

EAST GOSHEN MUNICIPAL AUTHORITY

February 14, 2011

Monday, 7:00 PM

1. CALL TO ORDER/PLEDGE OF ALLEGIANCE/MOMENT OF SILENCE

- a. Ask if anyone will be taping the meeting?

2. RIDLEY CREEK REPORTS

- a. Brickhouse Environmental Project Manager Report
b. Pennoni Engineers Report
c. Cost Summary Report
d. Change Orders – None

3. RIDLEY CREEK INVOICES

- | | | |
|-----------------------------------|----|------------|
| a. Brickhouse Environmental #5785 | \$ | 11,241.25 |
| b. Pennoni, #462905 | \$ | 9,995.50 |
| c. Gawthrop Greenwood #86168 | \$ | 2,592.50 |
| d. Gawthorpe Greenwood #86167 | \$ | 171.00 |
| e. Worth and Co.#P28001 | \$ | 125,000.00 |
| f. EnQuip #Q348546 | \$ | 655.00 |
| g. Faddis Concrete#KU0860 | \$ | 2,031.00 |
| h. Ransome #K0346101 | \$ | 2,598.00 |

4. CHAIRMAN'S REPORT/OTHER MEMBERS REPORTS

5. APPROVAL OF MINUTES

- a. January 10, 2011

6. APPROVAL OF INVOICES

- | | | |
|------------------------------|----|--------|
| a. Gawthorpe Greenwood#86166 | \$ | 931.00 |
| b. Gawthorpe Greenwood#85454 | \$ | 456.00 |
| c. Pennoni, #462649 | \$ | 315.00 |
| d. Pennoni#462650 | \$ | 195.28 |
| e. Pennoni#462651 | \$ | 787.50 |

7. LIAISON REPORTS

8. FINANCIAL REPORTS

- a. January Report

9. OLD BUSINESS

10. GOALS

- a. 2011 Goals

11. NEW BUSINESS

12. CAPACITY REQUESTS - None

13. SEWER REPORTS

- a. Director of Public Works Report – January 2011
b. East Goshen Township Flows for 2010

14. ANY OTHER MATTER

15. CORRESPONDENCE AND REPORTS OF INTEREST

- a. Lochwood Chase STP and Spray Fields - December 28, 2010
- b. Acknowledge Memo from Mark Miller regarding Sale of Used Equipment from Sewer Plant
- c. West Goshen Sewer Authority Minutes - February 2, 2011

16. PUBLIC COMMENT

17. ADJOURNMENT

18. EXECUTIVE SESSION - LEGAL

19. ADJOURNMENT

Reminder – NEWSLETTER ARTICLE SUBMISSION DUE DATES:

<u>Article Due Date</u>	<u>Delivery date</u>
February 09, 2011 – Jack	April 1, 2011
May 11, 2011 – Fran	July 1, 2011
August 10, 2011 – Joe	October 1, 2011
November 9, 2011- Dana	January 1, 2011

MILLER ENVIRONMENTAL, INC.

The Water and Wastewater Authority®

10 February 2011

RECEIVED AFTER
AGENDA
WAS PRINTED

East Goshen Township
1580 Paoli Pike
West Chester, PA 19380-6199

Attn: Mr. Rick Smith, Township Manager

Re: Monthly Operations Report- January 2011

Dear Mr. Smith:

For the month of January, we have the following operations activity to report:

Permits. A new permit was received for Lockwood. Highlights include additional drilling, meter installation, a Discharge Monitoring Report and details regarding use of the spray system. Jesse Goldberg of Miller asked for and received a clarification regarding specific DEP terms. Well sampling and testing required quarterly will be conducted in February according to the permit. The comminutor teeth should be sharpened or replaced if necessary.

e-DMRs. The e-DMRs have been applied for but not received as of this writing. A hard copy will be prepared a week prior to the 28th just in case. The last of January's sample testing has not arrived yet. The results thus far indicate compliance.

Nocardia Control Plan (NCP). The NCP should be implemented by next week. Chlorination/dechlor, with continuous monitoring of the Biomass and the residuals, is the plan. Jesse Goldberg is coordinating the plan with Scott Towler.

Training. Original equipment manufacturer training as required by contract will take place in April by Siemens; sooner for the centrifuge by Alfa Laval.

Thank you,

MILLER ENVIRONMENTAL INC.

William Ronyack
Operations Manager

(SENT VIA EMAIL)



MEMORANDUM

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

FROM: Daniel Barbato, P.E.
Authority Engineer

DATE: February 10, 2011

SUBJECT: Engineer's Report

RCSTP Upgrade and Expansion

- Construction phase services continue with punchlist monitoring, final review of operations and maintenance submittals, startup assistance and troubleshooting, and coordination with the Project Manager and the Township.
- A breakdown of effort expended over the past month by Pennoni is provided with the invoice detail under separate cover.
- Worth and Company and Clinger Corporation are working on punchlist completion. Remaining punchlist items are minor with the exception of Operations and Maintenance Manual submittals from Clinger.
- Pennoni has completed review of all Operations and Maintenance submittals from Worth and provided comments. Completion of O&Ms from Worth is expected this month.
- Pennoni is working on paperwork for the renewal of the discharge permit, which expires in September. Letters of intent for the renewal (Act 14) will be filed to the required parties (Chester County Health Dept., Chester County Planning Commission and East Goshen Board of Supervisors) followed by submittal of the paperwork to DEP in March. A data request to the Authority for information required for the permit is forthcoming.

I/I Metering Project

- The Township continues to meter flows at selected locations. Meters are in operation in at new locations as recommended, and we will review meter data as it is submitted. Data has been received through December.

Ridley Creek Consent Order

- The next report is due to DEP in March of 2011. No comments were received on the September report submitted to DEP. The March report is in progress and we are waiting to receive January meter and precipitation data.

LCSTP Elimination, Hershey Mill PS Diversion, Reserve PS Elimination Planning

- Our response to DNREC is due on February 28. Several of the DEP comments required action by West Goshen including adoption of a Resolution, review by the Planning Commission, and flow data from the Authority. We have completed all revisions to the narrative and prepared a comment response letter, and we are only awaiting required documentation from West Goshen, East Goshen Planning Commission, and the Chester County Health Department before formally submitting to DEP. We have informally submitted the revised narrative and comment response letter to DEP so they can begin their review prior to the formal submission near the end of the month.

Marydell PS Elimination Planning

- The draft report for the Act 537 Plan Revision is nearly complete. We will submit the draft report to the Authority for review by the end of February. Following the Authority's review, we will make the required Component 4 submissions to the East Goshen Planning Commission, West Goshen Planning Commission, Chester County Planning Commission, and Chester County Health Department.

Chapter 94 Report

- The annual updates to the Chapter 94 report are in progress. We will schedule a meeting with the Township to review developments and changes over the past year.

EAST GOSHEN MUNICIPAL AUTHORITY
 RIDLEY CREEK EXPANSION PROJECT
 SUMMARY
 2/14/2011 Corrected

Includes bills paid at 1/10/11 meeting

Name	Budget or Contract amt.	This Month	To Date	Balance on Budget or Contract	% of work completed
RECEIPTS					
Bond	\$9,500,000.00	\$0.00	\$9,500,000.00		
Pennoni (rechargeable)	\$20,000.00	\$0.00	\$0.00		
Grant	\$464,195.00	\$0.00	\$464,195.00		
RECEIPTS TOTAL	\$9,984,195.00	\$0.00	\$9,984,195.00		
EXPENSES					
Borrowing costs	\$52,250.00	\$0.00	\$52,250.00	\$0.00	100.00%
Worth	\$7,865,400.00	\$0.00	\$7,645,336.12	\$220,063.88	97.20%
change orders	\$18,932.66	\$0.00	\$0.00	\$18,932.66	0.00%
Clinger	\$974,000.00	\$0.00	\$950,777.64	\$23,222.36	97.62%
change orders	\$49,372.24	\$0.00	\$0.00	\$49,372.24	0.00%
Pennoni (Inspection) (05)	\$136,200.00	\$0.00	\$136,197.62	\$2.38	100.00%
Pennoni (Continued Services) (10)	\$192,320.00	\$8,722.35	\$196,670.67	-\$4,350.67	102.26%
Pennoni (Rechargeable) (06)	\$20,000.00	\$0.00	\$19,997.18	\$2.82	99.99%
Brickhouse	\$175,000.00	\$15,640.00	\$206,267.75	-\$31,267.75	117.87%
Extras					
Capital	\$424,584.10	\$0.00	\$130,435.82	\$294,148.28	30.72%
Capital (Identified but not paid)	\$80,196.00	\$0.00	\$12,416.76	\$67,779.24	15.48%
Trailer, Phone, Porta Pot & Internet	\$12,000.00	\$0.00	\$11,825.18	\$174.82	98.54%
EXPENSES TOTAL	\$10,000,255.00	\$24,362.35	\$9,362,174.74	\$638,080.26	93.62%
We have identified \$21,357 in potential extras not counting Clinger.					
We have filed a claim for the damaged TVSS units (Clinger CO #5)					
Retainage (10% until 50% of the project is done then it drops back to 5%)					
	Worth		\$224,058.22		2.5%
	Clinger		\$51,794.25		5%
	Total		<u>\$275,852.47</u>		

EAST GOSHEN MUNICIPAL AUTHORITY
 RIDLEY CREEK CAPITAL EXPANSION PROJECT
 DETAIL
 February 14, 2011
 corrected

Date	Amount	Subtotals	Name	Description
Worth				
2/9/2009	\$561,150.00		Worth & Company	Application #1
3/9/2009	\$480,825.00		Worth & Company	Application #2
4/9/2009	\$768,780.00		Worth & Company	Application #3
5/8/2009	\$125,352.90		Worth & Company	Application #4
5/31/2009	\$485,103.12		Worth & Company	Application #5
6/30/2009	\$267,975.00		Worth & Company	Application #6
7/31/2009	\$138,217.50		Worth & Company	Application #7
8/31/2009	\$679,793.40		Worth & Company	Application #8
9/30/2009	\$504,310.98		Worth & Company	Application #9
9/30/2009	\$222,861.55		Worth & Company	Application #10 (5% retainage)
10/31/2009	\$724,089.05		Worth & Company	Application #11
11/30/2009	\$379,360.17		Worth & Company	Application #12
12/31/2009	\$374,772.62		Worth & Company	Application #13
1/31/2010	\$207,881.86		Worth & Company	Application #14
2/28/2010	\$69,077.35		Worth & Company	Application #15
3/31/2010	\$75,857.50		Worth & Company	Application #16
4/30/2010	\$170,263.75		Worth & Company	Application #17
5/31/2010	\$178,290.62		Worth & Company	Application #18
6/30/2010	\$299,633.25		Worth & Company	Application #19
7/30/2010	\$426,170.00		Worth & Company	Application #20
8/31/2010	\$227,050.00		Worth & Company	Application #21
9/30/2010	\$54,520.50		Worth & Company	Application #22
10/31/2010	\$224,000.00		Worth & Company	Application #23
	\$7,645,336.12	\$7,645,336.12		
Clinger				
4/9/2009	\$22,152.64		Clinger	Application #1
5/8/2009	\$15,714.77		Clinger	Application #2
5/31/2009	\$77,973.43		Clinger	Application #3
6/30/2009	\$12,567.46		Clinger	Application #4
8/30/2009	\$10,855.98		Clinger	Application #5
9/30/2009	\$111,255.75		Clinger	Application #6
10/31/2009	\$59,344.83		Clinger	Application #7
11/30/2009	\$145,354.05		Clinger	Application #8
12/31/2009	\$94,727.00		Clinger	Application #9
1/31/2010	\$139,092.94		Clinger	Application #10
2/28/2010	\$58,514.64		Clinger	Application #11
2/28/2010	\$41,530.78		Clinger	Application #12 (5% retainage)
	\$13,575.79		Clinger	Application #13
5/2/2010	\$34,539.38		Clinger	Application #14

Date	Amount	Subtotals	Name	Description
6/30/2010	\$40,633.52		Clinger	Application #15
8/1/2010	\$42,347.24		Clinger	Application # 16
8/31/2010	\$30,597.44		Clinger	Application #17
	\$950,777.64	\$950,777.64		

Pennoni Inspection 05

?	\$712.50		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU ?
10/30/2008	\$943.50		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 10/19/08
12/5/2008	\$18,115.98		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 11/30/08
1/15/2009	\$12,929.00		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 12/28/08
2/5/2009	\$13,352.50		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 1/25/09
3/19/2009	\$31,288.00		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 3/1/09
4/8/2009	\$29,010.46		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 3/29/09
5/6/2009	\$22,436.46		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 4/26/09
6/26/2009	\$7,409.22		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 5/31/2009
	\$136,197.62	\$136,197.62		

Pennoni Continued Services 10

12/30/2010	\$16,482.50		PENNONI ASSOCIATES INC.	RCSTP EXP PROJ SERV THRU 12/31/10
1/29/2010	\$24,224.58		PENNONI ASSOCIATES INC.	RCSTP EXP PROJ SERV THRU 1/17/10
2/23/2010	\$13,057.00		PENNONI ASSOCIATES INC.	RCSTP EXP PROJ SERV THRU 2/14/10
4/1/2010	\$19,543.40		PENNONI ASSOCIATES INC.	
5/5/2010	\$18,810.50		PENNONI ASSOCIATES INC.	Through 4/18/2010
5/25/2010	\$19,287.50		PENNONI ASSOCIATES INC.	Through 5/16/2010
6/29/2010	\$17,901.25		PENNONI ASSOCIATES INC.	Through 6/20/10
7/29/2010	\$17,302.63		PENNONI ASSOCIATES INC.	Through 7/18/2010.
8/26/2010	\$12,393.25		PENNONI ASSOCIATES INC.	Through 8/15/2010
9/29/2001	\$12,521.81		PENNONI ASSOCIATES INC.	through 9/19/2010
10/27/2010	\$12,326.15		PENNONI ASSOCIATES INC.	Through 10/17/2010
11/23/2010	\$4,097.75		PENNONI ASSOCIATES INC.	through 11/7/2010
12/22/2010	\$8,722.35		PENNONI ASSOCIATES INC.	thru 12/12/10
	\$196,670.67	\$196,670.67		

Pennoni Rechargeable 06

2/5/2009	\$2,840.50		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 1/25/09
3/19/2009	\$4,934.75		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 3/1/09
4/8/2009	\$3,777.00		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 3/29/09
5/6/2009	\$1,409.50		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 4/26/09
6/26/2009	\$3,507.43		PENNONI ASSOCIATES INC.	RCSTP EXP.PROJ. SERV. THRU 5/31/09
7/29/2009	\$3,528.00		PENNONI ASSOCIATES INC.	RCSTP EXP PROJ SERV THRU 7/19/09
	\$19,997.18	\$19,997.18		

Brickhouse

5/12/2009	\$2,127.50		BRICKHOUSE	Apr-09
-----------	------------	--	------------	--------

Date	Amount	Subtotals	Name	Description
6/1/2009	\$8,452.50		BRICKHOUSE	May-09
7/1/2009	\$7,791.25		BRICKHOUSE	Jun-09
8/3/2009	\$9,315.00		BRICKHOUSE	Jul-09
9/1/2009	\$7,762.50		BRICKHOUSE	Aug-09
10/1/2009	\$7,417.50		BRICKHOUSE	Sep-09
11/2/2009	\$7,072.50		BRICKHOUSE	Oct-09
12/1/2009	\$7,963.75		BRICKHOUSE	Nov-09
1/4/2010	\$7,762.50		BRICKHOUSE	Dec-09
2/1/2010	\$7,618.75		BRICKHOUSE	Jan-10
3/1/2010	\$7,417.50		BRICKHOUSE	Feb-10
4/1/2010	\$10,005.00		BRICKHOUSE	Mar-10
5/3/2010	\$11,931.25		BRICKHOUSE	Apr-10
6/1/2010	\$10,321.25		BRICKHOUSE	May-10
7/1/2010	\$11,845.00		BRICKHOUSE	Jun-10
8/2/2010	\$14,911.25		BRICKHOUSE	Jul-10
9/1/2010	\$14,087.50		BRICKHOUSE	Aug-10
10/1/2010	\$10,695.00		BRICKHOUSE	Sep-10
10/1/2010	\$6,785.00		BRICKHOUSE	Clinger Matter
11/1/2010	\$8,826.25		BRICKHOUSE	Oct-10
11/1/2010	\$571.50		BRICKHOUSE	Clinger Matter
12/1/2010	\$9,947.50		BRICKHOUSE	Nov-11
1/3/2011	\$15,640.00		BRICKHOUSE	Dec-11
	\$206,267.75	\$206,267.75		

Extras - Capital - Paid

12/22/2008	\$44.98		EAST GOSHEN TOWNSHIP	REIMBURSE GEN FUND FOR OFFICE DEPOT
12/31/2008	\$88.00		FASTSIGNS	RED ON WHITE ALUM. SIGNS
1/12/2009	\$177.00		FASTSIGNS	SIGNS - PLEASE AVOID TOWNE DR....
12/1/2008	\$36.00		GREAT VALLEY LOCKSHOP	KEYS FOR CONTRACTOR
12/8/2008	\$160.80		GREAT VALLEY LOCKSHOP	PADLOCKS, REKEY CYLINDERS & KEYS
12/29/2008	\$474.82		HANSON AGGREGATES INC	36.95 TONS SUBBASE AGGREGATE
12/31/2008	\$908.00		HANSON AGGREGATES INC	70.66 TONS SUBGRADE 2 AGGREGATE
12/15/2008	\$2,089.39		LENNI ELECTRIC CORPORAT	TEMP SERV. FOR TRAILER - RIDLEY CRK
12/31/2008	\$120.00		LENNI ELECTRIC CORPORAT	SEWER PLANT - GUY WIRE RELOCATE
12/29/2008	\$7,865.00		MACANGA INC.	TRUCK & TRACKHOE RENTAL 12/5-12/18
12/1/2008	\$2,466.00		PATTERSON, MICHAEL J.	MATERIALS & LABOR - SPLIT RAIL FENCE
12/1/2008	\$4,907.72		PIPE XPRESS INC.	COPPER TUBING, BRASS COMP. COUPLING
12/15/2008	\$813.74		PIPE XPRESS INC.	BURIAL HYDRANT, BRASS CURB STOP, & 2 FT. SILT FENCE
12/29/2008	\$129.00		RAM-T CORPORATION	RAM-T CORPORATION
12/1/2008	\$1,183.00		RANSOME RENTAL COMPAN	CATERPILLAR - TRUCK LOADER RENTAL
12/8/2008	\$3,960.00		RANSOME RENTAL COMPAN	CATERPILLAR RENTAL 11/13-11/25/08
12/29/2008	\$908.00		RANSOME RENTAL COMPAN	CATERPILLAR RENTAL 12/15 - 12/18/08
12/31/2008	\$1,044.85		RANSOME RENTAL COMPAN	CATERPILLAR RENTAL 12/15-12/16/08
12/8/2008	\$119.95		SAFETY SOLUTIONS INC.	MEDICAL SUPPLIES
12/1/2008	\$635.60		US MUNICIPAL SUPPLY INC.	CUSTOM SIGNS - RIDLEY CREEK TREATMT
12/31/2008	\$157.50		GAWTHROP GREENWOOD	LEGAL

Date	Amount	Subtotals	Name	Description
1/31/2009	\$936.50		GAWTHROP GREENWOOD	LEGAL
3/19/2009	\$1,246.64		HAMMOND & MCCMLLOY	WATER SERVICE
3/31/2009	\$1,254.00		GAWTHROP GREENWOOD	LEGAL
4/2/2009	\$274.21		PIPE XPRESS INC.	YARD HYDRANT #2
4/2/2009	\$1,910.28		HAMMOND & MCCMLLOY	WATER PIPING
5/11/2009	\$158.69		US MUNICIPAL SUPPLY INC.	3 SIGNS
4/30/2009	\$264.86		LENNI ELECTRIC CORPORATION	WIRED HOT WATER HEATER
5/31/2009	\$133.00		GAWTHROP GREENWOOD	LEGAL
6/30/2009	\$304.00		GAWTHROP GREENWOOD	LEGAL
7/17/2009	\$1,481.00		EAST GOSHEN TOWNSHIP	BLOWER MOTOR (REPAIRED AND KEPT AS A SPARE)
9/10/2009	\$254.85		AGWAY	TREE STAKES AND PEAT MOSS
8/25/2009	\$1,855.00		HARMONY HILL NURSERIES	16 TREES
8/31/2009	\$836.00		GAWTHROP GREENWOOD	2 MONTH LEGAL
11/19/2009	\$314.00		VIMCO	SEALER FOR FLOORS
10/31/2009	\$285.00		GAWTHROP GREENWOOD	LEGAL
12/31/2010	\$1,414.97		L/B water	YARD HYDRANT #2
12/18/2009	\$443.48		Grainger	Hose Reel 1 inch
12/18/2009	\$267.98		Grainger	Hose Reel 3/4 inch
2/2/2010	\$789.45		Fisher Scientific	Lab Equipment
2/28/2010	\$57.00		GAWTHROP GREENWOOD	LEGAL
3/15/2010	\$103.96		Matthews Ford	Van rental
3/31/2010	\$275.50		Grainger	Hose
3/31/2010	\$247.00		GAWTHROP GREENWOOD	LEGAL
4/7/2010	\$70.15		GREAT VALLEY LOCKSHOP	6 locks
4/14/2010	\$641.98		Grainger	Shelving
4/15/2010	\$1,127.48		Continetal Fire & Safety	3" & 1.75" Hose
4/16/2010	\$28.58		Grainger	Phone
3/17/2010	\$1,092.01		Water Pollution Biology	Michael Geradi - Talk
2/22/2010	\$1,104.50		McNichols	Safety Grating
5/5/2010	\$1,078.38		HAMMOND & MCCMLLOY	WATER LINE OFFICE
5/5/2010	\$270.10		HAMMOND & MCCMLLOY	Hose fitting in storage room
5/3/2010	\$2,329.17		Fisher Scientific	DESICCATOR & OVEN
5/12/2010	\$1,485.63		Fisher Scientific	FURNACE
5/21/2010	\$456.81		USA Blue book	beakers
4/29/2010	\$258.00		Marco	3 10Lb dry Chem FX
5/9/2010	\$142.47		Staples	office equipment
5/31/2010	\$1,862.00		GAWTHROP GREENWOOD	Legal
5/15/2010	\$39,937.70		Aqua Wastewater Mgt	Sludge from DAYCO
6/30/2010	\$126.63		PIPE XPRESS INC.	pipe
6/15/2010	\$204.40		GREAT VALLEY LOCKSHOP	locks
6/8/2010	\$150.00		O'Rourke and Sons	Bend counter tops
6/29/2010	\$615.00		PENNON!	Soda Ash
7/20/2010	\$99.99		Office Depot	Printer
7/16/2010	\$50.39		Office Depot	Printer cartridge
7/27/2010	\$649.00		Newtown Office Supply	Desk
7/31/2010	\$589.00		GAWTHROP GREENWOOD	Legal

Date	Amount	Subtotals	Name	Description
6/29/2010	\$193.93		Fastenal	Chain
6/29/2010	\$1,019.00		LENNI ELECTRIC CORPORA1	Lights
7/12/2010	\$328.70		HAMMOND & MCCMLOSY	sink
7/15/2010	\$154.23		Hach	cable
7/16/2010	\$347.26		Hach	Combo
8/8/2010	\$1,599.97		Northern	Air Compressor
8/31/2010	\$1,310.00		GAWTHROP GREENWOOD	LEGAL
8/3/2010	\$43.27		Office Depot	White board
8/3/2010	\$37.08		Office Depot	White board
8/31/2010	\$2,623.51		PIPE XPRESS INC.	pipe
9/1/2010	\$465.02		PIPE XPRESS INC.	pipe
8/25/2010	\$357.50		Main Line Concrete	Concrete
9/30/2010	\$1,242.50		GAWTHROP GREENWOOD	LEGAL
10/7/2010	\$665.00		O'Rourke and Sons	AC stand
10/18/2010	\$2,531.00		Blosnski	Dumpster
10/13/2010	(\$105.00)		Power Pro	pallet credit
10/5/2010	\$2,073.90		Power Pro	block and pallet charge
10/27/2010	\$17.50		Power Pro	Re-bar
10/18/2010	\$577.93		Martin Limestone	Stone
10/18/2010	\$296.35		Martin Limestone	Stone
10/18/2010	\$299.83		Martin Limestone	Stone
10/20/2010	\$270.75		VIMCO	concrete products
10/20/2010	\$608.00		RANSOME RENTAL COMPAN	Cat rental
10/25/2010	\$1,984.00		RANSOME RENTAL COMPAN	Rental
10/5/2010	\$571.88		Yerkes	PL Survey
10/23/2010	\$212.40		Grainger	Door Parts
9/20/2010	\$88.32		Yale Electric	Parts
9/21/2010	\$114.76		Yale Electric	Parts
9/17/2010	\$450.00		Steven Bahatka	Wall Sign
9/7/2010	\$4,190.00		M&S Service	Alarm system
9/10/2010	\$851.22		HAMMOND & MCCMLOSY	HW heater
8/25/2010	\$337.50		Main Line Concrete	side walks
9/1/2010	\$465.02		PIPE XPRESS INC.	Roof Drains
9/7/2010	\$86.25		PIPE XPRESS INC.	Water supply
9/14/2010	\$388.60		EAST GOSHEN TOWNSHIP	Reimburse GF for Gutter Parts
11/18/2010	\$2,474.04		Fastenal	SS chain for lifting pumps
11/30/2011	\$171.00		GAWTHROP GREENWOOD	Legal Clinger
11/30/2011	\$720.00		GAWTHROP GREENWOOD	Legal
10/27/2010	\$17.50		Power Pro	Re bar
10/18/2010	\$1,464.80		Silvi	Concrete (3 invoices)
11/2/2010	\$1,125.21		Reilly and Sons	Fuel
	\$130,435.82	\$130,435.82		
Total				
Extras - Capital - Identified capital extras that have not been paid				
	\$20,396.00			Driveway Restoration
	\$3,300.00			Restoration of parking area

Date	Amount	Subtotals	Name	Description
\$50,000.00	\$37,583.24			Paving at RCSTP (we received a credit from Worth)
	\$6,500.00			Audit
	\$67,779.24	\$67,779.24		

Extras - Capital - Identified capital extras that have been paid

Date	Amount	Subtotals	Name	Description
11/5/2011	\$1,828.36		Highway	Blacktop
11/5/2011	\$1,841.53		Highway	Blacktop
11/18/2011	\$260.42		Highway	Blacktop
11/18/2010	\$1,147.06		Highway	Blacktop
11/5/2010	\$3,136.40		Independence	Blacktop
11/5/2011	\$4,202.99		Independence	Blacktop
	\$12,416.76	\$12,416.76		

Total

Trailer, Phone, Porta Potty & Internet

12/15/2008	\$1,039.10		ACTON MOBILE INDUSTRIES RENTAL MOBILE OFFICE	
12/22/2008	\$239.10		ACTON MOBILE INDUSTRIES MOBILE OFFICE RENTAL - THRU 1/19/09	
1/21/2009	\$239.10		ACTON MOBILE INDUSTRIES MOBILE OFFICE RENTAL - 1/20-2/20/09	
2/10/2009	\$239.10		ACTON MOBILE INDUSTRIES MOBILE OFFICE RENTAL - 2/20- 3/20/09	
3/10/2009	\$239.10		ACTON MOBILE INDUSTRIES MOBILE OFFICE RENTAL - 3/20 - 4/19	
4/10/2009	\$239.10		ACTON MOBILE INDUSTRIES MOBILE OFFICE RENTAL - 4/20 - 5/19	
5/10/2009	\$239.10		ACTON MOBILE INDUSTRIES MOBILE OFFICE RENTAL 5-20 - 6/19	
6/10/2009	\$239.10		ACTON MOBILE INDUSTRIES MOBILE OFFICE RENTAL 6/20 - 7/19	
7/10/2009	\$239.10		ACTON MOBILE INDUSTRIES 8/20 to 8/19	
8/10/2009	\$239.10		ACTON MOBILE INDUSTRIES 8/20/ to	
9/10/2009	\$239.10		ACTON MOBILE INDUSTRIES	
10/10/2009	\$239.10		ACTON MOBILE INDUSTRIES thru 11/19	
11/10/2009	\$239.10		ACTON MOBILE INDUSTRIES thru 12/19	
12/10/2009	\$239.10		ACTON MOBILE INDUSTRIES Thru 1/19	
1/10/2010	\$239.10		ACTON MOBILE INDUSTRIES Thru 2/19/10	
2/10/2010	\$239.10		ACTON MOBILE INDUSTRIES Thru 3/19/10	
3/10/2010	\$239.10		ACTON MOBILE INDUSTRIES Thru 4/19	
4/10/2010	\$239.10		ACTON MOBILE INDUSTRIES Thru 5/19	
5/10/2010	\$239.10		ACTON MOBILE INDUSTRIES Thru 6/19	
6/10/2010	\$239.10		ACTON MOBILE INDUSTRIES Thru 7/19	
7/10/2010	\$239.10		ACTON MOBILE INDUSTRIES Thru 8/19	
9/20/2010	\$305.00		ACTON MOBILE INDUSTRIES Removal	
	\$6,126.10	\$6,126.10		

12/15/2008	\$140.00		POTTY QUEEN	RENTAL PORTABLE TOILET - RIDLEY CRK
12/22/2008	\$64.47		POTTY QUEEN	RENTAL TOILET 12/23-1/10/08
2/8/2009	\$95.00		POTTY QUEEN	RENTAL TOILET 2/8-3/17
3/8/2009	\$95.00		POTTY QUEEN	RENTAL TOILET 3/8-4/4
4/5/2009	\$95.00		POTTY QUEEN	RENTAL TOILET 4/5-5/2

Date	Amount	Subtotals	Name	Description
5/5/2009	\$95.00		POTTY QUEEN	RENTAL TOILET ????
7/26/2009	\$95.00		POTTY QUEEN	Rental 7/26 TO 8/22
8/23/2009	\$95.00		POTTY QUEEN	Rental 8/23 to 9/19
9/20/2009	\$95.00		POTTY QUEEN	RENTAL 9/20 to 10/17
10/18/2009	\$95.00		POTTY QUEEN	10/18/09 to 11/14/09
11/14/2009	\$95.00		POTTY QUEEN	11/15 to 12/13
12/13/2009	\$95.00		POTTY QUEEN	12/13 to 1/9/10
1/10/2010	\$95.00		POTTY QUEEN	1/10/10 to 2/6/10
2/7/2010	\$95.00		POTTY QUEEN	2/7/10 to 3/6/10
3/7/2010	\$95.00		POTTY QUEEN	3/7 to 4/3
4/4/2010	\$95.00		POTTY QUEEN	4/4 to 5/1
5/2/2010	\$98.80		POTTY QUEEN	5/2 to 5/29
5/30/2010	\$96.90		POTTY QUEEN	5/30 to 6/26
6/30/2010	\$96.90		POTTY QUEEN	6/27 to 7/24
7/28/2010	\$96.90		POTTY QUEEN	7/25 to 8/21
	\$1,923.97	\$1,923.97		
12/22/2008	\$174.65		VERIZON -7041	NOVEMBER 25 - DECEMBER 6, 2008
1/7/2009	\$137.87		VERIZON -7041	BILLING DATE 1/07/09
2/7/2009	\$130.34		VERIZON -7041	BILLING DATE 2/07/09
3/7/2009	\$133.97		VERIZON -7041	BILLING DATE 3/7/09
4/7/2009	\$136.00		VERIZON -7041	BILLING DATE 4/7/09
5/7/2009	\$137.66		VERIZON -7041	BILLING DATE 5/7/09
6/7/2009	\$178.47		VERIZON -7041	BILLINGDATE 6/7/2009
7/7/2009	\$145.21		VERIZON -7041	Billing Date 7/7/09
8/7/2009	\$134.44		VERIZON -7041	Billing Date 8/7/09
9/7/2009	\$132.93		VERIZON -7041	billing date 9/7/09
10/7/2009	\$133.43		VERIZON -7041	Billing date 10/7/09
11/7/2009	\$133.79		VERIZON -7041	Billing Date 11/7/09
12/7/2009	\$136.76		VERIZON -7041	Billing date 12/7/09
1/7/2010	\$135.11		VERIZON -7041	Billing date 1/7/10
2/7/2010	\$134.35		VERIZON -7041	Billing date 2/7/10
3/7/2010	\$134.34		VERIZON -7041	Billing date 3/7/10
4/7/2010	\$134.72		VERIZON -7041	Billing date 4/7/10
5/7/2010	\$136.37		VERIZON -7041	billing ddate 5/7/2010
6/7/2010	\$134.06		VERIZON -7041	Billing date 6/7/10
7/7/2010	\$134.18		VERIZON -7041	Billing date 7/7/10
	\$2,788.65	\$2,788.65		
8/31/2009	\$286.56		VERIZON	INTERNET (FIRST BILL)
9/28/2009	\$69.99		VERIZON	INTERNET
10/28/2009	\$69.99		VERIZON	INTERNET
11/28/2009	\$69.99		VERIZON	INTERNET
12/28/2009	\$69.99		VERIZON	INTERNET

**EAST GOSHEN MUNICIPAL AUTHORITY
 RIDLEY CREEK CAPITAL EXPANSION PROJECT
 POTENTIAL EXTRAS/RECEIPTS
 February 14, 2011**

Potential capital extras	
Pipe conduit Conflicts	\$0
Controls	
Sludge room retrofit	\$0
HVAC Thermostats	\$10,000
Cathode Protection	\$0
Treatment Tanks	\$0
Electrician (increase in wages)	\$11,357
UV Channel	\$21,357
Total potential extras	\$21,357 *

* Does not include Climger

Potential Receipts	
Total Potential Receipts	\$0

EAST GOSHEN MUNICIPAL AUTHORITY
 RIDLEY CREEK CAPITAL EXPANSION PROJECT
 CHANGE ORDERS
 February 14, 2011

NO.	AMOUNT	APPROVED	WORK	STATUS	PAID
WORTH					
1	\$3,209.70	2/24/09	BLOWER #1 REPAIR	APPROVED	NO
4	\$5,542.80	5/11/09	BLOWER #2 REPAIR	APPROVED	NO
?	\$4,617.08	???	BLOWER #3 REPAIR	APPROVED	NO
3	\$2,703.00	12/14/09	ANTI-FLOT COLLAR	APPROVED	NO
5	\$6,784.65	12/14/09	LARGER MIXER FOR FLOC TANK	APPROVED	NO
15	\$4,494.52	12/14/09	REMOVABLE RAILS ON SBR TANK	APPROVED	NO
17	\$6,126.78	3/8/10	BLOWER #4 REPAIR	APPROVED	NO
8	-\$6,250.00	3/8/10	CREDIT FOR CAST IRON PIPE	APPROVED	NO
9	-\$20,000.00	2/8/10	Credit for Electric Wages	APPROVED	NO
19	-\$50,000.00	2/8/10	Credit for paving	APPROVED	NO
20	\$27,702.20	5/20/10	air drops	APPROVED	NO
20	\$3,516.77	5/20/10	2 doors	APPROVED	NO
21	\$18,094.59	5/20/10	Paint DAVCO WALKWAYS	APPROVED	NO
22	-\$13,875.00	5/20/10	Credit for concrete	APPROVED	NO
24	\$5,932.27	6/14/10	Additional block for sludge building	APPROVED	NO
23	\$6,671.26	11/4/10	Centrifuge Platform	APPROVED	NO
25	\$3,050.21	11/4/10	Fence	APPROVED	NO
12	\$4,703.27	11/8/10	Steel beam in control bldg	APPROVED	NO
18	\$4,499.12	11/8/10	Control Joint Mod in Screen Bldg	APPROVED	NO
26	\$1,409.44	12/13/10	gate in fence	APPROVED	NO
	\$18,932.66				
Total					
CLINGER					
1	\$5,106.00	Denied	EXTEND 34 KV LINES	DENIED	NO
2	\$23,585.00	7/1/09	CORNER UNIT FOR MCC	APPROVED	NO
3	\$3,171.00	4/12/10	SERVICE DISCONNECT	APPROVED	NO
4	\$1,451.24	3/23/10	Applebrook Pump	APPROVED	NO
5	\$16,059.00	1/10/11	Cables for 2 chart recorders	APPROVED	NO
	\$49,372.24		Replace TVSS Units - filed claim with PECO and Ins. Co.		
Total					

**EAST GOSHEN MUNICIPAL AUTHORITY
RIDLEY CREEK EXPANSION PROJECT
PROJECTED FINAL COSTS**

February 14, 2011

Corrected

Name	Budget or Contract amt.	Paid to Date	Projected Final Cost
EXPENSES			
Borrowing costs	\$52,250.00	\$52,250.00	\$52,250.00
Worth	\$7,865,400.00	\$7,645,336.12	\$7,865,400.00
change orders	\$18,932.66	\$0.00	\$18,932.66
Clinger	\$974,000.00	\$950,777.64	\$974,000.00
change orders	\$49,372.24	\$0.00	\$49,372.24
Pennoni (Inspection) (05)	\$136,200.00	\$136,197.62	\$136,197.62
Pennoni (Continued Services) (10)	\$192,320.00	\$196,670.67	\$215,000.00
Pennoni (Rechargeable) (06)	\$20,000.00	\$19,997.18	\$19,997.18
Brickhouse	\$175,000.00	\$206,267.75	\$215,000.00
Extras			
Capital	\$424,584.10	\$130,435.82	\$140,000.00
Capital (Identified but not paid)	\$80,196.00	\$12,416.76	\$50,000.00 *
Trailer, Phone, Porta Pot & Internet	\$12,000.00	\$11,825.18	\$11,825.18
SUB TOTAL	\$10,000,255.00	\$9,362,174.74	\$9,747,974.88
Refund for TVSS Units	-\$16,059.00	-\$16,059.00	-\$16,059.00
EXPENSES TOTAL	\$9,984,196.00	\$9,362,174.74	\$9,731,915.88
Project final cost vs. budget		Funds Left	
Original Budget	\$9,500,000.00	Total funds available	\$9,984,195.00
Projected final cost	\$9,731,915.88 **	Projected final cost	\$9,731,915.88 **
Over(Under)	\$231,915.88	Funds left	\$252,279.12
Percentage	2.44%		

* The Paving and driveway are expected to come in under budget

** Does not include Clinger



**Brickhouse
Environmental**
Consultants and Engineers

East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380

Invoice number **5785**
Date 2/1/2011

Client ID: 548

Contract: 09.2532
E Goshen Twp-Ridley Creek Sewer
Scope of Work: Project No. 09-2532-0 E. Goshen/Ridley Creek Sewer Plant/WW Engineering

Attn: Mr. Rick Smith, Township Manager

SEE PROJECT ACCOMPLISHMENTS ATTACHED.

Professional Services Rendered Through the Month of January 2011.

Labor

<u>Employee Type</u>	<u>Hours</u>	<u>Amount</u>
Project Manager	97.75	11,241.25
Labor Total	<u>97.75</u>	<u>11,241.25</u>
Invoice Total		<u><u>11,241.25</u></u>

OK TJS
2/10/11

515 South Franklin Street
West Chester, PA 19382

Phone 610.692.5770
Fax 610.692.8650

Payment Terms: Net Thirty (30) Days; Credit Cards Accepted

www.brickhouse-environmental.com

When Creativity & Experience Count

Project Accomplishments
B E Project No. 09-2532-0
East Goshen / Ridley Creek Sewage Treatment Plant Upgrade / Expansion
January 2011

The following Project Management tasks were performed for the Ridley Creek Wastewater Treatment Plant Expansion project:

- 1-3-11 Provided technical assistance to Miller Environmental and support w/ transition of operation and maintenance.
- 1-4-11 Coordinated centrifuge performance testing and issues w/ utility water system. Provided tech support for SBR operations. Assisted w/ SHT #1 decanting.
- 1-5-11 coordinated and provided oversight and management of draining and cleaning post EQ tanks, disc filters and foam removal.
- 1-6-11 Review operations w/ Miller Environmental. Assist w/ placing effluent EQ aeration diffusers into service and confirm air flow. Prepare December Project Managers report and distribute.
- 1-10-11 Site visit – Blower failure relay installed. Prepare for and attend EGTMA monthly meeting. Phone calls to Mark Miller, Dave Worlfinger, PADEP.
- 1-11-11 Emails to Mark Miller, Sam Stephens & Jeff Bush, conversations w/ Matt McAloon, PADEP, Miller Environmental, Coyne Chemical.
- 1-12-11 conversations w/ Jeff bush re: sludge flow meter, centrifuge test. Conversations w/ Alfa Laval re: centrifuge test / polymer issues. Conversations re: polymer jar testing. Emails w/ M. Gerardi.
- 1-13-11 Project file updates.
- 1-14-11 Site visit to assist Miller Environmental w/ operations. Provided training foe performing process control testing.
- 1-17-11 File updates and misc. correspondence.
- 1-18-11 Site visit to meet w/ Miller Environmental. Adjusted set points on SBR controls. SBR 4 D.O. trend erratic, sensor replaced. Adjusted SBR 3 & 4 knife valve openings.
- 1-19-11 Site visit to provide tech assistance to Miller Environmental. PADEP also onsite. Tested SHT 1 telescoping valve operation – valve not operating as

programmed at ACS panel. Fluid on pedestal beneath actuator. Adjusted SBR set points, recorded changes. D.O. trend for SBR 4 now normal.

- 1-20-11 Site visit to provide tech assistance to Miller Environmental & perform process control testing. D.O. trend from SBR 4 erratic again. Ammonia as N higher than normal and indicates insufficient oxygen for nitrification.
- 1-21-11 Special meeting at EGTMA. Visit to site to review facility w/ operator. Tel. call to Jeff Bush re: warranty items and training.
- 1-24-11 Conversations w/ Jeff bush & Evan Andrews.
- 1-25-11 Conversations w/ Mark Miller & Jeff Bush. Review & forward emails.
- 1-26-11 Review files and prepare highlight summary for major construction schedule delays attributed to Clinger Corporation. Review & email exchange w/ Jeff Bush re: outstanding issues.
- 1-27-11 Project file update and review.
- 1-28-11 Provided tech assistance for operations.
- 1-31-11 Conversations w/ Dave Evans. Project updates.
- 2-1-11 Site visit, review operations w/ operator.
- 2-2-11 Conference call w/ URS attorney re: Pennoni's request that Evan Andrews provide timeline of events re: Clinger issues.
- 2-3-11 On site meeting w/ representatives from Pennoni & Miller Environmental to develop action plan to address excessive filamentous growth and improve settleability, SVI and carryover loss. Met w/ R. Smith to review summary of meeting and Authority's Clinger meeting. Prepared and distributed memo for comment re: filamentous corrective actions.
- 2-4-11 Site visit to collect MLSS samples and foam from all SBRs for analysis by M. Gerardi. Packaged and shipped samples. Conversations w/ Jeff bush re: outstanding change orders, Alfa Laval performance. Warranty issues, UV, ACS, Mid-Atlantic utility water system. Review filamentous memo comments.



Brickhouse Environmental

East Goshen Township: Ridely Creek Sewer Plant Expansion Project Management Schedule Supplement

Brickhouse's contract for project management was originally anticipated to be completed week ending August 8, 2010 at 1,522 hours and \$175,030.

From April through October 2010, Brickhouse spent 100 hours on out of scope matters that were included in the total hours.

The duration was extended to week ending October 10, 2010 and attendance at the October 11, 2010 Authority meeting which then expended the original 1,522 hours.

The Board subsequently approved Brickhouse Environmental to continue to serve the Authority's needs as requested on a T&M basis.

Monthly Project Management Subtotals Beyond the Original Budget

Month	Project Subtotals		
	Pro. Mgt. Hours	Cumulative Hours	Cumulative Fees
October 2010	36.25	36.25	\$4,168.75
November 2010	86.50	122.75	\$14,116.25
December 2010	136.00	258.75	\$29,756.25
January - February 4, 2011	97.75	356.50	\$40,997.50
			Monthly Fees
			\$4,168.75
			\$9,947.50
			\$15,640.00
			\$11,241.25

Project Cumulating Totals

Project Management Hours	Fee
1,878.50	\$216,027.50



PENNONI ASSOCIATES INC.
CONSULTING ENGINEERS

INVOICE

Philadelphia, PA
215-222-3000 Fax: 215-222-3588

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 # : 462905
Invoice Date : 02/03/2011
Project : EGMA0707
Project Name : RCSTP Expansion

For Services Rendered through: 01/16/2011

Construction and coordination meetings with contractors and Township; O&M submittal review; punchlist progress review; site observation and consultation with Township regarding same. Meetings to discuss punchlists with contractors, troubleshooting and operations review, and project closeout activities. Investigation, documentation, meetings and support related to Electrical Contractor claims.

Phase Code / Name		Contract Amount	Previously Billed	% Complete	Complete To Date	Amount This Invoice
01 -- Permit Design	est.	\$111,400.00	\$111,385.00		\$111,385.00	\$0.00
02 -- Permitting	est.	\$14,200.00	\$14,184.00		\$14,184.00	\$0.00
03 -- Final Design	est.	\$226,700.00	\$226,655.50		\$226,655.50	\$0.00
04 -- Bidding	est.	\$14,500.00	\$14,446.50		\$14,446.50	\$0.00
05 -- Construction	est.	\$136,200.00	\$136,197.62		\$136,197.62	\$0.00
06 -- Additional Submittals	est.	\$20,000.00	\$19,997.18		\$19,997.18	\$0.00
10 -- Continued Construction Services	est.	\$206,320.00	\$196,370.67		\$199,986.17	\$3,615.50
Total :		\$729,320.00	\$719,236.47		\$722,851.97	\$3,615.50

Phase : 50 -- EC Response

Labor Class	Hours/Units	Rate	Amount
Principal Engineer	2.00	115.00	230.00
Senior Engineer	4.50	105.00	472.50
Senior Designer	15.00	83.00	1,245.00
Engineering Technician I	9.00	65.00	585.00
Authority Engineer	32.00	105.00	3,360.00
Technical Specialist	6.50	75.00	487.50
Labor Total:	69.00		\$6,380.00

Phase Subtotal

\$6,380.00

Amount Due This Invoice

\$9,995.50

o/c 175 2-10-11

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

Project: RCSTP Expansion and Upgrade
 Pennoni Job No.: EGMA0707
 Invoice No: 462905
 Invoice Period: 12/13/2010 to 1/16/2011

Initial Authorization:	\$ 465,000.00	Date:	8/14/2007
Changes:	\$ -	Date:	2/5/2009
Changes:	\$ 58,000.00	Date:	5/11/2009
Changes:	\$ 99,700.00	Date:	1/11/2010
Changes:	\$ 22,000.00	Date:	5/10/2010
Changes:	\$ 11,500.00	Date:	6/14/2010
Changes:	\$ 40,400.00	Date:	8/5/2010
Changes:	\$ 18,720.00	Date:	10/11/2010
Changes:	\$ 14,000.00	Date:	1/10/2011
Contract Amount:	\$ 729,320.00		
Previously Invoiced:	\$ 719,236.47		
Current Invoice:	\$ 3,615.00		
Invoiced to Date (\$):	\$ 722,851.47		
Invoiced to Date (%):	99%		
Remaining Budget (\$):	\$ 6,468.53		
Remaining Budget (%):	0.89%		

* Note: Calculations do not include Phase 50, which is billed on a time and material basis.

Budget by Phase:

Phase No. 10
 Phase Name: Continued Eng Svcs

Phase Budget:	\$ 99,700.00
Changes:	\$ 33,500.00
Changes:	\$ 40,400.00
Changes:	\$ 18,720.00
Changes:	\$ 14,000.00
Contract Amount:	\$ 206,320.00
Previously Invoiced:	\$ 196,370.67
Current Invoice:	\$ 3,615.50
Invoiced to Date (\$):	\$ 199,986.17
Invoiced to Date (%):	97%
Remaining Budget (\$):	\$ 6,333.83
Remaining Budget (%):	6%

Comments: Phase 10 - Continued Engineering Services
 Construction and coordination meetings with contractors and Township;
 O&M submittal review; punchlist progress review; site observation and consultation with Township regarding same.
 Meetings to discuss punchlists with contractors,
 troubleshooting and operations review, and project closeout activities.
 Investigation, documentation, meetings and support related to Electrical Contractor claims.

Effort by Labor Category under Phase 10:

Category	Previous Hrs.	Current	Total Hrs.
Authority Engineer	218.50	4.75	223.25
Senior Engineer	421.25	9.25	430.50
Senior Designer	220.00	1.00	221.00
Project Engineer	164.50	0.00	164.50
Staff Engineer	13.50	0.00	13.50
Associate Engineer	77.50	0.00	77.50
Graduate Engineer	43.75	0.00	43.75
Project Representative/Inspector	2.50	0.00	2.50
Technical Specialist (McAloon)	1094.25	27.50	1121.75
Engineering Technician I	57.25	0.00	57.25
Administrative Assistant I	1.50	0.00	1.50
Totals	2314.50	42.50	2357.00



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
01/31/2011
Client No: 6604-08M
Invoice No. 86168

Ridley Creek Treatment Plant - Arbitrations

Fees

			Hours	
01/06/2011	SRM	Review voice mail from client regarding change of meeting; correspondence to client regarding meeting.	0.40	70.00
01/19/2011	SRM	Preparation for meeting with R Smith.	1.00	175.00
	SRM	Attend meeting with client.	1.30	227.50
01/24/2011	SRM	Revise and edit additional portions of the payment and dispute chart.	1.00	175.00
01/26/2011	SRM	Review of correspondence.	0.20	35.00
01/27/2011	SRM	Preparation for meeting.	1.00	175.00
01/28/2011	SRM	Conference with client and Clinger.	3.50	612.50
	SRM	Telephone conference with D Peroni.	0.20	35.00
		For Current Services Rendered	8.60	1,505.00

Recapitulation

<u>Timekeeper</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Total</u>
Stephen R. McDonnell	8.60	\$175.00	\$1,505.00

Previous Balance	\$1,087.50
Total Current Charges	1,505.00
Balance Due	<u>\$2,592.50</u>

ok TRS
2-10-11
2,592.50 Page 1



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
12/31/2010
Client No: 6604-08M
Invoice No. 85456

Ridley Creek Treatment Plant - Arbitrations

Fees

			Hours	
12/13/2010	SRM	Review correspondence from R Smith regarding settlement; correspondence to R Smith.	0.50	87.50
12/17/2010	SRM	Conference call with client.	0.30	52.50
12/21/2010	SRM	Review correspondence from R Smith; correspondence from client.	0.40	70.00
12/28/2010	SRM	Preparation for and attend meeting with client.	0.90	157.50
		For Current Services Rendered	<u>2.10</u>	<u>367.50</u>

Recapitulation

<u>Timekeeper</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Total</u>
Stephen R. McDonnell	2.10	\$175.00	\$367.50

Previous Balance

pd ~~\$720.00~~

Total Current Charges

367.50

Balance Due

\$1,087.50

ok 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.

2-10-11

Page 2



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
01/31/2011
Client No: 6604-06M
Invoice No. 86167

Ridley Creek Treatment Plant Upgrades/ Expansion

Previous Balance	\$171.00
Balance Due	<u>\$171.00</u>

ok RS
2/10/11

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.

Application Certificate For Payment

To Owner: East Goshen Municipal Authority 1580 Paoli Pike West Chester, PA 19380	Project: Ridley Creek WWTP 1751 Towne Road Fred Papiernik 267-278-6108 West Chester, PA 19380	Application No: 24 Date: 12/30/2010 Period To: 11/30/10 Architect's Project No: Contract Date: 10/22/08
From (Contractor): Worth and Company, Inc. 6263 Kellers Church Road Pipersville, PA 18947	Contractor Job Number: P28001 Via (Architect): Contract For:	
Phone: 267 362-1100		

Contractor's Application For Payment

Change Order Summary	Additions	Deductions
Change orders approved in previous months by owner	46,672.59	-42,648.25
Change orders approved this month		
Totals		
Net change by change orders	4,024.34	

Original contract sum 7,865,400.00

Net change by change orders 4,024.34

Contract sum to date 7,869,424.34

Total completed and stored to date 7,869,424.34

Retainage

1.3% of completed work 99,058.22

0.0% of stored material 0.00

Total retainage 99,058.22

Total earned less retainage 7,770,366.12

Less previous certificates of payment 7,645,366.12

Current payment due 125,000.00

Balance to finish, including retainage 99,058.22

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information, and belief the work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

Contractor By: Linda D. Nelson Date: 12/02/10

State of: PA County of: Bucks

Subscribed and sworn to before me this 2nd day of December 2010 (year). Notary public: Linda D. Nelson

My commission expires _____

COMMONWEALTH OF PENNSYLVANIA
 Notarial Seal
 Linda D. Nelson, Notary Public
 Plumsted Twp., Bucks County
 My Commission Expires Sept. 19, 2014
 Member, Pennsylvania Association of Notaries

OKRS 12/16

Architect's Certificate for Payment

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the Amount Certified.

Architect: [Signature] Date: 12/7/10

This Certification is not negotiable. The Amount Certified is payable only to the Contractor named herein. Issuance, payment, and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

Amount Certified: \$ 125,000

NO ACTION Per MA 12/13

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

FILE

December 28, 2010

Jeff Bush, Project Manager
Worth & Company, Inc.
6263 Kellers Church Road
Pipersville, PA 18947

Re: Application for Payment No. 24
Dated 11/30/2010

Dear Jeff:

At their meeting on December 13, 2010 the Municipal Authority tabled action on the Worth and Company, Inc. Application for Payment No. 24. The Authority held a special meeting on December 28, 2010 to reconsider the Application and it was the consensus of the members that the payment should not be approved pending further review.

Please give me a call at 610-692-7171 or e-mail me at rsmith@eastgoshen.org if you have any questions or need additional information.

Sincerely,



Louis F. Smith, Jr.
Township Manager

Cc: Dan Barbato, PE
Scott Towler, PE

EnQuip Company

365 Devon Drive
Exton, PA 19341

Phone
610-363-8275

Email
sales@enquip.com

APPROVED BY: _____
DATE PAID: _____
CHECK #: _____
CHARGED TO: 07424

Invoice

Date	Invoice #
12/22/2010	Q348546

Bill To
East Goshen Township 1580 Paoli Pike West Chester, PA 19380 Attn: Mark Miller

Ship To
East Goshen Township 1580 Paoli Pike West Chester, PA 19380 Attn: Mark Miller TAG: Ridley Creek

P.O. Number	Terms	Rep	Ship	Via	F.O.B.	Project
Verbal - M. Miller	Net 15		12/14/2010	UPS		RIDLEY CREEK

Quantity	Item Code	Description	Price Each	Amount
1	AMD - 2021	2" T Scanaway 500 micron screen	640.00	640.00
	Freight - EGT	Freight - East Goshen Township - AMD filter	15.00	15.00

*OK 12/25
2/10/10*

Thank you for your business.	Total	\$655.00
------------------------------	--------------	----------



Faddis Concrete Products
 1805 Horseshoe Pike
 Honey Brook, PA 19344
 Phone: (610) 269-4685
 Fax: (610) 942-2629

INVOICE 60038669

Invoice Date: 1/17/2011

Sold to: EGT001
 EAST GOSHEN TOWNSHIP
 1580 PAOLI PIKE
 WEST CHESTER, PA 19380

Job Number: KU0860
 Ship to: RIDLEY CREEK TREATMENT PLANT
 1580 PAOLI PIKE
 WEST CHESTER, PA 19380

SHIP DATE 1/17/2011	SHIP VIA FADDIS TRUCK	F.O.B. JOB SITE	TERMS NET 30	PAGE 1
CUSTOMER PO# 201029	LOAD	SALES REP N/A	EXEMPT #	REFERENCE 60038669

Mark	Description	Qty	Piece Conversion	Unit	Selling Unit Qty	Price	TX	Extension
	Structure / Grouping: Other							
	34" CONCRETE MEDIAN 3'-0" LEN BARRIER			EA	10	\$203.10	LT	\$2,031.00
						Structure Total		\$2,031.00

Billing for product cast and shipped on load #1 dated 1.4.2011 as per attached shipping ticket.

Taxable	\$0.00
Non-Taxable	\$2,031.00
Sub Total	\$2,031.00
Tax	\$0.00
Invoice Total	\$2,031.00
Less Deposit	\$0.00
Invoice Balance	\$2,031.00

APPROVED BY: _____
 DATE PAID: _____
 CHECK #: _____
 CHARGED TO: 07424-7440

Barriers for Plant Equip.

OK TRS

RC

Ransome Rental Co., LP



1420 Phoenixville Pike, West Chester, Pa 19380 (610) 640-9001 FAX (610) 644-5270

INVOICE

Please Remit to: Ransome Rental Co., LP, P.O. Box 828735, Philadelphia, PA 19182-8735

SOLD TO

EAST GOSHEN TOWNSHIP
1580 PAOLI PIKE
WEST CHESTER, PA

APPROVED BY: _____ **SHIP TO** EAST GOSHEN PARK
DATE PAID: _____ 1751 TOWNE DRIVE
19386 WEST CHESTER, PA

CHECK #: _____
CHARGED TO: 07424 7440

Invoice Number K0346101	Invoice Date 12-22-10	Customer Number 1268550	Customer Order No	Store 30	Div R	Salesman 095	Terms 2	Page 1
Agreement Number K03461	Agreement Date 12-06-10	PC	LC	MC 10	Ship Via SHIPPED IN PA	LR	Inv Seq No 364609	
Make AA	Model 953CII	Serial Number BBX02606	Equipment Number	Meter Reading 1623.0	Mach Id No HR3113			

CUSTOMER CONTACT: MARK MILLER
TAX EXEMPTION LICENSE PA

	EQUIPMENT RENTAL	FROM 12/07/10 THRU 12/20/10	
	CATERPILLAR	MODEL 953CII	
	TRACK LOADER		
1.0	ID NO: HR3113	SERIAL NO: BBX02606	2350.00
		PIN: *CAT0953CCBBX02606*	
1.0	CLEANING CHARGE		40.00
1.0	ENVIRO CHARGE		8.00
1.0	CUST		
1.0	TRANSPORT IN PA		200.00

RANSOME RENTS HOURS:
MONDAY - FRIDAY 7:00AM - 5:00PM, CLOSED SATURDAY
& SUNDAY. EMERGENCY SERVICE AVAILABLE 24 HOURS/DAY
7 DAYS A WEEK. 1-888-438-RENT (7368).

Oct 25
2-10-10

Ransome Rental Co., LP makes no representation of warranty of any kind, nature or description, express or implied, with respect to the equipment's merchantability, or its fitness for any particular purpose. Title to and the right to possession of the equipment contracted to be sold shall remain vested in the seller until all sums due or to become due from the purchaser whether evidenced by note, book, account or otherwise, shall have been fully paid. TERMS: All invoices are due and payable upon receipt. A service charge of 1.5% per month (18% per annum) will be posted directly to your monthly statement if payment is not received within terms. Purchaser is hereby notified that Ransome Rental Co., LP has assigned to Nationwide Program Exchange Services Corp., acting in its capacity as a Qualified Intermediary, its rights (including its rights with respect to all money and any trade-ins, but none of its obligations) with respect to the sale of this equipment.	PLEASE PAY THIS AMOUNT	2598.00
	AMOUNT CREDITED	

1
2 **draft**
3 **EAST GOSHEN TOWNSHIP MUNICIPAL AUTHORITY**
4 **MEETING MINUTES**
5 **January 10, 2011**
6

7 The East Goshen Township Municipal Authority held their regularly scheduled meeting on Monday
8 January 10, 2011 at 7:00 p.m. at the East Goshen Township building. Members in attendance were:
9 Jack Yahraes, Fran Beck, Dana Pizarro, Joseph McCawley and Kevin Cummings. Also in
10 attendance were: Rick Smith, Township Manager; Dave Evans from Brickhouse Environmental;
11 Dan Barbato from Pennoni; Bob Adams, Authority Solicitor; and Jim Hopkins and Bill Ronyack
12 from Miller Environmental.
13

14 **COMMON ACRONYMS:**

15 <i>MA- Municipal Authority</i>	<i>I&I – Inflow & Infiltration</i>
16 <i>HC – Historical Commission</i>	<i>RCSTP – Ridley Creek Sewer Treatment Plant</i>
17 <i>PC – Planning Commission</i>	<i>LCSTP – Lochwood Chase Sewer Treatment Plant</i>
18 <i>CB – Conservancy Board</i>	<i>DEP – Department of Environmental Protection</i>
19 <i>PR – Park & Recreation Board</i>	<i>EPA – Environmental protection Agency</i>
20 <i>BOS – Board of Supervisors</i>	<i>NPDES – National Pollutant Discharge Elimination System</i>
21 <i>SSO – Sanitary System Overflow</i>	<i>WAS – Waste Activated Sludge</i>

22

23 **1. CALL TO ORDER AND PLEDGE OF ALLEGIANCE**

24 Chairman Jack Yahraes called the meeting to order at 7:00 p.m. and led those present in the
25 Pledge of Allegiance. There was a moment of silence to remember our Armed Forces.
26

27 **2. ELECTION OF OFFICERS**

28 Jack moved to elect the following officers for 2011:

29 Joe McCawley – Chairman
30 Dana Pizarro – Vice Chairman
31 Jack Yahraes – Treasurer
32 Fran Beck – Secretary
33 Kevin Cummings – Assistant Sec. & Treas.
34

35 **3. RIDLEY CREEK REPORTS**

36 **A. Brickhouse Report**

37 Dave reported that minimal progress was completed towards the electrical and
38 general/mechanical punch list items during December, however, both contractors addressed
39 equipment issues identified during the month. The remaining items include the short circuit
40 protection, coordination and arc flash studies labels for non-potable water hydrants,
41 replacing two hour meters, instrument panel lamp and adjustment knob for a dissolved
42 oxygen probe mounting bracket. Additional items were identified and brought to the
43 attention of both contractors.
44

45 The SBR treatment process has been identified to contain excessive filamentous growth
46 which has adversely impacted settleability of the solids within the SBR, and increase in
47 solids in the SBR effluent and accumulation of solids throughout individual unit processes.
48 On site Laboratory test data indicates that the biological processes are performing as
49 intended for nutrient removal. Achievement of the existing permit discharge limitations is
50 anticipated as well as those for the Siemens SBR performance warranty for total nitrogen

1 and phosphorus. Foam control has included removal through a vacuum truck as well as the
2 application of spray applying sodium hypochlorite to the foam during settle and idle periods.
3 Monitoring the biological activity, reduction in filamentous growth and plant performance is
4 ongoing. Improvement in the settleability is anticipated by the end of January.
5

6 The Siemens warranty performance testing of the treatment system has been postponed until
7 the treatment process is performing as intended. The centrifuge dewatering system
8 performance testing is rescheduled for January 10, 2011. Continued informal conversations
9 with the facility inspector from PADEP have included implementing the new NPDES final
10 effluent discharge requirements during the first quarter 2011 (March/April timeframe).
11 Prior to implementing the new discharge permit limitations, representatives from PADEP
12 will be invited to visit the facility, review operations and provide official notification of the
13 start date for the new effluent discharge permit limitations.
14

15 On January 1, 2011 participated in the transition and orientation of plant operation and
16 maintenance responsibilities to Miller Environmental.
17

18 **B. Pennoni** – Dan Barbato, reported the following:

19 **RCSTP Upgrade and Expansion**

- 20 • Construction phase services have transitioned to punch list monitoring, final review
21 of operations and maintenance submittals, and startup assistance and
22 troubleshooting, as well as the continuation of progress meetings with the
23 Contractors and Township, coordination and communication with Brickhouse and
24 the Township, and approval of contractor Payment Requests.
- 25 • A breakdown of effort expended over the past month by Pennoni is provided with
26 the invoice detail under separate cover.
- 27 • A request for supplemental budget to cover the extension of our Continued
28 Construction Services is submitted under separate cover.
- 29 • Worth and Company and Clinger Corporation are working on punch list completion
30 and outstanding items are expected to be complete this month.
- 31 • Pennoni has completed review of the Operations and Maintenance submittals for
32 Worth and Clinger and has provided comments back to both contractors. We revised
33 submittals from Worth on January 5.
- 34 • Pennoni will begin working on the renewal for the discharge permit, which expires
35 in September. DEP was contacted for paperwork. Paperwork was received. \$500
36 renewal fee needs to be submitted in March, 180 days before September.
37
- 38 • **I Metering Project**
- 39 • The Township continues to meter flows at selected locations. Meters are in
40 operation at new locations as recommended, and we will review all meter data as it is
41 submitted.
42

43 **Ridley Creek Consent Order**

- 44 • The next report is due to DEP in March of 2011. No comments were received to
45 date on the September report submitted to DEP..
46

47 **LCSTP Elimination, Hershey Mill PS Diversion, Reserve PS Elimination Planning**

- 1 • We received an extension from DEP to complete the response to their comments by
2 February 28, 2011. Several of the DEP comments require action by West Goshen
3 including adoption of a Resolution, review by the Planning Commission, and flow
4 data from the Authority. The extension will allow for time to obtain and submit the
5 required Resolution and other documentation. We have completed all revisions to
6 the narrative and prepared a comment response letter, and we are only awaiting
7 required documentation from West Goshen, East Goshen Planning Commission, and
8 the Chester County Health Department before formally submitting to DEP. We
9 have forwarded the documentation required by West Goshen and East Goshen under
10 separate cover. We will be informally submitting the revised narrative and comment
11 response letter to DEP this week so they can begin their review prior to the formal
12 submission in February.

13
14 Marydell PS Elimination Planning

- 15 • The draft report for the Act 537 Plan Revision is nearly complete. We will submit
16 the draft report to the Authority for review by the end of January. Following the
17 Authority's review, we will make the required Component 4 submissions to the East
18 Goshen Planning Commission, West Goshen Planning Commission, Chester County
19 Planning Commission, and Chester County Health Department.

20
21 Applebrook Comprehensive Groundwater Evaluation

- 22 * The final report was provided to the Authority for submission to DEP.

23
24 Dan reported regarding Lochwood, that the DEP issued a renewal permit. The DEP
25 representative acknowledged that DEP knows we are abandoning the plant. There
26 should be no fee, so don't send any money.

27
28 **C. Miller Environmental Report**

29 Report from Bill Ronyack – The first of the samples taken Wednesday the 5th of January by
30 Atlantic Coast Lab will be analyzed and reported along with all others in each succeeding
31 report. This will include copies of the E-DMR.

32
33 Miller Environmental is in the process of analyzing and preparing all records,
34 documentation, procedures to ensure permit compliance and efficient plant operation. The
35 next month should include Siemens' performance evaluation and Alfa/Laval centrifuge
36 training.

37
38 Filamentous bacteria removal/control is underway and new set points for control are being
39 considered. New lab equipment has been ordered and received and standard operating
40 procedures are being developed.

41
42 Mark Miller and his crew have been invaluable in efforts to restore the WWTP to conditions
43 prior to the Alum incident.

44
45 **D. Cost Summary** – The Cost Summary was reviewed.

46
47 **E. Change Orders** – None

48

1 **F. Other** – Pennoni presented an estimate of fees required to reach the January 31
2 anticipated completion date as follows:

3
4 October 15 – December 15

5 Additional progress meetings (3 meetings at 24 hrs total) = \$2,400

6 Construction observation (Matt McAloon only) (90 hrs total) = \$6,750

7 Response and assistance for two electrical/power outages (23 hrs total) = \$1,800

8 TOTAL = \$10,950

9
10 December 15 – January 31

11 1 meeting (8 hrs total) = \$800

12 Construction observation (Matt McAloon) (30 hrs total) = \$2,250

13 TOTAL = \$3,050

14
15 The estimated effort to complete the above items is \$14,000. Fran moved to pay the total of
16 \$14,000. Jack seconded the motion. There was no further discussion. The motion passed
17 unanimously.

18
19 **F. Other** – Rick had no response from Worth & Company to his December 28th letter.

20
21 **F. Other** – PECO Damage to TVSS unit - On December 9, 2010, PECO Energy was
22 installing new power lines along East Boot Road when they came in contact with the
23 existing power lines. This created a surge which caused the damage at the plant. Mark
24 Miller filed a claim with PECO and will be meeting with them to discuss it. Clinger has
25 submitted an invoice for their services totaling \$16,059.00. Jack moved to pay Clinger
26 \$16,059 for their services. Fran seconded the motion. There was no further discussion. The
27 motion passed unanimously.

28
29 **4. RCSTP INVOICES**

30 A. Brickhouse Environmental #5706, 1/3/11, \$15,640.00. Dana moved to approve
31 payment. Fran seconded the motion. There was no further discussion. The motion passed
32 unanimously.

33 B. Pennoni, #459101, 12/22/10, \$8,722.35. Fran moved to approve payment. Dana
34 seconded the motion. There was no further discussion. The motion passed unanimously.

35
36 **5. CHAIRMAN'S REPORT**

37 A. Jack reported that he attended the West Goshen meeting. The attorney for Goose
38 Creek suggested that they change to PMAA attorney Steve Hawn for federal court. East
39 Goshen is paying 16% of the cost.

40
41 **6. APPROVAL OF MINUTES**

42 A. Jack moved to approve the minutes of the December 13, 2010 meeting as corrected.
43 Dana seconded the motion. The motion passed unanimously.

44 B. Dana moved to approve the minutes of the December 28, 2010 special meeting. Jack
45 seconded the motion. The motion passed unanimously.

1 **7. APPROVAL OF INVOICES**

2 A. Jack moved to approve payment of the following invoices:

- 3 1. Pennoni, #459104, 12/22/10, \$866.25
4 2. Pennoni, #459105, 12/22/10, \$1,070.97
5 3. Pennoni, #459099, 12/22/10, \$795.00

6 Dana seconded the motion. The motion passed unanimously.
7

8 **8. LIAISON REPORTS**

9 A. Historical Commission - Ellen Carmody reported that some Commission members will
10 participate as judges in the National History Day competition in March at Immaculata.
11

12 **9. FINANCIAL REPORTS**

13 Financial reports were reviewed.
14

15 **10. GOALS**

16 Newsletter article assignments for 2011 with the "due date" are:

17 Feb. 9 – Joe

18 May 11 – Fran

19 August 10 – Jack

20 November 9 – Dana

21 February 2012 – Kevin

22 Rick provided a summary of 2010 goals.
23

24 **11. OLD BUSINESS**

25 None
26

27 **12. NEW BUSINESS**

28 A. Email policy – The chairman will be assigned an email address
29 (MAchair@eastgosheh.org). All Authority members who email using their personal email
30 for Township business, must cc the chairman or any township staff member so it will be
31 archived.

32 B. Municipal Authority members and BOS liaison will still receive hard copies of the
33 meeting packets. Other ABC liaisons will get it electronically.

34 C. Joe provided a proposed Fact Sheet for Municipal Authority information that he
35 suggested be put on the website. Rick will look into it.
36

37 **13. CAPACITY REQUESTS**

38 None
39

40 **14. SEWER REPORTS**

41 A. Mark Miller reported the following:

42 Meters – Allied Control was out to calibrate the meters. They made some minor
43 adjustments to the Ellis Lane meter. The other meters were fine.
44

45 CC Collection – We were notified of two lateral clogs, one was in Mary Dell and the
46 other was at the Reserve of Spring Meadows. Both were cleared.
47

48 Pump Stations – Pump station wet wells were cleaned as part of the maintenance
49 program.

1
2 RC Collection – Two sewer caps were placed in Clock Tower.

3
4 Lochwood Plant – The plant was visited on a routine basis.

5
6 Ridley Creek Plant – It has been a very busy month at the plant as we experienced
7 several problems with the SBR operation. See Brickhouse report.

8
9 Pa One Calls – 50 PA One Calls were received for the month of December.

10
11 Alarms – 27 alarms for the month of December. A float alarm was received at the
12 Ashbridge Station for high level. We were able to isolate the problem and replaced
13 the float.

14
15 **15. ANY OTHER MATTER**

16 None

17
18 **16. CORRESPONDENCE**

19 Joe acknowledged receipt of West Goshen minutes and a letter from Bob Adams accepting
20 re-appointment as solicitor for the Authority.

21
22 **17. PUBLIC COMMENT**

23 None

24
25 **18. ADJOURNMENT**

26 There being no further business, Jack moved to adjourn the meeting. Fran seconded the
27 motion. The meeting was adjourned at 8:30 p.m.

28
29 Respectfully submitted,

30
31
32 Ruth Kiefer, Recording Secretary

33
34 C:\Documents and Settings\Owner\My Documents\My Word\Municipal Authority\MA 2011\MA 01-10-11 draft.doc



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
01/31/2011

Client No: 6604-01M
Invoice No. 86166

General Authority Services

Fees

		Hours	
01/07/2011			
RFA	Review packet for Authority meeting of 1/10/11.	0.50	
01/10/2011			
RFA	Attend regular meeting of Municipal Authority. For Current Services Rendered	2.00 <u>2.50</u>	<u>475.00</u>

Recapitulation

<u>Timekeeper</u>		<u>Hours</u>	<u>Hourly Rate</u>	<u>Total</u>
Robert F. Adams		2.50	\$190.00	\$475.00
	Previous Balance			\$456.00
	Total Current Charges			475.00
	Balance Due			<u>\$931.00</u>

OK 25
2/10/11

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.



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
12/31/2010
Client No: 6604-01M
Invoice No. 85454

General Authority Services

Fees

		Hours	
12/13/2010	RFA		
	Review packet for 12/13 Authority meeting; attend regular meeting of Authority.	2.40	
	For Current Services Rendered	2.40	456.00
Recapitulation			
<u>Timekeeper</u>		<u>Hours</u>	<u>Hourly Rate</u>
Robert F. Adams		2.40	\$190.00
			<u>Total</u>
	Previous Balance		\$380.00
	Total Current Charges		456.00
12/16/2010	Fee Payment		-380.00
	Balance Due		<u>\$456.00</u>

OK RS
2-10

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.

Page 2



PENNONI ASSOCIATES INC.
CONSULTING ENGINEERS

INVOICE

Philadelphia, PA
215-222-3000 Fax: 215-222-3588

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 # : 462649
Invoice Date : 01/28/2011
Project : EGMA1000
Project Name : 2010 Annual Services

For Services Rendered through: 01/16/2011

Preparation of monthly report, attend monthly Authority meeting for December.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor :	315.00
Expense :	0.00
Phase Total :	315.00

Amount Due This Invoice

\$315.00

Fee :	13,338.25
Prior Billings :	11,913.25
Current Billings :	315.00
Total Billings :	12,228.25

Phase : **** -- Professional Services

Labor Class	Hours/Units	Rate	Amount
Authority Engineer	3.00	105.00	315.00
Labor Total:	3.00		315.00

Total Phase : **** -- Professional Services

Labor :	\$315.00
Expense :	\$0.00

Total Project : EGMA1000 -- 2010 Annual Services

Labor :	\$315.00
Expense :	\$0.00

OLC 125
2/10/11

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

East Goshen Municipal Authority
EGMA1000 Invoice Summary.xls
Invoice Date 1-28-2011

Project: 2010 Annual Services
Pennoni Job No.: EGMA 1000
Invoice No: 462649
Invoice Period: 12/13/2010 to 1/16/2011
Initial Authorization: \$ 10,338.25 **Date:** 1/11/2010
Changes: \$ 3,000.00 **Date:**
Contract Amount: \$ 13,338.25
Previously Invoiced: \$ 11,913.25
Current Invoice: \$ 315.00
Invoiced to Date (\$): \$ 12,228.25
Invoiced to Date (%): 92%
Remaining Budget (\$): \$ 1,110.00
Remaining Budget (%): 8%

Budget by Phase:

Phase No. ****
2010 Annual
Phase Name: **Services**
Phase Budget: \$ 13,338.25
Previously Invoiced: \$ 11,913.25
Current Invoice: \$ 315.00
Invoiced to Date (\$): \$ 12,228.25
Invoiced to Date (%): 92%
Remaining Budget (\$): \$ 1,110.00
Remaining Budget (%): 8%

Comments: Preparation of monthly report, monthly Authority meeting for December.



INVOICE
 Philadelphia, PA
 215-222-3000 Fax: 215-222-3588

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 # : 462650
 Invoice Date : 01/28/2011
 Project : EGMA1002
 Project Name : Applebrook Comp. Groundwater
 Eval.

For Services Rendered through: 01/16/2011

Final report.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor : 716.25
 Expense : 0.00
 Phase Total : 716.25

Amount Due This Invoice

\$195.28

Fee : 5,500.00
 Prior Billings : 5,304.72
 Current Billings : 195.28
 Total Billings : 5,500.00

Phase : **** -- Professional Services

Labor Class	Hours/Units	Rate	Amount
Authority Engineer	0.75	105.00	78.75
Project Engineer	1.75	90.00	157.50
Associate Engineer	1.50	80.00	120.00
Engineering Technician II	5.00	72.00	360.00
Labor Total:	9.00		716.25

Total Phase : **** -- Professional Services

Labor : \$716.25
 Expense : \$0.00

Total Project : EGMA1002 -- Applebrook Comp. Groundwater Eval.

Labor : \$716.25
 Expense : \$0.00

o/c RS 2/10

East Goshen Municipal Authority
EGMA1002 Invoice Summary.xlsx
Invoice Date 1-28-2011

Project: Applebrook Comp. Groundwater Eval.
Pennoni Job No.: EGMA 1002
Invoice No: 462650
Invoice Period: 12/13/2010 to 1/16/2011
Initial Authorization: \$ 5,500.00 **Date:** 9/20/2010
Changes: \$ - **Date:**
Contract Amount: \$ 5,500.00
Previously Invoiced: \$ 5,304.72
Current Invoice: \$ 195.28
Invoiced to Date (\$): \$ 5,500.00
Invoiced to Date (%): 100%
Remaining Budget (\$): \$ -
Remaining Budget (%): 0%

Budget by Phase:

Phase No. ****
Applebrook
Phase Name: **Comp.**
Phase Budget: \$ 5,500.00
Previously Invoiced: \$ 5,500.00
Current Invoice: \$ 195.28
Invoiced to Date (\$): \$ 5,695.28
Invoiced to Date (%): 104%
Remaining Budget (\$): \$ (195.28)
Remaining Budget (%): -4%

Comments: Final report.



INVOICE
 Philadelphia, PA
 215-222-3000 Fax: 215-222-3588

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 # : 462651
 Invoice Date : 01/28/2011
 Project : EGMA1100
 Project Name : 2011 Annual Services

For Services Rendered through: 01/16/2011

Preparation of monthly report, monthly Authority meeting for January. Review DEP correspondence and permit for Lochwood chase.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor :	787.50
Expense :	0.00
Phase Total :	787.50

Amount Due This Invoice

787.50

Fee :	10,000.00
Prior Billings :	0.00
Current Billings :	787.50
Total Billings :	787.50

Phase : **** -- Professional Services

Labor Class	Hours/ Units	Rate	Amount
Authority Engineer	7.50	105.00	787.50
Labor Total:	7.50		787.50

Total Phase : **** -- Professional Services

Labor :	\$787.50
Expense :	\$0.00

Total Project : EGMA1100 -- 2011 Annual Services

Labor :	\$787.50
Expense :	\$0.00

OK RS 2-10

East Goshen Municipal Authority
 EGMA1100 Invoice Summary.xlsx
 Invoice Date 1-28-2011

Project:	2011 Annual Services		
Pennoni Job No.:	EGMA 1100		
Invoice No:	462651		
Invoice Period:	1/1/2011	to	1/16/2011
Initial Authorization:	\$ 10,000.00	Date:	12/13/2010
Contract Amount:	\$ 10,000.00		
Previously Invoiced:	\$ -		
Current Invoice:	\$ 787.50		
Invoiced to Date (\$):	\$ 787.50		
Invoiced to Date (%):	8%		
Remaining Budget (\$):	\$ 9,212.50		
Remaining Budget (%):	92%		

Budget by Phase:

Phase No.	****
	2011 Annual
Phase Name:	Services
Phase Budget:	\$ 10,000.00
Previously Invoiced:	\$ -
Current Invoice:	\$ 787.50
Invoiced to Date (\$):	\$ 787.50
Invoiced to Date (%):	8%
Remaining Budget (\$):	\$ 9,212.50
Remaining Budget (%):	92%

Comments: Preparation of monthly report, monthly Authority meeting for January.
 Review DEP correspondence and permit for Lochwood chase.

**2011
EAST GOSHEN MUNICIPAL AUTHORITY GOALS
FEBRUARY REPORT**

ON-GOING

1. Submit an article for each newsletter.
 - a. Need by 2/9/11 - Joe
 - b. Need by 5/11/11 - Fran
 - c. Need by 8/10/11 - Jack
 - d. Need by 11/9/11 -Dana
 - e. February 2012 - Kevin
2. Attend West Goshen Meetings quarterly – more often if needed.
 - a. 1st Quarter (March)
 - b. 2nd Quarter (June)
 - c. 3rd Quarter (September)
 - d. 4th Quarter (December)
3. Respond to capacity requests in 45 days or less.
4. Implement I & I Plan
5. Conduct a sewer facilities tour after RCSTP construction is complete

RIDLEY CREEK PROJECT

1. Monitor construction.
2. Invite Board of Supervisors and all other ABC members to tour the plant.
3. Open House at the RCSTP
4. Have Siemens conduct a training session for Miller and Township Employees on the new SBR unit. (This would be in lieu of us going to the Siemens' facility in the mid-west.)

ACT 537 PLANNING

1. Obtain Act 537 Plan approval for the Lockwood STP Abandonment Project.
2. Obtain Act 537 Plan approval for the Greenhill PS Redirection and the Reserve PS Abandonment Project.
3. Obtain Act 537 Plan approval for the Marydell PS Abandonment project.
4. Obtain construction permits, solicit bids and start construction of the Marydell PS Abandonment project.

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

To: Municipal Authority
From: Mark Miller
Ref. Monthly Operations Report

Meters: The meters were read on a daily basis. The flows to West Goshen are down. The portable meters were checked on a by weekly basis however, the snow has made it difficult to get to do to their locations.

C.C.Collection: The pumping stations were visited on a daily basis. There were several alarms that were weather related. We had two lateral blockages, one was routine the other was rather interesting as found the vent pipe had pulled out of the hub by 15" the crew was able to push the pipe back in hub. They then had to remove rocks toy cars once they were cleared the line was flushed and put back in service.

R.C.Collection: The Hunt Country pumping stations was visited on a daily basis. We had several alarms that were weather related. We were notified of a lateral blockage in Bow tree. Steven and I removed the caps and found the vent pipe had pulled out of the hub by 12" we were able to push it back in the hub. The trap was full of dirt and stone we were able to remove the blockage and put the lateral back in service.

Ridley Creek Plant Miller Environmental has been busy with removing the Norcardiofrom bacteria. They will begin to treat one tank at a time until the foam is gone. The blower's electrical system has been reconfigured so if we get a power failure the blowers will restart. This will reduce labor costs by not requiring call outs to restart the blowers.

Loch wood Plant: The DEP has requested that we drill two monitoring wells since they are dry. I contacted Keys Well Drilling to drill the wells however, the weather is holding us up. I hope to get the work done next week. They also asked that we put in an influent flow meter, Rick and I plan to install a portable flow meter as this will be more cost effective. The flow meter for the spray fields was not working properly I had Allied Control out to make repairs.

Alarms: We received a total 30 alarms, we responded to 12 as the others were weather related.

Pa. One Calls: We received 44 calls for the month.

2008 FLOWMETERS

2011 JANUARY 1ST QUARTER

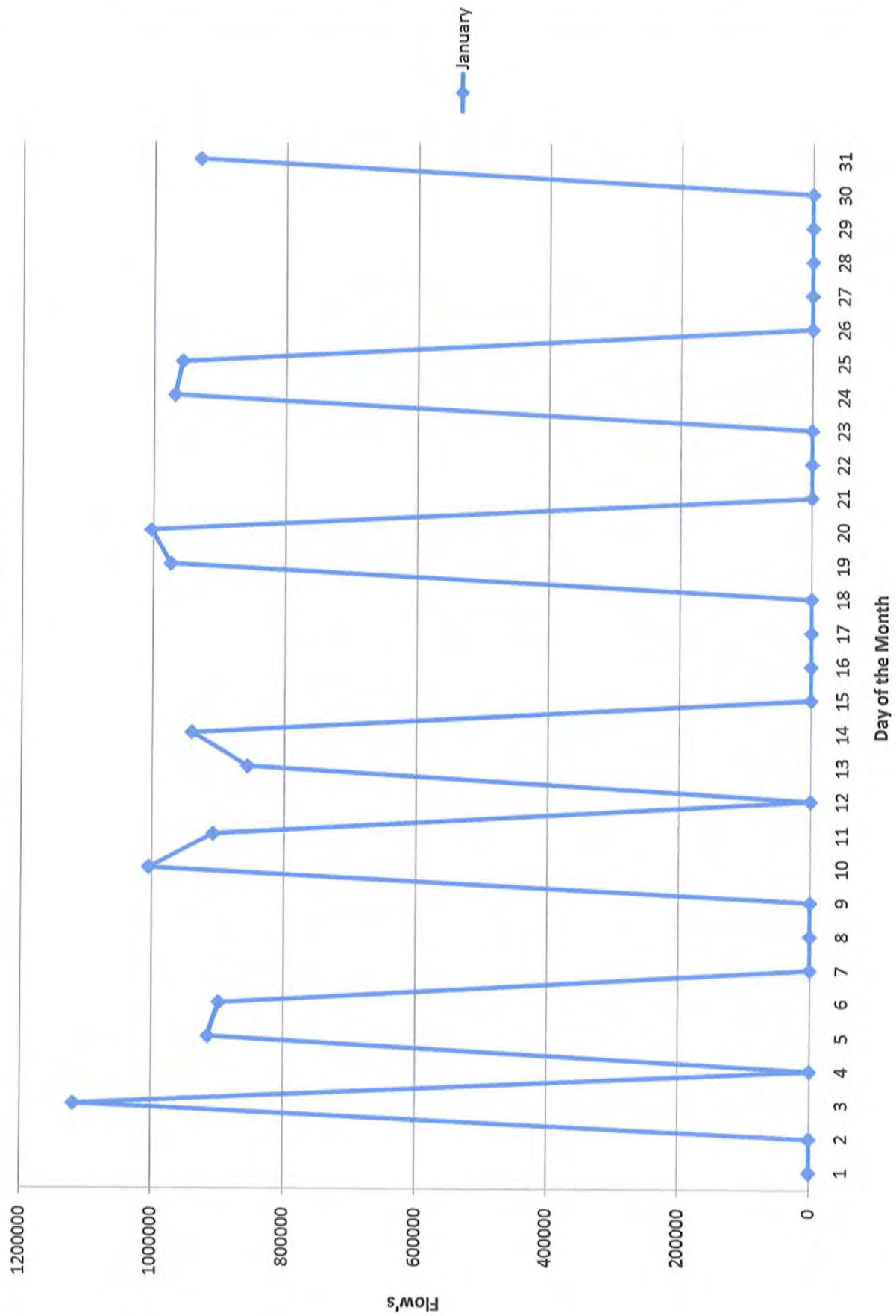
DATE	HERSHEY'S MILL		ASHBRIDGE		HICKS METER		RESERVOIR		SHERMAN		BARKWAY	
	READING	GPD	READING	GPD	READING	GPD	READING	GPD	READING	GPD	READING	GPD
01/01/11												
01/02/11												
01/03/11	20,137,949	73,580	993,578	82,625	16,349,268	322,050	112,406,718	892,245	486,618	7,020	1,784,412	16,165
01/04/11												
01/05/11	20,149,219	56,350	994,885	65,350	16,413,003	318,675	112,560,162	767,220	487,731	5,565	1,786,792	11,900
01/06/11	20,154,785	55,660	995,527	64,200	16,443,692	306,890	112,634,910	747,480	488,308	5,770	1,788,049	12,570
01/07/11												
01/08/11												
01/09/11												
01/10/11	20,177,923	57,845	998,102	64,375	16,549,421	264,323	112,918,064	707,885	490,811	6,258	1,793,071	12,555
01/11/11	20,183,627	57,040	998,732	63,000	16,579,630	302,090	112,991,438	733,740	491,435	6,240	1,794,157	10,860
01/12/11												
01/13/11	20,194,469	54,210	999,965	61,650	16,637,455	289,125	113,136,174	723,680	492,592	5,785	1,796,350	10,965
01/14/11	20,199,914	54,450	1,000,550	58,500	16,668,233	307,780	113,208,802	726,280	493,180	5,880	1,797,420	10,700
01/15/11												
01/16/11												
01/17/11												
01/18/11												
01/19/11	20,229,761	59,694	1,004,006	69,120	16,808,975	281,484	113,585,935	754,266	496,161	5,962	1,803,472	12,104
01/20/11	20,235,561	58,000	1,004,832	82,600	16,843,311	343,360	113,670,970	850,350	496,661	5,000	1,804,700	12,280
01/21/11												
01/22/11												
01/23/11												
01/24/11	20,259,442	59,703	1,007,764	73,300	16,955,375	280,160	113,971,267	750,743	499,065	6,010	1,809,755	12,638
01/25/11	20,264,980	55,380	1,008,427	66,300	16,987,541	321,660	114,047,781	765,140	499,672	6,070	1,810,839	10,840
01/26/11												
01/27/11												
01/28/11												
01/29/11												
01/30/11												
01/31/11	20,299,508	57,547	1,012,457	67,167	17,153,361	276,367	114,485,938	730,262	503,646	6,623	1,817,880	11,735
		53,493		62,585		278,133		701,586		5,463		11,131

2011 SUMMARY OF METER READINGS

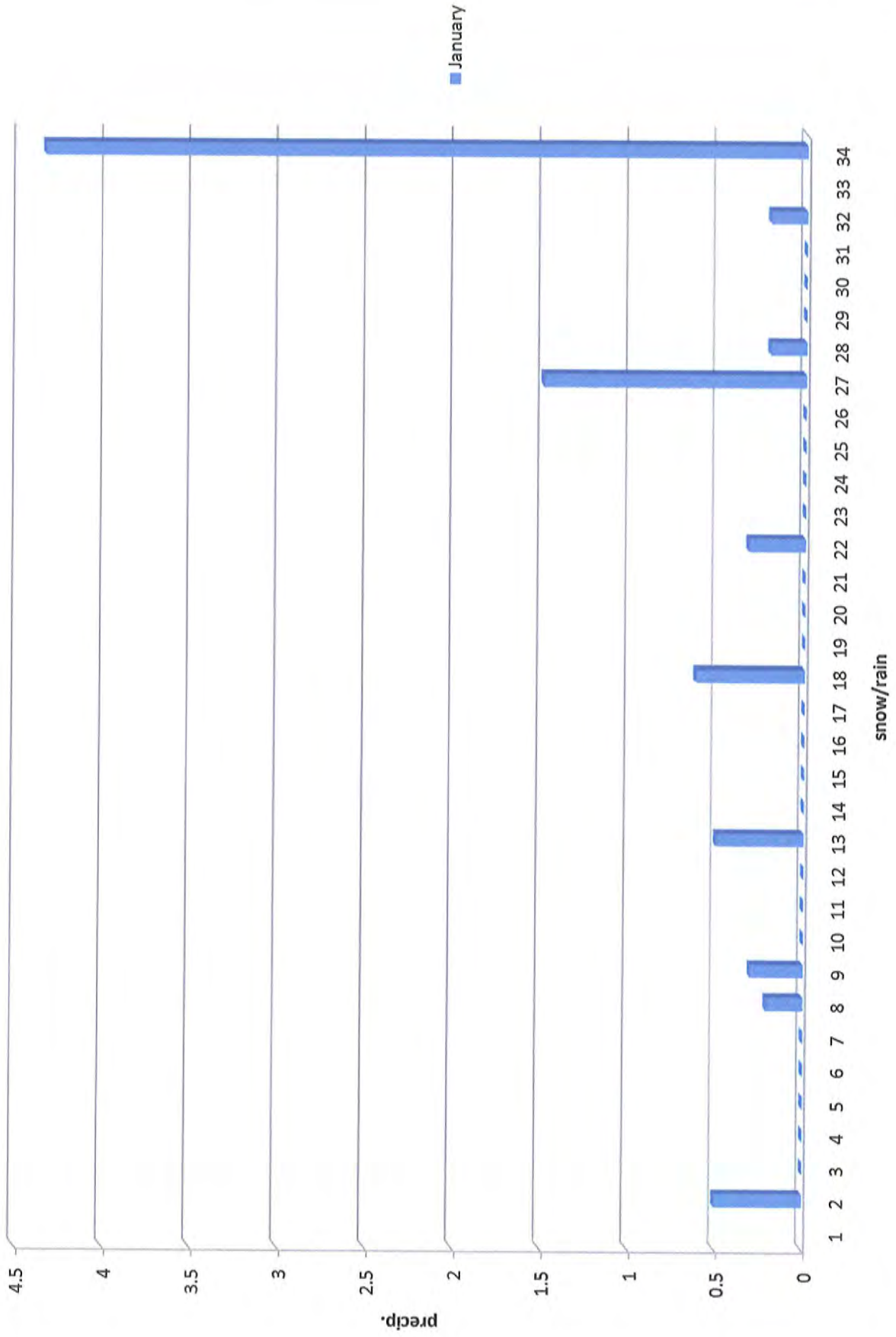
	WESTTOWN WAY	ELLIS LANE	PAOLI PIKE	WILSON DRIVE	SUMMIT	HERSHEY MILL	ASHBRIDGE	HICKS	RESERVOIR	SHERMAN	BARKWAY
JANUARY	1,081,404	97,651	47,105	57,700	20,400	53,493	62,585	278,133	701,586	5,463	11,131
FEBRUARY											
MARCH											
APRIL											
MAY											
JUNE											
JULY											
AUGUST											
SEPTEMBER											
OCTOBER											
NOVEMBER											
DECEMBER											
Total Flows											
Monthly Ave	1,081,404	97,651	47,105	57,700	20,400	53,493	62,585	278,133	701,586	5,463	11,131

To
West Goshen 878,948

Flowmeters January 2011



January Precip. 4.35 - 2011



East Goshen Township Flows December 2010

Date	West Goshen Plant Flow mgd	West. Way Pump Station mgd	Ellis Lane Meter Pit mgd	Paoli Pike Meter Pit mgd	Wilson Drive Meter Pit mgd	West. Way Meter Pit mgd	Total East Goshen Flow mgd
1	7.464	1.498	0.202	0.059	0.099	1.639	1.279
2	4.943	1.615	0.133	0.038	0.076	1.211	0.964
3	4.486	1.478	0.118	0.035	0.049	1.103	0.901
4	4.469	1.448	0.118	0.035	0.049	1.103	0.901
5	4.711	1.540	0.118	0.035	0.049	1.103	0.901
6	4.051	1.426	0.115	0.042	0.072	1.124	0.895
7	3.533	1.503	0.120	0.055	0.081	1.236	0.980
8	4.432	1.395	0.093	0.041	0.065	0.955	0.756
9	4.242	1.376	0.106	0.046	0.077	1.111	0.882
10	3.774	1.395	0.132	0.051	0.051	1.238	1.004
11	4.206	1.430	0.132	0.051	0.051	1.238	1.004
12	6.555	2.054	0.132	0.051	0.051	1.238	1.004
13	5.222	1.638	0.138	0.037	0.081	1.302	1.046
14	4.942	1.554	0.118	0.046	0.077	1.204	0.963
15	4.895	1.644	0.116	0.046	0.067	1.172	0.943
16	4.489	1.445	0.123	0.045	0.067	1.258	1.023
17	4.284	1.387	0.108	0.044	0.041	1.109	0.916
18	4.480	1.511	0.108	0.044	0.041	1.109	0.916
19	4.634	1.551	0.108	0.044	0.041	1.109	0.916
20	4.557	1.475	0.111	0.050	0.063	1.139	0.915
21	4.055	1.494	0.106	0.049	0.062	1.124	0.907
22	4.739	1.503	0.101	0.048	0.064	1.130	0.917
23	4.701	1.412	0.099	0.049	0.036	1.094	0.910
24	4.492	1.522	0.099	0.049	0.036	1.094	0.910
25	3.945	1.375	0.099	0.049	0.036	1.094	0.910
26	4.211	1.473	0.099	0.049	0.036	1.094	0.910
27	4.599	1.499	0.110	0.047	0.046	1.101	0.898
28	4.600	1.498	0.108	0.048	0.058	1.124	0.910
29	4.246	1.455	0.105	0.042	0.059	1.105	0.899
30	4.471	1.418	0.108	0.063	0.050	1.073	0.852
31	4.148	1.438	0.116	0.046	0.058	1.158	0.938
1							

Total	142.58	46.45	3.60	1.43	1.79	35.89	29.07
Avg.	4.599	1.498	0.116	0.046	0.058	1.158	0.938

NOTES:



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHEAST REGIONAL OFFICE

December 28, 2010

Mr. Louis F. Smith, Jr.
Township Manager
East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380-6199

RECEIVED
BY
JAN 11 2011

Re: Sewage
Lochwood Chase STP and Spray Fields
Permit No. 1580430, Amendment No. 1
East Goshen Township
Chester County

Dear Mr. Smith:

Your permit is enclosed.

You must comply with all Standard and Special Conditions attached to the Permit. Construction must be done in accordance to the permit application and all supporting documentation. Please review the permit conditions and the supporting documentation submitted with your application before starting construction.

This permit supersedes the original permit issued on February 20, 1981, to Ferguson & Flynn Enterprises and transferred to East Goshen Municipal Authority on January 25, 1988.

Please make a note that you are required to install a flow meter to measure influent flow to the treatment plant. You are also required to measure the volume of water sprayed to the sprayfields. The equipment shall be installed within one year of the issuance of this permit.

We would like to bring your attention to the Department's new electronic Discharge Monitoring Report (eDMR) program. The program can be accessed through the Internet at www.dep.state.pa.us/edmr and can be used in lieu of paper DMR submissions. Please find enclosed additional information concerning eDMR. We highly encourage your participation in this program.

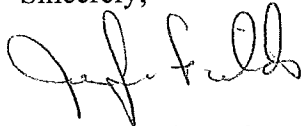
Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717-787-3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800-654-5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717-787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717-787-3483) FOR MORE INFORMATION.

If you have any questions, please call Mr. Andrew Haneiko at 484.250.5183.

Sincerely,



Jenifer Fields, P.E.
Regional Manager
Water Management

cc: Mr. Horrex - TMH Environmental Services, Inc.
Permits Chief
Data Systems and Analysis
Operations
East Goshen Township
Chester County Health Department
DRBC
Re 30 (joh07wqm)341-13



**WATER QUALITY MANAGEMENT
PERMIT**

<p>A. PERMITTEE (Name and Address): East Goshen Municipal Authority 1580 Paoli Pike West Chester, PA 19380</p>	<p>CLIENT ID#: 62683</p> <p>B. PRIMARY FACILITY (Name): Lochwood Chase WWTP and Sprayfields</p>
---	---

<p>C. LOCATION (Municipality, County): 928 Dolphin Drive East Goshen Township Chester County</p>	<p>SITE ID#: 256824</p>
---	------------------------------------

D. This Permit approves the operation of sewerage facilities consisting of: a communitor, aerated lagoon with two surface aerators, polishing pond, chlorine contact tank using hypochlorite for disinfection, five groundwater monitoring wells, and seven sprayfield zones.

<p>Pump Stations: _____ Design Capacity: _____ GPM Average Annual Flow: _____ GPD</p>	<p>Manure Storage: Volume _____ MG Freeboard: _____ inches</p>	<p>Industrial Wastewater/Sewage Treatment Facility: Annual Average Flow: <u>0.0252</u> MGD Design Hydraulic Capacity: <u>0.0252</u> MGD Design Organic Capacity: _____ lb/day</p>
---	---	---

E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:

- New Permits:** All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit application dated 07/17/80, its supporting documentation, and addendums dated 11/18/80, 02/20/81, and 12/09/87 which are hereby made a part of this permit.

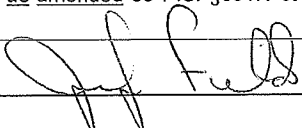
Amendments: All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated _____ and its supporting documentation, and addendums dated _____, which are hereby made a part of this amendment.

Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permit No. _____ dated _____ shall remain in effect.

Transfers: Water Quality Management Permit No. _____ dated _____ and conditions, supporting documentation and addendums are also made part of this transfer.
- Permit Conditions Relating to sewerage** are attached and made part of this permit.
- Special Conditions numbered I thru XVIII are attached and made part of this permit.

F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

- If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.
- Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit.
- This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 *et seq.* Issuance of this permit shall not relieve the permittee of any responsibility under any other law.

<p>PERMIT ISSUED: December 28, 2010</p>	<p>BY: <u></u> TITLE: <u>Water Management Program Manager</u></p>
---	--

Sewerage Permit No. 1580430 Amendment No. 1
East Goshen Municipal Authority
East Goshen Township, Chester County

This permit is subject to the following Special Condition(s):

- I. If there is a change in ownership of this facility or in permittee name, an application for transfer of permit must be submitted to the Department of Environmental Protection (Department).
- II. Copies of monthly Discharge Monitoring Report (DMR) and the quarterly groundwater Background/Monitoring Data Report forms must be submitted within 28 days of the end of the monitoring period to:

Department of Environmental Protection
Southeast Regional Office
Water Management
2 East Main Street
Norristown, PA 19401

III. Discharge Limitations and Monitoring Requirements:

Effluent from the sewage treatment plant shall be sampled from the effluent port of the chlorine contact tank and shall be limited at all times as follows:

Parameter	Discharge Limitations (mg/l)			Monitoring Requirements	
	Average Monthly	Average Weekly	Instantaneous Maximum	Measurement Frequency	Sample Type
Influent Flow (mgd)	0.0252			Continuous	Recorded
CBOD ₅	25	40	50	1/Month	Grab
Suspended Solids	30	45	60	1/Month	Grab
Total Nitrogen*	Monitor and Report		Monitor and Report	1/Month	Grab
Fecal Coliform	200 col/100 ml as geometric mean		1,000 col/100 ml	1/Month	Grab
pH (Std. Unit)	6.0		9.0	1/Month	Grab

***Total nitrogen is equal to the sum of organic nitrogen, ammonia-nitrogen, nitrite-nitrogen, and nitrate-nitrogen.**

Additional treatment requirements include the satisfactory disposal of sludge and the reduction of quantities of oils, greases, acids, alkalis, toxic, taste, and odor producing substances, inimical to the public interest to levels which will not pollute the receiving waters. Monitoring results shall be reported monthly on the DMR. The term "composite" sample means a combination of individual samples collected at regular intervals over a time period. The term "grab" sample means an individual sample collected in less than 15 minutes. Samples and measurements taken as required, herein, shall be representative of the volume and nature of the monitored discharge.

IV. Groundwater Monitoring Requirements:

The permittee shall effectively monitor the systems impact on groundwater quality. The groundwater-monitoring program shall include four groundwater monitoring wells: MW No. 1, MW No. 3, MW No. 4, and No. MW5. The parameters to be tested, and frequency of analysis shall be as follows:

- A. The groundwater monitoring wells shall be sampled quarterly (February, May, August, and November). The samples shall be analyzed for the following parameters: chlorides, total phosphates, ammonia-nitrogen, nitrate-nitrogen, nitrite-nitrogen, total Kjeldahl-nitrogen, total suspended solids, total dissolved solids, fecal coliform, turbidity, sulfates, alkalinity, and pH (Lab).

Field measurements shall include groundwater temperature, pH, conductivity, static water level, and sampling depth.

- B. Groundwater monitoring wells shall be purged three to five (3 to 5) well volumes and allowed to recover prior to sample collection.
- C. The results from the quarterly sampling shall be reported to the Department using the Background/Monitoring Data Report form. The reports shall be submitted within 28 days of the end of the monitoring period.
- D. The groundwater samples shall be collected from within the top five feet of the water table.
- E. The permittee shall drill monitoring wells MW No. 1 and MW No. 5 deeper to ensure that the site is properly monitored. All vehicles must be kept off the spray fields. The above mentioned task shall be completed within thirty (30) days of receipt of this permit. As-built monitoring logs shall be submitted to the Department.

- V. For the purpose of reporting instantaneous maximum concentration for fecal coliform, and for monthly data sets of 10 or more sample results, disregard the highest 10 percent of the sample results. With the remaining results, list the highest sample result as the I-max on the DMR. For facilities that take less than 10 samples per month, use the highest sample result of all sample results.

VI. Hydraulic Loading Requirements:

The recorded effluent flows to each sprayfield zone must be consistent with the maximum hydraulic loading rates per week (A) and the target hydraulic loading rates per month (B) shown in the following chart. Please note that each zone must receive the maximum hydraulic loading per week in order to meet the minimum loadings per month. **The maximum hydraulic loading rate per week cannot be exceeded.** Minimum hydraulic loadings per month are target values, and must be met to empty the storage lagoons. If minimum hydraulic loading rates per month cannot be met because of harvesting schedules, weather conditions, administrative or technical problems, the Department must be contacted immediately. Adding new sprayfields, adding pumps, or increasing pump sizes will require additional sewage facilities planning and/or revisions to this permit.

**MAXIMUM/MINIMUM HYDRAULIC LOADINGS
IN GALLONS PER ZONE**

ZONE 1-5 Wooded Site (2.9 acres)			
Month	Spray Days	Max/week Gallons (A)	Target Gallons per month (B)
January	31	118,120	523,102
February	28	118,120	472,480
March	31	118,120	523,102
April	30	118,120	506,228
May	31	118,120	523,102
June	30	118,120	506,228
July	31	118,120	523,102
August	31	118,120	523,102
September	30	118,120	506,228
October	31	118,120	523,102
November	30	118,120	506,228
December	31	118,120	523,102

ZONE 6-7 Grass Site (1.7 acres)			
Month	Spray Days	Max/week Gallons (A)	Target Gallons per month (B)
January	31	34,621	153,323
February	28	34,621	138,485
March	31	34,621	153,323
April	30	69,243	296,754
May	31	69,243	306,646
June	30	69,243	296,754
July	31	69,243	306,646
August	31	69,243	306,646
September	30	69,243	296,754
October	31	69,243	306,646
November	30	69,243	296,754
December	31	34,621	153,323

The operator is to assess soil Moisture content and soil/crop conditions frequently. It is the operator's responsibility to inspect the fields on a routine basis to prevent and/or address damage to the irrigation fields.

Application of effluent shall be managed to prevent run-off of effluent from the permitted spray field and ponding of effluent.

VII. Weather Condition Requirements:

- a. No irrigation is to occur on frozen soil, minimum mean daily temperature must not fall below 32 degrees F. The minimum low being 26 degrees F and the minimum high being 40 degrees F.
- b. No irrigation is to occur if more than 0.5 inches of rain has fallen in the previous 24 hours.
- c. The operator is to assess soil moisture content and soil/vegetation conditions frequently. It is the operator's responsibility to inspect the fields on a routine basis to prevent and/or address damage to the irrigation fields.

VIII. The water level within the impoundments shall be controlled so that a freeboard of at least 24 inches is maintained at all times.

IX. Crop Management Requirements:

The open spray fields shall be maintained in a grass crop to be frequently mowed with clippings collected and removed from the site. The wooded spray field take up and store nutrients and return a portion of those nutrients back to the soil in the form of leaf fall and debris such as fallen trees. When growth and nutrient uptake begin to decrease with age, identifying the older trees and harvesting is required to thin the stand. Whole tree harvesting must take place in the summer when the leaves are on the trees to maximize nitrogen removal. In addition, fallen trees are required to be harvested. All work must be conducted during dry or frozen soil conditions to prevent damage to the soil.

- X. If the effluent from the herein approved sewage treatment facilities creates a health hazard or nuisance, the permittee shall upon notice from the Department, provided such additional treatment as may be required by the Department.
- XI. The authorization to discharge contained in Section C of this permit shall expire in five years from the date of issuance or reissuance. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the above expiration date (unless permission has been granted by the Department for submission at a later date). In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal. The application for renewal shall be submitted on the appropriate Water Quality Management Part II Application forms and shall include a tabulated summary of all groundwater monitoring data for the previous five years, including a discussion of groundwater quality trends resulting from this discharge.
- XII. Unless otherwise specified in this permit, the test procedures for analysis of pollutants shall be those contained in 40 C.F.R. Part 136, or alternative test procedures approved pursuant to that Part. For the analysis of CBOD₅, consult Section 507 of Standard Methods.
- XIII. Reporting Spray and Drip Application Volumes:
- The permittee shall include with the monthly DMR a chart listing the gallons per day discharged to each field/zone, the daily high and low air temperature, total precipitation for the day and monthly observations of the storage lagoon levels.
- XIV. If the permittee monitors any pollutant more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

XV. Recording of Results:

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

1. The exact place, date, and time of sampling or measurement.
2. The person(s) who performed the sampling or measurement.
3. The dates the analyses were performed.
4. The person(s) who performed the analyses.
5. The analytical techniques or methods used.
6. The results of such analyses.

XVI. Recordkeeping and Retention:

The permittee shall keep records of operation and efficiency of the wastewater treatment facilities. All records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years. The three-year period shall be extended as requested by the Department.

XVII. Laboratory Certification:

The Environmental Laboratory Accreditation Act of 2002 requires that all environmental laboratories register with the Department. An environmental laboratory is any facility engaged in the testing or analysis of environmental samples required by a statute administered by the Department relating to the protection of the environment or of public health, safety, and welfare.

XVIII. Installation of a Flow Meters:

The permittee shall install an influent flow meter to measure daily influent flows to the treatment plant. The permittee shall also install flow meters to measure the rate of spray application onto the spray fields. Such installation must be completed within one year of the permit issuance date.



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

PERMIT CONDITIONS RELATING TO SEWERAGE
For use in Water Quality Management Permits

(Place a \checkmark in the box that applies)

General

- 1. Consistent with the Department of Environmental Protection's (DEP) technical guidance document *Conducting Technical Reviews of Water Quality Management Permit Wastewater Treatment Facilities* (DEP ID: 362-2000-007) available on DEP's website at www.dep.state.pa.us. DEP considers the registered Professional Engineer whose seal is affixed to the design documents to be fully responsible for the adequacy of all aspects of the facility design.
- 2. The permittee shall adopt and enforce an ordinance requiring the abandonment of privies, cesspools or similar receptacles for human waste and onlot sewage disposal systems on the premises of occupied structures accessible to public sewers. All such structures must be connected to the public sewers.
- 3. The outfall sewer or drain shall be extended to the low water mark of the receiving body of water. Where necessary to ensure proper mixing and waste assimilation, an outfall sewer or drain may be extended with appurtenances below the low water mark and into the bed of a navigable stream provided that the permittee has secured an easement, right-of-way, license or lease from DEP in accordance with Section 15 of the Dam Safety and Encroachments Act, the Act of November 26, 1978, P.L. 1375, as amended.
- 4. The approval is specifically made contingent on the permittee acquiring all necessary property rights, by easement or otherwise, providing for the satisfactory construction, operation, maintenance and replacement of all sewers or sewerage structures in, along or across private property with full rights of ingress, egress and regress.
- 5. When construction of the approved sewerage facilities is completed and before they are placed in operation, the permittee shall notify DEP in writing so that a DEP representative may inspect the facilities.
- 6. If, at any time, the sewerage facilities covered by this permit create a public nuisance, including but not limited to, causing malodors or causing environmental harm to waters of the Commonwealth, DEP may require the permittee to adopt appropriate remedial measures to abate the nuisance or harm.
- 7. This permit authorizes the construction and operation of the proposed sewerage facilities until such time as facilities for conveyance and treatment at a more suitable location are installed and capable of receiving and treating the permittee's sewage. Such facilities must be in accordance with the applicable municipal official plan adopted pursuant to Section 5 of the Pennsylvania Sewage Facilities Act, the Act of January 24, 1966, P.L. 1535 as amended. When such municipal sewerage facilities become available, the permittee shall provide for the conveyance of the sewage to these sewerage facilities, abandon the use of these approved facilities and notify DEP accordingly. This permit shall then, upon notice from DEP, terminate and become null and void and shall be relinquished to DEP.
- 8. This permit does not relieve the permittee of its obligations to comply with all federal, interstate, state or local laws, ordinances and regulations applicable to the sewerage facilities.
- 9. This permit does not give any real or personal property rights or grant any exclusive privileges, nor shall it be construed to grant or confirm any right, easement or interest in, on, to or over any lands which belong to the Commonwealth.
- 10. The authority granted by this permit is subject to all effluent requirements, monitoring requirements and other conditions as set forth in NPDES Permit No. PA___ and all subsequent amendments and renewals. No discharge is authorized from these facilities unless approved by an NPDES Permit.

Construction

- 11. An Erosion and Sedimentation (E&S) Plan must be developed prior to construction of the permitted facility, pursuant to Title 25 Pa. Code Chapter 102, and implemented during and after the earth disturbance activity.

If the activity involves 5 or more acres of earth disturbance, or from 1 to 5 acres of earth disturbance with a point source discharge to surface waters of the Commonwealth, an NPDES permit for the Discharge of Stormwater Associated with Construction Activity is required.

In addition to the state NPDES permitting requirements, some municipalities, through local ordinances, require the E&S Control Plan to be reviewed and approved by the local County Conservation District office prior to construction. For specific information regarding E&S control planning approval and NPDES permitting requirements, please contact your local County Conservation District office.
- 12. The facilities shall be constructed under the supervision of a Pennsylvania registered Professional Engineer in

accordance with the approved reports, plans and specifications.

- 13. A Pennsylvania registered Professional Engineer shall certify that construction of the permitted facilities was completed in accordance with the application and design plans submitted to DEP, using "Post Construction Certification" (3800-PM-WSWM0179a). It is the permittee's responsibility to ensure that a Professional Engineer is on-site to provide the necessary oversight and/or inspections to certify the facilities. The certification must be submitted to DEP before the facility is placed in operation. If requested, "as-built" drawings, photographs (if available) and a description of any DEP-approved deviations from the application and design plans must be submitted to DEP within 30 days of certification.
- 14. Manhole inverts shall be formed to facilitate the flow of the sewage and to prevent the stranding of sewage solids. The manhole structure shall be built to prevent undue infiltration, entrance of street wash or grit and provide safe access to facilitate manhole maintenance activities.
- 15. The local Waterways Conservation Officer of the Pennsylvania Fish and Boat Commission (PFBC) shall be notified when the construction of any stream crossing and/or outfall is started and completed. A written permit must be secured from the PFBC if the use of explosives in any waterways is required and the permittee shall notify the local Waterways Conservation Officer when explosives are to be used.

Operation and Maintenance

- 16. The permittee shall maintain records of "as-built" plans showing all the treatment facilities as actually constructed together with facility operation and maintenance (O&M) manuals and any other relevant information that may be required. Upon request, the "as-built" plans and O&M manuals shall be filed with DEP.
- 17. The sewers shall have adequate foundation support as soil conditions require. Trenches shall be back-filled to ensure that sewers will have proper structural stability, with minimum settling and adequate protection against breakage. Concrete used in connection with these sewers shall be protected from damage by water, freezing, drying or other harmful conditions until cured.
- 18. Stormwater from roofs, foundation drains, basement drains or other sources shall not be admitted directly to the sanitary sewers.
- 19. The approved sewers shall be maintained in good condition, kept free of deposits by flushing or other cleaning methods and repaired when necessary.
- 20. The sewerage facilities shall be properly operated and maintained to perform as designed.
- 21. The attention of the permittee is called to the highly explosive nature of certain gases generated by the digestion of sewage solids when these gases are mixed in proper proportions with air and to the highly toxic character of certain gases arising from such digestion or from sewage in poorly ventilated compartments or sewers. Therefore, at all places throughout the sewerage facilities where hazard of fire, explosion or danger from toxic gases may occur, the permittee shall post conspicuous permanent and legible warnings. The permittee shall instruct all employees concerning the aforesaid hazards, first aid and emergency methods of meeting such hazards and shall make all necessary equipment and material accessible.
- 22. An operator certified in accordance with the Water and Wastewater Systems Operator Certification Act of February 21, 2002, 63 P.S. §§1001, *et seq.* shall operate the sewage treatment plant.
- 23. The permittee shall properly control any industrial waste discharged into its sewerage system by regulating the rate and quality of such discharge, requiring necessary pretreatment and excluding industrial waste, if necessary, to protect the integrity or operation of the permittee's sewerage system.
- 24. There shall be no physical connection between a public water supply system and a sewer or appurtenance to it which would permit the passage of any sewage or polluted water into the potable water supply. No water pipe shall pass through or come in contact with any part of a sewer manhole.
- 25. All connections to the approved sanitary sewers must be in accordance with the corrective action plan as contained in the approved Title 25 Pa. Code Chapter 94 Municipal Wasteload Management Annual Report.
- 26. Collected screenings, slurries, sludge and other solids shall be handled and disposed of in compliance with Title 25 Pa. Code Chapters 271, 273, 275, 283 and 285 (related to permits and requirements for land filling, land application, incineration and storage of sewage sludge), Federal Regulations 40 CFR 257 and the Federal Clean Water Act and its amendments.

Re 30 (WP)



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER STANDARDS AND FACILITY REGULATION
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

PERMITTEE NAME/ADDRESS
PRIMARY FACILITY: **LOCHWOOD CHASE STP & SPRAY SYSTEM**

CLIENT: **EAST GOSHEN MUNICIPAL AUTHORITY**

ADDRESS: **928 DOLPHIN DRIVE
WEST CHESTER, PA 19380**

MUNICIPALITY: **EAST GOSHEN TOWNSHIP**
COUNTY: **CHESTER**

1580430-A1

PERMIT NUMBER

DISCHARGE NUMBER

MONITORING PERIOD

YEAR	MO	DAY	TO	YEAR	MO	DAY

PERMIT EXPIRES: **12-31-2015**
PERMIT APPLICATION DUE: **06-01-2015**

Check here if No Discharge

NOTE: Read instructions before completing this form

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	AVERAGE	MAXIMUM	UNITS	INSTANT MINIMUM	MONTHLY AVERAGE	INSTANT MAXIMUM	UNITS			
FLOW	Sample Measurement	XXXX		XXXX	XXXX	XXXX				
	Permit Requirement	0.0252	XXXX	MGD	XXXX	XXXX	XXXX		CONTINUOUS	METER
CBOD ₅	Sample Measurement	XXXX		XXXX						
	Permit Requirement	XXXX	XXXX	XXXX			50		1/MONTH	GRAB
TOTAL SUSPENDED SOLIDS	Sample Measurement	XXXX		XXXX						
	Permit Requirement	XXXX	XXXX	XXXX			60		1/MONTH	GRAB
TOTAL NITROGEN *	Sample Measurement	XXXX		XXXX						
	Permit Requirement	XXXX	XXXX	XXXX	MONITOR/REPORT	MONITOR/REPORT			1/MONTH	GRAB
FECAL COLIFORM	Sample Measurement	XXXX		XXXX						
	Permit Requirement	XXXX	XXXX	XXXX	XXXX	200/100 ML				
pH	Sample Measurement	XXXX		XXXX						
	Permit Requirement	XXXX	XXXX	XXXX	6.0	XXXX	9.0		1/MONTH	GRAB
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	Sample Measurement									
	Permit Requirement									
TYPE OR PRINT	Sample Measurement									
	Permit Requirement									
COMMENTS (Report all violations on the "Non-Compliance Reporting Form")	Sample Measurement	I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa.C.S.A. § 4904 (relating to unsworn falsification).								
	Permit Requirement									
		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT			AREA CODE		NUMBER		DATE	
		TELEPHONE			YEAR		MO		DAY	

* Total Nitrogen = Total Kjeldahl Nitrogen + Nitrite (NO2) Nitrogen + Nitrate (NO3) Nitrogen

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER MANAGEMENT
SOUTHEAST REGIONAL OFFICE

1580430 A1
PERMIT NUMBER

BACKGROUND/MONITORING DATA REPORT

Permittee Name/Address East Goshen Municipal Authority 1580 Paoli Pike West Chester, PA 19380	Facility Name/Address Lochwood Chase WWTP and Spray 928 Dolphin Drive West Chester, PA 19380	Municipality/County East Goshen Township Chester County
Date of Sampling _____ / _____ / _____ M D Y	Time of Collection (24-hour system) _____	Monitoring Period _____ / _____ / _____ M D Y TO _____ / _____ / _____ M D Y

Sample Method and Location

CIRCLE THE WELL PURGING METHOD: PUMP OR BAILER
 CIRCLE THE SAMPLED MONITORING WELL: **MW1, MW3, MW4, and MW5**

QUARTERLY ANALYSIS

All units expressed in mg/l unless otherwise specified

<u>PARAMETER</u>	<u>RESULT</u>	<u>PARAMETER</u>	<u>RESULT</u>
Chlorides	_____	Fecal Coliform	_____
Total Phosphates	_____	Turbidity	_____
Ammonia-Nitrogen	_____	Total Suspended Solids	_____
Nitrate-Nitrogen (NO ₃ -N)	_____	Total Dissolved Solids	_____
Nitrite-Nitrogen (NO ₂ -N)	_____	Total Kjeldahl-Nitrogen (TKN)	_____
Sulfates	_____	Alkalinity	_____
pH (Lab)	_____		_____

LABORATORY INFORMATION

LAB PERFORMING ANALYSES _____

TELEPHONE NUMBER: () _____

CHEMIST'S NAME _____ CHEMIST'S SIGNATURE _____

PERMITTEE RESPONSIBLE OFFICER _____

PERMITTEE RESPONSIBLE OFFICER SIGNATURE _____



**SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS**

Facility Name: Lochwood Chase STP Month: _____ Year: _____
 Municipality: East Goshen County: Chester Permit No.: 1580430-A1 Outfall No.: _____
 Watershed: _____ This permit will expire on _____

Day	Zone:		Zone:		Zone:		Precipitation		Average Temp °F	Ground Conditions (Wet, Dry, Frozen)
	Gallons	Acres:	Gallons	Acres:	Gallons	Acres:	Inches	Type		
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
Totals:										

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____ Signature: _____
 Title: _____ Date: _____



INSTRUCTIONS FOR COMPLETING LAND APPLICATION SYSTEMS SUPPLEMENTAL REPORT

Use this form to document wastewater management activities for facilities with land application programs (e.g., surface or subsurface irrigation, drip irrigation, etc.) approved under a Water Quality Management (WQM) permit.

1. Enter Facility Name, Municipality, County, Watershed No., Month, Year, Permit No., Outfall No. (if applicable) and Permit Expiration Date (if applicable).
2. Next to each "Zone" heading (this may also be considered "land application site"), enter a unique identifier. For example, "1," "2," etc. or "Site 1," "Site 2," etc. If the name of the zone or site is too long for the space provided, please use an abbreviation. Up to five zones can be accommodated on one report. If you have more than five zones, please use more sheets. Next to each "Acres" heading, enter the number of acres that receive effluent (e.g., "wetable acres").
3. Enter the daily volume (gallons) applied onto each zone.
4. Enter the average daily temperature at the land application site. An on-site temperature monitoring system is recommended, but other approaches may be acceptable, such as use of local airport data.
5. Enter the daily ground surface conditions (site-wide). Recommended entries include "dry," "wet," and "frozen," but others may be used.
6. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

INSTRUCTIONS FOR COMPLETING GROUNDWATER MONITORING SUPPLEMENTAL REPORT

Use this form to document groundwater monitoring results, where monitoring is required by the permit.

1. Enter Facility Name, Municipality, County, Watershed No., Monitoring Period (month, quarter or date range), Year, Permit No., and Monitoring Well No. Complete a separate report for each monitoring well.

Field Analysis

2. Report Top of Casing elevation (ft) for the monitoring well, the well diameter (ft), the initial depth to water (prior to sampling) (ft), the total well depth (ft), the volume of water in the well (gallons), and the total volume of water purged (gallons). The volume of water in the well is calculated as follows:

$$(\pi * \text{diameter}^2 / 4) * (\text{total well depth (ft)} - \text{depth to water (ft)}) * 7.48 \text{ gallons/ft}^3$$

3. Report the water temperature, pH, and conductivity prior to sampling. Department guidance recommends that sampling occur once these parameters begin to stabilize during well purging. To determine the total volume purged you must record (in a field book) the total time required for the parameters to stabilize and the average flow rate during that time.

Lab Analysis

4. Enter the sampling date, parameter name, result and laboratory reporting limit in the space provided. Use the Qualifier (Q) column to enter "<" or ">" as appropriate for "non-detect" results and results greater than the reporting limit, respectively, or other qualifier codes. Report the sample result units and laboratory reporting limit units in the spaces provided.
5. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.



NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plan of pollution prevention measures. If you are reporting other non-compliance events, and the reporting deadline does not coincide with your submission of the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the permit. See instructions for more information.

Facility Name: Lochwood Chase STP Month: _____ Year: _____
 Municipality: East Goshen Twp County: Chester Permit No.: 1580430-A1

Violations of Permit Effluent Limitations*

Date	Parameter	Permit Limit	Units	Statistical Code	Result	Units	Cause of Violation	Corrective Action Taken

Sanitary Sewer Overflows and Other Unauthorized Discharges*

Event Date	Substance Discharged	Location	Volume (gals)	Duration (hrs)	Receiving Waters	Impact on Waters	Cause of Discharge	Date DEP Notified

Other Permit Violations*

- Sample collection less frequent than required Explain
- Sample type not in compliance with permit Explain
- Violation of permit schedule Explain
- Other Explain
- Other Explain

***If the space provided is not sufficient to record all information, please attach additional sheets.**

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____ Signature: _____
 Title: _____ Date: _____



INSTRUCTIONS FOR COMPLETING NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). If you are reporting other non-compliance events, and the deadline for a written report (e.g., 5 days) does not coincide with your submission of the DMR, this form should be submitted separately to the Department by the reporting deadline set forth in the permit.

If you are unsure of whether an incident constitutes non-compliance that may endanger health or the environment, it is recommended that you notify the Department verbally as soon as possible after you become aware of the incident. Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plan of pollution prevention measures.

Instructions:

1. Enter the name of the facility, the municipality and county where it is located, the month and year when violations occurred, and the NPDES or WQM permit number for the facility.
2. If there were violations of permit effluent limitations during the month, check the box next to "Violations of Permit Effluent Limitations." (Note – if using the electronic version of this form, check the boxes first, and then select Tools – Unprotect Document to enter additional information). Enter the date of the violation (if a violation of a minimum or maximum limit, the date of sample collection, or if a violation of an average limit, the end of the monitoring period), the parameter name, the permit limit and units, the statistical code (e.g., "MIN", "MAX", "MO AVG", etc.), the measured result and units, the cause of the violation and the corrective action taken. **If there are more than two violations during the monitoring period and/or if the space provided is insufficient to explain the cause or corrective action, please attach additional pages.**
3. If there are Sanitary Sewer Overflow (SSO) discharges or other unauthorized discharges from the facility (e.g., spills, leaks, etc.) that enter or have the potential to enter waters of the Commonwealth, including groundwater, notify DEP by phone as soon as possible, and document the discharge on this form by checking the box next to "Sanitary Sewer Overflows and Other Unauthorized Discharges." Record the event (discharge) date, the substance discharged (e.g., sewage, on-site chemicals, etc.), the location where the discharge occurred (e.g., manhole number, pump station name, equipment description, etc.), the volume discharged (gallons), the approximate duration of the discharge (hours), the receiving waters (name of stream or groundwater), the impact on the receiving waters, if observed (e.g., solids deposition, foam, fish kill, etc.), the cause of the discharge, and the date on which the Department was verbally notified. **If there are more than two discharge events during the monitoring period and/or if the space provided is insufficient to explain the discharge, please attach additional pages.**
4. If there are other violations of the permit, check the box next to "Other Permit Violations," and check the appropriate box that describes the violation type. If not identified on the form, check the box next to "Other" and provide a written explanation. **If the space provided is insufficient to explain the violation, please attach additional pages.**
5. Type your name and title and sign and date the form after reading the certification statement.

If you have questions about completing this form, contact the Water Management Operations Section of the Department in your region:

Southeast Region – (484) 250-5970
 Northeast Region – (570) 826-2553
 Southcentral Region – (717) 705-4707

Northcentral Region – (570) 327-3661
 Southwest Region – (412) 442-4000
 Northwest Region – (814) 332-6942



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER STANDARDS AND FACILITY REGULATION

**SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING**

Facility Name: Lochwood Chase STP Month: _____ Year: _____
Municipality: East Goshen Twp County: Chester WQM Permit No.: 1580430-A1 Outfall No.: _____
Watershed: _____
Laboratories: _____
Renewal application due **180 days** prior to expiration
This permit will expire on _____

Day	Effluent Parameters											
	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
Avg												

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____ Signature: _____
Title: _____ Date: _____

INSTRUCTIONS FOR COMPLETING DAILY EFFLUENT MONITORING SUPPLEMENTAL REPORT

Use this form to report daily monitoring results for the parameters that must be monitored in effluent for compliance with the permit. Results for influent parameters should be reported on Form 3800-FM-WSFR0436.

1. Enter Facility Name, Municipality, County, Watershed No., Laboratories, Month, Year, NPDES Permit No., Outfall No., and Permit Expiration Date (it is noted that this information may be pre-populated if you have received this form with your permit). For Laboratories, list the names of all laboratories where samples were analyzed during the month, including on-site analysis.
2. In the column headers, below "Effluent Parameters," enter the names of parameters in the permit. Since limited space is provided, abbreviation may be necessary. If there are more parameters for an outfall than columns provided on the form, attach an additional sheet.
3. Below parameter names, and to the right of "Q" (Qualifier) column headers, enter the units associated each parameter (it is noted that this information may be pre-populated if you have received this form with your permit).
4. Enter monitoring results for parameters in the rows corresponding to the day of the month in which samples were collected. Enter results exactly as reported by the laboratory, or if measured with on-site equipment, to the level of precision recommended by the equipment manufacturer. Enter data qualifiers such as "<," ">," "J," and others in the "Q" column.
5. Calculate and report average values at the bottom of the table in accordance with the DMR Instructions (3800-FM-WSFR0463). Note – for bacteria, calculate and report the geometric mean value.
6. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

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

To: **Municipal Authority**

From: **Mark Miller**

RE: **Sale of Used Equipment From the Sewer Plant**

The Township went out to bid for used equipment from the sewer plant, the equipment list is as follows:

Trojan UV System
Two Gorman Rupp (T6) Pumps and Spare Parts
Two Forman Rupp (T3) Pumps and Spare Parts
1 Lakeside Rotamat Micro-Strainer

Attached is a list of bidders. Aqua was awarded the bid in the amount of \$5,000.00 for all of the equipment.

Used Equipment From Sewer Plant

Bid Opening, January 19, 2011 at 10:00 am

Company	Address	Amount
Aqua Resources, Inc.	762 W. Lancaster Ave. Bryn Mawr, PA 19010	\$5,000.00
Richard Wikos	300 Lucky Hill Road West Chester, PA 19382	\$500.00
Ron Smith Inc.	559 Trestle Place Downingtown, PA 19335	\$300.00

WEST GOSHEN SEWER AUTHORITY
REGULAR MEETING
February 2, 2011

The regular meeting of the West Goshen Sewer Authority was held on Wednesday, February 2, 2011 at the STP Administration Building. Those present were:

<u>Authority</u>	<u>Supervisor</u>	<u>Unruh, Turner</u>
Mike Arnold		Amanda Sundquist
Frank Biasi		
John Windle		
Dave Johnson	<u>Administration</u>	<u>Glance Associates, Inc.</u>
	John Scott	Max Stoner

Kevin Snoke, Ken Fuller and Ron Rothrock were absent.

Kevin Campbell and Shawn Carpenter from WCASD were present to go over the renovations scheduled for Westtown/Thornbury Elementary School, the school currently has an on-site sewer system. WCASD would like to annex the school from the West Goshen service area of the Westtown Township Agreement and send the flow to Rustin pump station, which would be 2200gpd and would need to have approval. John Windle made a motion to allow Ross Unruh to write an amendment to allow WCASD to be released from the Westtown Township Agreement with the WCASD paying legal cost for the change, seconded by Frank Biasi, the motion was passed unanimously.

The regular meeting of the Authority was called to order at 7:30 P.M. by Chairman, Mike Arnold. The Chairman called for approval of the minutes from the January 5, 2011 meeting. On motion by Dave Johnson, seconded by John Windle, the minutes were unanimously approved.

Amanda Lundquist presented the Solicitor's Report for the month. Right to Know requests were sent last week to DEP & EPA. The grinder pump agreement has been prepared and sent out for Liberty Tools and he is awaiting a response.

Max Stoner gave the Engineers report dated February 2, 2011: (See report for details)

1. Current Items

a) Pumping Station Nos. 1 & 6 Upgrade

General construction work has a few minor items to be done at PS#1 by the plant staff. The closeout paperwork has come back from Brandywine Electrical.

b) Goose Creek Stream Study/TMDL Permit Issues

The TMDL issues are winding their way through the court system and EHB. The Paxson Creek has been delisted.

c) Washington Street Pump Station

Blooming Glen Contractors completed the punch list at the station. The closeout paperwork needs signed.

2. The Arbours at West Goshen –
Nothing New This Month
3. Goshen Leisure Development
Nothing New This Month
4. West Goshen Business Park
This is a proposed 115 unit age restricted apartment complex on a lot in West Goshen Business Park. A letter of sewer capacity was required for a conditional use hearing.
5. Zarelli Subdivision 825 Goshen Road
Nothing new this month.
6. Margarita's Site Development
Waiting for as-built plans. Nothing new this month.
7. Wexford Mews
Waiting for as-built plans. Nothing new this month.
8. Jerrehian Estate
Large Tract
Glace has started to review the sanitary sewer plans for the proposed 598 unit development. They are still proposing two (2) pumping stations. They have provided preliminary plans. We are considering possible tie-ins to Hamilton Woods and portions of the Caswallen development. The review has been completed with no major issues on the proposed design, the review letter was sent out last month. Max and John Scott met with representatives from Horizon Engineering today to go over their plans for the two pumping stations.

Small Tract
Site work has been started. They are currently working on getting the area ready for sewer lines.
9. Greenhill Corporate Park – Lot 11
Drury Development Company is proposing a 2 ½ story 34,480 s.f. office building at 1171 McDermott Drive. There are no major issues with the sewer for this proposed project. this was approved at the planning commission in July.
10. Village of Shannon – Shadeland Woods
They are continuing to construct units in this development.
11. Lincoln Independence Park
Nothing New This Month
12. South Concord Road / Glenn White Subdivision / Quaker Ridge

This is a 20-lot single family residential subdivision of a portion of the Rolling Green Cemetery north of Amelia Drive. The site and sanitary sewer improvements have been started. There are some existing homes which may be able to connect to their proposed gravity collection system. The developer has agreed to provide a right of way to serve existing homes in the area. As per the Authority's previous policy the Authority would reimburse the developer for the actual cost of the sewer main extension. Ross has provided the developer's agreement and letter of credit forms to the developer's attorney. The developer has provided the right of way plats and descriptions as well as post construction escrow as well as the easements and minor revisions to the plans. The clearing and grubbing of the site has begun.

13. DLH Development – Reservoir Property

Waiting for as-built drawings and dedication documents. D.L. Howell relocated their office to one of these buildings earlier this month.

14. Domestic Violence Center

Need record drawings of the tie-in to the system. Nothing new this month.

15. Gavin Property – 415 Goshen Road

Nothing New This Month

16. Liberty Tools

This property will be served by a grinder pump. They have proposed to tie a few other lots into the low pressure system. John Scott has agreed with this concept which was done on Delaware Avenue and Wexford Mews. Ross has been discussing individual grinder pump agreements for each property that will connect to the system with the attorney for Liberty Tools. Nothing new this month.

17. Kirkland Woods

This is a new 7 lot sub-division on 4.3 acres, located at Kirkland Avenue and Ashbridge Road. The sanitary sewer main needs extended but no rights of ways are involved. A developer's agreement will need to be entered into between the Authority and the developer. The plan received approval from the Township and they have contacted Ross and our office to establish a construction escrow account. They reviewed and approved the construction escrow account.

18. QVC Warehouse

QVC is planning an approximately 60,000 s.f. addition to its warehouse. There appear to be no significant issues with the sanitary sewer system for the proposed addition.

19. R.E. Michel

This is a proposed 14,542 s.f. warehouse/storage/office HVAC facility to be constructed on the existing R.E. Michel property on the south side of Westtown Road. No major issues with the sewer for this proposed project. This project is currently under construction.

20. Fame Fire Company Expansion

Proposed 4,000 s.f. addition located at S. Matlack & Rosedale Ave. This does not significantly affect the Authority's system. An approval letter was sent out.

The following invoices and requisitions were moved for approval by John Windle, seconded by Dave Johnson, and unanimously approved:

ADMINISTRATIVE EXPENSES:

PAYEE	PURPOSE	AMOUNT
Unruh	General Representation	\$ 2,969.00

DEVELOPER ACCOUNTS:

PAYEE	DEVELOPER	AMOUNT
Unruh, Turner	South Concord Road – Glen White	\$ 126.00
Glace & Assoc.	Greystone South	\$ 66.00
Glace & Assoc.	Glen White / Quaker Ridge	\$ 66.00
		\$

On a motion by Dave Johnson, and seconded by John Windle, the following bills were approved for payment.

TAPPING FEE FUND:

REQUISITION #	PAYEE	PURPOSE	AMOUNT
1420	Glace & Associates	Washington St. PS, P.S. #6 Upgrade TMDL	\$ 701.50
1418	Hall & Associates	Periphyton Group NPDES Permit Chester Creek TMDL	\$ 4,993.75
1419	Unruh, Turner, Burke & Frees	Appeal to EHB	\$ 3,305.00
1421	Blooming Glen Contr.	Washington Street PS	\$ 2,942.49

TRUSTEE BALANCES (as of December 31, 2010)

Tapping Fee - \$ 5,057,417.08

BR&I - \$

John Scott – Would like the authority to consider paying for two muffin monsters for Westtown Way PS & Washington Street PS. Max will have specs available at the March meeting for approval at that time.

Mike Arnold requested that Max prepare an updated capital improvement list for review at next months meeting.

There being no further business, on motion by Dave Johnson, seconded by Frank Biasi, the meeting was adjourned at 8:12 p.m.

Respectfully submitted,

Tina Charron, Recording Secretary

Pages 3, 3 and 5 are BLANK

Item 8.01 Other Events

Artesian Water Company, Inc., the principal subsidiary of Artesian Resources Corporation, received a federal grand jury in connection with an investigation being conducted by the United States Attorney's Office in the Eastern District of Pennsylvania and the Environmental Protection Agency. The subpoena requests certain documents from Artesian Water principally from eight wastewater facilities in Pennsylvania formerly operated by personnel of Artesian Utility Development, Inc. (a wholly owned subsidiary of Artesian Resources). Artesian Resources was subsequently advised that Artesian Utility's operation of wastewater facilities in Pennsylvania is a subject of the grand jury investigation. Artesian Resources is fully cooperating in the investigation.

At this stage it is impossible to determine the ultimate outcome of the investigation and Artesian Resources is unable to predict what actions, if any, may be taken by the U.S. Attorney's Office or the Environmental Protection Agency.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on behalf by the undersigned hereunto duly authorized.

Date: January 21, 2011

ARTESIAN RESOURCES CORPORATION
By: /s/ David B. Spacht
David B. Spacht
Chief Financial Officer

FYI

Rick Smith

From: Rick Smith [rsmith@eastgoshen.org]
Sent: Wednesday, February 09, 2011 8:03 AM
To: 'Scott_Towler@URSCorp.com'; 'TDaily@pennoni.com'; 'sstump@miller-env.com';
'dbarbato@pennoni.com'; 'bronyack@miller-env.com'; 'devans@brickhouse-
environmental.com'; 'mmiller@eastgoshen.org'; 'devans@brickhouse-environmental.com';
'jgoldberg@miller-env.com'
Cc: 'eamil@aol.com'; 'Jyahraes@aol.com'; 'JBush@worthandcompany.com'
Subject: RE: RCSTP Filamentous Issue

Jesse

If you agree with Scott's recommendation call Univar, order the chlorine, (and what we need to add on the back end to remove the chlorine) and start the treatment.

I would suggest that we begin by treating only one of the SBR reactor tanks to see what happens.

Rick Smith, Township Manager
East Goshen Township
610-692-7171

From: Scott_Towler@URSCorp.com [mailto:Scott_Towler@URSCorp.com]
Sent: Tuesday, February 08, 2011 6:26 PM
To: TDaily@pennoni.com; sstump@miller-env.com; dbarbato@pennoni.com; bronyack@miller-env.com;
devans@brickhouse-environmental.com; rsmith@eastgoshen.org; mmiller@eastgoshen.org; devans@brickhouse-environmental.com; jgoldberg@miller-env.com
Cc: eamil@aol.com; Jyahraes@aol.com; JBush@worthandcompany.com
Subject: RCSTP Filamentous Issue

All:

Attached is a memo, with collective input from Tim and Jesse, regarding the poor settleability issues. Also attached is the microscopic exam performed by Michael Gerardi over the weekend.

As suspected, Norcardiofrom bacterium is the main factor resulting in the foam and poor settleability. Another bacterium, *microthrix parvicella* is present, however, not as severe as Norcardiofrom.

Based on Tim previous email with sodium hypochlorite feed rates, SBR 4 is expected to require approximately 20 gallons per day. I suggest Miller Environmental, Inc. take lead with the Municipal Authority towards procuring the supplies and preparing the pumping system to begin improving the settleability. I'm available to assist as requested.

Some additional reading material:

Scott A. Towler, PE, SEO, LO
Water/Wastewater Program Manager

URS Corporation
335 Commerce Drive, Suite 300
Fort Washington, PA 19034-2720
Tel: 215.367.2500
Direct: 215.367.2581
Mobile: 484.401.4198
Fax: 215-367-1000
scott_towler@urscorp.com

This e-mail and any attachments contain URS Corporation confidential information that may be proprietary or privileged. If you receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.

Memorandum

To: Rick Smith, East Goshen Township Manager

CC: Jesse Goldberg, Miller Environmental, Inc.
Scott Stump, Miller Environmental, Inc.
Tim Daily, P.E., Pennoni Associates
Dave Evan, Brickhouse Environmental, Inc.

From: Scott A. Towler, P.E.,

Date: 2/8/2011

Re: Ridley Creek Sewage Treatment Plant (RCSTP)

The following action plan is recommended to improve settleability, reduce solids loss, aid in removing the significant accumulations of filamentous bacteria currently present, and restores the RCSTP sequencing batch reactor treatment (SBR) system's operational design set points.

1.0 Problem

Microscopic observations suggest that foaming and poor settleability of the activated sludge is the result of excessive amounts of filamentous bacteria. The filamentous bacterium suspected to be present in excessive quantities is referred as Norcardioform.

2.0 Initial Plan

The initial plan is to step is to verify if Norcardioform is present and adversely affecting settleability of the activated sludge. Identification of additional types of bacterium contributing to poor settleability will be identified. If present, addition of sodium hypochlorite solution will be added to the SBR reactors kill the filamentous bacterium.

1. Collect samples of the SBR liquid phase and surface foam and perform a microscopic examination checking for the presence of and type of filament types. Should Norcardioform bacterium be verified to be

present, than chlorination should be attempted. Anticipation would be that a potential cause such as High Grease/Oil or Low Organic Loading Rate could be matched to the type of filaments identified.

2. Utilize the existing SBR alum feed pumps to supply a known volume of liquid sodium hypochlorite solution, 12.5 % w/v, during the beginning of the React Phase. See attached spread sheet.
 - a. Sodium hypochlorite solution addition will include all batches.
3. Utilize the existing alum feed pump and static mixer connected to the disc filter feed influent piping to provide a liquid sodium bisulfate, 38% w/v, solution.
4. Prior to the addition of sodium hypochlorite to the SBR, the following data will be collected and used to determine the sodium hypochlorite feed rate and volume;
 - a. MLSS
 - b. MLVSS
 - c. 30 minute Settled Sludge Volume
 - d. Ammonia as nitrogen
 - e. Nitrite
 - f. Nitrate
 - g. Microscopic examination
5. Upon the commencement of addition of sodium hypochlorite, the following tests shall be performed to monitor the nitrification process.
 - a. 30 minute Settled Sludge Volume
 - b. Ammonia as nitrogen
 - c. Nitrite
 - d. Nitrate
 - e. Microscopic examination
6. One the third day of chlorination, the following test will be performed to monitor progress;
 - a. MLSS
 - b. MLVSS
 - c. 30 minute Settled Sludge Volume
 - d. Ammonia as nitrogen
 - e. Nitrite
 - f. Nitrate

- g. Microscopic examination
7. Attainment of the goals to improve settleability, reduce solids loss, significantly remove the accumulations of filamentous bacteria, and restore the SBR original design set points will be measured as:
- a. 30 minute settled sludge volume with 200 to 300 ml/L
 - b. SVI of 120 or less
 - c. No floating sludge

3.0 Notes on Chlorination

Practical Control Methods for Activated Sludge Bulking and Foaming, Practical Control Methods For Activated Sludge Bulking and Foaming, Part 1

<http://www.dec.ny.gov/chemical/34373.html>

New York State Department of Environmental

Recommended chlorination dosage is 2-4 pounds per 1000 pounds VMLSS. Starting at a lighter dosage is recommended.

Signs of over chlorination are a turbid (milky) effluent, a significant increase in effluent TSS, a loss of the higher life forms (protozoa), and a reduction in BOD removal. It is normal to see a small increase in effluent suspended solids and BOD5 when using chlorine for bulking control

Microscopic examination of the activated sludge during chlorination is recommended to control chlorine application. Chlorine effects on filaments include, in order: a loss of intracellular sulfur granules (in those filaments that have these); cell deformity and cytoplasm shrinkage; and finally filament lysis. For filaments that don't have a sheath, the sludge SVI usually declines within a few days of chlorine use, if the dosage and frequency requirements are met. For sheathed filaments, the sheath is not destroyed by chlorine. Here, sludge settleability remains poor until the sheaths are washed out of the system by sludge wasting, which requires 1-2 sludge ages. Chlorine use for sheathed filaments should be stopped when mostly empty sheaths remain (60-80% of filaments) and not continued until the SVI falls, which can result in over chlorination.

4.0 Long term plan

The development of long term solutions for the management of the foam and poor settleability problems will be based on the cause of this filamentous outbreak. Foam on the top of an SBR basin is common. The foam should be tan / yellow in color and tend to occur in the fall and winter months.

Heavy brown foam which is present may be the result of elevated oil and grease concentrations, fatty acids, low organic loadings, low food to mass ratio and temperature.

Routine monitoring the activated sludge process for temperature, dissolved oxygen, food to mass ratio, organic loading, sludge age and microscopic exams is recommended. Process control testing to monitor nitrogen and phosphorus concentrations is also recommended.

Addition of aluminum sulfate solution to the SBRs may aid towards minimizing the adverse impacts of *Microthrix parvicella* bacterium during routine operations.

Development of protocol for determining the removal frequency of oil and grease build up from the influent pump station wet well should be developed. In addition, development of a baseline oil and grease loading to the SBRs is suggested for comparison purposes.

Development of procedures and frequencies for removal of excessive foam and scum build-up from the SBR tank surface is recommended.

Microscopic Analyses
RC SBR 1 & 4 and RC Foam
Sampling Date: 04 February 2011

SBR # 1 and 4

Floc Characterization & Filamentous Organisms

Most floc particles were small (> 150 µm) and medium (150 to 500 µm) in size and golden-brown in color. Due to copious growth of filamentous organisms, most floc particles were irregular in shape.

As revealed through phase contrast microscopy and methylene blue staining, most floc particles were weak in structure. Weak floc particles possess floc bacteria that are loosely adjoined.

Insignificant interfloc bridging and insignificant open floc formation were observed. Interfloc bridging is the joining in the bulk solution of the extended filamentous organisms from the perimeter of two or more floc particles. Open floc formation is the scattering of the floc bacteria in many small groups along the lengths of the filamentous organisms. Insignificant interfloc bridging and insignificant open floc formation do not adversely affect solids settleability.

Numerous filamentous organisms were found within the floc particles, extending from the perimeter of the floc particles and free-floating in the bulk solution. Most filamentous organisms were either < 20 µm or 100 to 200 µm in length. Free-floating filamentous organisms interfere with acceptable solids settleability.

The relative abundance of the filamentous organisms was rated as “6” on a scale of “0” to “6” with “0” being “none” and “6” being “excessive.” A rating of “6” can be described as “filamentous organisms observed in most floc particles; filamentous organisms more abundant than floc particles; or filamentous organisms growing in large numbers in the bulk solution.” At a relative abundance rating of “6” the filamentous organisms would adversely affect solids settleability.

There were two significant filamentous organisms. These organisms, their dominance or rank and their relative abundance ratings are listed in the following table:

Filamentous Organism	Rank	Relative Abundance
Nocardioform	1	“6”
<i>Microthrix parvicella</i>	2	“3”

Operational conditions associated with the rapid and undesired growth of Nocardioform and *Microthrix parvicella* in the activated sludge process are listed in the following table:

Operational Condition	Filamentous Organism	
	Nocardioform	<i>Microthrix</i>
High MCRT (> 10 days)		X
Fats, oils and grease	X	X
High pH (> 7.4)		X
Low DO and High MCRT		X
Low F/M (< 0.05)	X	X
Low nitrogen or phosphorus	X	
Low pH (< 6.8)	X	
Readily degradable cBOD	X	
Slowly degradable cBOD	X	X
Winter proliferation		X

Nocardioform and *Microthrix parvicella* are foam-producing filamentous organisms. Foam typical of these organisms is viscous and chocolate-brown. Foam production by Nocardioform is through 1) the release of lipids by living organisms that coat the floc particles and capture air and gas bubbles and 2) the release of biosurfactants by dead organisms. Foam production by *Microthrix parvicella* is through the release by hydrophobic secretions that coat the floc particles and capture air and gas bubbles. Often, these filamentous organisms are found in high abundance in foam and serve to “reseed” the mixed liquor. Therefore, foam as well as recycle streams to the mixed liquor should be examined for undesired filamentous organisms growth and treated, if these organisms are found in undesired numbers.

Insignificant particulate material and insignificant dispersed growth were observed. The relative abundance rating for particulate material was “insignificant,” and the relative abundance rating for dispersed growth also was “insignificant.” These ratings are indicative of desired removal of “fine” solids from the bulk solution.

Zoogloal growth or viscous floc was not observed. Zoogloal growth is the rapid and undesired growth of floc-forming bacteria. Zoogloal growth results in the production of weak and buoyant floc particles. Often, Zoogloal growth is accompanied by the production of billowy white foam.

Most floc particles tested negatively to the India ink reverse stain. The negative test results are indicative of the presence of adequate nutrients at the time of sampling.

SBR Foam

Characterization

Wet mounts and stained smears of foam revealed the presence of a copious growth of Nocardioform. The relative abundance of the growth was greater than the relative abundance of growth of the filamentous organism in mixed liquor. Also, *Microthrix*

parvicella was commonly observed in foam. Nocardioform and *Microthrix parvicella* are responsible for foam production.

Microthrix parvicella

Microthrix parvicella is a filamentous bacterium possessing the following characteristics:

- not branched;
- immobile;
- bent/twisted filaments, free in the water or in/around the flocs;
- filament length often < 200 µm;
- cell diameter ca. 0.5 µm;
- usually no attached growth;
- no sheath;
- septa not clearly visible;
- no sulphur storage;
- Gram positive;
- Neisser positive (poly-P granules). These granules become smaller if the growth stagnates.

M. parvicella resembles N limicola I. However, this latter organism forms more robust filaments and stains grey-violet with Neisser staining.

Occurrence in activated sludge

M. parvicella commonly occurs in low loaded domestic treatment plants. This filamentous bacterium is the most important cause of bulking sludge in many countries (including the Netherlands), and is also frequently responsible for scum formation. Transport of surplus sludge containing many M. parvicella filaments to the sludge digestion tank can also cause scum to arise in this tank. The population size of M. parvicella shows a marked seasonal pattern: the population is at its maximum at the end of the winter and at its minimum in summer.

The following process conditions are favourable to the growth of M. parvicella:

- sludge loading level < ca. 0.2 kg BOD/kg MLSS.day;
- waste water containing a substantial amount of higher fatty acids, such as oleic acid. This is always the case with normal domestic waste water;
- circumstances in which the fats/lipids present in the influent are hydrolysed before they reach the aeration tank. This releases the higher fatty acids. Consequently, a long hydraulic retention time in the sewer, the primary sedimentation tank or in the anaerobic zone with Bio-P processes is favourable to M. parvicella;
- a low oxygen level in the aeration tank;
- a large (> 40% of the total volume) anoxic zone in the aeration tank;
- water temperature of < ca. 15°C. M. parvicella grows principally in the late autumn and winter;
- supply of reduced sulphur and nitrogen compounds is also a possible cause. On account of this, recycling of water from the sludge dewatering unit is 'suspect'. This combination means that the process conditions in plants for nutrient removal are extremely favourable to the growth of M. parvicella. It hardly ever occurs in industrial treatment plants.
- nutrient removal conditions favour growth of M. parvicella, particularly when nitrification is incomplete.

Control strategies

1. Dosing with aluminium salts (3.5 g Al/kg MLSS. day). Up to now, this is the only method that has a "guaranteed" effect and which hardly ever negatively influences the desired treatment results. However, a reduction in the average floc size must be taken into account.
2. Strong reduction of the retention time in anoxic zones in the plant. This action is often not possible, depending upon the need for extended denitrification.
3. This is also valid for a major reduction of the sludge age (loss of nitrification).
4. A mixing phase (a few minutes) of raw waste water and returned sludge - before they reach the aeration tank - followed by alternated anoxic and aerobic process conditions (Bio-Denitro). This method is effective for controlling *M. parvicella*, but stimulates the development of Type 0041, which does not grow quite so massively and does not contribute to scum arising, however.
5. Experience with various types of selectors for controlling *M. parvicella* have not been consistent up to the present. A non-aerated selector has been introduced between the anaerobic zone (Bio-P) and the anoxic tank in some treatment plants in The Netherlands. Experiences with this configuration have been positive.

Filamentous Bacteria *Microthrix Parvicella*

Microthrix parvicella is a type of filamentous bacteria found mainly in activated sludge processes. It is commonly found in systems where there is a low food to mass concentration, low DO, foaming (made worse if the system has low dissolved oxygen and/or septicity), old sludge, or cold temperatures. It is common in systems where there is no primary clarifier and they have an affinity for oil and grease. Without primary clarification, most of the oils and greases are able to enter the aeration basins. *Microthrix parvicella* has an affinity for high fatty acids, specifically oleic acid. They can sometimes be controlled by intermittent feeding.

Microthrix parvicella should be identified by filamentous bacteria identification by trained personnel. By using activated sludge microscopic examination techniques, microbiologists will look for the following characteristics of this filament: irregular-shaped trichomes that are usually inside the floc and sometimes surrounding the floc or dispersed in the bulk water, spaghetti-like appearance, and non-motile. Individual cells are not apparent. This filament ranges from 5 to 200 microns in length and around 0.8 microns in diameter. This filament has no sheath, no attached growth, and no branching. *Microthrix parvicella* has a strong Gram positive and Neisser negative staining reactions. Even though it is Neisser negative, it can have Neisser positive granules.

Microthrix parvicella is one of the common causes for activated sludge bulking. It is more common in the northern part of the United States because this filament tends to like colder temperatures. It is known to occur in industrial wastewater treatment plants but is more common in domestic activated sludge systems, primarily in slaughterhouse, dairy and pharmaceutical wastes. *Microthrix parvicella* also causes activated sludge foaming just like the filamentous bacteria *Nocardioforms*. It occurs as thick, stable, brown foam or "scum" inches to many feet thick on aeration basin and final clarifier surfaces. *M. parvicella* foam is less viscous and has a lighter brown color than *Nocardial* foam. Normal scum traps (too small) and water sprays (too weak) may be useless to control this type of foam. This foam consists of activated sludge solids (flocs) containing large amounts of *M. parvicella* filaments growing from their surface and is quite stable, compared to most other foams, due to the physical "interlocking" of the *M. parvicella* filaments. These foams are easy to diagnose microscopically. They are dominated by spaghetti-like, Gram-positive filaments and a simple Gram stain of the foam is all that is needed. The analysis should include comparison to the underlying MLSS (prepare both samples for Gram staining on the same slide). True *M. parvicella* foam will contain 10 fold or more *M. parvicella* than the underlying MLSS. Although there has been some success in RAS chlorination, chlorination is difficult most of the time since this filament causes foaming and, therefore, will float on the surface of the basin where it is protected from the chlorine solution. Spraying a bleach solution over the foam can help at times. However, the root cause for the bulking has to be corrected to prevent the filament from returning. Physical control of foams is most widely practiced using enlarged surface scum traps and forceful water sprays (often containing chlorine) and disposal of this material separate from any process that could recycle it back to the aeration basin system.

**Characterisation and control of *Microthrix Parvicella*
in a laboratory-scale activated sludge plant (Ph.D. Research)**

Researcher: Miguel Orbaneja

Email: morbaneja@yahoo.es

Telephone: 0121 414 5140

Supervisors: Dr CM Carliell-Marquet and Dr L Burrows

Microthrix parvicella is arguably the most common filamentous bacterium responsible for solids separation problems in modern activated sludge systems. Difficulties in growing this micro-organism under a highly controlled environment have often hindered physiological studies and the subsequent development of control strategies.

In this study, lab-scale experiments were carried out in a controlled temperature room by operation of two sequencing batch reactors (SBRs). Low temperatures (10°C), a long solids retention time (SRT) of approximately 18 days and low food-to-micro-organism ratio (F:M) at a target of 0.08 kg BOD/kg MLSS per day, were provided to enhance the growth of *M. parvicella*.

Two synthetic wastewaters were used to investigate the proliferation of *M. parvicella* under different dissolved oxygen (DO) environments. Glucose, dextrin and starch were the main carbon sources of the initial sewage (sugar-based substrate) and were replaced by sodium oleate to produce a substrate rich in long chain fatty acids (LCFA).

The temperature effect was also examined by providing sudden winter conditions (10°C) to a weak and fragmented source of *M. parvicella*, obtained in the British summertime, and returning to its original temperature (17°C) after three sludge ages.

It was found that low temperature (10°C) and the presence of long chain fatty acids in the mixed liquor are essential for its proliferation and, along with predominantly aerobic conditions preceded by a short anoxic period, appeared to provide the optimum growing environment.

Finally, the effectiveness of two different chemicals to control *M. parvicella* was assessed under these growing conditions. DOSFOLAT@XS did not achieve successful control whereas polyaluminium chloride (PAX) proved to be highly effective.

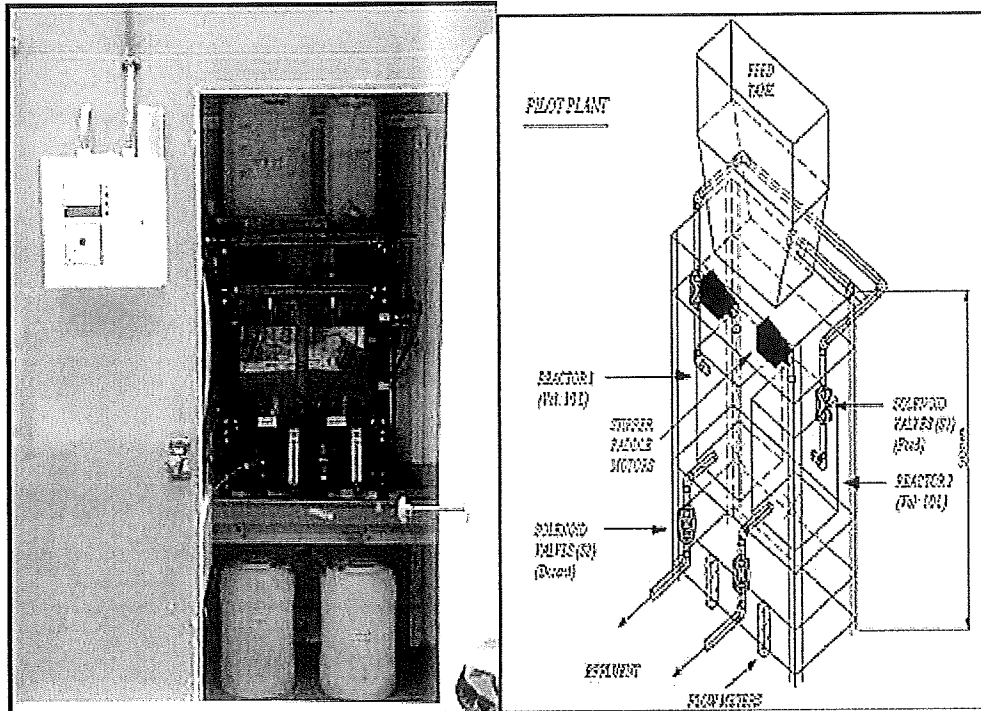


Figure 1: Laboratory scale SBR plants

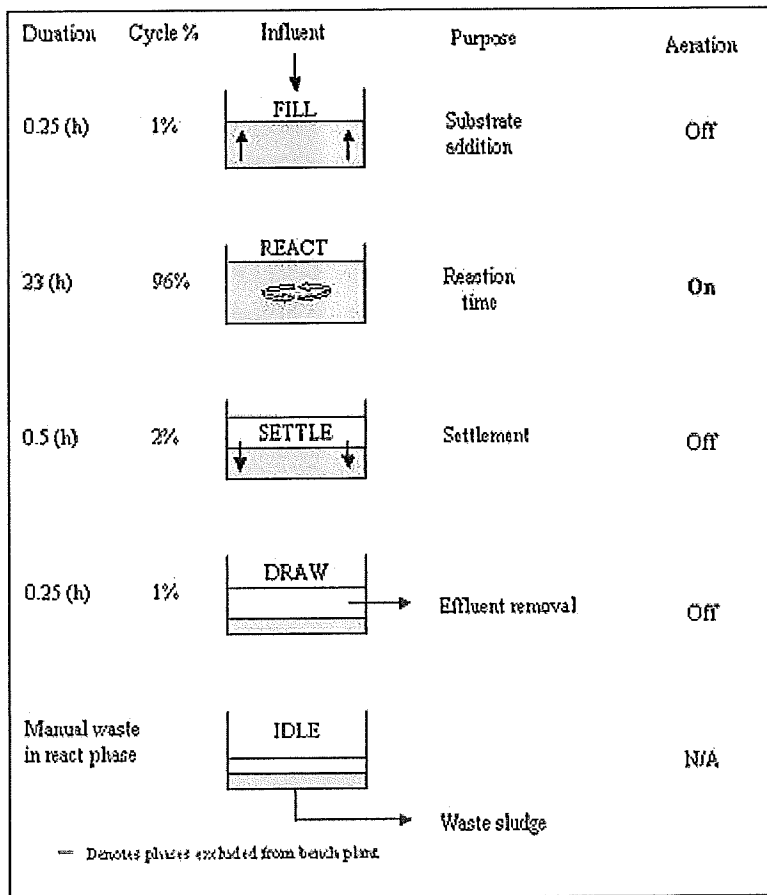


Figure 2: Typical SBR operating sequence

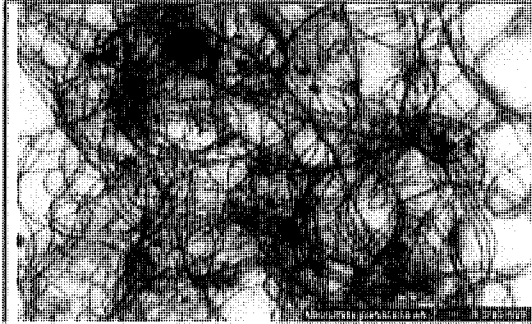


Figure 3. Temperature experiments. Gram staining microphotograph of *M. parvicella* after 7 weeks at 10°C, showing strong growth and dominance of the activated sludge biota by *M. parvicella*.



Figure 4. Temperature experiments. Gram staining microphotograph of *M. parvicella* after 4 weeks at 17°C showing a dramatic decrease in filament abundance, much shorter, 'broken' filaments and the appearance of 'empty zones' within the filaments.

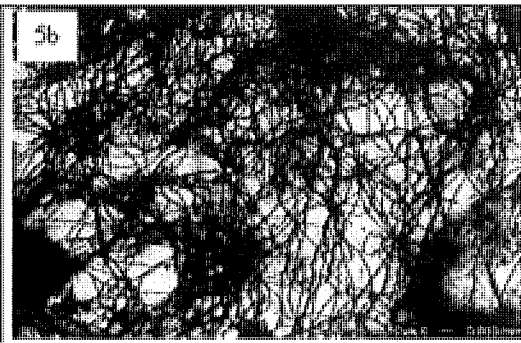
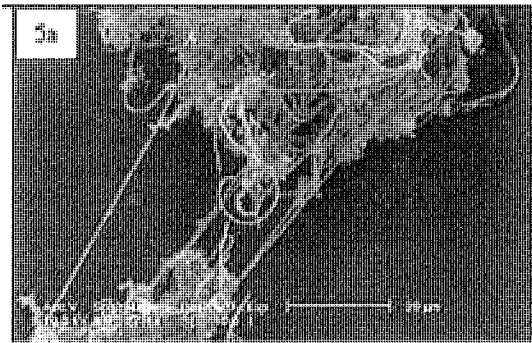


Figure 5a & b. ESEM microphotograph (5a) and gram staining reaction (5b) of *M. parvicella* before PAX-18 dosage, showing dominance of the activated sludge by *M. parvicella*.

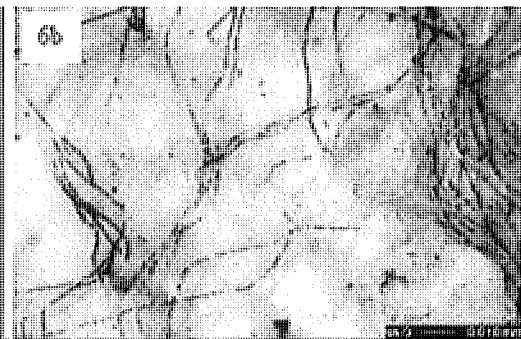
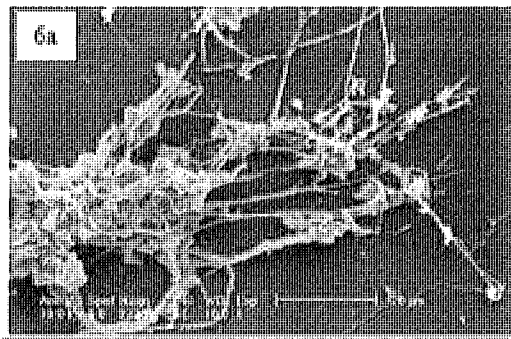


Figure 6a&b. ESEM microphotograph (6a) and gram staining reaction (6b) of *M. parvicella* after one sludge age dosing PAX-18, showing reduced dominance by *M. parvicella* with 'weaker' filaments, variable gram staining reaction and empty zones.

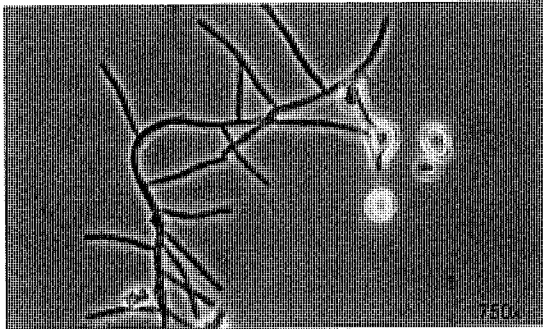
Nocardioforms

Resembles: -

Probes: phylum specific probe: HGC69a [6] and species specific probe: GOR0596 [1], see remarks

Frequency occurrence (200 samples; 175 plants):

- observed with a FI \geq 1 in 24 samples
- observed with a FI \geq 3 in 5 samples



Skermania piniformis



Gordonia sp.

Characteristics

- short, truly branched filaments, frequently occurring in small 'colonies' of tangled filaments;
- inside the flocs as well as free in the liquid between the flocs;
- filament length variable but usually $< 200 \mu\text{m}$;
- cell diameter $0.6 - 2.0 \mu\text{m}$, depending on the morphotype present;
- septa visible in more robust species;
- more or less square cells;
- no sulphur storage, but other stored granules might be present;
- usually Gram positive, but Gram variable morphotypes have been observed as well;
- only Neisser positive if poly-P-granules are present;

Remarks

Nocardioforms, or mycolata or mycolaic acid containing *Actinomycetes*, belong, just like "*Candidatus Microthrix parvicella*" and "*Candidatus Microthrix calida*" to the phylum *Actinobacteria* and class *Actinomycetes*. The *Actinobacteria* were formerly known as high mol % G+C Gram positive bacteria. Unfortunately, the phylum specific probe HGC69a does not target all members of the *Actinobacteria*. Positive signals with this probe and the species specific probe GOR0596 were obtained in 53 % and 20 % respectively of the samples where nocardioforms were observed with a FI \geq 1 by conventional microscopy. Other species specific nocardioforms probes were not applied during the Dynafilm project.

The group of the nocardioforms includes many different species [4]. Five 'morphotypes' were observed during the Macobs and Dynafilm projects. Except for *Skermania piniformis*, a reliable morphology based identification and classification is not possible, however. Probes are now available for a limited number of species. GOR0596, a probe by which *Gordona amarae* among other *Gordonia sp.* can be identified, was used during the Dynafilm project.

Physiology

The reader is referred to the literature [e.g. 5 or 7] for detailed information about this subject. Generally speaking, it can be stated that nocardioforms can use a broad spectrum of substrates, including complex compounds, for their growth. Hydrophobic substrates (lipids, olive oil, etc.) favour their growth, particularly. Most strains isolated from activated sludge require molecular oxygen for their growth.

Occurrence in activated sludge

Nocardioforms are notorious for their role in foaming followed by scum formation in activated sludge plants, especially in WTPs where the water temperature is higher than about 15 °C. Due to their selective flotation they enrich themselves at the water surface. Consequently, they are not removed with the surplus sludge, which implies that the population size is not controlled by the sludge age applied. Transport of scum into the sludge digestion tank will also cause a scum layer to occur in this tank. The negative effect on the settling velocity of the flocs is usually small. The following process conditions are favourable for the growth of nocardioforms:

- fats or other hydrophobic components in the influent;
- surface active materials in the influent;
- internal recycling of floating material;
- water temperature higher than approximately 15°C;
- ???

The question marks indicate that the available knowledge is still incomplete. Gram positive bacteria often have a hydrophobic cell surface through which fats bind well to their surfaces and thereby can be absorbed from the water. Fats and surface active compounds are always present in domestic waste water and also in many industrial effluents. In spite of this, nocardioforms are not always present, even at higher water temperatures. This can be partially explained by the sludge load applied: Nocardioforms are usually found at somewhat higher sludge loading levels (0.1 - 0.7 kg BOD/kg MLSS.day). At lower sludge loadings, other Gram positive filamentous bacteria such as "*Candidatus M. parvicella*" are present, which also use the hydrophobic compounds entering the WTP. Floc forming bacteria that can use this substrate also exist. It is not yet known which factors are decisive in the competition for this substrate.

During Macobs and Dynafilm, large populations were observed in WTPs treating wastewater from chemical, fish, rendering and food industries. Thus, it is not possible to correlate the occurrence of nocardioforms with a specific wastewater.

Control options

1. Good 'house-keeping'.
2. Systematic skimming , followed by removal/destruction of scum. This is by far the most effective option. Scum should never be internally recycled (for example to the primary sedimentation tank). In case of very persistent and massive foam and scum, a separate flotation unit can also be considered for 'separating' the nocardioforms from the sludge.
3. A drastic reduction of the sludge age is sometimes effective, but is not possible if extensive nitrification is required.
4. Dosing compounds which can change the cell surface from hydrophobic to hydrophilic (Al-salts, certain clay types) might be effective.
5. Reduction of the concentration of fats and so on, in the influent of the WTP.
6. Controlling symptoms, viz. applying physical or chemical methods aimed at a destruction of the filaments or at improving the settling velocity of the flocs by increasing their weight.

References for further reading about process control: 2, 3, 5 and 8.

References

1. De los Reyes, F. L., W. Ritter and L. Raskin (1997) Group-specific small-subunit rRNA hybridization probes to characterize filamentous foaming in activated sludge systems. *Appl. Environ. Microbiol.* **63** (3), 1107-1117.
2. Eikelboom, D. H. (2000) *Process control of activated sludge plants by microscopic investigation*. IWA Publishing, London, UK.
3. Jenkins, D., M. G. Richard and G. T. Daigger (2004) *Manual on the causes and control of activated sludge bulking, foaming and other solids separation problems*. IWA Publishing, London, UK.
4. Kämpfer, P. and M. Wagner (2002) Filamentous bacteria in activated sludge: current taxonomic status and ecology. In: *The Encyclopedia of Environmental Microbiology*. (Bitton, G. ed). John Wiley & Sons, Inc., New York, USA, pp. 1287-1306.
5. Lemmer, H und G. Lind (2000) *Blähschlamm, Schaum und Schwimmschlamm – Mikrobiologie und Gegenmassnahmen*. F. Hirthammer Verlag, München, Germany.

6. Roller, C., M. Wagner, R. Amann, W. Ludwig and K. H. Schleifer (1994) *In situ* probing of Gram positive bacteria with high DNA G+C content using 23S rRNA-targeted oligonucleotides. *Microbiology* **140**, 2849-2858.
7. Seviour, R. J. and L. L. Blackall (1999) *The microbiology of activated sludge*. Kluwer Publishers, Dordrecht, The Netherlands.
8. Tandoi, V., D. Jenkins and J. Wanner (2005) *Activated sludge separation problems – Theory, Control Measures, Practical Experiences*. IWA Publishing, London, UK.

Slide show images

Including one morphotype observed during a previous project, micrographs of six morphotypes are included in the slide show:

- 1-9: Nocardioforms-1: diameter ca. 0.7 μm and hardly visible septa; probably *Gordona amarae*
 - 1-6: morphology
 - 7-8: Gram stained
 - 9: FISH image; probe GOR-0596
- 10-18: *Skermania piniformis*. Characteristic V-shaped branching; diameter ca. 0.9 μm
 - 10-11: low magnification
 - 12-17: morphology at a high magnification
 - 18: Gram stained
- 19-23: Nocardioforms-3: short branches, almost perpendicular to the main branch; diameter ca. 0.7 μm and septa hardly visible
 - 19-21: morphology at a high magnification
 - 22: Gram stained
 - 23: Neisser stained \rightarrow many poly-P granules
- 24-32: Nocardioforms -4: less frequently branched, Gram variable and a diameter of about 1.2 μm
 - 24-29: morphology at a high magnification
 - 30: Gram stained \rightarrow Gram variable
 - 31: Neisser stained \rightarrow poly-P granules
 - 32: FISH image; HGC probe
- 33-37: Nocardioforms (?) -5: Robust, less frequently branched filaments with a diameter of about 2.0 μm . Gram variable and septa clearly visible. The features of this morphotype are rather uncommon for nocardioforms. A tiny fungal species is the alternative option.
 - 33-34: morphology at a low magnification
 - 35-36: morphology at a high magnification
 - 37: Gram stained
- 38-39: Nocardioforms -6: Cells largely filled with granules; diameter ca. 1.5 μm
 - 38: branched filaments inside a sludge floc
 - 39: FISH image; probe HGC
- 40-41: Miscellaneous
 - 40: filaments almost covered by attached growth
 - oil droplets adhering to a filament

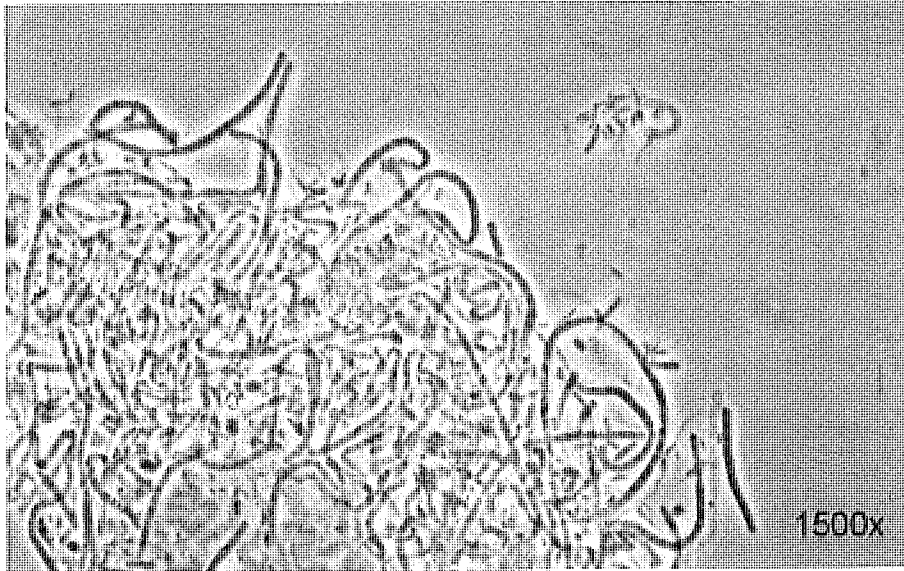
"*Candidatus Microthrix parvicella*"

Resembles: "*Cand. M. calida*" (see remarks below) and *N. limicola* I (filaments stain completely grey-violet with Neisser)

Probes: not targeted by the phylum specific probe HGC69a; species specific probes: MPA-645 [6] and MPAall-1410 [9]

Frequency occurrence: (200 samples; 175 WTPs):

- observed with a FI ≥ 1 in 14 samples
- observed with a FI ≥ 3 in 3 samples



Characteristics

- bent/curled filaments, often tangled;
- free in the liquid phase as well as inside or around the flocs;
- filament length variable;
- filaments not branched;
- not motile;
- cell diameter 0.5 – 0.6 μm ;
- no sheath;
- rarely significant attached growth;
- septa not clearly visible;
- no sulphur storage, but often poly-P-granules inside the cells;
- Gram positive;
- often Neisser positive (poly-P-granules), but as these granules are not always present, filaments might stain Neisser negative.

Remarks

Two *Microthrix parvicella* resembling morphotypes can be distinguished by conventional microscopy in sludges from industrial wastewater treatment plants [4, 9]. Both are characterised by curled and tangled, obvious Gram positive filaments, but they differ from each other in cell diameter : 0.5 – 0.6 μm (= "*Candidatus Microthrix parvicella*") and ca. 0.3 μm (= "*Candidatus Microthrix calida*") respectively. Both *Microthrix* morphotypes have been obtained in pure culture. 16S rRNA gene sequence analysis revealed maximal 96.7 % sequence similarity between both species [9].

"*Candidatus Microthrix parvicella*" and "*Candidatus Microthrix calida*" are members of the phylum *Actinobacteria*, class *Actinomycetes* [2, 9].

Initially, only one *M. parvicella* probe (MPA-645) was available [6]. It turned out that *M. parvicella* resembling filaments present in industrial sludges frequently did not hybridise with MPA-645. Populations composed of tiny *M. parvicella* resembling filaments were nearly completely missed by applying FISH and even more robust *M. parvicella* filaments occasionally did not hybridise with MPA-645 either. To solve this problem, two new *Microthrix* probes have been developed during Dynafilm: MPAall-1410, a more general *Microthrix* probe and MPA-T1-1260, specific for "*Candidatus Microthrix calida*".

Nearly all *M. parvicella* resembling filaments in the industrial sludges tested gave a fluorescent signal with probe MPAall-1410. Therefore, it is more or less a universal *Microthrix* probe. By applying various combinations of the three probes now available, different *Microthrix* strains can be distinguished in the industrial sludges:

1. Positive FISH result with MPA-645 as well as with MPAall-1410, but not with MPA-T1-1260: the classical "*Candidatus Microthrix parvicella*".
2. Positive FISH results with MPA-T1-1260 and MPAall-1410, but not with MPA-645: the tiny *Microthrix* = "*Candidatus Microthrix calida*".
3. Positive FISH results with MPAall-1410, but not with MPA-645 and MPA-T1-1260: filaments morphologically very similar to "*Cand. M. parvicella*", but completely Neisser negative and with slightly thicker filaments.
4. Positive FISH results only with MPA-645. Morphologically this filament resembles the tiny "*Candidatus Microthrix calida*".

Physiology

Due to its rather peculiar nutritional requirements, "*Candidatus M. parvicella*" is difficult to cultivate in pure culture [3, 4, 12, 15]. It can only use long chain fatty acids (LCFAs) such as palmitic acid or oleic acid as a carbon source and for its energy supply [1, 11, 13]. In addition to this, pure culture studies have showed that this bacterium requires reduced nitrogen and sulphur compounds for its growth [13].

Its hydrophobic cell surface is a great advantage in the competition with other 'sludge bacteria' for the poor water soluble LCFAs entering the treatment plant. The LCFAs preferentially enrich themselves along hydrophobic surfaces. "*Cand. M. parvicella*" has a high storage capacity for LCFAs, excrete several exo-enzymes for LCFA degradation and is capable of taking up and storing this substrate in aerobic as well as in anoxic and anaerobic zones in a treatment plant [11]. All stored compounds are further metabolised in the aerobic and anoxic zones, where reduced sulphur and nitrogen compounds should be present to allow cell synthesis.

"*Cand. M. parvicella*" appears to be microaerophilic, which means that low oxygen concentrations (< 1.0 mg/l) favour its growth.

Pure culture studies [13] revealed an optimal growth rate at 22 °C, very little growth in the temperature range of 25-30 °C, but still a considerable growth at 7 °C.

Finally, "*Cand. M. parvicella*" needs only small amounts of substrate for maintenance, viz. to keep the cells alive during periods without influent supply.

This combination of the physiological features favours "*Cand. M. parvicella*" in its competition with the other 'sludge bacteria' for the available substrate.

However, "*Cand. M. parvicella*" grows relatively slowly [13] which imply that this bacterium cannot maintain itself in WTPs where a short sludge age is applied.

Occurrence in activated sludge

The classical "*Cand. M. parvicella*" commonly occurs in low loaded domestic treatment plants, in particular when nutrient removal conditions are applied. It will mainly occur in industrial plants if a mixed influent (domestic + industrial) is treated or when an industrial effluent rich in LCFAs (e.g. wastewater from slaughterhouses or fish industries) is discharged to the WTP. "*Cand. M. parvicella*" is the most important cause of bulking sludge in domestic plants in many countries and is also frequently responsible for foaming and scum formation. Transport of surplus sludge with a large "*Cand. M. parvicella*" population to the sludge digestion tank can also cause scum to arise in this tank. The

population size of "*Cand. M. parvicella*" shows a distinct seasonal pattern which has not yet been explained: the population size is at its maximum at the end of the winter and at its minimum in late summer/autumn.

The following process conditions favour "*Cand. M. parvicella*" [5]:

- sludge age > about 10 days;
- alternating aerobic, anoxic and anaerobic conditions, viz. nutrient removal conditions;
- waste water containing a substantial amount of LCFAs, such as oleic acid. The size of the LCFAs fraction in common domestic wastewater frequently amounts to 20-30 % of the COD;
- conditions in which the fats/lipids present in the influent are hydrolysed before they reach the aeration tank. This releases the LCFAs, which improves their availability to "*Cand. M. parvicella*". Consequently, a long hydraulic retention time in the sewer, the primary sedimentation tank or in the anaerobic zone (Bio-P process) is favourable to "*Cand. M. parvicella*";
- an oxygen concentration < 1.0 mg O₂/l in the aerobic zone of the treatment plant;
- a large (> 40% of the total volume) anoxic zone in the aeration tank;
- water temperature below ca. 15°C. "*Cand. M. parvicella*" grows principally in the late autumn and winter;
- incomplete nitrification in the aerobic zone of the WTP;
- supply of reduced sulphur and nitrogen compounds with recycled water from the sludge dewatering unit.

This combination means that the process conditions in nutrient removal plants extremely favour "*Cand. M. parvicella*".

Microthrix resembling filaments were observed in about 25 Dynafilm samples:

- Small "*Cand. M. calida*" populations (FI ≤ 2) were present in four WTPs treating effluent from fish industry, calf manure (2x) and chemical wastewater, respectively. High temperatures (30-38 °C) are very common in at least three of these plants. This might explain the occurrence of "*Cand. M. calida*" in these plants. The occurrence of tangled "*Cand. M. calida*" filaments inside the flocs suggests that lysis products of other bacteria might support growth of this bacterium.
- Except for two WTPs treating calf manure, the classical "*Cand. M. parvicella*" was only observed in considerable amounts in WTPs treating a mixture of domestic and industrial wastewater.
- The "*Cand. M. parvicella*" resembling filaments which only hybridised with probe Mpaall-1410 were mainly observed in WTPs treating chemical wastewater and, occasionally, if effluents from food or textile industries were received. This unknown species was observed in 6 samples, two times with a FI ≥ 3.

Control options

1. Dosing aluminium salts (2 - 3.5 g Al/kg MLSS. day) in the recycled activated sludge flow for at least three weeks [5]. Positively charged polyaluminium (Al³⁺) is recommended for *Microthrix* control. Up until now, this has been the only method that has an almost "guaranteed" effect and which hardly ever negatively influences the treatment results. Any scum/foam will usually disappear within a couple of days. It will take about two weeks before the sludge settling properties start to improve. However, a reduction in the average floc size must be taken into account.
2. Strong reduction of the retention time in anoxic zones in the plant. This action is often not feasible in nutrient removal plants.
3. This is also valid for a major reduction of the sludge age (loss of nitrification).
4. Aiming at an almost complete nitrification in the aerobic zone of the treatment plant.
5. A mixing phase (just for a few minutes) of raw waste water and recycled sludge - before they reach the aeration tank - followed by alternating anoxic and aerobic process conditions (Bio-Denitro). This method is effective for largely controlling "*Cand. M. parvicella*", but stimulates the development of

Type 0041, which does not grow quite so massively and does not seriously contribute to the occurrence of scum, however.

6. Experiences with various types of selectors for controlling "*Cand. M. parvicella*" have not been consistent up to the present. A non-aerated selector has been introduced between the anaerobic zone (Bio-P) and the anoxic tank in several treatment plants in The Netherlands. Experiences with this configuration (BCFS process) have been positive [10].
7. Removal of hydrophobic compounds from the influent [14].

References for further reading about process control: 5, 7, 8 and 16.

References

1. Andreassen, K. and P. H. Nielsen (2000) Growth of *Microthrix parvicella* in nutrient removal activated sludge plants: Studies of *in situ* physiology. *Water Research* **34** (5), 1559-1569.
2. Blackall, L. L., E. M. Seviour, M. A. Cunningham, R. J. Seviour and P. Hugenholtz (1994) '*Microthrix parvicella*' is a novel, deep branching member of the actinomycetes subphylum. *Syst. Appl. Microbiol.* **17**, 513-518.
3. Blackall, L. L., H. Stratton, D. Bradford, C. Sjörup, T. Del Dot, E. M. Seviour and R. J. Seviour (1996) *Candidatus* *Microthrix parvicella* – a filamentous bacterium from activated sludge sewage treatment plants. *Int. J. Syst. Bacteriol.* **46**, 344-346.
4. Eikelboom, D. H. (1975) Filamentous organisms observed in activated sludge. *Water Research* **9**, 365-388.
5. Eikelboom, D. H. (2000) *Process control of activated sludge plants by microscopic investigation*. IWA Publishing, London, UK.
6. Erhart, R., D. Bradford, R. J. Seviour, R. Amann and L. L. Blackall (1997) Development and use of fluorescent *in situ* hybridisation probes for the detection and identification of *Microthrix parvicella* in activated sludge. *System. Appl. Microbiol.* **20**, 310-318.
7. Jenkins, D., M. G. Richard and G. T. Daigger (2004) *Manual on the causes and control of activated sludge bulking, foaming and other solids separation problems*. IWA Publishing, London, UK.
8. Lemmer, H und G. Lind (2000) *Blähschlamm, Schaum und Schwimmschlamm – Mikrobiologie und Gegenmassnahmen*. F. Hirthammer Verlag, München, Germany.
9. Levantesi, C., S. Rossetti, K. Thelen, C. Kragelund, J. Krooneman, D. Eikelboom, P. H. Nielsen and V. Tandoi (2006) Phylogeny, physiology and distribution of "*Candidatus* *Microthrix calida*", a new *Microthrix* species isolated from industrial activated WWTPs. Accepted for publication in *Environmental Microbiology*
10. Loosdrecht, M. C. M. van, F. A. Brandse and A. C. de Vries (1998) Upgrading of waste water treatment processes for integrated nutrient removal – the BCFS® process. *Water Sci. Techn.*, **37** (9), 209-217
11. Nielsen, P. H., P. Roslev, T. E. Dueholm and J. Nielsen (2002) *Microthrix parvicella*, a specialized lipid consumer in anaerobic – aerobic activated sludge plants. *Water Sci. Technol.* **46** (1-2), 73-80.
12. Rossetti, S., M. C. Tomei, P. H. Nielsen and V. Tandoi (2005) "*Microthrix parvicella*", a filamentous bacterium causing bulking and foaming in activated sludge systems: a review of current knowledge. *FEMS Microbiol. Rev.* **29** (1), 49-64.
13. Slijkhuys, H. (1983) *Microthrix parvicella*, a filamentous bacterium isolated from activated sludge: cultivation in a chemically defined medium. *Appl. Environ. Microbiol.* **46**, 832-839.
14. Slijkhuys, H. and M. H. Deinema (1988) Effect of environmental conditions on the occurrence of *Microthrix parvicella* in activated sludge. *Water Res.* **22**, 825-828.
15. Tandoi, V., S. Rossetti, L. Blackall and M. Majone (1998) Some physiological properties of an Italian isolate of "*Microthrix parvicella*". *Water Sci. Tech.* **37** (3/4), 1-8.
16. Tandoi, V., D. Jenkins and J. Wanner (2005) *Activated sludge separation problems – Theory, Control Measures, Practical Experiences*. IWA Publishing, London, UK.

Slide show images

- 1-4: morphology at a low magnification
- 5-11: morphology at a high magnification.
 - diameter somewhat variable
 - some attached growth might be present
 - image 7: plus Type IF-70
 - images 10 and 11: filaments which only hybridise with probe MPAall-1410 (= nr 3)
- 12-13: Gram stained
- 14-15: Neisser stained
- 16: FISH image with probe MPA-VIT (=MPAall-1410 + MPA-645)

BOARD OF SUPERVISORS

EAST GOSHEN TOWNSHIP

CHESTER COUNTY
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199**FYI**

February 7, 2011

Dear Property Owner:

The purpose of this letter is to inform you that Liberty Towers, LLC has amended their Zoning Variance application requesting relief from the zoning ordinance. The applicant is requesting that the Zoning Hearing Board grant relief from the requirements of the Township Zoning Ordinance to allow a Wireless Communications Facility use in the C-2 Zoning District. If granted the relief, the applicant proposes to construct a 150 foot tall Wireless Communications tower behind the Wawa store at 1594 Paoli Pike, West Chester, PA 19380.

The applicant is seeking relief from the following sections of the Township Zoning Ordinance:

1. A variance from section 240-15.B and 240-31.C(3)(h)[2][a][i] to allow construction and operation of the proposed facility in a C-2 zoning district;
2. A variance from section 240-15.G and 240-27.C(2)(b)[1] and 240-23.D(9) of the Ordinance to permit a rear yard setback of less than 50';
3. A variance from section 240-15.G to allow an increase of impervious cover on the project site above the maximum 45%;
4. A variance from section 240-23.A and 240-23.B(1) to permit two (2) principal uses and buildings on the subject property;
5. A variance from section 240-23.C and a variance or waiver from section 240-31.C(3)(h)[2][a][iii] to allow the proposed structure to exceed the height regulations specified in the Ordinance;
6. A variance from section 240-23.D(5)(a) to allow two (2) nonresidential principal buildings on the subject property separated by less than twice the minimum side yard requirement for each building;
7. A variance from section 240-31.C(3)(h)[2][c] to allow more than three(3) equipment cabinets to be installed on the proposed concrete pad;
8. A variance from section 240-31.C(3)(h)[2][f] to allow the base of the tower to be setback less than 40% of the tower height from the adjacent property line(s);
9. A variance and/ or waiver from section 240-31.C(3)(h)[2][o] to utilize existing parking spaces on the project site to service the proposed facility;

Pursuant to Township policy, property owners and residents within 1000 feet of the subject property are notified of Zoning Variance applications.

This application is scheduled to be discussed during the meetings outlined below, and is subject to change. Visit the Township website for current information:

February 16, 2011 - Planning Commission meeting: 7:00 P.M.

February 22, 2011 - Board of Supervisors meeting: 7:00 P.M.

March 3, 2011 - Zoning Hearing, 7:30 P.M.

BOARD OF SUPERVISORS
EAST GOSHEN TOWNSHIP

All meetings are held at the Township Building, are open to the public and are subject to change. This variance application is available for review at the Township Building during normal business hours. Please give me a call at 610-692-7171 or email me at mgordon@eastgoshen.org if you have any questions or need additional information.

Sincerely,



Mark A. Gordon
Township Zoning Officer

Cc: All Township Boards and Commissions
Kristin Camp, Esq. Township Solicitor (Via Email)
Mark Thompson, Esq. Zoning Hearing Board Solicitor (Via Email)
Richard J. Lemanowicz, Esq. (Via Email)