Kent Sewer Commission
Regular Meeting

December 13, 2016
4:30 P.M. Town Hall

Present: Elissa Potts, John Casey, Nicole Chase, Stan Jennings, Matt Palumbo and Susi Williams.

Also present: Bruce Adams, Bart Clark, Barbara Herbst and Butch Walsh.

Ms. Potts called the regular meeting of the Kent Sewer Commission to order at 4:30 p.m. The Pledge of Allegiance was recited.

Amend agenda/Approve agenda:
Mrs. Williams made a motion to approve the agenda, as submitted. Mr. Jennings seconded the motion and the motion carried.

Approval of Minutes:
Mr. Casey made a motion to approve the Regular Sewer Commission meeting minutes of October 11, 2016 minutes, as submitted. Mrs. Williams seconded the motion and the motion carried.

Public Communication:
Oral: None.
Written: None.

Report of Chairman:
Ms. Potts reported the following:

- Letter from Attorney Jeff Sienkiewicz regarding status of Kent Sewer Commission v. Kent Craft Village, LLC
- Mr. Money has removed the debris from the easement.

Mrs. Williams made a motion to drop the pending litigation against Kent Craft Village, LLC, because the debris has been removed. Mr. Jennings seconded the motion and the motion carried.

Report of Superintendent:
Mr. Walsh reported the following:

- 2.2 million gallons passed through the plant.
- Cleaning up before winter.

Report of Treasurer:
Ms. Herbst provided the following reports:

- Balance Sheet as of October 31, 2016
- Balance Sheet as of November 30, 2016
- Operating Account Ledger as of October 3, 2016
- Operating Account Ledger as of November 30, 2016
- Profit and Loss July through November 2016

RECEIVED FOR RECORD
KENT TOWN CLERK
2016 DEC 15 P 3:44
BY J. Bracey
TOWN CLERK

Mrs. Williams made a motion to approve the Operating Account Ledger as of October 31, 2016 and the Operating Account Ledger as of November 30, 2016, as submitted. Mr. Jennings seconded the motion and the motion carried.

Ms. Herbst provided a proposed 2016/2017 budget. After a brief discussion, which included the concept of the plant employees attending classes for continuing education, Mrs. Williams made a motion to approve the proposed 2016/2017 budget, as submitted. Mr. Jennings seconded the motion and the motion carried.

Mrs. Williams made a motion to approve a check for Oakwood Environmental Associates in the amount of $11,462. Mr. Jennings seconded the motion and the motion carried.

Report of Collector:
Ms. Devaux provided the Grand Ratebook Balance Sheet as of December 13, 2016. She stated that she sends out 300 bills, of that 318 are residential, 121 are commercial and 9 are restaurants. Ms. Devaux requested an updated definition of "restaurant." The Commission agreed that defining "restaurant" would be a starting point for the pending Ordinance update.

Report of Consulting Engineer:
Mr. Clark provided a written report.

Mr. Casey made a motion to accept and implement the recommendation of engineer Bart Clark for the re-use of the existing blowers, an update of the control system for the blowers to include timer operation, installing new diffuser grids in the aeration and digester tanks for an amount not to exceed $187,000 from the Capital Reserve Fund. Ms. Chase seconded the motion and the motion carried.

Mr. Casey made a motion to appoint Bart Clark of Oakwood Environmental Associates as Project Manager for the 'diffuser replacement project" at his normal stated rate of reimbursement. Ms. Chase seconded the motion and the motion carried.

2017 Regular Meeting Schedule:
Mrs. Williams made a motion to approve the proposed 2017 Regular Meeting Schedule for the Kent Sewer Commission, as submitted. Mr. Jennings seconded the motion and the motion carried.

Capital Plan:
No action.

2016/2017 Budget:
Presented and approved under Treasurer's Report.

Blower Project:
See Report of Consulting Engineer.

Website Update:
Nothing new to report.

Brookwoods:
Mr. Casey stated that he received a letter from Mr. Rorke dated December 8, 2016. Mr. Casey has drafted a letter to Mr. Rorke requesting a copy of the inspection report again.

Mrs. Williams made a motion to adjourn the meeting at 5:52 p.m. Ms. Chase seconded the motion and the motion carried.

Joyce Kearns
Administrative Assistant

These are draft minutes and the Kent Sewer Commission at the subsequent regular meeting may make corrections. Please refer to subsequent regular meeting minutes for possible corrections and approval of these minutes.

AGENDA

KENT SEWER COMMISSION
REGULAR MEETING

December 13, 2016
4:30 P.M. TOWN HALL

Regular Meeting

1. Call to order and Pledge of Allegiance

2. Elevate alternate

3. Amend agenda/approve agenda

4. Approval of Minutes
   a October 11, 2016 Regular meeting

5. Public Communication
   a Oral
   b Written

6. Report of Chairman

7. Report of Superintendent

8. Report of Treasurer

9. Report of Collector

10. Report of Consulting Engineer

11. New Business
    a 2017 Regular Meeting Schedule
    b Capital Plan

12. Old Business
    a 2016/2017 Budget
    b Blower project
    c Website Update

13. Adjourn

"An equal opportunity employer and service provider."

ALLINGHAM & READYOFF, LLC
ATTORNEYS AT LAW

November 16, 2016

Kent Craft Village, LLC
Attn: Justin Money
274 Segar Mountain Road
South Kent, CT 06785

Re: Kent Sewer Commission v. Kent Craft Village, LLC

Dear Mr. Money,

Please give me a call within the next few days to discuss whether or not this case can be resolved short of further contested legal proceedings.

Sincerely,

Jeffrey B. Sienkiewicz

JBS/jbs
pub\Kent\expansion\easements\Kent Craft\Kent Craft #5
cc: Elissa Potts, Chairman
Bart Clark, P.E.

emailed to E. Potts 11-30-16

PH 860.350.5454
FX 860.350.5457
54 BRIDGE STREET
NEW MILFORD, CT 06776
ALLINGHAMLAW.COM

Balance Sheet

Kent Sewer Commission

As of October 31, 2016

	Oct 31, 16	Oct 31, 15	$ Change
Checking/Savings			
1 USB	80,188.77	116,187.50	-35,998.73
2 USB Septage MMA #8052	190,275.02	108,643.72	81,631.30
3 USB Capital #3880	625,764.13	605,478.07	20,286.06
4 USB Grant/Loan #8175	0.00	732.00	-732.00
5 Brookwoods	31,627.79	31,284.20	343.59
6 Kent Affordable Housing	23,898.59	23,808.88	89.71
7 Saddle Ridge Estates	163,040.97	162,877.56	163.41
Total Checking/Savings	1,114,795.27	1,049,011.93	65,783.34
Accounts Receivable	1,320.00	918.75	401.25
Other Current Assets			
Due from General Fund	38,906.00	0.00	38,906.00
Undeposited Funds	0.00	2,080.00	-2,080.00
Total Other Current Assets	38,906.00	2,080.00	36,826.00
Total Current Assets	1,155,021.27	1,052,010.68	103,010.59
Fixed Assets			
Accumulated Depreciation	-1,244,154.05	-1,135,138.87	-109,015.18
Property and equipment	4,763,683.56	4,763,683.56	0.00
Total Fixed Assets	3,519,529.51	3,628,544.69	-109,015.18
TOTAL ASSETS	4,674,550.78	4,680,555.37	-6,004.59
LIABILITIES & EQUITY			
Accounts Payable	11,611.75	12,026.64	-414.89
Other Current Liabilities			
Due To Brookwoods	31,627.79	31,284.20	343.59
Due To Kent Affordable Housing	23,898.59	23,808.88	89.71
Due to Saddle Ridge Estates	163,040.97	162,877.56	163.41
Federal Taxes Payable	2,765.89	4,050.01	-1,284.12
State Taxes Payable	404.80	584.34	-179.54
Total Other Current Liabilities	221,738.04	222,604.99	-866.95
Long Term Liabilities			
USDA Loan 92-04	484,858.05	492,703.41	-7,845.36
USDA Loan 92-06	841,996.16	0.00	841,996.16
USDA Loan 92-08	80,012.07	81,320.13	-1,308.06
Total Long Term Liabilities	1,406,866.28	574,023.54	832,842.74
Total Liabilities	1,640,216.07	808,655.17	831,560.90
Equity			
*Retained Earnings	1,924,901.82	1,931,939.21	-7,037.39
Opening Bal Equity	420,287.36	420,287.36	0.00
Retained Earnings	665,227.72	1,518,401.72	-853,174.00
Net Income	23,917.81	1,271.91	22,645.90
Total Equity	3,034,334.71	3,871,900.20	-837,565.49
TOTAL LIABILITIES & EQUITY	4,674,550.78	4,680,555.37	-6,004.59

Balance Sheet

Kent Sewer Commission

As of November 30, 2016

	Nov 30, 16	Nov 30, 15	$ Change
Checking/Savings			
1 USB	110,507.21	134,542.65	-24,035.44
2 USB Septage MMA #8052	194,635.02	114,078.17	80,556.85
3 USB Capital #3880	625,764.13	605,478.07	20,286.06
4 USB Grant/Loan #8175	0.00	732.00	-732.00
5 Brookwoods	31,627.79	31,284.20	343.59
6 Kent Affordable Housing	23,898.59	23,808.88	89.71
7 Saddle Ridge Estates	163,040.97	162,877.56	163.41
Total Checking/Savings	1,149,473.71	1,072,801.53	76,672.18
Accounts Receivable	1,705.00	2,193.75	-488.75
Other Current Assets			
Due from General Fund	30,340.84	0.00	30,340.84
Undeposited Funds	0.00	1,320.00	-1,320.00
Total Other Current Assets	30,340.84	1,320.00	29,020.84
Total Current Assets	1,181,519.55	1,076,315.28	105,204.27
Fixed Assets			
Accumulated Depreciation	-1,244,154.05	-1,135,138.87	-109,015.18
Property and equipment	4,763,683.56	4,763,683.56	0.00
Total Fixed Assets	3,519,529.51	3,628,544.69	-109,015.18
TOTAL ASSETS	4,701,049.06	4,704,859.97	-3,810.91
LIABILITIES & EQUITY			
Accounts Payable	511.27	3,181.19	-2,669.92
Other Current Liabilities			
Due To Brookwoods	31,627.79	31,284.20	343.59
Due To Kent Affordable Housing	23,898.59	23,808.88	89.71
Due to Saddle Ridge Estates	163,040.97	162,877.56	163.41
Federal Taxes Payable	2,838.29	2,739.19	99.10
State Taxes Payable	415.92	389.56	26.36
Total Other Current Liabilities	221,821.56	221,099.39	722.17
Long Term Liabilities			
USDA Loan 92-04	484,858.05	492,703.41	-7,845.36
USDA Loan 92-06	841,996.16	0.00	841,996.16
USDA Loan 92-08	80,012.07	81,320.13	-1,308.06
Total Long Term Liabilities	1,406,866.28	574,023.54	832,842.74
Total Liabilities	1,629,199.11	798,304.12	830,894.99
Equity			
*Retained Earnings	1,924,901.82	1,931,939.21	-7,037.39
Opening Bal Equity	420,287.36	420,287.36	0.00
Retained Earnings	665,227.72	1,518,401.72	-853,174.00
Net Income	61,433.05	35,927.56	25,505.49
Total Equity	3,071,849.95	3,906,555.85	-834,705.90
TOTAL LIABILITIES & EQUITY	4,701,049.06	4,704,859.97	-3,810.91

12/13/16

Kent Sewer Commission
Operating Account ledger
As of October 31, 2016

Date	Num	Name	Memo	Amount	Balance
1 USB					99,854.35
Operating - 8044					99,854.35
10/07/16	10150	Allingham & Readyoff, LLC	General matters 5/3/16 - 8/5/16 (Mazza easement)	-344.00	99,510.35
10/07/16	10151	Custom Environmental Tech...	2 / 55 gallon drum(s) polymer	-2,171.87	97,338.48
10/07/16	10152	Eversource	Plant: 8/17 - 9/16 - Pump Station: 8/17 - 9/16 - #50 Maple St -8/1...	-2,191.09	95,147.39
10/07/16	10153	Kinsley Power Systems	Level II generator service	-1,175.00	93,972.39
10/07/16	10154	Salisbury Bank & Trust	VOID:	0.00	93,972.39
10/07/16	10155	Santoro's Commercial Laund...	Uniform Service - 09/21/16 - 9/28/16	-50.00	93,922.39
10/07/16	10156	Sommers, Lyle - Reimburse...	Telephone reimbursement - September	-80.00	93,842.39
10/07/16	10157	Town of Kent	FY '17 2nd Qtr LAP premium	-272.25	93,570.14
10/07/16	10158	Tunxis	Lab Services 9/20 & 9/29	-486.20	93,083.94
10/07/16	10159	Postmaster	Annual Renewal: PO Box 144	-48.00	93,035.94
10/07/16	E-pay	Administrator Unemploymen...	Qtrly Unrmployment reporting - 00-022-82 QB Tracking # 298511072	0.00	93,035.94
10/12/16	169....	Sewer Customers		684.54	93,720.48
10/13/16		QuickBooks Payroll Service	Created by Payroll Service for 10/14/16	-3,009.71	90,710.77
10/14/16	DirDep	Kearns, Joyce	Direct Deposit	0.00	90,710.77
10/14/16	DirDep	Sommers, Lyle R	Direct Deposit	0.00	90,710.77
10/14/16	DirDep	Walsh, John H.	Direct Deposit	0.00	90,710.77
10/14/16	E-pay	CT Commissioner of Revenu...	September payroll withholding remittance - 7268998-000 QB Trackin...	-607.20	90,103.57
10/14/16	E-pay	United States Treasury	September payroll withholding and taxes remittance - 06-1354645 Q...	-4,090.01	86,013.56
10/21/16	10160	FedEx	to Averill lab 9/14, 9/21, 9/28, 10/5	-120.48	85,893.08
10/21/16	10161	Frontier	Telephone service	-68.86	85,824.22
10/21/16	10162	Napa Auto Parts	trailer ball	-13.89	85,810.33
10/21/16	10163	Santoro's Commercial Laund...	uniform service 10/5 & 10/12	-50.00	85,760.33
10/21/16	10164	Sommers, Lyle - Reimburse...	Reimbursement for course,travel,hotel and meal	-493.84	85,266.49
10/21/16	10165	Tunxis	lab services 10/11	-243.10	85,023.39
10/21/16	10166	Walsh, John-Reimbursement	Telephone reimbursement - September	-80.00	84,943.39
10/21/16	10167	Welsh Sanitation	Commercial service: September 2016	-42.54	84,900.85
10/21/16	10168	Loureiro - LEA	9/1 - 9/30 (1 hr labor) and sample analysis 8/4/16	-690.39	84,210.46
10/25/16	169....	Sewer Customers		100.00	84,310.46
10/27/16		QuickBooks Payroll Service	Created by Payroll Service for 10/28	-3,009.72	81,300.74
10/28/16	DirDep	Kearns, Joyce	Direct Deposit	0.00	81,300.74
10/28/16	DirDep	Sommers, Lyle R	Direct Deposit	0.00	81,300.74
10/28/16	DirDep	Walsh, John H.	Direct Deposit	0.00	81,300.74
10/28/16		QuickBooks Payroll Service	Created by Payroll Service for 10/28	-466.45	80,834.29
10/31/16	DirDep	Devaux, Deborah J.	Direct Deposit	0.00	80,834.29
10/31/16	10136	Town of Kent	October - ROTH 401K employee withholding	-95.52	80,738.77
10/31/16	10169	ABT	October bookkeeping support	-550.00	80,188.77
Total Operating - 8044				-19,665.58	80,188.77
Total 1 USB				-19,665.58	80,188.77
TOTAL				-19,665.58	80,188.77

12/13/16

Kent Sewer Commission
Operating Account ledger
As of November 30, 2016

Date	Num	Name	Memo	Amount	Balance
1 USB					80,188.77
Operating - 8044					80,188.77
11/02/16	169....	Sewer Customers		224.81	80,413.58
11/04/16	10170	Eversource	Plant: 9/16 - 10/17 - #50 Maple St - 9/15 - 10/14 - Pump Station: ...	-2,067.53	78,346.05
11/04/16	10171	Gawel, William C.	13 Maple Street Ext, lateral connection (backhoe,labor,parts)	-2,645.00	75,701.05
11/04/16	10172	Pine Plains Tractor	JD PE4024TF270 (cracked fuel lines,mouse damage)	-879.00	74,822.05
11/04/16	10173	Quality Data Service Inc.	Oct 2016: printing and processing sewer/water billing 299 bills	-161.39	74,660.66
11/04/16	10175	Santoro's Commercial Laund...	Uniform service: 1/19 - 10/26 - 11/2	-75.00	74,585.66
11/04/16	10176	Sommers, Lyle - Reimburse...	Telephone reimbursement - October	-80.00	74,505.66
11/04/16	10177	Town of Kent	80% of all User fees collected from 7/1/16 - 10/31/16 on MSE prop...	-6,613.64	67,892.02
11/04/16	10178	Tunxis	10/19 - 10/21	-486.20	67,405.82
11/10/16		QuickBooks Payroll Service	Payroll direct deposits 11/11/16	-3,114.47	64,291.35
11/11/16	DirDep	Sommers, Lyle R	Includes 5 hrs OT for driving to PA, approved at Commission meeting...	0.00	64,291.35
11/11/16	DirDep	Kearns, Joyce	Direct Deposit	0.00	64,291.35
11/11/16	DirDep	Walsh, John H.	Direct Deposit	0.00	64,291.35
11/15/16	E-pay	CT Commissioner of Revenu...	CT payroll withholding for October 7268998-000 QB Tracking # 2930...	-404.80	63,886.55
11/15/16	E-pay	United States Treasury	Payroll withholding and taxes for October 06-1354645 QB Tracking #...	-2,765.96	61,120.59
11/15/16	169....	Sewer Customers		6,379.25	67,499.84
11/15/16	169....	Sewer Customers		31,619.24	99,119.08
11/16/16	169....	Sewer Customers		1,367.77	100,486.85
11/22/16	169....	Sewer Customers		5,205.52	105,692.37
11/23/16		QuickBooks Payroll Service	Payroll direct deposits 11/23/16	-3,009.65	102,682.72
11/23/16	169....	Sewer Customers		590.25	103,272.97
11/25/16	DirDep	Sommers, Lyle R	Holiday 11/11	0.00	103,272.97
11/25/16	DirDep	Kearns, Joyce	Direct Deposit	0.00	103,272.97
11/25/16	DirDep	Walsh, John H.	Holiday 11/11	0.00	103,272.97
11/29/16		QuickBooks Payroll Service	Payroll direct deposit 11/30/16	-466.44	102,806.53
11/29/16	10179	Town of Kent	Sommers: Roth IRA Withholding November 2016	-100.00	102,706.53
11/30/16	DirDep	Devaux, Deborah J.	Direct Deposit	0.00	102,706.53
11/30/16	10180	ABT	November bookkeeping support	-550.00	102,156.53
11/30/16	10181	Eversource	Plant: 10/17 - 11/15 - Pump Station: 10/17 - 11/15 - #50 Maple St...	-2,214.96	99,941.57
11/30/16	10182	FedEx	to Averill lab 10/12, 1019, 20/26, 11/02, 11/09	-137.88	99,803.69
11/30/16	10183	Frontier	11/1 - 11/30	-68.86	99,734.83
11/30/16	10184	Loureiro - LEA	10/1 - 10/31 - .5 hrs labor - quarterly sampling & analysis services	-60.50	99,674.33
11/30/16	10185	Napa Auto Parts	one bulb	-2.98	99,671.35
11/30/16	10186	Postmaster	6 rolls of stamps for Tax Collector	-282.00	99,389.35
11/30/16	10187	Santoro's Commercial Laund...	11/9 - 11/16	-50.00	99,339.35
11/30/16	10188	True Value, Kent	misc hardware	-23.48	99,315.87
11/30/16	10189	Tunxis	10/31 - 11/25 - 11/29 - 11/30	-1,231.20	98,084.67
11/30/16	10190	Walsh, John-Reimbursement	Telephone reimbursement - October	-80.00	98,004.67
11/30/16	10191	Welsh Sanitation	Commercial service: October 2016	-42.54	97,962.13
11/30/16		Town of Kent	QuickBooks generated zero amount transaction for bill payment stub	0.00	97,962.13
11/30/16	169....	Sewer Customers		12,545.08	110,507.21
Total Operating - 8044				30,318.44	110,507.21

12/13/16

Kent Sewer Commission
Profit & Loss Prev Year Comparison
July through November 2016

	Jul - Nov ...	Jul - Nov ...	$ Change
Ordinary Income/Expense			
Income			
Septage Fees	32,081.25	32,610.00	-528.75
Sewer User Charges			
Connection Fees	0.00	4,355.00	-4,355.00
User Charges	137,265.08	115,225.81	22,039.27
Total Sewer User Charges	137,265.08	119,580.81	17,684.27
Total Income	169,346.33	152,190.81	17,155.52
Gross Profit	169,346.33	152,190.81	17,155.52
Expense			
General & Admin Expenses			
Accounting/Bookkeeping Servi...	2,750.00	2,750.00	0.00
Bank Service Charges	15.00	0.00	15.00
Miscellaneous Admin Expense	0.00	99.00	-99.00
Office Supplies	567.04	200.00	367.04
Outside services-Admin	231.63	294.12	-62.49
Printing & Advertising	0.00	462.14	-462.14
Software/Licensing Fees	2,020.00	1,050.00	970.00
Total General & Admin Expenses	5,583.67	4,855.26	728.41
Operating Expenses			
Continuing Education	493.84	0.00	493.84
Electricity	10,909.16	9,891.11	1,018.05
Fuel	464.31	697.49	-233.18
Insurance			
Dental Insurance	482.78	467.74	15.04
Liab Auto Prop Insura	544.50	1,248.00	-703.50
Life Insurance	54.50	54.50	0.00
Medical	10,743.82	10,269.22	474.60
Workman's Comp	2,473.00	5,054.00	-2,581.00
Total Insurance	14,298.60	17,093.46	-2,794.86
Internet	83.99	0.00	83.99
Lab exams	5,620.90	5,460.40	160.50
Materials and supplies			
Purchases & supplies	2,380.92	1,976.51	404.41
Total Materials and supplies	2,380.92	1,976.51	404.41
Miscellaneous	0.00	35.80	-35.80
Outside Services-Operating	7,588.48	4,731.45	2,857.03
Parts & Repairs	879.00	3,493.41	-2,614.41
Payroll Expenses	50,613.21	48,580.03	2,033.18
Payroll taxes	3,799.81	3,647.20	152.61
Pension	718.79	614.98	103.81
Permit fees	2,278.44	2,011.25	267.19
Postage	790.80	703.62	87.18
Professional fees			

Kent Sewer Commission
Profit & Loss Prev Year Comparison
July through November 2016

	Jul - Nov ...	Jul - Nov ...	$ Change
Engineering fees	5,236.29	4,099.11	1,137.18
Legal fees	344.00	2,094.00	-1,750.00
Total Professional fees	5,580.29	6,193.11	-612.82
Telephone	1,225.22	1,323.30	-98.08
Uniforms	525.00	500.00	25.00
Total Operating Expenses	108,250.76	106,953.12	1,297.64
Total Expense	113,834.43	111,808.38	2,026.05
Net Ordinary Income	55,511.90	40,382.43	15,129.47
Other Income/Expense			
Other Income			
Grant Income	0.00	0.00	0.00
Investment income	120.45	135.29	-14.84
Transfers In	38,906.00	0.00	38,906.00
Total Other Income	39,026.45	135.29	38,891.16
Other Expense			
Transfer Out			
Maple Street Extension			
100% of all Connection Fees	0.00	4,355.00	-4,355.00
100% of Benefit Assessment ...	4,355.00	0.00	4,355.00
80% of User Fees Collected	1,022.14	856.37	165.77
Total Maple Street Extension	5,377.14	5,211.37	165.77
Total Transfer Out	5,377.14	5,211.37	165.77
USDA Loan Interest 92-04	0.00	-555.47	555.47
USDA Loan Interest 92-06	27,728.16	0.00	27,728.16
USDA Loan Interest 92-08	0.00	-65.74	65.74
void	0.00	0.00	0.00
Total Other Expense	33,105.30	4,590.16	28,515.14
Net Other Income	5,921.15	-4,454.87	10,376.02
Net Income	61,433.05	35,927.56	25,505.49

09/09/16

Kent Sewer Commission
Proposed Budget

	Jul 15	Aug 15	Sep 15	Oct 15	Nov 15	Dec 15	Jan 16	Feb 16	Mar 16	Apr 16	May 16
Income											
Benefit Assessments											
Septage Fees	5,000	9,245	6,226	6,464	5,940	6,005	3,240	4,656	6,880	5,395	7,803
Sewer User Charges											
Connection Fees											
User Charges											
Sewer User Charges	4,000	50,000	20,000	3,000	40,000	20,000	1,000	75,000	12,000	3,000	75,000
Total Income	9,000	59,245	26,226	9,464	45,940	26,005	4,240	79,656	18,880	8,395	82,803
Expense											
General & Admin Expenses											
Accounting/Bookkeeping Services	550	550	550	550	550	550	550	550	550	550	550
Audit	0	0	0	0	0	0	3,750	0	0	0	0
Miscellaneous Admin Expense	0	0	0			0	0	0	0	0	0
Office Supplies	0	0	100		0	100	0	0	100	0	0
Outside services-(Aquarion)	150	0	0	150	0	0	150	0	0	150	0
Printing & Advertising	0	0	250	0	0	0	0	250	0	0	0
Software/Licensing Fees	1,050	0	0	0	0	0	35	0	0	0	65
Total General & Admin Expenses	1,750	550	900	700	550	650	4,485	800	650	700	615
Operating Expenses											
Depreciation											
Electricity	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700
Fuel	208	208	208	208	208	208	208	208	208	208	208
Insurance											
Dental Insurance	98	98	98	98	98	98	98	98	98	98	98
Liab Auto Prop Insura	272	0	0	272	0	0	272	0	0	272	0
Life Insurance	11	11	11	11	11	11	11	11	11	11	11
Medical	1,564	1,564	4,564	1,564	1,564	1,564	1,564	1,564	1,564	1,564	1,564
Workman's Comp	1,237	0	0	1,237	0	0	1,237	0	0	1,237	0
Total Insurance	3,181	1,672	4,672	3,181	1,672	1,672	3,181	1,672	1,672	3,181	1,672
Internet	20	20	20	20	20	20	20	20	235	20	20
Lab exams	1,053	1,053	1,053	1,053	1,053	1,053	1,053	1,053	1,053	1,053	1,053
Materials and supplies											
New Equipment	0	0	0	0	0	0	0	0	0	0	0
Purchases & supplies	420	420	420	420	420	420	420	420	420	420	420
Total Materials and supplies	420	420	420	420	420	420	420	420	420	420	420
Miscellaneous	10	10	10	10	10	10	10	10	10	10	10
Operating expenses	0	0	0	0	0	0	0	0	0	0	0
Outside Services-(Quality,Welsh)	625	625	625	625	625	625	625	625	625	625	625
Parts & Repairs	400	400	400	400	400	400	400	400	400	400	400
Payroll Expenses (3% raise across the board)	10,081	10,081	10,081	10,081	10,081	10,081	10,081	10,081	10,081	10,081	10,081
Payroll taxes	771	771	771	771	771	771	771	771	771	771	771
Pension	0	0	687	0	0	687	0	0	687	0	0
Permit fees	2,279	0	0	0	0	0	0	0	0	0	0
Postage	150	150	150	150	150	150	150	150	150	150	150
Professional fees											

GRAND RATEBOOK BALANCE SHEET REPORT
KENT
GRAND LIST YEAR 2015

Year: 2000 To 2016, Pay Date: 12/13/2016, Time: 12/13/2016 01:23:17 pm All
Conditions: Recap By Year:Yes Recap By Dist:No Act/Susp: Active, Cycle: 00 To 00, Type: TOWN, Bill Type: 06 SU

YEAR/TYPE	ACTS	BEGINNING BALANCE	LAWFUL CORRECTIONS INC.	DEC.	TAXES COLLECTABLE	CURRENT SUSPENSE	TAXES/BINT PAID	INTEREST PAID	L+FEES PAID	TOTAL PAID	OVER PAID	UNCOLLECTED TAXES
SU	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
YR: 2011	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SU	2	912.37	0.00	0.00	912.37	0.00	0.00	0.00	0.00	0.00	0.00	912.37
YR: 2013	2	912.37	0.00	0.00	912.37	0.00	0.00	0.00	0.00	0.00	0.00	912.37
SU	3	1,242.35	0.00	0.00	1,242.35	0.00	0.00	0.00	0.00	0.00	0.00	1,242.35
YR: 2014	3	1,242.35	0.00	0.00	1,242.35	0.00	0.00	0.00	0.00	0.00	0.00	1,242.35
SU	314	6,322.96	0.00	0.00	6,322.96	0.00	4,759.56	332.10	0.00	5,091.66	0.00	1,563.40
YR: 2015	314	6,322.96	0.00	0.00	6,322.96	0.00	4,759.56	332.10	0.00	5,091.66	0.00	1,563.40
SU	314	149,251.45	0.00	-1,453.30	147,798.15	0.00	135,048.72	167.83	15.00	135,231.55	-497.70	12,749.43
YR: 2016	314	149,251.45	0.00	-1,453.30	147,798.15	0.00	135,048.72	167.83	15.00	135,231.55	-497.70	12,749.43
Grand Total	634	157,729.13	0.00	-1,453.30	156,275.83	0.00	139,808.28	499.93	15.00	140,323.21	-497.70	16,467.55

300 accounts

Residential 318
Commercial 121
Restaurant 9
Kent School
The tent

Town of Kent,
Water Pollution Control Authority

CTDEEP Facility No.: 68-001 Discharge Permit No UI0000311

Aeration System Upgrade

Engineer's Report

December 1, 2016

Summary

The Kent Water Pollution Authority (aka Kent Sewer Commission) has been experiencing intermittent problems with the operation of the Extended Air Treatment System at the Plant and has been looking for opportunities to reduce its energy use and improve its performance. Problems at the plant included:

- low dissolved oxygen (DO) levels in the aeration tank;
- treatment upsets, and
- exceedences of Permit limits of daily limits frequently and monthly limits occassional.

We investigated potential sources of the problems including toxic substances in the influent, low blower output and malfunctioning and/or aged diffusers. The conclusion was that the existing aeration system was not delivering the amount of air needed to keep the dissolved oxygen (DO) in the aeration tank at levels between 1.0 and 2.0 mg/l due to:

- the diffusers being installed without the depth needed for sufficient oxygen transfer;
- an insufficient number of diffusers installed; and
- the low number of diffusers causing a high pressure loss which limits the output of the blowers.

The recommendations of the report call for re-use of the existing blowers, an update of the control system for the blowers to include timer operation, installing new diffuser grids in the aeration and digester tanks. These improvements are estimated to cost $170,000.

The blowers were previously investigated for replacement with higher efficiency units to determine if there was an economically attractive reason for replacement. The cost of replacing the blowers and the limited cost savings made the payback for their replacement too long to make it economically attractive.

The remainder of this report provides the details considered during this investigation to support the recommendation.

Description of Existing Conditions

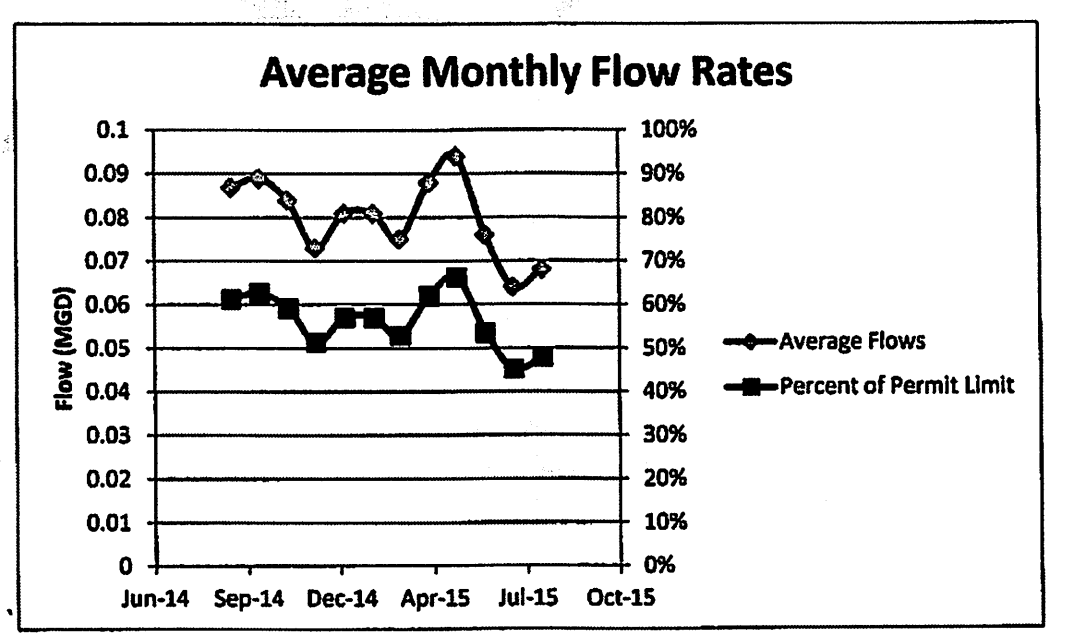
The Kent Water Pollution Control Authority operates a wastewater collection and treatment system serving a population of approximately 1500. The collection system serves a small residential and commercial area with one public school, one private school and a small health care facility. Based on the records from September 2014 to August 2015, the influent statistics are:

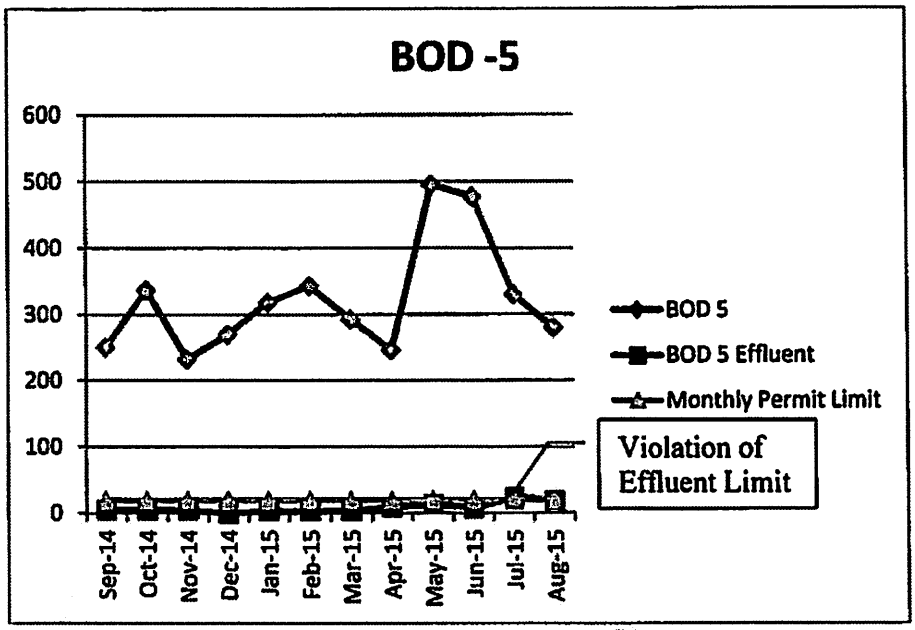
Parameter	Average	Winter	Summer	Peak
Flow (MGD)	0.080	0.078	0.069	0.094
BOD (5) (mg/l)	323	310	362	1000
TSS (mg/l)	342	263	449	2260
Nitrogen (ammonia)	38.0	36.5	30.4	55.8

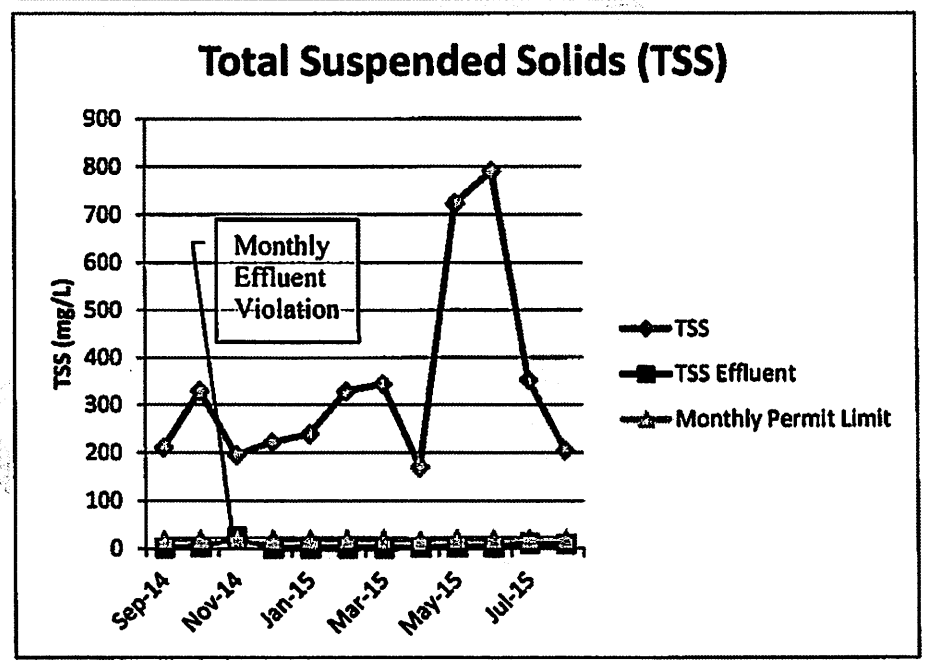
The Plant currently meets its discharge permit requirements with the exception of circumstances discussed later. The Permit Requirements are summarized below:

Parameter	Monthly Average	Weekly Average	Maximum Daily Limit
Flow (MGD)	0.142		
BOD 5 (mg/l)	20 max / 10% of Influent	30	40
TSS (mg/l)	20 max / 10% of Influent	30	40
Nitrogen	None Established		
pH	6 - 9 daily		

The effluent water quality is summarized on the graphs below:







There are several minor permit limit violations in the data. However, it is important to note that the Plant does not discharge directly to surface water, but, rather to groundwater. These "violations" are not generally seen as significant from a regulatory perspective because the soil which the effluent infiltrates to provides further treatment. This issue has not yet been addressed by the CTDEEP with modified permit limits.

The Permit expired in 2009. The CTDEEP has not acted on an application to renew the permit submitted by the Kent Sewer Commission.

The Treatment Plant was originally constructed in the early 1960's as a Smith and Loveless "package plant". An upgrade to the Plant was constructed in the mid 1990's. No changes to the configuration has been made since that time.

The Plant is operated as an extended aeration process with a discharge to groundwater. The major Plant equipment is summarized as:

- Rough Screening and Macerator;
- Composite Sampler and Flow Measurement;
- Circular Aeration Tank with 21,500CF volume;
- Circular 3,700 CF Sludge Digester;
- Two parallel 24 ft diameter Clarifiers;
- Effluent Monitoring Station/Plant Water;
- Four Infiltration Basins;
- Back-up Surface water Discharge to the Housatonic River (not Active)
- 1 m Belt Filter Press with land application of sludge; and
- a 90 KW emergency generator.

The Air for the treatment process is provided by two parallel Lamson model 510, 8-stage, 22" Diameter centrifugal blowers. The Design flow was specified as 525 scfm at 7 psig. The design was to allow one blower to provide all the air needed for the treatment process. The second blower is held in reserve in case the first blower was out of service.

The Blower currently runs at 8.2 psig which corresponds to approximately 200 cfm. The D.O. in the Aeration tanks typically is less than 0.5 mg/l. There are 66 fine bubble diffusers in the tank mounted at approximately 4 ft above the digester floor. The diffusers are mounted upside down. The limited number of diffusers, the relatively shallow depth and improper mounting tend to reduce the oxygen transfer efficiency. The diffusers are operating at approximately 3 cfm per diffuser which is higher than typically used for fine bubble diffusers. The higher flow creates a high head loss through the diffuser which reduces/limits the amount of air the Blower will produce.

The plant is currently meeting permit requirements; however, it has experienced significant up sets and frequent excursions of Daily and Monthly effluent BOD maximums even though the daily flow is only 56% of the flow.

A brief survey of the deposits in the bottom of the aeration tank was performed using a "sludge judge" device. This survey showed that within 30 feet of the inlet there is an accumulation of 4 to 6" of a loose organic grit. This material will have to be removed to allow the new grids to rest on the bottom of the tank.

Purpose of the Aeration System Upgrade

The Treatment System appears to be operating very near to its maximum capacity with its current equipment and diffuser configuration. This is evidenced by the low DO in the Aeration Tank, frequent system upsets and frequent exceedances of Maximum Daily and Monthly Effluent BOD limits. The purpose of the upgrades are to provide the equipment needed to stabilize the process and regain the capacity. The Sludge Digester has never had a effective diffuser system. Better Treatment of the sludge could help reduce the amount of sludge to be disposed of and reduce the chemicals needed in the

dewatering process.

Aeration System Design

The Aeration System Design requires consideration of two parts: the Air Diffusers and the Blowers.

Diffuser System

The Diffuser Grids for both the Aeration Tank and Sludge Tank currently are and must remain removable because there is only one aeration tank. The tank cannot be taken off-line and drained to allow fixed installation on the floor.

Two manufacturer's of Diffuser systems were approached to obtain diffuser performance data. These companies were SSI and Sanitaire. Their design concepts varied significantly from each other with recommended layouts of the diffusers, the number of diffusers and blower requirements.

Based on TR-16 requirements, we obtained the following starting point data:

Aeration Tanks:

Minimum Mixing Flow = 0.12 scfm/SF x 1250 SF = 149.8 scfm
A minimum of 150 Fine Bubble Diffusers are needed for mixing requirements with a flow rate of 1.0 cfm/diffuser.

Sludge Digester:

Minimum Mixing Flows = 30 scfm/ 1000 CF x 3828 CF = 114.8 cfm
A minimum of 77 fine bubble diffusers are needed at 1.5 cfm/diffuser.

The Diffuser manufacturers have each proposed a diffuser layout. The following table provides a summary of the layouts proposed by each manufacturer:

	Company	
	SSI	Sanitaire
Aeration Tank		
No. of Zones	8	11
Fine Bubble	192	132
Coarse Bubble	8	0
Flow Rate (at pressure)	240 cfm (8 psi)	170 to 380 (7.5 to 7.75psi)
Sludge Digester		
No. of Zones	4	7
Fine Bubble	64	63
Coarse Bubble	4	0
Flow Rate (at pressure)	130 cfm	110 cfm (5.91psi)
Total Flow (pressure)	370	280 to 490

Each recommendation appears to have a strong points and weak points. Sanitaire considered the design flow, peak organic load and current average conditions in their calculations.. SSI considered only the Design flow at the peak organic load. SSI's assumptions appear to result in an over designed system

given the flow rates and organic loading seen currently and those anticipated in the near future. We have considered the information from both manufacturers and settled on a layout consisting of the following:

Aeration Tank	
No. of Zones	11
Fine Bubble	154
Coarse Bubble	11
No. of Zones	7
Flow Rate	200 scfm (1.2 scfm/diffuser)
Sludge Digester	
Fine Bubble	63
Coarse Bubble	7
Flow Rate (at pressure)	130 cfm (1.9 cfm/diffuser)
Total Flow (pressure)	330

The Sanitaire layout and pressure estimates were favored because the higher number of diffuser grids should keep the pressure loss in the small diameter piping to less than 10% of the head loss through the diffusers allowing even air flow to each of the diffusers.

Blower Performance

The Existing Blowers were designed to provide 525 scfm at 7.0 psi. This condition has never been achieved. The Blowers have a pressure of 8.17 psi at the discharge (after the check valves) which correlates to 200 to 300 cfm. The Blower Manufacturer feels that under existing conditions, the Blower is very close to a surge condition. Surge should be avoided because it damages the blower bearings and motor coupling. The new diffuser layout should lower the pressure at the Blower to reduce the chance of a surge condition developing.

We have estimated that the blower will need to deliver 330 cfm at 7.7 psi to treat the design flow and organic loading. The process needs 170 cfm at 7.2 psi to treat the current average conditions. These flows are significantly less than design air flows due to the higher efficiency of the fine bubble diffusers. The pressure on the blowers is higher due to having the diffusers near the bottom of the tank instead of 4 or 5 feet above. The Blower will be able to operate at the higher rate; however, it will not be able to operate at the lower flow rate because it will be in the surge region of the blower operation.

It is likely that the process will see excessive amounts of air as long at the plant is operating at its current flow and organic loads. This excess air typically causes difficulty in treatment such as poor settling characteristics (high TSS), reduced pH, foaming, etc. Some modified control system must be implemented in order to allow the blowers to operate properly both with existing and design flows.

Blower Control

The blowers will have to have a control system in order to account for the lower air requirements. Control can take three paths: throttling the intake, cycling the blower operation, or speed control with Variable Frequency Drives.

Throttling the intake is certainly the less expensive option; however, its ability to control the DO in the process is very limited because the blowers are oversized and operate very close to the surge pressure. There is some opportunity for limited energy savings by reducing the power required to deliver the air needed. There are no improvements needed at the plant implement this control scheme. But, alone the

inlet valve throttling will have limited success in controlling the DO.

The Variable speed option provides for the greatest degree of control and power savings even though the range of RPM control is limited. RPM range is limited because the static head is high in relation to the maximum head developed by the blower and the fact that the blower is operating so close to the surge point. Static head on the blowers must overcome is approximately 13.7 feet (5.9 psi) in the Aeration Tank and 12.5 ft (5.4 psi) in the digester. The RPM range from overcoming static head and the maximum output of the blower is only 225 rpm (3300 to 3525). Straight Variable speed operation will not allow full control of DO without a second method of mixing.

Variable speed operation can be combined with timed intermittent periods of operation. The on period allows the DO to build in the Aeration Tank. The off period allows the DO to be used up by the biological process. The average DO comes closer to the levels needed for the process by varying the amount of time that the blowers are on or off. A description of the process is as follows:

1. A PLC is used to automatically rotate the use of blowers 1 to 2, or 1 on all the time, 2 on all the time. Each blower will be available even after a power interruption has resolved without resetting at the PLC or VFD. If the lead blower fails as detected by the VFD, the second blower will start. The VFD for the stand-by blower will be started.
2. The PLC allows the operator to select the RPM to operate at and provides an estimate of the flow rate based on the manufacturer's performance data from the HMI. The RPM for the motors is set based on the VFD for each motor.
3. The PLC will allow the input of a pressure transducer to monitor the pressure at the blower discharge in blowers 1 and 2. The blowers will be shut-down if the pressure exceeds a set value determined by the user. This shut-down will activate an alarm to the user. The pressure levels will be shown on a report accessed by the HMI.
4. The PLC allows the operator to select 10 minute time periods over the 24 hour day for the active blower to go into reduced speed operation based on input on the HMI. The reduced speed RPM can be operator selected or can change based on the water level in the sludge digester indicated by a pressure transducer in the digester. The speed is set based on a linear proportion from a minimum water level to a maximum water level.
5. The Sludge level in the digester will be tracked and a report will be provided to allow an estimate of volume added or withdrawn. The data will be available for download by USB port or a networked computer.
6. The PLC will operate a blow-off valve solenoid that will be installed in the main air distribution header. The blow-off valve will operate during low speed operation. A hand-off-auto function will be provided for this valve. A report will be available to shown the status of the valve over time.
7. The PLC records from the VFD: Motor RPM, Amps in, voltage in, power used, hours of operation, cold on/off starts and Graphs this data on the HMI. A USB port is provided to allow the data to be downloaded to a Thumb Drive.
8. The PLC will connect to the internet through virtual private connection. A small network will be created in the office next to the blower room. Remote operation of the blowers will be allowed but not activated. Remote access to the PLC program will be allowed for service personnel.
9. The PLC will provided with a UPS compatible with emergency generator operation. The UPS is to filter the power to the PLC and provide a bridge for the few minutes needed before the generator is running.
10. The PLC will alert the operator to the following conditions: A general fault causing shut-down of any blower to be not operational, ...
11. The HMI and PLC will be password protected to prevent unauthorized access to functions involving modifying operations or data.

12. The VFD will allow slow down of RPM by free-wheeling or other method that doesn't put excessive strain on the motor to blower coupling. Harmonic distortion will be kept as low as possible but in no case, be higher than 5%. Line Filters will be provided if necessary for protection of the generator or in coming power quality.

The system requires fine tuning by the operators to find the right RPM, the best on and off period sequence. This method is estimated to cost approximately $60,000 to purchase, install and set up.

Simple ON-OFF Alternation

Intermittent Aeration Control is a third DO control method. In this method, the Blowers are allowed to operate for a set period of time, then they are turned-off. This is a continuous alternation of on/off that is controlled by an adjustable electronic timer. The timer and its set up can be installed for approximately $5,000 to 10,000 and requires only limited changes to the existing equipment. The one disadvantage to this system is that it does have some limited increase in wear on the electric motors and motor starters.

We recommend the simple on/off alternation of the blowers given the its low cost and simple implementation.

Proposed Sequence of Construction

In order to maintain proper treatment during construction, we recommend the following steps be taken during construction:

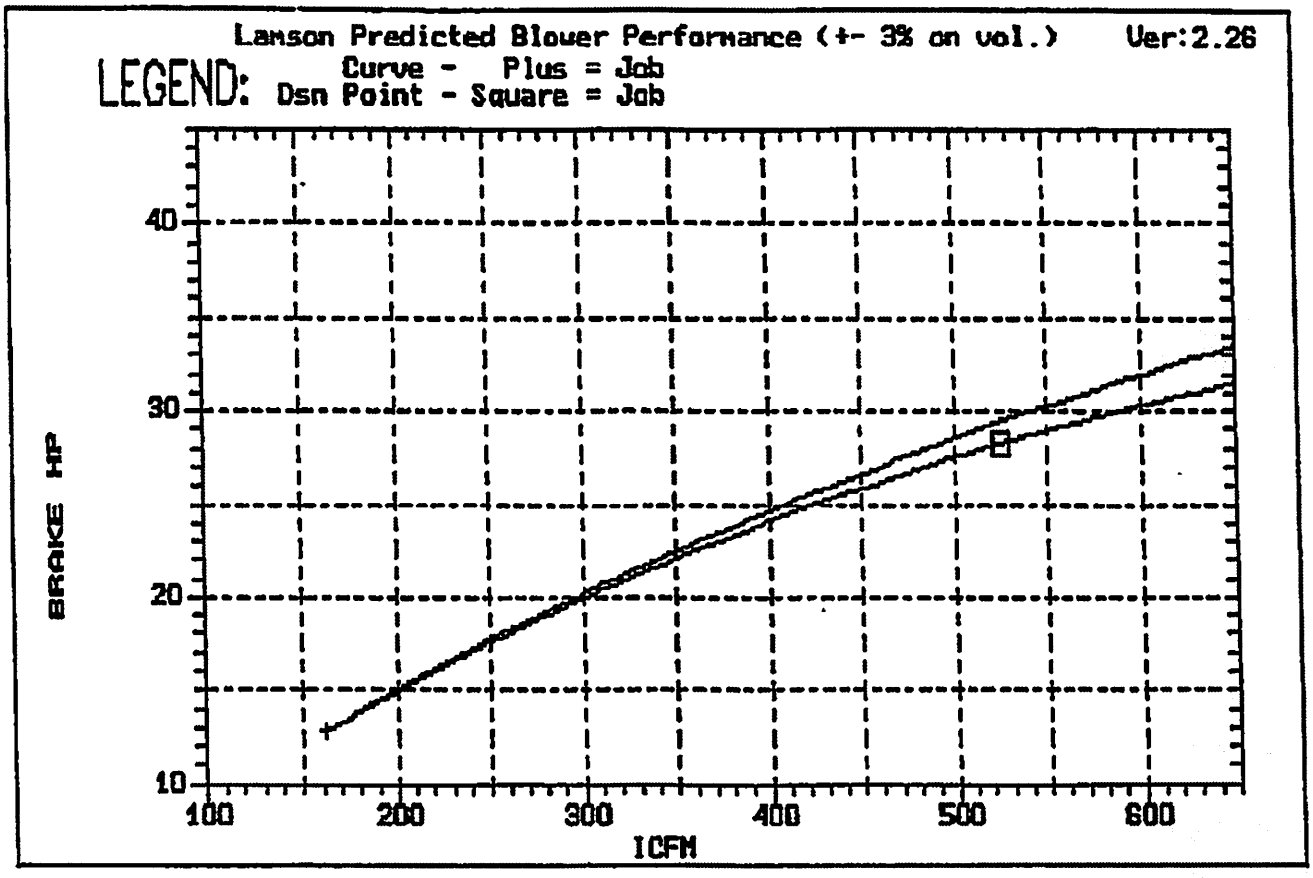
1. Fabricate all grids for the Sludge digester and Aeration tank.
2. Install new couplings for drop pipe on sludge digester header and cast ballast blocks.
3. Begin installation of strut supports for drop pipes to the digester.
4. Reduce the solids inventory in the treatment process and Drain the digester by processing sludge through the Filter Press.
5. Install Grids in Sludge Digester and test grids.
6. Install new couplings for drop pipe on aeration tank header and drop pipe supports.
7. By-pass aeration tank with influent to sludge digester, cut air to diffusers in area where grit is to be removed and remove grit from the Aeration Tank. Monitor performance of the Blowers.
8. Begin installing grids in aeration tank starting from the effluent end and working to the influent end.
9. Install timer circuits in blower control panel and test operation.
10. Monitor D.O. and other operational parameters in Treatment tanks and adjust blower cycles to produce desired treatment results.

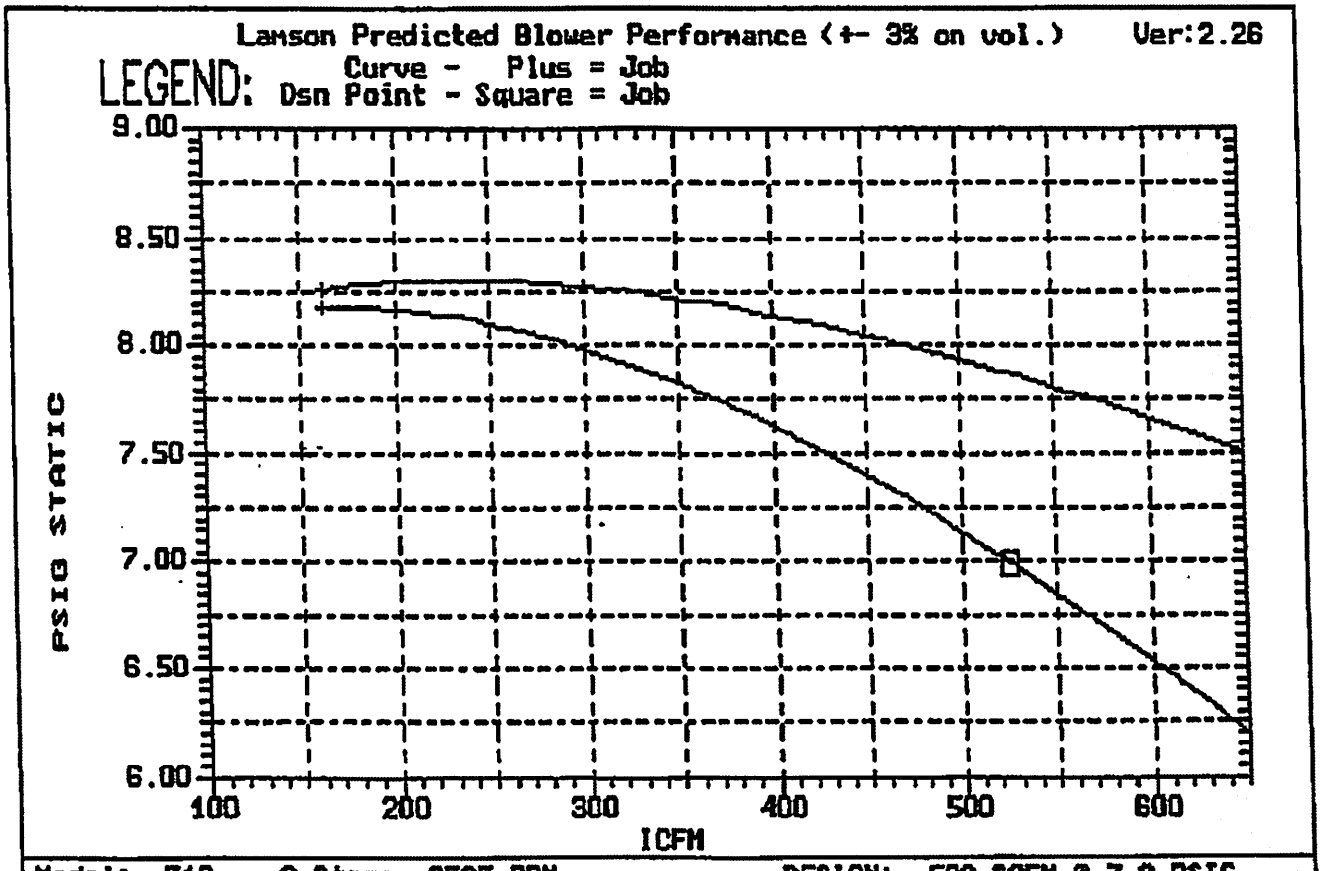
Attachments

Blower Performance Data
Diffuser Manufacturer's Report on Grid Performance
Blower Performance Chart for Variable Speed operation
Engineer's Estimate
Design Plans

Blower Performance Data

DRAFT





Model: 510 , 8 Stage, 3525 RPM
Impellers: 8 Stage(s) of 1003
Diameter: 22.00

DESIGN: 500 SCFM @ 7.0 PSIG
INLET: 14.7 PSIA, 90 F

SmartPIK(TM) Blower: * CORRECTED VALUES * Fri Jan 08,1993 14:57:41

	Parameter	Units - Original	- English
JOBSITE	Barometer :	14.70 PSIA	14.70 PSIA
	Inlet pressure :	14.70 PSIA	14.70 PSIA
	Relative Humidity :	36.0 %	36.0 %
	Inlet Temperature :	90.00° F	90.00° F
	Inlet Volume Flow :	500.00 SCFM	525 ICFM
	Discharge Pressure :	7.00 PSIG	7.00 PSIG
	Book Curve Inlet Flow (ICFM)	525 ICFM	525 ICFM
	Equivalent Air Pressure (EAP)	7.38 PSIG	7.38 PSIG

Model: 510 , 8 Stage(s), 8 - 1003 , 3525 RPM
Gas: Air

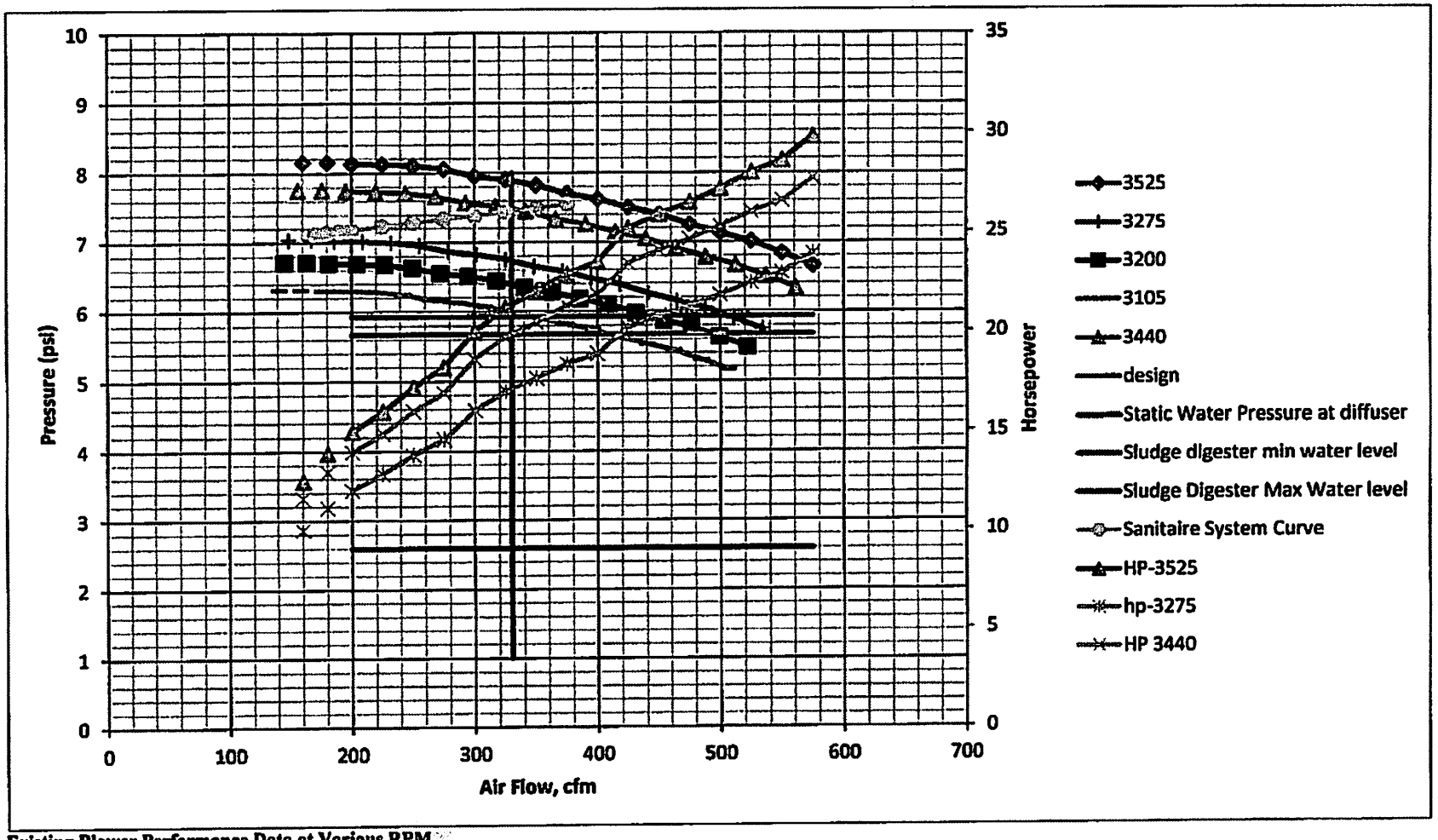
<Esc> MAIN MENU, <Any Other Keys> Next Screen

SmartPIK(TM) Blower: * MEASURED VALUES * Fri Jan 08,1993 14:57:42

	Parameter	Units - Plot	- English
JOBSITE	Surge Volume :	161.7 ICFM	162 ICFM
	Surge Pressure :	8.27 PSIG	8.27 PSIG
	Pressure Rise to Surge :	1.27 PSI	1.27 PSI
	Maximum Volumetric Turndown :	69.2 %	69.2 %
	Curve Pressure at Dsn Flow :	7.88 PSIG	7.88 PSIG
	Curve Power at Dsn Flow :	29.46 BHP	29.46 BHP
	Adiabatic Eff. at Dsn Flow :	52.3 %	52.3 %
	Discharge Temp. at Dsn Flow :	227.65° F	227.65° F

Model: 510 , 8 Stage(s), 8 - 1003 , 3525 RPM
Gas: Air

<Esc> MAIN MENU, <Any Other Keys> Next Screen



Existing Blower Performance Data at Various RPM

Diffuser Manufacturers Report on Grid Performance

SANITAIRE

a xylem brand

Diffused Aeration Equipment

for

Kent Sewer Commission

Aeration Tank: Fine Bubble Type

Sanitaire #27353-16o

October 27, 2016

cp K:\O27353-16\2016.10.25 SSII Aeration Basin Setup.aer

www.sanitaire.com

Sanitaire Aeration Design Inputs for: Kent Sewer Commission, Sanitaire #27353-16o

Tank Geometry
1 Train Consisting of:

Parameter	Units	Pass 1
Parallel Reactors		1
Pass Process		Aerobic
SWD	ft	15.3
Submergence	ft	14.4
Volume (*Specified Speci	ft^3	21,499.5*
Reactor Geometry:		Annulus
Outside Diameter	ft	44.3
Inside Diameter	ft	19.0
Degrees		360

Oxygen/Air Distribution

	Zone	1-11
	Pass	1
Default		9.1%/zone

Oxygenation

Parameter	Units	Annual Avg Flow Loading	Plant Design Flow	Peak Avg Load	Minimum Avg Flow
No. Trains Operating		1	1	1	1
Oxygen Requirement	lb/day	***379.0-A***	***672.7-A***	***1,049.6-A***	***303.2-A***
Influent Flow	mgd	0.08	0.14	0.09	0.06
BOD	mg/l	320	320	1000	320
NH3	mg/l	40	40	80	40
O2/BOD		***1.2***	***1.2***	***1***	***1.2***
O2/NH3		***4.6***	***4.6***	***4.6***	***4.6***

Standard Oxygen Correction Factor Parameters

Parameter	Units	Annual Avg Flow Loading	Plant Design Flow	Peak Avg Load	Minimum Avg Flow
Alpha		***0.65***	***0.65***	***0.5***	***0.65***
Beta		0.98	0.98	0.98	0.98
Theta		1.024	1.024	1.024	1.024
Dissolved Oxygen	mg/l	2	2	1	2
Site Elevation	FASL	500	500	500	500
Ambient Pressure	PSIA	14.46	14.46	14.46	14.46
Water Temperature	°C	***20***	***20***	***20***	***20***

Notes:
Bold, italicized text indicate assumptions made by Sanitaire
A - Indicates Actual (AOR) Requirement.
S - Indicates Standard Condition (SOR) Oxygen requirement.
If the AOR/SOR parameter is not given, then its value will be evaluated later if suitable alpha, beta, D.O., theta, pressure, and temperature data is supplied.
Round tanks are evaluated as rectangular tanks diameter equal to length and equal surface area.
Annular tanks are evaluated as rectangular tanks of width equal to the annular width and equal surface area.

Sanitaire Project Name: Kent Sewer Commission
Sanitaire Project #27353-16o
Design Summary

		Operating Point & O2 Distribution			
	Units	Annual Avg Flow Loading Default	Plant Design Flow Default	Peak Avg Load Default	Minimum Avg Flow Default
No. Trains in Operation		1	1	1	1
No. Grids in Operation		11	11	11	11
No. Operating Diffusers		132	132	132	132
SOR	lb/day	1,206	1,336	2,415	1,206
SOTE	%	28.4	28.0	25.6	28.4
Total Air Rate	scfm	169.2	190.3	376.8	169.2
Min.Diffuser Air Rate	scfm/diff.	1.28	1.44	2.85	1.28
Max. Diffuser Air Rate	scfm/diff.	1.28	1.44	2.85	1.28
Static Pressure	psig	6.25	6.25	6.25	6.25
Diffuser DWP @ Min Air	psig	0.5	0.51	0.63	0.5
Diffuser DWP @ Max Air	psig	0.5	0.51	0.63	0.5
Pressure @ Top of Dropleg	psig	6.82	6.86	7.25	6.82
Est. Blower Efficiency		70%	70%	70%	70%
Est. Motor Efficiency		90%	90%	90%	90%
Shaft Power	Bhp	6.56	7.41	15.36	6.56
Est. Motor Electrical Load	kW	5.43	6.14	12.73	5.43
Est. Standard Aeration Efficiency	#SOR/BHP-hr	7.66	7.51	6.55	7.66

Notes:

(1) Design air is the maximum of process air or mixing air

(2) Delivered oxygen based on design air

(3) Brake Horsepower based on adiabatic compression, 70% mechanical efficiency and 0.30 psi lineloss

(4) Performance based on diffuser density (At/Ad), submergence, and diffuser unit air flow.

(5) Diffuser Air Flow based on Active Valve Modulation

(6) Blower Pressure Capability also requires consideration of:

A. The Air Main headloss (piping, fittings, valves, instrumentation, etc.) between the blower and the aeration assembly dropleg connections.

B. Potential for increased headloss resulting from diffuser fouling and/or aging. Please refer to the US EPA Fine Pore Design Manual (EPA/625/1-89/023), WEF Manual of Practice FD-13, and other

technical publications for a detailed discussion on this subject. Note that this headloss consideration relates to all Fine Pore systems regardless of supplier or type of diffuser element.

C. Increased diffuser submergence during Peak Flow conditions.

(7) Air Flow defined at 20°C

(8) Fine Mixing air based on MOP/8 0.12 scfm/ft²

Sanitaire Project Name: Kent Sewer Commission
Sanitaire Project #27353-18o

Consulting Engineer:
Grid Numbers 1-11
Oxygen Distribution: As Listed

Aeration System Design

Parameter Distribution	Units	Annual Avg Flow Loading Default	Plant Design Flow Default	Peak Avg Load Default	Minimum Avg Flow Default
Pass		1	1	1	1
SWD	ft	15.25	15.25	15.25	15.25
Subm	ft	14.44	14.44	14.44	14.44
Volume	ft³	1,954.5	1,954.5	1,954.5	1,954.5
No. Parallel Tanks		1	1	1	1
No. Trains in Operation		1	1	1	1
Grid Count		1	1	1	1
Dropleg Diameter	inches	4	4	4	4
At/Ad		26.05	26.05	26.05	26.05
Diffuser Density	% Floor	3.84%	3.84%	3.84%	3.84%
Diffusers/Grid		12	12	12	12

Oxygen Transfer

Diffuser Type		SSII-9	SSII-9	SSII-9	SSII-9
Alpha		0.65	0.65	0.5	0.65
Beta		0.98	0.98	0.98	0.98
Theta		1.024	1.024	1.024	1.024
D.O.	mg/l	2	2	1	2
Water Temp	°C	20	20	20	20
AOR/SOR		0.5038	0.5038	0.4347	0.5038
Oxygen Distribution	%/Zone	9.1%	9.1%	9.1%	9.1%
AOR	lb/day	34.5	61.2	95.4	27.6
SOR	lb/day	68.4	121.4	219.5	54.7
Air Rate (7)	scfm				

Performance

Mixing Criteria	scfm/ft²	0.12	0.12	0.12	0.12
Safety Factor	%				
Mixing Air (8)	scfm	15.4	15.4	15.4	15.4
Process Air (for SOR)	scfm	6.9	17.3	34.3	6.9
Design Air (1,7)	scfm	15.4	17.3	34.3	15.4
Diffuser Air Rate	scfm/Diff.	1.28	1.44	2.85	1.28
Delivered SOR	lb/day	110.4	122.3	221.1	110.4
Delivered SOTE	%	28.7%	28.2%	25.8%	28.7%
Pressure @ Top of Dropleg	psig	6.82	6.88	7.25	6.82
Shaft Power	Bhp	0.6	0.7	1.4	0.6

Notes:
(1) Design air is the maximum of process air or mixing air
(2) Delivered oxygen based on design air
(3) Brake Horsepower based on adiabatic compression, 70% mechanical efficiency and 0.30 psi lineloss
(4) Performance based on diffuser density (At/Ad), submergence, and diffuser unit air flow.
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C. Increased diffuser submergence during Peak Flow conditions.
(7) Air Flow defined at 20 °C
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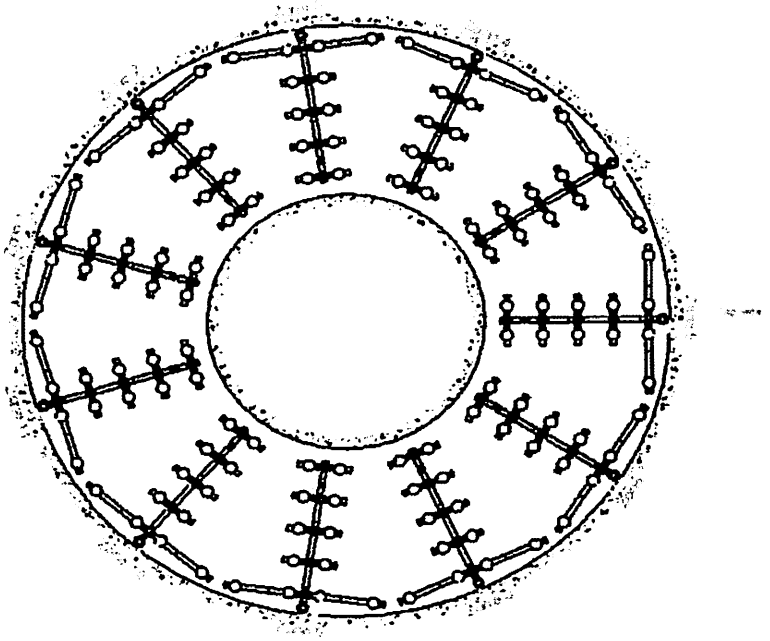

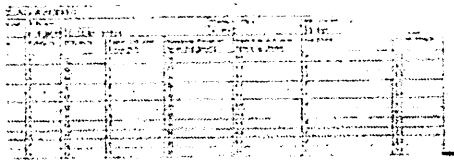

xylem
Let's Solve Water

Conceptual drawing

Aeration[2]
14-

SANITAIRE

a xylem brand

Diffused Aeration Equipment

for

Kent Sewer Commission

Sludge Digester: Fine Bubble

Represented By:
G. A. Fleet Associates
55 Calvert Street
Harrison, NY 10528
914 835 4000

Sanitaire #27353-16o
October 7, 2016
cp K:\O27353-16\2016.10.07 Sludge Digester.aer

Sanitaire Aeration Design Inputs for: Kent Sewer Commission, Sanitaire #27353-16o

Tank Geometry
1 Train Consisting of:

Parameter	Units	Pass 1
Parallel Reactors		1
Pass Process		Aerobic
SWD	ft	12.9
Submergence	ft	12.1
Volume	ft^3	3,657.5
Reactor Geometry:		Annulus
Outside Diameter	ft	19.0
Inside Diameter	ft	0.0
Degrees		360

Oxygen/Air Distribution

	Zone	1-7
	Pass	1
Default		14.282%/zone

Oxygenation

Parameter	Units	Mixing Requirement
No. Trains Operating		1
Air Rate	scfm	109.7
Unit Air Rate	scfm/kcf	30.0

Standard Oxygen Correction Factor Parameters

Parameter	Units	Mixing Requirement
Site Elevation	FASL	500
Ambient Pressure	PSIA	14.46
Water Temperature	°C	***20***

Notes:
Bold, Italicized text indicate assumptions made by Sanitaire
A - Indicates Actual (AOR) Requirement.
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Round tanks are evaluated as rectangular tanks diameter equal to length and equal surface area.
Annular tanks are evaluated as rectangular tanks of width equal to the annular width and equal surface area.

Sanitaire Project Name: Kent Sewer Commission
Sanitaire Project #27353-16o
Design Summary

	Units	Mixing Requirement Default
No. Trains in Operation		1
No. Grids in Operation		7
No. Operating Diffusers		63
SOR	lb/day	705.4
SOTE	%	25.7
Total Air Rate	scfm	109.7
Min.Diffuser Air Rate	scfm/diff.	1.74
Max. Diffuser Air Rate	scfm/diff.	1.74
Static Pressure	psig	5.23
Diffuser DWP @ Min Air	psig	0.54
Diffuser DWP @ Max Air	psig	0.54
Pressure @ Top of Dropleg	psig	5.91
Est. Blower Efficiency		70%
Est. Motor Efficiency		90%
Shaft Power	Bhp	3.77
Est. Motor Electrical Load	kW	3.13
Est. Standard Aeration Efficiency	#SOR/BHP-hr	7.79

Notes:

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(4) Performance based on diffuser density (At/Ad), submergence, and diffuser unit air flow.

(5) Diffuser Air Flow based on Active Valve Modulation

(6) Blower Pressure Capability also requires consideration of:

A. The Air Main headloss (piping, fittings, valves, instrumentation, etc.) between the blower and the aeration assembly dropleg connections.

B. Potential for increased headloss resulting from diffuser fouling and/or aging. Please refer to the US EPA Fine Pore Design Manual (EPA/625/1-89/023), WEF Manual of Practice FD-13, and other

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C. Increased diffuser submergence during Peak Flow conditions.

(7) Air Flow defined at 20°C

(8) Fine Mixing air based on MOP/8 0.12 scfm/ft²

Sanitaire Project Name: Kent Sewer Commission
Sanitaire Project #27353-16o
Output By Grid
Consulting Engineer:
Grid Type (Zones 1-7) 1
Oxygen Distribution: As Listed

Aeration System Design

Parameter Distribution	Units	Mixing Requirement Default
Pass		1
SWD	ft	12.90
Subm	ft	12.09
Volume	ft³	522.5
No. Parallel Tanks		1
No. Trains In Operation		1
Grid Count		1
Dropleg Diameter	inches	4
At/Ad		10.98
Diffuser Density	% Floor	9.11%
Diffusers/Grid		9

Oxygen Transfer

Diffuser Type		SSII-9
Alpha		
Beta		
Theta		
D.O.	mg/l	
Water Temp	°C	20
AOR/SOR		
Oxygen Distribution	%/Zone	14.3%
AOR	lb/day	
SOR	lb/day	
Air Rate (7)	scfm	15.7

Performance

Mixing Criteria	scfm/ft²	0.12
Safety Factor	%	
Mixing Air (8)	scfm	4.9
Process Air (for SOR)	scfm	15.7
Design Air (1,7)	scfm	15.7
Diffuser Air Rate	scfm/Diff.	1.74
Delivered SOR	lb/day	101.6
Delivered SOTE	%	25.9%
Pressure @ Top of Dropleg	psig	5.91
Shaft Power	Bhp	0.5

Notes:
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(8) Fine Mixing air based on MOP/8 0.12 scfm/ft²

AFD270 DISC DIFFUSERS
Town of Kent, CT
One (1) Aeration Tank
10/06/2016

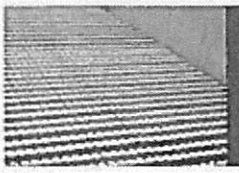
SSI Aeration

AERATION TANK DESIGN	
Design Basis (1=BOD, 2=SOR, 3=AOR, 4=COD)	2.00
SOR, Lbs/day	1,764
Barometric Pressure, psia	14.4
DESIGN INPUT	
Aeration Time/Day (hrs)	24.00
MLSS, mg/l	4,500
Basin Liquid Depth (ft.)	15.25
Basin Volume, mil. gal.	0.14
Basin Volume, mil. lb.	1.16
Basin Volume, Ft^3	18,579
Basin Floor Area - Ft^2	1,218
SOTR CALCULATIONS	
Wastewater Temperature, °C	30.00
Diffuser Water Depth, ft	14.70
Alpha (α) Factor	0.65
Basin DO conc. (Cl), mg/l	2.00
Beta (ß) Factor	0.95
Equivalent Depth Factor	0.35
Theta (Θ) Factor	1.024
C* (surface saturation, Std. Meth.)	7.56
Csw, mg/l, Site Basin Saturation	8.57
Css, mg/l, Std. Basin Saturation	10.47
Std. O2 Transfer Rate, #O2/day	1,764
Std. O2 Transfer Rate, #O2/hr	73.5
Std. O2 Transfer Rate, KgO2/hr	33.41
KLa20 - /hr	6.03
DIFFUSER QUANTITY, FLOW & PRESSURE	
Aerobic Tank Area (ft2)	1218.27
Airflow per diffuser Sm3/hr	2.05
SOR IN KG/HR	33.41
DWD/m	4.48
Normal Conditions in Deg C	0.00
Max. ambient temp deg C	30.00
Ambient pressure PSIA	14.70
OTE/% per m	6.80
Treatment Airflow m3/hr	393
Treatment Airflow SCFM	231
Diffuser quantity (Pcs)	192
Blower Pressure (PSI)	8.00
grO2/m3	85.03
KgO2/kWh	4.12
Circular Tank floor coverage	6.46%
Minimum Mixing SCFM	146.2
DIFFUSER QUANTITY (Pcs)	192
DIFFUSER AIRFLOW RATE SCFM	1.20
TOTAL AIRFLOW in SCFM	231
SOTE %	30.5%
PRESSURE @ TOP DROP PIPE in PSIG	7.12
BLOWER PRESSURE in PSIG	8.00

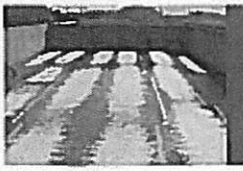
SSI PROPOSAL

SSI Aeration

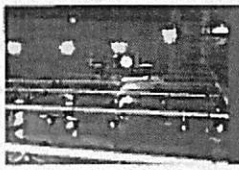
Date: : 09/30/2016
Project Name: Town of Kent, CT
Prepared for: Sherwood Logan & Associates, Inc
Fine Bubble Diffuser Equipment



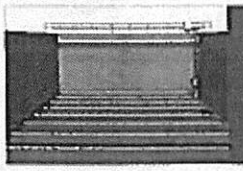
Fine Bubble Diffusers
Disc Type



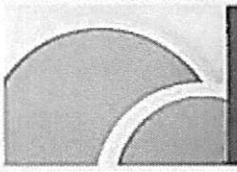
Fine Bubble Diffusers
Tube Type



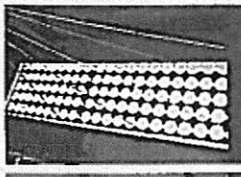
Coarse Bubble Diffusers
Reliability Built In



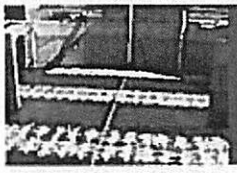
Telemetry Systems
Real Time Camera Monitoring



Advanced Membrane Materials
PTFE

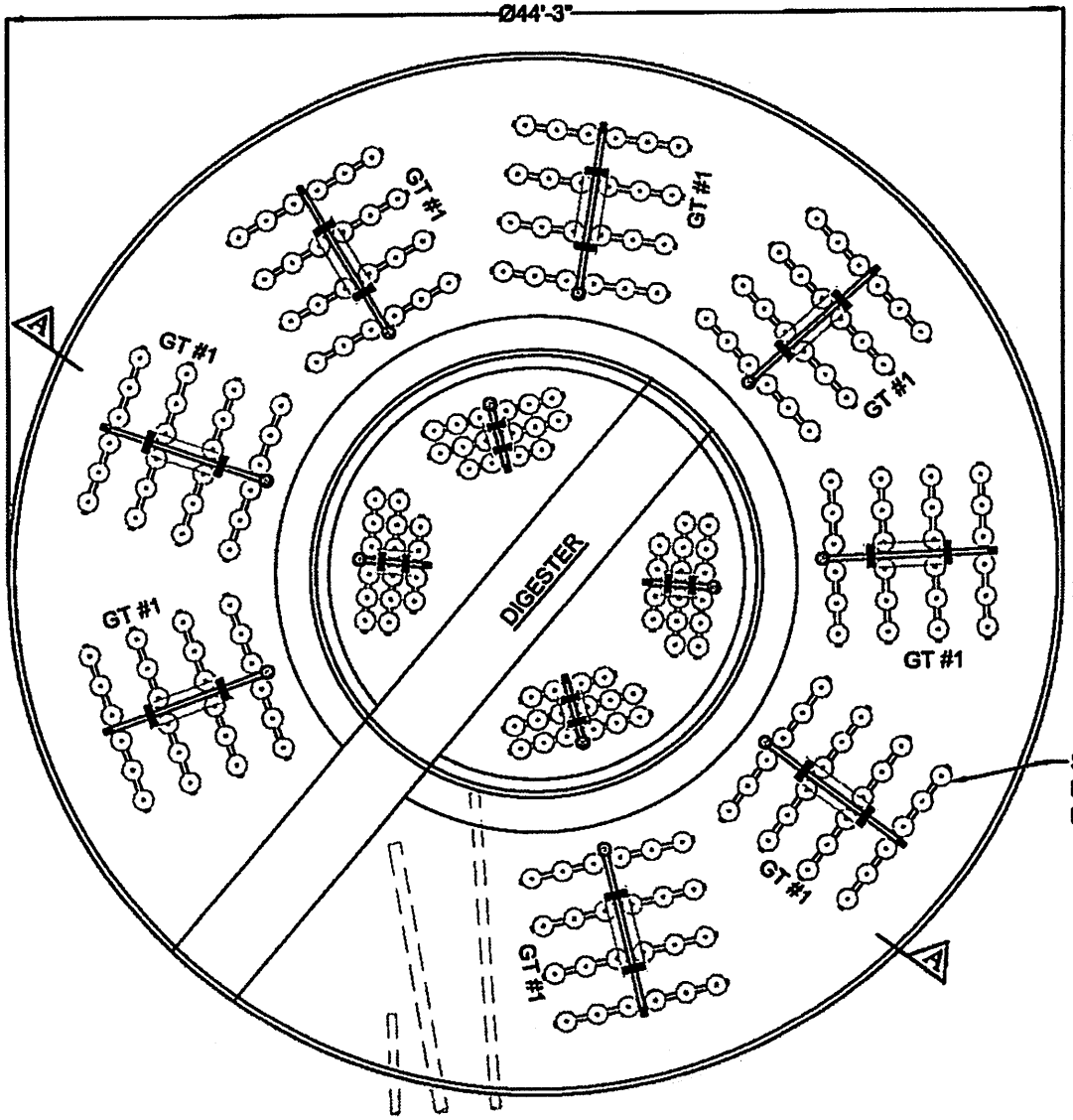


Retrievable Systems
Easy to Maintain



Complete Aeration Systems
Designed for You

OEM Replacement Membranes
Retrofit Existing Systems



SSI AFD270-E (9") FINE BUBBLE DISC DIFFUSERS WITH COMPRESSION MOLDED EPDM MEMBRANES C/W CLAMP ON SADDLE

AERATION TANK LAYOUT PLAN

REV	DESCRIPTION	DATE	BY
0	ISSUED FOR PROPOSAL	09/30/16	NAGESH

SSI AFD270-E (9") FINE BUBBLE DISC DIFFUSERS WITH COMPRESSION MOLDED EPDM MEMBRANES C/W CLAMP ON SADDLE

Town of Kent, CT

AERATION TANK - 1 No.
DIGESTER - 1 No.
LAYOUT PLAN

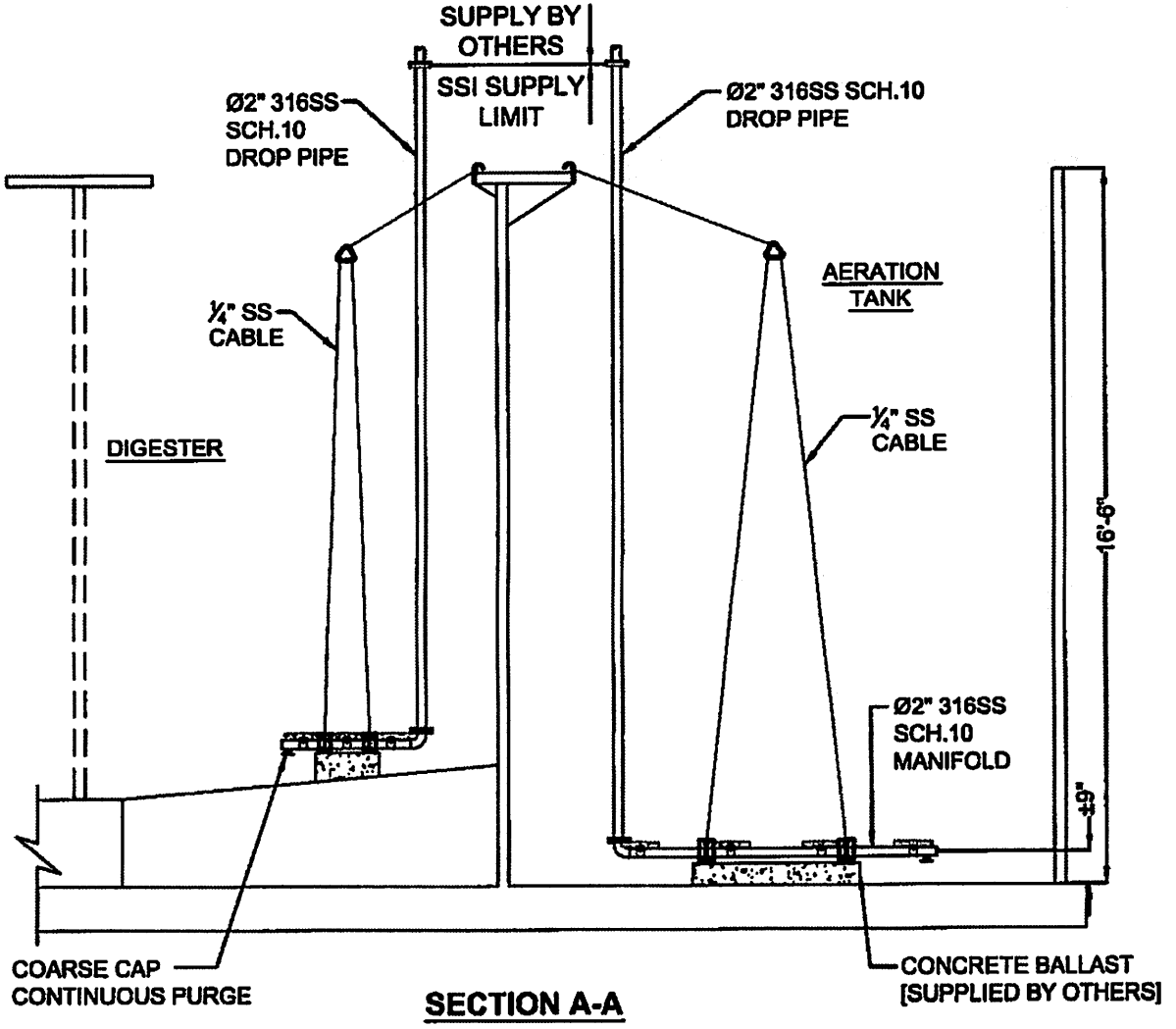
SSI Aeration Inc.
CLEAR WATER DEPT.

SUBMITTED:	DESIGNED BY: NSI
SCALE: NTS	DRAWN BY: NAGESH
	SHEET NO. 1 OF 2
DATE: SEPT, 2016	PROPOSAL ISSUE

DWG.NO: Town of Kent, CT_Aeration Tank_AFD270-E_P0

ALL THE FIELD DIMENSIONS OR ANY SLOPE IN THE TANK FLOOR TO BE CONFIRMED BEFORE APPROVAL

THIS LAYOUT IS FOR REFERENCE ONLY THIS DRAWING IS NOT TO USE FOR INSTALLATION 'OR' CONSTRUCTION PURPOSE



SECTION A-A

REV	DESCRIPTION	DATE	BY
0	ISSUED FOR PROPOSAL	09/30/18	HAGESH

SSI AFD270-E (9") FINE BUBBLE DISC DIFFUSERS WITH COMPRESSION MOLDED EPDM MEMBRANES C/W CLAMP ON SADDLE

Town of Kent, CT

AERATION TANK - 1 No.
DIGESTER - 1 No.
SECTION

SSI Aeration Inc.
CLEAR WATER DEPT.

SUBMITTED:	DESIGNED BY: NM
SCALE: NTS	DRAWN BY: HAGESH
DATE: SEPT. 2018	SHEET NO. 2 OF 2
	PROPOSAL ISSUE

DWG.NO: Town of Kent, CT_Aeration Tank_AFD270-E_P0

ALL THE FIELD DIMENSIONS OR ANY SLOPE IN THE TANK FLOOR TO BE CONFIRMED BEFORE APPROVAL

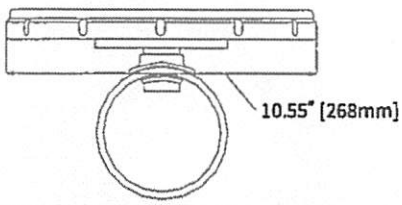
THIS LAYOUT IS FOR REFERENCE ONLY THIS DRAWING IS NOT TO USE FOR INSTALLATION 'OR' CONSTRUCTION PURPOSE

SSI Aeration
SMART IDEAS FOR WATER

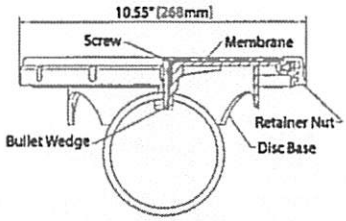
What Makes the **SSI 9" Disc Diffuser Systems** a Worldwide Choice?

The SSI 9" Disc Diffuser System combines engineering excellence, superior component quality, and a technically advanced product design. Proven highly durable and efficient in thousands of municipal and industrial installations around the world, this advanced system has reliability built into every stage of performance.

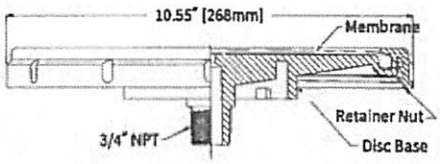
Grommet Connection

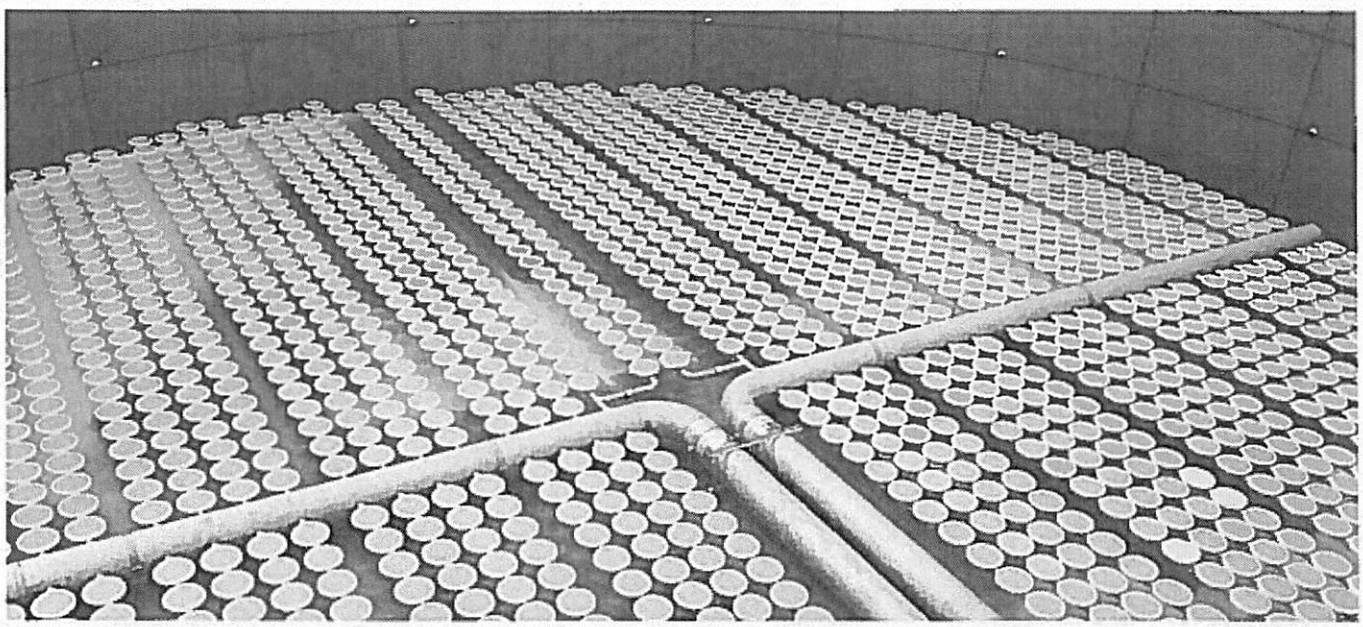


POD Connection



Disc Diffuser





SSI Aeration
4 Tucker Drive
Poughkeepsie, New York 12603 USA
www.sssiaeration.com tel: +1 (845) 454-8171
email: info@ssiaeration.com fax: +1 (845) 454-8094

Unique System Strengths

Complete product line – creating the system that fits your needs
SSI manufactures disc diffusers and coarse bubble diffusers, and we mount these products on a wide range of piping materials including PVC, CPVC, PP and Stainless Steel. We have the ability to attach diffusers to pipe using saddles, grommets, or pre-assembled PODS. We can provide retrievable systems or fixed grids, and systems in kit form or mostly factory assembled. We try to understand and anticipate your needs, and fit our recommendations to your situation.

Piping system integrity – thicker wall pipe and double anchors for fewer breakages
Our piping is 38% thicker and has double rod support stands as standard – two anchors for each support location means twice the resistance to hydraulic and thermal loads. Most often supports fail due to temperature and water velocity. SSI locates two anchors where support is needed most, helping to increase product longevity.

Comprehensive design service and after sales support
SSI provides full design services, including biological and mixing calculations, process simulations and hydraulic studies. We maintain a full drafting department with 3D and animation capabilities and we can assist with specifications and CAD drawings. Our service and installation crew can hold your hand during the early stages of the project and our worldwide multilingual staff is dedicated to your complete satisfaction.

Intelligent Upgrade Options

Patented PTFE membranes prolong efficiency and reduce whole-life costs
SSI's patented PTFE membrane barrier properties not only reduce plasticizer extraction, shrinking, and membrane hardening but also limit dynamic changes that can result from swell, such as creep. Compared with uncoated products that are more susceptible to increases in DWP due to more aggressive fouling and changes in physical properties and weight, the PTFE coated membrane improves consistency of DWP (Headloss) values over the product life. This directly impacts long-term power costs and the ability of the system to distribute air uniformly across the tank floor.

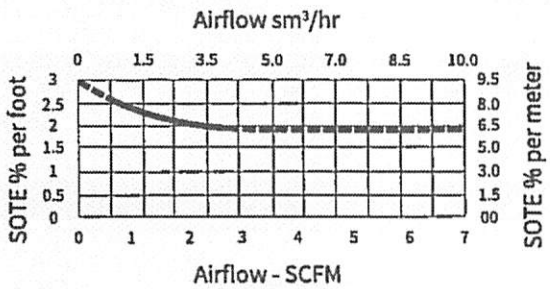
SSI Telemetry – the inside story solves maintenance problems
At the click of a mouse, you will know the DWP of your diffuser membranes, airflow rate to those monitored diffusers, and air temperature in the submerged piping system. You can sense vibration, pipe roll over, and water in the grid. Automatic moisture purging and automatic acid dosing systems are available. Through multiple cameras, you can see both inside the grids, and surface bubble patterns. Wet probes are also available for DO and WW temperature. Tracking all this data on a user-friendly online dashboard facilitates communication between consultant and client, manufacturer and rep. This smart technology lets you locate problem areas and allocate resources more efficiently. SSI Telemetry is your preventive maintenance hub in the heart of the plant.

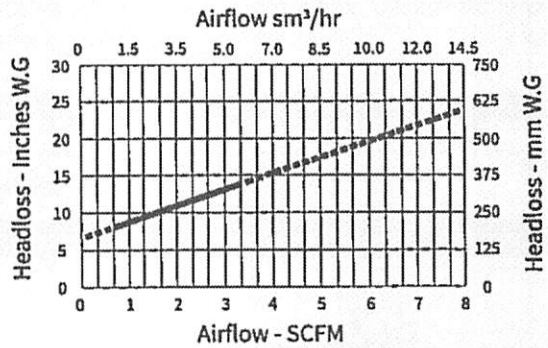
Pods Connection

Factory assembled diffusers mounted on laterals save contractors up to 30% on assembly time. PODS are a viable solution if you want to tank down for a minimum period, if your labor costs are high, or if you have a field labor shortage. For engineers unsure about the skill set of a contractor's field labor, SSI PODS are worry free with fewer field connections, and most connections created in controlled factory settings by trained personnel and automatic machines.

Grommet Connection

Simple to install on site, compact to ship and move. Affordably priced and time tested over 15 years worldwide.

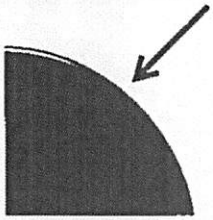




TECHNICAL DATA SHEET

SSI™ ADVANCED MEMBRANE MATERIALS

EPDM

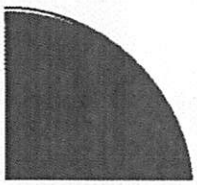


Manufactured by compression molding with a standard cure, low plasticizer content, and 1mm or 2mm perforations. Compression molding with modern equipment utilizing individual thermocouples and vacuum technology ensures a repeatable very high quality product.

COST SCALE

LOWEST ★ HIGHEST

fEPDM

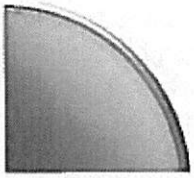


fEPDM membranes were developed in 2007 as an answer to those few cases where solvents were present and posed a risk to PTFE-coated membranes, and patent protection was filed for in 2008. In practice, they have outstanding chemical resistance similar to Viton®. A significant additional benefit of fEPDM membranes is that the entire outer surface area of the membrane is protected. This proprietary process also treats and protects the inner slits!

COST SCALE

LOWEST ★ HIGHEST

PTFE



Developed in 2004 and protected by patent soon thereafter, the PTFE-coated EPDM membrane is now proven technology. The PTFE surface layer protects the EPDM substrate from chemical attack, while at the same time significantly reducing surface fouling on the membrane. In time, we expect to learn that PTFE-coated EPDM membranes outlast standard EPDM, thereby reducing the life cycle costs even further. Industrially, this product is a "must have," and has become the industry standard in pulp and paper, dairy, refinery, carbonated beverage, and landfill leachate applications. Municipally, it is used by major cities worldwide due to the anticipated life cycle cost benefits and reduced maintenance.

COST SCALE

LOWEST ★ HIGHEST

VITON®

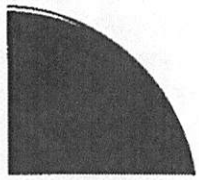
This material has been used successfully by SSI in a few applications where cost is not an issue. The membrane works very well, and is highly resistant to most foulants and chemicals. However, it is quite costly. Viton® costs us about 10 times what we pay for EPDM.

COST SCALE

LOWEST ★ HIGHEST

Viton® is a registered trademark of DuPont.

ANTI-STATIC EPDM

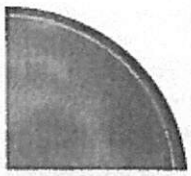


Air passing through a plastic piping system generates a significant static charge, which may increase bubble size and accelerate surface and, more specifically, inner-slit fouling. SSI's patent-pending anti-static membrane, newly developed for 2010, reduces the static charge of the air bubble to a minimum. This membrane is available plain, with fluorination, or with a PTFE coating.

COST SCALE

LOWEST ★ HIGHEST

WEPO™



Developed in 2009 with patent protection filed for in 2010, SSI's webbed polyurethane membrane provides outstanding chemical resistance, and excellent creep resistance. WEPO™ membranes are available with either standard or micro perforations to produce fine or ultra fine bubbles. This membrane material is suitable for municipal or industrial service.

COST SCALE

LOWEST ★ HIGHEST

Please see reverse for additional technical data

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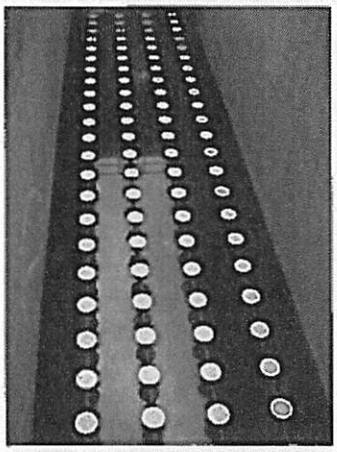
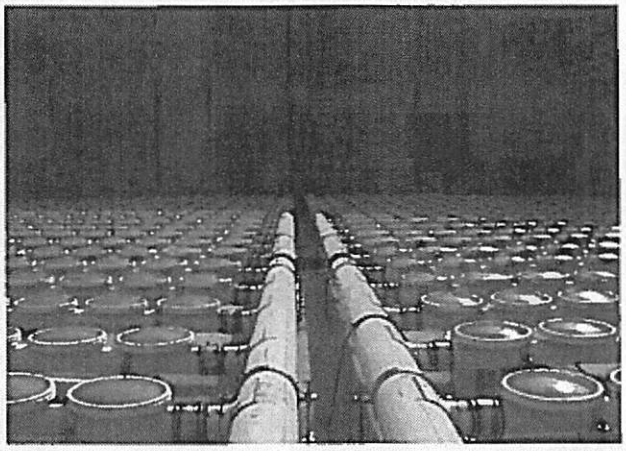
TECHNICAL DATA SHEET

SSI™ ADVANCED MEMBRANE MATERIALS

continued





REFERENCES

MENASHA, WISCONSIN – 2005
SCA Tissue North America LLC
Fine Bubble Diffuser System (750 pieces of AFD350-P: 12" Disc Diffusers with PTFE coating)

ALMA, KANSAS – 2006
Alma WWTP
Fine Bubble Aeration (160 pieces of AFD350-P: 12" Disc Diffusers with PTFE coating)

MEXICO CITY, MEXICO – 2004, updated 2006
Danone de Mexico WWTP
Fine Bubble Aeration System (800 pieces of AFD350 – 12" Disc Diffusers)

EAGLE, ID – 2007
Avimore Water Reclamation Facility
Three (3) Aeration basins with Fine Bubble Aeration (243 total pieces of AFD270-P: 9" Disc Diffusers with PTFE-coated membranes)

SINCLAIR, WY – 2006
Sinclair Wyoming Refining Company
Fine Bubble Aeration (1,120 feet of 80mm x 3048mm PTFE-coated tube membranes)

QUEBEC, CANADA – 2004
Agropur Cheese Plant
Fine Bubble Aeration (1,300 pieces of 9" PTFE-coated disc membranes)

OSWEGO, IL – 2008
Fox Metro Water Reclamation District
Fine Bubble (3,048 pieces of AFD350-P: 12" Disc Diffuser w/ PTFE-coated membrane)

LILLESTROM, NORWAY – 2007
Dynea Norway
Fine Bubble Aeration (832 pieces of 91 x 500mm diffusers w/ PTFE-coated membranes & 138 pieces of 91 x 1000mm diffusers w/ PTFE-coated membranes)

SAUDI ARABIA – 2005 thru 2008
North Jeddah & West Makka
Wastewater Treatment Plants
Fine Bubble Aeration (70,000 pieces of AFD270-P: 9" Disc Diffusers with PTFE-coated membranes)

OSWEGO, IL (PHASE II) – 2008
Fox Metro Water Reclamation District
Fine Bubble (3,048 pieces of AFD350-P: 12" Disc Diffuser w/ PTFE-coated membrane)

MATANE, QC – 2008
Tembec Pulp and Paper
Replacing Sanitaire™ 9" membrane discs
500/22,000 pieces shipped 2008 – pending results of pilot test, balance will ship

TROIS RIVIERES, QC – 2008
Kruger Wayagamack
9200 pieces 9" PTFE membrane replacing Sanitaire™ 9" membrane discs

UP, MICHIGAN
Versa Coated Paper
8000 pieces 9" PTFE membrane

WYOMING – 2007
Sinclair Oil Refinery
PTFE tube diffusers

CITY OF SEDALIA, MO – 2007
PTFE tube membrane replacement – replaced torn silicone diffusers

FRANCE – 2007
Yoplait Yogurts
Tube Diffusers

CITY OF SYDKYSTEN, DENMARK – 2007

CITY OF FREDERIKSHAVN, DENMARK – 2007

NIELSENS FISH EXPORT, DENMARK – 2006

FRANKLINTON, NC USA – 2006
Novozymes
PTFE tube diffusers

NORWAY – 2006
Dynea
PTFE tube diffusers

YORKSHIRE WATER, UK
Multiple Sites
All replacement work of existing EPDM diffusers - 20,000 pieces AFD270 PTFE – 2006-present. Each site SOTE tested; client fully satisfied with all purchases.

ARGENTINA
YPF/Repsol – Viton® membranes
Viton® is a registered trademark of DuPont.

PROJECTS SHOWN ABOVE:
Left: North Texas Municipal WWTP, USA
Center: Danone (Dairy) WWTP, Mexico
Right: Songnam Municipal WWTP, Korea

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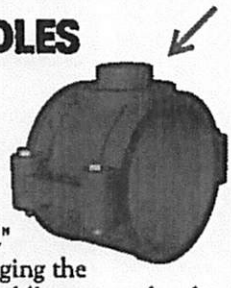
TECHNICAL DATA SHEET

SSI™ ACCESSORIES

CLAMP-SADDLES



Quick Connect type Clamp-Saddle mount on Stainless Steel and PVC pipes.
They allow retrofit of 12" to 9" discs without changing the piping system. Clamp-Saddles are made of PP, and install on pipe easily and quickly.

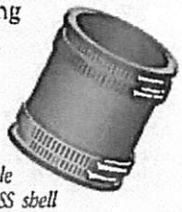
GROMMETS

Grommets are available for round plastic or square stainless steel pipes in US or Metric dimensions. Installation is simple. Multiple sizes are available based on pipe wall thickness. Grommets install into a 1-1/4" (32mm) chamfered hole.

EXPANSION JOINT OPTIONS

Rigid Bolted SS

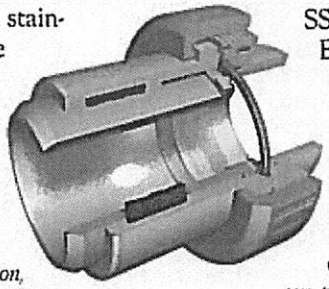
Expansion Joints are available in three types: Flexible PVC with SS Shell, Rigid Bolted SS, and Anti-rotation, Telescoping PVC. The flexible expansion joints are recommended for disc installations and the positive locking type for tube diffuser projects.



Flexible PVC w/SS shell

Slotted band joints with stainless steel shear rings are suitable for disc-type fine bubble and cap-type coarse bubble lateral plastic piping systems, in conjunction with SSI's fixed and guide support stand system to manage thermal expansion and contraction.

Positive locking bolted stainless steel couplings are suitable for drop pipes, stainless joints, and for all tube diffuser piping systems to restrict header pipe rotation.

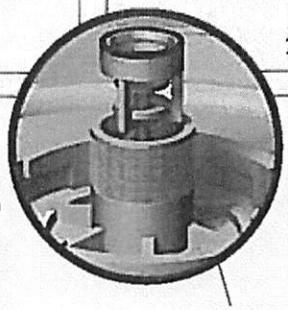


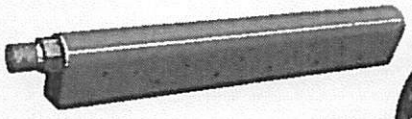
Anti-rotation, Telescoping PVC

SSI's Sliding Expansion Joint is an anti-rotational telescopic union which absorbs pipe expansion and contraction to up to 1.5" (38mm).

CHECK VALVES

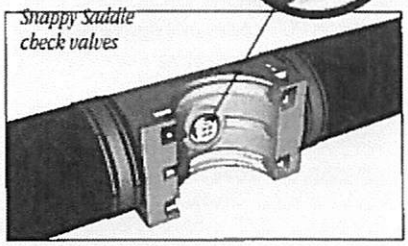
SSI fine and coarse bubble diffusers are available with optional check valves. These are not required for proper operation since most diffusers are self-checking, but they may give peace of mind to the designer or operator.



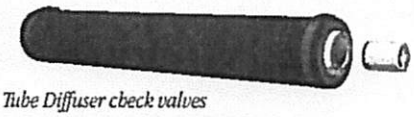


Coarse Band (WBCB) check valves

Disc showing check valve installation



Snappy Saddle check valves



Tube Diffuser check valves

Please see reverse for additional technical data

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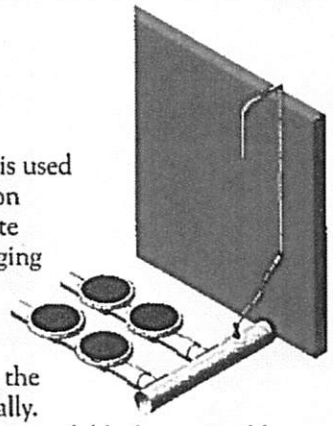
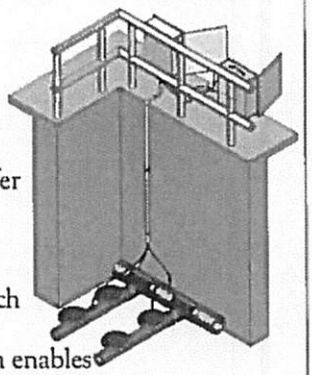
SSI™ ACCESSORIES *continued*

MOISTURE PURGE SYSTEM



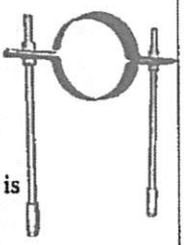
An airlift type purge system is used in all SSI fine bubble aeration systems to remove condensate from the piping system. Purging entrained water helps ensure even air distribution to all diffusers in a grid. A ball valve is supplied with the system and is opened manually. Continuous purge systems are available for retrievable-type aeration systems, or where it is not possible to fasten a purge line to a tank wall.

PRESSURE MONITORING SYSTEM

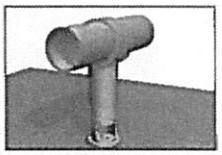


Throughout the life of an aeration system, oxygen transfer efficiency may decline somewhat when diffusers become fouled, but headloss can increase dramatically which in turn increases energy costs. A pressure monitoring system enables the operator to better determine the optimal cleaning frequency of the membranes. The fouling rate can vary by aeration zone, hence it is recommended to install at least one system in each zone.

SUPPORT STANDS



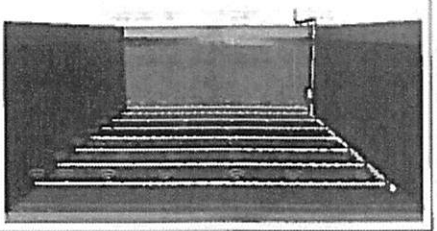
Support Stands are available in 304SS, 316SS or in ABS plastic. SSI's standard is 304SS with drop-in anchor bolts. In our aeration piping systems, support stands fulfill the dual role of anchoring pipes to the floor and controlling thermal expansion and contraction. Special support stands for uneven tank floors, for installing into concrete ballast forms, and for tanks with significant channel velocity (with lateral supports) are also available. ABS support stands are primarily used with disc diffusers and plastic pipe, where a low capital cost is the primary objective.



ABS plastic support stand

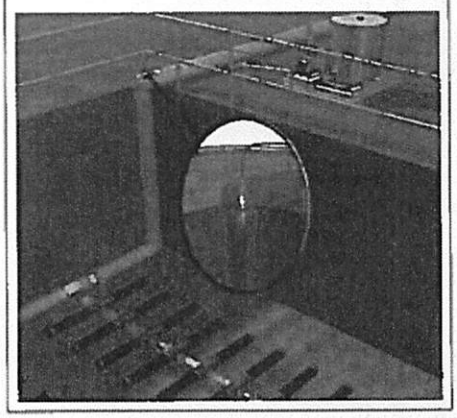
TELEMETRY SYSTEM

Adding a Telemetry System to your aeration system will allow you to remotely monitor factors inside your tank from any PC, tablet or mobile device. Telemetry can be installed in new systems or retrofitted through an end cap into existing systems. Telemetry sensors are available to monitor variables in your system such as temperature, vibration, humidity, water detection, DO, and other environmental factors.



ACID DOSING SYSTEM

In-situ Acid Dosing Systems are available to control calcareous deposits in the perforations which will reduce membrane backpressure.



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Engineer's Estimate

DRAFT

Conceptual Cost Estimate

Wastewater Treatment Plant Aeration System Upgrade

Prepared for

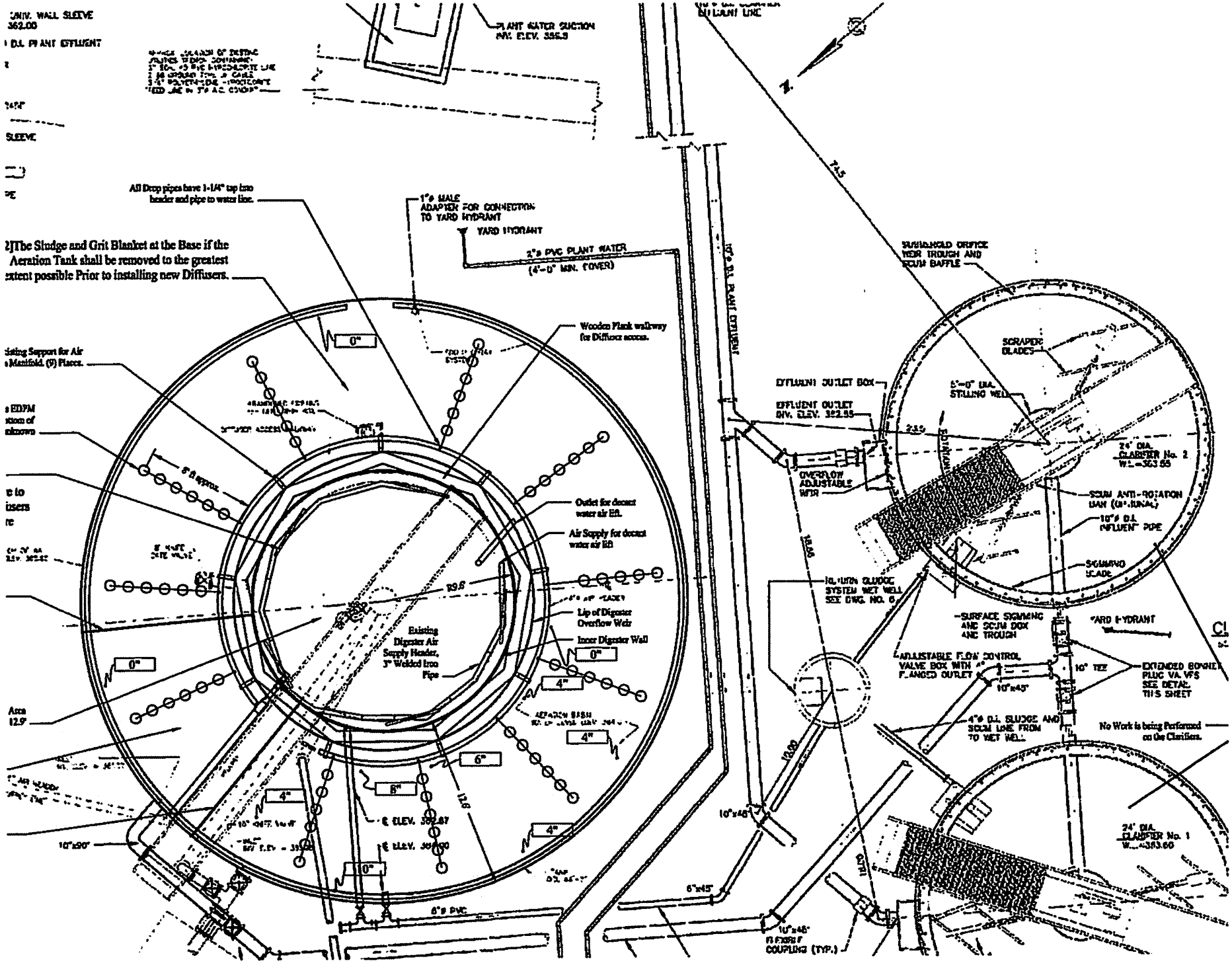
Town of Kent, Water Pollution Control Authority

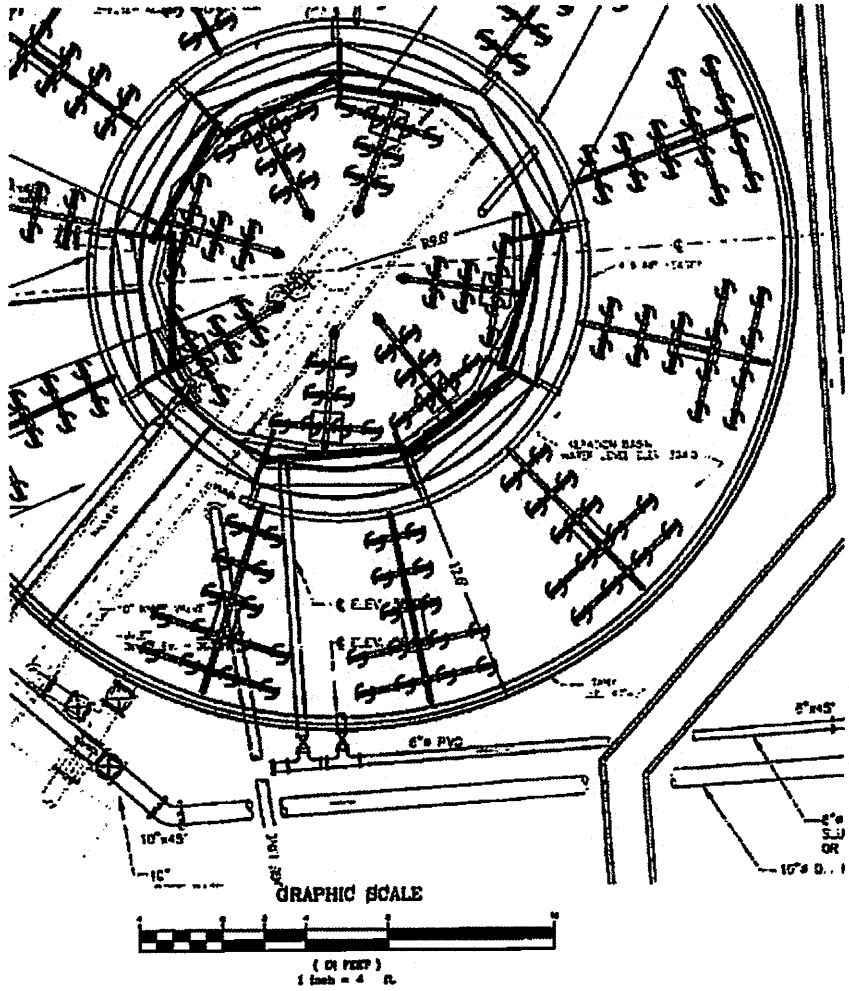
12/1/2016

Item no.	Item Description	unit of measure	Number of units required	cost per unit	Total Cost per item	Section Subtotals
1.00	**Contractors Administrative Costs**					
1.01	Bonds and Insurances	Allowance	1	$2,500.00	$2,500.00	
1.02	Shop Drawings	Allowance	1	$2,000.00	$2,000.00	
1.03	Closeout Costs	Allowance	1	$1,000.00	$1,000.00	
	Section Total					$5,500.00
2.00	**Construction Costs**					
2.01	Grit Removal					
	Vactor Removal	LS	1.0	$6,000.00	$6,000.00	
	Grit disposal	LS	1.0	$3,000.00	$3,000.00	
						$9,000.00
2.02	Fabrication of Diffuser Grids					
	Sludge Digester	LS	1.0	$15,000.00	$15,000.00	
	Aeration Tank	LS	1.0	$35,000.00	$35,000.00	
	Stainless steel drop pipe	LF	330.0	$25.00	$8,250.00	
						$58,250.00
2.04	Installation of Grids					
	2" Repair couplings	Ea	20.0	$250.00	$5,000.00	
	Weld new couplings on air header add new valves and pipe	Ea	18.0	$350.00	$6,300.00	
	Weld new drop pipe supports on tank wall	Ea	6.0	$200.00	$1,200.00	
	Cast Concrete ballast blocks	Ea	18.0	$400.00	$7,200.00	
	Lifting Hardware for grid (angle, clevis, bolts)	Ea	18.0	$200.00	$3,600.00	
	Stainless steel chain with ends	LF	360.0	$22.00	$7,920.00	
	Strut Support Frames for Sludge Digester	LS	1.0	$2,500.00	$2,500.00	
	Placing Grids in Sludge Digester	Day	2.0	$3,000.00	$6,000.00	
	Placing Grids in Aeration Tank	Day	4.0	$3,000.00	$12,000.00	
	Crane Rental	Month	1.0	$3,500.00	$3,500.00	
						$55,220.00
2.05	Blower Control System					
	Timer Relays	Ea	2.0	$300.00	$600.00	
	Installation of Relays and testing	LS	1.0	$4,000.00	$4,000.00	
						$4,600.00
	Section total					$127,070.00
	Subtotal					$132,570.00
	Contingency Allowances	Allowance	5.00%		$6,628.50	
	Engineering Services		15.00%		$19,885.50	
	Legal Services		5.00%		$6,628.50	
	Section Subtotal					$33,142.50
	Estimated Project Costs					$165,712.50
	Use Rounded Amount					$170,000.00

Design Plans

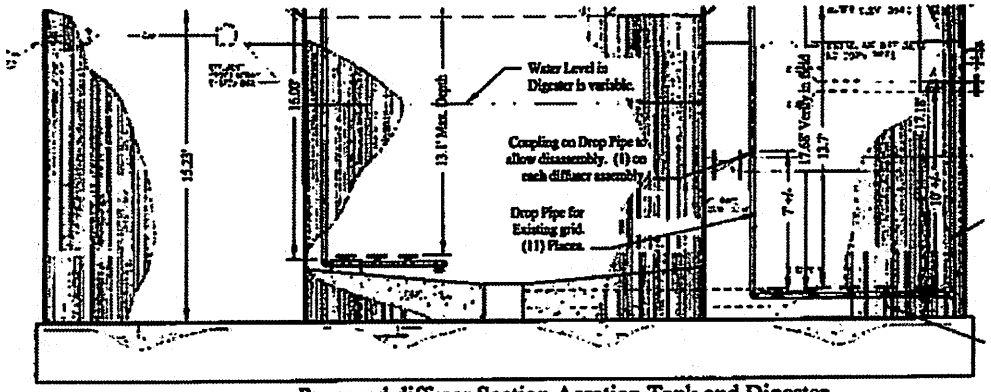
DRAFT


All Drop pipes have 1-1/4" tap into header and pipe to water line.
2]The Sludge and Grit Blanket at the Base if the Aeration Tank shall be removed to the greatest extent possible Prior to installing new Diffusers.
1"ø MALE ADAPTER FOR CONNECTION TO YARD HYDRANT
YARD HYDRANT
2"ø PVC PLANT WATER (4'-0" MIN. COVER)
PLANT WATER SUCTION
Wooden Plank walkway for Diffuser access.
Outlet for decant water air lift.
Air Supply for decant water air lift
Lip of Digester Overflow Weir
Inner Digester Wall
Existing Digester Air Supply Header, 3" Welded Iron Pipe
6"ø PVC
SCRAPER BLADES
EFFLUENT OUTLET BOX
EFFLUENT OUTLET INV. ELEV. 362.95
OVERFLOW ADJUSTABLE WEIR
24' DIA. CLARIFIER No. 2
SCUM ANTI-ROTATION BAR
10"ø D.I. INFLUENT PIPE
SCUMMING BLADE
SURFACE SKIMMING AND SCUM BOX AND TROUGH
YARD HYDRANT
ADJUSTABLE FLOW CONTROL VALVE BOX WITH FLANGED OUTLET
EXTENDED BONNET PLUG VALVES SEE DETAIL THIS SHEET
4"ø D.I. SLUDGE AND SCUM LINE FROM TO WET WELL
No Work is being Performed on the Clarifiers.
24' DIA. CLARIFIER No. 1
10"ø D.I. PLANT EFFLUENT
10"x45"
6"x45"
10"x45" FLEXIBLE COUPLING (TYP.)



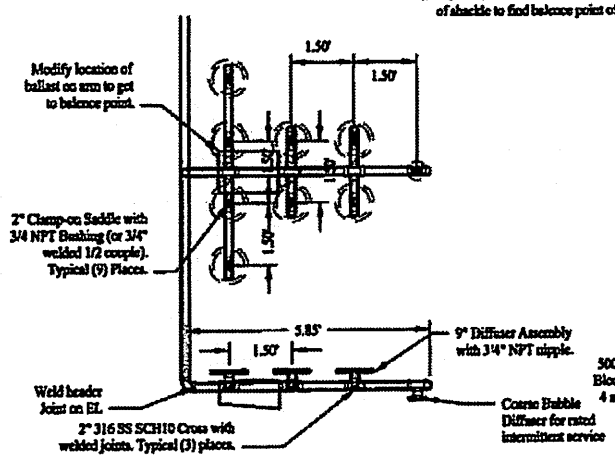
Proposed diffuser layout Aeratin Tank and Digester

Scale: 1" = 4'



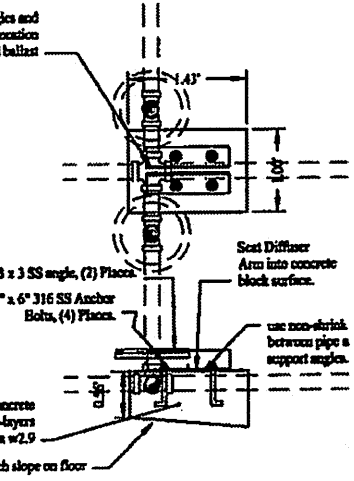
Proposed diffuser Section Aeration Tank and Digester

Scale: 1" = 4'

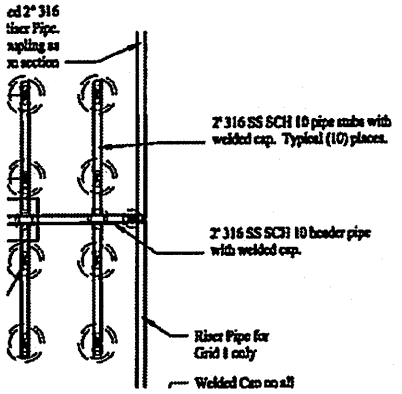


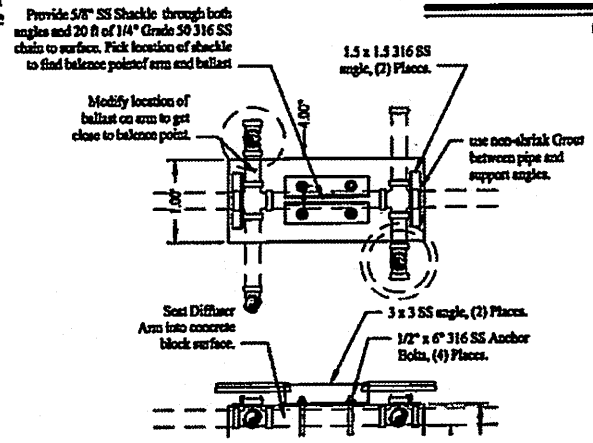
Removable Digester Grid

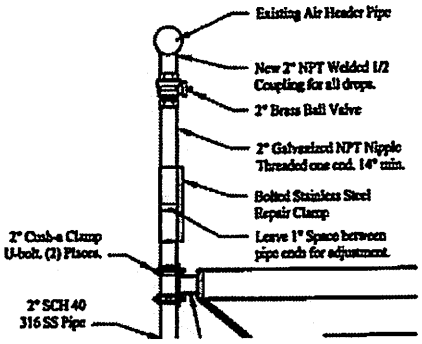
5
2



Aeration Tank Diffuser Arm E







DRAFT

TOWN OF KENT
Kent Sewer Commission
41 Kent Green Boulevard
P.O. Box 144
Kent, CT 06757

2017 Regular Meeting Schedule

Pursuant to CGS 1-225:
The Town of Kent Sewer Commission's regular monthly meetings will be held on the second Tuesday of each month at 4:30 p.m. at Kent's Town Hall, 41 Kent Green Boulevard, Kent, CT 06757. Meetings in addition to these listed below will be considered Special and will follow the State Mandated guidelines for posting a Special meeting.

At the December 13, 2016 Regular Board of Selectmen meeting, the following dates were approved as regular meeting dates for 2017:

Tuesday, January 10, 2017

Tuesday, February 14, 2017

Tuesday, March 14, 2017

Tuesday, April 11, 2017

Tuesday, May 9, 2017

Tuesday, June 13, 2017

Tuesday, July 11, 2017

Tuesday, August 8, 2017

Tuesday, September 12, 2017

Tuesday, October 10, 2017

Tuesday, November 14, 2017

Tuesday, December 12, 2017

_____
Administrative Assistant

This institution is an equal opportunity provider and employer.

Brookwoods II Association, Inc.
P.O. Box 890
Kent, CT 06757
(860) 927-1516

December 8, 2016

Mr. John Casey
Kent Sewer Commission
41 Kent Green Blvd
P.O. Box 144
Kent CT 06757

Dear John,

The Board of Directors of Brookwoods met and discussed your request for Brookwoods to hire a professional engineer who would report to the Kent Sewer Commission on the condition of our water system.

We came up with three questions about the request.

1. Why now when for years no such report was expected?
2. What will such and inspection accomplish?
3. If you still feel an inspection is necessary for your purposes, what will the Kent Sewer Commission provide to help with the project.

In 1997 we were granted a thirty-year license to operate our water system including the waste water system. Since that time, we have met every state and federal regulation pertaining to our water system particularly the regular testing for contaminants. We also pay $1100 per year to Connecticut DEP and Energy.

Currently our water system and the regular testing and maintenance of the water system is managed by:

Tomascak Plumbing LLC
28 Old Forge Hollow Road
Bantam, CT 06750
860-567-1611

We feel that an engineer's report is unnecessary. I have included a number of documents to demonstrate our feeling that the system is up to date and managed properly. Brookwoods itself is without debt and financially sound.

Sincerely,

John Rorke
For the Board of Directors

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

Raul Pino, M.D., M.P.H.
Commissioner

Dannel P. Malloy
Governor

Nancy Wyman
Lt. Governor

Drinking Water Section

October 31, 2016

Mr. George Bentley
Brookwoods II Association, Inc
433 Kent Cornwall Road #23
Kent, CT 06757

PUBLIC WATER SYSTEM:	Brookwoods II 433 Kent Cornwall Rd, Kent, CT
CLASSIFICATION TYPE:	Community
PWSID:	CT0688011

SUBJECT: SANITARY SURVEY REPORT

Dear Mr. Bentley:

I performed a sanitary survey of the public water system serving Brookwoods II on October 26, 2016 with Tom Tomascak the certified operator. This survey was conducted pursuant to Section 19-13-B102(e)(7)(E) of the Regulations of Connecticut State Agencies (RCSA) and consisted of an onsite review of the water source, treatment, distribution system, finished water storage, pumping facilities and controls, monitoring and reporting data, system management and operation, and operator compliance with the Department of Public Health (DPH) requirements.

Sanitary Survey Report Response Requirements:

No later than November 30, 2016. (per RCSA Section 19-13-B102(e)(7)(E)(iv)(III)): Provide a written plan to correct all significant deficiencies listed in this report by the date shown below. Your written response must also address all minor deficiencies, provide any required additional information, and as needed, address any recommendations and comments noted in this report.

SYSTEM DESCRIPTION:

The water system that serves Brookwoods II consists of two wells (well 1 and well 2), an atmospheric storage tank, two booster pumps, and distribution piping. Both wells are located near the edge of the woods; well 1 and well 2 have respective pump withdrawal rates of 9.5 gpm and 15 gpm. The water enters a buried atmospheric storage tank. Two booster pumps transfer water to the hydropneumatic pressure tank that has a total volume of 1,200 gallons.

SURVEY FINDINGS:

A) Significant Deficiencies

Section 19-13-B102(a)(104) of the RCSA defines a significant deficiency as any situation, practice, or condition in a public water system with respect to design, operation, maintenance, or administration that the department determines to be causing, or has the potential for causing, risks to health or safety of the public served by the system. Please note that all significant deficiencies must be corrected or the system must be in compliance with a department-approved corrective action plan within 120 days of the date of this report in accordance with B102(j)(14)(A)(iv) of the RCSA.

No significant deficiencies were identified at the time of the sanitary survey.

B) Minor Deficiencies

Minor deficiencies are defined as all other violations of the RCSA that have not been designated as significant.

No minor deficiencies were identified at the time of the sanitary survey.

C) Additional Information Required

Compliance with all applicable regulations was unable to be fully assessed at the time of this sanitary survey. Please note that upon submission of required information, the information will be reviewed for compliance and a determination made regarding whether the additional information results in a system deficiency or if the system is in compliance.

Applicable Regulatory Section	Observed Condition and Required Information
1. All atmospheric storage tanks, basins or clearwells shall be inspected at a minimum of once every 10 years for sanitary conditions and structural integrity. [RCSA Section 19-13-B102(f)(5)(C)] (V034)	**Observed Condition:** The atmospheric tank was reportedly inspected approximately 3 years ago; a date of last inspection could was not verified with documentation.
	Required Information: Please submit the most recent tank inspection report to verify that the inspection was performed.

D) Recommendations and Comments:

A written response addressing the following items should be provided to the DPH.

1. Please note that beginning April 1, 2016, all public water systems (PWS) are required to comply with the provisions of the Revised Total Coliform Rule (RTCR). The RTCR will affect how PWS sample for total coliform bacteria and react to positive coliform results with an emphasis on proactive public health protection. Guidance documents that will help PWS understand and comply with the RTCR are available on the DPH website at http://www.ct.gov/dph/cwp/view.asp?a=3139&q=544350.

2. Please be reminded that in accordance with the Lead and Copper Rule as outlined in the Code of Federal Regulations section 141.85(d) and 141.86, all systems shall provide a notice of the individual tap results from lead tap water monitoring to the occupants of the residence/location where the tap was tested. The notice must be delivered to consumers as soon as practical, but not later than 30 days of the sample results being received from the laboratory even if the results did not exceed the action level for lead. No later than three months following the end of the monitoring period, systems shall mail a completed and signed Certification of Consumer Notification of Lead Tap Water Sampling with a sample copy of the Consumer Notice of tap results to the Department. Lead Consumer Notice and Certification of Compliance templates are located on the DWS website at http://www.ct.gov/dph/cwp/view.asp?a=3139&q=541928.

3. The DPH strongly recommends that all operational hydro-pneumatic tanks be evaluated and replaced when warranted. The evaluation should consider structural integrity, manufacturer's pressure ratings, age and expected service life, and condition of internal coating systems. The potential for catastrophic failure of public water supply infrastructure provides an excellent reminder of the importance of an asset management plan. The plan assesses the age and the condition of water system components to set aside reserve funds to replace aging components before catastrophic failure and the resulting loss of water supply occurs.

4. All community water systems are required to install and maintain a standby generator capable of providing sufficient power to supply the power demands of the water system at each water system facility location. Each generator must be minimally equipped with an automatic transfer switch and be fueled by propane or natural gas. For requirements pertaining to allowable alternative sources of backup power see the relevant regulation or contact this office.

Community Water System	Deadline
Serving ≥ 100,000 people	December 17, 2016
Serving 10,000 – 99,999 people	December 17, 2017
Serving < 10,000 people	December 17, 2018

[RCSA Section 19-13-B102(w)(1)]

Small community water systems are eligible to apply for funding for new generator systems through the Drinking Water State Revolving Fund (DWSRF). The DWSRF currently provides subsidized low-interest loans (up to 45% subsidy) with terms ranging from 3-20 years depending on the cost of the generator system. The next application period for DWSRF funding will be announced in the Fall of 2016 and run through December 31, 2016 with funding becoming available after July 1, 2017. Subsidy rates are determined annually and may vary from the current rates in the next DWSRF funding cycle. Please visit the DWSRF's Emergency Power Generator Program webpage for more information or contact a staff engineer in the DWSRF Program at (860) 509-7333.

As a reminder, all necessary and required forms, sampling schedules, regulations, guidance documents, fact sheets, etc. are available on the DPH Drinking Water Section website at http://www.ct.gov/dph/publicdrinkingwater.

If you have any questions regarding this matter please contact me at (860) 509-7333 or via email at chris.urena@ct.gov.

Sincerely,

Christopher Urena
Sanitary Engineer 2
Drinking Water Section

MBS/cu

cc: Mr. Robert Rubbo, Director of Health, Torrington Area Health District
Mr. Thomas S. Tomascak, Certified Operator

BROOKWOODS II

P.O. Box 890
Kent, CT 06757
treasurer.brookwoods@gmail.com

George Bentley
Work (845) 832-6601 x18
gabtv.hcf@hotmail.com
fax (845) 832-3994

November 10, 2016

Ciristopher Urena
410 Capitol Avenue – MS #51 WAT
P.O. Box 340308
Hartford, CT 06134

RE : Sanitary Survey Brookwoods II

433 Kent Cornwall Rd

Kent CT 06757

PWSID : CT0688011

Dear Mr. Urena,

As per your letter dated October 31, 2016 and the requested documentation.

C) Additional Information required

As requested please find enclosed Brookwoods II atmosperic tank inspection report dated June 3, 2014.

D) Recommendations and Comments

1. Hydro Technologies Inc. of New Milford, CT handles all of Brookwoods II water sampling requirements so that Brookwoods II continues to be compliant with the provisions of the Revised Total Coliform Rule (RTCR) in sampling and and reacting to positive coliform results.

2. The Lead and Copper Rule sampling was performed in August 2016 with the summary report sent to CT DPH in September with the quarterly DMR report. Residents were mailed their test site results November 3rd upon receipt of your letter indicating that the residents should have received notice within 30 days of the results being received. Copies of the test result report summary and the individual letters sent to the (5) respective homeowners (of the sampling sites) have been enclosed.

3. On January 18, 2016 Tomascak Plumbing our certified water system operator provided a proposal for the booster pump one replacement, indicating that if the booster pump was upgraded to a variable frequency drive the need for the future replacement of the undergound 1200 gallon hydro-pneumatic tank could be eliminated. Instead a smaller tank could be substituted and located inside the pump house for easier access. Proposal enclosed.

4. Brookwoods II is currently awaiting the CT DPH next (Fall 2016) call for projects through the DWSRF to submit an application along with proposals from (3) contractors for an emergency 25 kW propane generator. See emergency contingency response plan drafted August 2016.

Sincerely,

George A. Bentley IV
Treasurer,
Brookwoods II Association

BROOKWOODS II

P.O. Box 890
Kent, CT 06757
treasurer.brookwoods@gmail.com

George Bentley
Work (845) 832-6601 x18
gabiv.hcf@hotmail.com
fax (845) 832-3994

November 10, 2016

Ciristopher Urena
410 Capitol Avenue – MS #51 WAT
P.O. Box 340308
Hartford, CT 06134

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433 Kent Cornwall Rd

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Sincerely,

George A. Bentley IV
Treasurer,
Brookwoods II Association

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

Raul Pino, M.D., M.P.H.
Commissioner

Dannel P. Malloy
Governor

Nancy Wyman
Lt. Governor

Drinking Water Section

DWS Circular Letter #2016-17

TO: Community Water Systems (CWSs)

FROM: Lori Mathieu, Public Health Section Chief, Drinking Water Section

DATE: June 17, 2016

RE: Generator Verification and Emergency and Contingency Plan Requirements

Effective December 17, 2015, Regulation of Connecticut State Agencies (RCSA) Section 19-13-B102(w) enacted new emergency power requirements for all community water systems (CWSs) as announced earlier this year under Circular Letter 2016-01. Subsection E states that each CWS that has a standby stationary on-site generator installed or a portable generator that was available for use prior to the effective date of this subsection shall file a statement with the department by August 16, 2016. To assist you in complying with this requirement, the attached form was created for your convenience. For every generator installed at your CWS, please complete a copy of the form provided here to document the current emergency power options available for your CWS.

If your CWS currently does not have backup power generator(s) installed, you can seek funding through the DPH's Drinking Water State Revolving Fund (DWSRF) which may include attractive subsidies in the form of a principal forgiveness. Information on the DWSRF program can be found on the DPH's website, using the link below.
http://www.ct.gov/dph/cwp/view.asp?a=3139&q=538484

* Also the regulation requires CWS's that are not subject to the requirements of CGS section 25-32d to prepare an emergency contingency and response plan by August 16, 2016, and make the plan available for review upon request by the Department. see attached

For assistance in the preparation of your plan, a template emergency contingency and response plan has been provided and is here attached.

DPH
Connecticut Department of Public Health

Phone: (860) 509-7333 • Fax: (860) 509-7359 • VP: (860) 899-1611
410 Capitol Avenue, P.O. Box 340308, MS#51WAT
Hartford, Connecticut 06134-0308
www.ct.gov/dph/publicdrinkingwater
Affirmative Action/Equal Opportunity Employer

Connecticut Department of Public Health Drinking Water Section Generator Documentation

Connecticut Department of Public Health

Emergency Contingency and Response Plan

Provide detailed plan for restoring service in the event of power loss to water supply:

currently collecting (3) proposals for a 25 kw generator w/ 100 amp automatic transfer switch to be installed w/ 1000 gal propane tank underground. will apply for DWSRF financing in next call for projects Fall 2016 to be installed by Dec 2018 or earlier.

Provide detailed plan to maintain an adequate and safe supply of water during service disruption(includes refueling plan):

Emergency back up generator and 1000 gallon propane tank to be installed and maintained as outlined above.
Refueling Lindell Fuels 860 824 5444

Plan for internal notifications of service loss:

Contact (30) residents in community via email and/or phone
Contact system Operator Tom Tomascak via email and phone 860-567-1611
Contact Hydro Technologies Test Lab 860-355-8773

Example Contacts:

- Water System Consumers
- Water System Management
- Water System Operators

Plan for external notifications of service loss:

Contact Kent Emergency Mangement 860 927 5218
Contact Torrington Area Health 860 489 0436
Contact Eversource online report outage.

Example Contacts:

- Local emergency management officials
- Local health dept.
- Drinking Water Staff
- Utility Provider

Consumer Notice of Tap Water Results
Unit Number 16

As you may be aware, Public Water Systems are required to monitor the water provided to its consumers for numerous contaminants. The purpose of this notice is to present consumers with the results of the most recent samples

Brookwoods II appreciated your participation in the lead and copper tap monitoring program. This letter is to report the lead and copper results from the sample collected at your residence, 433-16 Kent Cornwall Road *in August 2016.* The reported lead result for your residence is 0.001 parts per million (mg/l) and below the action level of 0.015 mg/l. The 90th percentile lead concentration for our waterworks is 0.002 mg/l. The reported copper result for your residence is 0.1 mg/L and below the action level of 1.3 mg/l. The 90th percentile copper concentration for our waterworks is 0.1 mg/L.

What Does This Mean?

Under the authority of the Safe Drinking Water Act, the Environmental Protection Agency (EPA) set the Action Level for lead in drinking water at 15 ppb. This means utilities must ensure that water from the customer's tap does not exceed this level in at least 90 percent of the homes sampled (90th percentile value). The Action Level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Because lead may pose serious health risks, the EPA also set a Maximum Contaminant Level Goal (MCLG) for lead of zero. The MCLG is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Some individual homes may have high lead concentrations while the 90th percentile value for the entire waterworks is below the Action Level. These individual site lead levels may be due to conditions unique to the individual home, such as the presence of lead solder or brass faucets, fittings and valves that may contain lead. Our waterworks strives to keep the corrosivity of our water as low as possible (corrosive water can cause lead to leach from plumbing materials that contain lead). Additionally, there are actions you can take to reduce your exposure. We strongly urge you to review the enclosed Fact Sheet and take the steps listed to reduce your exposure to lead in drinking water.
Lead is a common metal that has been in many consumer products but is now known to be harmful to human health if ingested or inhaled. It can be found in lead-based paint, air, soil, household dust, food, some types of pottery, and drinking water. Lead is rarely found in natural sources of water such as rivers, lakes, wells or springs.

What Are The Health Effects of Lead?

When people come in contact with lead, it may enter their bodies and accumulate over time, resulting in damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Lead in water can be a special problem for infants, whose diets may be mostly liquids, such as baby formulas or concentrated juices mixed with water. Smaller bodies can absorb lead more rapidly than bigger ones, so amounts of lead that won't hurt an adult can be very harmful to a child and scientists have linked the effects of lead on the brain with lowered IQ in children.

During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Adults who drink this water over many years could develop kidney problems or high blood pressure.

What Are The Sources of Lead?

The primary sources of lead exposure for most children are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated residential soil. Exposure to lead is a significant health concern, especially for young children and infants whose growing bodies tend to absorb more lead than the average adult. If you are concerned about lead exposure, parents should ask their health care providers about testing children for high levels of lead in the blood.

What Can I Do To Reduce Exposure to Lead in Drinking Water?

Lead may work its way into drinking water after the water entered the distribution system and is on its way to consumers taps. This usually happens through the corrosion of materials containing lead in household plumbing. These materials include brass faucets, lead solder on copper pipes, lead pipes, or lead service lines connecting the water main to the inside plumbing. Lead pipes are no longer installed for service lines or in household plumbing and lead solder has been outlawed in Virginia since 1985.

There are several steps you can take to reduce your exposure to lead in drinking water. These include:

1. **Run your water to flush out lead.** If water hasn't been used for several hours, allow the water to run at the tap for 15-30 seconds or until it becomes cold or reaches a steady temperature before using it for drinking or cooking. This flushes lead-containing water from the pipes. The water you run from drinking water taps does not have to be wasted. You can use this water for cleaning purposes or for watering plants. You may want to keep a container of drinking water in your refrigerator, so you don't have to run water every time you need it.

2. **Use cold water for cooking and preparing baby formula.** Do not cook with or drink water from the hot water tap as lead dissolves more easily into hot water. Do not use water from the hot water tap to make baby formula.

3. **Do not boil water to remove lead.** Boiling water will not reduce lead.

4. **Look for alternative sources or treatment of water.** You may want to consider purchasing bottled water or a water filter. Read the package to be sure the filter is approved to reduce lead or contact the National Sanitation Foundation at 800-NSF-8010 or www.nsf.org for information on performance standards for water filters. If you choose to install a lead removal filter, be sure to maintain and replace a filter device in accordance with the manufacturer's instructions to protect water quality.

6. **Get your child tested.** Contact your local health department or healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure.

7. **Identify if your plumbing fixtures contain lead.** New brass faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. The law currently allows end-use brass fixtures, such as faucets, with up to 8% lead to be labeled as "lead free." Visit the National Sanitation Foundation Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

For More Information

Call George Bentley at 860-927-4966. For more information on reducing lead exposure around your home and the health effects of lead, visit EPA's web site at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

CERTIFICATION OF COMPLIANCE

CONSUMER NOTIFICATION OF LEAD TAP WATER MONITORING

Public Water System ID: CT0688011

Public Water System Name: Brookwoods II

Public Water System Town: Kent

Notification of lead tap water monitoring results for the period: August 2016

The public water system indicated above hereby affirms that it has provided a notice of the individual tap results from lead tap water monitoring carried out under the requirements of Code of Federal Regulations 141.86 to the persons served by the water system at the specific sampling site from which the sample was taken in accordance with the delivery, content, and format requirements of Code of Federal Regulations 141.85(d).

George Bentley

Signature of owner or operator

11. 3. 16

Date

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

Raul Pino, M.D., M.P.H.
Commissioner

Dannel P. Malloy
Governor

Nancy Wyman
Lt. Governor

Drinking Water Section

DWS Circular Letter #2016-17

TO: Community Water Systems (CWSs)

FROM: Lori Mathieu, Public Health Section Chief, Drinking Water Section

DATE: June 17, 2016

RE: Generator Verification and Emergency and Contingency Plan Requirements

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http://www.ct.gov/dph/cwp/view.asp?a=3139&q=538484

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Connecticut Department of Public Health

Connecticut Department of Public Health Drinking Water Section Generator Documentation

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Example Contacts:
- Local emergency management officials
- Local health dept.
- Drinking Water Staff
- Utility Provider

ATTACHMENT "Q"
NUMBER 1
ENGINEERING REPORT

Arthur H. Howland

Land Surveyor
63 BRIDGE STREET
NEW MILFORD, CT 06776
203-354-9346

Professional Engineer
40 MAIN STREET
TORRINGTON, CT 06790
203-489-6559

PLEASE ADDRESS ALL MAIL TO NEW MILFORD OFFICE

June 30, 1997

Mr. Mark Donecker, V.P.
Brookwoods II Association
433 Kent Cornwall Road 30
Post Office Box 890
Kent, CT 06757

RE: Brookwoods II Engineering Report

Dear Mr. Donecker,

On June 6, 1997, I visited Brookwoods II Route 7 Kent with you to become familiar with the site layout and in particular to observe any evidence that might indicate the sanitary disposal systems are not working properly. I found no evidence of any breakout or anything that would indicate any problem with the system.

I have reviewed the records for the pumping of the septic tanks as well as the proposed pumping schedule through 1999. The schedule appears to be vary adequate since the pumping report shows the sludge accumulation to be small.

I have also reviewed the water sample reports for the monitoring wells and find they are being carried out on a scheduled basis. The same is true for the metering of the water use. My review of the water use indicates the sanitary disposal systems are receiving approximately 50% of the design flow.

It is my opinion the facilities are being monitored and cared for on a regular basis. They appear to be functioning as designed.

I recommend that each time a septic tank is pumped the baffels be checked so any necessary replacement can be performed before there is a failure of a leaching field.

Very truly yours,

Arthur H. Howland

AHH/acd

Brookwoods II
433 Kent Cornwall Road
Kent, CT 06757

Weekly Meter Readings

Month: September

Year: 2016

Public Water System: Brookwoods

Town:

	Chl	Well # 1 Reading	Usage	Gpm	Well # 2 Reading	Usage	Gpm	Totals
1								
2								
3								
4								
5			20666			3291		5357
6.		4110917	16529	9.5	9924322	26324	15	42853
7								
8								
9								
10								
11			1852			2945		4797
12		4122030	11113	9.5	9941990	17668	15	28781
13								
14								
15								
16								
17								
18			1628			2606		4234
19		4133426	11396	9.5	9960235	18245	15	29641
20								
21								
22								
23								
24								
25			1587			2525		4112
26		4144537	11111	9.5	9977909	17674	15	28785
27								
28								
29								
30								
31								

PUBLICATIONS

Evaluation of the Orientation Program for Thai Scholars (1994) A report issued on the experience of Thai Scholars based upon visits to twenty different schools to evaluate the impact of the Orientation and the support structure at the schools.

Journey Toward A Global Perspective (1989) A text for teaching Global Perspectives Education.

Survey of Global Environmental and Future Studies Education in Independent Schools (NAIS, 1983)

"Education for the Real World Doesn't Mean Learning How to Get a Job" in the *Independent School Bulletin* (February, 1983)

"A Comparison of Global Education in Europe and the United States" in *Development Forum* (United Nations, Geneva, Switzerland 1976)

"Research on Student Awareness and Global Perspectives: in *Trend* (University of Massachusetts Graduate School of Education, Amherst, MA 1975)

Global Development Studies: A Model Curriculum (New York, 1973)

As a speaker and director of numerous workshops sponsored by the University of Massachusetts, Drew University, UNESCO, the New York State Council on Social Studies and others, a number of talks and remarks have been published in conference reports. I am currently working on a book dealing with the cultural adaptation of international students in American Secondary Schools.

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