CEC

CARLSON ENVIRONMENTAL CONSULTANTS, PC

LANDFILL GAS, AIR PERMITTING, AND REGULATORY COMPLIANCE SERVICES

November 19, 2012

Mr. F. Thomas Lubozynski, P.E.
Waste Program Administrator
FDEP – Central District
3319 Maguire Blvd, Suite 232
Orlando, FL 32803-3767

Subject: Response to First Request for Additional Information
Vista Class III Landfill – Apopka, Florida
SW WACS # 87081
FDEP Permit Application No. SO48-0165969-020

Dear Mr. Lubozynski:

Per your request, and on behalf of Vista Landfill, LLC (Vista) and Waste Management Inc. of Florida (WMIF), Carlson Environmental Consultants, PC (CEC) is submitting to the Florida Department of Environmental Protection (FDEP) this response to the Request for Additional Information dated October 30, 2012 for the "Intermediate Class III Operation Permit Modification Application Gas Management System, Vista Landfill, Class III Facility".

We understand that FDEP has requested additional information on four (4) matters, which are listed below with our responses.

1. On Page 39 of 39, which is Part S, of DEP Form 62-701.900(1), the address for Timothy Hawkins is the address used for this letter. However, a letter from Paul Bermillo dated May 21, 2012 stated we use the following address: Tim Hawkins, Area Vice President, Waste Management Inc of Florida, 2700 Wiles Road, Pompano Beach, FL 33073. Which is the correct postal address? Or is either acceptable?

   Response: Please forward all correspondence concerning this application for Vista Landfill to the site address at 242 West Keene Road Apopka, Florida 32703.

2. Based on the review of the Report, the Department understands the gas management system plan at Vista Landfill to encompass the following:

   a. Current Conditions: 4 vertical wells, 5 horizontal collectors and header system connected and piped to the open flare located at the Keene Road landfill.

   b. Interim Design: Installation of future horizontal collectors, vertical wells, tie-ins to leachate collection riser pipes, and all associated piping.

305 SOUTH MAIN STREET
MONROE, NC 28112
704.283.9765 OFFICE
704.283.9755 FAX

1479 SCILLY CAY LANE
JUPITER, FL 33458
OFFICE 863.634.7185

c. On-going Maintenance: replacement, re-drilling, relocation, raising and decommissioning of existing wells as needed.

d. Closure Design: per conceptual drawing 3, LFG Final Buildout Plan.

Please provide the Department with a drawing of the conceptual interim design (plan drawing and detail drawing) showing the conceptual layout of the future interim horizontal collectors. The Department understands that the interim design and the closure design will be adjusted to account for operational needs. These adjustments (deviations) must be detailed in the construction certification report for each construction event. (Any additional adjustments after the construction certification report is approved by the Department, aside from on-going maintenance, should be discussed with us to determine if a permit modification is necessary.)

Response: Please reference the revised drawing set located in Attachment 2 of this submittal. The drawings have been revised to include the interim gas management system at Vista. Currently, WMIF is projecting five interim phases:

- **Phase 1: Installation of five (5) extraction wells, one condensate sump, two (2) blind flanges for future expansion, air supply line and condensate discharge line, and associated header/lateral piping.**
- **Phase 2: Installation of three (3) horizontal collectors with associated lateral piping.**
- **Phase 3: Installation of two (2) horizontal collectors with associated lateral piping.**
- **Phase 4: Installation of two (2) extraction wells, one (1) blind flange for future expansion, air supply line and condensate discharge line, and associated header/lateral piping.**
- **Phase 5: Installation of three (3) extraction wells, air supply line and condensate discharge line, and associated header/lateral piping.**

WMIF understands that the interim and final gas management system design is subject to change. Should this occur, WMIF will notify the Administrator to discuss the design changes.

3. The following are comments regarding the detailed cost estimate in Appendix C.

a. The Permit Modification Application tab section 1.3.5 states "Final gas management system design conditions for the closed landfill will apply in areas of the active landfill, where waste has reached final grade and a certified closed cap is in place." Landfill gas management systems which are included in the closure plan must be accounted for in the closing cost estimate. Based on our experience at the Keene

Road Class III Landfill, the Department believes a landfill gas management is necessary for proper closure of the Vista Class III landfill. Please revise Section IV, Item 8 of the closing cost estimate (page 4 of 9) to include those costs associated with the installation of the final gas management system at closure (as depicted on conceptual drawing 3, LFG Final Buildout Plan).

i. The estimate does not have to include portions of the system that are already constructed (for example, the pipeline across Keene Road and the flare). It is best to note on the cost estimate form that the line item has already been constructed.

ii. As portions of the system depicted on conceptual drawing 3, LFG Final Buildout Plan, are constructed and the certification of construction completion has been approved by the Department, you may submit a new detailed cost estimate eliminating those items from the cost estimate. Or, wait until the next required submittal for a detailed cost estimate.

Response: The financial assurance closure cost estimate has been revised to reflect the installation of Phases 1 through 4 of the Interim Design for Cells 1 through 3 of the Vista Landfill. Reference Attachment 3 for the revised FDEP Form 62-701.900(28) which includes the updated Closure Costs and the justification for these costs.

b. In the closing cost estimate Section IV, Item 4 (page 3 of 9), Top Soil Cover, it appears the cost is only for the spreading of the soil. Are we interpreting your entry correctly? Although items on site (for example, stock piled soil) may be used during closure of the facility, the cost estimate must assume all items are purchased and delivered from a third party. Please add the cost for the purchase and delivery of top soil cover for item 4. Or, clarify the entry to indicate what the unit cost represents.

Response: The original cost estimate for Item 4, Top Soil Cover included the following unit prices for 6-inches of top soil cover:

- **$3.50/CY for excavation/placement/spreading**
- **$2.00/CY for material cost**

These prices are based on the third-party quote provided in Appendix C-1-Third Party Quotes of the submitted application. In addition, the backup documentation show the total cost of $5.50/CY for material and excavation/placement/spreading.

The total cost of $5.50/CY was reflected in the FDEP Form 62-701.900(28), Item 4 under "spreading". For clarity, FDEP Form 62-701.900(28) has been revised to reflect the separate line times, yet the cost remains the same as the original submittal. The revised financial assurance form is located in Attachment 3.

4. The Permit Modification Application tab section 1.3.1 states "Upon completion of construction, WMIF will submit a certification of completion to the Administrator summarizing the construction." Please note, the certification of completion report at a minimum must include the following for each construction event:

   a. A signed and sealed Certification of Construction Completion of a Solid Waste Management Facility DEP form 62-701.900(2) which can be found at:

      http://www.dep.state.fl.us/waste/quick_topics/forms/documents/62-701/62-701.900(2).pdf

   b. Summary of deviations
   c. As-built drawings
   d. Daily logs

   Response: Upon completion of construction, a certification of completion will be submitted to the Administrator that summarizes the construction activities. The certification will include Form 62-701.900(2), record drawings, and daily logs. Section 1.7 of the engineering report, located in Attachment 1 of this correspondence, has been updated to reflect this text.

CEC, WMIF, and the Vista Class III Landfill appreciate your assistance during this process. Please feel free to contact me at (863) 634-7185 if you have any questions or desire additional information concerning this submittal.

Respectfully Submitted,

Seth A. Nunes, P.E.
Principal
Carlson Environmental Consultants, PC

cc: Sheree Grant, WMIF
Paul Bermillo, WMIF
Craig Pelton, WMIF
Amy Nunes, CEC
Lindsey Kennelly, CEC

ATTACHMENT 1

REVISED ENGINEERING REPORT

INTERMEDIATE CLASS III OPERATION PERMIT MODIFICATION APPLICATION GAS MANAGEMENT SYSTEM

VISTA LANDFILL, CLASS III FACILITY
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703

Prepared for:

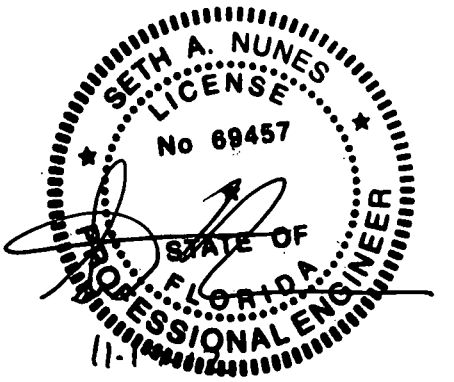
WASTE MANAGEMENT INC. OF FLORIDA

Prepared by:

CARLSON ENVIRONMENTAL CONSULTANTS, PC
305 South Main Street
Monroe, North Carolina 28112
(704) 283-9765

September 2012

Revised November 2012



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1 ENGINEERING REPORT

1.1 Introduction

The purpose of this intermediate permit modification for Vista Landfill, Class III Facility (Vista) is to provide information regarding Waste Management Inc. of Florida's (WMIF) proactive approach to gas management. This document supplements the information provided in the Operations Permit Application dated February 17, 2011.

Vista currently operates under an active Title V operating permit (No. 0951334-002-AV). This air operating permit addresses the landfill gas (LFG) that is collected at the contiguous landfills of Keene Road Recycling and Disposal Facility (Keene) and the Vista Landfill. The collected LFG from Vista is piped to the open flare located at the Keene Road Recycling and Disposal Facility.

1.2 Existing Conditions

Vista is located in Apopka, Orange County, Florida and is operated by WMIF. This intermediate permit modification outlines the proactive methodology employed to design and implement control measures to reduce migration. Existing control measures include active landfill gas extraction and flaring.

1.2.1 Landfill Gas Monitoring Probes

At final buildout, 25 permanent landfill gas monitoring probes will be installed at Vista along the site property line and in the vicinity of the on-site structures. The gas probes and structures are monitored on a quarterly basis in accordance with 62-701.530(2), FAC.

1.2.2 Landfill Gas Collection Points

The facility has installed additional control measures to reduce the migration and maintain compliance with Rule 62-701.530, FAC. The additional control measures included the installation of an active gas collection system at the facility in 2010. This active gas collection system includes a blower-assisted flare that is capable of collecting 2,800 standard cubic feet per minute (scfm) of gas from both Keene and Vista Landfills.

The current active gas collection system at Vista connects four (4) vertical extraction wells and five (5) horizontal collectors with below grade high density polyethylene (HDPE) header and lateral piping. Refer to Appendix A for copies of the wells logs. The existing site plan located in Appendix B shows the location of the installed gas management system features.

Condensate that is generated in the LFG extraction process is pumped back into Vista's leachate control system where it is comingled with the site's leachate. Leachate is collected at the site's

160,000 gallon capacity storage tank and conveyed to a municipal sanitary sewer line located on West Keene Road for off-site treatment and disposal at the City of Apopka Waste Water Treatment Plant (WWTP). At this time, condensate sampling and analysis is not performed. Leachate is analyzed annually in accordance with the site's Solid Waste Operating Permit (No. SO48-0165969-018).

1.3 Design Conditions

Vista's proposed methods for future gas migration mitigation include installation of additional LFG collection devices as filling continues. Included in Appendix B are figures depicting the proposed Gas Management System Layout at buildout conditions and typical Gas Management System Details (wells, wellheads, piping, etc.). These features are installed proactively by Waste Management Inc. of Florida and are not required by Rule 62-701.530, FAC as the landfill accepts Class III waste and is not required to have a passive or active gas management system. However, a combination of passive and active gas management system components may be used as control measures to reduce migration and maintain compliance in accordance with the regulations. All LFG features will be installed based on the determination of site personnel.

Final well placement may vary from this anticipated buildout design due to the placement of wells and/or collectors during interim conditions. During interim conditions the locations may be changed due to filling activities or other considerations of an active landfill. Furthermore, wells/collectors may have to be replaced, re-drilled, or relocated over the life of the facility due to the conditions of the waste the wells are contained in, ongoing operations, etc. If this happens, the location of the well/collector may vary from the original designed location.

1.3.1 Construction Notification and Certification

Prior to commencement of scheduled (non-emergency) gas management system construction, WMIF will notify the Administrator in a timely manner. The written notification will include a description of the proposed construction, the anticipated start date, and the approximate duration of construction activity. Upon completion of construction, WMIF will submit a certification of completion to the Administrator summarizing the construction.

WMIF understands that a minor modification shall be submitted to the Administrator should the gas management system layout deviate substantially from that included in this intermediate permit modification.

1.3.2 Excavated Waste Handling

Class III refuse from trenching and drilling spoils will be loaded and moved to the active working face as soon as possible after excavation for disposal.

In the event that the Class III refuse is excavated and cannot be immediately taken to the working face the refuse may be stored adjacent to the excavation/borehole until it can be taken

to the working face before the end of the same working day. Refuse will remain within close proximity to the location from which it was removed.

Care will be taken to limit stormwater contact with the exposed Class III refuse. If the refuse can not be taken immediately to the working face, the Class III refuse shall be tarped or otherwise covered, and bermed (if located on a sideslope), to prevent stormwater contamination.

1.3.3 Interim Design Conditions

In general, interim operating conditions occur when the landfill is actively accepting waste, and before it is closed or reaches final grades. During these interim conditions, the active gas collection system may be installed on an as needed basis.

One of the key factors in constructing and operating the gas management system during interim conditions, is how to design gas management features so it is compatible with the waste filling operations of an active landfill. Active filling operations may change due to economic conditions, natural disaster or other factors, which can impact when and how gas management features are installed. In general, gas management features will be installed to meet the requirements of the day-to-day activities of an active landfill. Due to the complexity of predicting fill operation, the exact timing of installation of these features may vary.

A flexible design was developed that incorporates the operational difficulties that can occur when installing an active gas collection system while the facility is actively accepting refuse. Collection device locations will be determined during operation of the landfill to maintain needed flexibility to account for daily operations which include shifting of refuse fill patterns, weather, waste type, waste volumes, natural disasters, and significant area events.

Interim conditions can hinder the effectiveness of the active gas collection system because it may be inadvertently damaged by heavy equipment collisions during filling operations, not necessarily coincide with filling operations, or water-in because of bellies resulting from heavy traffic or differential settlement.

Since the operations of the landfill, which include the filling patterns and amounts of waste accepted at Vista may change over time, there is no single design that can be presented at this time to address the location of each gas collection device and the corresponding piping network. Instead, during the interim period, the migration of LFG and conformance with Rule 62-701.530, FAC will be maintained and be used as the tool to determine when the system will be expanded and when upgrades to the system will be added.

Currently, WMIF is projecting five interim phases:

- Phase 1: Installation of five (5) extraction wells, one condensate sump, two (2) blind flanges for future expansion, air supply line and condensate discharge line, and associated header/lateral piping.

- Phase 2: Installation of three (3) horizontal collectors with associated lateral piping.

- Phase 3: Installation of two (2) horizontal collectors with associated lateral piping.

- Phase 4: Installation of two (2) extraction wells, one (1) blind flange for future expansion, air supply line and condensate discharge line, and associated header/lateral piping.

- Phase 5: Installation of three (3) extraction wells, air supply line and condensate discharge line, and associated header/lateral piping.

WMIF understands that the interim and final gas management system design is subject to change. Should this occur, WMIF will notify the Administrator to discuss the design changes.

Collection device locations and density will be determined at the time of installation to support normal operations of the landfill in regard to roadways, equipment, and fill sequencing. Actual collection device placement may vary from the locations shown on the drawings in Appendix B to accommodate actual site conditions at the time of installation.

The header and lateral pipeline systems have been sized to accommodate the peak flows depending on the planned life of the pipeline. If the landfill plans to operate the header and lateral pipelines only during interim conditions, and will be dismantled/replaced prior to final build out of the system, then it will be sized for the anticipated gas flows equating to the period of time it is planned to be operational. The portions of the pipe network that the landfill plans to use as part of the final design will be appropriately sized to handle the anticipated gas flows in the portion of the landfill at final buildout.

1.3.4 Compatibility with Refuse Filling Operations

During the process of Class III refuse filling operations, periodically, a vertical extraction well may be "raised" so the new Class III refuse is not placed over the top of an existing well in a manner that covers the well with Class III refuse, thereby preventing access. The vertical extraction wells are raised in anticipation of a new lift of Class III refuse, or in advance of the Class III refuse being added to the area in order to maintain worker safety in the active area during these well raising construction activities. However, in performing the well raising in a safe area may require the well to be raised more than 30 days before the Class III refuse can be placed around the well.

1.3.5 Landfill Cover Properties

The purpose of the interim cover system is to provide a barrier to landfill gas emissions, as well as, water and air infiltration. During the normal course of operations, daily, intermediate and final cover will be installed over the waste. The interim cover system will vary depending on

when the landfill plans to place additional waste in the area. If the waste landfill sequencing plan defers filling to final grade in certain area(s) it may decide to seed or install some kind of a temporary cap over this portion of the landfill.

Final gas management system design conditions for the closed landfill will apply in areas of the active landfill, where waste has reached final grade and a certified closed cap is in place. Final design conditions also apply to the closed landfill or closed portions of an active landfill that have achieved final waste grades.

Typical details of LFG features that may be installed are depicted in Appendix B. The proposed final buildout conditions of the gas management system are also shown in Appendix B.

1.3.6 Landfill Gas Extraction

Interim landfill gas extraction may be provided by a combination of vertical extraction wells, horizontal collectors, and tie-ins to the leachate collection system. While WMIF intends to install vertical extraction wells to the maximum extent practical, particularly on sideslopes or in areas at or near final grade, horizontal collectors may be employed at interim conditions when installation of vertical wells is not appropriate due to site geometry or sequence of filling. In areas where horizontal collectors are installed, additional vertical wells may be required at final buildout depending on the performance of the collectors.

1.3.6.1 Vertical Extraction Wells

The design of vertical extraction wells at the site will vary depending on the landfill area in which the wells will be installed. In landfill areas with geomembrane liners, vertical wells will typically terminate at least 10 feet above the bottom of refuse. Vertical wells typically have an effective radius of influence that ranges from approximately 2.0 to 2.25 times the well depth. Consequently, the well spacing at Vista varies generally from 100 to 200 feet, depending on the estimated radii of influence of the wells.

Vertical wells will be constructed of either HDPE or PVC pipe installed in 30-inch or 36-inch diameter boreholes, unless an engineering judgment is made that an alternate sized borehole is more appropriate. Typically, approximately the lower two-thirds of the well pipe will be perforated or slotted. However, perforations/slots will not be closer than 15 feet from the landfill surface unless the wells are being installed in an active area and additional refuse will be filled around the wells within a reasonable period of time. Perforations typically will be either 5/8-inch diameter holes staggered 180 degrees apart, or 3/8-inch wide by 8-inch long slots spaced 12-inches apart on center. However, alternative slot or perforation designs which provide comparable performance may be considered.

1.3.6.2 Horizontal Collectors

Horizontal collectors typically have a horizontal zone of influence of approximately 75 feet, which results in a lateral spacing of approximately 150 feet between collectors. Horizontal collector lengths will vary depending on site conditions at the time of system expansion, but generally will be less than 1,000 feet long.

Horizontal collectors will be constructed to include the following features:

- Collector pipe will normally be 6- or 8-inch diameter solid HDPE pipe with a smooth interior wall with sufficient strength to resist crushing force due to the overburden of the landfill.
- The perforated/slotted collector pipe will be installed in a trench filled with appropriate aggregate material. The permeable backfill material will be sized so as to not pose significant risk of clogging the pipe perforations. Tire chips may also be used as backfill material.
- Perforated pipe will cease and the remaining length of collector will be solid-wall pipe. This will reduce the potential for air infiltration into the collectors.
- Perforations in the pipe will be sufficiently large to not cause excessive head loss detrimental to LFG collection.

1.3.6.3 LCRS Tie-ins for LFG Collection

To provide supplemental LFG collection during interim conditions, WMIF may install tie-ins to existing and future leachate collection riser pipes. These collectors are intended to provide supplemental collection for landfill gas migration purposes.

1.3.6.4 Wellheads

Each extraction well and horizontal collector will include a wellhead constructed of appropriate materials. Wellheads will include a valve for flow control and monitoring ports for measuring gas quality, temperature, and flow rate.

1.4 Landfill Gas Collection Point Decommissioning

Based on the performance of each individual collection point, it may be necessary to decommission them at some point. To decommission a collection point, the wellhead will be removed and the vertical well casing and/or horizontal collector casing will be capped with a fused or slip-on cap.

Over the life of the site, individual collection points may be replaced, the new collections points will be renamed or given another alternative name.

1.5 Closure

At the time of closure, the permitted final cover system will be either a geosynthetic clay liner (GCL) or 40-mil low density polyethylene (LLDPE) synthetic cap. The barrier layer will be installed over a minimum 6-inch soil layer, overlain by 18-inches of protective cover soil overlain, and 6-inches of compost or topsoil capable of sustaining vegetation. Any modifications made to the gas management system (active or passive) during interim conditions will be incorporated in the site's closure plans.

1.6 Long-Term Care and Financial Assurance

As currently approved by FDEP Permit No. SO 48-0165969-018, Condition G, Vista is operating under a phased financial assurance. Since Cells 1, 2, and 3 of Phase 1 are currently constructed, the attached closure costs have been updated to reflect the closure area of these Phase 1 cells, which is approximately 26.2 acres. Refer to Appendix C for the revised Financial Assurance, which includes FDEP Form No. 62-701.900(28), the back-up calculations and third party quotes.

1.7 Recordkeeping

Prior to commencement of scheduled (non-emergency) gas management system construction, WMIF will notify the Administrator in a timely manner. The written notification will include a description of the proposed construction, the anticipated start date, and the approximate duration of construction activity. Upon completion of construction, WMIF will submit a certification of completion to the Administrator summarizing the construction. The certification will include Form 62.701.900(2), record drawings, and daily logs. Once construction has been completed, record drawings of the completed gas management system construction will be updated and a copy of the updated site plan will be kept on-site.

ATTACHMENT 2

REVISED APPENDIX B – REVISED GAS MANAGEMENT SYSTEM DRAWINGS

ATTACHMENT 3

REVISED APPENDIX C – UPDATED FINANCIAL ASSURANCE ESTIMATE

IV. ESTIMATED CLOSING COST (check what applies)

☒ **Recalculated Cost Estimate** ☐ **New Facility Cost Estimate**

Notes: 1. Cost estimates for the time period when the extent and manner of landfill operation makes closing most ex
2. Cost estimate must be certified by a professional engineer.
3. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.
4. In some cases, a price quote in support of individual item estimates may be required.

Description	Unit	Number of Units	Cost / Unit	Total Cost
1. Proposed Monitoring Wells	**(Do not include wells already in existence.)**			
	EA			
			Subtotal Proposed Monitoring Wells:	
2. Slope and Fill (bedding layer between waste and barrier layer):				
Excavation	CY	21,102	$3.00	$63,306.00
Placement and Spreading	CY	21,102	$2.10	$44,314.20
Compaction	CY			
Off-Site Material	CY			
Delivery	CY			
			Subtotal Slope and Fill:	$107,620.20
3. Cover Material (Barrier Layer):				
Off-Site Clay	CY			
Synthetics - 40 mil	SY	126,614	$4.68	$592,553.52
Synthetics - GCL	SY			
Synthetics - Geonet	SY	74,135	$5.22	$386,984.70
Synthetics - Other (explain)	CY	63,307	$8.50	$538,109.50
			Subtotal Cover Material:	$1,517,647.72
4. Top Soil Cover:				
Off-Site Material	CY	25,323	$2.00	$50,646.00
Delivery	CY			
Spread	CY	25,323	$3.50	$88,630.50
			Subtotal Top Soil Cover:	$139,276.50
5. Vegetative Layer				
Sodding	SY			
Hydroseeding	AC	26.2	$1,936.00	$50,723.20
Fertilizer	AC			
Mulch	AC			
Other (explain)				
			Subtotal Vegetative Layer:	$50,723.20
6. Stormwater Control System:				
Earthwork	CY			
Grading	SY			
Piping	LF	300	$20.00	$6,000.00
Ditches	LF	6,000	$15.00	$90,000.00
Berms	LF			
Control Structures	EA	2	$2,000.00	$4,000.00
Other (explain)				
			Subtotal Stormwater Control System:	$100,000.00

Description	Unit	Number of Units	Cost / Unit	Total Cost
7. Passive Gas Control:				
Wells	EA			
Pipe and Fittings	LF			
Monitoring Probes	EA	12	$2,000.00	$24,000.00
NSPS/Title V requirements	LS	1		
			Subtotal Passive Gas Control:	$24,000.00
8. Active Gas Extraction Control:				
Traps	EA			
Sumps	EA			
Flare Assembly	EA			
Flame Arrestor	EA			
Mist Eliminator	EA			
Flow Meter	EA			
Blowers	EA			
Collection System	LF			
Other (explain) See backup	EA	1	$523,017.00	$523,017.00
			Subtotal Active Gas Extraction Control:	$523,017.00
9. Security System:				
Fencing	LF			
Gate(s)	EA	1	$5,000.00	$5,000.00
Sign(s)	EA			
			Subtotal Security System:	$5,000.00
10. Engineering:				
Closure Plan Report	LS	1	$9,480.00	$9,480.00
Certified Engineering Drawings	LS	1	$25,200.00	$25,200.00
NSPS/Title V Air Permit	LS	1	$5,760.00	$5,760.00
Final Survey	LS	1	$8,760.00	$8,760.00
Certification of Closure	LS	1	$17,400.00	$17,400.00
Other (explain)				
			Subtotal Engineering:	$66,600.00

Description	Hours	Cost / Hour	Hours	Cost / Hour	Total Cost
11. Professional Services					
	Contract Management		Quality Assurance		
P.E. Supervisor	24	$120.0(	16	$120.0(	$4,800.00
On-Site Engineer	40	$120.0(	80	$120.0(	$14,400.00
Office Engineer	60	$120.0(	40	$120.0(	$12,000.00
On-Site Technician	0	$75.00	400	$75.00	$30,000.00
Other (explain)					

Description	Unit	Number of Units	Cost / Unit	Total Cost
Quality Assurance Testing	LS	1	$100,000.00	$100,000.00
			Subtotal Professional Services:	$161,200.00

		Subtotal of 1-11 Above:	$2,695,084.62
12. Contingency	10 % of Subtotal of 1-11 Above		$269,508.46
		Subtotal Contingency:	$269,508.46
		Estimated Closing Cost Subtotal:	$2,964,593.08

Description		**Total Cost**
13. Site Specific Costs		
Mobilization		$61,478.03
Waste Tire Facility		$3,828.13
Materials Recovery Facility		
Special Wastes		
Leachate Management System Modification		
Other (explain)		
	Subtotal Site Specific Costs:	$65,306.16

TOTAL ESTIMATED CLOSING COSTS ($): $3,029,899.24

CARLSON ENVIRONMENTAL CONSULTANTS, PC			
CLIENT WM of Inc. of Florida	PROJECT Vista Landfill		JOB NO. 101.07.07
SUBJECT FINANCIAL ASSURANCE - Response to RAI No. 1		BY Lindsey Kennelly	DATE 11/19/2012
		CHECKED SAN	DATE 11/19/12

OBJECTIVE: Update Closure Cost Item No. 8 to reflect the installation of Interim Designs Phases 1 through 5.

PHASE 1	**QUANTITY**	**UNITS**	**UNIT PRICE**	**COST**
Wells/Collectors				
No. of Extraction Wells/Wellheads =	5	EA	$500	$2,500
Approximate Depth per Well =	40	ft/well	–	–
Total Well Depth =	200	ft	$90	$18,000
No. of LCRS Remote Wellheads =	1	EA	$650	$650
No. of boots =	6	EA	$500	$3,000
Piping				
8-inch header piping =	1,471	ft	$37	$54,427
6-inch lateral piping =	782	ft	$31	$24,242
Common Trench:				
2-inch air supply line =	1,471	ft	$3	$4,413
2-inch condensate discharge line =	1,471	ft	$2	$2,942
Appertenances				
No. of Condensate Sumps =	1	EA	$15,000	$15,000
No. of Buried Blind Flanges =	2	EA	$500	$1,000
Mobilization =	1	EA	$5,000	$5,000
Contingency =	1	EA	10%	$13,117
			TOTAL PHASE 1:	$144,291

PHASE 2	**QUANTITY**	**UNITS**	**UNIT PRICE**	**COST**
Wells/Collectors				
No. of Horizontal Collectors/Wellheads =	3	EA	$500	$1,500
Length of 6-inch Perforated Pipe =	1,221	ft	$40	$48,840
No. of boots =	3	EA	$500	$1,500
Piping				
6-inch lateral piping =	527	ft	$31	$16,337
Mobilization =	1	EA	$5,000	$5,000
Contingency =	1	EA	10%	$7,318
			TOTAL PHASE 2:	$80,495

PHASE 3	**QUANTITY**	**UNITS**	**UNIT PRICE**	**COST**
Wells/Collectors				
No. of Horizontal Collectors/Wellheads =	2	EA	$500	$1,000
Length of 6-inch Perforated Pipe =	814	ft	$40	$32,560
No. of boots =	2	EA	$500	$1,000
Piping				
6-inch lateral piping =	377	ft	$31	$11,678
Mobilization =	1	EA	$5,000	$5,000
Contingency =	1	EA	10%	$5,124
			TOTAL PHASE 3:	$56,361

CARLSON ENVIRONMENTAL CONSULTANTS, PC			
CLIENT: WM of Inc. of Florida	PROJECT: Vista Landfill		JOB NO.: 101.07.07
SUBJECT: FINANCIAL ASSURANCE - Response to RAI No. 1		BY: Lindsey Kennelly	DATE: 11/19/2012
		CHECKED: SAN	DATE: 11/19/12

PHASE 4	QUANTITY	UNITS	UNIT PRICE	COST
Wells/Collectors				
No. of Extraction Wells/Wellheads =	2	EA	$500	$1,000
Approximate Depth per Well =	40	ft/well	--	--
Total Well Depth =	80	ft/well	$90	$7,200
No. of LCRS Remote Wellheads =	1	EA	$650	$650
No. of boots =	3	EA	$500	$1,500
Piping				
8-inch header piping =	374	ft	$37	$13,838
6-inch lateral piping =	511	ft	$31	$15,841
Common Trench:				
2-inch air supply line =	374	ft	$3	$1,122
2-inch condensate discharge line =	374	ft	$2	$748
Appertenances				
No. of Buried Blind Flanges =	1	EA	$500	$500
Mobilization =	1	EA	$5,000	$5,000
Contingency =	1	EA	10%	$4,740
			TOTAL PHASE 4:	$52,139

PHASE 5	QUANTITY	UNITS	UNIT PRICE	COST
Wells/Collectors				
No. of Extraction Wells/Wellheads =	3	EA	$500	$1,500
Approximate Depth per Well =	60	ft/well	--	--
Total Well Depth =	180	ft/well	$90	$16,200
No. of LCRS Remote Wellheads =	2	EA	$650	$1,300
No. of boots =	5	EA	$500	$2,500
Piping				
8-inch header piping =	2,423	ft	$37	$89,651
6-inch lateral piping =	136	ft	$31	$4,216
Common Trench:				
2-inch air supply line =	2,423	ft	$3	$7,269
2-inch condensate discharge line =	2,423	ft	$2	$4,846
Mobilization =	1	EA	$45,000	$45,000
Contingency =	1	EA	10%	$17,248
			TOTAL PHASE 4:	$189,730

SUMMARIZE TOTAL COST FOR INTERIM DESIGN PHASES 1 THROUGH 4

Phase 1	$144,291
Phase 2	$80,495
Phase 3	$56,361
Phase 4	$52,139
Phase 5	$189,730
TOTAL CLOSURE COST ITEM 8 =	$523,017

ERC GENERAL CONTRACTING SERVICES, INC.

Carter CommerCenter • 890 Carter Road, Suite 170
Winter Garden, Florida 34787
(407) 656-3900 • Fax (407) 656-2128

11/19/12

Seth Nunes, P.E.
Principal
Carlson Environmental Consultants, PC
1479 Scilly Cay Lane
Jupiter FL, 33458

Re: Landfill Closure Cost Estimate

Seth,

Based on current market pricing the purchase and placement of 6" top soil would be:

- $3.50/CY for excavation/placement/spreading
- $2.00/CY for material cost

If you have any questions please contact me at (407) 468-1046.

Sincerely,

Jerry L. Pinder, President