

Johnson, Sabrina O

From: Wiesman, Ronald <WiesmanR@hillsboroughcounty.org>
Sent: Monday, August 5, 2019 9:47 AM
To: Morgan, Steve; Barker, Maurice; Kautz, Lance; SWD_Waste
Cc: Byer, Kimberly; Schinella, Beth; O'Neill, Joseph; Ruiz, Larry
Subject: Hillsborough County July Composting Report
Attachments: July 2019Rpt.pdf

Mr. Morgan,

The July composting report for Hillsborough County is attached.
Please advise should you have any questions concerning the information provided.

Thank you,

Ron Wiesman II

Manager

Solid Waste Management Division
Public Utilities Department

P: (813) 671-7707 VOIP 42801

M: (813) 455-2194

E: wiesmanr@HCFLGov.net

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Hillsborough County

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Please note: All correspondence to or from this office is subject to Florida's Public Records law.



Hillsborough County Florida

SOLID WASTE MANAGEMENT

PO Box 1110 Tampa, FL 33601-1110
813-272-5680

August 5, 2019

Mr. Steve Morgan
Solid Waste Section
Florida Department of Environmental Protection, Southwest
District
13051 N. Telecom Pkwy
Temple Terrace, Florida 33637

Subject: Southeast County Landfill – Composting Monthly Report

Dear Mr. Morgan:

Hillsborough County Solid Waste Management Division hereby submits the July composting report for Hillsborough County.

Should you have any questions or require additional information concerning this submittal, please contact me at (813) 671-7707.

Sincerely,

Ron Wiesman
Manager
Solid Waste Management Division

RWW/ya
Attachments

CC: Beth Schinella, Division Director, Utility Operations, PUD
Kim Byer, Division Director, Solid Waste Management Division
Joseph O'Neill, Professional Engineer II, Solid Waste Management Division
Larry Ruiz, Section Manager, Solid Waste Management Division

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Peggy Caskey

INFRASTRUCTURE SERVICES

ADMINISTRATOR

John Lyons

Summary of Monthly Events

Biosolids Received (wet tons):	211.39 tons of biosolids received for the month. Stopped composting due to excessive rain.
Source of Biosolids:	Hillsborough County Falkenburg AWWTP
Source of Bulking Agent:	Consolidated Resource Recovery
General Description of Activities:	<p>All incoming biosolids were mixed with bulking agent and formed into windrows on the same day as received.</p> <p>2 windrows were formed and in active composting as of 7/31/19.</p> <p>Windrow temperatures were monitored daily.</p> <p>6 windrows has met temperature and time requirements of the Process to Further Reduce Pathogens (PFRP).</p> <p>8 windrow has been turned.</p> <p>Sampling was performed on July 15, 2019.</p> <p>194.80 tons of finished compost was picked up by Life Soils.</p> <p>28.12 tons of finished compost was picked up by IFAS.</p>
Attachments:	A-H: Windrow construction and temperature records.

Attachment A

MSAP Process Temperature Chart Windrow# 19-6-5																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	6/6/19	146	146	144	143	158	156	150	147	162	158	156	149	150	148	146	140	154	152	149	144.75	
2	6/7/19	150	154	155	160	160	163	164	169	160	158	153	150	150	155	155	150	159	157.5	156.75	157.25	
3	6/8/19	157	157	159	163	164	166	166	171	163	160	159	154	153	158	158	161	159.25	160.25	160.5	162.25	
4	6/9/19																					
5	6/10/19	149	155	160	163	140	148	153	157	142	142	146	153	158	161	164	160	147.25	151.5	155.75	158.25	
6	6/11/19	147	151	158	162	142	148	153	155	141	143	146	151	156	159	163	160	146.5	150.25	155	157	
7	6/12/19	140	145	149	155	138	142	147	158	135	139	144	149	150	156	159	156	140.75	145.5	149.75	154.5	
8	6/13/19	135	139	146	155	157	145	149	156	132	137	139	143	137	143	149	156	140.25	141	145.75	152.5	
9	6/14/19	134	140	155	161	140	145	152	161	139	141	152	161	141	144	144	154	138.5	142.5	150.75	159.25	
10	6/15/19	144	149	151	155	149	151	155	161	144	152	159	163	140	149	154	161	144.25	150.25	154.75	160	
11	6/16/19																					
12	6/17/19	140	144	149	151	146	149	151	153	141	149	152	155	140	146	151	155	141.75	147	150.75	153.5	
13	6/18/19	151	156	159	162	153	155	161	165	153	157	161	165	149	150	151	150	151.5	154.5	158	160.5	
14	6/19/19	149	154	159	164	148	151	158	165	145	153	158	164	144	149	156	161	146.5	151.75	157.75	163.5	
15	6/20/19	153	168	170	172	150	154	159	161	151	157	155	156	143	147	159	162	149.25	156.5	160.75	162.75	
16	6/21/19	144	145	155	159	147	148	155	159	140	141	150	151	150	154	157	160	145.25	147	154.25	157.25	
17	6/22/19	142	148	156	162	144	151	158	163	137	145	149	155	151	157	160	163	143.5	150.25	155.75	160.75	Turn
18	6/23/19																					
19	6/24/19	157	162	168	169	160	161	163	165	157	159	161	160	160	160	162	161	158.5	160.5	163.5	163.75	
20	6/25/19	160	165	169	169	159	162	166	167	156	159	162	163	158	162	163	163	158.25	162	165	165.5	
21	6/26/19	160	167	170	168	163	167	168	166	159	162	166	162	156	154	150	148	159.5	162.5	163.5	161	
22	6/27/19	160	169	173	170	166	170	171	169	163	165	169	166	159	156	152	148	162	165	166.25	163.25	
23	6/28/19	160	165	166	171	166	166	171	172	166	169	173	174	155	160	159	155	161.75	165	167.25	168	
24	6/29/19	155	163	169	172	164	169	171	171	164	167	169	171	163	169	171	173	161.5	167	170	171.75	Turn
25	6/30/19																					
26	7/1/19	162	168	171	173	158	164	170	172	146	148	151	151	168	172	173	172	158.5	163	166.25	167	
27	7/2/19	160	163	166	171	155	161	165	171	149	155	159	163	166	169	171	173	157.5	162	165.25	169.5	
28	7/3/19	152	157	161	166	152	157	161	167	145	151	157	161	159	161	166	169	152	156.5	161.25	165.75	
29	7/4/19																					
30	7/5/19	150	155	161	166	155	159	166	169	159	160	165	167	166	169	169	172	157.5	160.75	165.25	168.5	
31	7/6/19	155	161	164	169	161	166	166	171	161	166	166	165	160	163	160	158	159.25	164	164	165.75	

Attachment B

MSAP Process Temperature Chart Windrow# 19-6-8																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	6/9/19	147	153	158	162	145	153	158	164	144	150	156	160	145	149	150	146	145.25	151.25	155.5	158	
2	6/10/19																					
3	6/11/19	140	147	152	158	147	155	162	165	148	151	158	161	149	155	158	156	146	152	157.5	160	
4	6/12/19	139	142	148	154	141	147	154	160	141	146	152	159	143	147	152	159	141	145.5	151.5	158	
5	6/13/19	149	155	159	167	148	154	159	163	143	149	156	163	145	149	152	159	146.25	151.75	156.5	163	
6	6/14/19	152	154	152	150	148	151	150	149	140	145	147	151	151	155	157	159	147.75	151.25	151.5	152.25	
7	6/15/19	157	161	166	171	150	155	169	171	151	155	150	149	155	150	150	148	153.25	155.25	158.75	159.75	
8	6/16/19																					
9	6/17/19	136	139	141	148	132	136	144	140	139	141	140	138	138	140	141	148	136.25	139	141.5	143.5	
10	6/18/19	150	156	161	166	148	153	159	163	152	155	163	169	148	153	161	171	149.5	154.25	161	167.25	
11	6/19/19	139	143	148	159	136	144	149	159	147	154	159	163	140	146	149	158	140.5	146.75	151.25	159.75	
12	6/20/19	150	158	148	152	156	160	166	169	158	162	166	172	150	152	156	157	153.5	158	159	162.5	
13	6/21/19	150	156	159	160	157	161	163	165	150	153	157	161	150	154	159	165	151.75	156	159.5	162.75	
14	6/22/19	153	159	163	160	157	163	166	170	147	156	159	164	150	158	162	168	151.75	159	162.5	165.5	
15	6/23/19																					
16	6/24/19	148	151	150	148	160	164	163	161	152	156	160	162	153	157	161	164	153.25	157	158.5	158.75	
17	6/25/19	150	152	157	148	158	165	165	165	150	152	160	164	152	158	166	166	152.5	156.75	162	160.75	Turn
18	6/26/19	167	172	172	170	166	169	166	162	170	172	168	163	162	166	169	167	166.25	169.75	168.75	165.5	
19	6/27/19	170	175	172	171	168	172	169	167	165	171	174	170	166	169	172	170	167.25	171.75	171.75	169.5	
20	6/28/19	155	161	168	171	159	166	169	171	161	166	167	170	155	161	163	163	157.5	163.5	166.75	168.75	
21	6/29/19	150	157	163	167	161	166	169	171	166	166	171	173	160	166	166	170	159.25	163.75	167.25	170.25	
22	6/30/19																					
23	7/1/19	171	171	168	162	164	166	172	173	163	166	170	172	152	150	150	156	162.5	163.25	165	165.75	Turn
24	7/2/19	168	170	171	173	155	161	166	173	150	155	157	163	150	156	157	163	155.75	160.5	162.75	168	
25	7/3/19	161	167	171	173	151	159	163	169	155	159	162	169	151	157	159	163	154.5	160.5	163.75	168.5	
26	7/4/19																					
27	7/5/19	165	167	169	172	155	159	162	169	161	166	169	172	155	159	168	170	159	162.75	167	170.75	
28	7/6/19	152	159	162	166	158	160	162	169	158	162	163	169	162	168	169	171	157.5	162.25	164	168.75	
29	7/7/19																					
30	7/8/19	155	159	164	168	155	159	163	168	156	159	162	169	158	164	168	171	156	160.25	164.25	169	

Attachment C

MSAP Process Temperature Chart Windrow# 19-6-13																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	6/14/19	153	161	165	150	155	163	152	151	152	155	150	146	144	155	148	146	151	158.5	153.75	148.25	
2	6/15/19	158	162	165	154	160	165	152	152	152	157	152	149	151	156	148	148	155.25	160	154.25	150.75	
3	6/16/19																					
4	6/17/19	141	146	151	155	141	144	151	155	148	151	155	159	136	141	152	156	141.5	145.5	152.25	156.25	
5	6/18/19	151	155	162	163	150	151	156	163	150	155	158	162	150	151	155	161	150.25	153	157.75	162.25	
6	6/19/19	149	156	162	168	145	153	156	158	149	156	161	163	140	146	146	149	145.75	152.75	156.25	159.5	
7	6/20/19	150	155	159	167	153	158	160	166	156	161	165	168	153	157	155	152	153	157.75	159.75	163.25	
8	6/21/19	141	145	151	138	143	149	152	157	150	152	159	163	141	145	157	163	143.75	147.75	154.75	155.25	
9	6/22/19	140	147	143	139	145	152	157	161	149	156	159	166	142	147	156	164	144	150.5	153.75	157.5	
10	6/23/19																					
11	6/24/19	157	162	165	166	155	157	160	164	149	155	159	160	158	160	164	164	154.75	158.5	162	163.5	
12	6/25/19	156	163	168	168	153	157	163	165	151	156	161	165	158	161	167	166	154.5	159.25	164.75	166	
13	6/26/19	154	161	164	166	157	161	166	168	162	165	168	167	155	160	164	168	157	161.75	165.5	167.25	
14	6/27/19	157	164	169	169	160	164	170	171	164	169	171	169	159	163	168	168	160	165	169.5	169.25	
15	6/28/19	155	161	168	171	159	166	169	171	161	166	167	170	155	161	163	163	157.5	163.5	166.75	168.75	
16	6/29/19	150	157	163	167	161	166	169	171	166	166	171	173	160	166	166	170	159.25	163.75	167.25	170.25	
17	6/30/19																					
18	7/1/19	158	161	163	163	153	159	164	166	158	162	164	167	155	159	163	165	156	160.25	163.5	165.25	Turn
19	7/2/19	160	162	165	167	150	160	163	169	155	161	163	169	150	152	161	163	153.75	158.75	163	167	
20	7/3/19	160	160	166	166	152	155	161	163	157	161	169	171	153	159	164	169	155.5	158.75	165	167.25	
21	7/4/19																					
22	7/5/19	141	144	149	151	151	154	155	155	151	154	159	161	143	151	154	156	146.5	150.75	154.25	155.75	
23	7/6/19	150	155	159	161	151	159	166	169	155	159	166	167	159	159	167	172	153.75	158	164.5	167.25	
24	7/7/19																					
25	7/8/19	148	149	151	155	158	164	169	171	161	157	158	160	150	158	152	151	154.25	157	157.5	159.25	
26	7/9/19	150	156	160	161	161	165	168	169	159	162	162	160	152	156	156	155	155.5	159.75	161.5	161.25	
27	7/10/19	146	152	156	158	152	158	164	166	154	158	162	165	143	149	155	158	148.75	154.25	159.25	161.75	
28	7/11/19	155	158	161	162	158	164	166	165	159	161	162	161	154	156	155	154	156.5	159.75	161	160.5	Turn
29	7/12/19	159	162	164	161	167	169	165	162	164	163	163	157	157	159	158	155	161.75	163.25	162.5	158.75	
30	7/13/19	160	161	166	169	166	167	165	163	157	159	161	166	154	150	150	148	159.25	159.25	160.5	161.5	

Attachment E

MSAP Process Temperature Chart Windrow# 19-6-24																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	6/25/19	142	158	164	166	155	162	161	150	154	158	151	146	144	145	138	134	148.75	155.75	153.5	149	
2	6/26/19	158	166	165	161	160	162	158	151	158	161	156	149	157	163	159	155	158.25	163	159.5	154	
3	6/27/19	161	168	168	163	164	167	165	160	162	163	161	157	161	164	167	163	162	165.5	165.25	160.75	
4	6/28/19	166	167	168	171	160	162	166	162	160	163	165	167	163	164	164	166	162.25	164	165.75	166.5	
5	6/29/19	160	166	170	171	161	166	169	170	155	161	164	165	164	166	167	169	160	164.75	167.5	168.75	
6	6/30/19																					
7	7/1/19	156	163	168	168	158	162	166	156	156	164	166	166	161	163	163	163	157.75	163	165.75	163.25	
8	7/2/19	158	162	166	171	155	159	161	169	160	163	166	171	158	161	163	166	157.75	161.25	164	169.25	
9	7/3/19	150	153	161	166	148	153	159	164	157	161	166	169	160	166	171	173	153.75	158.25	164.25	168	
10	7/4/19																					
11	7/5/19	143	144	150	152	152	150	148	150	152	156	154	151	144	149	152	159	147.75	149.75	151	153	
12	7/6/19	147	156	163	166	155	159	163	169	155	157	163	169	150	155	166	162	151.75	156.75	163.75	166.5	
13	7/7/19																					
14	7/8/19	140	144	151	165	138	141	149	169	140	149	152	165	141	149	154	169	139.75	145.75	151.5	167	
15	7/9/19	142	149	157	165	144	162	166	171	139	148	156	164	138	148	161	166	140.75	151.75	160	166.5	
16	7/10/19	139	150	158	165	156	161	168	170	151	160	168	170	142	154	157	160	147	156.25	162.75	166.25	
17	7/11/19	141	156	166	170	151	158	166	169	161	168	172	172	160	166	171	172	153.25	162	168.75	170.75	
18	7/12/19	145	157	169	173	156	162	169	165	170	174	171	165	163	169	174	172	158.5	165.5	170.75	168.75	Turn
19	7/13/19	150	154	161	163	158	161	166	169	161	166	170	171	160	163	169	171	157.25	161	166.5	168.5	
20	7/14/19																					
21	7/15/19	138	144	151	150	150	152	155	159	148	151	155	155	149	150	150	152	146.25	149.25	152.75	154	
22	7/16/19	140	148	150	153	148	151	155	156	142	149	151	155	144	149	156	161	143.5	149.25	153	156.25	
23	7/17/19	143	148	155	159	148	148	151	157	144	148	151	155	150	155	159	161	146.25	149.75	154	158	
24	7/18/19	150	152	155	153	148	150	152	155	149	151	155	161	160	161	158	154	151.75	153.5	155	155.75	
25	7/19/19	152	159	161	163	155	160	164	166	159	166	169	171	161	166	171	172	156.75	162.75	166.25	168	Turn
26	7/20/19	157	160	161	166	154	161	166	167	160	163	166	164	160	164	164	163	157.75	162	164.25	165	
27	7/21/19																					
28	7/22/19	155	163	170	174	160	166	171	174	155	164	169	173	156	164	168	172	156.5	164.25	169.5	173.25	
29	7/23/19	153	157	163	170	155	161	168	172	142	150	159	164	148	157	163	167	149.5	156.25	163.25	168.25	
30	7/24/19	152	160	163	168	144	150	157	160	142	151	156	161	145	152	169	164	145.75	153.25	161.25	163.25	Turn
31	7/25/19	175	177	178	176	176	181	182	179	168	176	179	175	158	167	172	173	169.25	175.25	177.75	175.75	

Attachment F

MSAP Process Temperature Chart Windrow# 19-6-29																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	6/30/19																					
2	7/1/19	162	161	158	151	163	161	152	144	162	161	150	142	163	165	162	156	162.5	162	155.5	148.25	
3	7/2/19	160	161	159	154	160	160	158	156	164	161	158	153	160	161	160	156	161	160.75	158.75	154.75	
4	7/3/19	153	155	157	161	153	159	162	167	152	155	162	166	152	159	161	169	152.5	157	160.5	165.75	
5	7/4/19																					
6	7/5/19	152	155	161	163	158	164	163	161	151	155	161	164	152	159	164	171	153.25	158.25	162.25	164.75	
7	7/6/19	150	159	166	169	163	166	171	172	152	156	164	169	161	166	169	169	156.5	161.75	167.5	169.75	
8	7/7/19																					
9	7/8/19	151	156	161	167	161	160	150	160	155	164	170	167	155	161	169	171	155.5	160.25	162.5	166.25	
10	7/9/19	158	165	168	165	161	167	166	163	158	165	168	166	158	166	169	169	158.75	165.75	167.75	165.75	
11	7/10/19	158	164	169	171	164	167	168	165	163	171	172	171	139	146	159	165	156	162	167	168	
12	7/11/19	155	163	168	170	158	164	167	168	162	169	171	171	161	166	170	170	159	165.5	169	169.75	
13	7/12/19	158	165	172	164	163	170	168	164	166	173	174	175	164	169	172	172	162.75	169.25	171.5	168.75	
14	7/13/19	160	163	165	165	163	166	164	160	166	169	172	170	163	164	166	167	163	165.5	166.75	165.5	
15	7/14/19																					
16	7/15/19	144	151	155	162	141	148	152	155	148	150	159	163	160	162	162	166	148.25	152.75	157	161.5	
17	7/16/19	144	153	153	161	144	149	155	159	150	155	161	163	159	166	169	172	149.25	155.75	159.5	163.75	
18	7/17/19	150	153	159	161	148	153	159	161	154	160	166	169	155	159	159	161	151.75	156.25	160.75	163	
19	7/18/19	150	157	164	166	153	157	162	166	155	159	164	165	151	157	161	166	152.25	157.5	162.75	165.75	Turn
20	7/19/19	157	163	166	169	155	160	161	166	160	161	166	170	160	160	163	166	158	161	164	167.75	
21	7/20/19	158	160	166	169	155	166	170	171	159	163	167	170	160	166	169	171	158	163.75	168	170.25	
22	7/21/19																					
23	7/22/19	166	171	174	176	156	162	170	173	162	168	171	174	150	158	167	172	158.5	164.75	170.5	173.75	
24	7/23/19	168	172	175	175	164	168	173	174	160	167	172	175	150	162	167	171	160.5	167.25	171.75	173.75	
25	7/24/19	168	173	175	176	165	172	174	175	169	174	175	176	162	168	174	174	166	171.75	174.5	175.25	
26	7/25/19	167	173	176	176	163	171	175	178	161	168	175	176	162	170	173	175	163.25	170.5	174.75	176.25	
27	7/26/19	165	169	172	176	165	167	170	172	171	171	174	175	160	166	170	173	165.25	168.25	171.5	174	Turn
28	7/27/19	168	171	172	176	160	165	169	172	165	170	175	174	158	165	171	172	162.75	167.75	171.75	173.5	
29	7/28/19																					
30	7/29/19	160	165	169	174	165	169	171	172	163	168	171	174	160	168	171	175	162	167.5	170.5	173.75	
31	7/30/19	165	168	171	174	162	165	170	173	160	165	172	174	158	165	171	175	161.25	165.75	171	174	
32	7/31/19	158	162	168	173	162	168	173	175	153	161	166	173	145	156	163	167	154.5	161.75	167.5	172	

Attachment G

Hillsborough County Composting - Monitoring Sheet (MSAP Method)					Windrow # 19-7-5	
Windrow Construction:			Date Commenced: 7-1-19		Date Completed: 7-5-19	
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
7/1/19	Mike Bayne	23.52	30.58	44	22	
7/1/19	Mike Bayne	22.52	29.28	44	22	60
7/2/19	Mike Bayne	18.86	24.52	44	22	
7/2/19	Mike Bayne	18.68	24.28	44	22	60
7/3/19	Jerry Devoe	18.31	23.80	44	22	
7/3/19	Jerry Devoe	20.70	26.91	44	22	60
7/5/19	Jerry Devoe	22.42	29.15	44	22	
7/5/19	Jerry Devoe	22.82	29.67	44	22	60
Totals		167.83	218.18	352.00	176.00	240.00
Windrow Construction ratio:			3.52 /1			
Note: Yard waste yards = number of buckets * 4.00						

MSAP Process Temperature Chart Windrow# 19-7-5																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	7/6/19	148	144	140	136	138	136	131	128	146	142	138	132	140	138	136	132	143	140	136.25	132	
2	7/7/19																					
3	7/8/19	140	147	151	155	140	141	140	138	151	159	161	166	148	151	153	157	144.75	149.5	151.25	154	
4	7/9/19	144	158	165	165	143	143	141	139	158	166	170	173	153	158	162	165	149.5	156.25	159.5	160.5	
5	7/10/19	145	158	166	172	140	144	144	140	155	162	167	170	162	168	173	174	150.5	158	162.5	164	
6	7/11/19	160	165	166	164	162	165	168	167	157	163	167	170	153	165	170	172	158	164.5	167.75	168.25	
7	7/12/19	165	167	172	164	163	170	168	164	166	173	174	175	164	169	172	170	164.5	169.75	171.5	168.25	
8	7/13/19	166	169	170	171	159	161	166	171	151	155	161	166	151	155	162	166	156.75	160	164.75	168.5	
9	7/14/19																					
10	7/15/19	151	157	160	164	154	155	155	161	150	153	159	161	150	155	161	160	151.25	155	158.75	161.5	
11	7/16/19	148	152	157	159	150	152	159	163	150	153	148	147	152	155	159	162	150	153	155.75	157.75	
12	7/17/19	154	159	163	168	153	154	161	164	155	159	163	166	159	161	166	167	155.25	158.25	163.25	166.25	
13	7/18/19	155	160	160	163	159	161	164	167	158	164	166	169	153	155	159	161	156.25	160	162.25	165	
14	7/19/19	161	166	166	164	158	154	150	150	160	158	158	154	166	161	160	158	161.25	159.75	158.5	156.5	
15	7/20/19	164	166	164	170	159	160	160	167	160	165	169	170	161	166	166	161	161	164.25	164.75	167	
16	7/21/19																					
17	7/22/19	155	160	166	168	152	154	153	152	150	158	163	166	160	171	173	173	154.25	160.75	163.75	164.75	Turn
18	7/23/19	156	160	159	157	170	175	174	170	164	173	173	173	158	168	173	176	162	169	169.75	169	
19	7/24/19	169	170	168	165	168	174	178	177	166	173	176	178	157	166	171	174	165	170.75	173.25	173.5	
20	7/25/19	170	172	172	167	163	170	176	179	167	172	176	177	158	169	175	175	164.5	170.75	174.75	174.5	
21	7/26/19	173	170	169	168	167	166	165	164	169	171	173	175	170	168	166	162	169.75	168.75	168.25	167.25	
22	7/27/19	168	171	170	170	171	165	165	162	171	172	173	175	168	169	170	171	169.5	169.25	169.5	169.5	
23	7/28/19																					
24	7/29/19	170	171	172	173	168	169	167	165	165	168	172	175	164	168	172	171	166.75	169	170.75	171	Turn
25	7/30/19	170	171	175	178	165	171	175	175	164	169	172	175	160	168	175	178	164.75	169.75	174.25	176.5	
26	7/31/19	168	173	175	175	161	170	175	175	165	171	173	173	158	166	171	174	163	170	173.5	174.25	

Attachment H

Hillsborough County Composting - Monitoring Sheet (MSAP Method)				Windrow # 19-7-8		
Windrow Construction:		Date Commenced: 7-8-19		Date Completed: 7-8-19		
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
7/8/19	Mike Bayne	21.71	28.22	44	22	
7/8/19	Mike Bayne	21.85	28.41	44	22	70
Totals		43.56	56.63	88.00	44.00	70.00
Windrow Construction ratio:		3.57 /1				
Note: Yard waste yards = number of buckets * 4.00						

MSAP Process Temperature Chart Windrow# 19-7-8																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	7/9/19	132	125	120	118	112	110	107	104									122	117.5	113.5	111	
2	7/10/19	140	137	128	119	122	118	112	110									131	127.5	120	114.5	
3	7/11/19	158	166	168	164	149	156	162	165									153.5	161	165	164.5	
4	7/12/19	161	170	173	167	168	164	158	164									164.5	167	165.5	165.5	
5	7/13/19	154	154	150	151	150	151	158	161									152	152.5	154	156	
6	7/14/19																					
7	7/15/19	150	160	161	160	152	153	150	150									151	156.5	155.5	155	
8	7/16/19	157	162	166	169	150	155	152	150									153.5	158.5	159	159.5	
9	7/17/19	150	152	159	159	153	155	155	161									151.5	153.5	157	160	
10	7/18/19	155	160	161	160	159	160	160	163									157	160	160.5	161.5	
11	7/19/19	160	161	160	158	160	158	154	150									160	159.5	157	154	
12	7/20/19	163	162	160	160	159	160	163	164									161	161	161.5	162	
13	7/21/19																					
14	7/22/19	165	171	174	174	159	168	172	171									162	169.5	173	172.5	
15	7/23/19	159	165	168	168	160	166	169	169									159.5	165.5	168.5	168.5	
16	7/24/19	163	166	166	164	168	171	170	168									165.5	168.5	168	166	Turn
17	7/25/19	161	165	165	165	163	167	167	166									162	166	166	165.5	
18	7/26/19	156	163	167	170	162	164	166	166									159	163.5	166.5	168	
19	7/27/19	160	165	170	171	165	169	170	171									162.5	167	170	171	Turn
20	7/28/19																					
21	7/29/19	165	170	171	171	164	169	171	171									164.5	169.5	171	171	
22	7/30/19	160	165	169	171	162	165	170	176									161	165	169.5	173.5	
23	7/31/19	158	162	166	166	154	163	168	168									156	162.5	167	167	