WASTE MANAGEMENT INC. OF FLORIDA
Vista Landfill, LLC
242 W. Keene Road
Apopka, FL 32703

August 22, 2016

Mr. Tom Lubozynski, P.E.
Administrator, Waste Management
Florida Department of Environmental Protection
Central District
3319 Maguire Blvd., Suite 232
Orlando, FL 32803

Via email: DEP_CD@dep.state.fl.us

Subject: Q3 2016 Composting Disinfection Sample Results
Vista Organic Composting Facility
WACS Facility 87081
Permit No. SO48-0165969-020

Dear Mr. Lubozynski,

In order to show compliance with the disinfection requirements for compost in FAC 62-709, the Vista Landfill is submitting the attached quarterly lab analysis. This analysis shows compliance with the testing and record keeping requirements of 62-709.530. The facility also maintains onsite records showing compliance with the temperature monitoring requirements. Since the composting system uses aerated static piles, the materials are maintained ≥55°C for 3 consecutive days. Pursuant to a determination from the Department, the change was made to a Florida certified laboratory for this sampling event.

The reduction of organic matter is determined by comparing the organic matter content of the feedstock into the composting process and the organic matter content of the compost product. The amount of reduction is determined as a percent of the original amount contained in the feedstock using the following calculation:

$$\% \text{ ROM} = [1 - (\text{OMK}(100 - \text{OM})/\text{OM}(100 - \text{OMK}))]100$$

where: % ROM = reduction of organic matter, OM = % organic matter content of dry matter before decomposition, and OMK = % organic matter content of dry matter after decomposition.

A spreadsheet is attached showing the calculated %ROM values. If you have any questions, please call me at 904-562-9755 or email me at eparker1@wm.com.

Sincerely,

SUBMITTED VIA EMAIL SIGNED ELECTRONICALLY

Eric Parker
Environmental Protection Manager
Waste Management Inc. of Florida

cc: Allen Rainey, FDEP via email
Deborah Perez, WMIF via email
Jay Davoll, City of Apopka via email

Vista Organics Facility %ROM calculations

Baseline Sample Result 2016 (%OM2016)	Q1 2016 Percent Organic Matter (%OMKQ1)	Q1 2016 Percent Reduction Organic Matter (%ROMQ1)	Q2 2016 Percent Organic Matter (%OMKQ2)	Q2 2016 Percent Reduction Organic Matter (%ROMQ2)	Q3 2016 Percent Organic Matter (%OMKQ3)	Q3 2016 Percent Reduction Organic Matter (%ROMQ3)	Q4 2016 Percent Organic Matter (%OMKQ4)	Q4 2016 Percent Reduction Organic Matter (%ROMQ4)
89.2	47.73	88.9	39.35	92.1	70.5	71.1		100.0

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Lab # 2559341 **Report of Analysis** Report Number: 16-229-4122

Account: 36317	RAY STAMPER VISTA LANDFILL LLC 242 W KEENE RD APOPKA FL 32703
Date Sampled:	2016-08-03
Date Received:	2016-08-04
Sample ID:	STA COMPOST

Robert Ferris
Account Manager
402-829-9871

STA COMPOST

		Analysis (as rec'd)	Analysis (dry weight)	Total content, lbs per ton (as rec'd)
NUTRIENTS				
Nitrogen				
Total Nitrogen	%	0.95	1.74	19.0
Organic Nitrogen	%	0.85	1.55	17.0
Ammonium Nitrogen	%	0.101	0.185	2.0
Nitrate Nitrogen	%	< 0.01	----	----
Major and Secondary Nutrients				
Phosphorus	%	0.15	0.27	3.0
Phosphorus as P2O5	%	0.34	0.62	6.8
Potassium	%	0.30	0.55	6.0
Potassium as K2O	%	0.36	0.66	7.2
Sulfur	%	0.11	0.20	2.2
Calcium	%	1.73	3.17	34.6
Magnesium	%	0.10	0.18	2.0
Sodium	%	0.150	0.275	3.0
Micronutrients				
Iron	ppm	708	1296	1.4
Manganese	ppm	31.3	57	----
Boron	ppm	< 100	----	----
OTHER PROPERTIES				
Moisture	%	45.39		
Total Solids	%	54.61		1092.2
Organic Matter	%	38.50	70.50	770.0
Ash	%	16.10	29.48	322.0
Total Carbon	%	20.86	38.20	
Chloride	%	0.17	0.31	
pH		5.7		
Conductivity 1:5 (Soluble Salts)	mS/cm	7.92		

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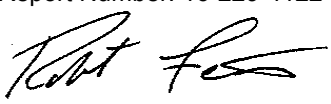
Lab # 2559341 **Biological & Physical Properties** Report Number: 16-229-4122

Account: 36317	RAY STAMPER VISTA LANDFILL LLC 242 W KEENE RD APOPKA FL 32703
Date Sampled:	2016-08-03
Date Received:	2016-08-04
Sample ID:	STA COMPOST



Robert Ferris
Client Service Representative
402-829-9871

STA COMPOST

	Analysis (as rec'd)	Analysis (dry weight)	Units	Detection Limit	Method
Biological Properties					
Germination	90		%	1	TMECC 05.05A
Germination Vigor	80		%	1	TMECC 05.05A
CO_2 OM Evolution	0.14		mgCO_2-C/gOM/day	0.01	TMECC 05.08B
CO_2 Solids Evolution	0.28		mgCO_2-C/gTS/day	0.01	TMECC 05.08B
Fecal Coliform		< 0.2	mpn/g	0.2	EPA 1681
Salmonella		< 0.01	mpn/4g	0.01	EPA 1682
Stability Rating	stable		N/A	N/A	TMECC 05.08B
Physical Properties					
Bulk Density (Loose)	994		lbs/cu yard	1	WT/VOL
Bulk Density (Packed)	1365		lbs/cu yard	1	WT/VOL
Film Plastics	n.d.		%	0.25	Microscopic
Glass Fragments	n.d.		%	0.25	Microscopic
Hard Plastics	n.d.		%	0.25	Microscopic
Metal Fragment	n.d.		%	0.25	Microscopic
Sharps	absent		---	---	Microscopic
Max. Particle Length		1.8	inches	N/A	TMECC Sieve
Sieve % Passing 3"		100	%	0.01	TMECC Sieve
Sieve % Passing 2"		100	%	0.01	TMECC Sieve
Sieve % Passing 1.5"		100	%	0.01	TMECC Sieve
Sieve % Passing 1"		100	%	0.01	TMECC Sieve
Sieve % Passing 3/4"		100	%	0.01	TMECC Sieve
Sieve % Passing 5/8"		100	%	0.01	TMECC Sieve
Sieve % Passing 3/8"		100	%	0.01	TMECC Sieve
Sieve % Passing 1/4"		97	%	0.01	TMECC Sieve

Compost Results Interpretations

Page 1

Report #:	16-229-4122
DATE RECEIVED:	2016-08-04

Organic Matter %

38.50 As Received

70.50 Dry Weight

Greater than 20% indicates a desirable range for compost on a dry weight basis.

Compost is a significant source of Organic Matter, which is an important supplier of carbon. Organic Matter improves soil and plant efficiency by improving soil physical properties, providing a source of energy to beneficial organisms, and enhancing the reservoir of soil nutrients.

C/N Ratio

22:1

20-30 indicates an ideal range for the initial compost process.

10-20 indicates an ideal range for a finished compost.

All organic matter is made up of substantial amounts of carbon with lesser amounts of nitrogen. The balance of these two elements is called the Carbon/Nitrogen Ratio. For the best performance, the compost pile requires the correct proportion of carbon for energy and nitrogen for protein production. If the C:N ratio is too high (excess carbon) decomposition slows down. If the C:N ratio is too low (excess Nitrogen) the compost pile could be difficult to manage.

Moisture %

45.39

<35% = Indicates overly dry compost

>55% = Indicates overly wet compost

Moisture Percent is the measure of water present in the compost and expressed as a percentage of total weight. Moisture present affects handling and transport. Overly dry will be light and dusty while overly wet will be heavy and clumpy. A desirable moisture content of finished compost will range between 40 to 50%.

Compost Results Interpretations

Page 2

Report #:	16-229-4122
DATE RECEIVED:	2016-08-04

Conductivity or Soluble Salts measures the conductance of electrical current in a liquid compost slurry. Excessive soluble salt content in a compost can prevent or delay seed germination and proper root growth. Conductivity analysis is done on a 1:5 basis.

Conductivity 1:5
7.9

Conductivity Level	**Interpretation**
Greater than 10	Very High nutrient content. Use for Ag Applications
5 - 10	High nutrient content. Use for Ag Applications
3 - 5	Higher than desirable for salt sensitive plants, some loss of vigor
0.6 - 3	Desirable range for most plants
0.3 - 0.6	Ideal range for greenhouse growth media
0.0 - 0.3	Very Low: Indicates very low nutrient status: plants may show deficiencies.

Compost Results Interpretations

Page 3

Report #: 16-229-4122

DATE RECEIVED: 2016-08-04

pH Value

5.7

0 to 14 scale with 6 to 8 as normal pH levels for compost

A pH in the 6 to 8 pH range indicates a more mature compost

pH measures the acidity or alkalinity of the compost, and is a measurement of the hydrogen ion activity of a soil or compost on a logarithmic scale. The pH scale ranges from 0 to 14 and 7 indicates a neutral pH. Growing media with a higher pH or pH greater than 7 can benefit from a compost that has a more acidic pH or pH below 7. This type of application will possibly lower the soil pH making the soil more conducive to plants that thrive in a more acidic soil condition.

Nutrient Index (Ag Index)

5.2

The Nutrient Index normally runs between 1 and 10.

The Nutrient Index is obtained by dividing the total nutrients (N,P,K) by the amount of salt (Sodium and Chloride). The higher the Nutrient Index the less chance of having a toxic buildup of Sodium (salt) in the soil.

AG INDEX CHART

salt injury possible	*use on soils with excellent drainage characteristics, good water quality and low salts*				*you may use on soils with poor drainage, poor water quality, or high salts*					*for all soils*
1	2	3	4	5	6	7	8	9	10	> 10

Nutrients (N+P205+K20)

3.02 Average Nutrient Content Dry Weight <2 = Low, >5 = High

1-0.5-0.5 Rating As Received

The most commonly used compost data is the amount of Nitrogen, Phosphate, and Potash (abbreviated as N,P,K) present and the information is similar to that found in common fertilizers. If a compost result has the rating 1-2-2 it means that the compost has 1% Nitrogen, 2% Phosphate and 2% Potash. Most compost tests will have a average nutrient level (N+P+K) of < 5%.

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VISTA LANDFILL LLC
RAY STAMPER
242 W KEENE RD
APOPKA FL 32703

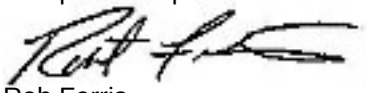
REPORT OF ANALYSIS

For: (36317) VISTA LANDFILL LLC
STA COMPOST

Analysis	Level Found As Received	Level Found Dry Weight	Units	Reporting Limit	Method	Analyst-Date	Verified-Date
Sample ID: **STA COMPOST** Lab Number: **2559341** Date Sampled: **2016-08-03 1045**							
Cadmium (total)	< 0.50	< 0.50	mg/kg	0.50	EPA 6010 *	ras7-2016/08/05	kkh9-2016/08/10
Chromium (total)	3.28	6.01	mg/kg	1.00	EPA 6010 *	ras7-2016/08/05	kkh9-2016/08/10
Mercury (total)	< 0.05	< 0.05	mg/kg	0.05	EPA 7471 *	ccm2-2016/08/08	kkh9-2016/08/10
Lead (total)	< 5.0	< 5.0	mg/kg	5.0	EPA 6010 *	ras7-2016/08/05	kkh9-2016/08/10
Molybdenum (total)	< 1.0	< 1.0	mg/kg	1.0	EPA 6010 *	ras7-2016/08/05	kkh9-2016/08/10
Nickel (total)	< 1.0	< 1.0	mg/kg	1.0	EPA 6010 *	ras7-2016/08/05	kkh9-2016/08/10
Selenium (total)	< 10.0	< 10.0	mg/kg	10.0	EPA 6010 *	ras7-2016/08/05	kkh9-2016/08/10
Zinc (total)	34.4	63.0	mg/kg	2.0	EPA 6010 *	ras7-2016/08/05	kkh9-2016/08/10
Copper (total)	12.5	22.9	mg/kg	1	EPA 6010 *	ras7-2016/08/05	kkh9-2016/08/10
Arsenic (total)	1.05	1.92	mg/kg	0.5	EPA 6020	cjm4-2016/08/08	kkh9-2016/08/10

Hold time exceeded for Salmonella and fecal coliform, not suitable for regulatory purposes.
ppm = parts per million, ppm = mg/kg

For questions please contact:



Rob Ferris
Account Manager
raf4@midwestlabs.com (402)829-9871

2559 341-341
Samples: 1 Page: 1/3
Lana L. Milek
2016 06 04 13:20

US COMPOSTING COUNCIL #36317

OFFICIAL Seal of Testing Assurance Compost Sample Chain of Custody Form

STA Laboratory: MidWest Laboratories Tel: 402-334-7770
Address: 13611 B Street FAX:
Email:
City, State Zip code: Omaha Nebraska 68144

Client/Reporting Company: Vista Landfill Tel: 216-956-0949
Contact Name: Ray Stamper FAX:
Billing Address: 242 W. Keene Rd. Email: rstamper@wm.com
City, State Zip code: Apopka FL. 32703
Send Results to: rstamper@WM.com
City, State Zip code:
Name or Source of Sample(s): STA Compost
Name of Person(s), Sample Collector(s): Ray Stamper

LABORATORY USE ONLY Storage Locations
Freezer ____ Cold Room ____ Storage Shelf ____
Sample Condition: ____
Temperature: ____ Malodor: ____ Moisture: ____

Sample Type: O POINT O COMPOSITE O STRATIFIED O INTERVAL
P.O. Number: ____
USCC Member: O YES O NO

SELECTION OF ANALYSIS. *Refer to http://www.tmecc.org/cap/methods.html for details.* STA Suite; State DOT Tests (indicate State); A, B, C – Specify other tests in fields A through C, (e.g., tests required for regulated samples, etc.). NOTE! *STA analytical results via the STA Compost Technical Data Sheet and this Chain of Custody form are submitted to STA program management.*

A	B	C

Client Sample ID and Special Instructions	1. List Feedstocks 2. Check all that apply 3. List % by volume. (Optional)		Collection Date/Time	Sample Matrix	Composting Operation Type	Shipping Temperature	Indicate Compost Analysis Requirements (*identify state)				LAB USE ONLY Job Number & Sample Status
STA Compost	✓ Green waste	Carcass	Date: 8/03/16	Compost X	Windrow X	Ambient O	STA Suite	State DOT Identify State	A	B	C	
	Manure	Fish Waste	Time: 10:45 AM	Feedstock O	Static pile O	Wet Ice X						
	✓ Food	Grease, Fats	Initials: RS	Mulch O	In-Vessel O	Dry Ice O						
	Biosolids			____ O	____ O							
	MSW			____ O	____ O							
	✓ Wood											

INFORM THE STA LABORATORY AND SPECIFY THE REQUIRED LABORATORY TESTS WHEN SUBMITTING REGULATED COMPOST SAMPLES (please use spaces A, B and C provided above).

PLEASE PROVIDE SPECIFIC FEEDSTOCK AND OPERATIONAL DETAIL IN THE SPACE PROVIDED.
YOUR VOLUNTEERED INFORMATION PROVIDES USCC STANDARDS AND PRACTICES COMMITTEE WITH CRUTIAL DATA NEEDED TO BETTER UNDERSTAND THE COMPOSTING PROCESS AND COMPOST END USES.

Releasing Signature 1	RS	Date 8/03/16	Time 11:00 AM	Receiving Signature 1	Jamie Wood	Date 8/4/16	Time 12:45
Releasing Signature 2		Date	Time	Receiving Signature 2		Date	Time
Releasing Signature 3		Date	Time	Receiving Signature 3		Date	Time
Releasing Signature 4		Date	Time	Receiving Signature 4		Date	Time

10.2%

SUBFORM NUMBER:
607114

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ORDER NUMBER: 053671

PAGE 1

ACCOUNT NO: 36317
VISTA LANDFILL LLC
RAY STAMPER
242 W KEENE RD
APOPKA, FL 32703

SAMPLE DESCRIPTION
STA COMPOST

PO NUMBER:

COPY TO:

2559341-341
Samples: 1 Page: 2/3
Lara L Mikels
2016 08 04 13:20

Automatic Order Submittal Form

PLACED BY: Robert A Ferris

	SAMPLE ID	DATE/TIME SAMPLED	MATRIX	TESTS REQUESTED	CONTAINER COUNT	COMMENTS
1	~~COMPOST~~ STA Compost	8/03/16 10:45Am		STA COMPOST 2559341	1	
2						
3						
4						
5						
6						
7						
8						
9						
10						

Sampled by: *(Signature)* RST	Temp on Arrival	Cooler arrived intact?	Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date/Time	Received in lab by: *(Signature)*

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2559341-341
Samples: 1 Page: 3/3
Lara L Mikels
2016 08 04 13:28

Regulatory

This sheet **MUST** be filled out before samples can be processed. To ensure that holding times are met, it is your responsibility that a completed form comes attached to the Chain of Custody.

Is this sample for regulatory/permit reporting? RS. ☒ Yes ☒ No

What city/state was your sample collected in? Apopka Florida

What agency/state are you reporting to? N/A

What type of sample? (Circle One)

Drinking Water	**Ground Water**	**Wastewater**
Compost		
Solid waste	**Hazardous Waste**	**UST**
Storm Water	**Process Water**	

SEE REVERSE SIDE FOR SAMPLING INSTRUCTIONS

RC FORM 14-1 Effective 01/14/16