

EAST GOSHEN MUNICIPAL AUTHORITY

March 10, 2014

Monday 7:00 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. APPROVAL OF MINUTES
a. February 10, 2014

4. APPROVAL OF INVOICES

a. Pennoni	Invoice #580215	\$4,431.25
b. Pennoni	Invoice #580216	\$1,211.00
c. Pennoni	Invoice #580217	\$ 5,676.25
d. Gawthrop	Invoice #116912 (paid)	\$ 160.00

5. LIAISON REPORTS

6. FINANCIAL REPORTS

- a. February 2014 Report

7. OLD BUSINESS

- a.

8. GOALS

- a. Review current mission statement and provide the Board of Supervisors with changes, if needed – June 1, 2014
- b. Submit an article for each newsletter – Due date for newsletter
Need by 1/31/14 – Dana **Completed**
Need by 4/30/14
Need by 7/1/14
Need by 10/31/14
- c. Obtain PA DEP approval for the Act 537 Plan revision for the Reservoir Road Pump Station – December 31, 2014
- d. Develop a recommendation on covers for the SBRs – August 1, 2014

- e. Attend West Goshen Meetings quarterly – more often if needed.
 - 1st Quarter (March) - Jack
 - 2nd Quarter (June)
 - 3rd Quarter (September)
 - 4th Quarter (December)
 - f. Respond to capacity requests in 45 days or less.
 - g. Continue to implement I & I Plan
 - h. Operate RCSTP in compliance with NPDES Permit
9. NEW BUSINESS
- a. Reservoir Road Pump Station, consider proposal for Bog Turtle survey
10. CAPACITY REQUESTS
- a. 211 Elis Lane – 1 EDU – existing house
 - b. 195 Wyllpen Circle – EDU – existing house
11. 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 for February 2014
12. ANY OTHER MATTER
13. CORRESPONDENCE AND REPORTS OF INTEREST
- a. March 5th memo, read annual goals
14. PUBLIC COMMENT
15. ADJOURNMENT

draft
EAST GOSHEN TOWNSHIP MUNICIPAL AUTHORITY
MEETING MINUTES
February 10, 2014

The East Goshen Township Municipal Authority held their regular public meeting on Monday, February 10, 2014 at 7:00 pm at the East Goshen Township building. Members in attendance were: Chairman Jack Yahraes, Fran Beck, Dana Pizarro, and Kevin Cummings. Also in attendance were: Rick Smith (Township Manager), Bob Adams (Attorney), Scott Towler (BFES), Mike Ellis (Pennoni), and Walter Wujcik, 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>PR – Park & Recreation Board</i>
<i>EPA – Environmental protection Agency</i>	<i>RCSTP – Ridley Creek Sewer Treatment Plant</i>
<i>HC – Historical Commission</i>	<i>SBR – Sequencing Batch Reactor</i>
<i>I&I – Inflow & Infiltration</i>	<i>SSO – Sanitary System Overflow</i>
<i>LCSTP – Lockwood Chase Sewer Treatment Plant</i>	<i>WAS – Waste Activated Sludge</i>

Call to Order & Pledge of Allegiance

Jack 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. Jack asked if anyone would be recording the meeting and there was no response.

Chairman’s Report/Other Member’s Reports

Dana reported that the Annual ABC Meeting went well. He talked about the projects that were completed on time and on budget in 2013, and about projects to be done in 2014. Jon Altshul explained the bond that the MA received and the excellent rating that the township received. Jack provided a picture of a bog turtle for the Authority members.

Approval of Minutes

Dana moved to accept the minutes of January 13, 2014. Fran seconded the motion. The motion passed unanimously.

Approval of Invoices

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

- | | | |
|----|-----------------|-------------|
| a. | Pennoni #576758 | \$ 1,355.00 |
| b. | Pennoni #576759 | \$ 105.00 |
| c. | Pennoni #576760 | \$10,582.50 |
| d. | Pennoni #576762 | \$ 881.50 |

Fran seconded the motion. The motion passed unanimously.

Liaison Reports

Conservancy Board – Walter reported that the tree protectors arrived but because of the weather, the Board has not been able to install them. At their last meeting, the CB met with consultants who are working on the update to the Open Space and Recreation Plan.

1 **Financial Reports**

2 Jon Altshul's February 6, 2014 Financial Report for January 2014:

3 The Municipal Authority recorded \$33,737.91 in revenues and -\$395 in expenses in December, a
4 difference of \$34,132.91. Expenses were negative due to a refund of \$1,845 from Pennoni for
5 overpayment from December. Revenues include \$12,600 in tapping fees from Goshen Meadows
6 and a \$21,000 transfer from the sewer operating fund. The fund balance is now \$1,632,403.33.

7
8 **Old Business**

9 Odor Control Alternatives – Mike presented a report on odor control alternative and tank covers
10 for the Ridley Creek Plant. The two most common methods of odor control are tank covers and
11 chemical misters. The different types of covers are:

12 Solid, fixed cover – Fiberglass reinforced plastic (FRP) covers were included as an Add
13 Alternative bid item in the RCSTP expansion in 2008. At that time the bids ranged from
14 \$750,000 to \$810,000 for the covers. The cost today would probably be over \$1,000,000. Also,
15 new structural support members would probably be needed on the walkways and carbon
16 columns, and fans may need to be added to the interior.

17 Flexible covers, such as fabric, geomembrane or tarps, would need to be able to handle a
18 rain and snow load, so some additional supports may be needed. Carbon columns and fans may
19 be needed. Flexible covers are generally inflatable, arch/frame supporting or floating. They are
20 expected to be less expensive than solid, fixed covers.

21 Floating Cover can be solid, flexible or balls. They may cause a conflict with the
22 decanter.

23 Misters – There are two general types – odor neutralizing (removes odor) and odor
24 masking (masks odor like a scented air freshener). Specific locations, typically around the site
25 perimeter, would need to be determined. Misters are expected to have a significantly lower
26 capital cost than covers but have an ongoing chemical supply cost and may not be as effective at
27 odor control.

28 The Authority members asked Mike to provide the cost of the flexible cover and ongoing costs
29 for the covers.

30
31 **New Business**

32 1. DEP Letter – Patricia O'Neill Subdivision, 1637 Manley Road – A copy of the letter from
33 PADEP to John Smirga, engineer for the O'Neill subdivision, granting exemption from Sewage
34 Facilities Planning was reviewed. This sewage will be treated at the West Goshen Township
35 facility.

36
37 2. Reservoir Road Pump Station – Rick provided the following data based on the December
38 2013 flows and 2013 expenses for West Goshen and Ridley Creek treatment facilities:

	<u>GPD(Dec)</u>	<u>GP Year</u>	<u>Cost</u>	<u>Cost/1,000</u>
40 West Goshen	896,870	327,357,550	\$983,039	\$3.00
42 Ridley Creek	398,404	145,417,460	\$597,337	\$4.11

43
44 He also provided a copy of the 2007 Wastewater Needs Analysis that recommended that the
45 Alternative A2, which included expansion of the RCSTP to 750,000 GPD and construction of the
46 Reservoir Rd Pump station, was the most cost effective alternative. The planning to expand

1 RCSTP actually started in 1996. Rick mentioned that we pay West Goshen a fee on the flows
2 and a percentage of the operating costs. Kevin and Dana voiced concern about future costs.
3 Dana feels a Lifecycle Cost Analysis should be done. Rick will provide a copy of the agreement
4 with West Goshen to the MA members.
5

6 3. Goshen Meadows, 1325 West Chester Pk – The MA reviewed a memo from Mark Gordon,
7 Township Zoning Officer, confirming that the Township received the 10% reservation fee for the
8 63 EDU's for this development. Fran moved to authorize the Municipal Authority Chairman to
9 execute the Capacity Reservation Agreement for the Goshen Meadows project. Dana seconded
10 the motion. The motion passed unanimously.
11

12 Sewer Reports

13 1. Mark Miller, Director of Public Works - No report
14

15 2. Pennoni – Mike Ellis gave the following report for January:
16

17 RCSTP – Pennoni continues to provide operations assistance as needed. No issues were brought
18 to our attention in January.

19 We gathered documentation requested by Miller Environmental's attorney and provided the
20 documentation to the Township's attorney.

21 Reserve PS Elimination – We are still awaiting several contract closeout documents from the
22 contractor before final payment will be made including as –built plans, a letter from the
23 geotechnical engineer confirming adequate backfill compaction within the detention basin berm,
24 written notification that they will return in the spring to remove the filter sock along the creek,
25 contractor's release, statement of surety, and maintenance bond. The contractor has not
26 indicated when these documents will be provided.

27 Chapter 94 Annual Reports – We collected and analyzed data and information for the Ridley
28 Creek STP, West Goshen, and Westtown reports. A draft of the Westtown report was completed
29 and forwarded to the Township for review. Preparation of the other two reports is ongoing.

30 Reservoir Road Pump Station Act 537 Plan – We conducted one complete PNDI Search for the
31 maximum project impact area consisting of the proposed pump station site, Alternative 2A force
32 main route, and construction access path from the end of the force main to the Ridley Creek STP.
33 The results require that we perform a Phase 1 bog turtle habitat survey and also submit
34 documentation to the PA Dept. of Conservation and Natural Resources (DCNR) for potential
35 threats to 3 special concern plant species – the Tooth-cup, Heller's Witchgrass and Autumn
36 Bluegrass. Two of these species are concerns that were not on prior PNDI results.

37 We made submissions to DCNR on January 16th for the special concern plant species, to PA
38 Historical and Museum Commission (PHMC) on January 16 for a Cultural Resources Notice
39 review, and to US Fish and Wildlife Service (F&W) on January 15 for a bog turtle habitat
40 screening. F&W may require additional in-field wetlands delineation of the extended force main
41 route prior to the bog turtle survey. However, we have not yet received feedback from any of the
42 agencies.

43 We evaluated the feasibility of diverting all upstream flow (approx. 500,000 gpd) in the Chester
44 Creek Interceptor through the new pump station and 8" force main in the future. Larger pumps
45 and a larger force main would be needed to convey all upstream flow, assuming that the pump

1 station would have to handle all upstream peak flows with no flow going to West Goshen. An
2 email with further details was sent to the Township on January 30.
3 We also estimated the impact of the additional pollutant loadings on the Ridley Creek STP. The
4 additional 300,000 gpd may cause the influent NH4 daily load (in pounds/day) to exceed the
5 plant's average design capacity. BOD5, TSS, TKN and Phosphorus influent loads are
6 anticipated to remain within the plant's design capacities. A more accurate evaluation can be
7 performed after an organic composite sample is taken from representative wastewater in the
8 Chester Creek Interceptor.

9 As previously reported, the altered and additional force main routing will require additional field
10 survey beyond our original scope; however, we do not recommend any further surveying be
11 performed until the design phase, after the Act 537 Plan is approved by PADEP.

12 The next step in the Act 537 planning process is to submit the draft Act 537 Plan to the Chester
13 County Planning Commission, Chester Co. Health Dept., East Goshen Township Planning
14 Commission, West Goshen Planning Commission, and West Goshen's Treatment Plant operator
15 for review. These agencies are allowed 60 days to provide comments. We recommend these
16 submissions be made within the next few weeks, at least upon receipt of feedback from DCNR
17 and PHMC, to keep the project moving forward.

18 The following is the tentative ACT 537 Planning schedule:

	<u>Estimated Date</u>
19 Submit to County & Township Agencies	March 3, 2014
20 60-day County & Township Review Period	May 3, 2014
21 Bob Turtle screening	May 3, 2014
22 Revisions per Agency Comments	May 15, 2014
23 30-day Public Comment Period	June 15, 2014
24 East Goshen & West Goshen Township Adoption	July 7, 2014
25 PADEP Review & Approval (120 days)	November 15, 2014

26
27
28 **3. Big Fish Environmental Services** – The following is a summary of Scott's report for
29 January 2014:

30 Treatment Process Operation- During December 2013, there were no exceedances of the final
31 effluent discharge limitations for Outfall 001 and Outfall 002.

32 The monthly average total phosphorus concentration was 0.24 mg/L as compared to the
33 discharge limitation of 0.5 mg/L. During the month, the final effluent total phosphorus
34 concentration discharged ranged from 0.18 mg/L to 0.38 mg/L.

35 There was no discharge to Applebrook, Outfall 002, during December 2013.

36 During the month of January 2014, there are no anticipated exceedances of the permitted effluent
37 discharge limitations.

38 During January 2014, there was no discharge to Applebrook.

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

44 SBRs #1, 3 and 4 were in service during the month of January.

45 Process monitoring of each SBR included ammonia as N, Nitrite as N, Nitrate as N, COD, SSV,
46 MLSS and total phosphorus. Foam concentrations remained around the same concentration as

1 during December. Present surface area coverage during React Phase ranges from approximately
2 90 to 100%. The foam color changed to a light tan color and averages 3 to 4 inches in depth.
3 Daily monitoring of the influent and final effluent 24-hour composites samples for total
4 phosphorus is ongoing. Daily analysis of the final effluent flow equalization grab sample total
5 phosphorus is ongoing. Sample collection and analysis of the influent wastewater collected at
6 the influent pump station wet well is ongoing.

7 Addition of aluminum sulfate solution to the SBRs to assist with phosphorus removal continued.
8 The volume of aluminum sulfate solution to the SBRs was consistent during January. The
9 addition of soda ash to the SBRs to assist with maintaining desired pH concentrations above 7.0
10 standard units continued during the month.

11 SBR #2 remains out of service as a treatment unit, however, partially filled with MLSS which
12 continuously mixed and aerated.

13 During the month, the decanter for SBR 3 continued to be periodically observed as being
14 extended above the water level. The effluent knife valve was routinely closed and the decanter
15 filled with water to assist with lowering the decanter within the water level. The frequency of
16 occurrence ranged from one to several occurrences during the month.

17 Process Monitoring On-Line Instrumentation: Representatives from the Hach Co. were on site
18 on December 17, 2013 to discuss the proposed pilot study of the RTC online analyzer. A
19 proposal for a real time monitoring and control system was received on January 30, 2013.

20 Solids Dewatering and Disposal: December 2013 & January 2014

21 During the month, sludge wasting to the sludge holding tanks and decanting of the sludge
22 holding tanks was ongoing. Process monitoring included pH, total alkalinity and total solids.
23 Sludge holding tank #1 was in service. The level at the beginning of the month was 9.31 feet
24 and the level at the end of the month was 12.88 feet. The initial total solids concentration was
25 0.92% and ended the month as 0.97% total solids. 267,840 gallons of supernatant were decanted
26 during the month. A total of 500 pounds of soda ash were added during the month for pH
27 adjustment.

28 Sludge holding tank #2 was in service. The level at the beginning of the month was 14.82 feet
29 and the level at the end of the month was 10.92 feet. The initial total solids concentration was
30 0.55% and ended the month as 0.91% total solids. 278,040 gallons of supernatant were decanted
31 during the month. A total of 150 pounds of soda ash were added during the month for pH
32 adjustment.

33 Significant storm/hydraulic Loading Events – On Monday January 6, 2014, excessive hydraulic
34 loading to the wastewater treatment plant was experienced. The “high flow” event was managed
35 utilizing manual diversion of flow to the offline SBR basin (SBR#2). No exceedances of the
36 final effluent discharge limitations were experienced during this event, including the 24 hour
37 composite sample collected on January 7, 2014 for NPDES compliance reporting. On Friday
38 January 10, 2014 a second excessive hydraulic loading event to the SBRs was observed. This
39 event included influent hydraulic flows rates in the range of 140% (112 x 1.25) to 157% (126 x
40 1.25) of the design hydraulic loadings. The duration of the event was approximately 6 hours. No
41 exceedances of the permitted effluent discharge limitations were experienced during this event.

42 Minor Repairs and Preventive Maintenance

- 43 1. Influent pump #1 was rebuilt as scheduled preventative maintenance and returned to the
44 wastewater treatment facility for reinstallation.
- 45 2. The UV lamp racks for banks number 1 & 2 were removed for cleaning. The channel was
46 cleaned.

- 1 3. Replace 3 failed on UV bank #2. Ballast replaced were module 1, bank 2, module 2, bank 2
- 2 and module 4, bank 2.
- 3 4. Identified a failed level transducer for post flow equalization basin #1. A replacement
- 4 transducer is in process.
- 5 5. Replaced failed ballast on UB bank #1. Ballast replaced was module 3, bank 2.
- 6 6. Adjusted belt on air compressor.
- 7 7. Replaced failed ballast on UV bank #1. Ballast replaced was Module 3, bank #1.
- 8 8. Drained and cleaned disc filters twice during the month. Scott mentioned that this is routine
- 9 maintenance.
- 10 Scott mentioned that about 5 dumpsters of sludge were removed during the month on January.

11
12 **Any Other Matter**

13 1. Control System Proposal – Scott presented a proposal from Hach Co. for a feedback control
14 system similar to ones being used in the Northeast. Currently the time used is 1.5 hours. There
15 may be a time savings. However, the estimated cost is \$40,000. They track the SBRs every day
16 and see changes in alkalinity, pH, etc. every day. Kevin and Dana would fund instrumentation to
17 make sampling more efficient. Kevin feels that they need to get the character of the waste. Dana
18 asked Scott to get proposals for probes to monitor pH and temperature in the SBRs. Scott
19 mentioned that they keep 2 logs – one for maintenance and one for operating.

20
21 **Adjournment**

22 There being no further business, Kevin moved to adjourn the meeting. Fran seconded the
23 motion. The motion passed unanimously. The meeting was adjourned at 8:30 pm.

24
25 Respectfully submitted,

26
27
28 Ruth Kiefer
29 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 #: 580215
 Invoice Date: 02/18/2014
 Project: EGMA1307
 Project Name: Reservoir Rd PS Act 537 Planning

For Services Rendered through: 2/9/2014

Attended meeting with R. Smith and M. Miller regarding proposed pump station location and force main routing alternatives; field recon throughout Alternative 2A routing with M. Miller; PNDI search for complete Alternative 2A routing; prepared and submitted PNDI potential plant species impact documentation to DCNR, Cultural Resources Notice to PHMC, and bog turtle habitat screening request to PA Fish & Wildlife; evaluated feasibility of conveying all upstream Chester Creek Interceptor flow (approx. 500,000 gpd) through new pump station and 8" force main in future, and issued summary email to Township; performed cursory evaluation of impact of additional 300,000 gpd on hydraulic and pollutant loadings at RCSTP; and prepared Alternatives Analysis narrative for Act 537 Plan document.

Phase : 03 -- Act 537 Plan Update

Total Phase : 03 -- Act 537 Plan Update

Labor :	4,431.25
Expense :	0.00
Phase Total :	4,431.25

Amount Due This Invoice

\$4,431.25

Phase : 03 -- Act 537 Plan Update

Labor Class	Hours/ Units	Rate	Amount
Authority Engineer	15.25	110.00	1,677.50
Senior Engineer	2.50	105.00	262.50
Project Engineer	18.25	95.00	1,733.75
Senior Environmental Scientist	2.25	85.00	191.25
Associate Engineer	0.75	83.00	62.25
Engineering Technician II	7.00	72.00	504.00
Labor Total:	46.00		4,431.25

Total Phase : 03 -- Act 537 Plan Update

Labor :	\$4,431.25
Expense :	\$0.00

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

Labor :	\$4,431.25
Expense :	\$0.00

OK RS 3/7

INVOICES DUE ON RECEIPT. Invoices outstanding over 30 days will have a Service Charge of 1 1/2% per month.

East Goshen Municipal Authority
EGMA1307 Invoice Summary
Invoice Date 02/18/2014

Project: EGMA1307
Pennoni Job No.: Reservoir Rd PS Act 537 Planning
Invoice No: **580215**
Invoice Period: 1/13/2014 to 2/9/2014
Initial Authorization: \$ 77,400.00 **Date:** 1/16/2013
Contract Amount: \$ 77,400.00
Previously Invoiced: \$ 49,029.50
Current Invoice: \$ 4,431.25
Invoiced to Date (\$): \$ 53,460.75
Invoiced to Date (%): 69%
Remaining Budget (\$): \$ 23,939.25
Remaining Budget (%): 31%

Budget by Phase:

	Reservoir Rd PS Act 537 Planning
Phase Name:	
Phase Budget:	\$ 77,400.00
Previously Invoiced:	\$ 49,029.50
Current Invoice:	\$ 4,431.25
Invoiced to Date (\$):	\$ 53,460.75
Invoiced to Date (%):	69%
Remaining Budget (\$):	\$ 23,939.25
Remaining Budget (%):	31%

Comments: Attended meeting with R. Smith and M. Miller regarding proposed pump station location and force main routing alternatives; field recon throughout Alternative 2A routing with M. Miller; PNDI search for complete Alternative 2A routing; prepared and submitted PNDI potential plant species impact documentation to DCNR, Cultural Resources Notice to PHMC, and bog turtle habitat screening request to PA Fish & Wildlife; evaluated feasibility of conveying all upstream Chester Creek Interceptor flow (approx. 500,000 gpd) through new pump station and 8" force main in future, and issued summary email to Township; performed cursory evaluation of impact of additional 300,000 gpd on hydraulic and pollutant loadings at RCSTP; and prepared Alternatives Analysis narrative for Act 537 Plan document.



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 # : 580216
Invoice Date : 02/18/2014
Project : EGMA1401
Project Name : 2014 General Services

For Services Rendered through: 2/9/2014

Prepared January and February Engineer's Reports, attended January Municipal Authority meeting, researched and prepared memo on RCSTP odor control and tank cover alternatives.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor :	1,211.00
Expense :	0.00
Phase Total :	1,211.00

Amount Due This Invoice

\$1,211.00

Fee :	10,300.00
Prior Billings :	0.00
Current Billings :	1,211.00
Total Billings :	1,211.00

Phase : **** -- Professional Services

Labor

<u>Class</u>	<u>Hours/ Units</u>	<u>Rate</u>	<u>Amount</u>
Authority Engineer	10.00	113.00	1,130.00
Senior Engineer	0.75	108.00	81.00
Labor Total:	10.75		1,211.00

Total Phase : **** -- Professional Services

Labor :	\$1,211.00
Expense :	\$0.00

Total Project : EGMA1401 -- 2014 General Services

Labor :	\$1,211.00
Expense :	\$0.00

OK RS 3/7

East Goshen Municipal Authority
EGMA1401 Invoice Summary
Invoice Date 02/18/2014

Project: EGMA1401
Pennoni Job No.: 2014 General Services
Invoice No: **580216**
Invoice Period: 1/13/2014 to 2/9/2014
Initial Authorization: \$ 10,300.00 **Date:** 12/9/2013
Contract Amount: \$ 10,300.00
Previously Invoiced: \$ -
Current Invoice: \$ 1,211.00
Invoiced to Date (\$): \$ 1,211.00
Invoiced to Date (%): 12%
Remaining Budget (\$): \$ 9,089.00
Remaining Budget (%): 88%

Budget by Phase:

Phase Name: 2014 General Services
Phase Budget: \$ 10,300.00
Previously Invoiced: \$ -
Current Invoice: \$ 1,211.00
Invoiced to Date (\$): \$ 1,211.00
Invoiced to Date (%): 12%
Remaining Budget (\$): \$ 9,089.00
Remaining Budget (%): 88%

Comments: Prepared January and February Engineer's Reports, attended January Municipal Authority meeting, and researched and prepared memo on RCSTP odor control and tank cover alternatives.



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 # : 580217
 Invoice Date : 02/18/2014
 Project : EGMA1403
 Project Name : 2013 Chapter 94 Reports

For Services Rendered through: 2/9/2014

Continued report preparation, mapping, data gathering, meter analysis, and projections for Ridley Creek STP, West Goshen, and Westtown Chapter 94 Reports; Westtown Report was completed and submitted to Township for review.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor :	5,676.25
Expense :	0.00
Phase Total :	5,676.25

Amount Due This Invoice

5,676.25

Fee :	14,400.00
Prior Billings :	881.50
Current Billings :	5,676.25
Total Billings :	6,557.75

Phase : **** -- Professional Services

Labor

Class	Hours/ Units	Rate	Amount
Authority Engineer	8.75	113.00	988.75
Graduate Engineer	62.50	75.00	4,687.50
Labor Total:	71.25		5,676.25

Total Phase : **** -- Professional Services

Labor :	\$5,676.25
Expense :	\$0.00

Total Project : EGMA1403 -- 2013 Chapter 94 Reports

Labor :	\$5,676.25
Expense :	\$0.00

OK 123 3/7

East Goshen Municipal Authority
EGMA1307 Invoice Summary
Invoice Date 02/18/2014

Project: EGMA1403
Pennoni Job No.: 2013 Chapter 94 Reports
Invoice No: **580217**
Invoice Period: 1/13/2014 to 2/9/2014
Initial Authorization: \$ 14,400.00 **Date:** 12/9/2013
Contract Amount: \$ 14,400.00
Previously Invoiced: \$ 881.50
Current Invoice: \$ 5,676.25
Invoiced to Date (\$): \$ 6,557.75
Invoiced to Date (%): 46%
Remaining Budget (\$): \$ 7,842.25
Remaining Budget (%): 54%

Budget by Phase:

**2013 Chapter 94
Reports**

Phase Name:
Phase Budget: \$ 14,400.00
Previously Invoiced: \$ 881.50
Current Invoice: \$ 5,676.25
Invoiced to Date (\$): \$ 6,557.75
Invoiced to Date (%): 46%
Remaining Budget (\$): \$ 7,842.25
Remaining Budget (%): 54%

Comments: Continued report preparation, mapping, data gathering, meter analysis, and projections for Ridley Creek STP, West Goshen, and Westtown Chapter 94 Reports; Westtown Report was completed and submitted to Township for review.



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
01/31/2014
Client No: 6604-001M
Invoice No. 116912

General Authority Services

Fees

		Hours	
01/13/2014	RFA		
	Review Pennoni memorandum regarding Reservoir Road pump station.	0.80	
	For Current Services Rendered	0.80	160.00

Recapitulation

<u>Timekeeper</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Total</u>
Robert F. Adams	0.80	\$200.00	\$160.00
Previous Balance			\$640.00
Total Current Charges			160.00
Balance Due			<u>\$800.00</u>

olc RS 2/19/14

ALREADY PAID
RS

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 February Financial Reports
Date: March 6, 2014

The Municipal Authority recorded \$10,371 in revenues and \$13,724 in expenses in February, a difference of -\$3,353. Engineering costs for the Reservoir Road Pump Station represented the bulk of expenses, while revenues came primarily from Tapping Fees. The fund balance is now \$1,629,050.

A complete list of all monthly expenses is provided.

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

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
MUNICIPAL AUTHORITY BEGINNING FUND BALANCE				
RCSTP BUDGET				
REVENUE				
INTEREST EARNED - RCSTP EXPANSION	07341 1020	2,000.00	123.56	260.89
GRANT REVENUE	07392 0800	0.00	0.00	0.00
TOTAL REVENUE		2,000.00	123.56	260.89
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
RCSTP NET RESULT		2,000.00	123.56	260.89

1,632,403.33

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

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
OPERATING BUDGET				
REVENUE				
INTEREST EARNINGS	07341 1000	27.00	1.33	1.91
C.C. TAPPING FEES	07364 1100	124,000.00	7,400.00	20,000.00
R.C.TAPPING FEES	07364 1110	21,444.00	2,000.00	2,000.00
CONNECTION FEES - SEWER	07364 1130	0.00	563.76	563.76
MISCELLANEOUS REVENUE	07380 1000	0.00	282.24	282.24
TRANSFER FROM SEWER OPERATING	07392 0500	0.00	0.00	21,000.00
TOTAL REVENUE		145,471.00	10,247.33	43,847.91
EXPENSES				
ADMINISTRATIVE WAGES	07424 1400	32,768.00	0.00	0.00
MISCELLANEOUS EXPENSE	07424 3000	4,000.00	0.00	1,450.00
MUNIC.AUTH.-AUDITING	07424 3110	10,800.00	0.00	0.00
ENGINEERING SERVICES	07424 3130	35,525.00	2,236.50	391.50
LEGAL SERVICES	07424 3140	7,000.00	800.00	800.00
M.C.-DVRFA-DEBT SERVICE	07471 1000	22,120.00	0.00	0.00
M.C.-DVRFA-INTEREST PAYM N	07472 1000	5,115.00	0.00	0.00
M.C.-DVRFA-INTEREST PAYM N	07472 1010	0.00	0.00	0.00
TOTAL EXPENSES		117,328.00	3,036.50	2,641.50
OPERATING NET RESULT		28,143.00	7,210.83	41,206.41

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

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
CAPITAL BUDGET				
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
EXPENSES				
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	0.00
RESERVE PUMP STATION - CONSTRUCTION	07427 2000	0.00	0.00	0.00
RESERVOIR PUMP STATION - ENGINEER	07428 1000	75,000.00	10,687.50	10,687.50
RESERVOIR PUMP STATION CONSTRUCTION	07428 2000	0.00	0.00	0.00
TOTAL EXPENSES		75,000.00	10,687.50	10,687.50
CAPITAL NET RESULT		(75,000.00)	(10,687.50)	(10,687.50)

MUNICIPAL AUTHORITY ENDING FUND BALANCE 1,629,050.22

MGRP18 run by BRIAN 8 : 28 AM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07341-1000					0.00				
									INTEREST EARNINGS
	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				
			0.00	1.91	-0.58				
07341-1020					0.00				
									INTEREST EARNED - RCSTP EXPANSION
	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				
			0.00	260.89	-137.33				
07364-1100					0.00				
									C.C. TAPPING FEES
	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				
			0.00	20,000.00	-20,000.00				
07364-1110					0.00				
									R.C. TAPPING FEES
		41280		2,000.00		02/25/14	41280 1		TAP IN FEE-903 SORELL HILL LT2
			0.00	2,000.00	-2,000.00				
			0.00	2,000.00	-2,000.00				
07364-1130					0.00				
									CONNECTION FEES - SEWER
		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
		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				
			282.24	846.00	-563.76				

MGRP18 run by BRIAN 8 : 28 AM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07380-1000					0.00				
		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				
			0.00	282.24	-282.24				
07392-0500					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				
07424-3000					0.00				
	CD	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				
			1,450.00	0.00	1,450.00				
07424-3130					0.00				
		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				
			2,236.50	1,845.00	391.50				
07424-3140					0.00				
		41310	800.00			02/27/14	2234		528 GAWTHROP GREENWOOD & HALSTED LEGAL SERVICES - NOV.2013 GEN.AU
			800.00	0.00	800.00				

MGRP18 run by BRIAN 8 : 28 AM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
			800.00	0.00	800.00				
07424-7460					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				
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				
			10,687.50	0.00	10,687.50				
Beg Bal		0.00	16,746.24	47,526.04	30779.8				

Memo
East Goshen Township
1580 Paoli Pike
West Chester, PA 19380

Voice (610) 692-7171

Fax (610) 425-8950

E-mail rsmith@eastgoshen.org

Date: March 7, 2014

To: Municipal Authority

From: Rick Smith, Township Manager

Re: Reservoir Road Pump Station – Act 537 Plan

We have received letters from US Fish and Wildlife, PA DCNR and PHMC. (Attached)

We have obtained a proposal for the Phase I Bog Turtle Survey from Conestoga –Rovers and I would suggest the Authority accept it.

Mike Ellis has had discussions with PA DCNR and they are willing to consider photos and other site documentation as a first step. Suggest we see how this pans out. If need be we could hire a botanist in April.

The good news is that the PHMC is ok with the project.



**CONESTOGA-ROVERS
& ASSOCIATES**

410 Eagleview Boulevard, Suite 110
Exton, Pennsylvania 19341
Telephone: (610) 321-1800 Fax: (610) 321-2763
www.CRAworld.com

March 6, 2014

Reference No. 400002

Mr. William K. Hohman
Pennoni Associates Inc.
Christiana Executive Campus
121 Continental Drive, Suite 207
Newark, DE 19713-4310

Re: Proposal for Bog Turtle Habitat Assessment (Phase 1 Survey)
Sanitary Sewer Line
East Goshen Township, Chester County, Pennsylvania

Conestoga-Rovers & Associates, Inc. (CRA) is pleased to submit this proposal to Pennoni Associates, Inc. to conduct a bog turtle habitat assessment (Phase 1 survey) for a proposed sanitary sewer line between Reservoir Road and Chelsea Circle in East Goshen Township, Chester County, Pennsylvania. We understand that the project involves the construction of approximately 8,500 linear feet of sewer line which will cross several wetlands delineated by Pennoni along its course. Typically, the USFWS requests that all wetlands within 300 feet of the centerline of linear projects (Study Area) be evaluated as part of the bog turtle habitat assessment.

The following paragraphs provide a detailed scope of work, cost estimate, and schedule to complete a Phase 1 survey for bog turtle habitat within the Study Area and prepare a Habitat Assessment Report for submission to the USFWS documenting the presence or absence of habitat suitable to support bog turtles within the Study Area.

1.0 SCOPE OF WORK

1.1 HABITAT ASSESSMENT

CRA will conduct a bog turtle habitat assessment (Phase 1 survey) in accordance with the USFWS *Guidelines for Bog Turtle Surveys* (revised April 2006) for all delineated wetlands and streams in the Study Area. The Phase 1 survey will be conducted by Mr. Scott E. Bush, a USFWS recognized bog turtle surveyor. The habitat in each wetland within the Study Area will be assessed for its suitability to support bog turtles based on the soil, plant community composition and structure, and hydrology. Documentation of each area assessed will be provided on USFWS Bog Turtle Habitat Evaluation Field Forms completed in the field and photographs of each area will be taken.

1.2 HABITAT ASSESSMENT REPORT

CRA will prepare a Bog Turtle Habitat Assessment Report documenting the methodology and results of our habitat assessment. The report will include a description of the vegetation, soils, and hydrology in

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**CONESTOGA-ROVERS
& ASSOCIATES**

March 6, 2014

Reference No. 400002

- 2 -

all wetlands delineated within the Study Area. We will provide a determination as to whether habitat suitable to support bog turtles is present or absent in each wetland within the project area. Photographic documentation of the habitats present will be provided in the report. A draft copy of the Habitat Assessment Report will be provided to you for review and comment prior to formal submission to the USFWS. Upon your approval, CRA will submit the final report to USFWS for review and concurrence.

2.0 BUSINESS CONDITIONS

2.1 SERVICES AGREEMENT

We propose that the scope of work be conducted under CRA's Standard Terms for Professional Services (attached).

2.2 FEE

We propose that the scope of work be completed on a time and materials basis. Only incurred costs will be billed. Our fee will not exceed the total estimated fee below unless the scope of work changes and Pennoni and CRA agree that a fee adjustment is warranted.

TOTAL ESTIMATED FEE	\$3,700
---------------------	---------

3.0 SCHEDULE

CRA will commence the fieldwork for the habitat assessment within 10 days of being authorized to proceed (weather permitting). We will provide you with a preliminary verbal report of our findings as the field work progresses. We will submit draft copies of the Habitat Assessment Reports to you within approximately 10 business days of completing the fieldwork for the Phase 1 survey. CRA will submit the final report to the agencies upon your approval of the draft report. Typically, the agencies require 30 to 60 days to issue a concurrence letter, depending on their workload.

Note that if potentially suitable bog turtle habitat is present, the USFWS may request additional coordination to clear the project or they may require presence/ absence surveys by a qualified biologist. This proposal does not include a cost estimate for additional studies should they be required; however, CRA can provide these services if required.



**CONESTOGA-ROVERS
& ASSOCIATES**

March 6, 2014

Reference No. 400002

- 3 -

4.0 QUALIFIERS AND ASSUMPTIONS

CRA assumes that Pennoni will secure access to the Study Area for our habitat assessment. We also assume that Pennoni will provide CRA with base drawings of the study area that shows the sewer corridor, potential access routes, and wetlands delineated for the project.

5.0 KEY PROJECT PERSONNEL

CRA's key project personnel for this project will include:

Mr. Scott E. Bush, P.W.S., Approved Bog Turtle Surveyor
Ms. Christine Miller, M.S., Ecologist and Agency Approved Assistant

We appreciate the opportunity to assist you on this project. If you would like us to proceed with the outlined scope of work, please forward a signed copy of CRA's Standard Terms for Professional Services to my attention.

If you have any questions, please feel free to call me at (610) 321-1800 ext. 11.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

A handwritten signature in black ink that reads "Scott E. Bush". The signature is written in a cursive style.

Scott E. Bush, P.W.S.
Senior Ecologist

SEB/smk/1
Encl.

STANDARD TERMS FOR PROFESSIONAL SERVICES

Conestoga-Rovers & Associates, Inc. ("CRA") and CLIENT (as set forth in the attached proposal) agree that any professional services performed by CRA for CLIENT relating to the proposal will be on the following standard terms:

1. Invoices for services rendered will be issued monthly payable on receipt. Amounts due will be increased at the rate of 1 1/2 percent per month after 30 days. CRA reserves the right, without penalty, to discontinue services in the event of non-payment of undisputed amounts.
2. CRA maintains statutory workers compensation insurance, and professional, pollution, general, auto, and employers liability insurance which CRA deems adequate. Certificates of insurance shall be provided on request.
3. CRA's services are solely for CLIENT's benefit and may not be relied upon by any third party without CRA's express written consent. Any use, change, or distribution of Work Product without the written consent of CRA shall be at CLIENT's risk and will not give rise to liability of CRA.
4. CRA shall perform its professional services in the manner consistent with the level of care and skill ordinarily exercised by other professional firms acting under similar circumstances and at similar times. CRA makes no other warranty, implied or expressed.
5. CRA shall indemnify and hold harmless Client for its services to the extent CRA's neglect or willful misconduct causes liability for the CLIENT. Neither party shall be liable for any consequential loss, injury or damages suffered by the other party, including but not limited to loss of use, earnings, and business interruption.
6. To the maximum extent permitted by law, CRA's liability and that of its employees, agents, directors, officers, and subcontractors to CLIENT due to any negligent acts, errors or omissions, shall not exceed \$1,000,000, except as to damages resulting from the gross negligence or willful misconduct of CRA.
7. CLIENT acknowledges that the pre-existing presence, if any, of pollutants, and other potentially hazardous conditions at the project site were not caused by or the responsibility of CRA, and that this contractual arrangement does not transfer any legal responsibilities for such conditions from CLIENT to CRA.

These Terms and Conditions are hereby accepted this ____ day of _____, 201__.

Name of Company

Per:

Title:

I have authority to bind the Corporation



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850

February 24, 2014

William Hohman
Penmoni Associates Inc.
Christiana Executive Campus
121 Continental Drive, Suite 207
Newark, DE 19713

RE: USFWS Project #2014-0265
PNDI receipt #20140115434297

Dear Mr. Hohman:

This responds to your letter dated January 16, 2014, requesting information about federally listed and proposed endangered and threatened species within the area affected by the proposed Reservoir Road pump station and sewer diversion project located in East Goshen Township, Chester County, Pennsylvania. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

East Goshen Municipal Authority is proposing to construct a new pump station and new diversion chamber on a vacant Township owned property. Additionally, a new force main will be constructed within existing rights-of-way and sewer easements. As you described, the force main is proposed to be constructed via horizontal directional drilling methods to minimize earth disturbance.

The proposed project is within the known range of the bog turtle (*Clemmys muhlenbergii*), a species that is federally listed as threatened. Bog turtles inhabit shallow, spring-fed fens, sphagnum bogs, swamps, marshy meadows, and pastures characterized by soft, muddy bottoms; clear, cool, slow-flowing water, often forming a network of rivulets; high humidity; and an open canopy. Bog turtles usually occur in small, discrete populations occupying suitable wetland habitat dispersed along a watershed. The occupied "intermediate successional stage" wetland habitat is usually a mosaic of micro-habitats ranging from dry pockets, to areas that are saturated with water, to areas that are periodically flooded. Some wetlands occupied by bog turtles are located in agricultural areas and are subject to grazing by livestock.

As indicated on the PNDI receipt, a Phase 1 bog turtle habitat assessment should be conducted on all wetlands in and within 300 feet of the proposed project action area, as described under "Bog Turtle Habitat Survey" (Phase 1 survey) of the enclosed *Guidelines for Bog Turtle Surveys*. The project "action area" includes all areas that will be directly or indirectly affected by the proposed project (including all phases of multi-phased projects) and all project-associated features, such as roads, water and sewer lines, utility lines, stormwater and sedimentation basins, buildings and other structures, driveways, parking lots, yards/lawns, and wells.

Due to the skill required to correctly identify potential bog turtle habitat, we recommend that the Phase 1 survey be done by a qualified surveyor (see enclosed list). Survey results should be submitted to the Service for review and concurrence. If the Phase 1 survey is done by someone who is not on this list, it is likely that a site visit by a Fish and Wildlife Service biologist will be necessary to verify their findings. Due to the limited availability of staff from this office, such a visit may not be possible for some time. Use of a qualified surveyor will expedite our review of the survey results.

If potential bog turtle habitat is found in the project action area, efforts should be made to avoid any direct or indirect impacts to those wetlands (see enclosed *Bog Turtle Conservation Zones*). Avoidance of direct and indirect effects means no disturbance to or encroachment into the wetlands (e.g., filling, ditching or draining) for any project-associated features or activities. Adverse effects may also be anticipated to occur when lot lines include portions of the wetland; when an adequate upland buffer is not designated around the wetland (see *Bog Turtle Conservation Zones*); or when roads, stormwater/sedimentation basins, impervious surfaces, or wells affect the hydrology of the wetland.

If potential habitat is found, submit (along with your Phase 1 survey results) a detailed project description and detailed project plans documenting how direct and indirect impacts to the wetlands will be avoided. If adverse effects to these wetlands cannot be avoided, a more detailed and thorough survey will be necessary, as described under "Bog Turtle Survey" (Phase 2 survey) of the *Guidelines*. The Phase 2 survey should be conducted by a qualified biologist with bog turtle field survey experience (see enclosed list of qualified surveyors). Submit survey results to the Service for review and concurrence.

In cases where adverse effects to federally listed species cannot be avoided, further consultation with the Service would be necessary to avoid potential violations of section 9 (prohibiting "take" of listed species) and/or section 7 (requiring federal agencies to consult) of the Endangered Species Act. Information about the section 7 and section 10 consultation processes (for federal and non-federal actions, respectively) can be obtained by contacting this office or accessing the Service's Endangered Species Home Page (<http://endangered.fws.gov>).

This response relates only to endangered and threatened species under our jurisdiction, based on an office and/or field review of the proposed project. Consequently, this letter is not to be construed as addressing potential Service concerns under the Fish and Wildlife Coordination Act or other authorities. A compilation of certain federal status species in Pennsylvania is enclosed for your information.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

Please contact Kayla Easler of this office at (814) 234-4090 if you have any questions regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Lora L. Zimmerman". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Lora L. Zimmerman
Field Office Supervisor

Enclosures

RECEIVED
FEB 28 2014
PENNONI ASSOCIATES INC

Federally Listed, Proposed, and Candidate Species in Pennsylvania
(revised May 23, 2012)

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status¹</u>	<u>Distribution (Counties and/or Watersheds)</u>
MAMMALS			
Indiana bat	<i>Myotis sodalis</i>	E	<u>Hibernacula</u> : Armstrong, Beaver, Blair, Centre, Fayette, Huntingdon, Lawrence, Luzerne, Mifflin and Somerset Co. <u>Maternity Colonies & Male Sites</u> : Adams, Armstrong, Bedford, Berks, Blair, Greene, Pike, Washington, and York Counties. Potential winter habitat state-wide in caves or abandoned mines. Potential summer habitat state-wide in forests or wooded areas.
BIRDS			
Piping plover	<i>Charadrius melodus</i>	E	Designated critical habitat on Presque Isle (Erie Co.). Migratory. No nesting in PA since 1950s, but recent colonization attempts at Presque Isle
REPTILES			
Bog turtle	<i>Clemmys (Glyptemys) mhlenbergii</i>	T	Adams, Berks, Bucks, Carbon (Aquashicola Creek watershed only), Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill (Swatara Creek watershed only), and York Co. <i>Historically found in Crawford, Mercer and Philadelphia Co.</i>
Eastern massasauga rattlesnake	<i>Sistrurus catenatus catenatus</i>	C	Butler, Crawford, Mercer and Venango Co. <i>Historically found in Allegheny and Lawrence Co.</i>
MUSSELS			
Clubshell	<i>Pleurobema clava</i>	E	Allegheny River (Armstrong, Clarion, Forest, Venango, Warren); Conneaut Outlet (Crawford); Conneauttee Creek (Crawford); French Creek (Crawford, Erie, Mercer, Venango); LeBoeuf Creek (Erie); Muddy Creek (Crawford); Shenango River (Mercer) <i>Has not been found recently in 13 streams of historical occurrence in Butler, Beaver, Fayette, Greene, Indiana, Lawrence, and Westmoreland Co.</i>
Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	E	Delaware River (Monroe, Northampton, Pike, Wayne Co.). <i>Has not been found recently in streams of historical occurrence in the Delaware River watershed (Bucks, Carbon, Chester, Philadelphia) or Susquehanna River watershed (Lancaster)</i>
Northern riffleshell	<i>Epioblasma torulosa rangiaria</i>	E	Allegheny River (Armstrong, Clarion, Forest, Venango, Warren); Conewango Creek (Warren); French Creek (Crawford, Erie, Mercer, Venango); LeBoeuf Creek (Erie); Muddy Creek (Crawford) <i>Has not been found recently in streams of historical occurrence, including Shenango River (Lawrence)</i>

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u> ¹	<u>Distribution (Counties and/or Watersheds)</u>
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	T	Allegheny River (Armstrong, Clarion, Forest, Venango, Warren); Conneauttee Creek (Venango); French Creek (Crawford, Erie, Mercer, Venango); LeBoeuf Creek (Erie); Muddy Creek (Crawford); Shenango River (Crawford, Mercer)
Rayed bean	<i>Villosa fabalis</i>	E	Allegheny River (Armstrong, Clarion, Forest, Venango, Warren); Cussewago Creek (Crawford); French Creek (Crawford, Erie, Mercer, Venango); LeBoeuf Creek (Erie); Muddy Creek (Crawford) <i>Potentially extant in Shenango River (Crawford, Mercer) and Woodcock Creek (Venango)</i> <i>Has not been found recently in 5 streams of historical occurrence in Armstrong, Lawrence, Mercer and Warren Co.</i>
Sheepnose	<i>Plethobasus cyphus</i>	E	Allegheny River (Forest and Venango Co.). <i>Has not been found recently in streams of historical occurrence, including: Allegheny River (Armstrong); Beaver River (Lawrence); Monongahela River (Washington); Ohio River (Allegheny and Beaver)</i>
Snuffbox	<i>Epioblasma triquetra</i>	E	Allegheny River (Armstrong, Clarion, Venango), Conneaut Outlet (Crawford); Cussewago Creek (Crawford); Dunkard Creek (Greene); French Creek (Crawford, Erie, Mercer, Venango); LeBoeuf Creek (Erie); Little Mahoning Creek (Indiana); Muddy Creek (Crawford); Shenango and Little Shenango River (Mercer); West Branch French Creek (Erie)
FISH			
Atlantic sturgeon ²	<i>Acipenser oxyrinchus oxyrinchus</i>	E	Delaware River (New York Bight Distinct Population Segment)
Shortnose sturgeon ²	<i>Acipenser brevirostrum</i>	E	Delaware River and other Atlantic coastal waters
PLANTS			
Northeastern bulrush	<i>Scirpus ancistrochaetus</i>	E	Adams, Bedford, Blair, Cambria, Carbon, Centre, Clinton, Columbia, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Lackawanna, Lehigh, Lycoming, Mifflin, Monroe, Perry, Snyder, Tioga, and Union Co. <i>Historically found in Northampton Co.</i>
Small-whorled pogonia	<i>Isotria medeoloides</i>	T	Centre, Chester and Venango Co. <i>Historically found in Berks, Greene, Monroe, Montgomery and Philadelphia Co.</i>

¹ E = Endangered; T = Threatened; PE = Proposed for listing as Endangered; C = Candidate

² Atlantic sturgeon and shortnose sturgeon are under the jurisdiction of the National Marine Fisheries Service

**U.S. FISH AND WILDLIFE SERVICE
& PENNSYLVANIA FISH AND BOAT COMMISSION**

QUALIFIED BOG TURTLE SURVEYORS

The following list includes persons known by the U.S. Fish and Wildlife Service and the Pennsylvania Fish and Boat Commission to have the skills and experience to search for and successfully find bog turtles and their habitat. This list includes individuals who do bog turtle survey work in Pennsylvania on a contractual basis. Any individuals handling or conducting surveys for bog turtles must first obtain from the Pennsylvania Fish and Boat Commission a Scientific Collector's Permit, and a Special Permit to survey for endangered and threatened species pursuant to 58 PA Code 75.4. All permitted collector's encounters with bog turtles must be reported in writing to the Commission and Service within 48 hours.

Contracted bog turtle surveys and research will be overseen by a qualified surveyor, who will be present in the field at all times during the investigation. Qualified surveyors are the individuals who act in the capacity of Principal Investigator (PI), having in-field oversight responsibility for surveys, bog turtle captures, turtle identification and marking, telemetry studies, and safe handling procedures. They are also the individuals responsible for ensuring 1) they and their assistants have the appropriate permits to conduct bog turtle work, 2) surveys are carried out in accordance with survey protocols, and 3) reports are accurate and complete and submitted to the appropriate agencies. Phase 1 and Phase 2 surveys should be carried out in accordance with the Service's *Guidelines for Bog Turtle Surveys* (dated April 2006); exceptions should be reviewed and approved by the Service and Commission.

This information is not to be construed as an endorsement of individuals or firms by the Service, the Commission, or any of its employees. Persons not on this list, but who have documented experience in conducting scientific studies of, or successful searches for, bog turtles and their habitat may submit their qualifications to the Service and the Commission for review. Additions to and deletions from this list are at the sole discretion of the Service and Commission. This list is subject to revision at any time without prior notice.

Ben Berra Skelly and Loy, Inc. 449 Eisenhower Blvd - Suite 300 Harrisburg, PA 17111-2302 717-232-0593 or 800-892-6532 bberra@skellyloy.com	Tessa Mai Bickhart Herpetological Associates, Inc. 581 Airport Road Bethel, PA 19507 717-933-8380; 717-933-4096 (fax) TBickhart@herpetologicalassociates.com	Stan Boder Wildlife Specialists, LLC 942 Camp Trail Road Quakertown, PA 18951 office: 215-529-7280 cell: 570-952-1169 fax: 215-529-1556 stan@wildlife-specialists.com
Andrew Brookens Skelly and Loy, Inc. 449 Eisenhower Blvd - Suite 300 Harrisburg, PA 17111-2302 717-232-0593 or 800-892-6532 abrookens@skellyloy.com	Robert Bull The Wilson T. Ballard Company 28 Northbrook Drive - Suite 3 Shrewsbury, PA 17361 717-235-0770; 717-235-3149 (fax) rbull@wtbco.com	Robert Zappalorti Herpetological Associates 575 Toms River Road, Route 571 Jackson, NJ 08527 732-833-8600; Fax 732-928-9257 RZappalort@aol.com
Jay Drasher Aqua-Terra Environmental Ltd. P.O. Box 4099 Reading, PA 19606 610-374-7500; 610-374-7480 (fax) JDraasher@Aqua-TerraEnv.com	Bryon DuBois Trident Environmental 521 Beaver Valley Pike Lancaster, PA 17602 908-814-1109 (cell); 732-818-3744 (fax) BDubois@tridentenviro.com	B. Scott Fiegel Ecological Associates, LLC 185 Long Lane, PO Box 181 Oley, PA 19547-0181 610-987-6585 Bscottfiegel@aol.com

<p>Sean P. Gorby Clemmys Environmental Services 112 Commons Court Chadds Ford, PA 19317 610-558-1664 Sean.Gorby@Clemmysenvironmental.com</p>	<p>Jeremy Hite RETTBW 3020 Columbia Avenue Lancaster, PA 17603 717-394-3721; 717-394-1063 (fax) jhite@rettew.com</p>	<p>Kevin S. Keat ECSI 1095 Mill Road PenArgyl, PA 18072 484-515-6806 kevinkeat@ptd.net</p>
<p>Andrew J. Longenecker CBSO, Inc. 800 Bursca Drive, Suite 804 Bridgeville, Pennsylvania 15017-1451 (412) 221-2236 Ext. 2003 (412) 334-8619 (cell) longenecker@cesoinc.com</p>	<p>Matthew Malhame P.O. Box 394 Henryville, PA 18332 570-872-1284 mmalhame@hotmail.com</p>	<p>Gian L. Rocco 322 Strawberry Hill Road Centre Hall, PA 16828 814-364-1204; 814-441-4303 (cell) gxr124@psu.edu</p>
<p>Brandon M. Ruhe MACHAC, Inc. Mid-Atlantic Center for Herpetology & Conservation P.O. Box 620 Oley, PA 19547 610-462-8530 bmruhe@ptd.net</p>	<p>Charles Strunk 1505 Sleepy Hollow Road Quakertown, PA 18951 215-679-9147; 267-784-6142 (cell) Strunk1@aol.com</p>	<p>Jason Tesauro J. Tesauro Ecological Consulting 53 North Union Street, 2nd Floor Lambertville, NJ 08530 201-841-6879 jasontesauro@yahoo.com</p>
<p>Autumn M. Thomas AECOM Environment 4 Neshaminy Interplex, Suite 300 Trevose, PA 19053-6940 215.244.7100; 215.244.7179(fax) autumn.thomas@aecom.com</p>	<p>Michael Torocco Herpetological Associates, Inc. 581 Airport Road Bethel, PA 19507 717-933-8380; 717-933-4096 (fax) MTorocco@herpetologicalassociates.com</p>	<p>Harry Strano Amy S. Greene Environmental 4 Walter E. Foran Blvd. Suite 209 Flemington, NJ 08822 908-788-3676</p>
<p>Teresa Amitrone Liberty Environmental, Inc. 50 North 5th Street, 5th Floor Reading, PA 19601 610-375-9301 x206; 610-375-9302 (fax) tamitrone@libertyenviro.com</p>	<p>David Smith Coastal Resources, Inc. 2988 Solomons Island Road Edgewater, MD 21037 410-956-9000; 410-956-0566 davids@coastal-resources.net</p>	<p>Laura Newgard David Moskowitz Ecolsciences, Inc. 75 Fleetwood Drive, Suite 250 Rockaway, NJ 07866 973-366-9500 ; 973-366-9593 LNewgard@ecolsciences.com</p>
<p>Raymond Farrell Herpetological Associates, Inc. 31 Fayette Avenue Staten Island, NY 10305 718-273-2086 Farrell31@aol.com</p>	<p>Bridger Thompson URS Corporation 4507 North Front Street Harrisburg, PA 17110 717-635-7901, ext. 7913 bridger.thompson@urs.com</p>	<p>Joe Pignatelli EcolSciences 75 Fleetwood Drive Suite 250 Rockaway, NJ 07866 973-366-9500; 908 244 4898 (cell) Jpignatelli@Ecolsciences.com</p>
<p>Scott E. Bush Conestoga-Rovers & Associates, Inc. 410 Eagleview Blvd., Suite 110 Exton, PA 19341 610-321-1800, ext. 11 sbush@craworld.com</p>		

BOG TURTLE CONSERVATION ZONES¹

(revised April 18, 2001)

Projects in and adjacent to bog turtle habitat can cause habitat destruction, degradation and fragmentation. Of critical importance is evaluating the potential direct and indirect effects of activities that occur in or are proposed for upland areas adjacent to bog turtle habitat. Even if the wetland impacts from an activity are avoided (i.e., the activity does not result in encroachment into the wetland), activities in adjacent upland areas can seriously compromise wetland habitat quality, fragment travel corridors, and alter wetland hydrology, thereby adversely affecting bog turtles.

The following bog turtle conservation zones have been designated with the intent of protecting and recovering known bog turtle populations within the northern range of this species. The conservation suggestions for each zone are meant to guide the evaluation of activities that may affect high-potential bog turtle habitat, potential travel corridors, and adjacent upland habitat that may serve to buffer bog turtles from indirect effects. *Nevertheless, it is important to recognize that consultations and project reviews will continue to be conducted on a case-by-case basis, taking into account site- and project-specific characteristics.*

Zone 1

This zone includes the wetland and visible spring seeps occupied by bog turtles. Bog turtles rely upon different portions of the wetland at different times of year to fulfill various needs; therefore, this zone includes the entire wetland (the delineation of which will be scientifically based), not just those portions that have been identified as, or appear to be, optimal for nesting, basking or hibernating. In this zone, bog turtles and their habitat are most vulnerable to disturbance, therefore, the greatest degree of protection is necessary.

Within this zone, the following activities are likely to result in habitat destruction or degradation and should be avoided. These activities (not in priority order) include:

- ▶ development (e.g., roads, sewer lines, utility lines, storm water or sedimentation basins, residences, driveways, parking lots, and other structures)
- ▶ wetland draining, ditching, tiling, filling, excavation, stream diversion and construction of impoundments
- ▶ heavy grazing
- ▶ herbicide, pesticide or fertilizer application²
- ▶ mowing or cutting of vegetation²
- ▶ mining
- ▶ delineation of lot lines (e.g., for development, even if the proposed building or structure will not be in the wetland)

Some activities within this zone may be compatible with bog turtle conservation but warrant careful evaluation on a case-by-case basis:

- ▶ light to moderate grazing
- ▶ non-motorized recreational use (e.g., hiking, hunting, fishing)

GUIDELINES FOR BOG TURTLE SURVEYS¹

(revised April 2006)

RATIONALE

A bog turtle survey (when conducted according to these guidelines) is an attempt to determine presence or probable absence of the species; it does not provide sufficient data to determine population size or structure. Following these guidelines will standardize survey procedures. It will help maximize the potential for detection of bog turtles at previously undocumented sites at a minimum acceptable level of effort. Although the detection of bog turtles confirms their presence, failure to detect them does not absolutely confirm their absence (likewise, bog turtles do not occur in all appropriate habitats and many seemingly suitable sites are devoid of the species). Surveys as extensive as outlined below are usually sufficient to detect bog turtles; however, there have been instances in which additional effort was necessary to detect bog turtles, especially when habitat was less than optimum, survey conditions were less than ideal, or turtle densities were low.

PRIOR TO CONDUCTING ANY SURVEYS

If a project is proposed to occur in a county of known bog turtle occurrence (see attachment 1), contact the U.S. Fish and Wildlife Service (Service) and/or the appropriate State wildlife agency (see attachment 2). They will determine whether or not any known bog turtle sites occur in or near the project area, and will determine the need for surveys.

- < If a wetland in or near the project area is *known* to support bog turtles, measures must be taken to avoid impacts to the species. The Service and State wildlife agency will work with federal, state and local regulatory agencies, permit applicants, and project proponents to ensure that adverse effects to bog turtles are avoided or minimized.
- < If wetlands in or adjacent to the project area are *not* known bog turtle habitat, conduct a bog turtle habitat survey (Phase 1 survey) if:
 1. The wetland(s) have an emergent and/or scrub-shrub wetland component, or are forested with suitable soils and hydrology (see below), *and*
 2. Direct and indirect adverse effects to the wetland(s) cannot be avoided.

See *Bog Turtle Conservation Zones*² for guidance regarding activities that may affect bog turtles and their habitat. In addition, consult with the Fish and Wildlife Service and/or appropriate State wildlife agency to definitively determine whether or not a Phase 1 survey will be necessary.

¹ These guidelines are a modification of those found in the final "Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan" (dated May 15, 2001). Several minor revisions were made to facilitate survey efforts and increase searcher effectiveness. As additional information becomes available regarding survey techniques and effectiveness, these survey guidelines may be updated and revised. Contact the Fish and Wildlife Service or one of the state agencies listed in Attachment 1 for the most recent version of these guidelines.

² See Appendix A of the "Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan" (dated May 15, 2001).

BOG TURTLE HABITAT SURVEY (= Phase 1 survey)

The purpose of this survey is to determine whether or not the wetland(s) are *potential* bog turtle habitat. These surveys are performed by a recognized, qualified bog turtle surveyor (contact the Service or the appropriate State wildlife agency to receive a list of recognized, qualified bog turtle surveyors). The following conditions and information apply to habitat surveys.

- < Surveys can be performed any month of the year (except when significant snow and/or ice cover is present). This flexibility in conducting Phase 1 surveys allows efforts during the Phase 2 survey window to be spent on wetlands most likely to support bog turtles (*i.e.*, those that meet the criteria below).

- < Potential bog turtle habitat is recognized by three criteria (*not all of which may occur in the same portion of a particular wetland*):
 1. **Suitable hydrology.** Bog turtle wetlands are typically spring-fed with shallow surface water or saturated soils present year-round, although in summer the wet area(s) may be restricted to near spring head(s). Typically these wetlands are interspersed with dry and wet pockets. There is often subsurface flow. In addition, shallow rivulets (less than 4 inches deep) or pseudo-rivulets are often present.
 2. **Suitable soils.** Usually a bottom substrate of permanently saturated organic or mineral soils. These are often soft, mucky-like soils (this does not refer to a technical soil type); you will usually sink to your ankles (3-5 inches) or deeper in muck, although in degraded wetlands or summers of dry years this may be limited to areas near spring heads or drainage ditches. In some portions of the species' range, the soft substrate consists of scattered pockets of peat instead of muck.
 3. **Suitable vegetation.** Dominant vegetation of low grasses and sedges (in emergent wetlands), often with a scrub-shrub wetland component. Common emergent vegetation includes, but is not limited to: tussock sedge (*Carex stricta*), soft rush (*Juncus effusus*), rice cut grass (*Leersia oryzoides*), sensitive fern (*Onoclea sensibilis*), tearthumbs (*Polygonum* spp.), jewelweeds (*Impatiens* spp.), arrowheads (*Sagittaria* spp.), skunk cabbage (*Symplocarpus foetidus*), panic grasses (*Panicum* spp.), other sedges (*Carex* spp.), spike rushes (*Eleocharis* spp.), grass-of-Parnassus (*Parnassia glauca*), shrubby cinquefoil (*Dasiphora fruticosa*), sweet-flag (*Acorus calamus*), and in disturbed sites, reed canary grass (*Phalaris arundinacea*) or purple loosestrife (*Lythrum salicaria*). Common scrub-shrub species include alder (*Alnus* spp.), red maple (*Acer rubrum*), willow (*Salix* spp.), tamarack (*Larix laricina*), and in disturbed sites, multiflora rose (*Rosa multiflora*). Some forested wetland habitats are suitable given hydrology, soils and/or historic land use. These forested wetlands include red maple, tamarack, and cedar swamps.

Suitable hydrology and soils are the critical criteria (*i.e.*, the primary determinants of potentially suitable habitat).

- < Suitable hydrology, soils and vegetation are necessary to provide the critical wintering sites (soft muck, peat, burrows, root systems of woody vegetation) and nesting habitats (open

areas with tussocky or hummocky vegetation) for this species. It is very important to note, however, that one or more of these criteria may be absent from portions of a wetland or wetland complex supporting bog turtles. Absence of one or more criteria does not preclude bog turtle use of these areas to meet important life functions, including foraging, shelter and dispersal.

- < If these criteria (suitable soils, vegetation and hydrology) are present in the *wetland*, then the *wetland* is considered to be potential bog turtle habitat, regardless of whether or not that portion of the wetland occurring within the project boundaries contains all three criteria. If the *wetland* is determined to be potential habitat and the project will directly or indirectly impact *any portion* of the wetland (see *Bog Turtle Conservation Zones*), then either:
 - < Completely avoid all direct and indirect effects to the wetland, in consultation with the Service and appropriate State wildlife agency, OR
 - < Conduct a Phase 2 survey to determine the presence of bog turtles.
- < The Service and appropriate State wildlife agency (see list) should be sent a copy of survey results for review and comment including: a USGS topographic map indicating location of site; project design map, including location of wetlands and stream and delineation of wetland type (PEM, PSS, PFO, POW) and "designated survey areas"³; color photographs of the site; surveyor's name; date of visit; opinion on potential/not potential habitat; a description of the hydrology, soils, and vegetation. A phase 1 report template and field form are available from the States and Service.

BOG TURTLE SURVEY (= Phase 2 survey)

If the wetland(s) are identified as potential bog turtle habitat (see Phase 1 survey), and direct and indirect adverse effects cannot be avoided, conduct a bog turtle survey in accordance with the specifications below. Note that this is *not* a survey to estimate population size or structure; a long-term mark/recapture study would be required for that.

Prior to conducting the survey, contact the appropriate State agency (see attached list) to determine whether or not a scientific collector's permit valid for the location and period of the survey will be required.

The Phase 2 survey will focus on the areas of the wetland that meet the soils, hydrology and vegetation criteria, as defined under the Phase 1 survey guidelines. Those areas that meet the criteria are referred to as "designated survey areas" for Phase 2 and Phase 3 survey purposes.

1. Surveys should only be performed during the period from April 15-June 15. For the Lake Plain Recovery Unit (see Recovery Plan), surveys should only be performed during the period from May 1 to June 30. This coincides with the period of greatest annual turtle activity (spring emergence and breeding) and before vegetation gets too dense to accurately survey. While turtles may be found outside of these dates, a result of no turtles would be

³ "Designated survey areas" are those areas of the wetland that meet the soils, hydrology and vegetation criteria for potential bog turtle habitat. These areas may occur within the emergent, scrub-shrub or forested parts of the wetland.

considered inconclusive. Surveys beyond June also have a higher likelihood of disruption or destruction of nests or newly hatched young.

2. Ambient air temperature at the surface in the shade should be $\geq 55^{\circ}$ F.
3. Surveys should be done during the day, at least one hour after sunrise and no later than one hour before sunset.
4. Surveys may be done when it is sunny or cloudy. In addition, surveys may be conducted during and after light rain, provided air temperatures are $\geq 65^{\circ}$ F.
5. At least one surveyor must be a recognized qualified bog turtle surveyor⁴, and the others should have some previous experience successfully conducting bog turtle surveys or herpetological surveys in wetlands. To maintain survey effort consistency and increase the probability of encountering turtles, the same surveyors should be used for each wetland.
6. A minimum of four (4) surveys per wetland site are needed to adequately assess the site for presence of bog turtles. At least two of these surveys must be performed in May. From April 15 to April 30, surveys should be separated by six or more days. From May 1 to June 15, surveys should be separated by three or more days. The shorter period between surveys during May and June is needed to ensure that surveys are carried out during the optimum window of time (*i.e.*, before wetland vegetation becomes too thick).

Note that bog turtles are more likely to be encountered by spreading the surveys out over a longer period. For example, erroneous survey results could be obtained if surveys were conducted on four successive days in late April due to possible late spring emergence, or during periods of extreme weather because turtles may be buried in mud and difficult to find.

Because this is solely a presence/absence survey, survey efforts at a particular wetland may cease once a bog turtle has been found.

7. Survey time should be at least four (4) to six (6) person-hours per acre of designated survey area per visit. Additional survey time may be warranted in wetlands that are difficult to survey or that have high quality potential habitat. The designated survey area includes all areas of the wetland where soft, mucky-like soils are present, regardless of vegetative cover type. This includes emergent, scrub-shrub, and forested areas of the wetland.

If the cover is too thick to effectively survey using Phase 2 survey techniques alone (*e.g.*, dominated by multiflora rose, reed canary grass, *Phragmites*), contact the Service and State wildlife agency for guidance on Phase 3 survey techniques (trapping) to supplement the Phase 2 effort. In addition, Phase 3 (trapping) surveys may also be warranted if the site is in

⁴ Searching for bog turtles and recognizing their habitat is a skill that can take many months or years of field work to develop. This level of expertise is necessary when conducting searches in order to ensure that surveys are effective and turtles are not harmed during the survey (*e.g.*, by stepping on nests). Many individuals that have been recognized as qualified to conduct bog turtle surveys obtained their experience through graduate degree research or employment by a state wildlife agency. Others have spent many years actively surveying for bog turtles as amateur herpetologists or consultants.

the Lake Plain-Prairie Peninsula Recovery Unit. Check with the Service or State wildlife agency for further guidance.

8. Walk quietly through the wetland. Bog turtles will bask on herbaceous vegetation and bare ground, or be half-buried in shallow water or rivulets. Walking noisily through the wetland will often cause the turtles to submerge before they can be observed. Be sure to search areas where turtles may not be visible, including under mats of dead vegetation, shallow pools, underground springs, open mud areas, vole runways and under tussocks. Do not step on the tops of tussocks or hummocks because turtle nests, eggs and nesting microhabitat may be destroyed. Both random opportunistic searching and transect surveys should be used at each wetland.

The following survey sequence is recommended to optimize detection of bog turtles:

- Semi-rapid walk through the designated survey area using visual encounter techniques.
 - If no bog turtles are found during visual survey, while walking through site identify highest quality habitat patches. Within these highest quality patches, begin looking under live and dead vegetation using muddling and probing techniques.
 - If still no bog turtles are found, the rest of the designated survey area should be surveyed using visual encounter surveys, muddling and probing techniques.
9. Photo-documentation of each bog turtle located will be required; a macro lens is highly recommended. The photos should be in color and of sufficient detail and clarity to identify the bog turtle to species and individual. Therefore, photographs of the carapace, plastron, and face/neck markings should be taken of each individual turtle. Do not harass the turtle in an attempt to get photos of the face/neck markings; if gently placed on the ground, most turtles will slowly extend their necks if not harassed. If shell notching is conducted, do the photo-documentation after the notching is done.
 10. The following information should be collected for each bog turtle: sex, carapace length-straight line and maximum length, carapace width, weight, and details about scars/injuries. Maximum plastron length information should also be collected to differentiate juveniles from adults as well as to obtain additional information on recruitment, growth, and demography.
 11. Each bog turtle should be marked (*e.g.*, notched, PIT tagged) in a manner consistent with the requirements of the appropriate State agency and/or Service. Contact the appropriate State wildlife agency prior to conducting the survey to determine what type of marking system, if any, should be used.
 12. All bog turtles must be returned to the point of capture as soon as possible on the same day as capture. They should only be held long enough to identify, measure, weigh, and photograph them, during which time their exposure to high temperatures must be avoided. No bog turtles may be removed from the wetland without permission from the Service and appropriate State agency.

13. The Fish and Wildlife Service and appropriate State agency should be sent a copy of survey results for review and concurrence, including the following: dates of site visits; time spent per designated survey area per wetland per visit; names of surveyors; a site map including wetlands and delineations of designated survey areas; a table indicating the size of each wetland, the designated survey area within each wetland, and the survey effort per visit; a description of the wetlands within the project area (e.g., acreage, vegetation, soils, hydrology); an explanation of which wetlands or portions of wetlands were or were not surveyed, and why; survey methodology; weather per visit at beginning and end of survey (air temperature, wind, and precipitation); presence or absence of bog turtles, including number of turtles found and date, and information and measurements specified in item 10 above; and other reptile and amphibian species found and date.

ADDITIONAL SURVEYS / STUDIES

Proper implementation of the Phase 2 survey protocol is usually adequate to determine species presence or probable absence, especially in small wetlands lacking invasive plant species. Additional surveys, however, may be necessary to determine whether or not bog turtles are using a particular wetland, especially if the Phase 2 survey results are negative but the quality and quantity of habitat are good and in a watershed of known occurrence. In this case, additional surveys (Phase 2 and/or Phase 3 (trapping) surveys), possibly extending into the following field season, may be recommended by the Service or appropriate State agency.

If bog turtles are documented to occur at a site, additional surveys/studies may be necessary to characterize the population (e.g., number, density, population structure, recruitment), identify nesting and hibernating areas, and/or identify and assess adverse impacts to the species and its habitat, particularly if project activities are proposed to occur in, or within 300 feet of, wetlands occupied by the species.

CONTACT AGENCIES - BY STATE

(April 2006)

STATE	FISH AND WILDLIFE SERVICE	STATE AGENCY
Connecticut	U.S. Fish and Wildlife Service New England Field Office 22 Bridge Street, Unit #1 Concord, NH 03301	Department of Environmental Protection Env. & Geographic Information Center 79 Elm Street, Store Floor, Hartford, CT 06106 <i>(info about presence of bog turtles in or near a project area)</i> Department of Environmental Protection Wildlife Division, Sixth Floor 79 Elm Street, Store Floor, Hartford, CT 06106 <i>(to get a Scientific Collectors Permit or determine what type of marking system to use)</i>
Delaware	U.S. Fish and Wildlife Service Chesapeake Bay Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401	Nongame & Endangered Species Program Delaware Division of Fish and Wildlife 4876 Hay Point Landing Road Smyrna, DE 19977
Maryland	U.S. Fish and Wildlife Service Chesapeake Bay Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401	Maryland Department of Natural Resources Wildlife & Heritage Division PO Box 68, Main Street Wye Mills, MD 21679
Massachusetts	U.S. Fish and Wildlife Service New England Field Office 22 Bridge Street, Unit #1 Concord, NH 03301	Division of Fisheries and Wildlife Dept. Fisheries, Wildlife and Env Law Enforcement Rt. 135 Westboro, MA 01581
New Jersey	U.S. Fish and Wildlife Service New Jersey Field Office 927 North Main Street, Bldg. D-1 Pleasantville, NJ 08232	New Jersey Division of Fish and Wildlife Endangered and Nongame Species Program 143 Van Syckels Road Hampton, NJ 08827
New York	U.S. Fish and Wildlife Service 3817 Luker Road Cortland, NY 13045	New York Natural Heritage Program 625 Broadway, 5th Floor Albany, NY 12233-4757 Phone: (518) 402-8935 <i>(info about presence of bog turtles in or near a project area)</i> NYS Department of Environmental Conservation Division of Fish, Wildlife, and Marine Resources Special Licenses Unit 600 Broadway, 5th Floor Albany, NY 12233-4752 <i>(for endangered species permit applications)</i>
Pennsylvania	U.S. Fish and Wildlife Service Pennsylvania Field Office 315 South Allen Street, Suite 322 State College, PA 16801	Natural Diversity Section Pennsylvania Fish and Boat Commission 450 Robinson Lane Bellefonte, PA 16823

BOG TURTLE COUNTIES OF OCCURRENCE OR LIKELY OCCURRENCE¹
(April 2006)

STATE	COUNTY	
Connecticut	Fairfield	Litchfield
Delaware	New Castle	
Maryland	Baltimore Carroll	Cecil Harford
Massachusetts	Berkshire	
New Jersey	Burlington Gloucester Hunterdon Middlesex Monmouth Morris	Ocean Salem Somerset Sussex Union Warren
New York	Albany Columbia Dutchess Genesee Orange Oswego Putnam	Seneca Sullivan Ulster Wayne Westchester
Pennsylvania	Adams Berks Bucks Chester Cumberland Delaware Franklin	Lancaster Lebanon Lehigh Monroe Montgomery Northampton Schuylkill York

¹ This list is valid for one year from the date indicated. It may, however, be revised more frequently if new counties of occurrence are documented. Updates to this list are available from the Service upon request.

February 27, 2014

PNDI Number: 20140115434297

Michael Ellis
Pennoni
Email: mellis@pennoni.com

**Re: Reservoir Road Pump Station Project
East Goshen Township, Chester County, PA**

Dear Mr. Ellis,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number 20140115434297 for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

Potential Impact Anticipated

PNDI records indicate species or resources under DCNR's jurisdiction are located in the project vicinity. Based on a detailed PNDI review, DCNR determined potential impacts to the following threatened or endangered species or species of special concern.

<i>Dichanthelium yadkinense</i>	Yadkin River Panic-grass	Special Concern Species	Proposed PA Endangered
<i>Dichanthelium oligo santhes</i>	Heller's Witchgrass	Special Concern Species	Proposed PA Threatened
<i>Poa Autumnalis</i>	Autumn Bluegrass	PA Endangered	Proposed PA Endangered
<i>Rotala ramosior</i>	Tooth-cup	PA Rare	Proposed PA Rare

Survey Request

There are four species known nearby that use habitat type may be present within the project area; therefore, we are requesting a qualified botanist conduct a survey for the following species (habitat and flowering time information from *The Plants of Pennsylvania, 2nd Edition*, by Rhoads and Block) at the appropriate time of year and then submitted to our office for review.

***Dichanthelium yadkinense* (Yadkin River Panic-grass)** inhabits dry woods and was found nearby along a gravel bar on the edge of a shaded rocky stream. The best time to identify Yadkin River Panic grass is in May through early June when vernal terminal panicles are present or in summer or fall when axillary panicles are present.

***Dichantehlum oligosahthes* (Heller's Witchgrass)** is a facultative upland species that occurs in thickets and loamy or clayey soils. Heller's Witchgrass was observed nearby in a dry meadow. Vernal terminal panicles are present May through early July or late summer to early fall.

Poa Autumnalis (Autumn Bluegrass) is a facultative species that occurs in moist woods; flowers late May through June. Autumn Bluegrass was found nearby in an open to shaded floodplain forest on a moist slope.

Rotala ramosior (Tooth-cup) is an obligate species that occurs in wet sandy shores and other swampy open grounds; flowers July through September. Tooth-cup was observed nearby in a vernal pool.

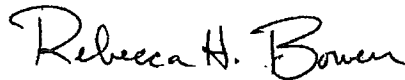
Your botanist should carefully review the new DCNR Botanical Survey Protocols available at <http://www.gis.dcnr.state.pa.us/hgis-cr/Login.aspx>. These protocols are recommended to ensure that the all necessary information is collected and that survey reports are prepared properly. It is the expectation of DCNR that these protocols will be followed when conducting surveys for species under our jurisdiction. Contact our office prior to the survey for detailed information about the species, or for a list of qualified surveyors.

Any target and non-target state-listed species found during the site visit should be reported to our office. Mitigation measures and monitoring may be requested if species or communities of special concern are found on or adjacent to site. If the land type(s) does not exist onsite a survey may not be necessary; please submit a habitat assessment report which describes the current land cover, habitat types and species found onsite.

This response represents the most up-to-date review of the PNDI data files and is valid for two (2) years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review.

Should you have any questions or concerns, please contact Emilee Boyer Euker, Ecological Information Specialist at 717.787.7067 or c-eboyer@pa.gov.

Sincerely,



Rebecca H. Bowen, Section Chief
Bureau of Forestry, Ecological Services Section
Pennsylvania Natural Heritage Program

conserve

sustain

enjoy



Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

March 5, 2014

Pennoni Associates, Inc.
Attn: Michael J. Ellis, P.E.
Christiana Executive Campus
121 Continental Drive, Suite 207
Newark, DE 19713

RE: ER# 2014-0572-029-A
DEP Act 537 Update Revision: East
Goshen Municipal Authority, Proposed
Reservoir Road Pump Station, East
Goshen Township, Chester County

Dear Mr. Ellis:

The Bureau for Historic Preservation (the State Historic Preservation Office) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 *et seq.* (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources. Our comments are as follows:

Archaeology

We have re-evaluated the potential effects of this project on archaeological resources. In our opinion, no archaeological investigations are necessary for this project. This supersedes our correspondence dated February 24, 2014.

Historic Structures

The properties listed below, listed in or eligible for the National Register of Historic Places, are located near the project area. In our opinion, the activity described in your proposal will have no effect on such resources. Should the scope and/or nature of the project change, the Bureau for Historic Preservation should be contacted immediately.

Rocky Hill Historic District



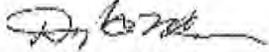
Pennsylvania Historical & Museum Commission

Tom Corbett, Governor • Andrew E. Masich, Chairman • James M. Vaughan, Executive Director

Page Two
Mr. Ellis
March 5, 2014

If you have any questions or comments concerning our review, please contact Mark Shaffer at (717) 783-9900.

Sincerely,



Douglas C. McLearen, Chief
Division of Archaeology and Protection

cc: DEP, Southeast Regional Office



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

March 5, 2014

To: Municipal Authority
From: Mark Miller
Re: January and February 2014 Monthly Report

Meters: All meters were read on a daily basis. The new meter was installed at Wilson Drive. The portable meters are still be being used, the data is being sent to Mike Ellis. The calibrations were not completed during January due to weather; I have scheduled them for later this month.

C.C. Collection: The pumping stations were visited on a daily basis. We replaced the valve pit top at the Ashbridge Pumping Station, we had a problem with the chemical feed corporation that ties into the force main when a piece of the top fell on the corporation breaking the valve. We had to utilize a pump truck while we shut the station down to make the repair. The DEP was notified via phone; we also filled out the emergency incident report and sent it to the DEP. We responded to two sewer lateral backups during the month of February, we plunged the lateral line and cleared the blockage.

R.C. Collection: We have been working on raising and sealing the manholes on the interceptor line to Ridley Creek as weather permits; to date we have done 16 manholes.

R.C. Plant: The utility waste water pump that was pulled in December has been rebuilt; we will get it installed as weather permits.

Alarms: We responded to dozens of alarms since the 1st of the year. Most of them were caused by weather such as power outages. The generators were utilized foe days during the ice storm; we ended up hauling fuel in on a daily basis. However, there were no problems with any of the equipment while we were without power.

PA One Calls: We received 55 PA One calls since January.



MEMORANDUM

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

FROM: Michael Ellis, P.E.
Authority Engineer

DATE: March 6, 2014

SUBJECT: Engineer's Report

Invoices

- Invoices with summaries are provided under separate cover.

Ridley Creek Sewage Treatment Plant (RCSTP)

- Pennoni continues to provide operations assistance as needed. No operational issues were brought to our attention in February.

Reserve PS Elimination

- We are still awaiting several contract closeout documents from the contractor before final payment can be made including as-built plans, a letter from the geotechnical engineer confirming adequate backfill compaction within the detention basin berm, written notification that they will return in the spring to remove the filter sock along the creek, contractor's release, statement of surety, and maintenance bond. The contractor has not indicated when these documents will be provided.

Chapter 94 Annual Reports

- We continued data analysis, projections, and report preparation for the Ridley Creek STP and West Goshen reports. Final drafts of both reports should be completed by March 14. A draft of the Westtown report was previously completed and forwarded to the Township for review.

Reservoir Road Pump Station Act 537 Plan

- We received a response letter from the PA Department of Conservation and Natural Resources (DCNR), and they are requiring a field botanical survey of potential threats to four special concern plant species. We are preparing photo documentation and other justification to submit to the DCNR in an effort to eliminate this requirement. If a field botanical survey still ends up being required, it will not be performed until the spring growing season, likely in late April or May.

- We received a response letter from the Pennsylvania Historical and Museum Commission (PHMC) requiring an archaeological study of the project area. We coordinated with the PHMC to revisit the need for such a study since nearly all work is within existing roads and previously excavated easements. The PHMC then issued a revised letter that a study is not required for the proposed route. If the force main route is revised to run through the intersection of Strasburg Road and Rt. 352, they likely will require an archaeological study of that specific Rocky Hill Historic District area.
- We received a response letter from the U.S. Fish and Wildlife Service (F&W) requiring a Phase 1 bog turtle habitat assessment of the entire project area. A Phase 2 bog turtle survey could be required if habitat is found in Phase 1 and adverse impacts to the habitat cannot be avoided. We are coordinating with bog turtle consultants to obtain pricing and scheduling to perform the Phase 1 assessment in time for consideration by the Authority at the March MA meeting.
- We continued preparation of the Act 537 Plan report and plot plan. We intend to submit to the County and Township review agencies by March 21.
- Tentative Act 537 Planning schedule (assuming no botanical survey or Phase 2 bog turtle screening):

Estimated Date

- Submit to County and Township Agencies March 21, 2014
- Phase 1 Bog Turtle Habitat Assessment April 4, 2014
- 60-day County and Township Review Period May 21, 2014
- Revisions per Agency Comments..... May 28, 2014
- 30-Day Public Comment Period July 4, 2014
- East Goshen and West Goshen Township Adoption July 31, 2014
- PADEP Review and Approval (120 days)..... December 15, 2014

Semi-Annual I/I Report

- We received portable meter data for the past six-month period, and we have begun to analyze the flows. We will prepare and issue the report prior to the April MA meeting.

New Sewer Connections

- We reviewed a sketch plan for a new grinder pump and low pressure sewer lateral at 211 Ellis Lane, and we forwarded comments to the Township.



Monthly Operations Report: February 2014

Treatment Process Operation

During January 2014, there were no exceedances of the final effluent discharge limitations for outfall 001 and no discharge from Outfall 002. Table 1 illustrates the final effluent composite sample data reported for the January 2014 eDMR.

Table 1

January 2014 - Final Effluent - Out Fall 001											
NPDES Permit Discharge Limitations	Flow	CBOD ₅		TSS		NH ₄ -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											
January 7, 2014	0.406	2.0	6.8	11	37	0.100	0.34	0.39	1.32	1	0.0000
January 14, 2014	0.559	2.0	9.3	6	28	0.15	0.72	0.22	1.03	1	0.0000
January 21, 2014	0.512	2.1	9.0	2	9	0.433	1.85	0.12	0.51	1	0.0000
January 28, 2014	0.466	3.0	11.7	4	16	0.10	0.39	0.30	1.17	1	0.0000
Average	0.4858	2.3	9.2	6	22	0.197	0.82	0.26	1.01	1	0.0000
Minimum	0.4060	2.0	6.8	2	9	0.100	0.34	0.12	0.51	1	0.0000
Maximum	0.5590	3.0	11.7	11	37	0.433	1.85	0.39	1.32	1	0.0000

The monthly average total phosphorus concentration was 0.26 mg/L as compared to the discharge limitation of 0.5 mg/L. During the month, the final effluent total phosphorus concentration discharged ranged from 0.12 mg/L to 0.39 mg/L.

There was no discharge to Applebrook, Outfall 002, during January 2014.

Table 2 illustrates the influent wastewater pollutant loadings for December 2013. The influent loadings remained within the treatment facility design loadings.



Table 2

January 2014 - Influent Wastewater											
Design Basis	Flow	BOD ₅		TSS		NH ₄ -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											
January 7, 2014	0.357	182	542	168	500	30.6	91	46.4	138	5.3	16
January 14, 2014	0.429	161	479	152	453	27.8	83	42	125	6.4	19
January 21, 2014	0.478	138	411	91	271	30.9	92	39.7	118	5.1	15
January 28, 2014	0.368	304	905	220	655	36.8	110	36.4	108	5.4	16
Average	0.4082	196	584	158	470	31.5	94	41.1	122	5.6	17
Minimum	0.3571	138	411	91	271	27.8	83	36.4	108	5.1	15
Maximum	0.4781	304	905	220	655	36.8	110	46.4	138	6.4	19

During the month of February 2014, there are no anticipated exceedances of the permitted effluent discharge limitations.

The final effluent CBOD5 sample data for the composite sample collected on February 4, 2014 was lost due to a power failure at the certified laboratory as a result of the snow/ice storm during February 3rd and 4th. The Laboratory provided a letter that will be included in the eDMR submission to PADEP. A COD analysis was performed resulting with a concentration typical of CBOD5 of less than 10 mg/L (as determined using data collected through on site analysis).

Table 3 presents the final effluent data for the month of February 2014.



Table 3

February 2014 - Final Effluent - Out Fall 001											
NPDES Permit Discharge Limitations	Flow	CBOD ₅		TSS		NH ₄ -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											
February 4, 2014	0.383			7	22	0.616	1.97	0.35	1.12	1	0.0000
February 11, 2014	0.490	2.8	11.4	5	20	0.781	3.19	0.50	2.04	1	0.0000
February 18, 2014	0.444	2.1	7.8	5	19	2.01	7.44	0.27	1.00	1	0.0000
February 25, 2014	0.541	2.0	9.0	2	9	0.00	0.00	0.11	0.50	1	0.0000
Average	0.4645	2.3	9.4	5	18	1.136	3.15	0.31	1.16	1	0.0000
Minimum	0.3830	2.0	7.8	2	9	0.616	0.00	0.11	0.50	1	0.0000
Maximum	0.5410	2.8	11.4	7	22	2.010	7.44	0.50	2.04	1	0.0000

During February 2014, there was no discharge to Applebrook.

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.



Table 4

February 2014 - Influent Wastewater											
Design Basis	Flow	BOD ₅		TSS		NH ₄ -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											
February 4, 2014	0.424	211	745	112	396	23.1	82	67.2	237	4.7	17
February 11, 2014	0.509	299	1,056	232	820	23.2	82	35.1	124	5.2	18
February 18, 2014	0.408	228	805	220	777	34.0	120	49.2	174	5.0	18
February 25, 2014	0.484	146	516	200	707		0		0	3.7	13
Average	0.4562	221	781	191	675	26.8	71	50.5	134	4.7	16
Minimum	0.4083	146	516	112	396	23.1	0	35.1	0	3.7	13
Maximum	0.5089	299	1056	232	820	34.0	120	67.2	237	5.2	18

Sequencing batch reactors (SBRs) numbered 1, 3 and 4 were in service during the month of January.

Process monitoring of each SBR included ammonia as N, nitrite as N, Nitrate as N, COD, SSV, MLSS and total phosphorus. Foam concentrations reduced and eliminated during the month of February. Increased sludge wasting and process monitoring to lower the MLSS inventory was implemented. The lower biomass MLSS concentration combined with the lower SBR temperatures contributed to a slight increase in the final effluent ammonia as nitrogen concentration. The effluent remains in compliance with the NPDES Permit discharge parameters.

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 was reduced during February. The addition of soda ash to the SBRs to assist with maintain desired pH concentrations above 7.0 standard units continued during the



month. There was an overall reduction in the soda ash addition to the SBRs during February, however, an increase amount was added to the sludge holding tanks.

SBR No. 2 remains out of service as a treatment unit, however, partially filled with MLSS which continuously mixed and aerated. SBR No. 2 was periodically placed in service to assist with managing periods of high flow. The majority of the contents were transferred to the sludge holding tanks.

During the month, the decanter for SBR 3 continued to be periodically observed as being slightly tilted within the water level. The effluent knife valve was routinely closed and the decanter filled with water to assist with lowering the decanter within the water level. The frequency of occurrence ranged from one to several occurrences during the month

Process Monitoring On-Line Instrumentation:

Representatives from the Hach Company were contacted regarding the incorporation of pH monitoring in conjunction with the LDO monitoring of the SBRs. A proposal from Hach is under development.

Flow data:

February 2014		
Flow Meter Location	Total Volume for Month, MGD	Average Daily Flow, gpd
Influent Wastewater to Screening Building	12.516	447,003
Influent Wastewater to SBRs	14.364	513,006
Internal Recycle	1.968	70,303
Treated Effluent to Disc Filters	13.688	488,857
Final Effluent Discharge	13.787	492,393
Applebrook Golf Course	0	0

Chemical Usage:

February 2014		
Chemical	Daily Average	Total Monthly
Soda Ash	307	8,600
Magnesium Hydroxide	0	0
Aluminum Sulfate solution	46.2	1,294
Polymer (centrifuge)	0.86*	12 gallons

*Fourteen (14) days of centrifuge operation



Solids Dewatering and Disposal: February 2014

Sludge Dewatering Summary	
Gallons of sludge dewatered	196,230 gallons
Average Dewatered Total Solids, %	19.2
Wet Tons	24.3
Dry Tons	4.739
Number of dumpsters	3

**A total of four (4) dumpsters were filled and three (3) dumpsters were removed during February.*

During the month, 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.

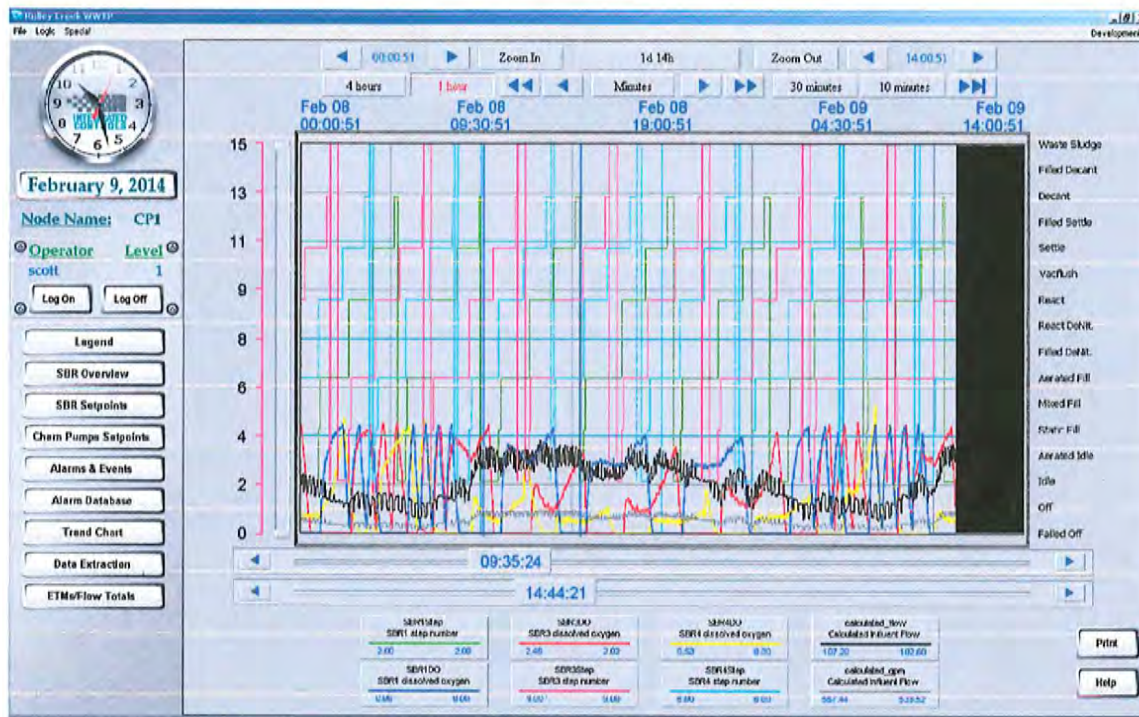
Sludge holding tank No. 1 was in service. The level at the beginning of the month was 13.44 feet and the level at the end of the month was 11.01 feet. The initial total solids concentration was 0.87% and ended the month as 0.93% total solids. 211,400 gallons of supernatant were decanted during the month. A total of 1,000 pounds of soda ash were added during the month for pH adjustment.

Sludge holding tank No. 2 was in service. The level at the beginning of the month was 10.90 feet and the level at the end of the month was 15.28 feet. The initial total solids concentration were 0.88% and ended the month as 0.96% total solids. 204,206 gallons of supernatant were decanted during the month. A total of 650 pounds of soda ash were added during the month for pH adjustment.

Significant Storm/Hydraulic Loading Events

On Saturday, February 8, 2014, a hydraulic loading to the wastewater treatment plant exceeding 100% of was sustained for a continuous period of approximately 5 hours. Figure 1 illustrates the influent hydraulic loading to the SBRs. The "high flow" event was managed utilizing manual diversion of flow to the offline SBR basin (SBR number 2). No exceedances of the final effluent discharge limitations were experienced during this event.

Figure 1



On Friday, February 21, 2014 a hydraulic loading event to the SBRs was observed. This event consisted of an influent hydraulic flow rate at or exceeding 100% of the design hydraulic capacity for approximately 14 hours. No exceedances of the permitted effluent discharge limitations were experienced during this event. Figure 2 illustrates the influent hydraulic flow pattern to the SBRs.

On Saturday, February 22, 2014 a hydraulic loading event to the SBRs was observed. This event consisted of an influent hydraulic flow rate at or exceeding 100% of the design hydraulic capacity for approximately 12 hours. No exceedances of the permitted effluent discharge limitations were experienced during this event. Figure 3 illustrates the influent hydraulic flow pattern to the SBRs.

Figure 2

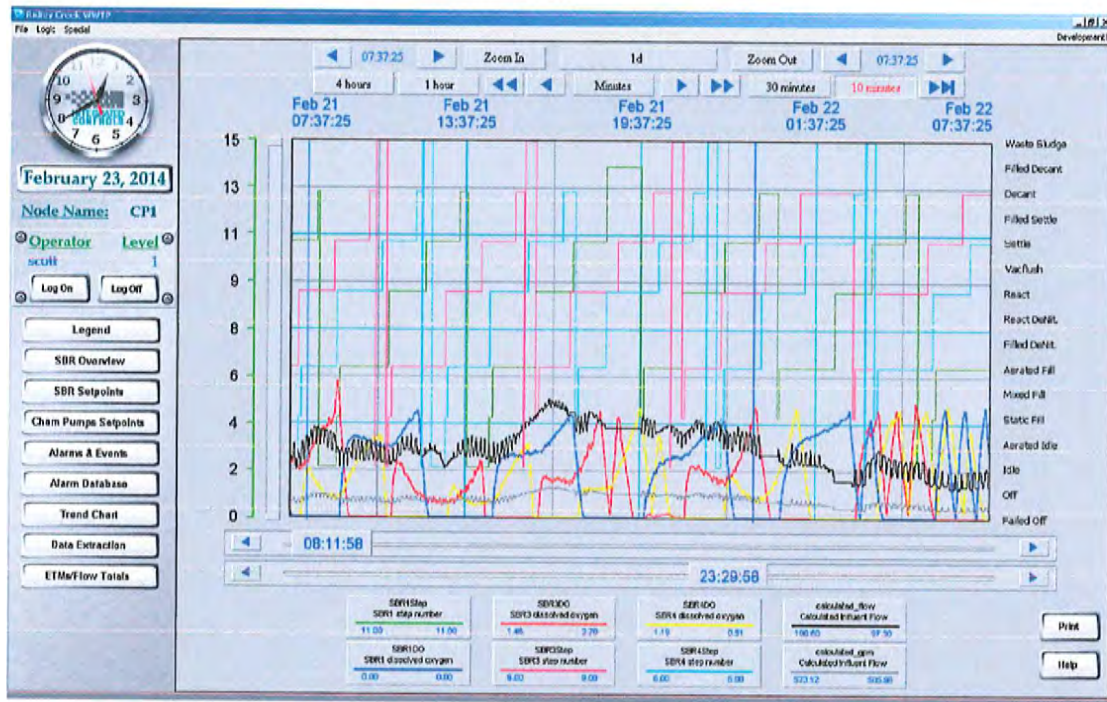
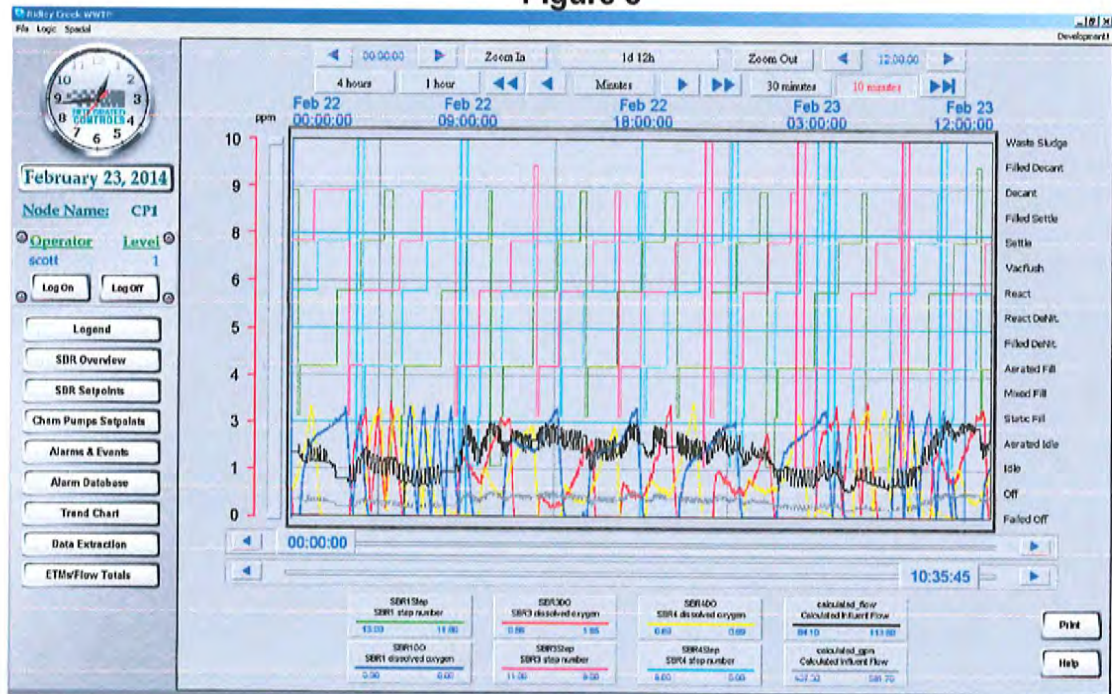


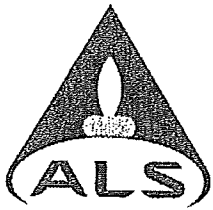
Figure 3





Minor Repairs and Preventative Maintenance

- Drained and cleaned disc filters once during the month.
- Installed a valve on the potable water line to the decommissioned soda ash mix tank.
- Installed a hose bib on the non-potable water line adjacent to SBR Number 3/SBR control room.
- Removed the soda ash feed tank from the existing blower/Laboratory building.



34 Dogwood Lane
Middletown, PA 17057

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www.alsglobal.com

March 2, 2014

Mr. Mark Miller
East Goshen Township Municipal Authority
1580 Paoli Pike
West Chester, PA 19380

Re: Workorder 1070166 BOD/CBOD

Dear Mr. Miller,

On February 4, 2014, East Goshen Township Municipal Authority submitted to ALS Environmental samples with the descriptions "Final Effluent (DMR Reporting)" and "Influent (Outside Compositor)" to be analyzed for a variety of parameters including biochemical oxygen demand (BOD) and carbonaceous biochemical oxygen demand (CBOD). The samples were received by ALS Environmental and entered for analysis as sample numbers 1070166001 and 1070166003. These samples were initially set up for BOD/CBOD within the holding time specified for the method.

When samples are analyzed for BOD/CBOD, an initial dissolved oxygen reading is taken. The samples are then incubated for five days and a final dissolved oxygen reading is taken. During the incubation period for these samples ALS Environmental experienced difficulties with our computer system which resulted in the corruption of several data files stored on our servers, including the file containing the initial dissolved oxygen data for these samples. Every attempt was made to recover and fix these corrupt files, but without success. Regrettably, without the initial dissolved oxygen value a BOD/CBOD result cannot be determined. The BOD for sample 1070166003 was reanalyzed; however, the reanalysis was completed after the holding time for the method had expired. The CBOD for sample 1070166001 could not be reanalyzed; sufficient volume for sample 1070166001 did not remain to reanalyze this parameter. ALS Environmental was not able to provide a CBOD result for sample 1070166001.

ALS Environmental believes the computer issues were the result of damage caused to the system by a storm related power outage and is researching the installation of a more robust computer backup system that will allow for the duplication of all files on a system completely independent from our facility location. Installation of such a system will prevent any possible future data loss.

We apologize for any inconvenience caused. If we can be of any assistance in discussing this issue with your regulatory authorities please let us know. You can contact me at 717-944-5541 or by e-mail at anna.milliken@alsglobal.com

Sincerely,

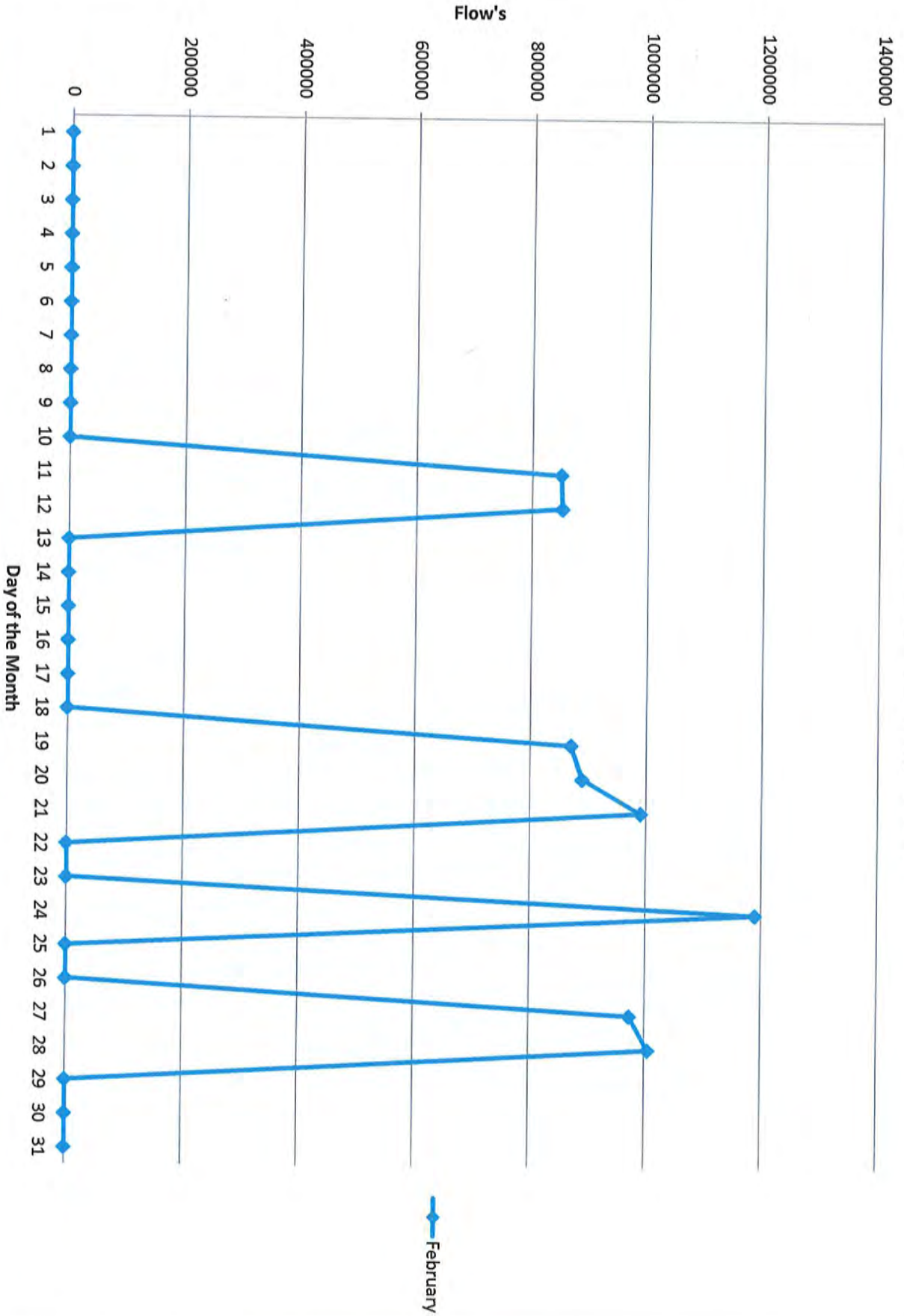
Anna G. Milliken
QC Manager

2014 SUMMARY OF METER READINGS

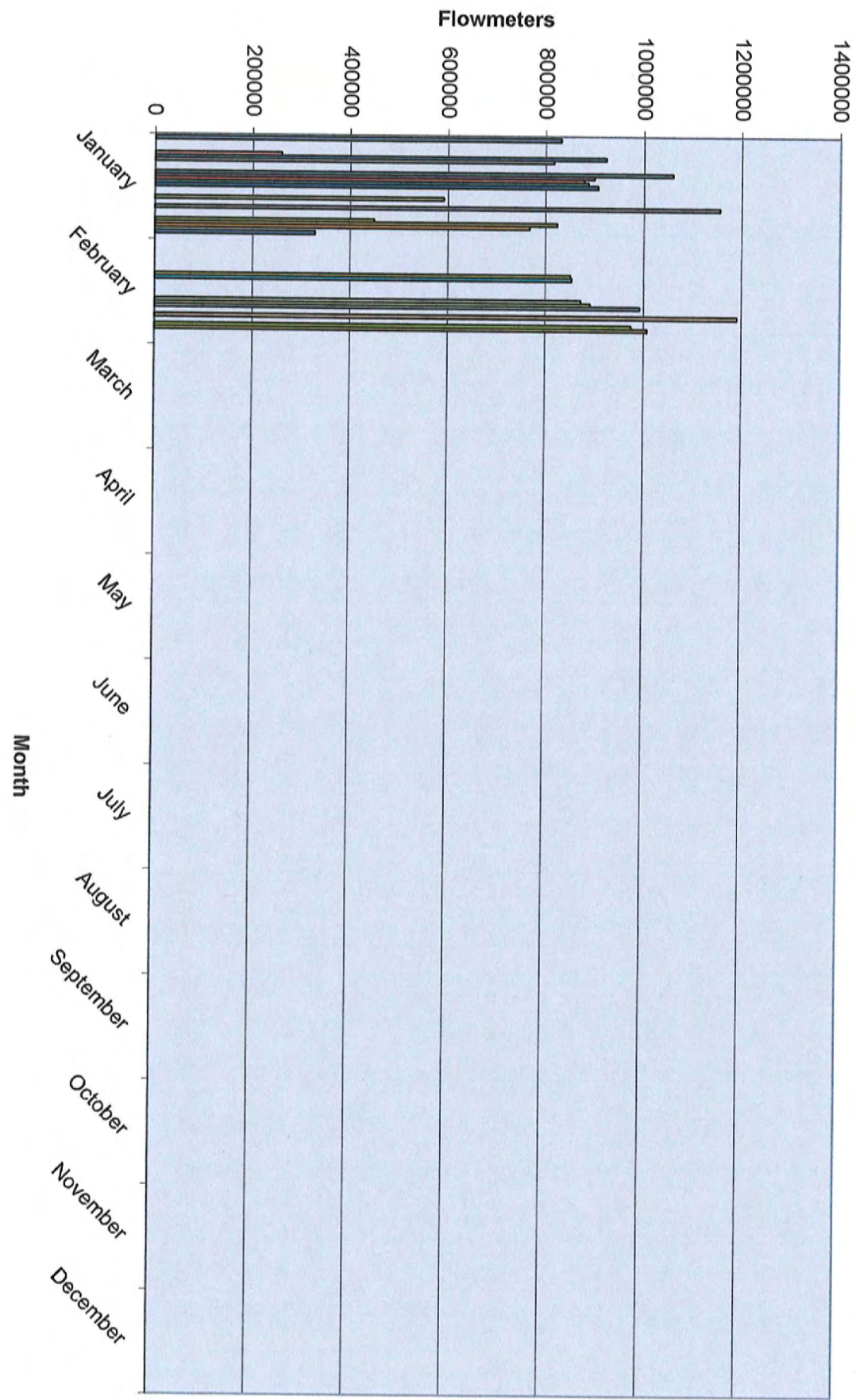
	WESTTOWN WAY	ELLIS LANE	PAOLI PIKE	WILSON DRIVE	SUMMIT	HERSHEY MILL	ASHBRIDGE	HICKS	RESERVOIR	SHERMAN	BARKWAY
JANUARY	1,120,955	112,631	63,436	80,890	24,000			255,116	795,376		
FEBRUARY	1,249,173	138,449	68,472	88,803	24,000			287,831	881,433		
MARCH											
APRIL											
MAY											
JUNE											
JULY											
AUGUST											
SEPTEMBER											
OCTOBER											
NOVEMBER											
DECEMBER											
Total Flows											
Monthly Ave	1,185,064	125,540	65,954	84,847	24,000	0	0	271,474	838,405	0	0

To
West Goshen 908,724

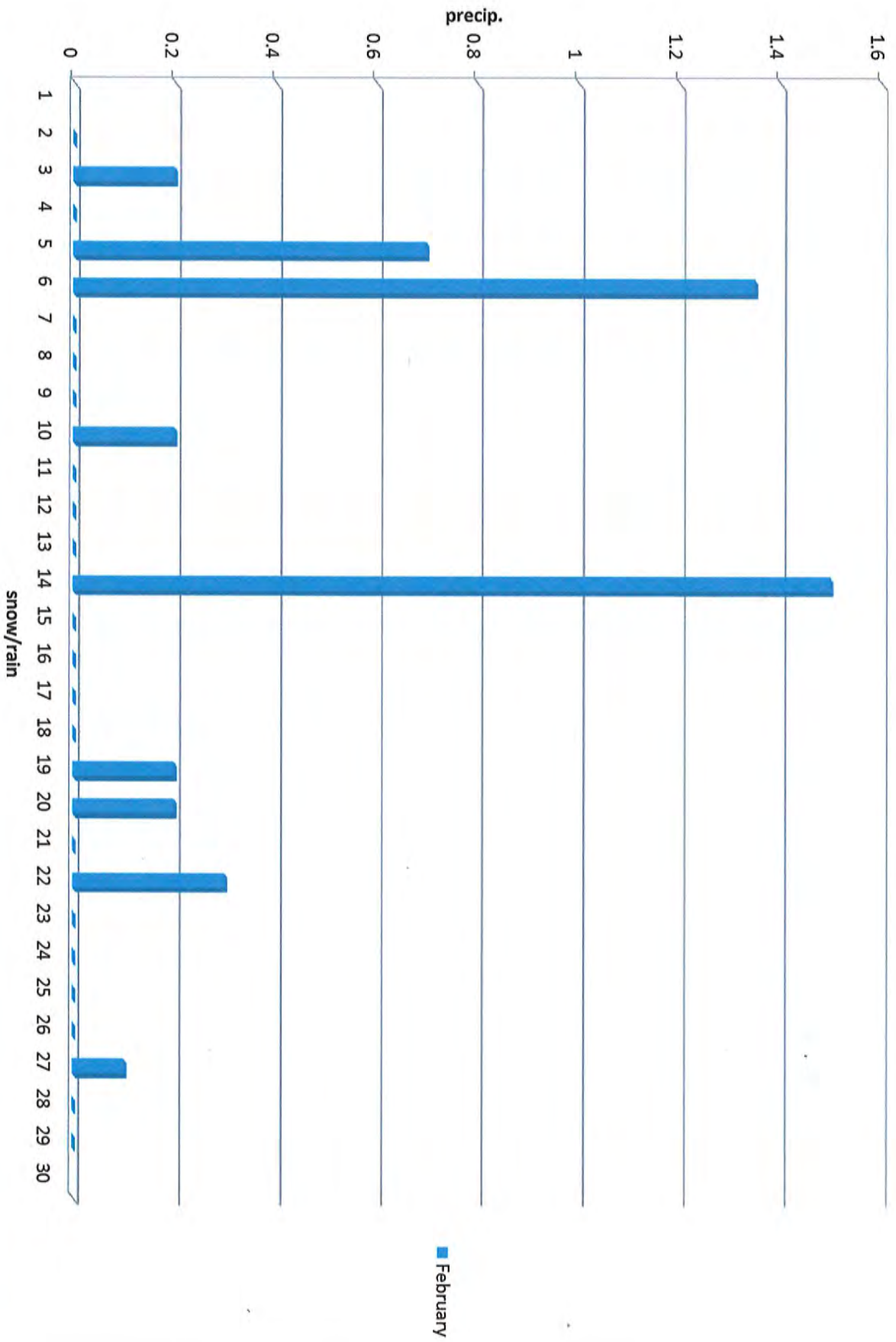
Flowmeters February 2014



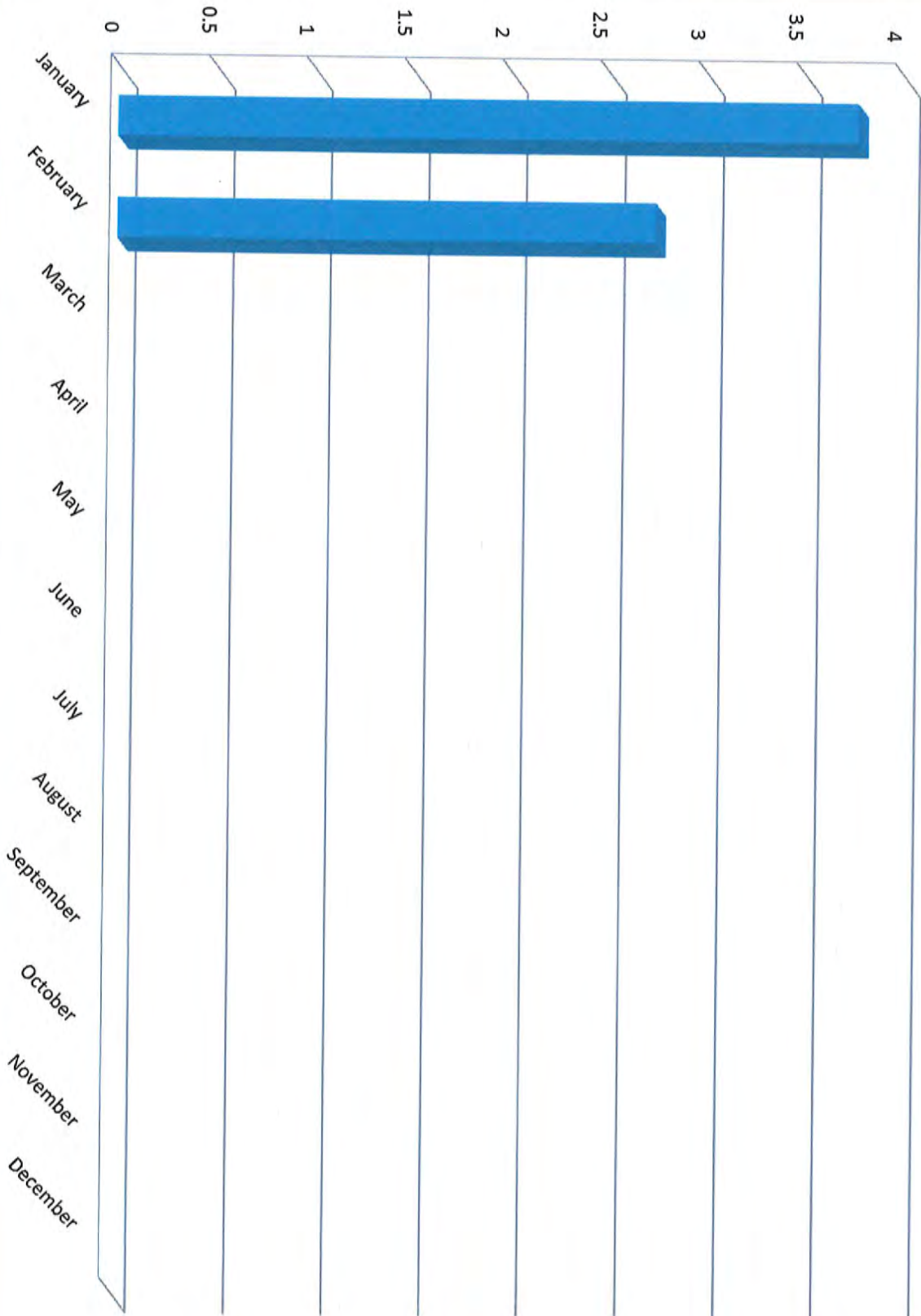
Monthly Totals 2012 Jan-Dec



February Precip. 4.75 - 2014



2013 Monthly Precipitation



■ Series1

Memo
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Date: March 5, 2014

To: Commerce Commission
Conservancy Board
Historical Commission
Municipal Authority
Park Commission
Planning Commission

From: Rick Smith, Township Manager

Re: Annual Goals

At their meeting on March 4, 2014 the Board of Supervisor approved the following goals for the ABC's. As previously noted, these goals will be listed on your upcoming agendas. Any actions taken towards their completion will then be reflected in the minutes, which will eliminate the need for preparing regular status reports.

The Board also noted that each ABC should be credited for taking the time and effort to develop the other goals presented at the Planning Session. The ABC's are free to pursue their additional goals; however, from the Board's perspective, the goals listed below should take priority.

All ABC's

- Review current mission statement and provide the Board of Supervisors with changes, if needed – June 1, 2014
- Submit an article for each newsletter – Due date for newsletter

Commerce Commission

- Hold annual breakfast and lunch meetings – December 31, 2014
- Complete Workforce Development project – June 30, 2014

Conservancy Board

- Develop signage and information for a rain barrel demonstration project at Township Building – April 30, 2014
- Investigate alternatives for recycling containers and provide recommendation to the Board of Supervisors – July 1, 2014

Historical Commission

- Identify the specific basis or criteria for why each resource is on the Historic Inventory List – December 31, 2014
- Conduct the Living History at the Plank House & Blacksmith Shop – September 1, 2014

Municipal Authority

- Obtain PA DEP approval for the Act 537 Plan revision for the Reservoir Road Pump Station – December 31, 2014
- Develop a recommendation on covers for the SBRs – August 1, 2014

Park and Recreation Commission

- Develop a five year capital improvement plan for the Tot Lot – July 31, 2014
- Identify the participant recreation needs of various age groups – August 31, 2014

Planning Commission

- Complete review of the solar & wind regulations and provide recommendation to the Board of Supervisors – May 30, 2014
- Present Comprehensive Plan Update to the Board of Supervisors – July 31, 2014
- Complete review of the Zoning Ordinance and provide recommendation to the Board of Supervisors - December 31, 2014.