New York State Department of Environmental Conservation
Division of Materials Management
Albany, New York 12233-7253

2020

REGISTERED OR PERMITTED FACILITY ANNUAL REPORT

COMPOSTING

(DO NOT USE THIS FORM FOR BIOSOLIDS COMPOSTING)

6 NYCRR Part 361-3.2

This annual report is for the year of operation from January 01, 2020 to December 31, 2020

Annual Report Form Due: No Later than March 1, 2021

This form may be used for all composting facilities under section 361-3.2 of the Part 360 series except for biosolids composting. Biosolids composting requires the submission of a different annual report form. Forms for all solid waste management facilities can be found at http://www.dec.ny.gov/chemical/52706.html. If you have any questions on this form, please e-mail organicrecycling@dec.ny.gov.

Failure to provide the required information requested is a violation of Environmental Conservation Law. Timely submission of a properly completed form to the Department's Regional Office that has jurisdiction over your facility and to the Department's Central Office is required to meet the Annual Report requirements of 6 NYCRR Part 360 series.

Attach additional sheets if space on the pages is insufficient or supplementary information is required or appropriate.

FACILITY NAME: NOCO Enterprises LLC, dba as Buffalo River Compost

SW FACILITY ACTIVITY NUMBER(S): (Ex. 02P20099) 15P10021 / 15P20021

COUNTY WHERE FACILITY IS LOCATED: Erie County

DEC USE ONLY

Region: SWIMS:

MATRIX:

Date Reviewed:

Reviewed By:

Data Entered:

COMPOST FACILITY ANNUAL REPORT

SECTION 1 – FACILITY INFORMATION

FACILITY INFORMATION			
FACILITY NAME: Buffalo River Compost			
FACILITY LOCATION ADDRESS: 47 Ensign St.	**FACILITY CITY:** Buffalo	**STATE:** NY	**ZIP CODE:** 14210
FACILITY TOWN: Buffalo	**FACILITY COUNTY:** Erie	**FACILITY PHONE NUMBER:** 716-510-4618	
NYSDEC REGION #: Region 9			
FACILITY CONTACT: Brian Murphy	**CONTACT PHONE NUMBER:** Cell: 716-510-4618		
CONTACT EMAIL ADDRESS: bmurphy@noco.com			

OWNER INFORMATION			
OWNER NAME: NOCO Enterprises LLC	**OWNER PHONE NUMBER:** Office: 716-833-6626 / Cell: 716-510-4618		
OWNER ADDRESS: 2440 Sheridan Drive	**OWNER CITY:** Tonawanda	**STATE:** NY	**ZIP CODE:** 14150
OWNER CONTACT: Brian Murphy	**OWNER CONTACT EMAIL ADDRESS:** bmurphy@noco.com		

OPERATOR INFORMATION

OPERATOR NAME:

☑ *Same as owner*

PREFERENCES

Preferred address to receive correspondence: ○ *Facility location address* ◉ *Owner address* ○ *Other (provide):*

Preferred email address: ○ *Facility Contact* ◉ *Owner Contact* ○ *Other (provide):*

Preferred individual to receive correspondence: ○ *Facility Contact* ○ *Owner* ◉ *Owner Contact* ○ *Other (provide):*

Did you operate in 2020? ◉ **Yes; Complete this form.**

○ **No; Complete and submit Sections 1, 12 and 13.** If you no longer plan to operate and wish to relinquish your permit/registration associated with this solid waste management activity, please notify the regional office of your intent. See attachment for Regional Office addresses and contacts.

SECTION 2 – QUANTITY OF MATERIAL RECEIVED

Please report quantities received from January 01, 2020 to December 31, 2020

	Inputs	Quantity	Unit	Source(s)
YARD WASTE	Leaves only	50	Cubic Yards	FGI Landscaping
	Grass Clippings		Choose Units	
	Mixture of Grass and Leaves	50	Cubic Yards	FGI Landscaping
	Brush (Small branches and limbs, <4 inch diameter)	2000	Cubic Yards	Multiple Sources
SSO	Source Separated Organics (Food scraps, soiled paper products, etc.)	450	Tons	Natural Upcycling
	Food Processing Waste (brewery grains, grape pomace, etc.)	50	Cubic Yards	Local Buffalo Breweries
OTHER	Crop Residues (Corn stalks, etc.)		Choose Units	
	Manure (including bedding)	200	Cubic Yards	Buffalo City Zoo
	Sawdust/Shavings		Choose Units	
	Animal Carcasses (road-kill, animal mortalities)		Choose Units	
	Paper Mill Residuals		Choose Units	
	Digestate		Choose Units	
	Other: _____		Choose Units	
BULKING AGENT	Woodchips	1000	Cubic Yards	Asplund & ETS
	Sawdust		Choose Units	
	Other: _____		Choose Units	

SECTION 3 – COMPOST PRODUCTION

WHAT IS THE PROCESS DETENTION TIME? ***Note: Total time material is processed, not including storage time***	Generally 30 to 60 **days**
COMPOST PRODUCED DURING THE YEAR:	Approx. 4,018 Cubic Yards
COMPOST DISTRIBUTED DURING THE YEAR:	Approx. 4,018 Cubic Yards
QUANTITY CURRENTLY STOCKPILED: ***Note: Finished product stockpiled***	Approx. 1,600 Cubic Yards
AGE OF OLDEST PRODUCT ON SITE:	3 to 6 **months**

SECTION 4 – COMPOST DISTRIBUTION

Quantity Distributed Cubic Yards	Use of Compost (landscaping, agriculture, highway, onsite, bagged, etc.)
Approximately 4,018	Landscaping - Bulk Sales

If **PERMITTED SSO** composting facility, continue to Section #5
SSO – Source Separated Organics

ALL OTHER COMPOSTING FACILITIES, continue to Section #9

SECTION 5 – PATHOGEN AND VECTOR ATTRACTION REDUCTION

For permitted SSO composting facilities only. Check one method for each:

Pathogen Reduction 361-3.7(a)

- (●) Windrow Composting
- ( ) Aerated Static Pile Composting
- ( ) In-vessel Composting
- ( ) Other (specify): _____

Vector Attraction Reduction 361-3.7(b)

- ( ) 38 % Volatile Solids Reduction
- ( ) SOUR
- (●) Aerobic Process 14 days, ≥40C, ≥45 C avg.

IMPORTANT NOTE!

Attach operating and monitoring data to show compliance with methods chosen. Temperature data records should indicate when a pile was created, pile was moved, additional material was added and/or pile was turned.

SECTION 6 – FINISHED COMPOST ANALYSIS

For permitted SSOW composting facilities only. Please attach sampling analyses and laboratory reports as required under Part 360 or your permit. Copies of original laboratory results must be attached. All results, except pH and Total Solids, must be on a dry weight basis. See 361-3.9 Table 6 for pollutant limits and Table 5 for annual product testing frequency 361-3.9 Table 5.

Summarize data in table below or attached document. Print additional pages as needed.

Analysis Date =====>	See	Att.	Labs		Max. Conc. (mg/kg)
Arsenic (mg/kg)					41
Cadmium (mg/kg)					10
Chromium (mg/kg)					1,000
Copper (mg/kg)					1,500
Lead (mg/kg)					300
Mercury (mg/kg)					10
Molybdenum (mg/kg)					40
Nickel (mg/kg)					200
Selenium (mg/kg)					100
Zinc (mg/kg)					2,500
TKN (mg/kg)					
Ammonia Nitrogen (mg/kg)					
Nitrate (mg/kg)					
Total Phosphorus (mg/kg)					
Total Potassium (mg/kg)					
pH (s.u.)					
Total Solids(%)					
Total Volatile Solids (%)					
Fecal Coliform (MPN/g)					<1,000 MPN/g
Salmonella (MPN/4g)					<3MPN/4g
Other_____					

SECTION 7 –SAMPLE MANAGEMENT PLAN

For permitted SSO composting facilities only. Describe the number, frequency and location of samples taken.

Include a diagram showing all sampling locations.

Samples of finished compost are collected once matured, as required by the end-user. Multiple grab samples are collected throughout the windrow and composited to ensure the sample is representative of the whole pile.

SECTION 8 – ATTACHMENTS (IF REQUIRED)

Permitted SSO composting facilities, please attach:

- Temperature monitoring and detention time data.
- Sample analyses laboratory reports.
- Any additional reporting requirements.

Do you have a variance to the Part 360 permit requirements? ◯ Yes ◉ No

If yes, please describe:

SECTION 9 – UNAUTHORIZED WASTE

Has unauthorized solid waste been received at the composting facility during the reporting period?

◯ Yes ◉ No

If yes, give information below for each incident (attach additional sheets if necessary):

SECTION 10 – PROBLEMS/COMPLAINTS

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

No problems or complaints recorded.

SECTION 11 – QUESTIONS

Please identify any questions or concerns that you would like the Department to answer or consider:

SECTION 12 – FOOD DONATION & FOOD SCRAPS RECYCLING LAW

If you are registered or permitted to compost food scraps please complete the following. **For all other operations that are interested in processing food scraps, please contact your DEC regional office to determine what is required.**

In 2019, New York State passed the Food Donation & Food Scraps Recycling law. Effective January 1, 2022, large generators of food scraps (defined as generating an annual average of two tons per week or more) must donate excess food and recycle all remaining food scraps if they are within 25 miles of an organics recycler (composting facility, anaerobic digester, etc.). Examples of large generators include: large restaurants, grocery stores, hotels, colleges, etc. For more information visit: https://www.dec.ny.gov/chemical/114499.html

Contact Information

Under this legislation, DEC is responsible for providing a list of organics recyclers (compost facilities, anaerobic digesters, etc.) to large generators so they can determine available food scraps recycling opportunities in their area.

You will be included in this listing if you hold a permit or registration for the composting of source separated organics or food scraps. This will educate both large generators and haulers of food scraps that you are an available composter in their area.

Please provide the following information to include in the listing.

Name of Business: Buffalo River Compost

Business Phone Number: 716-510-4618

Business Email: bmurphy@noco.com

Business Website: www.noco.com

☐ I would like to opt out of DEC listing my facility as an available food scraps recycler for large generators as it relates to the Food Donation and Food Scraps Recycling law.

Assessing Your Food Scraps Recycling Capacity

DEC is responsible for assessing available food scraps recycling capacity across New York State. Information from your operation will help us do this. Please complete the following section to calculate the amount of excess food scraps your operation will have the capability to process in **2022.** Please stay consistent with units (wet tons or cubic yards).

A. Amount of foods scraps projected to be processed in **2021**: 400 - 600 Tons

B. Amount of foods scraps projected to be processed in **2022**: 400 - 600 Tons

* Note: You will not be required to process this quantity of material, these estimates will only be used to assist DEC in capacity planning across the state in preparation for the Food Donation and Food Scraps Recycling law effective January 1, 2022.

Questions?

DEC USE ONLY

Excess Capacity:

SECTION 13 - CERTIFICATION

The Owner or Operator must sign, date and submit one completed form with an original signature to the appropriate Regional Office (See attachment for Regional Office addresses and Contacts.)

The Owner or Operator must also submit one copy by email, fax or mail to:

NYS Department of Environmental Conservation
Bureau of Waste Reduction and Recycling – Annual Report
625 Broadway – 9th Floor
Albany, New York 12233-7253

Phone: 518-402-8706
Fax 518-402-9024
Email address: organicrecycling@dec.ny.gov

I certify, under penalty of law, that the information that will be used to determine compliance with the requirements in Subpart 361-3 of 6 NYCRR Part 361 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 false statement made herein are punishable pursuant to section 210.45 of the penal law.

Signature	02/10/2021 Date
Brian D. Murphy Name (Print)	General Manager Title (Print)
bmurphy@noco.com Email (Print)	
2440 Sheridan Drive Address	Tonawanda City
New York 14150 State and Zip	(716) 510-4618 Phone Number

ATTACHMENTS: ○NO ◉YES (IF YES, LIST ATTACHMENTS)

- Temperature Monitoring Data
- Lab Reports
- _____

New York State Department of Environmental Conservation
Division of Materials Management
Bureau of Waste Reduction and Recycling

MATERIAL MANAGEMENT PROGRAM CONTACTS

CENTRAL OFFICE
Bureau of Waste Reduction and Recycling
625 Broadway
Albany, NY 12233-7253
Phone: (518) 402-8706

For Submission of Organics Recycling Annual Reports only:
Fax: (518) 402-9024
Email: organicrecycling@dec.ny.gov

REGIONAL OFFICE ADDRESS & LEAD CONTACT PERSON

REGION 1 (Nassau, Suffolk)
Syed Rahman/David Gibb
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790
Phone: (631) 444-0375
SWMFannualreportR1@dec.ny.gov

REGION 2 (Bronx, Kings, New York, Queens, Richmond)
Joseph O'Connell
47-40 21st Street
Long Island City, NY 11101-5407
Phone: (718) 482-4896
SWMFannualreportR2@dec.ny.gov

REGION 3 (Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester)
James Lansing
21 South Putt Corners Road
New Paltz, NY 12561
Phone: (845) 256-3123
SWMFannualreportR3@dec.ny.gov

REGION 4 (Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady, Schoharie)
Victoria Schmitt
1130 North Westcott Road
Schenectady, NY 12306
Phone: (518) 357-2243
SWMFannualreportR4@dec.ny.gov

REGION 5 (Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren, Washington)
Jessie Sangster
1115 State Route 86, PO Box 296
Ray Brook, NY 12977
Phone: (518) 897-1266
SWMFannualreportR5@dec.ny.gov

REGION 6 (Herkimer, Jefferson, Lewis, Oneida, St. Lawrence)
Gary McCullouch
317 Washington Street
Watertown, NY 13601
Phone: (315) 785-2513
SWMFannualreportR6@dec.ny.gov

REGION 7 (Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga, Tompkins)
Thomas Annal
615 Erie Boulevard West
Syracuse, NY 13204
Phone: (315) 426-7419
SWMFannualreportR7@dec.ny.gov

REGION 8 (Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne, Yates)
Greg MacLean
6274 East Avon-Lima Road
Avon, NY 14414
Phone: (585) 226-5411
SWMFannualreportR8@dec.ny.gov

REGION 9 (Allegany, Cattaraugus, Chautauqua, Erie, Niagara, Wyoming)
Peter Grasso
270 Michigan Avenue
Buffalo, NY 14203
Phone: (716) 851-7220
SWMFannualreportR9@dec.ny.gov

September 2020

Spectrum Analytic
1087 Jamison Road NW
Washington Court House, OH 43160-8748
www.spectrumanalytic.com

SRO OF BUFFALO
214 FENTON
BUFFALO, NY 14206

Prepared For
BRC

Sample Information			
Sample	1	Sampled	04-24-2020
Description	COMPOST 1	Tested	04-24-2020
Sample Type	Greenhouse		
Lab Number	FF52896		

Certificate of Analysis

Analysis	Guarantee	Result	Method
Soil pH		8.3	
Organic Matter		17.01 %	
Soluble Salts		1.17 mmhos/cm	
Carbon to Nitrogen Ratio		12	
Carbon		9.87 %	3050B, 9060A
Screen 1/2 in		10.3 % retained	

Spectrum Analytic
1087 Jamison Road NW
Washington Court House, OH 43160-9748

www.spectrumanalytic.com

[redacted]

Prepared For
LAURIE FERRO

Sample Information			
Lab Number	FF53337	Sampled	06-24-2020
Sample	ZOO MANURE	Tested	06-25-2020
Manure Type	Unspecified, Liquid		

Certificate of Analysis
Manure

Analysis	Result	Unit	Nutrients lbs/1000 gal	Available 1st Yr [3] lbs/1000 gal	Nutrients lbs/acre-inch	Available 1st Yr [3] lbs/acre-inch
Organic Matter	22.66	%				
Moisture	48.71	%				
Nitrogen, Total	.64	%	55.7	- [2]	1440	- [2]
Phosphorus [P2O5], Total	.45	%	39.1	- [1]	1010	- [1]
Potassium [K2O]	.48	%	41.8	- [1]	1080	- [1]
Carbon to Nitrogen Ratio	21					
Iron	.75	%				
Carbon	13.14	%				
pH	8.3					
Soluble Salts	2.06	mmhos/cm				

(1) Estimates of 1st year nutrient availability are unavailable if manure type is not specified.
(2) Estimates of 1st year nutrient availability of "Total Nitrogen" are unavailable if no "Ammonium Nitrogen" test is run.
(3) Estimates of 1st year nutrient availability do not take into consideration losses in handling and storage prior to incorporation. Nutrient Management Plan guidelines use 100% availability the 1st year for phosphorus and potassium. Actual 1st year availability varies from 40-90% depending on manure type, soil temperature, moisture and other factors. When using manure credits in fertility programs other than NMP, consult state publications, MWP-18, "Livestock Waste Facilities Handbook" or Spectrum Analytic for more specific 1st year availability percentages.
(4) Source: MWP-18, "Livestock Waste Facilities Handbook"
(5) Source: A3411, "Manure Nutrient Credit Worksheet", University [illegible]

Spectrum Analytic
1087 Jamison Road NW
Washington Court House, OH 43160-9748
www.spectrumanalytic.com

BRC OF BUFFALO
234 FENTON
BUFFALO, NY 14206

Prepared For
BRC

Sample Information			
Sample	2	Sampled	04-24-2020
Description	COMPOST 2	Tested	04-24-2020
Sample Type	Greenhouse		
Lab Number	FF52897		

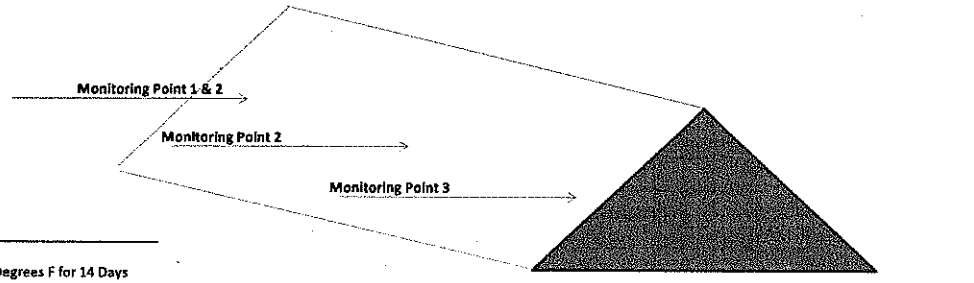
Certificate of Analysis

Analysis	Guarantee	Result	Method
Soil pH		8.2	
Organic Matter		31.22 %	
Soluble Salts		0.95 mmhos/cm	
Carbon to Nitrogen Ratio		21.6	
Carbon		18.11 %	3050B, 9060A
Screen 1/2 in		27.3 % retained	

Pile ID: 2020-1

Windrow Monitoring Data

Date Created: 10/15/2019



Turn Number	Date	Location
1	10/15/2019	
2	1/25/2020	
3	2/15/2020	
4	3/20/2020	
5	8/29/2020	Screened
6		
7		

Monitoirng Specifications

Turn According to Temperature
Min. Pile Temp for Vector Reduction: 104 Degrees F for 14 Days
Min. Temp for Pathogen Reduction 131 Degrees F for 15 Days
Too HOT - Open Up 180

Assumed Product Loss in Composting: 40%

Monitoring Point 1

consolidated

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	2/25/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/5/2020							
3' Temperature:	128	141	144	116	92	122	148	123	138	150	145	135	144							

Monitoring Point 2

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	2/25/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/5/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	144	143	145	122	133	153	148	134	146	151	150	132	144							

Monitoring Point 3

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	2/25/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/5/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	141	146	156	110	98	122	152	141	143	144	143	143	146							

Monitoring Point 4

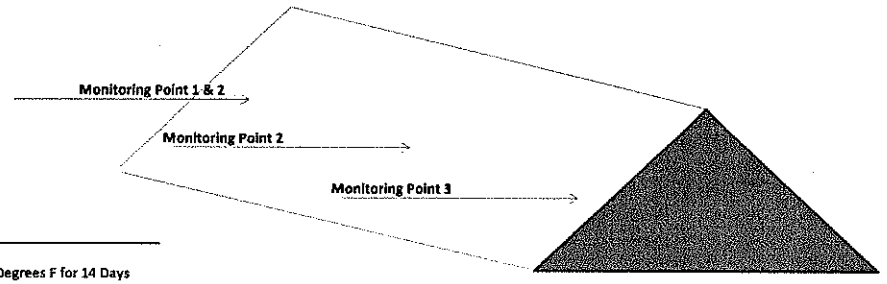
Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	2/25/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/5/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	143	149	139	110	121	131			140		135	144								

Notes:
1/6/2020 Stable - turn
1/28/2020 Turn
2/25/2020 Unstabler
4/20/2020 Good internal fungi growth throughout
8/5/2020 Good consistent temps - Finished

Pile ID: 2020-2

Windrow Monitoring Data

Date Created: 10/15/2019



Turn Number	Date	Location
1	10/15/2019	
2	1/25/2020	
3	3/2/2020	
4	4/23/2020	
5	8/29/2020	Screened
6		
7		

Monitoirng Specifications

Turn According to Temperature
Min. Pile Temp for Vector Reduction: 104 Degrees F for 14 Days
Min. Temp for Pathogen Reduction 131 Degrees F for 15 Days
Too HOT - Open Up 180

Assumed Product Loss in Composting: 40%

Monitoring Point 1 consolidated

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	2/25/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/5/2020							
3' Temperature:	130	143	133	144	144	122	148	143	159	145	155	144	150							

Monitoring Point 2

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	2/25/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/5/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	120	140	140	140	97	155	144	131	144	142	155	141	160							

Monitoring Point 3

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	2/25/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/5/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	122	144	134	121	140	133	153	150	142	142	155	150	156							

Monitoring Point 4

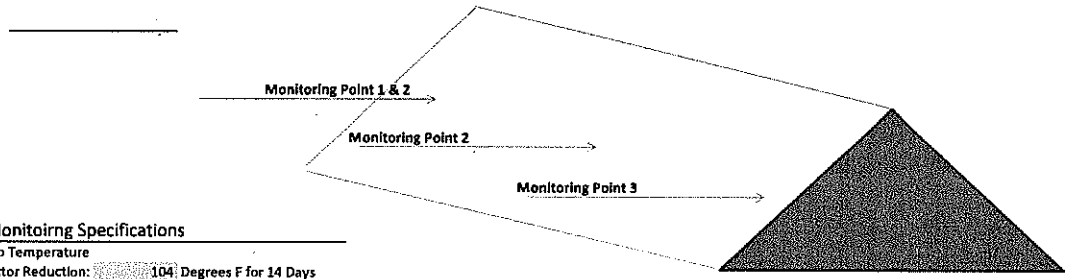
Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	2/25/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/5/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:		141	151	152	140	131			144	133	155		160							

Notes:
1/6/2020 Stable - turn
1/28/2020 Turn
2/25/2020 Unstable - Turn
6/25/2020 Have never seen all the same temps - very stable.
8/5/2020 looks good and decomposted - finished

Pile ID: 2020-3

Windrow Monitoring Data

Date Created: 10/15/2019



Turn Number	Date	Location
1	10/15/2019	
2	2/15/2020	
3	4/23/2020	
4	8/15/2020	
5	8/29/2020	Screened
6		
7		

Monitoirng Specifications

Turn According to Temperature
Min. Pile Temp for Vector Reduction: 104 Degrees F for 14 Days
Min. Temp for Pathogen Reduction 131 Degrees F for 15 Days
Too HOT - Open Up 180

Assumed Product Loss in Composting: 40%

Monitoring Point 1

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/19/2020	9/11/2020							
3' Temperature:	130	122	142	176	143	165	164	144	125	139	151	141	110							

Monitoring Point 2

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/19/2020	9/11/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	140	138	144	176	173	170	171	150	126	143	150	150	118							

Monitoring Point 3

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/19/2020	9/11/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	126	149	133	168	170	177	170	153	127	142	155	152	118							

Monitoring Point 4

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/19/2020	9/11/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	126	118	145	184	176	160			140	140	150	144	127							

Monitoring Point 5

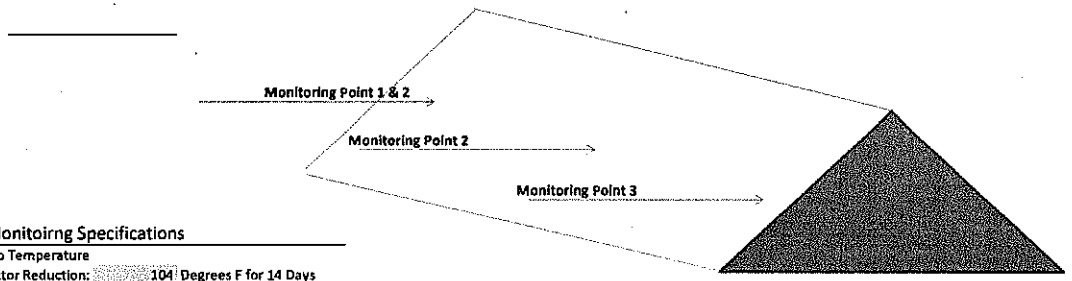
Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	6/25/2020	7/16/2020	8/19/2020	9/11/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:										144										

Notes:
1/6/2020 turn in 3 days
1/28/2020 turn - hot
3/9/2020 Hot!
4/20/2020 Homogenous - good mycelia and mushrooms
7/16/2020 Turn
8/19/2020 White cap fungi fruits - Good - finished
9/11/2020 Cured - Ready - Finished

Pile ID: 2020-4

Windrow Monitoring Data

Date Created: 10/15/2019



Turn Number	Date	Location
1	10/15/2019	
2	2/15/2020	
3	4/23/2020	
4	8/15/2020	
5	8/29/2020	Screened
6		
7		

Monitoirng Specifications

Turn According to Temperature
Min. Pile Temp for Vector Reduction: 104 Degrees F for 14 Days
Min. Temp for Pathogen Reduction 131 Degrees F for 15 Days
Too HOT - Open Up 180

Assumed Product Loss in Composting: 40%

Monitoring Point 1

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	2/25/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	7/16/2020	8/5/2020	8/19/2020							
3' Temperature:	114	162	171	164	151	120	150	148	148	132	141	158	138							

Monitoring Point 2

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	2/25/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	7/16/2020	8/5/2020	8/19/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	120	166	177	160	129	144	147	161	147	132	143	143	138							

Monitoring Point 3

Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	2/25/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	7/16/2020	8/5/2020	8/19/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	120	171	165	170	110	110	148	136	158	144	144	163	141							

Monitoring Point 4

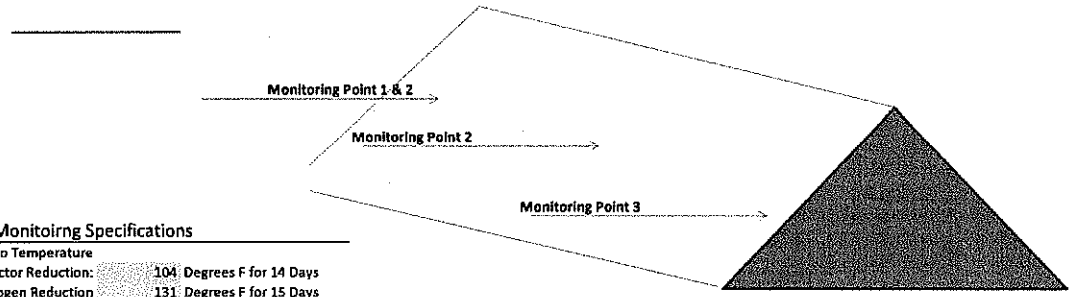
Date:	12/2/2019	1/6/2020	1/17/2020	1/28/2020	2/25/2020	3/9/2020	3/15/2020	3/25/2020	4/20/2020	5/18/2020	7/16/2020	8/5/2020	8/19/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	126	173	170	168	143	139					140		143							

Notes:
1/6/2020 Hot - Turn
1/17/2020 Turn in 4 days
1/28/2020 Turn
2/25/2020 Good odor. Some blue cap fungi
4/20/2020 Good mycelia and mushrooms
7/16/2020 Consistent
8/5/2020 Turn
8/19/2020 Good sign after turning and maturing - Finished

Pile ID: 2020-5

Windrow Monitoring Data

Date Created: 1/6/2020



Turn Number	Date	Location
1	4/23/2020	
2	8/15/2020	
3	8/29/2020	Screened
4		
5		

Monitoirng Specifications

Turn According to Temperature		
Min. Pile Temp for Vector Reduction:	104	Degrees F for 14 Days
Min. Temp for Pathogen Reduction	131	Degrees F for 15 Days
Too HOT - Open Up	180	

Monitoring Point 1

Date:	1/17/2020	1/28/2020	3/9/2020	3/15/2020	4/20/2020	5/18/2020	6/25/2020	8/19/2020	9/2/2020	9/11/2020										
3' Temperature:	161	127	158	124	162	144	133	157	130	132										

Monitoring Point 2

Date:	1/17/2020	1/28/2020	3/9/2020	3/15/2020	4/20/2020	5/18/2020	6/25/2020	8/19/2020	9/2/2020	9/11/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	155	133	83	121	159	154	134	159	131	134										

Monitoring Point 3

Date:	1/17/2020	1/28/2020	3/9/2020	3/15/2020	4/20/2020	5/18/2020	6/25/2020	8/19/2020	9/2/2020	9/11/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	144	145	93	161	136	160	139	154	132	138										

Monitoring Point 4

Date:	1/17/2020	1/28/2020	3/9/2020	3/15/2020	4/20/2020	5/18/2020	6/25/2020	8/19/2020	9/2/2020	9/11/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	167	145	79	158		151	147			138										

Monitoring Point 5

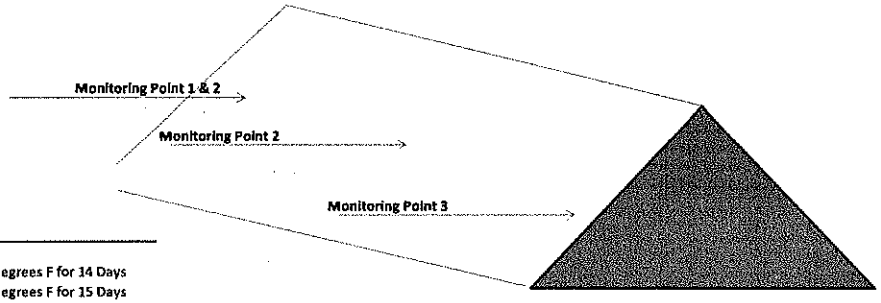
Date:	1/17/2020	1/28/2020	3/9/2020	3/15/2020	4/20/2020	5/18/2020	6/25/2020	8/19/2020	9/2/2020	9/11/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:				168																

Notes:
1/28/2020 Turn - food odor
4/20/2020 Turn - good mycelia and mushrooms
9/2/2020 Good consistency after screening
9/11/2020 Cured / finished / Ready

Pile ID: 2020-6

Windrow Monitoring Data

Date Created: 3/5/2020



Turn Number	Date	Location
1	4/23/2020	
2	7/16/2020	
3	8/29/2020	Screened
4	10/20/2020	
5		

Monitoirng Specifications

Turn According to Temperature

Min. Pile Temp for Vector Reduction: 104 Degrees F for 14 Days

Min. Temp for Pathogen Reduction 131 Degrees F for 15 Days

Too HOT - Open Up 180

Monitoring Point 1

7/16/2020 Consolidated Piles — 2 -smaller piles

Date:	3/25/2020	4/20/2020	5/18/2020	8/19/2020	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020								
3' Temperature:	165	158	120	159	140	120	140	172	162	155	122	123								

Monitoring Point 2

Date:	3/25/2020	4/20/2020	5/18/2020	8/19/2020	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	158	130	130	152	141	132	141	171	168	152	131	121								

Monitoring Point 3

Date:	3/25/2020	4/20/2020	5/18/2020	8/19/2020	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	158	146	132	158	144	152	140	178	177		125	131								

Monitoring Point 4

Date:	3/25/2020	4/20/2020	5/18/2020	8/19/2020	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:		128			144	150	140	171	155	159	139	130								

Monitoring Point 5

Date:	3/25/2020	4/20/2020	5/18/2020	8/19/2020	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:										169										

Monitoring Point 6

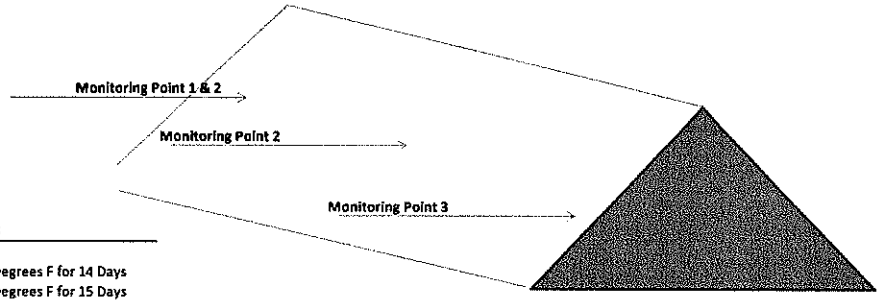
Date:	3/25/2020	4/20/2020	5/18/2020	8/19/2020	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:										150										

Notes:
- 4/20/2020 Turn - good mushrooms and odor
- 5/18/2020 Looks good
- 9/2/2020 Good consistency after screening
- 9/25/2020 Good consistency
- 10/9/2020 Too hot - turn asap
- 12/18/2020 Mature Pile - Finished

Pile ID: 2020-7

Windrow Monitoring Data

Date Created: 3/5/2020



Turn Number	Date	Location
1	4/23/2020	
2	7/16/2020	
3	9/5/2020	
4	12/15/2020	
5		

Monitoirng Specifications

Turn According to Temperature
Min. Pile Temp for Vector Reduction: 104 Degrees F for 14 Days
Min. Temp for Pathogen Reduction 131 Degrees F for 15 Days
Too HOT - Open Up 180

Monitoring Point 1

7-16-20 - Consolidated piles — smaller piles

Date:	3/25/2020	4/20/2020	5/18/1950	8/19/2020	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020								
3' Temperature:	125	118	123	135	141	116	139	160	164	144	150	138								

Monitoring Point 2

Date:	3/25/2020	4/20/2020	5/18/1950	8/19/2020	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	158	121	124	141	144	140	154	150	154	156	171	130								

Monitoring Point 3

Date:	3/25/2020	4/20/2020	5/18/1950	8/19/2020	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	145	123	151	147	144	140	152	163	168	160	174	131								

Monitoring Point 4

Date:	3/25/2020	4/20/2020	5/18/1950	8/19/2020	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:		129		143	148	140	152	166	157	160		114								

Monitoring Point 5

Date:	3/25/2020	4/20/2020	5/18/1950	8/19/2020	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:												118								

Monitoring Point 6

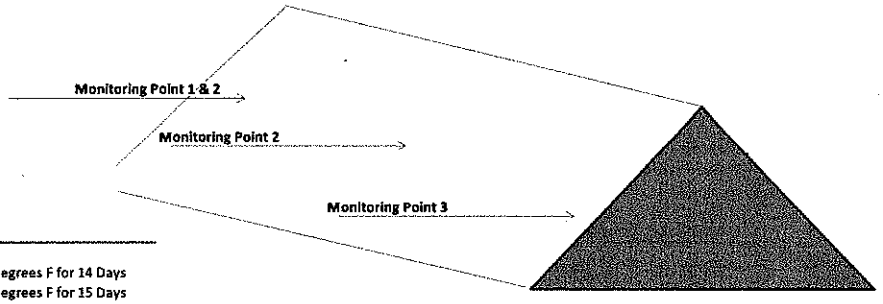
Date:	3/25/2020	4/20/2020	5/18/1950	8/19/2020	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:												121								

Notes: 4/20/2020 Turn
5/18/2020 Looks Good
9/2/2020 Very good hyphai strands and fungi evident on outside. Very good
12/6/2020 Turn

Pile ID: 2020-8

Windrow Monitoring Data

Date Created: 8/5/2020



Turn Number	Date	Location
1	9/15/2020	
2	10/20/2020	
3		
4		
5		

Monitoring Specifications

Turn According to Temperature
Min. Pile Temp for Vector Reduction: 104 Degrees F for 14 Days
Min. Temp for Pathogen Reduction 131 Degrees F for 15 Days
Too HOT - Open Up 180

Monitoring Point 1

Date:	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020											
3' Temperature:	176	140	150	164	135	145	150	131											

Monitoring Point 2

Date:	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	161	165	140	147	144	131	138	157											

Monitoring Point 3

Date:	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	166	160	142	155	141	132	133	161											

Monitoring Point 4

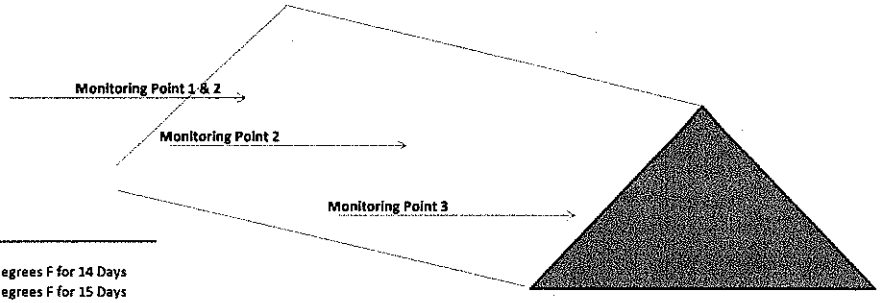
Date:	9/2/2020	9/11/2020	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	181	149	145	159	145	166		138											

Notes: 9/11/2020 Recommend turn asap
9/25/2020 Turn
10/9/2020 Turn
12/6/2020 Turn
12/18/2020 Turn

Pile ID: 2020-9

Windrow Monitoring Data

Date Created: 9/5/2020



Turn Number	Date	Location
1	9/27/2020	
2	12/15/2020	
3		
4		
5		

Monitoirng Specifications

Turn According to Temperature

Min. Pile Temp for Vector Reduction:	104	Degrees F for 14 Days
Min. Temp for Pathogen Reduction	131	Degrees F for 15 Days
Too HOT - Open Up	180	

Monitoring Point 1

Date:	9/11/2020	9/25/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020													
3' Temperature:	138	145	154	162	143	141													

Monitoring Point 2

Date:	9/11/2020	9/25/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	136	157	164	144	172	163													

Monitoring Point 3

Date:	9/11/2020	9/25/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	160	132	171	160	172	170													

Monitoring Point 4

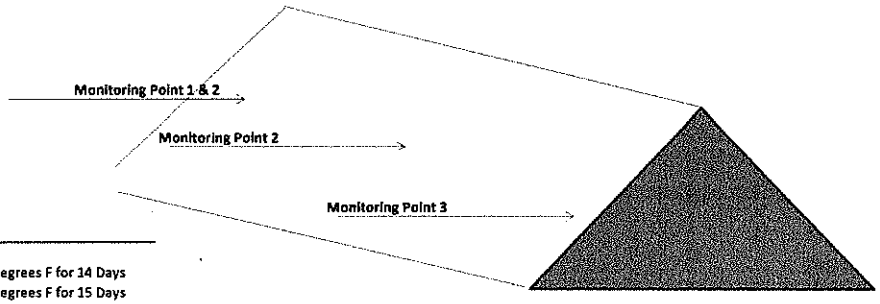
Date:	9/11/2020	9/25/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:		132	142	139	170														

Notes: 9/25/2020 Turn
12/6/2020 Turn - too hot too long
12/18/2020 Turn

Pile ID: 2020-10

Windrow Monitoring Data

Date Created: 9/20/2020



Turn Number	Date	Location
1		
2		
3		
4		
5		

Monitoirng Specifications

Turn According to Temperature		
Min. Pile Temp for Vector Reduction:	104	Degrees F for 14 Days
Min. Temp for Pathogen Reduction	131	Degrees F for 15 Days
Too HOT - Open Up	180	

Monitoring Point 1

Date:	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020													
3' Temperature:	119	111	102	127	126	115													

Monitoring Point 2

Date:	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	118	110	146	131	117	123													

Monitoring Point 3

Date:	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	135	134	111	131	119	130													

Monitoring Point 4

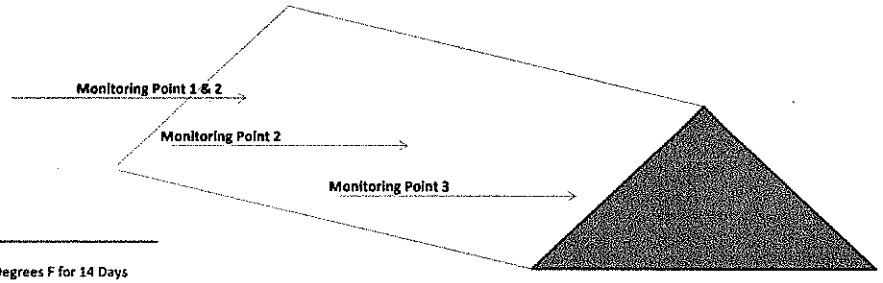
Date:	9/25/2020	10/9/2020	11/2/2020	11/20/2020	12/6/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	147	122	144	151	112														

Notes: 10/9/2020 Not ready to monitor yet - may need to mix
12/6/2020 Turn

Pile ID: ZOO - Not Compost

Windrow Monitoring Data

Date Created:



Turn Number	Date	Location
1		
2		
3		
4		
5		

Monitoirng Specifications

Turn According to Temperature
Min. Pile Temp for Vector Reduction: 104 Degrees F for 14 Days
Min. Temp for Pathogen Reduction 131 Degrees F for 15 Days
Too HOT - Open Up 180

Assumed Product Loss in Composting: 40%

Monitoring Point 1

Date:	1/6/2020	1/17/2020	1/28/2020	3/25/2020 - L	4-20-20 - L	5-18-20 - L	6/25/2020	7/16/2020	8/5/2020	8/19/2020	9/2/2020	9/25/2020	10/9/2020	11/20/2020	12/18/2020					
3' Temperature:	155	117	122	80	117	120	129	120	128	125	126	123	122	140	130					

Monitoring Point 2

Date:	1/6/2020	1/17/2020	1/28/2020	3/25/2020 - L	4-20-20 - L	5-18-20 - L	6/25/2020	7/16/2020	8/5/2020	8/19/2020	9/2/2020	9/25/2020	10/9/2020	11/20/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:	148	121	115	90	110	115	134	128	120	125	121	128	120	140	125					

Monitoring Point 3

Date:	1/6/2020	1/17/2020	1/28/2020	3/25/2020 - L	4-20-20 - L	5-18-20 - L	6/25/2020	7/16/2020	8/5/2020	8/19/2020	9/2/2020	9/25/2020	10/9/2020	11/20/2020	12/18/2020	1/0/1900	1/0/1900	1/0/1900	1/0/1900	1/0/1900
3' Temperature:		120	152	80	110	112			133	129	130		120	151	132					

Notes:
1/17/2020 Turn
1/28/2020 Turn
6/25/2020 Turn zoo pile - back end
7/16/2020 Will do a seed germination test
8/5/2020 Mix