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I.	Dried sludge removed from S-1 drying beds to Leo Dickson & Sons Composting Facility	

Leo Dickson Compost

5/C 03

Leo Dickson Land App 5/L05

TOWN OF OWEGO BIOSOLIDS SUMMARY 1/1/15 - 12/31/15

1,278,500 gals. totaling 104.5 dry tons/ 94.8 dry metric tons were removed from the WPCP #2 anaerobic digesters and hauled to WPCP #1 for belt pressing and storage on the drying beds.

Dried Biosolids were removed from the drying beds and landspread on:

82.87 dry tons/ 75.16 dry metric tons of WPCP #2 anaerobic biosolids were applied to the Valentine and Card farms.

Field nitrogen loadings were predetermined using Cornell University Nutrient Guidelines. Recommendations were based on Agro-One soil analysis through Dairy One.

4.02 dry tons/ 3.64 dry metric tons of WPCP #2 anaerobic biosolids were removed from the drying beds and transported to the Leo Dickson & Sons Inc. composting facility located in Bath, NY.

Pathogen and vector attraction reduction were achieved by anaerobic digestion.
Average temperature for the WPCP #2 primary digester was: 98 degrees F.
with an MCRT of > 30 days.
Volatile solids reduction exceeded 38% continually.

1,209,840 gallons totaling 76.59 dry tons/ 69.47 dry metric tons were removed from the WPCP #1 aerobic digesters, belt pressed and stored on the drying beds.

59.7 dry tons/ 54.15 dry metric tons of WPCP #1 belt pressed sludge was removed from the drying beds and transported to the Leo Dickson & Sons Inc. composting facility located in Bath, NY.

Aerobic digester operation is monitored using Specific Oxygen Uptake Rate (SOUR).

Additionally, at the request of the owner, the Town began a potential long-term project to resurrect Field #C-1.

Field # C-1 is a 20 acre parcel and a portion of the farm owned by Donald Card when the original Part 360 engineering report was prepared in 1984 for biosolids application to the Card Farm.

The Card Farm was subsquently divided among three of Donald's nephews, with field #C-1 being the first to change ownership. Although the remainder of the original Card Farm has continued to receive biosolids, no record of land-application exists for field #C-1.

Therefore, at the request of Dennis Card (owner) and after consulting with NYSDEC Environmental Engineer 2 James E Gruppe, soil sampling was conducted on field #C-1. The resulting pH (5.4) indicated a large amount of lime would be required to adjust the field pH to the required 6.5 over a realtively long period of time.

Although the potential for increasing the usable acreage by 33% exists, the Town elected to take a conservative approach and apply lime to the north half of the field in 2013 at a rate of: 2.62 tons/acre.
Soil sampling will be conducted seperately on the north and south halves of field #C-1 in 2014 to determine the cost effectiveness of continuing lime addition to the entire field.
Results showed to be positive with a PH of 5.9. Lime was add in 2014 to both the north and south at a rate of two ton per acre. 2015 permit was modified and field C-1 was added to permit.

2015 SLUDGE LOG for WPCP #1 and #2

DATE:	FROM:	TO:	UNIT:
Jan. 5	Transport Drying bed #2	Hauled to: Dickson's Envir. Services	78.40 tons
Jan. 5	Transport Drying bed #3	Hauled to: Dickson's Envir. Services	6.95 tons
Jan. 6	Transport Drying bed #2	Hauled to: Dickson's Envir. Services	66.27 tons
Jan.7	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #2	22185 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	25500 gals.
Jan.15	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #2	16160 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	25500 gals.
Jan.22	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #2	27930 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	22000 gals.
Jan.29	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #2	29340 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	22000 gals.
Feb.5	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #2	33440 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	22000 gals.
Feb.13	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #2	18770 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	22000 gals.
Feb.18	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #2	21330 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	15500 gals.
Feb.26	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #2	28880 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	25500 gals.
March. 4	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #2	20480 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	25500 gals.
March. 12	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #2	24220 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	29000 gals.
March. 19	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #2	19030 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	29000 gals.
March. 25	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #2	29820 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	22000 gals.
March. 31	Transport Drying bed #2	Hauled to: Dickson's Envir. Services	61.90 tons
April. 1	Transport Drying bed #2	Hauled to: Dickson's Envir. Services	13.93 tons
April.2	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #1	27405 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	22000 gals.
April.15	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #1	35500 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	19500 gals.
April.23	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #1	35730 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	19500 gals.
April.30	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #1	13210 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	25500 gals.
May.7	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #1	33210 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	25500 gals.
May.15	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #1	26650 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	25500 gals.
May.21	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #1	24460 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	25500 gals.
May.26	**Drying Bed #3**	**Card field 6**	11 **Dry Ton**
May.26	**Drying Bed #3**	**Val. field 5**	3.75 **Dry Ton**
May.27	**Drying Bed #3**	**Val. field 2**	10.86 **Dry Ton**
May.28	Belt press 1 Aerobic digs.	Hauled to: Drying Bed #1	40105 gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	22000 gals.
May.28	**Drying Bed #4**	**Card field 9**	7.72 **Dry Ton**
May.28	**Drying Bed #4**	**Card field 11**	3.37 **Dry Ton**
May.28	**Drying Bed #4**	**Card field 13**	7.37 **Dry Ton**
May.29	**Drying Bed #4**	**Card field 8**	6.31 **Dry Ton**

DATE:	FROM:	TO:		UNIT:
May.29	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	25645	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	0	gals.
June.4	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	13650	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	25500	gals.
June.10	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	21590	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	25500	gals.
June.17	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	17985	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	29000	gals.
June.24	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	25310	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	32500	gals.
July.2	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	20060	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	32500	gals.
July.8	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	24760	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	32500	gals.
July.15	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	29995	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	29000	gals.
July.22	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	20010	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	25500	gals.
July.31	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	19340	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	25500	gals.
Aug.6	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	29680	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	22000	gals.
Aug.13	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	20745	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	25500	gals.
Aug.19	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	12515	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	25500	gals.
Aug.26	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	17505	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #4	32500	gals.
Sept.3	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	26105	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	29500	gals.
Sept.9	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	11945	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	25500	gals.
Sept.10	**Drying Bed #4**	**Card field 9** 8.38	**Dry Ton**	
Sept.10	**Drying Bed #4**	**Card field 13** 4.07	**Dry Ton**	
Sept.11	**Drying Bed #4**	**Val. field 4** 12.45	**Dry Ton**	
Sept.11	**Drying Bed #4**	**Val. field 2** 7.51	**Dry Ton**	
Sept.17	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	23855	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	29000	gals.
Sept.24	Belt press I Aerobic digs.	Hauled to: Drying Bed #1	0	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	29000	gals.
Oct.1	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	18770	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	25500	gals.
Oct. 5	Transport Drying bed #1	Hauled to: Dickson's Envir. Services		tons
Oct. 6	Transport Drying bed #1	Hauled to: Dickson's Envir. Services		tons
Oct. 8	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	31500	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	22000	gals.
Oct.15	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	11375	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	25500	gals.
Oct.22	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	11945	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	25500	gals.
Oct.30	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	11945	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	25500	gals.

2015 SLUDGE LOG for WPCP #1 and #2

DATE:	FROM:	TO:		UNIT:
Nov.4	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	6260	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	25500	gals.
Nov.12	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	13840	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	25500	gals.
Nov.18	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	23890	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	22000	gals.
Nov.25	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	16755	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	25500	gals.
DEC.2	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	33455	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	22000	gals.
DEC.10	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	27840	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	25500	gals.
DEC.16	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	37550	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	22000	gals.
DEC.23	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	35760	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	18500	gals.
DEC.30	Belt press I Aerobic digs.	Hauled to: Drying Bed #2	36400	gals.
	Belt press S-2 sec. Anaerobic Dig	Hauled to: Drying Bed #3	22000	gals.

PERMIT

Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
TOWN OF OWEGO

2354 ST RTE 434

APALACHIN, NY 13732

Facility:
OWEGO WTP LAND SPREADING FACILITIES
S APALACHIN RD, VALLEY RD & MONTROSE TPKE
APALACHIN, NY 13732

Facility Permit Contact:
MICHAEL J TRIVISONNO
TOWN OF OWEGO
1319 MAIN ST
APALACHIN, NY 13732
(607) 625-2197

Facility Application Contact:
TYSON STILES
OWEGO (T)
1319 MAIN ST
APALACHIN, NY 13732
(607) 625-2197

Facility Location: in OWEGO in TIOGA COUNTY
Facility Principal Reference Point: NYTM-E: 402.9 NYTM-N: 4652.911
Latitude: 42°01'20.1" Longitude: 76°10'22.3"

Authorized Activity: The applicant is authorized to land apply, at an agronomic rate, a maximum of 150 dry-tons/year, certified Class B biosolids generated by the Town of Owego Wastewater Treatment Plants No. 1 & 2 at the Rodney Valentine, Timothy Card, and Dennis Card Farms on South Apalachin Road, Owego, New York. Land application must be conducted in compliance with Part 360-4 and the permit to operate.

This permit includes a variance from 6 NYCRR Part 360-4(b)(10), which requires the biosolids to be incorporated into the soil within 24-hours after application.

Permit Authorizations

Solid Waste Management - Under Article 27, Title 7
Permit ID 7-4930-00025/00009

Renewal	Effective Date: 5/19/2014	Expiration Date: 5/18/2024
Modification # 1	Effective Date: 7/24/2015	Expiration Date: 5/18/2024

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 7A-570

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

TOWN OF OWEGO UTILITIES DEPARTMENT
1319 MAIN STREET
APALACHIN, NY 13732

CONTACT NAME: JEFFREY D. PARKER
COUNTY: TIOGA
TELEPHONE NO: (607)625-2197

PERMIT TYPE:

- ☐ NEW
- ☒ RENEWAL
- ☐ MODIFICATION

EFFECTIVE DATE: 07/01/2015
EXPIRATION DATE: 06/30/2016
US EPA ID NUMBER:

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY:
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
OWEGO (T) WPCP NO. 1	OWEGO , NY	Residential Raw Sewage including Portable Toilet Waste Sludge from Sewage or Water Supply Treatment Plant	
RODNEY VALENTINE FARM	APALACHIN , NY	Sludge from Sewage or Water Supply Treatment Plant	7-4930-00025/00
SOUTHERN TIER RECYCLERS	OWEGO , NY	Non-Residential Raw Sewage or Sewage-Contaminated Wastes	
TIM CARD FARM	APALACHIN , NY	Sludge from Sewage or Water Supply Treatment Plant	7-4930-00025/00

NOTE: By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the Environmental Conservation Law, all applicable regulations, and the General Conditions printed on the back of this page.

ADDRESS: New York State Department of Environmental Conservation
Division of Materials Management - Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

AUTHORIZED SIGNATURE: [signature] Date: 4/21/15

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DEC PERMIT NUMBER
8-4699-00012/00001
FACILITY/PROGRAM NUMBER(S)
511.05

PERMIT

Under the Environmental Conservation Law (ECL)

EFFECTIVE DATE
January 7, 2013
MODIFIED
January 7, 2013
EXPIRATION DATE(S)
January 6, 2018

TYPE OF PERMIT ☐ NEW X RENEWAL X MODIFICATION X PERMIT TO CONSTRUCT X PERMIT TO OPERATE

☐ Article 15, Title 5: Protection of Waters

☐ Article 15, Title 15: Water Supply

☐ Article 15, Title 15: Water Transport

☐ Article 15, Title 15: Long Island Wells

☐ Article 15, Title 27: Wild, Scenic and Recreational Rivers

☐ 6NYCRR 608: Water Quality Certification

☐ Article 17, Titles 7, 8: SPDES

☐ Article 19: Air Pollution Control

☐ Article 23, Title 27: Mined Land Reclamation

☐ Article 24: Freshwater Wetlands

☐ Article 25: Tidal Wetlands

X Article 27, Title 7; 6NYCRR 360: Solid Waste Management

☐ Article 27, Title 9; 6NYCRR 373: Hazardous Waste Management

☐ Article 34: Coastal Erosion Management

☐ Articles 1, 3, 17, 19, 27, 37; NYCRR 380: Radiation Control

☐ Other:

PERMIT ISSUED TO			TELEPHONE NUMBER
LEO DICKSON & SONS, INC.			607-776-7997
ADDRESS OF PERMITTEE			
5226 BONNY HILL ROAD, BATH, NY 14810			
CONTACT PERSON FOR PERMITTED WORK			TELEPHONE NUMBER
PHILIP DICKSON			607-776-7997
NAME AND ADDRESS OF PROJECT/FACILITY			
LEO DICKSON & SONS, INC. LAND APPLICATION			
LOCATION OF PROJECT/FACILITY			
SEE THE FIELDS AND STORAGES IDENTIFIED ON ATTACHEMENTS B AND C TO THIS PERMIT.			
COUNTY	TOWN	WATERCOURSE	NYTM COORDINATES
STEUBEN	**BATH, CAMERON & THURSTON**	Water Body:	E: N:

DESCRIPTION OF AUTHORIZED ACTIVITY: Storage of liquid biosolids and food processing waste, and land application of food processing waste and stabilized biosolids on agricultural fields, in accordance with the conditions of this permit. Approved waste sources, application sites and storage facilities are listed in Attachment A, Attachment B (B-1, B-2, and B-3), and Attachment C of this permit.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified (see page 2) and any Special Conditions included as part of this permit.

PERMIT ADMINISTRATOR:	ADDRESS	
Kimberly A. Merchant	6274 E. Avon-Lima Rd, Avon, NY 14414	
AUTHORIZED SIGNATURE	DATE	
Kimberly A. Merchant	January 7, 2013	Page 1 of 28

SPECIAL CONDITIONS
For Article 27, Title 7 (Leo Dickson & Sons, Inc.)
ATTACHMENT A
Approved Waste Sources

1). Stabilized biosolids generated from the following sources may be accepted for land application contingent on meeting the requirements of Special Condition # 33(a) of this permit.

- Addison, NY. Village of: WWTP
- Bath, NY. Village of: WWTP
- Canisteo, NY Village of: WWTP
- Castile NY Village of WWTP
- Cayuga Heights NY. Village of: WWTP
- Conesus Lake County Sewer District, NY: WWTP
- Dryden, NY Village of: WWTP
- Knoxville, PA Borough of: WWTP
- Montour Falls, NY. Village of: WWTP
- Nelson Township, PA: WWTP
- Perry, NY Village of: WWTP
- Sabinsville, PA Village of: WWTP
- Trumansburg, NY. Village of: WWTP
- Owego, NY. Town of: WWTP
- Warsaw, NY Village of: WWTP
- Watkins Glen, NY Village of: WWTP
- Waverly, NY Village of: WWTP
- Wayland, NY Village of: WWTP
- Westfield, PA Borough of: WWTP
- Whitney Point NY. Town of WWTP

Stabilized biosolids generated from the following sources may be accepted for Land application only after the department has received and reviewed a new round of analytical test results for the waste. The Testing and Analytical results must meet the requirements found in Special Conditions #33(a) of this permit.

- Alfred, NY. Village of: WWTP
- Dansville, NY. Village of: WWTP
- Dundee, NY Village of: WWTP
- Elkland Borough, PA: WWTP
- Lawrence Borough Authority, PA: WWTP
- Nunda, NY Village of: WWTP
- Portville, NY Village of: WWTP
- Hornell, NY City of: WWTP Backwash Collection Lagoon Sludge

2. Food Processing Waste Generated at:
   - LePrino Foods – Waverly, PA
   - Dietrichs Foods (Dairy Farmers of America) – Middlebury Center, PA
   - Kraft Foods – Campbell, NY
   - Kraft Foods (formerly Ecovation) – Campbell, NY
   - Kraft Foods - Lowville, NY
   - -Quest- Kerry Bio Science in Norwich NY
   - Rejected raw milk load- independent haulers- loads rejected by Kraft in Campbell

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DEC PERMIT NUMBER
8-4666-00022/00001
FACILITY/PROGRAM NUMBER(S)
51C03

PERMIT

Under the Environmental Conservation Law (ECL)

EFFECTIVE DATE
June 28, 2012
MODIFIED
January 7, 2013
EXPIRATION DATE(S)
June 27, 2017

TYPE OF PERMIT ☐ NEW X RENEWAL X MODIFICATION X PERMIT TO CONSTRUCT X PERMIT TO OPERATE

☐ Article 15, Title 5: Protection of Waters

☐ Article 15, Title 15: Water Supply

☐ Article 15, Title 15: Water Transport

☐ Article 15, Title 15: Long Island Wells

☐ Article 15, Title 27: Wild, Scenic and Recreational Rivers

☐ 6NYCRR 608: Water Quality Certification

☐ Article 17, Titles 7, 8: SPDES

☐ Article 19: Air Pollution Control

☐ Article 23, Title 27: Mined Land Reclamation

☐ Article 24: Freshwater Wetlands

☐ Article 25: Tidal Wetlands

X Article 27, Title 7; 6NYCRR 360: Solid Waste Management

☐ Article 27, Title 9; 6NYCRR 373: Hazardous Waste Management

☐ Article 34: Coastal Erosion Management

☐ Articles 1, 3, 17, 19, 27, 37; NYCRR 380: Radiation Control

☐ Other:

PERMIT ISSUED TO			TELEPHONE NUMBER
LEO DICKSON & SONS, INC.			607-776-7997
ADDRESS OF PERMITTEE			
5226 BONNY HILL ROAD, BATH, NY 14810			
CONTACT PERSON FOR PERMITTED WORK			TELEPHONE NUMBER
PHILIP DICKSON			585-454-6110
NAME AND ADDRESS OF PROJECT/FACILITY			
LEO DICKSON & SONS, INC. COMPOSTING FACILITY			
LOCATION OF PROJECT/FACILITY			
DIXON ROAD			
COUNTY	TOWN	WATERCOURSE	NYTM COORDINATES
STEUBEN	**THURSTON**	Water Body:	E N:
DESCRIPTION OF AUTHORIZED ACTIVITY: **OPERATION OF A COMPOSTING FACILITY FOR BIOSOLIDS GENERATED FROM THE MUNICIPAL SOURCES SHOWN ON ATTACHMENT A.**			

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified (see page 2) and any Special Conditions included as part of this permit.

PERMIT ADMINISTRATOR:	ADDRESS	
Kimberly A. Merchant	6274 E. Avon-Lima Rd, Avon, NY 14414	
AUTHORIZED SIGNATURE	DATE	
Kimberly A. Merchant	January 7, 2013	Page 1 of 8

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPECIAL CONDITIONS

For Article 27, Title 7 (Leo Dickson & Sons Composting Facility.)

ATTACHMENT A

SOLID WASTE MANAGEMENT FACILITY 51C03

BIOSOLIDS GENERATED FROM THE FOLLOWING SOURCES MAY BE ACCEPTED FOR COMPOSTING CONTINGENT ON MEETING THE REQUIREMENTS OF SPECIAL CONDITIONS #6 AND #21 OF THIS PERMIT.

Addison, NY., Village of:	WWTP
Bath, NY., Village of :	WWTP
Canisteo, NY.,Village of:	WWTP
Castile, NY.,Village of :	WWTP
Cayuga Heights, NY., Village of:	WWTP
Conesus Lake NY., County Sewer Dist.	WWTP
Dryden, NY., Village of:	WWTP
Knoxville PA., Borough of:	WWTP
Montour Falls, NY., Village of:	WWTP
Nelson PA., Township:	WWTP
Perry, NY., Village of:	WWTP
Sabinsville PA., Village of:	WWTP
Trumansburg, NY., Village of:	WWTP
Owego, NY., Town of:	WWTP
Warsaw, NY., Village of :	WWTP
Watkins Glen, NY., Village of:	WWTP
Waverly, NY., Village of:	WWTP
Wayland, NY., Village of :	WWTP
Westfield, PA., Borough of:	WWTP
Whitney Point NY., Town of:	WWTP

BIOSOLIDS GENERATED FROM THE SOURCES LISTED BELOW MAY BE ACCEPTED FOR COMPOSTING ONLY AFTER THE DEPARTMENT HAS RECEIVED AND REVIEWED A NEW ROUND OF ANALYTICAL TEST RESULTS FOR THE WASTE. THE TESTING AND ANALYTICAL RESULTS MUST MEET THE REQUIREMENTS FOUND IN SPECIAL CONDITIONS #6 AND #21 OF THIS PERMIT.

Alfred NY., Village of:	WWTP
Elkland PA., Borough of:	WWTP
Nunda, NY., Village of:	WWTP
Portville, NY.,Village of:	WWTP

End of Attachment A

CITY OF WATERTOWN
OUTSIDE USER PERMIT

PERMIT NO: OUP-12-005

In accordance with the provisions of Chapter 253 of the Code of the City of Watertown:

OWEGO, TOWN OF
1319 MAIN STREET
APALACHIN, N.Y. 13732
S-2 FACILITY

Is hereby authorized to discharge wastewater, sludge and slurries from its waste water facility to the City of Watertown's Wastewater and Sewage Treatment Plant (STP) located at 700 W. T. Field Drive, Watertown, New York 13601, in accordance with the conditions set forth in this permit. Compliance with this permit does not relieve the permittee of it's obligation to comply with any or all applicable pretreatment regulations, standards, or requirements under Federal, State, or Local Laws, including any such regulations, standards, requirements, or laws that may become effective during the term of this permit.

Non-compliance with any term or condition of this permit shall constitute a violation of Chapter 253 of the Code of the City of Watertown, New York.

This permit shall become effective upon 2/12/15 and shall expire at midnight on 2/11/18 .

If the permittee wishes to continue to discharge after the expiration date of this permit, an application must be filed for renewal permit a minimum of ninety (90) days prior to the expiration date.

If the permittee wishes to appeal or challenge any conditions imposed in this permit, a petition shall be filed at the office of the City Engineer of the City of Watertown, Municipal Building, Room 305, 245 Washington Street, Watertown, New York 13601 for modification or re-issuance of this permit within thirty (30) days of your receipt of this correspondence. Failure to petition for reconsideration of the permit within the allotted time is deemed a waiver by the permittee of his right to challenge the terms of this permit.

By: R. Mark Gambell
Chief Operator

Issued this 12 day of FEB 2015

CITY OF WATERTOWN
OUTSIDE USER PERMIT

PERMIT NO: OUP-13-008

In accordance with the provisions of Chapter 253 of the Code of the City of Watertown:

OWEGO, TOWN OF
1319 MAIN STREET
APALACHIN, N.Y. 13732
S-1 FACILITY

Is hereby authorized to discharge wastewater, sludge and slurries from its waste water facility to the City of Watertown's Wastewater and Sewage Treatment Plant (STP) located at 700 W. T. Field Drive, Watertown, New York 13601, in accordance with the conditions set forth in this permit. Compliance with this permit does not relieve the permittee of it's obligation to comply with any or all applicable pretreatment regulations, standards, or requirements under Federal, State, or Local Laws, including any such regulations, standards, requirements, or laws that may become effective during the term of this permit.

Non-compliance with any term or condition of this permit shall constitute a violation of Chapter 253 of the Code of the City of Watertown, New York.

This permit shall become effective upon 12/11/13 and shall expire at midnight on 12/10/16 .

If the permittee wishes to continue to discharge after the expiration date of this permit, an application must be filed for renewal permit a minimum of ninety (90) days prior to the expiration date.

If the permittee wishes to appeal or challenge any conditions imposed in this permit, a petition shall be filed at the office of the City Engineer of the City of Watertown, Municipal Building, Room 305, 245 Washington Street, Watertown, New York 13601 for modification or re-issuance of this permit within thirty (30) days of your receipt of this correspondence. Failure to petition for reconsideration of the permit within the allotted time is deemed a waiver by the permittee of his right to challenge the terms of this permit.

By: Robert M. Corbett
Chief Operator

Issued this 12-11-13 day of

Biosolids Land Application Facility Annual Report

Section 1
Owner/ Facility Information

Biosolids Source:

POTW Name: Town Of Owego WPCP#2

Mailing Address: 1319 Main St. Apalachin, NY 13732

County: Tioga

Operator Name: Tyson Stiles Tel: 607625-2197 E-mail: tstiles@townofowego.com

Land Application Site:

Owner: Rodney Valentine/Tim Card Phone: (607)625-3028/625-4092

Address: South Apalachin Rd. Apalachin, NY 13732

County: Tioga

DEC Region (1-9): 7 DEC Facility Code (e.g. 99L12): 7-4930-00025/00009

Permit Expiration Date: May 18,2024

This report covers the period from Jan.1 2015 **to** Dec.31, 2015

Biosolids Land Application Facility Annual Report

Section 2
Biosolids Analyses

Copies of original laboratory results must be attached.
All results, except pH and Total Solids, must be on a dry weight basis.

Analysis Date ==>	2/4/15	4/29/15	8/5/15	9/2/15			Avg.
Arsenic (mg/kg)	<33.9	4.74	3.52	6.19			<12.09
Cadmium (mg/kg)	<3.39	1.26	0.790	1.48			<1.73
Chromium (mg/kg)	22.3	21.1	11.9	22.1			19.35
Copper (mg/kg)	1400	1350	678	1350			1195
Lead (mg/kg)	<33.9	29.8	17.7	33.9			28.8
Mercury (mg/kg)	0.787	0.610	0.783	<1.57			<0.938
Molybdenum (mg/kg)	<102	7.4	<12.0	<21.6			<35.8
Nickel (mg/kg)	<67.9	17.3	10.0	17.4			<28.2
Selenium (mg/kg)	<33.9	11.9	4.62	10.1			<15.1
Zinc (mg/kg)	1050	1010	741	1510			1078
TKN (mg/kg)	51900	2830	9260	13600			11898
Ammonia Nitrogen (mg/kg)	3530	1540	1550	2120			2185
Nitrate (mg/kg)	<33.6	<23.1	326	<31.6			<104
Total Phosphorus (mg/kg)	17500	10700	13200	15300			14175
Total Potassium (mg/kg)	<1700	1300	699	1170			<1217
pH (s.u.)	7.69	7.65	6.93	7.88			7.54
Total Solids(%)	14.9	21.6	18.4	15.8			17.68
Total Volatile Solids (%)	65.0	61.3	64.1	65.4			64.0

Biosolids Land Application Facility Annual Report

Section 3
Soil Analyses

Site Name and Field Number: Dennis Caid #C1

Copies of original laboratory results must be attached.
All results, except pH and Total Solids, must be on a dry weight basis.

Analysis Date ⟹	6/1/15	5/29/15					Avg.
Arsenic (mg/kg)	6.51						6.51
Cadmium (mg/kg)	<0.932						<0.932
Chromium (mg/kg)	13.7						13.7
Copper (mg/kg)	16.5						16.5
Lead (mg/kg)	12.0						12.0
Mercury (mg/kg)	0.294						0.294
Molybdenum (mg/kg)	<2.80						<2.80
Nickel (mg/kg)	16.8						16.8
Selenium (mg/kg)	<0.932						<0.932
Zinc (mg/kg)	60.6						60.6
pH (s.u.)	5.65	5.9					5.8

Section 4
Summary of Application Information

Total Biosolids Land Applied This Year: 82.79 dry tons
Total Acres Land Applied: 57 acres
Total Biosolids Landfilled This Year: 0 dry tons

Biosolids Land Application Facility Annual Report

Section 3
Soil Analyses

Site Name and Field Number: Valentine # C2

Copies of original laboratory results must be attached.
All results, except pH and Total Solids, must be on a dry weight basis.

Analysis Date ⟹	4/14/15	4/2015					Avg.
Arsenic (mg/kg)	9.30						9.30
Cadmium (mg/kg)	0.272						0.272
Chromium (mg/kg)	18.5						18.5
Copper (mg/kg)	34.2						34.2
Lead (mg/kg)	11.3						11.3
Mercury (mg/kg)	<0.326						<0.326
Molybdenum (mg/kg)	<2.86						<2.86
Nickel (mg/kg)	20.3						20.3
Selenium (mg/kg)	<0.954						<0.954
Zinc (mg/kg)	82.8						82.8
pH (s.u.)	6.86	6.7					6.8

Section 4
Summary of Application Information

Total Biosolids Land Applied This Year: 82.79 dry tons
Total Acres Land Applied: 57 acres
Total Biosolids Landfilled This Year: 0 dry tons

Biosolids Land Application Facility Annual Report

Section 3
Soil Analyses

Site Name and Field Number: Valentine #C4

Copies of original laboratory results must be attached.
All results, except pH and Total Solids, must be on a dry weight basis.

Analysis Date ⟹	4/14/15	4/20/15					Avg.
Arsenic (mg/kg)	10.4						10.4
Cadmium (mg/kg)	0.325						0.325
Chromium (mg/kg)	22.3						22.3
Copper (mg/kg)	40.3						40.3
Lead (mg/kg)	12.6						12.6
Mercury (mg/kg)	<0.326						<0.326
Molybdenum (mg/kg)	<2.95						<2.95
Nickel (mg/kg)	23.9						23.9
Selenium (mg/kg)	<0.983						<0.983
Zinc (mg/kg)	99.0						99.0
pH (s.u.)	6.45	6.3					6.4

Section 4
Summary of Application Information

Total Biosolids Land Applied This Year: 82.79 dry tons
Total Acres Land Applied: 57 acres
Total Biosolids Landfilled This Year: 0 dry tons

Biosolids Land Application Facility Annual Report

Section 3
Soil Analyses

Site Name and Field Number: Valentine #C-5

Copies of original laboratory results must be attached.
All results, except pH and Total Solids, must be on a dry weight basis.

Analysis Date ⟹	4/14/15	4/24/15					Avg.
Arsenic (mg/kg)	9.87						9.87
Cadmium (mg/kg)	0.327						0.327
Chromium (mg/kg)	24.2						24.2
Copper (mg/kg)	39.2						39.2
Lead (mg/kg)	13.3						13.3
Mercury (mg/kg)	<0.315						<0.315
Molybdenum (mg/kg)	<2.79						<2.79
Nickel (mg/kg)	20.8						20.8
Selenium (mg/kg)	<0.929						<0.929
Zinc (mg/kg)	88.5						88.5
pH (s.u.)	6.82	6.7					6.8

Section 4
Summary of Application Information

Total Biosolids Land Applied This Year: 82.79 dry tons
Total Acres Land Applied: 57 acres
Total Biosolids Landfilled This Year: 0 dry tons

Biosolids Land Application Facility Annual Report

Section 3
Soil Analyses

Site Name and Field Number: Card #C-3

Copies of original laboratory results must be attached.
All results, except pH and Total Solids, must be on a dry weight basis.

Analysis Date ⟹	4/14/15	4/20/15					Avg.
Arsenic (mg/kg)	10.1						10.1
Cadmium (mg/kg)	0.346						0.346
Chromium (mg/kg)	25.3						25.3
Copper (mg/kg)	52.8						52.8
Lead (mg/kg)	12.1						12.1
Mercury (mg/kg)	<0.356						<0.356
Molybdenum (mg/kg)	<3.05						<3.05
Nickel (mg/kg)	25.9						25.9
Selenium (mg/kg)	<1.02						<1.02
Zinc (mg/kg)	109						109
pH (s.u.)	6.76	6.5					6.6

Section 4
Summary of Application Information

Total Biosolids Land Applied This Year: 82.79 dry tons
Total Acres Land Applied: 57 acres
Total Biosolids Landfilled This Year: 0 dry tons

Biosolids Land Application Facility Annual Report

Section 3
Soil Analyses

Site Name and Field Number: Card H C-6

Copies of original laboratory results must be attached.
All results, except pH and Total Solids, must be on a dry weight basis.

Analysis Date ===>	4/14/15	4/20/15					Avg.
Arsenic (mg/kg)	9.43						9.43
Cadmium (mg/kg)	0.428						0.428
Chromium (mg/kg)	26.1						26.1
Copper (mg/kg)	75.9						75.9
Lead (mg/kg)	21.6						21.6
Mercury (mg/kg)	<0.371						<0.371
Molybdenum (mg/kg)	<3.54						<3.54
Nickel (mg/kg)	26.4						26.4
Selenium (mg/kg)	<1.18						<1.18
Zinc (mg/kg)	130						130
pH (s.u.)	6.59	6.4					6.5

Section 4
Summary of Application Information

Total Biosolids Land Applied This Year: 82.79 dry tons
Total Acres Land Applied: 57 acres
Total Biosolids Landfilled This Year: 0 dry tons

Biosolids Land Application Facility Annual Report

Section 3
Soil Analyses

Site Name and Field Number: Card #C-8

Copies of original laboratory results must be attached.
All results, except pH and Total Solids, must be on a dry weight basis.

Analysis Date ⟹	4/14/15	4/20/15					Avg.
Arsenic (mg/kg)	9.73						9.73
Cadmium (mg/kg)	0.278						0.278
Chromium (mg/kg)	20.6						20.6
Copper (mg/kg)	38.3						38.3
Lead (mg/kg)	19.9						19.9
Mercury (mg/kg)	<0.334						<0.334
Molybdenum (mg/kg)	<3.00						<3.00
Nickel (mg/kg)	18.6						18.6
Selenium (mg/kg)	<0.999						<0.999
Zinc (mg/kg)	85.6						85.6
pH (s.u.)	6.82	6.5					6.7

Section 4
Summary of Application Information

Total Biosolids Land Applied This Year: 82.79 dry tons
Total Acres Land Applied: 57 acres
Total Biosolids Landfilled This Year: 0 dry tons

Biosolids Land Application Facility Annual Report

Section 3
Soil Analyses

Site Name and Field Number: Card # C-9

Copies of original laboratory results must be attached.
All results, except pH and Total Solids, must be on a dry weight basis.

Analysis Date ⟹	4/14/15	4/24/15					Avg.
Arsenic (mg/kg)	12.2						12.2
Cadmium (mg/kg)	0.331						0.331
Chromium (mg/kg)	16.6						16.6
Copper (mg/kg)	36.4						36.4
Lead (mg/kg)	28.8						28.8
Mercury (mg/kg)	<0.310						<0.310
Molybdenum (mg/kg)	<2.95						<2.95
Nickel (mg/kg)	18.3						18.3
Selenium (mg/kg)	<0.983						<0.983
Zinc (mg/kg)	79.7						79.7
pH (s.u.)	6.37	6.3					6.3

Section 4
Summary of Application Information

Total Biosolids Land Applied This Year: 82.79 dry tons
Total Acres Land Applied: 57 acres
Total Biosolids Landfilled This Year: 0 dry tons

Biosolids Land Application Facility Annual Report

Section 3
Soil Analyses

Site Name and Field Number: Caid # C-11

Copies of original laboratory results must be attached.
All results, except pH and Total Solids, must be on a dry weight basis.

Analysis Date ⟹	4/14/15	4/20/15					Avg.
Arsenic (mg/kg)	8.69						8.69
Cadmium (mg/kg)	0.324						0.324
Chromium (mg/kg)	19.0						19.0
Copper (mg/kg)	37.5						37.5
Lead (mg/kg)	16.4						16.4
Mercury (mg/kg)	<0.361						<0.361
Molybdenum (mg/kg)	<2.97						<2.97
Nickel (mg/kg)	21.8						21.8
Selenium (mg/kg)	<0.989						<0.989
Zinc (mg/kg)	92.1						92.1
pH (s.u.)	6.84	6.8					6.8

Section 4
Summary of Application Information

Total Biosolids Land Applied This Year: 82.79 dry tons
Total Acres Land Applied: 57 acres
Total Biosolids Landfilled This Year: 0 dry tons

Biosolids Land Application Facility Annual Report

Section 3
Soil Analyses

Site Name and Field Number: Card # C-13

Copies of original laboratory results must be attached.
All results, except pH and Total Solids, must be on a dry weight basis.

Analysis Date ⟹	4/14/15	4/20/15					Avg.
Arsenic (mg/kg)	10.8						10.8
Cadmium (mg/kg)	0.354						0.354
Chromium (mg/kg)	26.6						26.6
Copper (mg/kg)	51.5						51.5
Lead (mg/kg)	16.7						16.7
Mercury (mg/kg)	<0.304						<0.304
Molybdenum (mg/kg)	<2.60						<2.60
Nickel (mg/kg)	24.6						24.6
Selenium (mg/kg)	<0.867						<0.867
Zinc (mg/kg)	108						108
pH (s.u.)	6.87	6.6					6.7

Section 4
Summary of Application Information

Total Biosolids Land Applied This Year: 82.79 dry tons
Total Acres Land Applied: 57 acres
Total Biosolids Landfilled This Year: 0 dry tons

Biosolids Land Application Facility Annual Report

Section 5
Field Application Rates
(Complete one copy for each field used)

Site Owner: Valentine Field Number: C-2 Field Size: 9 Acres

Biosolids Applied: 18.37 dry tons Application Rate: 2.04 dry tons/acre

Crop Grown: Hay/grass Remaining Site Life: 15.89 years

Dates Applied (List All Applications)	Biosolids Applied (dry tons)	Application Rate (dry tons/acre)
may 27 2015	10.86	1.21
Sept 11 2015	7.51	0.83

	Loading Rates *	
Loading Parameters	**Current Year**	**Cumulative**
Hydraulic (gals/acre)		
Available Nitrogen (lbs/acre)	12.81	
Phosphorus (lbs/acre)	28.93	
Potassium (lbs/acre)	4.97	
Cadmium (lbs/acre)	0.07	0.085
Chromium (lbs/acre)	0.079	0.871
Copper (lbs/acre)	4.878	34.47
Lead (lbs/acre)	0.118	1.482
Nickel (lbs/acre)	0.115	0.197
Zinc (lbs/acre)	4.401	24.396

* Attach calculations to support values in the table.

Biosolids Land Application Facility Annual Report

Section 5
Field Application Rates
(Complete one copy for each field used)

Site Owner: Valentine Field Number: C-4 Field Size: 6 Acres

Biosolids Applied: 12.45 dry tons Application Rate: 2.08 dry tons/acre

Crop Grown: Hay/grass Remaining Site Life: 16.53 years

Dates Applied (List All Applications)	Biosolids Applied (dry tons)	Application Rate (dry tons/acre)
Sept. 10 2015	12.45	2.08

	Loading Rates *	
Loading Parameters	**Current Year**	**Cumulative**
Hydraulic (gals/acre)		
Available Nitrogen (lbs/acre)	13.03	
Phosphorus (lbs/acre)	29.41	
Potassium (lbs/acre)	5.05	
Cadmium (lbs/acre)	0.007	0.064
Chromium (lbs/acre)	0.080	0.829
Copper (lbs/acre)	4.959	30.005
Lead (lbs/acre)	0.120	1.241
Nickel (lbs/acre)	0.117	0.709
Zinc (lbs/acre)	4.474	25.869

* Attach calculations to support values in the table.

Biosolids Land Application Facility Annual Report

Section 5
Field Application Rates
(Complete one copy for each field used)

Site Owner: Valentine Field Number: C-5 Field Size: 4 Acres

Biosolids Applied: 3.79 dry tons Application Rate: 0.95 dry tons/acre

Crop Grown: Hay/grass Remaining Site Life: 29.68 years

Dates Applied (List All Applications)	Biosolids Applied (dry tons)	Application Rate (dry tons/acre)
May 26 2015	3.79	0.95

Loading Parameters	Loading Rates *	
	Current Year	Cumulative
Hydraulic (gals/acre)		
Available Nitrogen (lbs/acre)	5.95	
Phosphorus (lbs/acre)	13.43	
Potassium (lbs/acre)	2.31	
Cadmium (lbs/acre)	0.003	0.077
Chromium (lbs/acre)	0.037	1.169
Copper (lbs/acre)	2.265	44.788
Lead (lbs/acre)	0.055	2.700
Nickel (lbs/acre)	0.53	1.039
Zinc (lbs/acre)	2.043	30.872

* Attach calculations to support values in the table.

Biosolids Land Application Facility Annual Report

Section 5
Field Application Rates
(Complete one copy for each field used)

Site Owner: Tim Caird Field Number: C-6 Field Size: 11 Acres

Biosolids Applied: 11.03 dry tons Application Rate: 1.00 dry tons/acre

Crop Grown: Hay grass Remaining Site Life: 32.57 years

Dates Applied (List All Applications)	Biosolids Applied (dry tons)	Application Rate (dry tons/acre)
May 26 2015	11.03	1.00

	Loading Rates *	
Loading Parameters	**Current Year**	**Cumulative**
Hydraulic (gals/acre)		
Available Nitrogen (lbs/acre)	6.3	
Phosphorus (lbs/acre)	14.21	
Potassium (lbs/acre)	2.44	
Cadmium (lbs/acre)	0.003	0.070
Chromium (lbs/acre)	0.039	0.913
Copper (lbs/acre)	2.397	33.933
Lead (lbs/acre)	0.058	1.595
Nickel (lbs/acre)	0.057	0.709
Zinc (lbs/acre)	2.162	20.584

* Attach calculations to support values in the table.

Biosolids Land Application Facility Annual Report

Section 5
Field Application Rates
(Complete one copy for each field used)

Site Owner: Tim card Field Number: C-8 Field Size: 4 Acres

Biosolids Applied: 6.34 dry tons Application Rate: 1.59 dry tons/acre

Crop Grown: Hay grass Remaining Site Life: 20.10 years

Dates Applied (List All Applications)	Biosolids Applied (dry tons)	Application Rate (dry tons/acre)
May 29 2015	6.34	1.59

	Loading Rates *	
Loading Parameters	Current Year	Cumulative
Hydraulic (gals/acre)		
Available Nitrogen (lbs/acre)	9.95	
Phosphorus (lbs/acre)	22.47	
Potassium (lbs/acre)	3.86	
Cadmium (lbs/acre)	0.005	0.056
Chromium (lbs/acre)	0.061	0.910
Copper (lbs/acre)	3.788	35.885
Lead (lbs/acre)	0.091	2.260
Nickel (lbs/acre)	0.089	0.621
Zinc (lbs/acre)	3.417	35.243

* Attach calculations to support values in the table.

Biosolids Land Application Facility Annual Report

Section 5
Field Application Rates
(Complete one copy for each field used)

Site Owner: Tim Card Field Number: C-9 Field Size: 11 Acres

Biosolids Applied: 16.10 dry tons Application Rate: 1.46 dry tons/acre

Crop Grown: Hay/grass Remaining Site Life: 21.85 years

Dates Applied (List All Applications)	Biosolids Applied (dry tons)	Application Rate (dry tons/acre)
May 29 2015	7.72	0.70
Sept 10 2015	8.38	0.76

	Loading Rates *	
Loading Parameters	**Current Year**	**Cumulative**
Hydraulic (gals/acre)		
Available Nitrogen (lbs/acre)	9.19	
Phosphorus (lbs/acre)	20.75	
Potassium (lbs/acre)	3.56	
Cadmium (lbs/acre)	0.005	0.083
Chromium (lbs/acre)	0.057	0.523
Copper (lbs/acre)	3.498	35.567
Lead (lbs/acre)	0.084	3.338
Nickel (lbs/acre)	0.083	0.984
Zinc (lbs/acre)	3.156	25.368

* Attach calculations to support values in the table.

Biosolids Land Application Facility Annual Report

Section 5
Field Application Rates
(Complete one copy for each field used)

Site Owner: Tim Card Field Number: C-11 Field Size: 6 Acres

Biosolids Applied: 3.37 dry tons Application Rate: 0.56 dry tons/acre

Crop Grown: Hay/grass Remaining Site Life: 46.38 years

Dates Applied (List All Applications)	Biosolids Applied (dry tons)	Application Rate (dry tons/acre)
May 28 2015	3.37	0.56

	Loading Rates *	
Loading Parameters	**Current Year**	**Cumulative**
Hydraulic (gals/acre)		
Available Nitrogen (lbs/acre)	3.56	
Phosphorus (lbs/acre)	7.96	
Potassium (lbs/acre)	1.37	
Cadmium (lbs/acre)	0.002	0.140
Chromium (lbs/acre)	0.022	0.827
Copper (lbs/acre)	1.342	49.760
Lead (lbs/acre)	0.032	3.917
Nickel (lbs/acre)	0.032	0.833
Zinc (lbs/acre)	1.211	36.472

* Attach calculations to support values in the table.

Biosolids Land Application Facility Annual Report

Section 5
Field Application Rates
(Complete one copy for each field used)

Site Owner: Tim Caird Field Number: C-13 Field Size: 6 Acres

Biosolids Applied: 11.44 dry tons Application Rate: 1.91 dry tons/acre

Crop Grown: Hay/grass Remaining Site Life: 16.2 years

Dates Applied (List All Applications)	Biosolids Applied (dry tons)	Application Rate (dry tons/acre)
May 28 2015	7.37	1.23
Sept 10 2015	4.07	0.68

	Loading Rates *	
Loading Parameters	**Current Year**	**Cumulative**
Hydraulic (gals/acre)		
Available Nitrogen (lbs/acre)	11.97	
Phosphorus (lbs/acre)	27.03	
Potassium (lbs/acre)	4.64	
Cadmium (lbs/acre)	0.007	0.077
Chromium (lbs/acre)	0.074	1.051
Copper (lbs/acre)	4.557	38.186
Lead (lbs/acre)	0.110	1.925
Nickel (lbs/acre)	0.108	0.927
Zinc (lbs/acre)	4.111	29.009

* Attach calculations to support values in the table.

Biosolids Land Application Facility Annual Report

Section 6
Next Year's Proposed Quantities and Application Rates

(Complete one copy for each field that will be used)

Site Owner: Valentine Field Number: C-2 Field Size: 9 Acres

Biosolids to be Applied: 23.89 dry tons

Proposed Application Rate: 2.65 dry tons/acre

Crop To Be Grown: Hay/grass

Attach calculations to support proposed application rate.

Biosolids Land Application Facility Annual Report

Section 6
Next Year's Proposed Quantities and Application Rates

(Complete one copy for each field that will be used)

Site Owner: Valentine Field Number: C-4 Field Size: 6 Acres

Biosolids to be Applied: 15.93 dry tons

Proposed Application Rate: 2.65 dry tons/acre

Crop To Be Grown: Hay/grass

Attach calculations to support proposed application rate.

Biosolids Land Application Facility Annual Report

Section 6
Next Year's Proposed Quantities and Application Rates

(Complete one copy for each field that will be used)

Site Owner: Valentine Field Number: C-5 Field Size: 4 Acres

Biosolids to be Applied: 10.62 dry tons

Proposed Application Rate: 2.65 dry tons/acre

Crop To Be Grown: Hay grass

Attach calculations to support proposed application rate.

Biosolids Land Application Facility Annual Report

Section 6
Next Year's Proposed Quantities and Application Rates

(Complete one copy for each field that will be used)

Site Owner: Tim Curd Field Number: C-6 Field Size: 11 Acres

Biosolids to be Applied: 29.2 dry tons

Proposed Application Rate: 2.65 dry tons/acre

Crop To Be Grown: Hay/grass

Attach calculations to support proposed application rate.

Biosolids Land Application Facility Annual Report

Section 6
Next Year's Proposed Quantities and Application Rates

(Complete one copy for each field that will be used)

Site Owner: Tim Cord Field Number: C-8 Field Size: 4 Acres

Biosolids to be Applied: 10.62 dry tons

Proposed Application Rate: 2.65 dry tons/acre

Crop To Be Grown: Hay/grass

Attach calculations to support proposed application rate.

Biosolids Land Application Facility Annual Report

Section 6
Next Year's Proposed Quantities and Application Rates

(Complete one copy for each field that will be used)

Site Owner: Tim Card Field Number: C-9 Field Size: 11 Acres

Biosolids to be Applied: 29.15 dry tons

Proposed Application Rate: 2.65 dry tons/acre

Crop To Be Grown: Hay/grass

Attach calculations to support proposed application rate.

Biosolids Land Application Facility Annual Report

Section 6
Next Year's Proposed Quantities and Application Rates

(Complete one copy for each field that will be used)

Site Owner: Tim Card Field Number: C-11 Field Size: 6 Acres

Biosolids to be Applied: 15.9 dry tons

Proposed Application Rate: 2.65 dry tons/acre

Crop To Be Grown: Hay/grass

Attach calculations to support proposed application rate.

Biosolids Land Application Facility Annual Report

Section 6
Next Year's Proposed Quantities and Application Rates

(Complete one copy for each field that will be used)

Site Owner: Tim Card Field Number: C-13 Field Size: 6 Acres

Biosolids to be Applied: 15.9 dry tons

Proposed Application Rate: 2.65 dry tons/acre

Crop To Be Grown: Hay/grass

Attach calculations to support proposed application rate.

Biosolids Land Application Facility Annual Report

Section 7
Pathogen Reduction / Vector Attraction Reduction

Check one method for each:

Pathogen Reduction
Class B

- ☒ Anaerobic Digestion 15 days 35 °C or 60 days 20-35 °C
- ☐ Aerobic Digestion 40 days 20 °C or 60 days 15-20 °C
- ☐ Fecal Coliform < 2,000,000 MPN
- ☐ Air Drying
- ☐ Composting 5 days 40 °C
- ☐ pH raised to 12 for 2 hours
- ☐ Other: _____

Vector Attraction Reduction

- ☒ 38 % Volatile Solids Reduction
- ☐ Incorporation within 6 hrs
- ☐ Subsurface injection
- ☐ pH raised to 12 for 2 hours, 11.5 for 22 hours
- ☐ Aerobic Process 14 days 40 °C, average 45 °C
- ☐ 75 % solids
- ☐ 90 % solids (untreated solids)
- ☐ Other: _____

Attach operating and monitoring data to show compliance with methods chosen.

Biosolids Land Application Facility Annual Report

Section 8
Problems / Complaints

Describe any operational problems or complaints arising from the land application operation and include any methods used to remedy the situations. This should include odor complaints, application difficulties, major equipment failure, etc.

Section 9
Signature and Date

I certify, under penalty of law, that the information that will be used to determine compliance with Subpart 360-4 of 6 NYCRR Part 360 has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Tyson R. Stiles	Tyson R. Stiles	1-6-15
Name (Print or Type)	Signature	Date

Title: Chief Operator

Address: 1319 Main Street
Altalachin NY 13732

Phone: 6076252197 E-mail: tstiles@townofowego.com

(1/06)

2015 Biosolids Activity at S-1 Drying Bed #3

Month	Belt Pressed & Applied to Bed #3 IN: Gallons	S-1 Solids	Dry tons	S-2 Gallons	S-2 Solids	Dry tons
2014						
July			0.00			0.00
August			0.00			0.00
Sept.			0.00			0.00
October			0.00	140000	0.0186	10.86
November			0.00	91500	0.019	7.25
December			0.00	112500	0.0231	10.84
2015						
January			0.00	95000	0.0191	7.57
February			0.00			0.00
March			0.00			0.00
April			0.00			0.00
May			0.00			0.00
June			0.00			0.00
July			0.00			0.00
August			0.00			0.00
Sept.			0.00	112500	0.0215	10.09
October			0.00	124000	0.0206	10.65
November			0.00	98500	0.019	7.80
December			0.00	110000	0.0244	11.19
2015 Total:	0		0.00	540000		47.30
Total: (metric)			0.00			42.90

Notes:

- to field #2
- to field#6
- TO COMPOST
- 1/2 to field #6
- 1/2 to field #5

Month	Removed to Compost OUT: wet tons	Solids	Total Dry tons	% Dry Tons (since last cleaned): S-1 Sludge	S-2 Sludge	To Compost: Dry tons S-1	Dry tons S-2
2015 January	27.71	0.145	4.02		100	0.00	4.02
February			0.00			0.00	0.00
March			0.00			0.00	0.00
April			0.00			0.00	0.00
May			0.00			0.00	0.00
June			0.00			0.00	0.00
July			0.00			0.00	0.00
August			0.00			0.00	0.00
Sept.			0.00			0.00	0.00
October			0.00			0.00	0.00
November			0.00			0.00	0.00
December			0.00			0.00	0.00
						0.00	4.02
						0.00	3.64

2015 Biosolids Activity at S-1 Drying Bed #4

Month	Belt Pressed & Applied to Bed #4 IN: Gallons	S-1 Solids	Dry tons	Gallons	S-2 Solids	Dry tons	Notes:	Removed to Compost OUT: wet tons	Solids	Total Dry tons	% Dry Tons (since last cleaned): S-1 Sludge	S-2 Sludge	To Compost: Dry tons S-1	Dry tons S-2
2014														
July			0.00			0.00								
August			0.00			0.00								
Sept.			0.00			0.00								
October			0.00			0.00								
November			0.00			0.00								
December			0.00			0.00								
2015														
January			0.00			0.00								
February			0.00	85000	0.0179	6.34	to field #8							
March			0.00	105500	0.0153	6.73	1/2 to field #13 1/2 to field #11							
April			0.00	86500	0.0111	4.00	to field #13							
May			0.00	98500	0.0188	7.72	to field #9							
June			0.00	112500	0.016	7.51	to field#2							
July			0.00	145000	0.0277	16.75	1/2 to field#4 1/2 to field#9							
August			0.00	105500	0.0185	8.14	1/2 to field#4 1/2 field #13							
Sept.			0.00			0.00								
October			0.00			0.00								
November			0.00			0.00								
December			0.00			0.00								
2015 Total:	0		0.00	738500		57.20							0.00	0.00
Total: (metric)			0.00			51.88							0.00	0.00

MICROBAC

Benchmark Analytics Sayre, A Microbac Laboratory

CERTIFICATE OF ANALYSIS

S5B0496

Owego, Town of Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: 360/503 Analysis

Project / PO Number: N/A
Received: 02/04/2015 17:00
Reported: 02/13/2015 17:36

Analytical Testing Parameters

Client Sample ID: SI Drying Bed #3
Lab Sample ID: S5B0496-01
Sample Type: Composite

Collection Date: 02/04/15
Collection Time: 11:00
Collected By: TS

Benchmark Analytics Sayre, A Microbac Laboratory

General Parameters

	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C								
pH	7.69		0.0100	pH Units		02/10/15 0833	02/10/15 0833	KJG

Inorganics

	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 350.1, Rv 2								
Ammonia as N	3530		67.1	mg/kg dry		02/05/15 1255	02/05/15 1839	KED
Method: EPA 351.2, Rv 2								
Total Kjeldahl Nitrogen (TKN)	51900		67.1	mg/kg dry	D	02/05/15 1143	02/10/15 1314	KAL
Method: EPA 365.3, Rv 1978								
Phosphorus - Total as P	17500		524	mg/kg dry	D	02/09/15 0831	02/10/15 1136	JPP
Method: SM2540 G-1997								
Percent Solids	14.9			% by Weight		02/05/15 1700	02/06/15 1200	ICC
Total Volatile Solids - TVS	65.0		0.100	%		02/05/15 1700	02/06/15 1742	ICC
Method: SM4500-NO3 F-2000								
Nitrate as N	<33.6		33.6	mg/kg dry		02/09/15 1606	02/09/15 1638	SXG
Nitrate-Nitrite as N	<33.6		33.6	mg/kg dry		02/09/15 1530	02/09/15 1638	SXG
Nitrite as N	<16.8		16.8	mg/kg dry		02/09/15 1606	02/09/15 1606	SXG

Microbac Laboratories, Inc. - Ohio Valley

Mercury

	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B								
Mercury, Total	0.787	0.0641	1.60	mg/kg DRY	J	02/11/15 0645	02/12/15 1235	PDM

Metals by 6010

	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C								
Arsenic, Total	<33.9	33.9	67.9	mg/kg DRY	U	02/11/15 1115	02/12/15 1428	PDM
Beryllium, Total	<3.39	3.39	6.79	mg/kg DRY	U	02/11/15 1115	02/12/15 1428	PDM
Cadmium, Total	<3.39	3.39	6.79	mg/kg DRY	U	02/11/15 1115	02/12/15 1428	PDM
Chromium, Total	22.3	8.49	17.0	mg/kg DRY		02/11/15 1115	02/12/15 1428	PDM
Copper, Total	1400	33.9	67.9	mg/kg DRY		02/11/15 1115	02/12/15 1428	PDM

MICROBAC

Benchmark Analytics Sayre, A Microbac Laboratory

CERTIFICATE OF ANALYSIS

S5B0496

Analytical Testing Parameters

Client Sample ID:	SI Drying Bed #3	**Collection Date:**	02/04/15
Lab Sample ID:	S5B0496-01	**Collection Time:**	11:00
Sample Type:	Composite	**Collected By:**	TS

Metals by 6010

	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Lead, Total	<33.9	33.9	67.9	mg/kg DRY	U	02/11/15 1115	02/12/15 1428	PDM
Molybdenum, Total	<102	102	204	mg/kg DRY	U	02/11/15 1115	02/12/15 1428	PDM
Nickel, Total	<67.9	67.9	136	mg/kg DRY	U	02/11/15 1115	02/12/15 1428	PDM
Potassium, Total	<1700	1700	3390	mg/kg DRY	U	02/11/15 1115	02/12/15 1428	PDM
Selenium, Total	<33.9	33.9	67.9	mg/kg DRY	U	02/11/15 1115	02/12/15 1428	PDM
Zinc, Total	1050	33.9	67.9	mg/kg DRY		02/11/15 1115	02/12/15 1428	PDM

Percent Solids

	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216								
Percent Solids	14.4	1.00	1.00	weight %			02/11/15 0747	JJS

Definitions

D:	Dilution performed on sample.
J:	The analyte was positively identified, but the quantitation was below the RL
U:	Not detected at or above adjusted sample detection limit
PQL:	Practical Quantitation Limit
MDL:	Minimum Detection Limit

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	2.4 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

Project Requested Certification(s):

Certificate ID	Agency
Microbac Laboratories, Inc. - Ohio Valley	
VA ID: 460187, Cert: 6338	Virginia
DEP ID: 68-01670, Cert No.: 010	State of Pennsylvania (NELAC)
NY Lab ID No.: 10861, Serial No.: 50396	New York State Department of Health

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5D1582

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: 360/503 Analysis

Project / PO Number: N/A
Received: 04/29/2015 17:00
Reported: 05/19/2015 10:54

Analytical Testing Parameters

Client Sample ID: Drying Bed 3 & 4
Lab Sample ID: S5D1582-01
Sample Type: Composite

Collected By: TS
Collection Date: 04/29/15
Collection Time: 10:00

General Paramaters	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C								
pH	7.65		0.0100	pH Units		05/04/15 1045	05/04/15 1045	SRS
Method: SM4500 H+ B-2000								
Temperature	21.1			°C		05/04/15 1045	05/04/15 1045	SRS

Inorganics	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 350.1, Rv 2								
Ammonia as N	1540		46.3	mg/kg dry		05/05/15 1446	05/05/15 1648	KED
Method: EPA 351.2, Rv 2								
Total Kjeldahl Nitrogen (TKN)	2830		4.63	mg/kg dry		05/17/15 1655	05/18/15 1038	KAL
Method: EPA 365.3, Rv 1978								
Phosphorus - Total as P	10700		289	mg/kg dry		05/04/15 0821	05/05/15 1122	JPP
Method: SM2540 G-1997								
Percent Solids	21.6			% by Weight		05/04/15 1700	05/05/15 0840	ICC
Total Volatile Solids (TVS)	61.3		0.100	%		05/04/15 1700	05/05/15 1630	ICC
Method: SM4500-NO2 B-2000								
Nitrite as N	<11.6		11.6	mg/kg dry		05/05/15 1021	05/05/15 1021	SXG
Method: SM4500-NO3 F-2000								
Nitrate as N (calc)	<23.1		23.1	mg/kg dry		05/05/15 1021	05/05/15 1148	SXG
Nitrate-Nitrite as N	<23.1		23.1	mg/kg dry		05/05/15 0900	05/05/15 1148	SXG

Microbac Laboratories, Inc. - Ohio Valley

Mercury	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B								
Mercury, Total	0.610	0.0451	1.13	mg/kg DRY	J	05/06/15 0629	05/07/15 1248	PDM

Metals by 6010	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C								
Arsenic, Total	4.74	1.59	3.18	mg/kg DRY		05/06/15 0900	05/07/15 1133	QX
Beryllium, Total	<0.159	0.159	0.318	mg/kg DRY	U	05/06/15 0900	05/07/15 1133	QX
Cadmium, Total	1.26	0.159	0.318	mg/kg DRY		05/06/15 0900	05/07/15 1133	QX
Chromium, Total	21.1	0.398	0.796	mg/kg DRY		05/06/15 0900	05/07/15 1133	QX
Copper, Total	1350	1.59	3.18	mg/kg DRY		05/06/15 0900	05/07/15 1133	QX
Lead, Total	29.8	1.59	3.18	mg/kg DRY		05/06/15 0900	05/07/15 1133	QX
Molybdenum, Total	7.40	4.76	9.55	mg/kg DRY	J	05/06/15 0900	05/07/15 1133	QX
Nickel, Total	17.3	3.18	6.37	mg/kg DRY		05/06/15 0900	05/07/15 1133	QX
Potassium, Total	1300	79.6	159	mg/kg DRY		05/06/15 0900	05/07/15 1133	QX
Selenium, Total	11.9	1.59	3.18	mg/kg DRY		05/06/15 0900	05/07/15 1133	QX
Zinc, Total	1010	1.59	3.18	mg/kg DRY		05/06/15 0900	05/07/15 1133	QX

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5D1582

Analytical Testing Parameters

Client Sample ID:	Drying Bed 3 & 4	**Collected By:**	TS
Lab Sample ID:	S5D1582-01	**Collection Date:**	04/29/15
Sample Type:	Composite	**Collection Time:**	10:00

Percent Solids	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216								
Percent Solids	21.6	1.00	1.00	weight %			05/06/15 0738	JJS

Definitions

J:	The analyte was positively identified, but the quantitation was below the RL
MDL:	Minimum Detection Limit
PQL:	Practical Quantitation Limit
U:	Not detected at or above adjusted sample detection limit

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	4.2 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

Project Requested Certification(s):

Microbac Laboratories, Inc. - Ohio Valley

VA ID: 460187, Cert: 6338	Virginia
DEP ID: 68-01670, Cert No.: 010	State of Pennsylvania (NELAC)
NY Lab ID No.: 10861, Serial No.: 50396	New York State Department of Health

Report Comments:

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
06/19/2015 10:54

Go Green: Contact Tracy Cole to set up email reporting and invoicing options.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included.

For any feedback concerning our services, please contact Tracy Cole listed above at Tracy.Cole@microbac.com or 570-888-0169. You may also contact Trevor Boyce President, at president@microbac.com.

MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5H0513

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: 360/503 Analysis-Drying Bed #4

Project / PO Number: N/A
Received: 08/05/2015 16:20
Reported: 08/18/2015 20:40

Analytical Testing Parameters

Client Sample ID:	**Drying Bed #4**	**Collected By:**	TS
Lab Sample ID:	**S5H0513-01**	**Collection Date:**	08/05/15
Sample Type:	Composite	**Collection Time:**	07:30

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: EPA 9045C							
pH	6.93	0.0100	pH Units	Y	08/11/15 1000	08/11/15 1137	SAY
Method: SM4500 H+ B-2000							
Temperature	22.0		°C	Y	08/11/15 1000	08/11/15 1137	SAY

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: EPA 350.1, Rv 2							
Ammonia as N	1550	54.5	mg/kg dry	Y	08/10/15 1815	08/11/15 1826	SAY
Method: EPA 351.2, Rv 2							
Total Kjeldahl Nitrogen (TKN)	9260	5.45	mg/kg dry	Y	08/12/15 1614	08/13/15 1257	SAY
Method: EPA 365.3, Rv 1978							
Phosphorus - Total as P	13200	341	mg/kg dry	Y	08/11/15 1247	08/13/15 1021	SAY
Method: SM2540 G-1997							
Percent Solids	18.4		% by Weight	Y	08/10/15 1342	08/11/15 1403	SAY
Total Volatile Solids (TVS)	64.1	0.100	%	Y	08/11/15 0805	08/12/15 0956	SAY
Method: SM4500-NO3 F-2000							
Nitrate as N (calc)	326	27.2	mg/kg dry		08/11/15 1555	08/12/15 1208	SAY
Nitrate-Nitrite as N	659	27.2	mg/kg dry	Y	08/11/15 0800	08/12/15 1208	SAY
Nitrite as N	333	13.6	mg/kg dry	Y	08/11/15 1555	08/11/15 1555	SAY

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

Mercury	Result	PQL	Units	Note	Prepared	Analyzed
Method: SW7471B						
Mercury, Total	<0.783	0.783	mg/kg DRY		08/10/15 0720	08/10/15 1116

MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5H0513

Analytical Testing Parameters

Client Sample ID:	Drying Bed #4	**Collected By:**	TS
Lab Sample ID:	S5H0513-01	**Collection Date:**	08/05/15
Sample Type:	Composite	**Collection Time:**	07:30

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed
Method: SW6010C						
Arsenic, Total	3.52	2.40	mg/kg DRY		08/11/15 1139	08/12/15 1333
Beryllium, Total	<0.240	0.240	mg/kg DRY		08/11/15 1139	08/12/15 1333
Cadmium, Total	0.790	0.240	mg/kg DRY		08/11/15 1139	08/12/15 1333
Chromium, Total	11.9	0.600	mg/kg DRY		08/11/15 1139	08/12/15 1333
Copper, Total	678	2.40	mg/kg DRY		08/11/15 1139	08/12/15 1333
Lead, Total	17.7	2.40	mg/kg DRY		08/11/15 1139	08/12/15 1333
Molybdenum, Total	<12.0	12.0	mg/kg DRY		08/11/15 1139	08/12/15 1333
Nickel, Total	10.0	4.80	mg/kg DRY		08/11/15 1139	08/12/15 1333
Potassium, Total	699	120	mg/kg DRY		08/11/15 1139	08/12/15 1333
Selenium, Total	4.62	2.40	mg/kg DRY		08/11/15 1139	08/12/15 1333
Zinc, Total	741	2.40	mg/kg DRY		08/11/15 1139	08/12/15 1333

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed
Method: D2216						
Percent Solids	31.7	1.00	weight %			08/11/15 0758

Laboratory

SAY	Microbac Laboratories Inc., - Sayre

Definitions

MDL:	Minimum Detection Limit
PQL:	Practical Quantitation Limit
Y:	This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	3.5 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

Project Requested Certification(s):

Microbac Laboratories, Inc. - Sayre	
NY Lab ID No.: 11216	New York State Department of Health
Microbac Laboratories, Inc. - Ohio Valley	
NY Lab ID No.: 10861, Serial No.: 50396	New York State Department of Health
DEP ID: 68-01670, Cert No.: 010	State of Pennsylvania (NELAC)
VA ID: 460187, Cert: 6338	Virginia

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Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5I0385

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: 360/503 Analysis

Project / PO Number: N/A
Received: 09/02/2015 16:45
Reported: 09/24/2015 12:45

Analytical Testing Parameters

Client Sample ID:	Drying Bed #4	**Collected By:**	TS
Lab Sample ID:	S5I0385-01	**Collection Date:**	09/02/15
Sample Type:	Composite	**Collection Time:**	10:00

General Paramaters	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: EPA 9045C							
pH	7.88	0.0100	pH Units	Y	09/09/15 1724	09/09/15 2023	SAY
Method: SM4500 H+ B-2000							
Temperature	23.9		°C	Y	09/09/15 1724	09/09/15 2023	SAY

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: EPA 350.1, Rv 2							
Ammonia as N	2120	63.1	mg/kg dry	Y	09/04/15 1432	09/04/15 1902	SAY
Method: EPA 351.2, Rv 2							
Total Kjeldahl Nitrogen (TKN)	13600	63.1	mg/kg dry	Y	09/15/15 1711	09/18/15 1204	SAY
Method: EPA 365.3, Rv 1978							
Phosphorus - Total as P	15300	395	mg/kg dry	Y	09/15/15 0930	09/15/15 1424	SAY
Method: SM2540 G-1997							
Percent Solids	15.8		% by Weight	Y	09/08/15 1520	09/09/15 1340	SAY
Total Volatile Solids (TVS)	65.4	0.100	%	Y	09/14/15 0820	09/14/15 1152	SAY
Method: SM4500-NO3 F-2000							
Nitrate as N (calc)	<31.6	31.6	mg/kg dry		09/14/15 1227	09/14/15 1508	
Nitrate-Nitrite as N	<31.6	31.6	mg/kg dry	Y	09/14/15 0900	09/14/15 1508	SAY
Nitrite as N	33.1	15.8	mg/kg dry	Y	09/14/15 1227	09/14/15 1227	SAY

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Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5I0385

Analytical Testing Parameters

Client Sample ID:	Drying Bed #4	**Collected By:**	TS
Lab Sample ID:	S5I0385-01	**Collection Date:**	09/02/15
Sample Type:	Composite	**Collection Time:**	10:00

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8081A							
4,4'-DDD	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
4,4'-DDE	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
4,4'-DDT	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Aldrin	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
alpha Chlordane	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
alpha-BHC	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
beta-BHC	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
delta-BHC	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Dieldrin	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Endosulfan I	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Endosulfan II	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Endosulfan sulfate	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Endrin	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Endrin aldehyde	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Endrin ketone	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
gamma Chlordane	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
gamma-BHC (Lindane)	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Heptachlor	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Heptachlor epoxide	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Methoxychlor	<61.4	61.4	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Toxaphene	<1230	1230	ug/kg DRY		09/10/15 0856	09/11/15 1805	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	57.3	Limit: 39-130	% Rec		09/10/15 0856	09/11/15 1805	
Surrogate: Decachlorobiphenyl	45.4	Limit: 33-143	% Rec		09/10/15 0856	09/11/15 1805	
Method: SW9014							
Cyanide	3.71	2.97	mg/kg DRY			09/11/15 1401	

8260C Solids	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8260C							
Acetone	108	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Benzene	89.9	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Bromobenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Bromochloromethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Bromodichloromethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Bromoform	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Bromomethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
2-Butanone	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
n-Butylbenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
sec-Butylbenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
tert-Butylbenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Carbon disulfide	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	

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Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5I0385

Analytical Testing Parameters

Client Sample ID:	Drying Bed #4	**Collected By:**	TS
Lab Sample ID:	S5I0385-01	**Collection Date:**	09/02/15
Sample Type:	Composite	**Collection Time:**	10:00

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

8260C Solids	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Carbon tetrachloride	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Chlorobenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Chlorodibromomethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Chloroethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
2-Chloroethyl vinyl ether	<63.6	63.6	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Chloroform	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Chloromethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
2-Chlorotoluene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
4-Chlorotoluene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,2-Dibromo-3-chloropropane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,2-Dibromoethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Dibromomethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,2-Dichlorobenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,3-Dichlorobenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,4-Dichlorobenzene	81.5	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Dichlorodifluoromethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,1-Dichloroethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,2-Dichloroethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,1-Dichloroethene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
cis-1,2-Dichloroethene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
trans-1,2-Dichloroethene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,2-Dichloropropane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,3-Dichloropropane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
2,2-Dichloropropane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
cis-1,3-Dichloropropene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
trans-1,3-Dichloropropene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,1-Dichloropropene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Ethylbenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
2-Hexanone	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Hexachlorobutadiene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Isopropylbenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
p-Isopropyltoluene	34.6	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
4-Methyl-2-pentanone	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Methylene chloride	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Naphthalene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
n-Propylbenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Styrene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,1,1,2-Tetrachloroethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,1,2,2-Tetrachloroethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Tetrachloroethene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Toluene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	

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Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5I0385

Analytical Testing Parameters

Client Sample ID:	Drying Bed #4	**Collected By:**	TS
Lab Sample ID:	S5I0385-01	**Collection Date:**	09/02/15
Sample Type:	Composite	**Collection Time:**	10:00

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

8260C Solids	Result	PQL	Units	Note	Prepared	Analyzed	Lab
1,2,3-Trichlorobenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,2,4-Trichlorobenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,1,1-Trichloroethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,1,2-Trichloroethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Trichloroethene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Trichlorofluoromethane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,2,3-Trichloropropane	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,2,4-Trimethylbenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
1,3,5-Trimethylbenzene	<31.8	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Vinyl acetate	<63.6	63.6	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Vinyl chloride	<63.6	63.6	ug/kg DRY		09/15/15 0908	09/16/15 1357	
o-Xylene	39.6	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
m-,p-Xylene	62.6	31.8	ug/kg DRY		09/15/15 0908	09/16/15 1357	
Surrogate: Dibromofluoromethane	88.7	Limit: 80-120	% Rec		09/15/15 0908	09/16/15 1357	
Surrogate: 1,2-Dichloroethane-d4	80.9	Limit: 80-120	% Rec		09/15/15 0908	09/16/15 1357	
Surrogate: Toluene-d8	121	Limit: 81-117	% Rec	*	09/15/15 0908	09/16/15 1357	
Surrogate: 4-Bromofluorobenzene	134	Limit: 74-121	% Rec	*	09/15/15 0908	09/16/15 1357	

Mercury	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW7471B							
Mercury, Total	<1.57	1.57	mg/kg DRY		09/10/15 0946	09/11/15 1037	

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C							
Antimony, Total	<21.6	21.6	mg/kg DRY		09/10/15 0938	09/11/15 1209	
Arsenic, Total	6.19	4.32	mg/kg DRY		09/10/15 0938	09/15/15 1652	
Beryllium, Total	<0.432	0.432	mg/kg DRY		09/10/15 0938	09/11/15 1209	
Cadmium, Total	1.48	0.432	mg/kg DRY		09/10/15 0938	09/11/15 1209	
Chromium, Total	22.1	1.08	mg/kg DRY		09/10/15 0938	09/11/15 1209	
Copper, Total	1350	4.32	mg/kg DRY		09/10/15 0938	09/11/15 1209	
Lead, Total	33.9	4.32	mg/kg DRY		09/10/15 0938	09/11/15 1209	
Molybdenum, Total	<21.6	21.6	mg/kg DRY		09/10/15 0938	09/11/15 1209	
Nickel, Total	17.4	8.65	mg/kg DRY		09/10/15 0938	09/11/15 1209	
Potassium, Total	1170	216	mg/kg DRY		09/10/15 0938	09/11/15 1209	
Selenium, Total	10.1	4.32	mg/kg DRY		09/10/15 0938	09/11/15 1209	
Silver, Total	2.68	2.16	mg/kg DRY		09/10/15 0938	09/11/15 1209	
Thallium, Total	<43.2	43.2	mg/kg DRY		09/10/15 0938	09/11/15 1209	
Zinc, Total	1510	4.32	mg/kg DRY		09/10/15 0938	09/11/15 1209	

CB SOLID	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8082							

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Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5I0385

Analytical Testing Parameters

Client Sample ID:	Drying Bed #4	**Collected By:**	TS
Lab Sample ID:	S5I0385-01	**Collection Date:**	09/02/15
Sample Type:	Composite	**Collection Time:**	10:00

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

PCB SOLID	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Aroclor-1016	<181	181	ug/kg DRY		09/10/15 0834	09/11/15 1633	
Aroclor-1221	<181	181	ug/kg DRY		09/10/15 0834	09/11/15 1633	
Aroclor-1232	<181	181	ug/kg DRY		09/10/15 0834	09/11/15 1633	
Aroclor-1242	<181	181	ug/kg DRY		09/10/15 0834	09/11/15 1633	
Aroclor-1248	<181	181	ug/kg DRY		09/10/15 0834	09/11/15 1633	
Aroclor-1254	<181	181	ug/kg DRY		09/10/15 0834	09/11/15 1633	
Aroclor-1260	<181	181	ug/kg DRY		09/10/15 0834	09/11/15 1633	
Surrogate: 2,4,5,6-Tetrachloro-m-Xylene	45.5	Limit: 29-133	% Rec		09/10/15 0834	09/11/15 1633	
Surrogate: Decachlorobiphenyl	30.3	Limit: 60-125	% Rec	*	09/10/15 0834	09/11/15 1633	

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216							
Percent Solids	15.9	1.00	weight %			09/11/15 0712	
Percent Solids	16.1	1.00	weight %			09/11/15 0712	

SEMIVOLATILE ORGANICS	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8270D							
1,2,4-Trichlorobenzene	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
1,2-Dichlorobenzene	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
1,2-Diphenylhydrazine (as Azobenzene)	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
1,3-Dichlorobenzene	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
1,4-Dichlorobenzene	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2,3,4,6-Tetrachlorophenol	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2,4,5-Trichlorophenol	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2,4,6-Trichlorophenol	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2,4-Dichlorophenol	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2,4-Dimethylphenol	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2,4-Dinitrophenol	<24100	24100	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2,4-Dinitrotoluene	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2,6-Dinitrotoluene	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2-Chloronaphthalene	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2-Chlorophenol	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2-Methylnaphthalene	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2-Methylphenol	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2-Nitroaniline	<24100	24100	ug/kg DRY		09/11/15 1115	09/14/15 1955	
2-Nitrophenol	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
3,3'-Dichlorobenzidine	<9620	9620	ug/kg DRY		09/11/15 1115	09/14/15 1955	
3-,4-Methylphenol	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
3-Nitroaniline	<24100	24100	ug/kg DRY		09/11/15 1115	09/14/15 1955	
4,6-Dinitro-2-methylphenol	<24100	24100	ug/kg DRY		09/11/15 1115	09/14/15 1955	
4-Bromophenyl phenyl ether	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	

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Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5I0385

Analytical Testing Parameters

Client Sample ID:	Drying Bed #4	**Collected By:**	TS
Lab Sample ID:	S5I0385-01	**Collection Date:**	09/02/15
Sample Type:	Composite	**Collection Time:**	10:00

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

SEMIVOLATILE ORGANICS	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Pentachlorophenol	<24100	24100	ug/kg DRY		09/11/15 1115	09/14/15 1955	
Phenanthrene	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
Phenol	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
Pyrene	<4810	4810	ug/kg DRY		09/11/15 1115	09/14/15 1955	
Pyridine	<24100	24100	ug/kg DRY		09/11/15 1115	09/14/15 1955	
Surrogate: 2,4,6-Tribromophenol	61.8	Limit: 19-122	% Rec		09/11/15 1115	09/14/15 1955	
Surrogate: 2-Fluorobiphenyl	58.1	Limit: 30-115	% Rec		09/11/15 1115	09/14/15 1955	
Surrogate: 2-Fluorophenol	38.3	Limit: 25-121	% Rec		09/11/15 1115	09/14/15 1955	
Surrogate: Nitrobenzene-d5	50.5	Limit: 23-120	% Rec		09/11/15 1115	09/14/15 1955	
Surrogate: p-Terphenyl-d14	65.8	Limit: 18-137	% Rec		09/11/15 1115	09/14/15 1955	
Surrogate: Phenol-d5	36.0	Limit: 24-113	% Rec		09/11/15 1115	09/14/15 1955	

Laboratory

SAY: Microbac Laboratories Inc., - Sayre

Definitions

***:**	Surrogate or spike compound out of range
MDL:	Minimum Detection Limit
PQL:	Practical Quantitation Limit
RPD:	Relative Percent Difference
Y:	This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 3.8°C

Cooler Inspection Checklist

Custody Seals Intact and/or No Evidence of Tampering	Yes	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Correct (or not required)	Yes
Received on Ice (or not required)	Yes		

Project Requested Certification(s)

Microbac Laboratories Inc., - Sayre	
NY Lab ID No.: 11216	New York State Department of Health
Microbac Laboratories, Inc. - Ohio Valley	
NY Lab ID No.: 10861, Serial No.: 50396	New York State Department of Health
DEP ID: 68-01670, Cert No.: 010	State of Pennsylvania (NELAC)
VA ID: 460187, Cert: 6338	Virginia

2015 Sludge removal from S-2 Anaerobic Digesters

DATE	FROM:		TO:		Gals. Applied
Jan. 7	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	25500 gals.
Jan. 15	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	25500 gals.
Jan. 22	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	22000 gals.
Jan. 29	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	22000 gals.
Feb.5	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	22000 gals.
Feb.13	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	22000 gals.
Feb.18	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	15500 gals.
Feb.26	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	25500 gals.
March.4	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	25500 gals.
March.12	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	29000 gals.
March.19	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	29000 gals.
March.25	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	22000 gals.
April.2	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	22000 gals.
April.15	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	19500 gals.
April.23	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	19500 gals.
April.30	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	25500 gals.
May.7	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	25500 gals.
May.15	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	25500 gals.
May.21	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	25500 gals.
May.28	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	22000 gals.
June.4	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	25500 gals.
June.10	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	25500 gals.
June.17	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	29000 gals.
June.24	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	32500 gals.
July.2	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	32500 gals.
July.8	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	32500 gals.
July.15	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	29000 gals.
July.22	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	25500 gals.
July.31	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	25500 gals.
Aug.6	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	22000 gals.
Aug.13	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	25500 gals.
Aug.19	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	25500 gals.
Aug.26	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#4	32500 gals.
Sept.3	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	29000 gals.
Sept.9	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	25500 gals.
Sept.17	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	29000 gals.
Sept.24	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	29000 gals.
Oct.1	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	25500 gals.
Oct.8	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	22000 gals.
Oct.15	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	25500 gals.
Oct.22	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	25500 gals.
Oct.30	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	25500 gals.
Nov.4	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	25500 gals.
Nov.12	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	25500 gals.
Nov.18	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	22000 gals.
Nov.25	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	25500 gals.

2015 Sludge removal from S-2 Anaerobic Digesters

DATE	FROM:		TO:		Gals. Applied
DEC.2	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	22000 gals.
DEC.10	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	25500 gals.
DEC.16	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	22000 gals.
DEC.23	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	18500 gals.
DEC.30	Belt press	S-2 sec. Anaerobic Dig.	Hauled to: Drying Bed	#3	22000 gals.

TOTAL **1278500 gallons**

Town of Owego WPCP #2 2015 Anaerobic Digester Daily Temperatures - Afternoon

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	98	97	97	98	98	98	98	101	98	98	98	97
2	97	100	97	97	98	98	99	101	99	99	98	98
3	98	100	96	97	97	98	99	100	98	99	98	97
4	98	99	96	96	97	98	98	101	98	99	98	97
5	98	99	96	98	99	98	100	101	99	100	98	98
6	98	99	96	98	99	99	99	100	100	98	99	98
7	97	98	97	98	99	100	98	101	99	98	99	98
8	97	100	97	98	98	98	99	101	100	98	99	98
9	96	100	97	98	100	99	99	101	100	99	99	97
10	96	100	98	98	100	98	98	100	99	99	99	97
11	96	100	98	98	100	98	100	99	99	98	98	97
12	97	100	98	98	99	98	98	99	100	100	97	97
13	98	100	98	97	99	98	100	99	100	98	98	96
14	98	99	97	97	99	99	100	99	99	97	98	97
15	98	98	97	98	99	98	99	100	99	97	96	97
16	98	98	97	99	99	98	99	100	98	97	98	97
17	98	99	97	100	98	98	100	99	98	98	98	97
18	97	98	96	98	99	98	100	99	99	98	98	97
19	97	98	96	98	99	99	100	99	100	98	98	98
20	98	98	96	98	98	100	100	100	100	98	99	96
21	98	96	97	98	98	100	100	100	99	98	99	99
22	98	97	97	97	98	98	100	99	99	98	99	100
23	98	98	96	96	100	99	100	98	98	99	98	100
24	98	96	97	96	100	98	100	98	98	98	98	100
25	98	96	96	96	100	98	100	98	98	98	96	100
26	99	97	97	95	99	98	99	98	100	98	98	100
27	99	96	97	96	99	98	100	98	100	98	97	100
28	98	98	97	96	99	98	100	98	100	97	98	100
29	98		97	96	98	98	100	98	100	97	96	101
30	99		96	97	99	98	101	98	99	98	98	101
31	98		98		98		100	98		98		100
												100
Avg Daily Temp	98	98	97	97	99	98	99	99	99	98	98	98
Avg Annual Temp	98											

Town of Owego WPCP #2 2015 Anaerobic Digester Daily Temperatures - Morning

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	98	97	97	98	98	98	98	101	98	98	98	97
2	97	100	97	97	98	98	99	101	99	99	98	98
3	98	100	96	97	97	98	99	100	98	99	98	97
4	98	99	96	96	97	98	98	101	98	99	98	97
5	98	99	96	98	99	98	100	101	99	100	98	98
6	98	99	96	98	99	99	99	100	100	98	99	98
7	97	98	97	98	99	100	98	101	99	98	99	98
8	97	100	97	98	98	98	99	101	100	98	99	97
9	96	100	97	98	100	99	99	101	100	99	99	97
10	96	100	98	98	100	98	98	100	99	99	99	97
11	96	100	98	98	100	98	100	99	99	98	98	97
12	97	100	98	98	99	98	98	99	100	100	97	96
13	98	100	98	97	99	98	100	99	100	98	98	97
14	98	99	97	97	99	99	100	99	99	97	98	97
15	98	98	97	98	99	98	99	100	99	97	96	97
16	98	98	97	99	99	98	99	100	98	97	98	97
17	98	99	97	100	98	98	100	99	98	98	98	97
18	97	98	96	98	99	98	100	99	99	98	98	98
19	97	98	96	98	99	99	100	99	100	98	98	96
20	98	98	96	98	98	100	100	100	100	98	99	99
21	98	96	97	98	98	100	100	100	99	98	99	100
22	98	97	97	97	98	98	100	99	99	98	99	100
23	98	98	96	96	100	99	100	98	98	99	98	100
24	98	96	97	96	100	98	100	98	98	98	98	100
25	98	96	96	96	100	98	100	98	98	98	96	100
26	99	97	97	95	99	98	99	98	100	98	98	100
27	99	96	97	96	99	98	100	98	100	98	97	100
28	98	98	97	96	99	98	100	98	100	97	98	101
29	98		97	96	98	98	100	98	100	97	96	101
30	99		96	97	99	98	101	98	99	98	98	100
31	98		98		98		100	98		98		100
Avg Daily Temp	98	98	97	97	99	98	99	99	99	98	98	98

Avg Annual Temp 98

DATE: Jan 26, 2015 NAME: TYSON

FLOW METER: 577485 gallons

DAILY FLOW: 0.59 MG

SREEENINGS: _____ cu.ft. removed from plant

GRIT: _____ cu.ft. removed from plant

Elect. Meter (1st/ ea. month) _____ (x200)

Admin. gas Meter (1st/ ea. month) _____

Generator gas Meter (1st/ ea. month) _____

Dig. Bldg.gas Meter (1st/ ea. month) _____

DIGESTER TEMP: 99 F.

INFLUENT: Composite Grab

EFFLUENT: Composite Grab

Time: 7:30

AMMONIA 20 mg/l T.-Phos. _____

AMMONIA 61 mg/l T.-Phos. 2.2

NO3 8.9 mg/l

Alkalinity _____ mg/l

SETTLEOMETER

	SSV	MLSS	SVI = (ssv)(1000) / mlss
5 mins.	200		
30 mins.	150		66
60 mins.			

MLSS volume 50 mls.

NE AT # 1
dry wgt. 8450
tare 7265
wgt. _____
mlss 2370

SE AT # 2
dry wgt. 8490
tare 7730
wgt. _____
mlss 2160

WAT # 3
dry wgt. 8690
tare 7550
wgt. _____
mlss 2280

FST-core # 4
dry wgt. 7650
tare 7395
wgt. _____
mlss 510

WAS (25mls) # 5
dry wgt. 8260
tare 7250
wgt. _____
mlss 4040

_____
dry wgt. _____
tare _____
wgt. _____
mlss _____

CL2 FEED: _____ lbs./day-disinfection

_____ lbs./day- RAS

ALUM FEED: ~~230~~ 30 gallons

SUGAR FEED: 50 lbs.

SLUDGE BLANKET: finals: N. 1/2 feet

S. 1/2 feet

SLUDGE WASTING: finals: 8 mins.

SLUDGE BLANKET: thickener: 3 feet

primary: _____ feet

THICK. SLUDGE PUMPING: 30 mins.

lbs. of Solids Wasted

WAS: (0.004 mg)(8.34)(WAS concen. 4040)

(395/495 gpm) 135 lbs. solids to thick.

Thick. Sludge: (2250 gals.)(8.34)(4.5 %solids) =

(75 gpm) 845 lbs. solids to dig.

Gas Production: 11,560 cu. ft.

lbs. of solids

NE A.T.	(.157 mg)	3100
NW A.T.	(.092 mg)	1750
SE A.T.	(.157 mg)	2830
SW A.T.	(.092 mg)	1750
AT total	(.498 mg)	9430
FST (2)	(.154 mg)	655
TOTAL system lbs.		10085

D.O. @ _____

NE A.T. _____ mg/l

NW A.T. _____ mg/l

N. Anox. _____ mg/l

SE A.T. _____ mg/l

SW A.T. _____ mg/l

S. Anox. _____ mg/l

D.O. @

NE A.T. 2.5 mg/l

NW A.T. 6.4 mg/l

N. Anox. 0.1/0.1 mg/l

SE A.T. 2.1 mg/l

SW A.T. 7.1 mg/l

S. Anox. 0.1/0.1 mg/l

O.U.R.

DO depl. (10 mins) 2.00 mg/l 9.70 5.70

O.U.R. = (DO depl)(60 mins/hr) / 10

12.0

R.R. = OUR (mg O2/l/hr) / MLSS (gm/l)

5.3 g/l/hr.

DATE: March 11, 2015 NAME: Tyson Stiles

FLOW METER: 595850 gallons

DAILY FLOW: 1.43 MG

SREEENINGS: _____ cu.ft. removed from plant

GRIT: _____ cu.ft. removed from plant

Elect. Meter (1st/ ea. month) _____ (x200)

Admin. gas Meter (1st/ ea. month) _____

Generator gas Meter (1st/ ea. month) _____

Dig. Bldg.gas Meter (1st/ ea. month) _____

DIGESTER TEMP: 98 F.

INFLUENT: Composite Grab

EFFLUENT: Composite Grab

Time: _____

AMMONIA 30 mg/l T.-Phos. _____

AMMONIA 0.1 mg/l T.-Phos. 1.2

NO3 10.2 mg/l

Alkalinity _____ mg/l

SETTLEOMETER

	SSV	MLSS	SVI = (ssv)(1000) / mlss
5 mins.	250		
30 mins.	150		
60 mins.			

CL2 FEED: _____ lbs./day-disinfection

_____ lbs./day- RAS

ALUM FEED: 75 gallons

SUGAR FEED: 30 lbs.

MLSS volume _____ mls.

AT # 1		AT # 2	
dry wgt.	8790	dry wgt.	8670
tare	7500	tare	7460
wgt.		wgt.	
mlss	2580	mlss	2420

AT # 3		FST-core # 4	
dry wgt.	8250	dry wgt.	7690
tare	7070	tare	7060
wgt.		wgt.	
mlss	2440	mlss	1260

WAS (25mls) #		#	
dry wgt.		dry wgt.	
tare		tare	
wgt.		wgt.	
mlss		mlss	

SLUDGE BLANKET: finals: N. 1 feet

S. 1 feet

SLUDGE WASTING: finals: 25 mins.

SLUDGE BLANKET: thickener: _____ feet

primary: _____ feet

THICK. SLUDGE PUMPING: 45 mins.

lbs. of Solids Wasted

WAS: (0.012 mg)(8.34)(WAS concen. 7760)

(395/495 gpm) 775 lbs. solids to thick.

Thick. Sludge: (335 gals.)(8.34)(4% %solids) =

(gpm) 1125 lbs. solids to dig.

Gas Production: 12,625 cu. ft.

lbs. of solids

NE A.T.	(.157 mg)	3380
NW A.T.	(.092 mg)	1870
SE A.T.	(.157 mg)	3170
SW A.T.	(.092 mg)	1870
AT total	(.498 mg)	10290
FST (2)	(.154 mg)	1620
TOTAL system lbs.		11910

D.O. @ _____

NE A.T. _____ mg/l

NW A.T. _____ mg/l

N. Anox. _____ mg/l

SE A.T. _____ mg/l

SW A.T. _____ mg/l

S. Anox. _____ mg/l

D.O. @ _____

NE A.T. 3.5 mg/l

NW A.T. 5.2 mg/l

N. Anox. 0.05 mg/l

SE A.T. 2.2 mg/l

SW A.T. 4.7 mg/l

S. Anox. 0.05 mg/l

O.U.R.

DO depl. (10 mins) 2.8 mg/l 2.85 − 0.05 = 2.8

O.U.R. = (DO depl)(60 mins/hr) / 10 = 16.8

R.R. = OUR (mg O2/l/hr) / MLSS (gm/l) = 6.1 g/l/hr.

TOWN OF OWEGO WPCP S-2

DATE: April 15, 2015 **NAME:** Tyson Sykes

FLOW METER: 658365 gallons

DAILY FLOW: 1.99 MG

SREEENINGS: 4 cu.ft. removed from plant

GRIT: 30 cu.ft. removed from plant

Elect. Meter (1st/ ea. month) _____ (x200)

Admin. gas Meter (1st/ ea. month) _____

Generator gas Meter (1st/ ea. month) _____

Dig. Bldg.gas Meter (1st/ ea. month) _____

DIGESTER TEMP: 98 F.

INFLUENT: Composite Grab AMMONIA _____ mg/l T.-Phos. _____

EFFLUENT: Composite Grab AMMONIA _____ mg/l T.-Phos. _____

Time: _____ NO3 _____ mg/l

Alkalinity _____ mg/l

SETTLEOMETER

	SSV	MLSS	SVI = (ssv)(1000)/mlss
5 mins.			
30 mins.			
60 mins.			

CL2 FEED: _____ lbs./day-disinfection

_____ lbs./day- RAS

ALUM FEED: 25 gallons

SUGAR FEED: 0 lbs.

MLSS volume 80 mls.

AT # 6		AT # 7	
dry wgt.	9340	dry wgt.	8860
tare	7870	tare	7340
wgt.		wgt.	
mlss	2940	mlss	3040

AT # 8		FST-core # 9	
dry wgt.	8310	dry wgt.	7965
tare	8060	tare	7790
wgt.		wgt.	
mlss	500	mlss	350

WAS (25mls) #		#	
dry wgt.		dry wgt.	
tare		tare	
wgt.		wgt.	
mlss		mlss	

SLUDGE BLANKET: finals: N. 34 feet

S. 1½ feet

SLUDGE WASTING: finals: 8 mins.

SLUDGE BLANKET: thickener: _____ feet

primary: _____ feet

THICK. SLUDGE PUMPING: 45 mins.

lbs. of Solids Wasted

WAS: (_____ mg)(8.34)(WAS concen._____)

(385/495 gpm) 65 lbs. solids to thick.

Thick. Sludge:(_____ gals.)(8.34)(3.8 %solids) =

(_____ gpm) 1020 lbs. solids to dig.

Gas Production: 6,290 cu. ft.

lbs. of solids

NE A.T.	(.157 mg)	3850
NW A.T.	(.092 mg)	380
SE A.T.	(.157 mg)	3980
SW A.T.	(.092 mg)	380
AT total	(.498 mg)	8590
FST (2)	(.154 mg)	450
TOTAL system lbs.		9040

D.O. @ _____

NE A.T._____mg/l

NW A.T._____mg/l

N. Anox._____mg/l

SE A.T._____mg/l

SW A.T._____mg/l

S. Anox._____mg/l

D.O. @ _____

NE A.T._____mg/l

NW A.T._____mg/l

N. Anox._____mg/l

SE A.T._____mg/l

SW A.T._____mg/l

S. Anox._____mg/l

O.U.R.

DO depl. (10 mins)_____mg/l

O.U.R. = (DO depl)(60 mins/hr) / 10 = _____

R.R. = OUR (mg O2/l/hr) / MLSS (gm/l) = _____ g/l/hr.

TOWN OF OWEGO WPCP S-2

DATE: May 11, 2015 **NAME:** Tyson Stiles

FLOW METER: 658025 gallons

DAILY FLOW: .73 MG

SREEENINGS: _____ cu.ft. removed from plant

GRIT: _____ cu.ft. removed from plant

Elect. Meter (1st/ ea. month) _____ (x200)

Admin. gas Meter (1st/ ea. month) _____

Generator gas Meter (1st/ ea. month) _____

Dig. Bldg.gas Meter (1st/ ea. month) _____

DIGESTER TEMP: 99.5 F.

INFLUENT: Composite Grab

EFFLUENT: Composite Grab

Time: _____

AMMONIA 20 mg/l T.-Phos. _____

AMMONIA <1 mg/l T.-Phos. <0.12

NO3 _____ mg/l

Alkalinity _____ mg/l

SETTLEOMETER

	SSV	MLSS	SVI = (ssv)(1000) / mlss
5 mins.	275		
30 mins.			
60 mins.			

CL2 FEED: _____ lbs./day-disinfection

_____ lbs./day- RAS

ALUM FEED: 25 gallons

SUGAR FEED: 70 lbs.

MLSS volume _____ mls.

AT # 1		AT # 2	
dry wgt.	9040	dry wgt.	8860
tare	8090	tare	7840
wgt.		wgt.	
mlss	1900	mlss	2040

AT # 3		FST-core # 4	
dry wgt.	8980	dry wgt.	8730
tare	7990	tare	7920
wgt.		wgt.	
mlss	1980	mlss	820

WAS (25mls) # 5		#	
dry wgt.	9630	dry wgt.	
tare	7830	tare	
wgt.		wgt.	
mlss	7200	mlss	

SLUDGE BLANKET: finals: N. 1 feet

S. 1 feet

SLUDGE WASTING: finals: 25 mins.

SLUDGE BLANKET: thickener: 4 feet

primary: _____ feet

THICK. SLUDGE PUMPING: 45 mins.

lbs. of Solids Wasted

WAS: (6.0/2 mg)(8.34)(WAS concen. 7200)

(385/495 gpm) 720 lbs. solids to thick.

Thick. Sludge:(_____ gals.)(8.34)(4.5 %solids) =

(_____ gpm) 1265 lbs. solids to dig.

Gas Production:

_____ cu. ft.

lbs. of solids

NE A.T.	(.157 mg)	2485
NW A.T.	(.092 mg)	1520
SE A.T.	(.157 mg)	2670
SW A.T.	(.092 mg)	1520
AT total	(.498 mg)	8195
FST (2)	(.154 mg)	1055
TOTAL system lbs.		9250

D.O. @

NE A.T. _____ mg/l

NW A.T. _____ mg/l

N. Anox. _____ mg/l

SE A.T. _____ mg/l

SW A.T. _____ mg/l

S. Anox. _____ mg/l

D.O. @

NE A.T. 1.5 mg/l

NW A.T. 5.3 mg/l

N. Anox. 2.09 mg/l

SE A.T. 1.5 mg/l

SW A.T. 5.4 mg/l

S. Anox. 4.08 mg/l

O.U.R.

DO depl. (10 mins) 2.2 mg/l

O.U.R. = (DO depl)(60 mins/hr) / 10

13.2

R.R. = OUR (mg O2/l/hr) / MLSS (gm/l)

6.17 g/l/hr.

4.25
2.05
2.20

TOWN OF OWEGO WPCP S-2

DATE: June 16, 2015 NAME: Devon

FLOW METER: 25270 gallons

DAILY FLOW: 0.80 MG

SREEENINGS: _____ cu.ft. removed from plant

GRIT: _____ cu.ft. removed from plant

Elect. Meter (1st/ ea. month) _____ (x200)

Admin. gas Meter (1st/ ea. month) _____

Generator gas Meter (1st/ ea. month) _____

Dig. Bldg.gas Meter (1st/ ea. month) _____

DIGESTER TEMP: 98 F.

INFLUENT: Composite Grab

EFFLUENT: Composite Grab

Time: _____

AMMONIA 15.0 mg/l T.-Phos. _____

AMMONIA <1 mg/l T.-Phos. ~~4.1~~ 1.1

NO3 4.7 mg/l

Alkalinity _____ mg/l

SETTLEOMETER

	SSV	MLSS	SVI = (ssv)(1000) / mlss
5 mins.	190		
30 mins.	150		
60 mins.			

CL2 FEED: 25 lbs./day-disInfection

_____ lbs./day- RAS

ALUM FEED: 35 gallons

SUGAR FEED: 100 lbs.

MLSS volume _____ mls.

NE AT # 1

dry wgt. 8700

tare 7740

wgt. _____

mlss 1970

SE AT # 2

dry wgt. 8980

tare 7820

wgt. _____

mlss 1720

AT # 3

dry wgt. 8620

tare 7615

wgt. _____

mlss 2010

FST-core # 4

dry wgt. 8470

tare 7915

wgt. _____

mlss 3110

WAS (25mls) # ~~3~~

dry wgt. _____

tare ~~7615~~

wgt. _____

mlss _____

_____

dry wgt. _____

tare _____

wgt. _____

mlss _____

SLUDGE BLANKET: finals: N. 0 1/4 feet

S. ~~1~~ 3 feet

SLUDGE WASTING: finals: _____ mins.

SLUDGE BLANKET: thickener: 7 feet

primary: _____ feet

THICK. SLUDGE PUMPING: 60 mins.

lbs. of Solids Wasted

WAS: (_____ mg)(8.34)(WAS concen. 3646)

(385/495 gpm) 765 lbs. solids to thick.

Thick. Sludge: (4500 gals.)(8.34)(2.4 %solids) =

(_____ gpm) 900 lbs. solids to dig.

Gas Production: _____ cu. ft.

lbs. of solids

NE A.T.	(.157 mg)	2515
NW A.T.	(.092 mg)	1540
SE A.T.	(.157 mg)	2965
SW A.T.	(.092 mg)	1540
AT total	(.498 mg)	8060
FST (2)	(.154 mg)	3995
TOTAL system lbs.		12055

D.O. @ _____

NE A.T. _____ mg/l

NW A.T. _____ mg/l

N. Anox. _____ mg/l

SE A.T. _____ mg/l

SW A.T. _____ mg/l

S. Anox. _____ mg/l

D.O. @ _____

NE A.T. 2.3 mg/l

NW A.T. 6.7 mg/l

N. Anox. 0.05/0.00 mg/l

SE A.T. 1.6 mg/l

SW A.T. 8.1 mg/l

S. Anox. 0.05/0.08 mg/l

O.U.R.

DO depl. (10 mins) 1.7 mg/l

O.U.R. = (DO depl)(60 mins/hr) / 10

10.2

R.R. = OUR (mg O2/l/hr) / MLSS (gm/l)

5.0 g/l/hr.

8.9

7.2

1.7

TOWN OF OWEGO WPCP S-2

DATE: July 27th 2015 NAME: Dwon

FLOW METER: 60190 gallons

DAILY FLOW: 0.58 MG

SREEENINGS: _____ cu.ft. removed from plant

GRIT: _____ cu.ft. removed from plant

Elect. Meter (1st/ ea. month) _____ (x200)

Admin. gas Meter (1st/ ea. month) _____

Generator gas Meter (1st/ ea. month) _____

Dig. Bldg.gas Meter (1st/ ea. month) _____

DIGESTER TEMP: 100 F.

INFLUENT: Composite Grab

EFFLUENT: Composite Grab

Time: 7:15

AMMONIA 30 mg/l T.-Phos. _____

AMMONIA <1 mg/l T.-Phos. 0.8

NO3 6.0 mg/l

Alkalinity _____ mg/l

SETTLEOMETER

	SSV	MLSS	SVI = (ssv)(1000) / mlss
5 mins.	220		
30 mins.	175		
60 mins.			

MLSS volume _____ mls.

NEAT #5
dry wgt. 9060
tare 7880
wgt. _____
mlss 2360

SEAT #6
dry wgt. 9000
tare 7850
wgt. _____
mlss 2300

NWAT #7
dry wgt. 8770
tare 7640
wgt. _____
mlss 2260

FST-core #8
dry wgt. 7790
tare 7540
wgt. _____
mlss 500

WAS (25mls) #9
dry wgt. 9030
tare 7610
wgt. _____
mlss 5690

\# _____
dry wgt. _____
tare _____
wgt. _____
mlss _____

CL2 FEED: 20 lbs./day-disinfection

_____ lbs./day- RAS

ALUM FEED: 35 gallons

SUGAR FEED: 900 lbs.

SLUDGE BLANKET: finals: N. 1/2 feet

S. 1 feet

SLUDGE WASTING: finals: 24 mins.

SLUDGE BLANKET: thickener: 3½ feet

primary: _____ feet

THICK. SLUDGE PUMPING: 45 mins.

lbs. of Solids Wasted

WAS: (_____ mg)(8.34)(WAS concen. _____)

(395/495 gpm) _____ lbs. solids to thick.

Thick. Sludge:(_____ gals.)(8.34)(_____ %solids) =

(_____ gpm) _____ lbs. solids to dig.

Gas Production: 15,200 cu. ft.

lbs. of solids

NE A.T.	(.157 mg)	3090
NW A.T.	(.092 mg)	1730
SE A.T.	(.157 mg)	3010
SW A.T.	(.092 mg)	1730
AT total	(.498 mg)	9560
FST (2)	(.154 mg)	640
TOTAL system lbs.		10200

D.O. @

NE A.T. _____ mg/l

NW A.T. _____ mg/l

N. Anox. _____ mg/l

SE A.T. _____ mg/l

SW A.T. _____ mg/l

S. Anox. _____ mg/l

D.O. @

NE A.T. 3.0 mg/l

NW A.T. 5.6 mg/l

N. Anox. 0.0/4.5 mg/l

SE A.T. 2.2 mg/l

SW A.T. 6.2 mg/l

S. Anox. 0.0/4.5 mg/l

O.U.R.

DO depl. (10 mins) 1.50 mg/l

O.U.R. = (DO depl)(60 mins/hr) / 10 = 9.0

R.R. = OUR (mg O2/l/hr) / MLSS (gm/l) = 4.6 g/l/hr.

6.05
4.55
1.50

TOWN OF OWEGO WPCP S-2

DATE: Aug 18 2015 NAME: Tyson Stiles

FLOW METER: 71690 gallons

DAILY FLOW: 0.46 MG

SREEENINGS: _____ cu.ft. removed from plant

GRIT: _____ cu.ft. removed from plant

Elect. Meter (1st/ ea. month) _____ (x200)

Admin. gas Meter (1st/ ea. month) _____

Generator gas Meter (1st/ ea. month) _____

Dig. Bldg.gas Meter (1st/ ea. month) _____

DIGESTER TEMP: 99 F.

INFLUENT: Composite Grab AMMONIA 30 mg/l T.-Phos. _____

EFFLUENT: Composite Grab AMMONIA <1 mg/l T.-Phos. 10

Time: _____ NO3 7.3 mg/l

Alkalinity _____ mg/l

SETTLEOMETER

	SSV	MLSS	SVI = (ssv)(1000) / mlss
5 mins.	250		
30 mins.	150		71
60 mins.			

MLSS volume 10 mls.

AT # 1		AT # 2	
dry wgt.	8890	dry wgt.	8940
tare	7810	tare	7770
wgt.		wgt.	
mlss	2160	mlss	2340

AT # 3		FST-core # 4	
dry wgt.	8950	dry wgt.	8050
tare	7890	tare	8030
wgt.		wgt.	
mlss	2120	mlss	40

WAS (25mls) #		#	
dry wgt.		dry wgt.	
tare		tare	
wgt.		wgt.	
mlss		mlss	

CL2 FEED: 20 lbs./day-disinfection

_____ lbs./day- RAS

ALUM FEED: 75 gallons

SUGAR FEED: 100 lbs.

SLUDGE BLANKET: finals: N. 44 feet

S. 1/4 feet

SLUDGE WASTING: finals: 30 mins.

SLUDGE BLANKET: thickener: 4 feet

primary: _____ feet

THICK. SLUDGE PUMPING: 60 mins.

lbs. of Solids Wasted

WAS: (_____ mg)(8.34)(WAS concen. _____)

(395/495 gpm) 395 lbs. solids to thick.

Thick. Sludge:(_____ gals.)(8.34)(_____ %solids) =

(_____ gpm) 1350 lbs. solids to dig.

Gas Production: 10,560 cu. ft.

lbs. of solids

NE A.T.	(.157 mg)	2830
NW A.T.	(.092 mg)	1625
SE A.T.	(.157 mg)	3065
SW A.T.	(.092 mg)	1625
AT total	(.498 mg)	9145
FST (2)	(.154 mg)	50
TOTAL system lbs.		9195

D.O. @

NE A.T._____mg/l

NW A.T._____mg/l

N. Anox._____mg/l

SE A.T._____mg/l

SW A.T._____mg/l

S. Anox._____mg/l

D.O. @

NE A.T._____mg/l

NW A.T._____mg/l

N. Anox._____mg/l

SE A.T._____mg/l

SW A.T._____mg/l

S. Anox._____mg/l

O.U.R.

DO depl. (10 mins) 1.6 mg/l

O.U.R. = (DO depl)(60 mins/hr) / 10 = 9.6

R.R. = OUR (mg O2/l/hr) / MLSS (gm/l) = 4.5 g/l/hr.

6.2
4.6
1.6

TOWN OF OWEGO WPCP S-2

DATE: Sept. 14, 2015 NAME: _____

FLOW METER: 83520 gallons

DAILY FLOW: 0.42 MG

Elect. Meter (1st/ ea. month) _____ (x200)
Admin. gas Meter (1st/ ea. month) _____
Generator gas Meter (1st/ ea. month) _____
Dig. Bldg.gas Meter (1st/ ea. month) _____

SREEENINGS: _____ cu.ft. removed from plant
GRIT: _____ cu.ft. removed from plant

DIGESTER TEMP: 99 F.

INFLUENT: Composite Grab
EFFLUENT: Composite Grab
Time: _____

AMMONIA 20 mg/l T.-Phos. _____
AMMONIA <1 mg/l T.-Phos. 1.5
NO3 5.5 mg/l
Alkalinity _____ mg/l

SETTLEOMETER

	SSV	MLSS	SVI = (ssv)(1000) / miss
5 mins.	310		
30 mins.	200		69
60 mins.			

CL2 FEED: 20 lbs./day-disinfection
_____ lbs./day- RAS

ALUM FEED: 35 gallons
SUGAR FEED: 100 lbs.

MLSS volume _____ mls.

AT #1		AT #2	
dry wgt.	8390	dry wgt.	8780
tare	7760	tare	7630
wgt.		wgt.	
miss	2060	miss	2300

AT #3		FST-core #4	
dry wgt.	9180	dry wgt.	8050
tare	8060	tare	7656
wgt.		wgt.	
miss	2240	miss	800

WAS (25mls) # 5		#	
dry wgt.	8760	dry wgt.	
tare	7800	tare	
wgt.		wgt.	
miss	3840	miss	

SLUDGE BLANKET: finals: N. 1 feet
S. 1 feet

SLUDGE WASTING: finals: 24 mins.

SLUDGE BLANKET: thickener: 3.5 feet
primary: _____ feet

THICK. SLUDGE PUMPING: 60 45 mins.

lbs. of Solids Wasted

WAS: (_____mg)(8.34)(WAS concen._____)
(395/495 gpm) _____ lbs. solids to thick.

Thick. Sludge:(_____gals.)(8.34)(_____%solids) =
(_____gpm) _____ lbs. solids to dig.

Gas Production: 14,215 cu. ft.

lbs. of solids

NE A.T.	(.157 mg)	2920
NW A.T.	(.092 mg)	1720
SE A.T.	(.157 mg)	3010
SW A.T.	(.092 mg)	1720
AT total	(.498 mg)	9376
FST (2)	(.154 mg)	1025
TOTAL system lbs.		10395

D.O. @ _____

NE A.T. _____ mg/l
NW A.T. _____ mg/l
N. Anox. _____ mg/l
SE A.T. _____ mg/l
SW A.T. _____ mg/l
S. Anox. _____ mg/l

D.O. @ _____

NE A.T. 2.4 mg/l
NW A.T. 6.00 mg/l
N. Anox. 0.05/0.03 mg/l
SE A.T. 2.7 mg/l
SW A.T. 5.06 mg/l
S. Anox. 0.05/0.03 mg/l

O.U.R.

DO depl. (10 mins) 1.4 mg/l

O.U.R. = (DO depl)(60 mins/hr) / 10
8.4

R.R. = OUR (mg O2/l/hr) / MLSS (gm/l)
3.8 g/l/hr.

5.2
3.8
1.4

TOWN OF OWEGO WPCP S-2

DATE: 10-13-15 NAME:

FLOW METER: 96935 gallons

DAILY FLOW: 0.43 MG

SREEENINGS: cu.ft. removed from plant

GRIT: cu.ft. removed from plant

Elect. Meter (1st/ ea. month) (x200)

Admin. gas Meter (1st/ ea. month)

Generator gas Meter (1st/ ea. month)

Dig. Bldg.gas Meter (1st/ ea. month)

DIGESTER TEMP: 100 F.

INFLUENT: Composite Grab

EFFLUENT: Composite Grab

Time:

AMMONIA 30 mg/l T.-Phos.

AMMONIA <1 mg/l T.-Phos. 1.1

NO3 6.3 mg/l

Alkalinity mg/l

SETTLEOMETER

	SSV	MLSS	SVI = (ssv)(1000) / mlss
5 mins.	320		
30 mins.	210		
60 mins.			

CL2 FEED: — lbs./day-disinfection

lbs./day- RAS

ALUM FEED: 35 gallons

SUGAR FEED: 100 lbs.

SLUDGE BLANKET: finals: N. 1/4 feet

S. — feet

SLUDGE WASTING: finals: mins.

SLUDGE BLANKET: thickener: feet

primary: feet

THICK. SLUDGE PUMPING: 45 mins.

MLSS volume mls.

NE AT #1
dry wgt. 9065
tare 7630
wgt.
mlss 2870

SE AT #2
dry wgt. 8750
tare 7330
wgt.
mlss 2840
8150

W AT #3
dry wgt. 9735
tare 8350
wgt.
mlss 2770

FST-core #4
dry wgt.
tare 7930
wgt.
mlss 440

WAS (25mls) #5
dry wgt. 9040
tare 8030
wgt.
mlss 4040

(395/495 gpm)
dry wgt.
tare
wgt.
mlss

lbs. of Solids Wasted

WAS: (0.016 mg)(8.34)(WAS concen. 540) lbs. solids to thick.

Thick. Sludge:(gals.)(8.34)(%solids) = (gpm) lbs. solids to dig.

Gas Production: 10,550 cu. ft.

lbs. of solids

NE A.T.	(.157 mg)	3760
NW A.T.	(.092 mg)	2125
SE A.T.	(.157 mg)	3720
SW A.T.	(.092 mg)	2125
AT total	(.498 mg)	11,730
FST (2)	(.154 mg)	565
TOTAL system lbs.		12,295

D.O. @

NE A.T. mg/l
NW A.T. mg/l
N. Anox. mg/l
SE A.T. mg/l
SW A.T. mg/l
S. Anox. mg/l

D.O. @

NE A.T. mg/l
NW A.T. mg/l
N. Anox. mg/l
SE A.T. mg/l
SW A.T. mg/l
S. Anox. mg/l

O.U.R.

DO depl. (10 mins) 1.35 mg/l

O.U.R. = (DO depl)(60 mins/hr) / 10 = 8.1

R.R. = OUR (mg O2/l/hr) / MLSS (gm/l) = 2.9 g/l/hr.

4.60
3.25
1.35

TOWN OF OWEGO WPCP S-2

DATE: NOV 17 2015 NAME: TYSON St. '05

FLOW METER: 114050 gallons

DAILY FLOW: 0.46 MG

Elect. Meter (1st/ ea. month) _____ (x200)
Admin. gas Meter (1st/ ea. month) _____
Generator gas Meter (1st/ ea. month) _____
Dig. Bldg.gas Meter (1st/ ea. month) _____

SREEENINGS: _____ cu.ft. removed from plant
GRIT: _____ cu.ft. removed from plant

DIGESTER TEMP: 98 F:

INFLUENT: Composite Grab AMMONIA 30 mg/l T.-Phos. _____
EFFLUENT: Composite Grab AMMONIA < 1 mg/l T.-Phos. 0.8
Time: _____ NO3 6.9 mg/l
Alkalinity _____ mg/l

SETTLEOMETER

	SSV	MLSS	SVI = (ssv/X1000) mlss
5 mins.	350		
30 mins.	225		89
60 mins.			

CL2 FEED: _____ lbs./day-disinfection
_____ lbs./day- RAS

ALUM FEED: 25 gallons
SUGAR FEED: 100 lbs.

MLSS volume _____ mls.

AT # 1		AT # 2	
dry wgt.	9130	dry wgt.	8640
tare	7770	tare	8390
wgt.		wgt.	
mlss	2720	mlss	2520

AT # 3		FST-core # 4	
dry wgt.	9210	dry wgt.	7390
tare	7950	tare	7270
wgt.		wgt.	
mlss	2520	mlss	240

WAS (25mls) #		#	
dry wgt.		dry wgt.	
tare		tare	
wgt.		wgt.	
mlss		mlss	

SLUDGE BLANKET: finals: N. 14 feet
S. 12 feet

SLUDGE WASTING: finals: 30 mins.

SLUDGE BLANKET: thickener: 5 feet
primary: _____ feet

THICK. SLUDGE PUMPING: 45 mins.

lbs. of Solids Wasted

WAS: (0.046 mg)(8.34)(WAS concen. _____)
(395/495 gpm) 410 lbs. solids to thick.

Thick. Sludge:(_____ gals.)(8.34)(_____ %solids) =
(_____ gpm) _____ lbs. solids to dig.

Gas Production: 9,160 cu. ft.

lbs. of solids

NE A.T.	(.157 mg)	3560
NW A.T.	(.092 mg)	1930
SE A.T.	(.157 mg)	3300
SW A.T.	(.092 mg)	1930
AT total	(.498 mg)	10720
FST (2)	(.154 mg)	310
TOTAL system lbs.		11030

D.O. @

NE A.T.	mg/l
NW A.T.	mg/l
N. Anox.	mg/l
SE A.T.	mg/l
SW A.T.	mg/l
S. Anox.	mg/l

D.O. @

NE A.T.	3.7 mg/l
NW A.T.	5.7 mg/l
N. Anox.	0.05 mg/l
SE A.T.	3.3 mg/l
SW A.T.	5.3 mg/l
S. Anox.	0.05 mg/l

O.U.R.

DO depl. (10 mins) _____ mg/l

O.U.R. = (DO depl)(60 mins/hr) / 10 = 2.8

R.R. = OUR (mg O2/l/hr) / MLSS (gm/l) = 3.1 g/l/hr.

6.3
5.0
1.3

TOWN OF OWEGO WPCP S-2

DATE: Dec 8 2015 **NAME:** Tyson

FLOW METER: 124535 gallons

DAILY FLOW: 0.48 MG

SREEENINGS: _____ cu.ft. removed from plant

GRIT: _____ cu.ft. removed from plant

Elect. Meter (1st/ ea. month) _____ (x200)

Admin. gas Meter (1st/ ea. month) _____

Generator gas Meter (1st/ ea. month) _____

Dig. Bldg.gas Meter (1st/ ea. month) _____

DIGESTER TEMP: 97 F.

INFLUENT: Composite (Grab)

EFFLUENT: Composite (Grab)

Time: _____

AMMONIA 35 mg/l T.-Phos. _____

AMMONIA 51 mg/l T.-Phos. 1.1

NO3 58 mg/l

Alkalinity _____ mg/l

SETTLEOMETER

	SSV	MLSS	SVI = (ssv)(1000) / mlss
5 mins.	740		
30 mins.	715		
60 mins.			

MLSS volume 50 mls.

	AT # 1	AT # 2
dry wgt.	9160	9480
tare	8080	7330
wgt.		
mlss	2160	2300

	AT #3	FST-core #4
dry wgt.	8900	8570
tare	7750	8085
wgt.		
mlss	2300	970

	WAS (25mls) #5	#
dry wgt.	8550	
tare	7780	
wgt.		
mlss	3220	

CL2 FEED: _____ lbs./day-disinfection

_____ lbs./day- RAS

ALUM FEED: 25 gallons

SUGAR FEED: 70 lbs.

SLUDGE BLANKET: finals: N. 3/4 feet

S. 1/4 feet

SLUDGE WASTING: finals: 32 mins.

SLUDGE BLANKET: thickener: 5 feet

primary: _____ feet

THICK. SLUDGE PUMPING: 60 mins.

lbs. of Solids Wasted

WAS: (0.016 mg)(8.34)(WAS concen. 3220)

(395/495 gpm) 430 lbs. solids to thick.

Thick. Sludge:(_____gals.)(8.34)(_____%solids) =

(_____gpm) _____ lbs. solids to dig.

Gas Production: 13,500 cu. ft.

lbs. of solids

NE A.T.	(.157 mg)	2830
NW A.T.	(.092 mg)	1765
SE A.T.	(.157 mg)	3010
SW A.T.	(.092 mg)	1765
AT total	(.498 mg)	9370
FST (2)	(.154 mg)	1245
TOTAL system lbs.		10615

D.O. @ _____

NE A.T. _____ mg/l

NW A.T. _____ mg/l

N. Anox. _____ mg/l

SE A.T. _____ mg/l

SW A.T. _____ mg/l

S. Anox. _____ mg/l

D.O. @

NE A.T. 3.7 mg/l

NW A.T. 7.7 mg/l

N. Anox. 0.08 mg/l

SE A.T. 2.9 mg/l

SW A.T. 6.2 ng/l

S. Anox. 0.08 mg/l

O.U.R.

DO depl. (10 mins) _____ mg/l 6.95

O.U.R. = (DO depl)(60 mins/hr) / 10 = _____

R.R. = OUR (mg O2/l/hr) / MLSS (gm/l) = _____ g/l/hr.

BENCHMARK ANALYTICS
A MICROBAC LABORATORY

Benchmark Analytics Sayre, A Microbac Laboratory
CERTIFICATE OF ANALYSIS
S5A1507

Project Name: Apalachin Secondary Digestor

Owego, Town of Utilities
Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project / PO Number: N/A
Received: 01/21/2015 17:00
Reported: 01/27/2015 12:00

Analytical Testing Parameters

Client Sample ID:	Apalachin Secondary Digestor	**Collection Date:**	01/21/15
Lab Sample ID:	S5A1507-01	**Collection Time:**	09:00
Sample Type:	Composite	**Collected By:**	TS

Benchmark Analytics Sayre, A Microbac Laboratory

Inorganics

	Result	MCL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	1.91			% by Weight		01/23/15 1700	01/23/15 1700	ICC

Definitions

MCL:	Maximum Contamination Level
PQL:	Practical Quantitation Limit

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	2.70 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

BENCHMARK ANALYTICS
A MICROBAC LABORATORY

Benchmark Analytics Sayre, A Microbac Laboratory

CERTIFICATE OF ANALYSIS

S5B1374

Project Name: Apalachin Secondary Digestor

Owego, Town of Utilities
Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project / PO Number: N/A
Received: 02/18/2015 17:00
Reported: 02/26/2015 13:23

Analytical Testing Parameters

Client Sample ID: Apalachin Secondary Digestor
Lab Sample ID: S5B1374-01
Sample Type: Composite

Collection Date: 02/18/15
Collection Time: 08:00
Collected By: TS

Benchmark Analytics Sayre, A Microbac Laboratory

Inorganics

	Result	MCL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	1.79			% by Weight		02/19/15 1700	02/20/15 0930	ICC

Definitions

MCL: Maximum Contamination Level
PQL: Practical Quantitation Limit

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	3.70 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

BENCHMARK ANALYTICS
A MICROBAC LABORATORY

Benchmark Analytics Sayre, A Microbac Laboratory

CERTIFICATE OF ANALYSIS

S5C1750

Project Name: Apalachin Secondary Digestor

Town of Owego Utilities
Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project / PO Number: N/A
Received: 03/25/2015 16:15
Reported: 03/31/2015 10:58

Analytical Testing Parameters

Client Sample ID:	Apalachin Secondary Digestor	**Collection Date:**	03/18/15
Lab Sample ID:	S5C1750-01	**Collection Time:**	N/A
Sample Type:	Composite	**Collected By:**	TS

Benchmark Analytics Sayre, A Microbac Laboratory

Inorganics

	Result	MCL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	1.53			% by Weight	H1	03/26/15 1700	03/27/15 1127	ICC

Definitions

H1:	Sample was received past holding time.
MCL:	Maximum Contamination Level
PQL:	Practical Quantitation Limit

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	2.90 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

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Benchmark Analytics Sayre, A Microbac Laboratory

CERTIFICATE OF ANALYSIS

S5D1002

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Apalachin Digestor

Project / PO Number: N/A
Received: 04/15/2015 16:15
Reported: 04/27/2015 17:29

Analytical Testing Parameters

Client Sample ID:	Apalachin Digestor	**Collected By:**	TS
Lab Sample ID:	S5D1002-01	**Collection Date:**	04/15/15
Sample Type:	Composite	**Collection Time:**	N/A

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	1.11			% by Weight		04/21/15 1550	04/22/15 0945	KAL

Definitions

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	3.4 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

Report Comments:

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
04/27/2015 17:29

Go Green: Contact Tracy Cole to set up email reporting and invoicing options.

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For any feedback concerning our services, please contact Tracy Cole listed above at Tracy.Cole@microbac.com or 570-888-0169. You may also contact Trevor Boyce President, at president@microbac.com.

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5E2336

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Apalachin Secondary Digestor

Project / PO Number: N/A
Received: 05/27/2015 17:00
Reported: 06/05/2015 19:02

Analytical Testing Parameters

Client Sample ID: Apalachin Secondary Digestor
Lab Sample ID: S5E2336-01
Sample Type: Composite

Collected By: TS
Collection Date: 05/27/15
Collection Time: 07:00

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	1.86			% by Weight		06/01/15 1700	06/02/15 0920	ICC

Definitions

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	5.7 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

Report Comments:

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
06/05/2015 19:02

Go Green: Contact Tracy Cole to set up email reporting and invoicing options.

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CERTIFICATE OF ANALYSIS

S5F2402

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Apalachin Secondary Digestor

Project / PO Number: N/A
Received: 06/17/2015 15:50
Reported: 06/29/2015 21:48

Analytical Testing Parameters

Client Sample ID:	Apalachin Secondary Digestor	**Collected By:**	TS
Lab Sample ID:	S5F2402-01	**Collection Date:**	06/17/15
Sample Type:	Grab	**Collection Time:**	08:00

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	1.60			% by Weight	Y	06/23/15 1825	06/25/15 0815	SRS

Definitions

Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	5.8 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

Project Requested Certification(s):

Microbac Laboratories Inc., Sayre Division
NY Lab ID No.: 11216 — New York State Department of Health

Report Comments:

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
06/29/2015 21:48

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Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5G3175

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Apalachin Secondary Digester

Project / PO Number: N/A
Received: 07/29/2015 15:30
Reported: 08/04/2015 18:01

Analytical Testing Parameters

Client Sample ID:	**Apalachin Secondary Digester**	**Collected By:**	**TS**
Lab Sample ID:	**S5G3175-01**	**Collection Date:**	**07/29/15**
Sample Type:	Grab	**Collection Time:**	**10:00**

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SM2540 G-1997								
Percent Solids	**2.77**			% by Weight	Y	08/03/15 1600	08/04/15 1409	SAY

Laboratory

SAY Microbac Laboratories Inc., - Sayre

Definitions

Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	4.2 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

Project Requested Certification(s):

Microbac Laboratories, Inc. - Sayre
NY Lab ID No.: 11216 — New York State Department of Health

Report Comments:

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
08/04/2015 18:01

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MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5H1427

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Apalachin Secondary Digestor

Project / PO Number: N/A
Received: 08/19/2015 16:00
Reported: 08/25/2015 20:59

Analytical Testing Parameters

Client Sample ID:	Apalachin Secondary Digestor	**Collected By:**	TS
Lab Sample ID:	S5H1427-01	**Collection Date:**	08/19/15
Sample Type:	Grab	**Collection Time:**	10:00

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SM2540 G-1997								
Percent Solids	1.86			% by Weight	Y	08/24/15 1630	08/25/15 1103	SAY

Laboratory

SAY Microbac Laboratories Inc., - Sayre

Definitions

Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	5.2 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

Project Requested Certification(s):

Microbac Laboratories, Inc. - Sayre
NY Lab ID No.: 11216 — New York State Department of Health

Report Comments:

In accordance with: NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
08/25/2015 20:59

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MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5I1258

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Apalachin Secondary Digestor

Project / PO Number: N/A
Received: 09/16/2015 15:40
Reported: 09/24/2015 17:56

Analytical Testing Parameters

Client Sample ID:	**Apalachin Secondary Digester**	**Collected By:**	TS
Lab Sample ID:	**S5I1258-01**	**Collection Date:**	09/16/15
Sample Type:	Grab	**Collection Time:**	10:00 . .

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SM2540 G-1997								
Percent Solids	2.15			% by Weight	Y	09/23/15 0932	09/24/15 1453	SAY

Laboratory

SAY: Microbac Laboratories Inc., - Sayre

Definitions

RPD: Relative Pecent Difference
Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 2.2°C

Cooler Inspection Checklist

Custody Seals Intact and/or No Evidence of Tampering	Yes	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Correct (or not required)	Yes
Received on Ice (or not required)	Yes		

Report Comments

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
09/24/2015 17:56

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Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5J1143

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Apalachin Secondary Digestor

Project / PO Number: N/A
Received: 10/14/2015 15:10
Reported: 10/19/2015 23:41

Analytical Testing Parameters

Client Sample ID:	Apalachin Secondary Digestor	**Collected By:**	TS
Lab Sample ID:	S5J1143-01	**Collection Date:**	10/14/15
Sample Type:	Grab	**Collection Time:**	10:00

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SM2540 G-1997								
Percent Solids	2.06			% by Weight	Y	10/16/15 1515	10/19/15 0730	SAY

Laboratory

SAY: Microbac Laboratories Inc., - Sayre

Definitions

RPD: Relative Percent Difference
Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 3.8°C

Cooler Inspection Checklist

Custody Seals Intact and/or No Evidence of Tampering	Yes	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Correct (or not required)	Yes
Received on Ice (or not required)	Yes		

Report Comments

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
10/19/2015 23:41

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Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5K1212

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Apalachin Anaerobic Digestor

Project / PO Number: N/A
Received: 11/18/2015 16:30
Reported: 11/25/2015 13:02

Analytical Testing Parameters

Client Sample ID:	Apalachin Aerobic Digestor	**Collected By:**	TS
Lab Sample ID:	S5K1212-01	**Collection Date:**	11/18/15
Sample Type:	Composite	**Collection Time:**	10:00

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SM2540 G-1997								
Percent Solids	1.90			% by Weight	Y	11/20/15 1700	11/23/15 0830	SAY

Laboratory

SAY: Microbac Laboratories Inc., - Sayre

Definitions

RPD: Relative Pecent Difference
Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 4.2°C

Cooler Inspection Checklist

Custody Seals Intact and/or No Evidence of Tampering	Yes	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Correct (or not required)	Yes
Received on Ice (or not required)	Yes		

Project Requested Certification(s)

Microbac Laboratories Inc., - Sayre
NY Lab ID No.: 11216 — New York State Department of Health

Report Comments

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
11/25/2015 13:02

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MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5L1059

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Apalachin Secondary Digestor

Project / PO Number: N/A
Received: 12/16/2015 15:30
Reported: 12/23/2015 10:59

Analytical Testing Parameters

Client Sample ID:	Apalachin Secondary Digestor	**Collected By:**	TS
Lab Sample ID:	S5L1059-01	**Collection Date:**	12/16/15
Sample Type:	Grab	**Collection Time:**	10:30

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SM2540 G-1997								
Percent Solids	2.44			% by Weight	Y	12/21/15 1650	12/22/15 0900	SAY

Laboratory

SAY: Microbac Laboratories Inc., Sayre

Definitions

Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 4.1°C

Cooler Inspection Checklist

Custody Seals Intact and/or No Evidence of Tampering	Yes	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Correct (or not required)	Yes
Received on Ice (or not required)	Yes		

Project Requested Certification(s)

Microbac Laboratories Inc., Sayre
NY Lab ID No.: 11216 — New York State Department of Health

Report Comments

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
12/23/2015 10:59

Go Green: Contact Tracy Cole to set up email reporting and invoicing options.

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SITE LIFE (2014)

developed using copper loadings

Field:	A 2015 Cu loading	B cumulative loading	C cum. limit lbs/acre	D C-B	remaining field life D/A	
#C-2	4.878	34.470	112	77.53	15.89	years
#C-4	4.959	30.005	112	82.00	16.53	years
#C-5	2.265	44.764	112	67.24	29.68	years
#C-3	0.000	31.329	112	31.33	28.00	years
#C-6	2.397	33.926	112	78.07	32.57	years
#C-8	3.788	35.867	112	76.13	20.10	years
#C-9	3.498	35.567	112	76.43	21.85	years
#C-11	1.342	49.760	112	62.24	46.38	years
#C-13	4.557	38.186	112	73.81	16.20	years

LIME ADDITION

FIELD:	TONS APPLIED:		DATE:
#C-1	40.0	Tons	5/28/2015
#C-2	40.0	Tons	8/7/2015
#C-3			
#C-4	6.0	Tons	5/28/2015
#C-5			
#C-6			
#C-8			
#C-9	11.0	Tons	5/28/2015
#C-11			
#C-13			

Valentine Farm field #C-2

Plant #2 Sludge (surface application)

Date Processed:	Oct 2014 June 2015	Quantity Applied:	18.37 dry tons
Date Applied:	May 27 Sept. 11 2015	Solids Applied:	17.68 %

Nutrient concentration (mg/kg):	NO3	NH3	TKN	Phos.	Pottas.
	104	2185	11898	14175	1217

Percent Organic N: 0.97 %
Available N/dry ton: **6.28** lbs./dry ton

Valentine Farm field #C-2
Nutrients

Acres: 9

Dry Tons: **18.37**
Dry Tons/Acre: **2.04**
Dry Met. Tons: 16.66
Dry Met Tons/Acre: 1.85

Current Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	**12.81**	**28.93**	**4.97**
Kg/Hectare	14.35	32.40	5.56

Residual Available Nitrogen 2014

Past Application rate:	1.05	dry tons/acre
Percent Organic N:	3.60	
AR Value:	1.60	
Residual Available N:	**6.0**	lbs./acre

years/last appl.	AR value
1	1.60
2	0.72

Residual Available Nitrogen 2013

Past Application rate:	0.75	dry tons/acre
Percent Organic N:	0.06	
AR Value:	0.72	
Residual Available N:	**0.0**	lbs./acre

Valentine Farm field #C-2
Projected loadings for 2016

Acres: 9

Solids: 17.68 %
Dry Tons: **71.68**
Dry Tons/Acre: **7.96**
Dry Met. Tons: 65.01
Dry Met Tons/Acre: 7.22

Projected Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	50.00	112.89	19.38
Kg/Hectare	56.00	126.44	21.71

Valentine Farm, FIELD # C-2
Plant #2 Sludge - Metals

Date Processed: October.2014 June2015
Date Applied: May 27 Sept.11 2015

Acres:	9
Dry Tons:	18.37
Dry Tons/Acre:	**2.04**
Dry Met. Tons:	16.66
Dry Met Tons/Acre:	1.85

Current Loading Rates

	As	Cd	Cr	Cu	Pb	Hg
mg/Kg	12.09	1.730	19.4	1195	28.8	0.938
lb/ton	0.024	0.003	0.039	2.390	0.058	0.002
lb/acre	**0.049**	**0.007**	**0.079**	**4.878**	**0.118**	**0.004**
Kg/Hectare	0.055	0.008	0.088	5.464	0.132	0.004

	Mo	Ni	Se	Zn
mg/Kg	35.8	28.2	15.1	1078
lb/ton	0.072	0.056	0.030	2.156
lb/acre	**0.146**	**0.115**	**0.062**	**4.401**
Kg/Hectare	0.164	0.129	0.069	4.929

2014 Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	0.382	0.078	0.792	29.592	1.364	0.032
Kg/Hectare	0.428	0.087	0.887	33.143	1.528	0.036

	Mo	Ni	Se	Zn
lb/acre	0.401	0.082	0.334	19.995
Kg/Hectare	0.449	0.092	0.374	22.394

Current Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	**0.431**	**0.085**	**0.871**	**34.470**	**1.482**	**0.036**
Kg/Hectare	0.483	0.095	0.976	38.607	1.659	0.040

	Mo	Ni	Se	Zn
lb/acre	**0.547**	**0.197**	**0.396**	**24.396**
Kg/Hectare	0.613	0.221	0.443	27.323

Valentine Farm field #C-4

Plant #2 Sludge (surface application)

Date Processed:	1/2 July 1/2 Aug 2015	Quantity Applied:	12.45 dry tons
Date Applied:	Sept 10 2015	Solids Applied:	17.70 %

Nutrient concentration (mg/kg):	NO3	NH3	TKN	Phos.	Pottas.
	104	2185	11898	14175	1217

Percent Organic N: 0.97 %

Available N/dry ton: **6.28** lbs./dry ton

Valentine Farm field #C-4
Nutrients

Acres:	6
Dry Tons:	**12.45**
Dry Tons/Acre:	**2.08**
Dry Met. Tons:	11.29
Dry Met Tons/Acre:	1.88

Current Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	**13.03**	**29.41**	**5.05**
Kg/Hectare	14.59	32.94	5.66

Residual Available Nitrogen 2014

Past Application rate:	0.95	dry tons/acre
Percent Organic N:	3.60	
AR Value:	1.60	
Residual Available N:	**5.5**	lbs./acre

years/last appl.	AR value
1	1.60
2	0.72

Residual Available Nitrogen 2013

Past Application rate:	1.22	dry tons/acre
Percent Organic N:	0.06	
AR Value:	0.72	
Residual Available N:	**0.1**	lbs./acre

Valentine Farm field #C-4
Projected loadings for 2016

Acres:	6
Solids:	17.70 %
Dry Tons:	**47.78**
Dry Tons/Acre:	**7.96**
Dry Met. Tons:	43.34
Dry Met Tons/Acre:	7.22

Projected Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	50.00	112.89	19.38
Kg/Hectare	56.00	126.44	21.71

Valentine Farm, FIELD # C-4
Plant #2 Sludge - Metals

Date Processed: 1/2 July 1/2 Aug 2015
Date Applied: Sept 10 2015

Acres: 6

Dry Tons:	12.45
Dry Tons/Acre:	**2.08**
Dry Met. Tons:	11.29
Dry Met Tons/Acre:	1.88

Current Loading Rates

	As	Cd	Cr	Cu	Pb	Hg
mg/Kg	12.09	1.730	19.4	1195	28.8	0.938
lb/ton	0.024	0.003	0.039	2.390	0.058	0.002
lb/acre	**0.050**	**0.007**	**0.080**	**4.959**	**0.120**	**0.004**
Kg/Hectare	0.056	0.008	0.090	5.554	0.134	0.004

	Mo	Ni	Se	Zn
mg/Kg	35.8	28.2	15.1	1078
lb/ton	0.072	0.056	0.030	2.156
lb/acre	**0.149**	**0.117**	**0.063**	**4.474**
Kg/Hectare	0.166	0.131	0.070	5.011

2014 Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	0.274	0.057	0.749	25.046	1.121	0.026
Kg/Hectare	0.307	0.064	0.839	28.052	1.256	0.029

	Mo	Ni	Se	Zn
lb/acre	0.193	0.592	0.296	21.395
Kg/Hectare	0.216	0.663	0.332	23.962

Current Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	**0.324**	**0.064**	**0.829**	**30.005**	**1.241**	**0.030**
Kg/Hectare	0.363	0.072	0.929	33.606	1.389	0.033

	Mo	Ni	Se	Zn
lb/acre	**0.342**	**0.709**	**0.359**	**25.869**
Kg/Hectare	0.383	0.794	0.402	28.973

Valentine Farm field #C-5

Plant #2 Sludge (surface application)

Date Processed:	1/2 Jan 2015	Quantity Applied:	3.79	dry tons
Date Applied:	May 26 2015	Solids Applied:	17.70	%

	NO3	NH3	TKN	Phos.	Pottas.
Nutrient concentration (mg/kg):	104	2185	11898	14175	1217

Percent Organic N:	0.97	%
# Available N/dry ton:	**6.28**	lbs./dry ton

Valentine Farm field #C-5
Nutrients

Acres:	4
Dry Tons:	**3.79**
Dry Tons/Acre:	**0.95**
Dry Met. Tons:	3.44
Dry Met Tons/Acre:	0.86

Current Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	**5.95**	**13.43**	**2.31**
Kg/Hectare	6.66	15.04	2.58

Residual Available Nitrogen 2014

Past Application rate:	1.28	dry tons/acre
Percent Organic N:	3.60	
AR Value:	1.60	
Residual Available N:	**7.4**	lbs./acre

years/last appl.	AR value
1	1.60
2	0.72

Residual Available Nitrogen 2013

Past Application rate:	0.98	dry tons/acre
Percent Organic N:	0.06	
AR Value:	0.72	
Residual Available N:	**0.0**	lbs./acre

Valentine Farm field #C-5
Projected loadings for 2016

Acres:	4
Solids:	17.70 %
Dry Tons:	**31.86**
Dry Tons/Acre:	**7.96**
Dry Met. Tons:	28.89
Dry Met Tons/Acre:	7.22

Projected Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	50.00	112.89	19.38
Kg/Hectare	56.00	126.44	21.71

Valentine Farm, FIELD # C-5
Plant #2 Sludge - Metals

Date Processed: 1/2 Jan 2015
Date Applied: May 26 2015

Acres: 4

Dry Tons:	3.79
Dry Tons/Acre:	**0.95**
Dry Met. Tons:	3.44
Dry Met Tons/Acre:	0.86

Current Loading Rates

	As	Cd	Cr	Cu	Pb	Hg
mg/Kg	12.09	1.730	19.4	1195	28.8	0.938
lb/ton	0.024	0.003	0.039	2.390	0.058	0.002
lb/acre	**0.023**	**0.003**	**0.037**	**2.265**	**0.055**	**0.002**
Kg/Hectare	0.026	0.004	0.041	2.536	0.061	0.002

	Mo	Ni	Se	Zn
mg/Kg	35.8	28.2	15.1	1078
lb/ton	0.072	0.056	0.030	2.156
lb/acre	**0.068**	**0.053**	**0.029**	**2.043**
Kg/Hectare	0.076	0.060	0.032	2.288

2014 Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	0.186	0.074	1.132	42.523	2.645	0.072
Kg/Hectare	0.208	0.083	1.268	47.626	2.962	0.081

	Mo	Ni	Se	Zn
lb/acre	0.301	0.986	0.384	28.829
Kg/Hectare	0.337	1.104	0.430	32.288

Current Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	**0.209**	**0.077**	**1.169**	**44.788**	**2.700**	**0.074**
Kg/Hectare	0.234	0.087	1.309	50.162	3.024	0.083

	Mo	Ni	Se	Zn
lb/acre	**0.369**	**1.039**	**0.413**	**30.872**
Kg/Hectare	0.413	1.164	0.462	34.576

Card Farm field #C-3

Plant #2 Sludge (surface application)

Date Processed:
Date Applied:

Quantity Applied: 0.00 dry tons
Solids Applied: 0.00 %

	NO3	NH3	TKN	Phos.	Pottas.
Nutrient concentration (mg/kg):	104	2185	11898	14175	1217

Percent Organic N: 0.97 %
Available N/dry ton: **6.28** lbs./dry ton

Card Farm field #C-3
Nutrients

Acres:	3
Dry Tons:	**0.00**
Dry Tons/Acre:	**0.00**
Dry Met. Tons:	0.00
Dry Met Tons/Acre:	0.00

Current Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	**0.00**	**0.00**	**0.00**
Kg/Hectare	0.00	0.00	0.00

Residual Available Nitrogen 2014

Past Application rate: 0.00 dry tons/acre
Percent Organic N: 0.00
AR Value: 1.60
Residual Available N: **0.0** lbs./acre

years/last appl.	AR value
1	1.60
2	0.72

Residual Available Nitrogen 2013

Past Application rate: 1.22 dry tons/acre
Percent Organic N: 2.70
AR Value: 0.72
Residual Available N: **2.4** lbs./acre

Card Farm field #C-3
Projected loadings for 2016

Acres: 3

Solids:	17.70 %
Dry Tons:	**23.89**
Dry Tons/Acre:	**7.96**
Dry Met. Tons:	21.66
Dry Met Tons/Acre:	7.22

Projected Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	50.00	112.86	19.38
Kg/Hectare	56.00	126.40	21.70

CARD FARM, FIELD # C-3
Plant #2 Sludge - Metals

Date Processed:
Date Applied:

Acres: 3

Dry Tons:
Dry Tons/Acre: **0.00**
Dry Met. Tons: 0.00
Dry Met Tons/Acre: 0.00

Current Loading Rates

	As	Cd	Cr	Cu	Pb	Hg
mg/Kg						
lb/ton	0.000	0.000	0.000	0.000	0.000	0.000
lb/acre	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Kg/Hectare	0.000	0.0000	0.000	0.000	0.000	0.0000

	Mo	Ni	Se	Zn
mg/Kg				
lb/ton	0.000	0.000	0.000	0.000
lb/acre	**0.000**	**0.000**	**0.000**	**0.000**
Kg/Hectare	0.000	0.000	0.000	0.000

2014 Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	0.335	0.093	0.895	31.329	1.559	0.063
Kg/Hectare	0.375	0.104	1.002	35.088	1.746	0.071

	Mo	Ni	Se	Zn
lb/acre	0.459	0.709	0.270	23.152
Kg/Hectare	0.514	0.794	0.302	25.930

Current Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	**0.335**	**0.093**	**0.895**	**31.329**	**1.559**	**0.063**
Kg/Hectare	0.375	0.104	1.002	35.088	1.746	0.071

	Mo	Ni	Se	Zn
lb/acre	**0.459**	**0.709**	**0.270**	**23.152**
Kg/Hectare	0.514	0.794	0.302	25.930

Card Farm field #C-6

Plant #2 Sludge (surface application)

Date Processed:	1/2 Jan. Nov.2015	Quantity Applied:	11.03 dry tons
Date Applied:	May 26 2015	Solids Applied:	17.70 %

Nutrient concentration (mg/kg):	NO3	NH3	TKN	Phos.	Pottas.
	104	2185	11898	14175	1217

Percent Organic N: 0.97 %

Available N/dry ton: **6.28** lbs./dry ton

Card Farm field #C-6
Nutrients

Acres: 11

Dry Tons:	**11.03**
Dry Tons/Acre:	**1.00**
Dry Met. Tons:	10.00
Dry Met Tons/Acre:	0.91

Current Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	**6.30**	**14.21**	**2.44**
Kg/Hectare	7.05	15.92	2.73

Residual Available Nitrogen 2014

Past Application rate:	1.19	dry tons/acre
Percent Organic N:	3.60	
AR Value:	1.60	
Residual Available N:	**6.9**	lbs./acre

years/last appl.	AR value
1	1.60
2	0.72

Residual Available Nitrogen 2013

Past Application rate:	1.21	dry tons/acre
Percent Organic N:	0.06	
AR Value:	0.72	
Residual Available N:	**0.1**	lbs./acre

Card Farm field #C-6
Projected loadings for 2016

Acres:	11
Solids:	17.70 %
Dry Tons:	**87.60**
Dry Tons/Acre:	**7.96**
Dry Met. Tons:	79.46
Dry Met Tons/Acre:	7.22

Projected Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	50.00	112.89	19.38
Kg/Hectare	56.00	126.44	21.71

CARD FARM, FIELD # C-6
Plant #2 Sludge - Metals

Date Processed: 1/2Jan 2015 Nov 2014
Date Applied: May 26 2015

Acres: 11

Dry Tons: 11.03
Dry Tons/Acre: **1.00**
Dry Met. Tons: 10.00
Dry Met Tons/Acre: 0.91

Current Loading Rates

	As	Cd	Cr	Cu	Pb	Hg
mg/Kg	12.09	1.730	19.4	1195	28.8	0.938
lb/ton	0.024	0.003	0.039	2.390	0.058	0.002
lb/acre	**0.024**	**0.003**	**0.039**	**2.397**	**0.058**	**0.002**
Kg/Hectare	0.027	0.004	0.043	2.684	0.065	0.002

	Mo	Ni	Se	Zn
mg/Kg	35.8	28.2	15.1	1078
lb/ton	0.072	0.056	0.030	2.156
lb/acre	**0.072**	**0.057**	**0.030**	**2.162**
Kg/Hectare	0.080	0.063	0.034	2.421

2014 Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	0.168	0.067	0.874	31.536	1.537	0.047
Kg/Hectare	0.188	0.075	0.979	35.320	1.721	0.053

	Mo	Ni	Se	Zn
lb/acre	0.309	0.652	0.282	18.422
Kg/Hectare	0.346	0.730	0.316	20.633

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	**0.192**	**0.070**	**0.913**	**33.933**	**1.595**	**0.049**
Kg/Hectare	0.215	0.079	1.022	38.004	1.786	0.055

	Mo	Ni	Se	Zn
lb/acre	**0.381**	**0.709**	**0.312**	**20.584**
Kg/Hectare	0.426	0.794	0.350	23.054

Card Farm field #C-8

Plant #2 Sludge (surface application)

Date Processed:	Feb-15	Quantity Applied:	6.34 dry tons
Date Applied:	May 29 2015	Solids Applied:	17.70 %

Nutrient concentration (mg/kg):	NO3	NH3	TKN	Phos.	Pottas.
	104	2185	11898	14175	1217

Percent Organic N: 0.97 %

Available N/dry ton: **6.28** lbs./dry ton

Card Farm field #C-8
Nutrients

Acres: 4

Dry Tons:	**6.34**
Dry Tons/Acre:	**1.59**
Dry Met. Tons:	5.75
Dry Met Tons/Acre:	1.44

Current Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	**9.95**	**22.47**	**3.86**
Kg/Hectare	11.15	25.16	4.32

Residual Available Nitrogen 2014

Past Application rate:	1.45	dry tons/acre
Percent Organic N:	3.60	
AR Value:	1.60	
Residual Available N:	**8.4**	lbs./acre

years/last appl.	AR value
1	1.60
2	0.72

Residual Available Nitrogen 2013

Past Application rate:	1.11	dry tons/acre
Percent Organic N:	2.70	
AR Value:	0.72	
Residual Available N:	**2.2**	lbs./acre

Card Farm field #C-8
Projected loadings for 2016

Acres: 4

Solids:	17.70 %
Dry Tons:	**31.86**
Dry Tons/Acre:	**7.96**
Dry Met. Tons:	28.89
Dry Met Tons/Acre:	7.22

Projected Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	50.00	112.89	19.38
Kg/Hectare	56.00	126.44	21.71

CARD FARM, FIELD # C-8
Plant #2 Sludge - Metals

Date Processed: Feb. 2015
Date Applied: May.29 2015

Acres: 4

Dry Tons: 6.34
Dry Tons/Acre: **1.59**
Dry Met. Tons: 5.75
Dry Met Tons/Acre: 1.44

Current Loading Rates

	As	Cd	Cr	Cu	Pb	Hg
mg/Kg	12.09	1.730	19.4	1195	28.8	0.938
lb/ton	0.024	0.003	0.039	2.390	0.058	0.002
lb/acre	**0.038**	**0.005**	**0.061**	**3.788**	**0.091**	**0.003**
Kg/Hectare	0.043	0.006	0.069	4.243	0.102	0.003

	Mo	Ni	Se	Zn
mg/Kg	35.8	28.2	15.1	1078
lb/ton	0.072	0.056	0.030	2.156
lb/acre	**0.113**	**0.089**	**0.048**	**3.417**
Kg/Hectare	0.127	0.100	0.054	3.827

2014 Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	0.212	0.051	0.849	32.097	2.169	0.044
Kg/Hectare	0.237	0.057	0.951	35.949	2.429	0.049

	Mo	Ni	Se	Zn
lb/acre	0.157	0.532	0.389	21.826
Kg/Hectare	0.176	0.596	0.436	24.445

Current Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	**0.250**	**0.056**	**0.910**	**35.885**	**2.260**	**0.047**
Kg/Hectare	0.280	0.063	1.020	40.191	2.532	0.053

	Mo	Ni	Se	Zn
lb/acre	**0.270**	**0.621**	**0.437**	**25.243**
Kg/Hectare	0.303	0.696	0.489	28.272

Card Farm field #C-9

Plant #2 Sludge (surface application)

Date Processed:	May 1/2 July 2015	Quantity Applied:	16.10 dry tons
Date Applied:	May 28 Sept. 10 2015	Solids Applied:	17.70 %

Nutrient concentration (mg/kg):	NO3	NH3	TKN	Phos.	Pottas.
	104	2185	11898	14175	1217

Percent Organic N: 0.97 %

Available N/dry ton: **6.28** lbs./dry ton

Card Farm field #C-9
Nutrients

Acres: 11

Dry Tons: **16.10**
Dry Tons/Acre: **1.46**
Dry Met. Tons: 14.60
Dry Met Tons/Acre: 1.33

Current Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	**9.19**	**20.75**	**3.56**
Kg/Hectare	10.29	23.24	3.99

Residual Available Nitrogen 2014

Past Application rate: 0.86 dry tons/acre
Percent Organic N: 3.60
AR Value: 1.60
Residual Available N: **5.0** lbs./acre

years/last appl.	AR value
1	1.60
2	0.72

Residual Available Nitrogen 2013

Past Application rate: 1.35 dry tons/acre
Percent Organic N: 2.70
AR Value: 0.72
Residual Available N: **2.6** lbs./acre

Card Farm field #C-9
Projected loadings for 2016

Acres: 11
Solids: 17.70 %
Dry Tons: **87.60**
Dry Tons/Acre: **7.96**
Dry Met. Tons: 79.46
Dry Met Tons/Acre: 7.22

Projected Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	50.00	112.89	19.38
Kg/Hectare	56.00	126.44	21.71

CARD FARM, FIELD # C-9
Plant #2 Sludge - Metals

Date Processed: May 1/2 July 2015
Date Applied: May.28Sept10 2015

Acres:	11
Dry Tons:	16.10
Dry Tons/Acre:	**1.46**
Dry Met. Tons:	14.60
Dry Met Tons/Acre:	1.33

Current Loading Rates

	As	Cd	Cr	Cu	Pb	Hg
mg/Kg	12.09	1.730	19.4	1195	28.8	0.938
lb/ton	0.024	0.003	0.039	2.390	0.058	0.002
lb/acre	**0.035**	**0.005**	**0.057**	**3.498**	**0.084**	**0.003**
Kg/Hectare	0.040	0.006	0.063	3.918	0.094	0.003

	Mo	Ni	Se	Zn
mg/Kg	35.8	28.2	15.1	1078
lb/ton	0.072	0.056	0.030	2.156
lb/acre	**0.105**	**0.083**	**0.044**	**3.156**
Kg/Hectare	0.117	0.092	0.050	3.534

2014 Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	0.244	0.078	0.466	32.069	3.254	0.071
Kg/Hectare	0.273	0.087	0.522	35.917	3.644	0.080

	Mo	Ni	Se	Zn
lb/acre	0.300	0.901	0.246	22.212
Kg/Hectare	0.336	1.009	0.276	24.877

Current Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	**0.279**	**0.083**	**0.523**	**35.567**	**3.338**	**0.074**
Kg/Hectare	0.313	0.093	0.585	39.835	3.739	0.083

	Mo	Ni	Se	Zn
lb/acre	**0.405**	**0.984**	**0.290**	**25.368**
Kg/Hectare	0.453	1.102	0.325	28.412

Card Farm field #C-11
Plant #2 Sludge (surface application)

Date Processed:	1/2 March	Quantity Applied:	3.37	dry tons
Date Applied:	May 28 2015	Solids Applied:	17.70	%

	NO3	NH3	TKN	Phos.	Pottas.
Nutrient concentration (mg/kg):	104	2185	11898	14175	1217

Percent Organic N: 0.97 %
Available N/dry ton: **6.28** lbs./dry ton

Card Farm field #C-11
Nutrients

Acres: 6

Dry Tons: **3.37**
Dry Tons/Acre: **0.56**
Dry Met. Tons: 3.06
Dry Met Tons/Acre: 0.51

Current Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	**3.53**	**7.96**	**1.37**
Kg/Hectare	3.95	8.92	1.53

Residual Available Nitrogen 2014

Past Application rate: 0.40 dry tons/acre
Percent Organic N: 3.60
AR Value: 1.60
Residual Available N: **2.3** lbs./acre

years/last appl.	AR value
1	1.60
2	0.72

Residual Available Nitrogen 2013

Past Application rate: 0.70 dry tons/acre
Percent Organic N: 2.70
AR Value: 0.72
Residual Available N: **1.4** lbs./acre

Card Farm field #C-11
Projected loadings for 2016

Acres: 6
Solids: 17.70 %
Dry Tons: **47.78**
Dry Tons/Acre: **7.96**
Dry Met. Tons: 43.34
Dry Met Tons/Acre: 7.22

Projected Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	50.00	112.89	19.38
Kg/Hectare	56.00	126.44	21.71

CARD FARM, FIELD # C-11
Plant #2 Sludge - Metals

Date Processed: 1/2 March 2015
Date Applied: May 28 2015

Acres: 6

Dry Tons:	3.37
Dry Tons/Acre:	**0.56**
Dry Met. Tons:	3.06
Dry Met Tons/Acre:	0.51

Current Loading Rates

	As	Cd	Cr	Cu	Pb	Hg
mg/Kg	12.09	1.730	19.4	1195	28.8	0.938
lb/ton	0.024	0.003	0.039	2.390	0.058	0.002
lb/acre	**0.014**	**0.002**	**0.022**	**1.342**	**0.032**	**0.001**
Kg/Hectare	0.015	0.002	0.024	1.503	0.036	0.001

	Mo	Ni	Se	Zn
mg/Kg	35.8	28.2	15.1	1078
lb/ton	0.072	0.056	0.030	2.156
lb/acre	**0.040**	**0.032**	**0.017**	**1.211**
Kg/Hectare	0.045	0.035	0.019	1.356

2014 Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	0.331	0.138	0.805	48.418	3.885	0.072
Kg/Hectare	0.371	0.155	0.902	54.228	4.351	0.081

	Mo	Ni	Se	Zn
lb/acre	0.396	0.801	0.321	35.261
Kg/Hectare	0.444	0.897	0.360	39.492

Current Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	**0.345**	**0.140**	**0.827**	**49.760**	**3.917**	**0.073**
Kg/Hectare	0.386	0.157	0.926	55.732	4.387	0.082

	Mo	Ni	Se	Zn
lb/acre	**0.436**	**0.833**	**0.338**	**36.472**
Kg/Hectare	0.489	0.933	0.379	40.849

Card Farm field #C-13

Plant #2 Sludge (surface application)

Date Processed:	1/2 March April 1/2 Aug	Quantity Applied:	11.44	dry tons
Date Applied:	May 28 Sept. 10 2015	Solids Applied:	17.70	%

	NO3	NH3	TKN	Phos.	Pottas.
Nutrient concentration (mg/kg):	104	2185	11898	14175	1217

Percent Organic N: 0.97 %

Available N/dry ton: **6.28** lbs./dry ton

Card Farm field #C-13
Nutrients

Acres: 6

Dry Tons: **11.44**
Dry Tons/Acre: **1.91**
Dry Met. Tons: 10.38
Dry Met Tons/Acre: 1.73

Current Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	**11.97**	**27.03**	**4.64**
Kg/Hectare	13.41	30.27	5.20

Residual Available Nitrogen 2014

Past Application rate:	1.12	dry tons/acre
Percent Organic N:	3.60	
AR Value:	1.60	
Residual Available N:	**6.5**	lbs./acre

years/last appl.	AR value
1	1.60
2	0.72

Residual Available Nitrogen 2013

Past Application rate:	1.31	dry tons/acre
Percent Organic N:	0.60	
AR Value:	0.72	
Residual Available N:	**0.6**	lbs./acre

Card Farm field #C-13
Projected loadings for 2016

Acres: 6
Solids: 17.70 %
Dry Tons: **47.78**
Dry Tons/Acre: **7.96**
Dry Met. Tons: 43.34
Dry Met Tons/Acre: 7.22

Projected Loading Rates

Available:	Nitrogen	Phos.	Pottas.
mg/Kg		7087.5	1217
lb/dry ton	6.28	14.18	2.43
lb/acre	50.00	112.89	19.38
Kg/Hectare	56.00	126.44	21.71

CARD FARM, FIELD # C-13
Plant #2 Sludge - Metals
Date Processed: 1/2 /MarchApril1/2 Aug 2015
Date Applied: May 28 Sept 10 2015

Acres:	6
Dry Tons:	11.44
Dry Tons/Acre:	**1.91**
Dry Met. Tons:	10.38
Dry Met Tons/Acre:	1.73

Current Loading Rates

	As	Cd	Cr	Cu	Pb	Hg
mg/Kg	12.09	1.730	19.4	1195	28.8	0.938
lb/ton	0.024	0.003	0.039	2.390	0.058	0.002
lb/acre	**0.046**	**0.007**	**0.074**	**4.557**	**0.110**	**0.004**
Kg/Hectare	0.052	0.007	0.083	5.104	0.123	0.004

	Mo	Ni	Se	Zn
mg/Kg	35.8	28.2	15.1	1078
lb/ton	0.072	0.056	0.030	2.156
lb/acre	**0.137**	**0.108**	**0.058**	**4.111**
Kg/Hectare	0.153	0.120	0.064	4.604

2014 Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	0.277	0.07	0.977	33.629	1.815	0.028
Kg/Hectare	0.310	0.078	1.094	37.664	2.033	0.031

	Mo	Ni	Se	Zn
lb/acre	0.245	0.819	0.351	24.898
Kg/Hectare	0.274	0.917	0.393	27.886

Current Cumulative Loading

	As	Cd	Cr	Cu	Pb	Hg
lb/acre	**0.323**	**0.077**	**1.051**	**38.186**	**1.925**	**0.032**
Kg/Hectare	0.362	0.086	1.177	42.768	2.156	0.035

	Mo	Ni	Se	Zn
lb/acre	**0.382**	**0.927**	**0.409**	**29.009**
Kg/Hectare	0.427	1.038	0.458	32.490

Agro-One Soil Analysis

with Cornell Nutrient Guidelines

Also sent to:

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730 Warren Road
Ithaca, NY 14850
Phone: (800) 344-2697
Fax: (607) 257-1350
www.dairyone.com

Cornell University
College of Agriculture and Life Sciences

Agro-One
Agronomy Services

Lab Sample ID:	71897470
Field/Location:	DENNIS CARD #C-1
Date Sampled:	05/29/2015
Date Tested:	06/15/2015
Statement ID:	TOWN OF OWEGO PO# 15415
Description:	
County:	Tioga

A

TOWN OF OWEGO
TYSON STILES
1319 MAIN ST
APALACHIN, NY 13732

Element	lbs/acre*	Very Low	Low	Medium	High	Very High
Phosphorus (P)	2					
Potassium (K)	102					
Calcium (Ca)	2,732					
Magnesium (Mg)	427					

G

Element	Value	Element	Value	Element	Value
Soil pH	5.9	Manganese (Mn), lbs/acre	34.4	% OM	6.3
Buffer pH	5.5	Zinc (Zn), lbs/acre	0.9		
Iron (Fe) , lbs/acre	14.6	Aluminum (Al), lbs/acre	111.7		

Crop History (1 = last year, etc.)

Year	Crop
3	Grasses Maintenance
2	Grasses Maintenance
1	Grasses Maintenance

Sample Information Summary

Soil Name: Mardin
Tillage Depth: No Till
Drainage: Not Specified
% Legume: 100% Non-legume
Crop Code: GRT
Type: Maintenance

Soil Fertilizer Recommendations (1=current yr, 2=next yr, etc.)

Year	Crop	tons / acre	lbs / acre		
		Lime	N Range	P2O5 Range	K2O
1	Grasses Maintenance	4.00	50 - 75	40	30.00
2	Grasses Maintenance	0.00	50 - 75	40	30.00

Comments - Improve yield and plant quality as well as protect the environment with proper fertilization.

* Morgan analysis results reported in pounds per acre.

Nutrient recommendations provided by Cornell University. For assistance interpreting your report, contact your local Cooperative Extension office at 607-687-4020 or http://cce.cornell.edu/Pages/DefaultLaspx for a complete list of Cornell Cooperative Extension offices.

Nutrient recommendations provided by Cornell University.

These are general comments. Always consult with your crop adviser for recommendations specific to your farm.

Yr1 Lime rate is for 100% ENV. To calculate actual rate: rate to use = recommended rate/ENV (of lime source) x 100.

Yr1 Economic lime rate for topdressing sod or no till crop is 3 tons/acre. Apply 3 tons/acre and resample in 3 years or before plowing.

Visit http://cnal.cals.cornell.edu/links/index.html or www.dairyone.com/AgroOne for interpretive information.

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www.dairyone.com

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Lab Sample ID:	**71852360**
Field/Location:	VALENTINE C-2
Date Sampled:	04/20/2015
Date Tested:	04/24/2015
Statement ID:	TOWN OF OWEGO PO#15244
Description:	
County:	Tioga

A

TOWN OF OWEGO
1319 MAIN STREET
APALACHIN, NY 13732

Emails/Phones: TOWN OF OWEGO: tstiles@townofowego.com

Element	lbs/acre*	Very Low	Low	Medium	High	Very High
Phosphorus (P)	32					
Potassium (K)	104					
Calcium (Ca)	2,932					
Magnesium (Mg)	652					

nent	Value	Element	Value	Element	Value
Soil pH	6.7	Manganese (Mn), lbs/acre	24.6	% OM	5.4
Buffer pH	6.3	Zinc (Zn), lbs/acre	2.1		
Iron (Fe) , lbs/acre	4.4	Aluminum (Al), lbs/acre	40.0		

Crop History (1 = last year, etc.)

Year	Crop
3	Grasses Maintenance
2	Grasses Maintenance
1	Grasses Maintenance

Sample Information Summary

Soil Name: Mardin
Tillage Depth: No Till
Drainage: Not Specified
% Legume: 100% Non-legume
Crop Code: GRT
Type: Maintenance

Soil Fertilizer Recommendations (1=current yr, 2=next yr, etc.)

Year	Crop	tons / acre	lbs / acre		
		Lime	N Range	P2O5 Range	K2O
1	Grasses Maintenance	0.00	50 - 75	0	30.00
2	Grasses Maintenance	0.00	50 - 75	0	30.00

Comments - Improve yield and plant quality as well as protect the environment with proper fertilization.

* Morgan analysis results reported in pounds per acre.

Nutrient recommendations provided by Cornell University. For assistance interpreting your report, contact your local Cooperative Extension office at 607-687-4020 or http://cce.cornell.edu/Pages/Default.aspx for a complete list of Cornell Cooperative Extension offices.

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Lab Sample ID:	71852370
Field/Location:	VALENTINE C-4
Date Sampled:	04/20/2015
Date Tested:	04/24/2015
Statement ID:	TOWN OF OWEGO PO#15244
Description:	
County:	Tioga

A

TOWN OF OWEGO
1319 MAIN STREET
APALACHIN, NY 13732

Emails/Phones: TOWN OF OWEGO: tatles@townofowego.com

Element	lbs/acre*	Very Low	Low	Medium	High	Very High
Phosphorus (P)	8					
Potassium (K)	88					
Calcium (Ca)	2,958					
Magnesium (Mg)	632					

.nent	Value	Element	Value	Element	Value
Soil pH	6.3	Manganese (Mn), lbs/acre	20.0	% OM	6.1
Buffer pH	6.1	Zinc (Zn), lbs/acre	1.2		
Iron (Fe) , lbs/acre	5.4	Aluminum (Al), lbs/acre	45.5		

Crop History (1 = last year, etc.)

Year	Crop
3	Grasses Maintenance
2	Grasses Maintenance
1	Grasses Maintenance

Sample Information Summary

Soil Name: Mardin
Tillage Depth: No Till
Drainage: Not Specified
% Legume: 100% Non-legume
Crop Code: GRT
Type: Maintenance

Soil Fertilizer Recommendations (1=current yr, 2=next yr, etc.)

Year	Crop	tons / acre	lbs / acre		
		Lime	N Range	P2O5 Range	K2O
1	Grasses Maintenance	0.00	50 - 75	15	50.00
2	Grasses Maintenance	0.00	50 - 75	15	50.00

Comments - Improve yield and plant quality as well as protect the environment with proper fertilization.

* Morgan analysis results reported in pounds per acre.
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Lab Sample ID:	**71852380**
Field/Location:	VALENTINE C-5
Date Sampled:	04/20/2015
Date Tested:	04/24/2015
Statement ID:	TOWN OF OWEGO PO#15244
Description:	
County:	Tioga

A

TOWN OF OWEGO
1319 MAIN STREET
APALACHIN, NY 13732

Emails/Phones: TOWN OF OWEGO: tstiles@townofowego.com

Element	lbs/acre*	Very Low	Low	Medium	High	Very High
Phosphorus (P)	18					
Potassium (K)	94					
Calcium (Ca)	3,856					
Magnesium (Mg)	750					

.nent	Value	Element	Value	Element	Value
Soil pH	6.7	Manganese (Mn), lbs/acre	28.7	% OM	5.9
Buffer pH	6.3	Zinc (Zn), lbs/acre	1.5		
Iron (Fe) , lbs/acre	3.8	Aluminum (Al), lbs/acre	29.6		

Crop History (1 = last year, etc.)

Year	Crop
3	Grasses Maintenance
2	Grasses Maintenance
1	Grasses Maintenance

Sample Information Summary

Soil Name: Mardin
Tillage Depth: No Till
Drainage: Not Specified
% Legume: 100% Non-legume
Crop Code: GRT
Type: Maintenance

Soil Fertilizer Recommendations (1=current yr, 2=next yr, etc.)

Year	Crop	tons / acre	lbs / acre		
		Lime	N Range	P2O5 Range	K2O
1	Grasses Maintenance	0.00	50 - 75	0	45.00
2	Grasses Maintenance	0.00	50 - 75	0	45.00

Comments - Improve yield and plant quality as well as protect the environment with proper fertilization.

* Morgan analysis results reported in pounds per acre.
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Lab Sample ID:	71852390
Field/Location:	CARD C-3
Date Sampled:	04/20/2015
Date Tested:	04/24/2015
Statement ID:	TOWN OF OWEGO PO#15244
Description:	
County:	Tioga

A

TOWN OF OWEGO
1319 MAIN STREET
APALACHIN, NY 13732

Emails/Phones: TOWN OF OWEGO: tstiles@townofowego.com

Element	lbs/acre*	Very Low	Low	Medium	High	Very High
Phosphorus (P)	37					
Potassium (K)	120					
Calcium (Ca)	3,421					
Magnesium (Mg)	779					

.nent	Value	Element	Value	Element	Value
Soil pH	6.5	Manganese (Mn), lbs/acre	18.2	% OM	6.4
Buffer pH	6.2	Zinc (Zn), lbs/acre	2.2		
Iron (Fe) , lbs/acre	4.2	Aluminum (Al), lbs/acre	35.6		

Crop History (1 = last year, etc.)

Year	Crop
3	Grasses Maintenance
2	Grasses Maintenance
1	Grasses Maintenance

Sample Information Summary

Soil Name: Mardin
Tillage Depth: No Till
Drainage: Not Specified
% Legume: 100% Non-legume
Crop Code: GRT
Type: Maintenance

Soil Fertilizer Recommendations (1=current yr, 2=next yr, etc.)

Year	Crop	tons / acre	lbs / acre		
		Lime	N Range	P2O5 Range	K2O
1	Grasses Maintenance	0.00	50 - 75	0	15.00
2	Grasses Maintenance	0.00	50 - 75	0	15.00

Comments - Improve yield and plant quality as well as protect the environment with proper fertilization.

* Morgan analysis results reported in pounds per acre.

Nutrient recommendations provided by Cornell University. For assistance interpreting your report, contact your local Cooperative Extension office at 607-687-4020 or http://cce.cornell.edu/Pages/Default.aspx for a complete list of Cornell Cooperative Extension offices.

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Lab Sample ID:	**71852400**
Field/Location:	CARD C-6
Date Sampled:	04/20/2015
Date Tested:	04/24/2015
Statement ID:	TOWN OF OWEGO PO#15244
Description:	
County:	Tioga

A

TOWN OF OWEGO
1319 MAIN STREET
APALACHIN, NY 13732

Emails/Phones: TOWN OF OWEGO: tstiles@townofowego.com

Element	lbs/acre*	Very Low	Low	Medium	High	Very High
Phosphorus (P)	22					
Potassium (K)	84					
Calcium (Ca)	3,926					
Magnesium (Mg)	711					

nent	Value	Element	Value	Element	Value
Soil pH	6.4	Manganese (Mn), lbs/acre	29.1	% OM	7.5
Buffer pH	6.1	Zinc (Zn), lbs/acre	1.8		
Iron (Fe) , lbs/acre	5.0	Aluminum (Al), lbs/acre	36.5		

Crop History (1 = last year, etc.)

Year	Crop
3	Grasses Maintenance
2	Grasses Maintenance
1	Grasses Maintenance

Sample Information Summary

Soil Name: Mardin
Tillage Depth: No Till
Drainage: Not Specified
% Legume: 100% Non-legume
Crop Code: GRT
Type: Maintenance

Soil Fertilizer Recommendations (1=current yr, 2=next yr, etc.)

Year	Crop	tons / acre	lbs / acre		
		Lime	N Range	P2O5 Range	K2O
1	Grasses Maintenance	0.00	50 - 75	0	55.00
2	Grasses Maintenance	0.00	50 - 75	0	55.00

Comments - Improve yield and plant quality as well as protect the environment with proper fertilization.

* Morgan analysis results reported in pounds per acre.

Nutrient recommendations provided by Cornell University. For assistance interpreting your report, contact your local Cooperative Extension office at 607-687-4020 or http://cce.cornell.edu/Pages/Default.aspx for a complete list of Cornell Cooperative Extension offices.

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Lab Sample ID:	71852410
Field/Location:	CARD C-8
Date Sampled:	04/20/2015
Date Tested:	04/24/2015
Statement ID:	TOWN OF OWEGO PO#15244
Description:	
County:	Tioga

A

TOWN OF OWEGO
1319 MAIN STREET
APALACHIN, NY 13732

Emails/Phones: TOWN OF OWEGO: tstiles@townofowego.com

Element	lbs/acre*	Very Low	Low	Medium	High	Very High
Phosphorus (P)	23					
Potassium (K)	92					
Calcium (Ca)	2,993					
Magnesium (Mg)	591					

.nent	Value	Element	Value	Element	Value
Soil pH	6.5	Manganese (Mn), lbs/acre	35.2	% OM	5.5
Buffer pH	6.2	Zinc (Zn), lbs/acre	2.1		
Iron (Fe) , lbs/acre	8.9	Aluminum (Al), lbs/acre	38.9		

Crop History (1 = last year, etc.)

Year	Crop
3	Grasses Maintenance
2	Grasses Maintenance
1	Grasses Maintenance

Sample Information Summary

Soil Name: Mardin
Tillage Depth: No Till
Drainage: Not Specified
% Legume: 100% Non-legume
Crop Code: GRT
Type: Maintenance

Soil Fertilizer Recommendations (1=current yr, 2=next yr, etc.)

Year	Crop	tons / acre	lbs / acre		
		Lime	N Range	P2O5 Range	K2O
1	Grasses Maintenance	0.00	50 - 75	0	45.00
2	Grasses Maintenance	0.00	50 - 75	0	45.00

Comments - Improve yield and plant quality as well as protect the environment with proper fertilization.

* Morgan analysis results reported in pounds per acre.

Nutrient recommendations provided by Cornell University. For assistance interpreting your report, contact your local Cooperative Extension office at 607-687-4020 or http://cce.cornell.edu/Pages/Default.aspx for a complete list of Cornell Cooperative Extension offices.

Nutrient recommendations provided by Cornell University.

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Ithaca, NY 14850
Phone: (800) 344-2697
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Cornell University College of Agriculture and Life Sciences

Agro-One Agronomy Services

Lab Sample ID:	71852420
Field/Location:	CARD C-9
Date Sampled:	04/20/2015
Date Tested:	04/24/2015
Statement ID:	TOWN OF OWEGO PO#15244
Description:	
County:	Tioga

A

TOWN OF OWEGO
1319 MAIN STREET
APALACHIN, NY 13732

Emails/Phones: TOWN OF OWEGO: tstiles@townofowego.com

Element	lbs/acre*	Very Low	Low	Medium	High	Very High
Phosphorus (P)	8					
Potassium (K)	74					
Calcium (Ca)	2,684					
Magnesium (Mg)	435					

nent	Value	Element	Value	Element	Value
Soil pH	6.3	Manganese (Mn), lbs/acre	18.6	% OM	4.3
Buffer pH	6.1	Zinc (Zn), lbs/acre	1.3		
Iron (Fe) , lbs/acre	8.4	Aluminum (Al), lbs/acre	49.3		

Crop History (1 = last year, etc.)

Year	Crop
3	Grasses Maintenance
2	Grasses Maintenance
1	Grasses Maintenance

Sample Information Summary

Soil Name: Mardin
Tillage Depth: No Till
Drainage: Not Specified
% Legume: 100% Non-legume
Crop Code: GRT
Type: Maintenance

Soil Fertilizer Recommendations (1=current yr, 2=next yr, etc.)

		tons / acre	lbs / acre		
Year	Crop	Lime	N Range	P2O5 Range	K2O
1	Grasses Maintenance	0.00	50 - 75	10	65.00
2	Grasses Maintenance	0.00	50 - 75	10	65.00

Comments - Improve yield and plant quality as well as protect the environment with proper fertilization.

* Morgan analysis results reported in pounds per acre.

Nutrient recommendations provided by Cornell University. For assistance interpreting your report, contact your local Cooperative Extension office at 607-687-4020 or http://cce.cornell.edu/Pages/Default.aspx for a complete list of Cornell Cooperative Extension offices.

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Phone: (800) 344-2697
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Agro-One
Agronomy Services

Lab Sample ID:	71852430
Field/Location:	CARD C-11
Date Sampled:	04/20/2015
Date Tested:	04/24/2015
Statement ID:	TOWN OF OWEGO PO#15244
Description:	
County:	Tioga

A

TOWN OF OWEGO
1319 MAIN STREET
APALACHIN, NY 13732

Emails/Phones: TOWN OF OWEGO: tstiles@townofowego.com

Element	lbs/acre*	Very Low	Low	Medium	High	Very High
Phosphorus (P)	10					
Potassium (K)	87					
Calcium (Ca)	3,161					
Magnesium (Mg)	637					

...nent	Value	Element	Value	Element	Value
Soil pH	6.8	Manganese (Mn), lbs/acre	21.3	% OM	5.2
Buffer pH	6.4	Zinc (Zn), lbs/acre	0.9		
Iron (Fe) , lbs/acre	3.0	Aluminum (Al), lbs/acre	26.6		

Crop History (1 = last year, etc.)

Year	Crop
3	Grasses Maintenance
2	Grasses Maintenance
1	Grasses Maintenance

Sample Information Summary

Soil Name: Mardin
Tillage Depth: No Till
Drainage: Not Specified
% Legume: 100% Non-legume
Crop Code: GRT
Type: Maintenance

Soil Fertilizer Recommendations (1=current yr, 2=next yr, etc.)

		tons / acre	lbs / acre		
Year	Crop	Lime	N Range	P2O5 Range	K2O
1	Grasses Maintenance	0.00	50 - 75	5	50.00
2	Grasses Maintenance	0.00	50 - 75	5	50.00

Comments - Improve yield and plant quality as well as protect the environment with proper fertilization.

* Morgan analysis results reported in pounds per acre.

Nutrient recommendations provided by Cornell University. For assistance interpreting your report, contact your local Cooperative Extension office at 607-687-4020 or http://cce.cornell.edu/Pages/Default.aspx for a complete list of Cornell Cooperative Extension offices.

'utrient recommendations provided by Cornell University.

ase are general comments. Always consult with your crop adviser for recommendations specific to your farm.

Visit http://cnal.cals.cornell.edu/links/index.html or www.dairyone.com/AgroOne for interpretive information.

4M

Agro-One Soil Analysis

with Cornell Nutrient Guidelines

Also sent to:

Agro-One
730 Warren Road
Ithaca, NY 14850
Phone: (800) 344-2697
Fax: (607) 257-1350
www.dairyone.com

Cornell University
College of Agriculture
and Life Sciences

Agro-One
Agronomy Services

Lab Sample ID:	**71852440**
Field/Location:	CARD C-13
Date Sampled:	04/20/2015
Date Tested:	04/24/2015
Statement ID:	TOWN OF OWEGO PO#15244
Description:	
County:	Tioga

A

TOWN OF OWEGO
1319 MAIN STREET
APALACHIN, NY 13732

Emails/Phones: TOWN OF OWEGO: tstiles@townofowego.com

Element	lbs/acre*	Very Low	Low	Medium	High	Very High
Phosphorus (P)	11					
Potassium (K)	80					
Calcium (Ca)	2,877					
Magnesium (Mg)	603					

Element	Value	Element	Value	Element	Value
Soil pH	6.6	Manganese (Mn), lbs/acre	20.5	% OM	4.9
Buffer pH	6.3	Zinc (Zn), lbs/acre	1.2		
Iron (Fe) , lbs/acre	4.1	Aluminum (Al), lbs/acre	29.9		

Crop History (1 = last year, etc.)

Year	Crop
3	Grasses Maintenance
2	Grasses Maintenance
1	Grasses Maintenance

Sample Information Summary

Soil Name: Mardin
Tillage Depth: No Till
Drainage: Not Specified
% Legume: 100% Non-legume
Crop Code: GRT
Type: Maintenance

Soil Fertilizer Recommendations (1=current yr, 2=next yr, etc.)

Year	Crop	tons / acre	lbs / acre		
		Lime	N Range	P2O5 Range	K2O
1	Grasses Maintenance	0.00	50 - 75	0	60.00
2	Grasses Maintenance	0.00	50 - 75	0	60.00

Comments - Improve yield and plant quality as well as protect the environment with proper fertilization.

* Morgan analysis results reported in pounds per acre.

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Nutrient recommendations provided by Cornell University.

These are general comments. Always consult with your crop adviser for recommendations specific to your farm.

Visit http://cnal.cals.cornell.edu/links/index.html or www.dairyone.com/AgroOne for interpretive information.

4M

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5F0278

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Soil Testing

Project / PO Number: N/A
Received: 06/01/2015 15:40
Reported: 06/15/2015 12:32

Analytical Testing Parameters

Client Sample ID: Dennis Card #C-1
Lab Sample ID: S5F0278-01
Sample Type: Composite

Collected By: TS
Collection Date: 05/29/15
Collection Time: 13:00

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C							
pH	5.65	0.0100	pH Units		06/04/15 1340	06/04/15 1340	NSF
Method: SM4500 H+ B-2000							
Temperature	22.8		°C		06/04/15 1340	06/04/15 1340	NSF

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997							
Percent Solids	80.0		% by Weight		06/03/15 1700	06/04/15 0920	ICC

Microbac Laboratories, Inc. - Ohio Valley

Mercury	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B							
Mercury, Total	<0.294	0.294	mg/kg DRY	J	06/09/15 0958	06/10/15 0953	PDM

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C							
Arsenic, Total	6.51	0.932	mg/kg DRY		06/03/15 1633	06/09/15 1415	PDM
Cadmium, Total	<0.932	0.932	mg/kg DRY		06/03/15 1633	06/10/15 1444	PDM
Chromium, Total	13.7	0.233	mg/kg DRY		06/03/15 1633	06/09/15 1415	PDM
Copper, Total	16.5	0.932	mg/kg DRY		06/03/15 1633	06/09/15 1415	PDM
Lead, Total	12.0	0.932	mg/kg DRY		06/03/15 1633	06/09/15 1415	PDM
Molybdenum, Total	<2.80	2.80	mg/kg DRY		06/03/15 1633	06/09/15 1415	PDM
Nickel, Total	16.8	1.86	mg/kg DRY		06/03/15 1633	06/09/15 1415	PDM
Selenium, Total	<0.932	0.932	mg/kg DRY		06/03/15 1633	06/09/15 1415	PDM
Zinc, Total	60.6	0.932	mg/kg DRY		06/03/15 1633	06/09/15 1415	PDM

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216							
Percent Solids	80.4	1.00	weight %			06/04/15 0750	ERP

Definitions

J: The analyte was positively identified, but the quantitation was below the RL
MDL: Minimum Detection Limit
PQL: Practical Quantitation Limit

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5D1016

Analytical Testing Parameters

Client Sample ID:	Valentine #C-2	**Collected By:**	TS
Lab Sample ID:	S5D1016-03	**Collection Date:**	04/14/15
Sample Type:	Composite	**Collection Time:**	13:00

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C							
pH	6.86	0.0100	pH Units	H1	04/21/15 1253	04/21/15 1253	SRS
Method: SM4500 H+ B-2000							
Temperature	20.5		°C	H1	04/21/15 1253	04/21/15 1253	SRS

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997							
Percent Solids	72.1		% by Weight		04/21/15 1550	04/22/15 0945	KAL

Microbac Laboratories, Inc. - Ohio Valley

Mercury	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B							
Mercury, Total	<0.326	0.326	mg/kg DRY	J	04/20/15 0621	04/23/15 1613	BKT

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C							
Arsenic, Total	9.30	0.954	mg/kg DRY		04/20/15 0922	04/22/15 1356	JYH
Cadmium, Total	0.272	0.0954	mg/kg DRY		04/20/15 0922	04/22/15 1356	JYH
Chromium, Total	18.5	0.239	mg/kg DRY		04/20/15 0922	04/22/15 1356	JYH
Cobalt, Total	12.2	0.239	mg/kg DRY		04/20/15 0922	04/22/15 1356	JYH
Copper, Total	34.2	0.954	mg/kg DRY		04/20/15 0922	04/22/15 1356	JYH
Lead, Total	11.3	0.954	mg/kg DRY		04/20/15 0922	04/22/15 1356	JYH
Molybdenum, Total	<2.86	2.86	mg/kg DRY		04/20/15 0922	04/22/15 1356	JYH
Nickel, Total	20.3	1.91	mg/kg DRY		04/20/15 0922	04/22/15 1356	JYH
Selenium, Total	<0.954	0.954	mg/kg DRY	J	04/20/15 0922	04/22/15 1356	JYH
Zinc, Total	82.8	0.954	mg/kg DRY		04/20/15 0922	04/22/15 1356	JYH

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216							
Percent Solids	76.7	1.00	weight %			04/22/15 0725	JJS

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5D1016

Analytical Testing Parameters

Client Sample ID:	Valentine #C-4	**Collected By:**	TS
Lab Sample ID:	S5D1016-04	**Collection Date:**	04/14/15
Sample Type:	Composite	**Collection Time:**	13:00

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C							
pH	6.45	0.0100	pH Units	H1	04/21/15 1253	04/21/15 1253	SRS
Method: SM4500 H+ B-2000							
Temperature	20.5		°C	H1	04/21/15 1253	04/21/15 1253	SRS

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997							
Percent Solids	82.4		% by Weight		04/21/15 1550	04/22/15 0945	KAL

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Mercury	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B							
Mercury, Total	<0.336	0.336	mg/kg DRY	J	04/20/15 0621	04/23/15 1616	BKT

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C							
Arsenic, Total	10.4	0.983	mg/kg DRY		04/20/15 0923	04/22/15 1400	JYH
Cadmium, Total	0.325	0.0983	mg/kg DRY		04/20/15 0923	04/22/15 1400	JYH
Chromium, Total	22.3	0.246	mg/kg DRY		04/20/15 0923	04/22/15 1400	JYH
Cobalt, Total	14.3	0.246	mg/kg DRY		04/20/15 0923	04/22/15 1400	JYH
Copper, Total	40.4	0.983	mg/kg DRY		04/20/15 0923	04/22/15 1400	JYH
Lead, Total	12.6	0.983	mg/kg DRY		04/20/15 0923	04/22/15 1400	JYH
Molybdenum, Total	<2.95	2.95	mg/kg DRY		04/20/15 0923	04/22/15 1400	JYH
Nickel, Total	23.9	1.97	mg/kg DRY		04/20/15 0923	04/22/15 1400	JYH
Selenium, Total	<0.983	0.983	mg/kg DRY	J	04/20/15 0923	04/22/15 1400	JYH
Zinc, Total	99.0	0.983	mg/kg DRY		04/20/15 0923	04/22/15 1400	JYH

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216							
Percent Solids	74.4	1.00	weight %			04/22/15 0725	JJS

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5D1016

Analytical Testing Parameters

Client Sample ID:	Valentine #C-5	**Collected By:**	TS
Lab Sample ID:	S5D1016-05	**Collection Date:**	04/14/15
Sample Type:	Composite	**Collection Time:**	13:00

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C							
pH	6.82	0.0100	pH Units	H1	04/21/15 1253	04/21/15 1253	SRS
Method: SM4500 H+ B-2000							
Temperature	20.6		°C	H1	04/21/15 1253	04/21/15 1253	SRS

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997							
Percent Solids	69.1		% by Weight		04/21/15 1550	04/22/15 0945	KAL

Microbac Laboratories, Inc. - Ohio Valley

Mercury	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B							
Mercury, Total	<0.315	0.315	mg/kg DRY	J	04/20/15 0621	04/23/15 1618	BKT

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C							
Arsenic, Total	9.87	0.929	mg/kg DRY		04/20/15 0925	04/22/15 1404	JYH
Cadmium, Total	0.327	0.0929	mg/kg DRY		04/20/15 0925	04/22/15 1404	JYH
Chromium, Total	24.2	0.232	mg/kg DRY		04/20/15 0925	04/22/15 1404	JYH
Cobalt, Total	13.6	0.232	mg/kg DRY		04/20/15 0925	04/22/15 1404	JYH
Copper, Total	39.2	0.929	mg/kg DRY		04/20/15 0925	04/22/15 1404	JYH
Lead, Total	13.3	0.929	mg/kg DRY		04/20/15 0925	04/22/15 1404	JYH
Molybdenum, Total	<2.79	2.79	mg/kg DRY		04/20/15 0925	04/22/15 1404	JYH
Nickel, Total	20.8	1.86	mg/kg DRY		04/20/15 0925	04/22/15 1404	JYH
Selenium, Total	<0.929	0.929	mg/kg DRY	J	04/20/15 0925	04/22/15 1404	JYH
Zinc, Total	88.5	0.929	mg/kg DRY		04/20/15 0925	04/22/15 1404	JYH

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216							
Percent Solids	75.3	1.00	weight %			04/22/15 0725	JJS

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5D1016

Analytical Testing Parameters

Client Sample ID:	Card #C-3	**Collected By:**	TS
Lab Sample ID:	S5D1016-06	**Collection Date:**	04/14/15
Sample Type:	Composite	**Collection Time:**	13:00

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C							
pH	8.76	0.0100	pH Units	H1	04/21/15 1253	04/21/15 1253	SRS
Method: SM4500 H+ B-2000							
Temperature	20.2		°C	H1	04/21/15 1253	04/21/15 1253	SRS

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997							
Percent Solids	69.5		% by Weight		04/21/15 1550	04/22/15 0945	KAL

Microbac Laboratories, Inc. - Ohio Valley

Mercury	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B							
Mercury, Total	<0.356	0.356	mg/kg DRY	J	04/20/15 0821	04/23/15 1621	BKT

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C							
Arsenic, Total	10.1	1.02	mg/kg DRY		04/20/15 0926	04/22/15 1408	JYH
Cadmium, Total	0.346	0.102	mg/kg DRY		04/20/15 0926	04/22/15 1408	JYH
Chromium, Total	25.3	0.254	mg/kg DRY		04/20/15 0926	04/22/15 1408	JYH
Cobalt, Total	13.3	0.254	mg/kg DRY		04/20/15 0926	04/22/15 1408	JYH
Copper, Total	52.8	1.02	mg/kg DRY		04/20/15 0926	04/22/15 1408	JYH
Lead, Total	12.1	1.02	mg/kg DRY		04/20/15 0926	04/22/15 1408	JYH
Molybdenum, Total	<3.05	3.05	mg/kg DRY		04/20/15 0926	04/22/15 1408	JYH
Nickel, Total	25.9	2.04	mg/kg DRY		04/20/15 0926	04/22/15 1408	JYH
Selenium, Total	<1.02	1.02	mg/kg DRY	J	04/20/15 0926	04/22/15 1408	JYH
Zinc, Total	109	1.02	mg/kg DRY		04/20/15 0926	04/22/15 1408	JYH

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216							
Percent Solids	69.5	1.00	weight %			04/22/15 0725	JJS

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Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5D1016

Analytical Testing Parameters

Client Sample ID:	Card #C-6	**Collected By:**	TS
Lab Sample ID:	S5D1016-07	**Collection Date:**	04/14/15
Sample Type:	Composite	**Collection Time:**	13:00

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C							
pH	8.59	0.0100	pH Units	H1	04/21/15 1253	04/21/15 1253	SRS
Method: SM4500 H+ B-2000							
Temperature	20.1		°C	H1	04/21/15 1253	04/21/15 1253	SRS

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997							
Percent Solids	84.8		% by Weight		04/21/15 1550	04/22/15 0945	KAL

Microbac Laboratories, Inc. - Ohio Valley

Mercury	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B							
Mercury, Total	<0.371	0.371	mg/kg DRY	J	04/20/15 0621	04/23/15 1624	BKT

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C							
Arsenic, Total	9.43	1.18	mg/kg DRY		04/20/15 0927	04/22/15 1412	JYH
Cadmium, Total	0.428	0.118	mg/kg DRY		04/20/15 0927	04/22/15 1412	JYH
Chromium, Total	26.1	0.295	mg/kg DRY		04/20/15 0927	04/22/15 1412	JYH
Cobalt, Total	17.4	0.295	mg/kg DRY		04/20/15 0927	04/22/15 1412	JYH
Copper, Total	75.9	1.18	mg/kg DRY		04/20/15 0927	04/22/15 1412	JYH
Lead, Total	21.6	1.18	mg/kg DRY		04/20/15 0927	04/22/15 1412	JYH
Molybdenum, Total	<3.54	3.54	mg/kg DRY		04/20/15 0927	04/22/15 1412	JYH
Nickel, Total	26.4	2.36	mg/kg DRY		04/20/15 0927	04/22/15 1412	JYH
Selenium, Total	<1.18	1.18	mg/kg DRY	J	04/20/15 0927	04/22/15 1412	JYH
Zinc, Total	130	1.18	mg/kg DRY		04/20/15 0927	04/22/15 1412	JYH

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216							
Percent Solids	83.3	1.00	weight %			04/22/15 0725	JJS

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5D1016

Analytical Testing Parameters

Client Sample ID:	Card #C-8	**Collected By:**	TS
Lab Sample ID:	S5D1016-08	**Collection Date:**	04/14/15
Sample Type:	Composite	**Collection Time:**	13:00

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C							
pH	6.82	0.0100	pH Units	H1	04/21/15 1253	04/21/15 1253	SRS
Method: SM4500 H+ B-2000							
Temperature	20.1		°C	H1	04/21/15 1253	04/21/15 1253	SRS

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997							
Percent Solids	66.0		% by Weight		04/21/15 1550	04/22/15 0945	KAL

Microbac Laboratories, Inc. - Ohio Valley

Mercury	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B							
Mercury, Total	<0.334	0.334	mg/kg DRY	J	04/20/15 0821	04/23/15 1626	BKT

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C							
Arsenic, Total	9.73	0.999	mg/kg DRY		04/20/15 0927	04/22/15 1416	JYH
Cadmium, Total	0.278	0.0999	mg/kg DRY		04/20/15 0927	04/22/15 1416	JYH
Chromium, Total	20.6	0.250	mg/kg DRY		04/20/15 0927	04/22/15 1416	JYH
Cobalt, Total	10.9	0.250	mg/kg DRY		04/20/15 0927	04/22/15 1416	JYH
Copper, Total	38.3	0.999	mg/kg DRY		04/20/15 0927	04/22/15 1416	JYH
Lead, Total	19.9	0.999	mg/kg DRY		04/20/15 0927	04/22/15 1416	JYH
Molybdenum, Total	<3.00	3.00	mg/kg DRY		04/20/15 0927	04/22/15 1416	JYH
Nickel, Total	18.6	2.00	mg/kg DRY		04/20/15 0927	04/22/15 1416	JYH
Selenium, Total	<0.999	0.999	mg/kg DRY	J	04/20/15 0927	04/22/15 1416	JYH
Zinc, Total	85.6	0.999	mg/kg DRY		04/20/15 0927	04/22/15 1416	JYH

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216							
Percent Solids	70.2	1.00	weight %			04/22/15 0725	JJS

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5D1016

Analytical Testing Parameters

Client Sample ID:	Card #C-9	**Collected By:**	TS
Lab Sample ID:	S5D1016-09	**Collection Date:**	04/14/15
Sample Type:	Composite	**Collection Time:**	13:00

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C							
pH	6.37	0.0100	pH Units	H1	04/21/15 1253	04/21/15 1253	SRS
Method: SM4500 H+ B-2000							
Temperature	20.3		°C	H1	04/21/15 1253	04/21/15 1253	SRS

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997							
Percent Solids	76.2		% by Weight		04/21/15 1550	04/22/15 0945	KAL

Microbac Laboratories, Inc. - Ohio Valley

Mercury	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B							
Mercury, Total	<0.310	0.310	mg/kg DRY	J	04/20/15 0821	04/23/15 1629	BKT

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C							
Arsenic, Total	12.2	0.983	mg/kg DRY		04/20/15 0929	04/22/15 1420	JYH
Cadmium, Total	0.331	0.0983	mg/kg DRY		04/20/15 0929	04/22/15 1420	JYH
Chromium, Total	16.6	0.246	mg/kg DRY		04/20/15 0929	04/22/15 1420	JYH
Cobalt, Total	10.4	0.246	mg/kg DRY		04/20/15 0929	04/22/15 1420	JYH
Copper, Total	36.4	0.983	mg/kg DRY		04/20/15 0929	04/22/15 1420	JYH
Lead, Total	28.8	0.983	mg/kg DRY		04/20/15 0929	04/22/15 1420	JYH
Molybdenum, Total	<2.95	2.95	mg/kg DRY		04/20/15 0929	04/22/15 1420	JYH
Nickel, Total	18.3	1.97	mg/kg DRY		04/20/15 0929	04/22/15 1420	JYH
Selenium, Total	<0.983	0.983	mg/kg DRY	J	04/20/15 0929	04/22/15 1420	JYH
Zinc, Total	79.7	0.983	mg/kg DRY		04/20/15 0929	04/22/15 1420	JYH

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216							
Percent Solids	77.1	1.00	weight %			04/22/15 0725	JJS

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5D1016

Analytical Testing Parameters

Client Sample ID:	Card #C-11	**Collected By:**	TS
Lab Sample ID:	S5D1016-10	**Collection Date:**	04/14/15
Sample Type:	Composite	**Collection Time:**	13:00

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C							
pH	6.84	0.0100	pH Units	H1	04/21/15 1253	04/21/15 1253	SRS
Method: SM4500 H+ B-2000							
Temperature	20.4		°C	H1	04/21/15 1253	04/21/15 1253	SRS

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997							
Percent Solids	77.3		% by Weight		04/21/15 1550	04/22/15 0945	KAL

Microbac Laboratories, Inc. - Ohio Valley

Mercury	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B							
Mercury, Total	<0.361	0.361	mg/kg DRY	J	04/20/15 0621	04/23/15 1631	BKT

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C							
Arsenic, Total	8.69	0.989	mg/kg DRY		04/20/15 0930	04/22/15 1424	JYH
Cadmium, Total	0.324	0.0989	mg/kg DRY		04/20/15 0930	04/22/15 1424	JYH
Chromium, Total	19.0	0.247	mg/kg DRY		04/20/15 0930	04/22/15 1424	JYH
Cobalt, Total	12.7	0.247	mg/kg DRY		04/20/15 0930	04/22/15 1424	JYH
Copper, Total	37.5	0.989	mg/kg DRY		04/20/15 0930	04/22/15 1424	JYH
Lead, Total	16.4	0.989	mg/kg DRY		04/20/15 0930	04/22/15 1424	JYH
Molybdenum, Total	<2.97	2.97	mg/kg DRY		04/20/15 0930	04/22/15 1424	JYH
Nickel, Total	21.8	1.98	mg/kg DRY		04/20/15 0930	04/22/15 1424	JYH
Selenium, Total	<0.989	0.989	mg/kg DRY	J	04/20/15 0930	04/22/15 1424	JYH
Zinc, Total	92.1	0.989	mg/kg DRY		04/20/15 0930	04/22/15 1424	JYH

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216							
Percent Solids	67.6	1.00	weight %			04/22/15 0725	JJS

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5D1016

Analytical Testing Parameters

Client Sample ID:	Card #C-13	**Collected By:**	TS
Lab Sample ID:	S5D1016-11	**Collection Date:**	04/14/15
Sample Type:	Composite	**Collection Time:**	13:00

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C							
pH	6.87	0.0100	pH Units	H1	04/21/15 1253	04/21/15 1253	SRS
Method: SM4500 H+ B-2000							
Temperature	20.5		°C	H1	04/21/15 1253	04/21/15 1253	SRS

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997							
Percent Solids	68.5		% by Weight		04/21/15 1550	04/22/15 0945	KAL

Microbac Laboratories, Inc. - Ohio Valley

Mercury	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B							
Mercury, Total	<0.304	0.304	mg/kg DRY	J	04/20/15 0621	04/23/15 1639	BKT

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C							
Arsenic, Total	10.8	0.867	mg/kg DRY		04/20/15 0931	04/22/15 1309	JYH
Cadmium, Total	0.354	0.0867	mg/kg DRY		04/20/15 0931	04/22/15 1309	JYH
Chromium, Total	26.6	0.217	mg/kg DRY		04/20/15 0931	04/22/15 1309	JYH
Cobalt, Total	14.4	0.217	mg/kg DRY		04/20/15 0931	04/22/15 1309	JYH
Copper, Total	51.5	0.867	mg/kg DRY		04/20/15 0931	04/22/15 1309	JYH
Lead, Total	16.7	0.867	mg/kg DRY		04/20/15 0931	04/22/15 1309	JYH
Molybdenum, Total	<2.60	2.60	mg/kg DRY		04/20/15 0931	04/22/15 1309	JYH
Nickel, Total	24.6	1.73	mg/kg DRY		04/20/15 0931	04/22/15 1309	JYH
Selenium, Total	<0.867	0.867	mg/kg DRY	J	04/20/15 0931	04/22/15 1309	JYH
Zinc, Total	108	0.867	mg/kg DRY		04/20/15 0931	04/22/15 1309	JYH

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216							
Percent Solids	79.0	1.00	weight %			04/22/15 0725	JJS

Definitions

H1:	Sample was received past holding time.
J:	The analyte was positively identified, but the quantitation was below the RL
MDL:	Minimum Detection Limit
PQL:	Practical Quantitation Limit

Invoice 40159

AGRI-BALANCE SERVICES
PO BOX 388 11 MILL STREET
AFTON, NY 13730-0388
800-432-7630 607-639-2331

Invoice Date	05/28/2015
Due Date	06/27/2015
Customer ID	TownOw
Customer P.O.	15409
Shipping Loc.	Main

Town of Owego Utilities
1319 Main St
Apalachin, NY 13732

A FINANCE CHARGE OF 1% (12% APR) IS CHARGED ON ITEMS NOT PAID IN 30 DAYS FROM INVOICE DATE. ANY ACCOUNT REFERRED TO AN ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES AND COLLECTION COSTS WILL ADDED TO BALANCE DUE.

Quantity	Description	Unit Price	Total $
14.000 Tons	Hi Mag Bulk Lime	50.00 /Tons	700.00
13.100 Tons	Hi Mag Bulk Lime	50.00 /Tons	655.00
12.550 Tons	Hi Mag Bulk Lime	50.00 /Tons	627.50
18.050 Tons	Hi Mag Bulk Lime	50.00 /Tons	902.50

6 ton field C-4
11 ton field C-9
40 ton field C-1
} 5-28-15

Terms: Please Make Checks Payable To: Agri-BALANCE Services PO Box 388, Afton, NY 13730

Sub Total	2,885.00
Amount Due	**2,885.00**

Discount Options

If Paid By	Discount	Deduct	Pay This
06/07/2015	5.000%	144.25	2740.75

Thank you

Remit To: Agri-BALANCE Services
PO Box 388
Afton NY 13730
Phone #: 607 639-2331

Town of Owego Utilities

Invoice **40159**

Invoice 40982

AGRI-BALANCE SERVICES
PO BOX 388 11 MILL STREET
AFTON, NY 13730-0388
800-432-7630 607-639-2331

Town of Owego Utilities
1319 Main St
Apalachin, NY 13732

Invoice Date	08/14/2015
Due Date	09/13/2015
Customer ID	TownOw
Customer P.O.	Verbal - Tyson
Shipping Loc.	Main

A FINANCE CHARGE OF 1% (12% APR) IS CHARGED ON ITEMS NOT PAID IN 30 DAYS FROM INVOICE DATE. ANY ACCOUNT REFERRED TO AN ATTORNEY FOR COLLECTION, REASONABLE ATTORNEY'S FEES AND COLLECTION COSTS WILL ADDED TO BALANCE DUE.

Quantity	Description	Unit Price	Total $
13.800 Tons	Hi Mag Bulk Lime	50.00 /Tons	690.00
13.500 Tons	Hi Mag Bulk Lime	50.00 /Tons	675.00
13.450 Tons	Hi Mag Bulk Lime	50.00 /Tons	672.50

C-1
8-7-15

Terms: Please Make Checks Payable To: Agri-BALANCE Services PO Box 388, Afton, NY 13730

Sub Total	2,037.50
Amount Due	**2,037.50**

Discount Options

If Paid By	Discount	Deduct	Pay This
08/24/2015	5.000%	101.88	1935.62

Thank You

Remit To: Agri-BALANCE Services
PO Box 388
Afton NY 13730
Phone #: 607 639-2331

Town of Owego Utilities

Invoice 40982

2015 Sludge removal from S-1 Aerobic Digesters

DATE	FROM:	TO:	Gals. Applied
Jan. 7	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #2	22185 gals.
Jan. 15	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #2	16160 gals.
Jan. 22	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #2	27930 gals.
Jan. 29	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #2	29340 gals.
Feb.5	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #2	33440 gals.
Feb.13	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #2	18770 gals.
Feb.18	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #2	21330 gals.
Feb.26	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #2	28880 gals.
March.4	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #2	20480 gals.
March.12	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #2	24220 gals.
March.19	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #2	19030 gals.
March.25	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #2	29820 gals.
April.2	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	27405 gals.
April.15	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	35500 gals.
April.23	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	35730 gals.
April.30	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	13210 gals.
May.7	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	33210 gals.
May.15	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	26650 gals.
May.21	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	24460 gals.
May.28	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	40105 gals.
May.29	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	25645 gals.
June.4	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	13650 gals.
June.10	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	21590 gals.
June.17	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	17985 gals.
June.24	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	25310 gals.
July.2	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	20060 gals.
July.8	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	24760 gals.
July.15	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	29995 gals.
July.22	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	20010 gals.
July.31	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	19340 gals.
Aug.6	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	29680 gals.
Aug.13	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	20745 gals.
Aug.19	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	12515 gals.
Aug.26	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	17505 gals.
Sept.3	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	26105 gals.
Sept.9	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	11945 gals.
Sept.17	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	23855 gals.
Sept.24	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	0 gals.
Oct.1	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	18770 gals.
Oct.8	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	31500 gals.
Oct.15	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	11375 gals.
Oct.22	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	11945 gals.
Oct.30	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	15950 gals.
Nov.4	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	6260 gals.
Nov.12	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	13840 gals.
Nov.18	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	23890 gals.
Nov.25	Belt press S-1 Aerobic digs.	Hauled to: Drying Bed #1	16755 gals.

DEC.2	Belt press	S-1 Aerobic digs.	Hauled to:	Drying Bed #1	33455 gals.
DEC.10	Belt press	S-1 Aerobic digs.	Hauled to:	Drying Bed #1	27840 gals.
DEC.16	Belt press	S-1 Aerobic digs.	Hauled to:	Drying Bed #1	37550 gals.
DEC.23	Belt press	S-1 Aerobic digs.	Hauled to:	Drying Bed #1	35760 gals.
DEC.30	Belt press	S-1 Aerobic digs.	Hauled to:	Drying Bed #1	36400 gals.
TOTAL					**1209840 gallons**

TOWN OF OWEGO WPCF

DATE: Sept 18 2015 NAME: Tyson Sites

FLOW METER: 26090130 gallons Elect. Meter (1st day of each month)

DAILY FLOW: 0.350 MG Gas Meter (1st day of each month)

SANMINA FLOW: 0.240 MG LOCKHEED FLOW: 0.039 MG

SREEENINGS: cu.ft. removed from plant GRIT: cu.ft. removed from plant

INFLUENT: Composite Grab

pH 8.5 AMMONIA 26 mg/l Alkalinity mg/l

BASIN #1				BASIN #2			
TIME: D.O.residual mg/l				TIME: D.O.residual mg/l			
SETTLEOMETER	SSV	MLSS	SVI = (ssv)(1000)/mlss	SETTLEOMETER	SSV	MLSS	SVI = (ssv)(1000)/mlss
5 mins.				5 mins.	275		
30 mins.				30 mins.	150		96
60 mins.				60 mins.			
BASIN DEPTH: ft.				BASIN DEPTH: 17.3 ft.			
BASIN SOLIDS: lbs.(depth)(43,100)				BASIN SOLIDS: 13125 lbs.(depth)(43,100)			
WASTING: mins/ gals/ lbs.				WASTING: 25 mins/ 6250 gals/ 330 lbs			
MCRT: days				MCRT: 40 days			
Time: pH: NH3: mg/l				Time: 9:30 pH: 6.7 NH3: 20 mg/l			
Alkalinity: mg/l NO3: mg/l				Alkalinity: 105 mg/l NO3: 8.9 mg/l			
T.-Phos: mg/l				T.-Phos: 4.3 mg/l			
MLSS - volume mls WAS - volume mls				MLSS - volume 50 mls WAS - volume 25 mls			
#		#		# 3		# 3	
dry wgt. grab		dry wgt.		dry wgt. 9175		dry wgt. 9190	
tare		tare		tare 8120		tare 7600	
wgt.		wgt.		wgt.		wgt.	
mlss		mlss		mlss 2110		mlss 6360	
TSS - volume mls				TSS - volume mls			
#				#			
dry wgt.				dry wgt.			
tare				tare			
wgt.				wgt.			
tss				tss			
tss				tss			
Bags of Sodium added to Influent:				Alum Feed: gals.		Sugar Feed: lbs.	
Basin #1							
Basin #2							

TOWN OF OWEGO WPCF

DATE: Oct 16 2015 NAME: Tyson Styles

FLOW METER: 76202890 gallons Elect. Meter (1st day of each month): _____

DAILY FLOW: 0.422 MG Gas Meter (1st day of each month) _____

SANMINA FLOW: _____ MG LOCKHEED FLOW: _____ MG

SREEENINGS: _____ cu.ft. removed from plant GRIT: _____ cu.ft. removed from plant

INFLUENT: Composite Grab

pH 8.7 AMMONIA 30 mg/l Alkalinity _____ mg/l

BASIN #1				BASIN #2			
TIME: _____ D.O.residual _____ mg/l				TIME: _____ D.O.residual _____ mg/l			
SETTLEOMETER	SSV	MLSS	SVI = (ssv)(1000) / mlss	SETTLEOMETER	SSV	MLSS	SVI = (ssv)(1000) / mlss
5 mins.				5 mins.	340		
30 mins.				30 mins.	225		89
60 mins.				60 mins.			
BASIN DEPTH: _____ ft.				BASIN DEPTH: 17.4 ft.			
BASIN SOLIDS: _____ lbs.(depth)(43,100)				BASIN SOLIDS: 15825 lbs.(depth)(43,100)			
WASTING: _____ mins/ _____ gals/ _____ lbs.				WASTING: 15 mins/ 7750 gals/ 250 lbs			
MCRT: _____ days				MCRT: 63 days			
Time: _____ pH: _____ NH3: _____ mg/l				Time: _____ pH: 6.3 NH3: 61 mg/l			
Alkalinity: _____ mg/l NO3: _____ mg/l				Alkalinity: 70 mg/l NO3: 20.4 mg/l			
T.-Phos: _____ mg/l				T.-Phos: 2.8 mg/l			
MLSS - volume _____ mls WAS - volume _____ mls				MLSS - volume 50 mls WAS - volume 25 mls			
#			#	# 2			# 3
dry wgt. _____ grab		dry wgt. _____		dry wgt. 8880 grab		dry wgt.	10065
tare _____		tare _____		tare 7615		tare	8085
wgt. _____		wgt. _____		wgt. _____		wgt.	_____
mlss		mlss		mlss 2530		mlss	7920
TSS - volume _____ mls				TSS - volume _____ mls			
#				#			
dry wgt. _____				dry wgt. _____			
tare _____				tare _____			
wgt. _____				wgt. _____			
tss				tss			
tss				tss			

Bags of Sodium added to Influent:

Basin #1 40

Basin #2

Alum Feed: _____ gals.

Sugar Feed: _____ lbs.

DATE: NOV 16 2015 NAME: Tyson Styles

FLOW METER: 2633930 gallons Elect. Meter (1st day of each month): _____

DAILY FLOW: 0.473 MG Gas Meter (1st day of each month): _____

SANMINA FLOW: 0.265 MG LOCKHEED FLOW: _____ MG

SREEENINGS: _____ cu.ft. removed from plant GRIT: _____ cu.ft. removed from plant

INFLUENT: Composite Grab

pH 8.5 AMMONIA 30 mg/l Alkalinity _____ mg/l

BASIN #1				BASIN #2			
TIME: _____ D.O.residual _____ mg/l				TIME: _____ D.O.residual _____ mg/l			
SETTLEOMETER				SETTLEOMETER			
	SSV	MLSS	SVI = (ssv)(1000) / mlss		SSV	MLSS	SVI = (ssv)(1000) / mlss
5 mins.	358			5 mins.	320		
30 mins.	215		103	30 mins.	250		112
60 mins.				60 mins.			
BASIN DEPTH: 17.2 ft.				BASIN DEPTH: 17.2 ft.			
BASIN SOLIDS: 12915 lbs.(depth)(43,100)				BASIN SOLIDS: 13780 lbs.(depth)(43,100)			
WASTING: 15 mins/ _____ gals/ 170 lbs.				WASTING: 15 mins/ _____ gals/ 180 lbs			
MCRT: 76 days				MCRT: 77 days			
Time: _____ pH: 6.5 NH3: <1 mg/l				Time: _____ pH: 6.3 NH3: <1 mg/l			
Alkalinity: 90 mg/l NO3: 7.2 mg/l				Alkalinity: 80 mg/l NO3: 11.1 mg/l			
T.-Phos: 1.9 mg/l				T.-Phos: 1.4 mg/l			
MLSS - volume 50 mls WAS - volume _____ mls				MLSS - volume 50 mls WAS - volume _____ mls			
# 1			#	# 2			#
dry wgt. 8770	grab	dry wgt.		dry wgt. 8970	grab	dry wgt.	
tare 7725		tare		tare 7855		tare	
wgt.		wgt.		wgt.		wgt.	
mlss 2090		mlss		mlss 2270		mlss	
TSS - volume _____ mls				TSS - volume _____ mls			
#				#			
dry wgt.				dry wgt.			
tare				tare			
wgt.				wgt.			
tss				tss			
tss				tss			

Bags of Sodium added to Influent:

Basin #1

Basin #2

Alum Feed: _____ gals.

Sugar Feed: _____ lbs.

BENCHMARK ANALYTICS
A MICROBAC LABORATORY

Benchmark Analytics Sayre, A Microbac Laboratory

CERTIFICATE OF ANALYSIS

S5A1018

Project Name: Owego Aerobic Digestor

Owego, Town of Utilities
Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project / PO Number: N/A
Received: 01/14/2015 17:00
Reported: 01/22/2015 09:35

Analytical Testing Parameters

Client Sample ID: Owego Aerobic Digestor
Lab Sample ID: S5A1018-01
Sample Type: Grab

Collection Date: 01/07/15
Collection Time: 14:30
Collected By: TS

Benchmark Analytics Sayre, A Microbac Laboratory

Inorganics

	Result	MCL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	1.17			% by Weight	H1	01/16/15 1700	01/19/15 1000	ICC

Definitions

H1: Sample received past holding time.
MCL: Maximum Contamination Level
PQL: Practical Quantitation Limit

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	4.20 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

BENCHMARK ANALYTICS
A MICROBAC LABORATORY

Benchmark Analytics Sayre, A Microbac Laboratory
CERTIFICATE OF ANALYSIS
S5B0969

Project Name: Owego Aerobic Digestor

Owego, Town of Utilities
Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project / PO Number: N/A
Received: 02/11/2015 17:00
Reported: 02/18/2015 15:45

Analytical Testing Parameters

Client Sample ID: Owego Aerobic Digester
Lab Sample ID: S5B0969-01
Sample Type: Grab

Collection Date: 02/05/15
Collection Time: 14:30
Collected By: TS

Benchmark Analytics Sayre, A Microbac Laboratory

Inorganics

	Result	MCL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	0.660			% by Weight	H	02/16/15 1700	02/17/15 0920	ICC

Definitions

H: Sample was analyzed past holding time.
MCL: Maximum Contamination Level
PQL: Practical Quantitation Limit

Cooler Receipt Log:

Cooler ID:	Default Cooler	Received On Ice (or not required):	Yes
Cooler Temp:	4.00 °C	Preservation Correct (or not required):	Yes
COC/Labels Agree:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes
Containers Intact:	Yes		

BENCHMARK ANALYTICS
A MICROBAC LABORATORY

Benchmark Analytics Sayre, A Microbac Laboratory

CERTIFICATE OF ANALYSIS

S5C0999

Project Name: Owego Aerobic Digester

Owego, Town of Utilities
Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project / PO Number: N/A
Received: 03/11/2015 17:00
Reported: 03/17/2015 13:26

Analytical Testing Parameters

Client Sample ID:	Owego Aerobic Digester	**Collection Date:**	03/05/15
Lab Sample ID:	S5C0999-01	**Collection Time:**	14:30
Sample Type:	Grab	**Collected By:**	TS

Benchmark Analytics Sayre, A Microbac Laboratory

Inorganics

	Result	MCL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	0.580			% by Weight		03/12/15 1700	03/13/15 0820	ICC

Definitions

MCL:	Maximum Contamination Level
PQL:	Practical Quantitation Limit

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	4.20 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

MICROBAC®

Benchmark Analytics Sayre, A Microbac Laboratory

CERTIFICATE OF ANALYSIS

S5D1003

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Owego Aerobic Digestor

Project / PO Number: N/A
Received: 04/15/2015 16:15
Reported: 04/27/2015 17:32

Analytical Testing Parameters

Client Sample ID:	Owego Aerobic Digester	**Collected By:**	TS
Lab Sample ID:	S5D1003-01	**Collection Date:**	04/02/15
Sample Type:	Grab	**Collection Time:**	14:30

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	1.27			% by Weight	H1	04/21/15 1550	04/22/15 0945	KAL

Definitions

H1: Sample was received past holding time.

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	3.4 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

Report Comments:

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
04/27/2015 17:32

Go Green: Contact Tracy Cole to set up email reporting and invoicing options.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included.

For any feedback concerning our services, please contact Tracy Cole listed above at Tracy.Cole@microbac.com or 570-888-0169. You may also contact Trevor Boyce President, at president@microbac.com.

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5E1337

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Owego Aerobic Digestor

Project / PO Number: N/A
Received: 05/13/2015 17:00
Reported: 05/26/2015 21:40

Analytical Testing Parameters

Client Sample ID: Owego Aerobic Digester
Lab Sample ID: S5E1337-01
Sample Type: Grab

Collected By: TS
Collection Date: 05/07/15
Collection Time: 14:30

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	1.11			% by Weight	H	05/20/15 1620	05/21/15 0930	ICC

Definitions

H: Sample was analyzed past holding time.

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	3.7 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

Report Comments:

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
05/26/2015 21:40

Go Green: Contact Tracy Cole to set up email reporting and invoicing options.

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MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5F2148

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Owego Aerobic Digestor

Project / PO Number: N/A
Received: 06/15/2015 15:40
Reported: 06/22/2015 18:45

Analytical Testing Parameters

Client Sample ID: Owego Aerobic Digestor
Lab Sample ID: S5F2148-01
Sample Type: Grab

Collected By: TS
Collection Date: 06/04/15
Collection Time: 14:30

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	0.960			% by Weight	H1	06/16/15 1700	06/17/15 1700	ICC

Definitions

H1: Sample was received past holding time.

Cooler Receipt Log:

Cooler ID:	Default Cooler	Received On Ice (or not required):	Yes
Cooler Temp:	3.6 °C	Preservation Correct (or not required):	Yes
COC/Labels Agree:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes
Containers Intact:	Yes		

Report Comments:

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
06/22/2015 18:45

Go Green: Contact Tracy Cole to set up email reporting and invoicing options.

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MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5G2365

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Owego Aerobic Digestor

Project / PO Number: N/A
Received: 07/15/2015 15:30
Reported: 07/30/2015 23:06

Analytical Testing Parameters

Client Sample ID:	**Owego Aerobic Digester**	**Collected By:**	TS
Lab Sample ID:	**S5G2365-01**	**Collection Date:**	07/03/15
Sample Type:	Grab	**Collection Time:**	14:00

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SM2540 G-1997								
Percent Solids	**1.50**			% by Weight	**H1,Y**	07/23/15 1700	07/24/15 0900	SAY

Laboratory

SAY Microbac Laboratories Inc., - Sayre

Definitions

H1: Sample was received past holding time.
Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	4.2 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

Project Requested Certification(s):

Microbac Laboratories, Inc. - Sayre
NY Lab ID No.: 11216 — New York State Department of Health

Report Comments:

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
07/30/2015 23:06

Go Green: Contact Tracy Cole to set up email reporting and invoicing options.

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MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5H1303

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Owego Aerobic Digester

Project / PO Number: N/A
Received: 08/17/2015 14:50
Reported: 08/25/2015 21:01

Analytical Testing Parameters

Client Sample ID:	Owego Aerobic Digestor	**Collected By:**	Tyson Stiles
Lab Sample ID:	S5H1303-01	**Collection Date:**	08/13/15
Sample Type:	Grab	**Collection Time:**	14:30

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SM2540 G-1997								**Method Notes: H**
Percent Solids	0.820			% by Weight	Y	08/24/15 1630	08/25/15 1103	SAY

Laboratory

SAY Microbac Laboratories Inc., - Sayre

Definitions

H: Sample was analyzed past holding time.
Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log:

Cooler ID:	Default Cooler	Received On Ice (or not required):	Yes
Cooler Temp:	2.2 °C	Preservation Correct (or not required):	Yes
COC/Labels Agree:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes
Containers Intact:	Yes		

Project Requested Certification(s):

Microbac Laboratories, Inc. - Sayre
NY Lab ID No.: 11216 — New York State Department of Health

Report Comments:

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
08/25/2015 21:01

Go Green: Contact Tracy Cole to set up email reporting and invoicing options.

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MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5I0800

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Owego Aerobic Digestor

Project / PO Number: N/A
Received: 09/09/2015 15:15
Reported: 09/14/2015 11:39

Analytical Testing Parameters

Client Sample ID:	**Owego Aerobic Digestor**	**Collected By:**	TS
Lab Sample ID:	**S5I0800-01**	**Collection Date:**	09/03/15
Sample Type:	Composite	**Collection Time:**	14:00

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SM2540 G-1997								
Percent Solids	0.580			% by Weight	Y	09/10/15 1140	09/11/15 0730	SAY

Laboratory

SAY: Microbac Laboratories Inc., - Sayre

Definitions

Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log

Cooler ID: Default Cooler **Temp:** 4.2°C

Cooler Inspection Checklist

Custody Seals Intact and/or No Evidence of Tampering	Yes	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Correct (or not required)	Yes
Received on Ice (or not required)	Yes		

Project Requested Certification(s)

Microbac Laboratories, Inc. - Sayre
NY Lab ID No.: 11216 — New York State Department of Health

Report Comments

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
09/14/2015 11:39

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MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5J0709

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Owego Aerobic Digestor

Project / PO Number: N/A
Received: 10/07/2015 16:25
Reported: 10/14/2015 16:19

Analytical Testing Parameters

Client Sample ID:	**Owego Aerobic Digestor**	**Collected By:**	TS
Lab Sample ID:	**S5J0709-01**	**Collection Date:**	10/01/15
Sample Type:	Grab	**Collection Time:**	14:30

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SM2540 G-1997								
Percent Solids	**1.76**			% by Weight	H,Y	10/09/15 1735	10/09/15 1800	SAY

Laboratory

SAY: Microbac Laboratories Inc., - Sayre

Definitions

H: Sample was analyzed past holding time.
RPD: Relative Pecent Difference
Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 5.2°C

Cooler Inspection Checklist

Custody Seals Intact and/or No Evidence of Tampering	Yes	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Correct (or not required)	Yes
Received on Ice (or not required)	Yes		

Report Comments

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Go Green: Contact Tracy Cole to set up email reporting and invoicing options.

Reviewed and Approved By:

Tracy Cole
Department Manager
10/14/2015 16:19

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MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5K1091

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Owego Aerobic Digestor

Project / PO Number: N/A
Received: 11/16/2015 15:20
Reported: 11/25/2015 13:00

Analytical Testing Parameters

Client Sample ID:	**Owego Aerobic Digestor**	**Collected By:**	Tyson Stiles
Lab Sample ID:	**S5K1091-01**	**Collection Date:**	11/12/15
Sample Type:	Grab	**Collection Time:**	14:30

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SM2540 G-1997								
Percent Solids	**1.35**			% by Weight	H,Y	11/20/15 1700	11/23/15 0830	SAY

Laboratory

SAY: Microbac Laboratories Inc., - Sayre

Definitions

H: Sample was analyzed past holding time.
RPD: Relative Pacent Difference
Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 1.8°C

Cooler Inspection Checklist

Custody Seals Intact and/or No Evidence of Tampering	Yes	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Correct (or not required)	Yes
Received on Ice (or not required)	Yes		

Project Requested Certification(s)

Microbac Laboratories Inc., - Sayre
NY Lab ID No.: 11216 — New York State Department of Health

Report Comments

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
11/25/2015 13:00

Go Green: Contact Tracy Cole to set up email reporting and invoicing options.

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MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5L0686

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: Owego Aerobic Digestor

Project / PO Number: N/A
Received: 12/09/2015 16:00
Reported: 12/17/2015 19:48

Analytical Testing Parameters

Client Sample ID:	**Owego Aerobic Digestor**	**Collected By:**	TS-Client
Lab Sample ID:	**S5L0686-01**	**Collection Date:**	12/02/15
Sample Type:	Grab	**Collection Time:**	14:30

Inorganics	Result	Limit	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SM2540 G-1997								
Percent Solids	**0.413**			% by Weight	**H,Y**	12/14/15 1615	12/15/15 1130	SAY

Laboratory

SAY: Microbac Laboratories Inc., Sayre

Definitions

H: Sample was analyzed past holding time.
Y: This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 3.8°C

Cooler Inspection Checklist

Custody Seals Intact and/or No Evidence of Tampering	Yes	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Correct (or not required)	Yes
Received on Ice (or not required)	Yes		

Project Requested Certification(s)

Microbac Laboratories Inc., Sayre
NY Lab ID No.: 11216 — New York State Department of Health

Report Comments

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
12/17/2015 19:48

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2015 Biosolids Activity at S-1 Drying Bed #1

Month	Belt Pressed & Applied to Bed #1 IN						Notes:	Removed to Compost OUT			% Dry Tons (since last cleaned)		To Compost	
	Gallons	S-1 Solids	Dry tons	Gallons	S-2 Solids	Dry tons		wet tons	Solids	Total Dry tons	S-1 Sludge	S-2 Sludge	Dry tons S-1	Dry tons S-2
2014														
July			0.00			0.00								
August			0.00			0.00								
Sept.			0.00			0.00								
October			0.00			0.00								
November			0.00			0.00								
December			0.00			0.00								
2015														
January			0.00			0.00				0.00			0.00	0.00
February			0.00			0.00				0.00			0.00	0.00
March			0.00			0.00	to compost			0.00			0.00	0.00
April	111845	0.0127	5.92			0.00	to compost			0.00			0.00	0.00
May	150070	0.0111	6.95			0.00	to compost			0.00			0.00	0.00
June	78535	0.0096	3.14			0.00	to compost			0.00			0.00	0.00
July	114165	0.015	7.14			0.00	to compost	113.02	0.1410	15.94	100		15.94	0.00
August	80445	0.0082	2.75			0.00	to compost			0.00			0.00	0.00
Sept.	61905	0.0058	1.50			0.00	to compost			0.00			0.00	0.00
October			0.00			0.00		89.82	0.127	11.41	100		11.41	0.00
November			0.00			0.00				0.00			0.00	0.00
December			0.00			0.00				0.00			0.00	0.00
2015														
Total:	596965		27.40	0		0.00							27.34	0.00
Total: (metric)			24.85			0.00							24.80	0.00

H

2015 Biosolids Activity at S-1 Drying Bed #2

Month	Belt Pressed & Applied to Bed #2 IN						Notes:	Removed to Compost OUT			% Dry Tons (since last cleaned)		To Compost	
	Gallons	S-1 Solids	Dry tons	Gallons	S-2 Solids	Dry tons		wet tons	Solids	Total Dry tons	S-1 Sludge	S-2 Sludge	Dry tons S-1	Dry tons S-2
2014														
July			0.00			0.00								
August			0.00			0.00								
Sept.			0.00			0.00								
October	92605	0.00162	0.63			0.00	TO COMPOST							
Novembe	92395	0.0088	3.39			0.00	TO COMPOST							
Decembe	127785	0.0034	1.81			0.00	TO COMPOST							
2015														
January	95615	0.0117	4.66			0.00	TO COMPOST	January	123.91	0.184	22.80	100		22.80	0.00
February	102420	0.0066	2.82			0.00	TOCOMPOST	February			0.00			0.00	0.00
March	93550	0.0058	2.26			0.00	TO COMPOST	March			0.00			0.00	0.00
April			0.00			0.00		April	75.26	0.127	9.56	100		9.56	0.00
May			0.00			0.00		May			0.00			0.00	0.00
June			0.00			0.00		June			0.00			0.00	0.00
July			0.00			0.00		July			0.00			0.00	0.00
August			0.00			0.00		August			0.00			0.00	0.00
Sept.			0.00			0.00		Sept.			0.00			0.00	0.00
October	89540	0.0176	6.57			0.00		October			0.00			0.00	0.00
Novembe	60745	0.0135	3.42			0.00		November			0.00			0.00	0.00
Decembe	171005	0.0413	29.45			0.00		December			0.00			0.00	0.00
2015														
Total:	612875		49.19	0		0.00								32.36	0.00
Total: (metric)			44.61			0.00								29.35	0.00

2015 Biosolids Activity at S-1 Drying Bed #3

Month	Belt Pressed & Applied to Bed #3 IN: S-1 Gallons	S-1 Solids	S-1 Dry tons	S-2 Gallons	S-2 Solids	S-2 Dry tons	Notes:
2014							
July			0.00			0.00	
August			0.00			0.00	
Sept.			0.00			0.00	
October			0.00	140000	0.0186	10.86	to field #2
November			0.00	91500	0.019	7.25	to field#6
December			0.00	112500	0.0231	10.84	TO COMPOST
2015							1/2 to field #6
January			0.00	95000	0.0191	7.57	1/2 to field #5
February			0.00			0.00	
March			0.00			0.00	
April			0.00			0.00	
May			0.00			0.00	
June			0.00			0.00	
July			0.00			0.00	
August			0.00			0.00	
Sept.			0.00	112500	0.0215	10.09	
October			0.00	124000	0.0206	10.65	
November			0.00	98500	0.019	7.80	
December			0.00	110000	0.0244	11.19	
2015 Total:	0		0.00	540000		47.30	
Total: (metric)			0.00			42.90	

Month	Removed to Compost OUT: wet tons	Solids	Total Dry tons	% Dry Tons (since last cleaned): S-1 Sludge	S-2 Sludge	To Compost: Dry tons S-1	Dry tons S-2
2015							
January	27.71	0.145	4.02		100	0.00	4.02
February			0.00			0.00	0.00
March			0.00			0.00	0.00
April			0.00			0.00	0.00
May			0.00			0.00	0.00
June			0.00			0.00	0.00
July			0.00			0.00	0.00
August			0.00			0.00	0.00
Sept.			0.00			0.00	0.00
October			0.00			0.00	0.00
November			0.00			0.00	0.00
December			0.00			0.00	0.00
						0.00	4.02
						0.00	3.64

BENCHMARK ANALYTICS
A MICROBAC LABORATORY

Benchmark Analytics Sayre, A Microbac Laboratory

CERTIFICATE OF ANALYSIS

S5A0521

Project Name: Sludge Drying Bed #3-Dec. 2014

Owego, Town of Utilities
Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project / PO Number: N/A
Received: 01/07/2015 17:00
Reported: 01/12/2015 16:56

Analytical Testing Parameters

Client Sample ID: Sludge Bed #3-Dec. 2014
Lab Sample ID: S5A0521-01
Sample Type: Composite

Collection Date: 01/05/15
Collection Time: 14:00
Collected By: TS

Benchmark Analytics Sayre, A Microbac Laboratory

Inorganics

	Result	MCL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SM2540 G-1997								
Percent Solids	14.5			% by Weight		01/08/15 1730	01/09/15 1350	ICC

Definitions

MCL: Maximum Contamination Level
PQL: Practical Quantitation Limit

Cooler Receipt Log:

Cooler ID: Default Cooler
Cooler Temp: 5.40 °C
COC/Labels Agree: Yes
Containers Intact: Yes

Received On Ice (or not required): Yes
Preservation Correct (or not required): Yes
Custody Seals Intact and/or No Evidence of Tampering: Yes

MICROBAC

Benchmark Analytics Sayre, A Microbac Laboratory

CERTIFICATE OF ANALYSIS

S5C1371

Dickson Environmental Services, Inc.

Phil Dickson
5226 Bonny Hill Rd
Bath, NY 14810

Project Name: Town of Owego Utilities/S-1 Drying Bed #2
Project / PO Number: N/A
Received: 03/18/2015 18:35
Reported: 03/31/2015 11:28

Analytical Testing Parameters

Client Sample ID: S-1 Drying Bed #2
Lab Sample ID: S5C1371-01
Sample Type: Composite

Collected By: Tyson Stiles
Collection Date: 03/18/15
Collection Time: 10:00

Benchmark Analytics Sayre, A Microbac Laboratory

General Paramaters

	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C								
pH	6.98		0.0100	pH Units	Y	03/23/15 1023	03/23/15 1023	SRS
Method: SM4500 H+ B-2000								
Temperature	18.7			°C	Y	03/23/15 1023	03/23/15 1023	SRS

Inorganics

	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 350.1, Rv 2								
Ammonia as N	6860		77.0	mg/kg dry	Y	03/26/15 1216	03/26/15 1556	KAL
Method: EPA 351.2, Rv 2								
Total Kjeldahl Nitrogen (TKN)	58700		77.0	mg/kg dry	D,Y	03/26/15 1134	03/30/15 1626	KED
Method: EPA 365.3, Rv 1978								
Phosphorus - Total as P	13300		462	mg/kg dry	D,Y	03/23/15 0901	03/24/15 1157	JPP
Method: SM2540 G-1997								
Percent Solids	13.0			% by Weight	Y	03/24/15 1745	03/25/15 1000	ICC
Total Volatile Solids - TVS	82.9		0.100	%	Y	03/24/15 1700	03/25/15 1700	ICC
Method: SM4500-NO3 F-2000								
Nitrate as N	<38.5		38.5	mg/kg dry		03/24/15 1216	03/24/15 1310	SXG
Nitrate-Nitrite as N	<38.5		38.5	mg/kg dry	Y	03/24/15 1000	03/24/15 1310	SXG
Nitrite as N	<19.3		19.3	mg/kg dry	Y	03/24/15 1216	03/24/15 1218	SXG

Microbac Laboratories, Inc. - Ohio Valley

Mercury

	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B								
Mercury, Total	0.261	0.0805	2.01	mg/kg DRY	J	03/23/15 0818	03/24/15 1002	PDM

Metals by 6010

	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C								
Arsenic, Total	<2.77	2.77	5.54	mg/kg DRY	U	03/24/15 0804	03/25/15 1132	PDM
Cadmium, Total	0.466	0.277	0.554	mg/kg DRY	J	03/24/15 0804	03/25/15 1132	PDM
Chromium, Total	21.9	0.693	1.39	mg/kg DRY		03/24/15 0804	03/25/15 1132	PDM

MICROBAC

Benchmark Analytics Sayre, A Microbac Laboratory

CERTIFICATE OF ANALYSIS

S5C1371

Analytical Testing Parameters

Client Sample ID:	S-1 Drying Bed #2	**Collected By:**	Tyson Stiles
Lab Sample ID:	S5C1371-01	**Collection Date:**	03/18/15
Sample Type:	Composite	**Collection Time:**	10:00

Metals by 6010

	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Copper, Total	1370	2.77	5.54	mg/kg DRY		03/24/15 0804	03/25/15 1132	PDM
Lead, Total	44.2	2.77	5.54	mg/kg DRY		03/24/15 0804	03/25/15 1132	PDM
Molybdenum, Total	19.8	8.31	16.6	mg/kg DRY		03/24/15 0804	03/25/15 1132	PDM
Nickel, Total	41.9	5.54	11.1	mg/kg DRY		03/24/15 0804	03/25/15 1132	PDM
Potassium, Total	4540	139	277	mg/kg DRY		03/24/15 0804	03/25/15 1132	PDM
Selenium, Total	4.90	2.77	5.54	mg/kg DRY	J	03/24/15 0804	03/26/15 1132	JYH
Zinc, Total	209	2.77	5.54	mg/kg DRY		03/24/15 0804	03/25/15 1132	PDM

Percent Solids

	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216								
Percent Solids	12.3	1.00	1.00	weight %			03/25/15 0730	JJS

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5F0279

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: 360/503 Analysis

Project / PO Number: N/A
Received: 06/01/2015 15:40
Reported: 06/15/2015 12:34

Analytical Testing Parameters

Client Sample ID: Drying Bed #1
Lab Sample ID: S5F0279-01
Sample Type: Composite

Collected By: TS
Collection Date: 06/01/15
Collection Time: 11:00

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9045C							
pH	7.09	0.0100	pH Units		06/04/15 1340	06/04/15 1340	NSF
Method: SM4500 H+ B-2000							
Temperature	22.5		°C		06/04/15 1340	06/04/15 1340	NSF

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 350.1, Rv 2							
Ammonia as N	2960	69.9	mg/kg dry		06/02/15 1432	06/02/15 1820	KED
Method: EPA 351.2, Rv 2							
Total Kjeldahl Nitrogen (TKN)	3450	699	mg/kg dry		06/04/15 1544	06/08/15 1345	KAL
Method: EPA 365.3, Rv 1978							
Phosphorus - Total as P	9870	1090	mg/kg dry		06/10/15 1720	06/11/15 0930	SRS
Method: SM2540 G-1997							
Percent Solids	14.3		% by Weight		06/03/15 1700	06/04/15 0920	ICC
Total Volatile Solids (TVS)	79.5	0.100	%		06/03/15 1700	06/04/15 1720	ICC
Method: SM4500-NO3 F-2000							
Nitrate as N (calc)	<34.9	34.9	mg/kg dry		06/02/15 1609	06/02/15 1643	SXG
Nitrate-Nitrite as N	<34.9	34.9	mg/kg dry		06/02/15 1609	06/02/15 1643	SXG
Nitrite as N	<17.5	17.5	mg/kg dry		06/02/15 1609	06/02/15 1609	SXG

Microbac Laboratories, Inc. - Ohio Valley

Mercury	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW7471B							
Mercury, Total	<1.80	1.80	mg/kg DRY	J	06/09/15 0958	06/10/15 0947	PDM

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: SW6010C							
Arsenic, Total	<5.54	5.54	mg/kg DRY	J	06/03/15 1631	06/09/15 1345	PDM
Beryllium, Total	<0.554	0.554	mg/kg DRY		06/03/15 1631	06/09/15 1345	PDM
Cadmium, Total	<0.554	0.554	mg/kg DRY	J	06/03/15 1631	06/09/15 1345	PDM
Chromium, Total	31.3	1.39	mg/kg DRY		06/03/15 1631	06/09/15 1345	PDM
Copper, Total	1900	5.54	mg/kg DRY		06/03/15 1631	06/09/15 1345	PDM
Lead, Total	51.2	5.54	mg/kg DRY		06/03/15 1631	06/09/15 1345	PDM
Molybdenum, Total	20.1	16.6	mg/kg DRY		06/03/15 1631	06/09/15 1345	PDM
Nickel, Total	87.9	11.1	mg/kg DRY		06/03/15 1631	06/09/15 1345	PDM
Potassium, Total	4140	277	mg/kg DRY		06/03/15 1631	06/09/15 1345	PDM
Selenium, Total	7.42	5.54	mg/kg DRY		06/03/15 1631	06/09/15 1345	PDM
Zinc, Total	218	5.54	mg/kg DRY		06/03/15 1631	06/09/15 1345	PDM

MICROBAC

Microbac Laboratories Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5F0279

Analytical Testing Parameters

Client Sample ID:	Drying Bed #1	**Collected By:**	TS
Lab Sample ID:	S5F0279-01	**Collection Date:**	06/01/15
Sample Type:	Composite	**Collection Time:**	11:00

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Analyst
Method: D2216							
Percent Solids	13.8	1.00	weight %			06/04/15 0750	ERP

Definitions

J:	The analyte was positively identified, but the quantitation was below the RL
MDL:	Minimum Detection Limit
PQL:	Practical Quantitation Limit

Cooler Receipt Log:

Cooler ID:	Default Cooler		
Cooler Temp:	4.7 °C	Received On Ice (or not required):	Yes
COC/Labels Agree:	Yes	Preservation Correct (or not required):	Yes
Containers Intact:	Yes	Custody Seals Intact and/or No Evidence of Tampering	Yes

Project Requested Certification(s):

Microbac Laboratories, Inc. - Ohio Valley	
VA ID: 460187, Cert: 6338	Virginia
DEP ID: 68-01670, Cert No.: 010	State of Pennsylvania (NELAC)
NY Lab ID No.: 10861, Serial No.: 50398	New York State Department of Health

Report Comments:

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Tracy Cole
Department Manager
06/15/2015 12:34

Go Green: Contact Tracy Cole to set up email reporting and invoicing options.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included.

For any feedback concerning our services, please contact Tracy Cole listed above at Tracy.Cole@microbac.com or 570-888-0169. You may also contact Trevor Boyce President, at president@microbac.com.

MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5I1256

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: 360/503 Analysis

Project / PO Number: N/A
Received: 09/16/2015 15:40
Reported: 10/28/2015 17:00

Analytical Testing Parameters

Client Sample ID:	Drying Bed #1	**Collected By:**	TS
Lab Sample ID:	S5I1256-01	**Collection Date:**	09/16/15
Sample Type:	Composite	**Collection Time:**	10:00

General Parameters	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: EPA 9045C							
pH	7.76	0.0100	pH Units	H1,Y	09/24/15 1723	09/24/15 1725	SAY
Method: SM4500 H+ B-2000							
Temperature	21.3		°C	H1,Y	09/24/15 1723	09/24/15 1725	SAY

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: EPA 350.1, Rv 2							
Ammonia as N	5560	77.9	mg/kg dry	Q3, R1,Y	09/18/15 1223	09/18/15 1808	SAY
Method: EPA 351.2, Rv 2							
Total Kjeldahl Nitrogen (TKN)	14600	7790	mg/kg dry	Y	09/21/15 1855	09/22/15 1438	SAY
Method: EPA 365.3, Rv 1978							
Phosphorus - Total as P	9310	812	mg/kg dry	Y	09/21/15 1615	09/22/15 0730	SAY
Method: SM2540 G-1997							
Percent Solids	12.8		% by Weight	Y	09/23/15 0932	09/24/15 1453	SAY
Total Volatile Solids (TVS)	75.4	0.100	%	Y	09/24/15 1602	09/24/15 1655	SAY
Method: SM4500-NO3 F-2000							
Nitrate as N (calc)	566	39.0	mg/kg dry		10/27/15 1705	10/27/15 1231	
Nitrate-Nitrite as N	566	39.0	mg/kg dry	H,Y	10/22/15 1200	10/26/15 1539	SAY
Nitrite as N	<19.5	19.5	mg/kg dry	H,Y	10/27/15 1705	10/27/15 1231	SAY

MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5I1256

Analytical Testing Parameters

Client Sample ID:	Drying Bed #1	**Collected By:**	TS
Lab Sample ID:	S5I1256-01	**Collection Date:**	09/15/15
Sample Type:	Composite	**Collection Time:**	10:00

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C							
Arsenic, Total	<5.59	5.59	mg/kg DRY		09/21/15 1315	09/22/15 1306	
Cadmium, Total	<0.559	0.559	mg/kg DRY		09/21/15 1315	09/22/15 1306	
Chromium, Total	42.8	1.40	mg/kg DRY		09/21/15 1315	09/22/15 1306	
Copper, Total	2670	5.59	mg/kg DRY		09/21/15 1315	09/22/15 1306	
Lead, Total	81.3	5.59	mg/kg DRY		09/21/15 1315	09/22/15 1306	
Molybdenum, Total	<27.9	27.9	mg/kg DRY		09/21/15 1315	09/22/15 1306	
Nickel, Total	72.4	11.2	mg/kg DRY		09/21/15 1315	09/22/15 1306	
Potassium, Total	3290	279	mg/kg DRY		09/21/15 1315	09/22/15 1306	
Selenium, Total	6.58	5.59	mg/kg DRY		09/21/15 1315	09/22/15 1306	
Zinc, Total	216	5.59	mg/kg DRY		09/21/15 1315	09/22/15 1306	

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216							
Percent Solids	12.5	1.00	weight %			09/23/15 0830	

Laboratory

SAY: Microbac Laboratories Inc., - Sayre

Definitions

H:	Sample was analyzed past holding time.
H1:	Sample was received past holding time.
MDL:	Minimum Detection Limit
PQL:	Practical Quantitation Limit
Q3:	LCS recovery is below acceptance limits. The reported value is estimated.
R1:	Duplicate RPD is outside acceptance criteria.
RPD:	Relative Percent Difference
Y:	This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 2.2°C

Cooler Inspection Checklist

Custody Seals Intact and/or No Evidence of Tampering	Yes	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Correct (or not required)	Yes
Received on Ice (or not required)	Yes		

MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5L0284

Town of Owego Utilities

Tyson Stiles
1319 Main Street
Apalachin, NY 13732

Project Name: 360/503 Analysis

Project / PO Number: N/A
Received: 12/02/2015 15:30
Reported: 12/22/2015 16:52

Analytical Testing Parameters

Client Sample ID:	Drying Bed #2	**Collected By:**	TS
Lab Sample ID:	S5L0284-01	**Collection Date:**	12/02/15
Sample Type:	Composite	**Collection Time:**	10:30

General Paramaters	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: EPA 9045C							
pH	6.25	0.0100	pH Units	Y	12/07/15 1524	12/07/15 1524	SAY
Method: SM4500 H+ B-2000							
Temperature	18.4		°C	Y	12/07/15 1524	12/07/15 1524	SAY

Inorganics	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: EPA 350.1, Rv 2							
Ammonia as N	174	75.9	mg/kg dry	R1,Y	12/08/15 1435	12/08/15 1502	SAY
Method: EPA 351.2, Rv 2							
Total Kjeldahl Nitrogen (TKN)	1560	7.59	mg/kg dry	M2, R1,Y	12/04/15 1330	12/08/15 1236	SAY
Method: EPA 365.3, Rv 1978							
Phosphorus - Total as P	5820	474	mg/kg dry	Y	12/12/15 0926	12/14/15 1205	SAY
Method: SM2540 G-1997							
Percent Solids	13.2		% by Weight	Y	12/08/15 1640	12/09/15 0800	SAY
Total Volatile Solids (TVS)	81.1	0.100	%	Y	12/09/15 1115	12/09/15 1530	SAY
Method: SM4500-NO3 F-2000							
Nitrate as N (calc)	<37.9	37.9	mg/kg dry		12/08/15 1648	12/09/15 1337	
Nitrate-Nitrite as N	<37.9	37.9	mg/kg dry	Y	12/08/15 1300	12/09/15 1337	SAY
Nitrite as N	<19.0	19.0	mg/kg dry	Y	12/08/15 1548	12/08/15 1548	SAY

MICROBAC

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5L0284

Analytical Testing Parameters

Client Sample ID:	Drying Bed #2	**Collected By:**	TS
Lab Sample ID:	S5L0284-01	**Collection Date:**	12/02/15
Sample Type:	Composite	**Collection Time:**	10:30

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

Metals by 6010	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C							
Arsenic, Total	<5.91	5.91	mg/kg DRY		12/09/15 1231	12/09/15 1659	
Cadmium, Total	<0.591	0.591	mg/kg DRY	J	12/09/15 1231	12/09/15 1659	
Chromium, Total	31.2	1.48	mg/kg DRY		12/09/15 1231	12/09/15 1659	
Copper, Total	2080	5.91	mg/kg DRY		12/09/15 1231	12/09/15 1659	
Lead, Total	83.7	5.91	mg/kg DRY		12/09/15 1231	12/09/15 1659	
Molybdenum, Total	<29.5	29.5	mg/kg DRY	J	12/09/15 1231	12/15/15 1034	
Nickel, Total	44.1	11.8	mg/kg DRY		12/09/15 1231	12/09/15 1659	
Potassium, Total	3870	295	mg/kg DRY		12/09/15 1231	12/09/15 1659	
Selenium, Total	<5.91	5.91	mg/kg DRY	J	12/09/15 1231	12/09/15 1659	
Zinc, Total	203	5.91	mg/kg DRY		12/09/15 1231	12/09/15 1659	

Percent Solids	Result	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216							
Percent Solids	12.5	1.00	weight %			12/10/15 0759	

Laboratory

SAY: Microbac Laboratories Inc., Sayre

Definitions

J:	The analyte was positively identified, but the quantitation was below the RL
M2:	Matrix spike recovery is below acceptance limits.
MDL:	Minimum Detection Limit
PQL:	Practical Quantitation Limit
R1:	Duplicate RPD is outside acceptance criteria.
Y:	This analyte is not on the laboratory's current Scope of Accreditation.

Cooler Receipt Log

Cooler ID: Default Cooler **Temp:** 5.3°C

Cooler Inspection Checklist

Custody Seals Intact and/or No Evidence of Tampering	Yes	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Correct (or not required)	Yes
Received on Ice (or not required)	Yes		

Dickson's Environmental Services, Inc.
5226 Bonny Hill Road
Bath, NY 14810

Phone: 607-776-7997
Fax: 607-776-4217

Invoice

Date 1/8/2015

Invoice # 97030

Bill To

Town of Owego
1319 Main Street
Apalachin, NY 13732

P.O. No.	Term	Due Date
	Net 30	2/7/2015

Serviced	Item	Quantity	Description	U/M	Rate	Work Or...	job code	Amount
1/5/2015	Owego-Fa...	21.5	Owego to Farm		48.00		Ton	1,032.00
	Owego-Fa...	20.95	Owego to Farm		48.00		Ton	1,005.60
	Owego-Fa...	21	Owego to Farm		48.00		Ton	1,008.00
	Owego-Fa...	21.9	Owego to Farm		48.00		Ton	1,051.20
	Owego-Fa...	20.76	Owego to Farm		48.00		Ton	996.48
1/6/2015	Owego-Fa...	21.85	Owego to Farm		48.00		Ton	1,048.80
	Owego-Fa...	23.66	Owego to Farm		48.00		Ton	1,135.68
1/31/2015	Fuel Surc...	7	Fuel Surcharge		34.23			239.61

Total $7,517.37

Dickson's Environmental Services, Inc.
5226 Bonny Hill Road
Bath, NY 14810

Phone: 607-776-7997
Fax: 607-776-4217

Invoice

Date 4/1/2015

Invoice # 10074

Bill To

Town of Owego
1319 Main Street
Apalachin, NY 13732

P.O. No.	Term	Due Date
	Net 30	5/1/2015

Serviced	Item	Quantity	Description	U/M	Rate	Work Or...	job code	Amount
3/31/2015	Owego-Fa...	15.83	Owego to Farm		48.00		Ton	759.84
	Owego-Fa...	13.83	Owego to Farm		48.00		Ton	663.84
	Owego-Fa...	15.06	Owego to Farm		48.00		Ton	722.88
	Owego-Fa...	17.18	Owego to Farm		48.00		Ton	824.64
3/31/2015	Fuel Surc...	4	Fuel Surcharge		34.23			136.92

Total $3,108.12

Dickson's Environmental Services, Inc.
5226 Bonny Hill Road
Bath, NY 14810

Phone: 607-776-7997
Fax: 607-776-4217

Invoice

Date 5/1/2015

Invoice # 97119

Bill To

Town of Owego
1319 Main Street
Apalachin, NY 13732

P.O. No.	Term	Due Date
	Net 30	5/31/2015

Serviced	Item	Quantity	Description	U/M	Rate	Work Or...	Job code	Amount
4/1/2015	Owego-Fa...	13.93	Owego to Farm		48.00		Ton	668.64
	Fuel Surc...	1	Fuel Surcharge		34.23			34.23

Total $702.87

Dickson's Environmental Services, Inc.
5226 Bonny Hill Road
Bath, NY 14810

Phone: 607-776-7997
Fax: 607-776-4217

Invoice

Date 7/1/2015

Invoice # 1469

Bill To

Town of Owego
1319 Main Street
Apalachin, NY 13732

P.O. No.	Term	Due Date
	Net 30	7/31/2015

Serviced	Item	Quantity	Description	U/M	Rate	Work Or...	job code	Amount
6/30/2015	Owego-Fa...	24	Owe to Farm		48.00		Ton	1,152.00
	Owego-Fa...	22	Owego to Farm		48.00		Ton	1,056.00
6/30/2015	Owego-Fa...	20.02	Owego to Farm		48.00		Ton	960.96
	Owego-Fa...	24	Owego to Farm		48.00		Ton	1,152.00
	Owego-Fa...	23	Owego to Farm		48.00		Ton	1,104.00

Total $5,424.96

Dickson's Environmental Services, Inc.
5226 Bonny Hill Road
Bath, NY 14810

Phone: 607-776-7997
Fax: 607-776-4217

Invoice

Date 11/1/2015

Invoice # 1617

Bill To

Town of Owego
1319 Main Street
Apalachin, NY 13732

P.O. No.	Term	Due Date
	Net 30	12/1/2015

Serviced	Item	Quantity	Description	U/M	Rate	Work Or...	Job code	Amount
10/5/2015	Owego To...	23.42		ton	75.15			1,760.01
10/5/2015	Owego To...	23.37		ton	75.15			1,756.26
	Owego To...	20.72		ton	75.15			1,557.11
10/6/2015	Owego To...	22.31		ton	75.15			1,676.60
10/31/2015	Fuel Surc...	4	Fuel Surcharge		10.90			43.60
		89.82						

Total $6,793.58