

Sheplak, Scott

From: Sheplak, Scott
Sent: Tuesday, February 06, 2007 9:04 AM
To: Heron, Teresa
Cc: Linero, Alvaro
Subject: RE: EPA Recognizes Landfill Energy Projects

Re: Pinellas WTE

Thanks.

-----Original Message-----

From: Heron, Teresa
Sent: Tuesday, February 06, 2007 8:24 AM
To: Sheplak, Scott
Subject: FW: EPA Recognizes Landfill Energy Projects

FYI

-----Original Message-----

From: Waste Age Wire [mailto:wasteage@pbinews.com]
Sent: Monday, January 29, 2007 11:28 AM
To: Heron, Teresa
Subject: EPA Recognizes Landfill Energy Projects

WASTE AGE WIRE
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January 29, 2007

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LMOP

NEWS

--EPA Recognizes Landfill Energy Projects The U.S. Environmental Protection Agency (EPA) announced awards recognizing participants in its Landfill Methane Outreach Program (LMOP), a voluntary assistance and partnership program that reduces greenhouse gas emissions by supporting landfill gas energy project development. LMOP partners have assisted in developing more than 325 landfill gas projects in the past 12 years. According to the EPA, these projects have reduced methane emissions by about 90 million metric tons of carbon dioxide equivalent.

"Across the nation, EPA is helping transform landfill waste into energy wealth," said Bill Wehrum, acting assistant administrator for EPA's Office of Air and Radiation, in presenting the awards. "We are recognizing partners who have demonstrated superior innovation and environmental achievement in advancing landfill gas energy projects."

Nationwide, there are more than 400 projects in operation. In 2006, LMOP projects provided over 10 billion kilowatt hours of electricity and 75 billion cubic feet of landfill gas to corporate and government end users. These projects produced energy equivalent to powering roughly 780,000 homes and heating nearly 1.2 million homes.

To view the award winners, click on the headline above.

To view the full article go to:

<http://ct.pbnews.com/rd/cts?d=244-8860-95-28575-79263-422743-0-0-0-1>

--Veolia ES Waste-to-Energy Awarded 17-Year Pinellas County, Fla., Contract The Pinellas County Board of County Commissioners in Clearwater, Fla., has awarded a 17-year, \$615 million contract to Veolia ES Waste-to-Energy to operate the county's waste-to-energy (WTE) facility.

The Pinellas WTE facility began commercial operations in 1983. It consists of three boilers, each of which is capable of burning 1,050 tons of solid waste per day. These are the largest WTE boilers in the United States. Using steam from the boilers to run turbines, the plant generates about 75 megawatts of electricity per hour, enough to power approximately 45,000 homes and businesses every day.

To view the full article go to:

<http://ct.pbnews.com/rd/cts?d=244-8860-95-28575-79263-422744-0-0-0-1>

--New Mack Cabover Truck Announced

At the recent World of Concrete Show in Las Vegas, Allentown, Pa.-based Mack Trucks unveiled its new TerraPro Cabover model, which the company says is optimized for refuse and construction applications. The TerraPro will replace the company's MR model, which customers will be able to purchase only until existing inventories are depleted.

According to Mack, the truck includes several new features aimed at optimizing driver comfort. It also incorporates technology designed to improve performance, such as the latest version of Mack's Vehicle Management and Control System (V-MAC IV), which offers more than 100 programmable functions, and an optional Mack M-Ride 6-rod suspension, allowing up to 17-inch articulation for greater maneuverability in landfills.

To read more, click on the headline above.

To view the full article go to:
<http://ct.pbinews.com/rd/cts?d=244-8860-95-28575-79263-422745-0-0-0-1>

UPDATES

--Announcements

The San Carlos, Calif.-based South Bayside Waste Management Authority (SBWMA) has hired two new recycling officials. Cliff Feldman will be SBWMA's recycling program manager, and Hilary Gans will serve as facility operations contract manager, a newly created position within the authority.

MARK IT

--Feb. 14-16, 2007
Sanitary Landfill Design Course

Madison, Wis.

Offered by the University of Wisconsin-Madison's Department of Engineering Professional Development

For details, visit epdweb.engr.wisc.edu/WEBH963 (<http://epdweb.engr.wisc.edu/WEBH963>).

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--Feb. 26-27, 2007
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Tampa, Fla.

For details, visit www.swana.org (<http://www.swana.org>).

--Feb. 26-March 1, 2007
SWANA's Winter Training Center

Tampa, Fla.

For details, visit www.swana.org (<http://www.swana.org>).

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Editor: (770) 618-0202, e-mail <mailto:saverett@prismb2b.com>.

Trends analyze the news and current trends in our ever-changing waste

industry.-- News, contact Jennifer Grzeskowiak, Managing Editor: (770) 618-0101, e-mail

<mailto:jgrzeskowiak@prismb2b.com>. Tip Off is the news section that offers a quick digest of current events and news. --

Waste Age Product News, Deanna Hart, Assistant Editor: (770) 618-0120, e-mail <mailto:dhart@prismb2b.com>. Waste Age

Product News highlights the products and services in every segment of the waste industry.

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Prism Business Media

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Overland Park, KS 66282

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Florida Department of Environmental Protection

Memorandum

To: Al Linero

From: Scott M. Sheplak *JMS*

Date: February 21, 2007

Re: Trip Report - Waste Management (WM) Okeechobee & Central Landfills
January 10 & 11, 2007 - Site Visits

On January 10, I visited the Central Landfill located in Pompano Beach near Ft. Lauderdale in Broward County. The Wheelbrator North Broward Waste-to-Energy facility is located adjacent to the Central landfill. I visited the Okeechobee Landfill formerly known as the Berman Road Landfill located near Fort Pierce in Okeechobee County on January 11. I coordinated both of the site tours with Mr. David Thorley from Waste Management. The purpose of the tours was for me to become familiar with municipal solid waste landfills and the current technology used to collect and control air pollutant emissions. This report summarizes both visits and includes pictures.

Contacts at Central Landfill:

- Mr. David Thorley, P.E., Director of Air Programs - South, WM
- Mr. John Casagrande, Landfill Manager, WM
- Mr. Bryan Tindell, Landfill District Manager, WM
- Mr. John Phillips, District Manager Gas Plant, WM
- Mr. Carlos Solorro, Gas Plant Operator, WM
- Mr. Gilmer Viana, Compression Engineer, WM
- Mr. Jeff Broadeur, Site Engineer, WM
- Mr. John Ficula, Turbine Operations Manager, WM

The air operation permit, Title V permit number 0112094-005-AV, was recently renewed effective May 28, 2006.

The Central Landfill is located just outside a major metropolitan area, Ft. Lauderdale. The Central Landfill is owned and operated by Waste Management and provides backup waste disposal capacity to Broward County in accordance with a contractual agreement¹. The Central landfill currently has a design capacity of 52 million cubic yards which is equivalent to 42.7 million megagrams³. The landfill began to receive waste in 1969³ and projects to remain open 10 more years until the year 2017. The municipal solid waste landfill's foot print is approximately 391.5 acres. The landfill has a gas collection and treatment system with 2 enclosed flares and 1 open flare. Approximately 12 MW of electricity is generated by combustion turbines.

The Central Landfill uses a desulphurization system to remove hydrogen sulfide (H_2S) from the landfill gas stream prior to being routed to 3 combustion turbines. Landfill gas contains methane, a fuel. The facility originally had 5 combustion turbines, only 3 exist now. Plant contacts estimated a typical large municipal waste landfill generates gas for up to 30 years. H_2S gas typically evolves first from the active portion of a landfill then methane gas emanates over time during continued waste decomposition. Gas curves show this phenomenon.

The content of H_2S in landfill gas is variable. Construction & demolition waste can contain up to 30,000 ppmvd.⁶ H_2S in a moisture laden gas stream can form sulfuric acid which is highly corrosive. The landfill gas at Central has a high sulfur content due to wastes with high sulfur contents. Wallboard is attributed to being the source of the sulfur containing gypsum (calcium sulfate) waste.⁶ Recent unprecedented storms increased the volume of wallboard going into landfills. On-site contacts indicated a sulfur content of up to 5,800 ppmvd H_2S in the Central landfill gas.

The desulphurization system used to remove H_2S at the Central landfill is the LO-CAT[®] technology. The LO-CAT[®] brochure² provided on the Web site indicates the Central landfill gas contains up to 5,000 ppmvd H_2S . The facility contact showed me the old LO-CAT I system which is no longer in use. On the control board the Wheelabrator Air Technologies name was displayed. A LO-CAT II system is now used to reduce H_2S to 1,000 ppmvd. The 1,000 ppmvd level is a combustion turbine specification. This represents an H_2S reduction of approximately 83%.

Mr. Carlos Solorro provided me a tour of the operating LO-CAT II system. An iron chelae solution is used to capture sulfur in the absorption reactor where the gas stream and liquid stream mix. In the absorption tank, ping pong looking plastic balls are used as the contact packing medium for the gas and liquid. A scheduled maintenance program is followed to change out the packing material. I asked why dP gauges are not used. I was told that dP gauges plugged and caked up easily with sulfur slurry. The slurry goes to a vacuum belt where liquid is removed. The cake rolls off the belts into a bin for disposal back into the landfill. The sulfur cake had a slight off yellow color and distinct sulfur odor. Sulfur caking in equipment can easily occur with imbalances in the process. A complete process flow diagram of the LO-CAT II system at the Central Landfill is posted on the Merichem Company website². The plant uses draeger tubes to sample H_2S concentrations frequently from the main gas header entering the gas plant and at the gas outlet of the LO-CAT II system just prior to the combustion turbines. Good operation and maintenance keeps this system operating efficiently. Several pictures were taken of the LO-CAT II system and are attached to this report (see pictures 1. - 8.).

Mr. Phillips then provided me a tour of the gas plant/power generation. A backup open flare exists at the combustion turbine site. Approximately 7 MW was being generated at the time of the visit. The electrical generators were manufactured by the Ideal Energy Company and the gas turbines were manufactured by Solar Turbine. The combustion turbine units appeared to be very well maintained.

Re: Trip Report - Waste Management (WM) Okeechobee & Central Landfills
January 10 & 11, 2007 - Site Visits
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At the end of the visit, Mr. Tindell provided me a tour of the landfill. The plant contacts provided a tour of the landfill active and closed portions. Gas collection wells were shown. I took a few pictures while on top of the landfill (see pictures 11. - 13.).

Pictures Taken at the Central Landfill

Description

1. Duct where landfill gas stream enters the LO-CAT II system.
2. Duct with gas stream and duct with liquid stream containing iron chelate. This is where the two streams began mixing.
3. Absorber tower showing circular access ports to access the packing material.
4. Garbage can nearby absorbers for packing material change outs. Note sulfur compound remains on insides.
5. View looking from absorber tower to the oxidation tank.
6. Side view of outside of the oxidation tank. The oxidation tank is where air is injected at various points.
7. Bottom of oxidation tank from within the inside of the tank enclosure. Slurry gravimetrically falls down through the funnel and then is ducted to filter presses.
8. Filter press belt. Filter cake rolls off of the end of the belt here.
9. Side view of the Central Landfill looking south where the gas main header comes into the gas plant. The header is not shown in this picture.
10. View where gas main from landfill header goes to the LO-CAT system. The two large circular stacks in the background are turbine exhaust stacks.
11. Active portion on top of the landfill looking east.
12. Other side of active portion of landfill looking west. Note protruding gas well ductwork.
13. View looking east towards Ft. Lauderdale where landfill will next be expanded.

Contacts at Okeechobee Landfill:

Mr. David Thorley, P.E., Director of Air Programs - South, WM

Mr. Mike Stallard, Director of Operations - Central Florida Landfills, WM

Ms. Michele Lersch, Environmental Protection Manager - Central Florida, WM

Mr. Miguel Delgado, Site Engineer, WM

Mr. Kristopher L. Carlson, P.E., President, Carlson Environmental Consultants, PC

The facility's recent permit was for a revision on 12/17/2003. The current Title V permit number 0930104-011-AV expires on 08/02/2008.

The Okeechobee Landfill is located west of Ft. Pierce and to the north of Lake Okeechobee in Okeechobee County in a very rural area. This landfill is centrally located in Central Florida approximately 107 miles from southeast Florida (Ft. Lauderdale), 107 miles to Orlando, 96 miles from southwest Florida (Ft. Myers) and approximately 2 ½ hours or 138 miles to Tampa.⁵

The landfill is undergoing an expansion. The Okeechobee site is comprised of what has been known as the Berman Road landfill portion and a new area known as Clay Farms. The Clay Farms is south of the Berman Road portion. A design capacity of 129.5 million megagrams equivalent to 142.7 million tons is reflected in the current Title V permit.⁴ The current landfill began receiving waste in 1981.⁴ The Okeechobee site is projected to receive waste until the year 2061. The Berman Road landfill has a gas collection and treatment system consisting of 2 enclosed flares and 1 open flare. A temporary flare used for odor control is installed near the north end of the active portion of the landfill. The facility uses spray demisters around the property line for additional odor control. Water trucks keep the roads wet to control dust from truck traffic. WM indicated this site will be the 4th largest private landfill in the country. The flares are used to control emissions from the landfill gas and leachate collection system. The 2 enclosed flares are located next to the leachate evaporation units. Approximately 31,000 scfm is the projected gas generation from the site. Current flare capacity is permitted at 9,000 scfm. The applicant may propose using the landfill gas for electrical generation. The applicant plans to discuss this further in the air construction/prevention of significant deterioration (AC/PSD) permit application.

According to the contacts, the landfill currently has 162 wells that are required to be monitored on a monthly basis. Monthly samples are taken for: methane, oxygen, nitrogen and temperature gauge pressure. These parameters are referenced in Table 2-2. Summary of Monitoring Requirements for Landfills. The landfill is regulated under NSPS 40 CFR 60 Subpart WWW and NESHAP 40 CFR 63 Subpart AAAA. The NSPS regulates non-methane organic compounds (NMOC). Methane is excluded from the definition of a volatile organic compound (VOC) due to it having negligible photo chemical reactivity. H₂S is not a listed HAP, however H₂S is a regulated air pollutant for PSD purposes. When combusted it forms SO₂ which is also a regulated air pollutant for PSD purposes. The significance thresholds for triggering PSD are 10 tons per year (TPY) for H₂S and 40 TPY for SO₂.

The facility uses a portable analyzer unit referred to as the "GEM2000" unit to perform the sampling and analysis of landfill gas parameters. I took a picture of the "GEM2000" unit. The "GEM2000" units are tied into a computer network operated by Waste Management. Data is automatically uploaded into the network for each sampled well.

At the Okeechobee site we discussed issues with the AC/PSD permit such as potential to emit (PTE), air dispersion modeling, best available control technology (BACT) and the National Park Service & Southeast District DEP office concerns. I emphasized the importance of getting the air dispersion modeling done and submitted to our office for our review. Their consultants, Shaw Environmental were preparing the air dispersion modeling. They discussed their issue with PTE. We discussed the concept of PTE as it applies to a landfill. I also described the BACT process, draft permit and technical evaluation documents that would be prepared. The professional engineer (P.E.) of record on the AC/PSD permit request is Kristin Alzheimer. I provided a copy of my agenda for this visit.

I described the definition of PTE and how it may apply to landfills. I provided the current definition from Rule 62-210.200, F.A.C., effective 9/6/06. I told the contacts my preference would be to base PTE on the ultimate capacity of the landfill site. I mentioned that I would run this by my supervisor, Al Linero. The company is proceeding to base the project on the PTE of the ultimate site.

Mr. Stallard showed me an aerial map of the site. On the map the current landfill, Berman Road, was shown along with the expansion south in an area known as Clay Farms. A copy of the site's footprint was requested to document the capacity of the entire site for purposes of PTE. The Okeechobee site apparently is licensed under solid waste for approximately a total of 833 acres. The solid waste permit(s) will be used to confirm what is licensed. The applicable solid waste permit number is 0040842-010-SC. In subsequent telephone conversations a copy of the permit was requested.

The facility plans to continue the flaring of landfill gas under the expansion. The facility is willing to use a desulphurization system like the LO-CAT system used at the Central Landfill in order to reduce SO₂ emissions. Such a system would reduce H₂S in the landfill gas. The Central Landfill uses the landfill gas methane as a fuel to generate electricity as previously mentioned. A desulphurization system like the LO-CAT would further decrease SO₂ formation if the gas were flared.

The facility understands the LO-CAT System has operation and maintenance costs. The facility would take advantage of the operational experiences from the nearby Central Landfill personnel. I mentioned that the LO-CAT system is advertised on an internet site. The facility anticipates needing 2 years to purchase a LO-CAT system. The facility would like the AC/PSD permit by April 2007.

The LO-CAT technology is sold by the Merichem Company². The LO-CAT system is marketed for its H₂S treatment applications at petroleum processing plants, a landfill (Central) and a

Re: Trip Report - Waste Management (WM) Okeechobee & Central Landfills
January 10 & 11, 2007 - Site Visits
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wastewater treatment plant in Jupiter, Florida. A process flow diagram of the Central Landfill application is posted on the website. The current commercial availability of the LO-CAT systems is unknown.

I requested WM's Okeechobee Landfill presentation for the National Park Service (NPS). WM indicated it would be provided. Subsequent to the onsite visit, the presentation was provided via an e-mail dated 01/29/2007.

The contacts provided me a quick tour of the facility. I took pictures along the way (see pictures 14. - 24.).

SMS/mh

Attachments

Pictures Taken at the Okeechobee Landfill

Description

14. View from on top of landfill at approximately 225' elevation looking south.
15. Gas wellhead on top of landfill with "GEM2000" unit attached. Hard piping is the well which goes into the landfill. The flexible ductwork goes to the gas collection system.
16. View on top of active portion of landfill looking east.
17. Permanent enclosed flare.
18. View of the top of the temporary flare.
19. Side view of temporary flare.
20. Flame arrestor (square enclosure) on temporary flare.
21. Monitoring displays at the temporary flare. Temperature strip chart and blower amps are shown.
22. Monitoring displays at the permanent flare location.
23. Side view of enclosed flare.
24. Enclosed flare evaporation unit for leechate with candlestick open flare back up in the background.

Pictures Taken off-site of the Okeechobee Landfill

25. Entrance to site.
26. View at ground elevation just south of landfill looking northeast from the road.

References

¹ Broward County Web site accessed on 01/09/2007
<http://www.broward.org/waste/iwi02600.htm> .

² LO-CAT technology information from Merichem Company Web site accessed on 01/09/2007
<http://www.gtp-merichem.com/products/lo-cat> .

³ Title V permit number 0112094-005-AV. .

⁴ Title V permit number 0930104-011-AV.

⁵ Mileage estimates from MapQuest Web site <http://www.mapquest.com/> .

⁶ *Odors & Landfill Gas from C & D Waste* by Brian E. Flynn; January 1998, Waste Age.



Picture 1.



Picture 2.



Picture 3.



Picture 4.



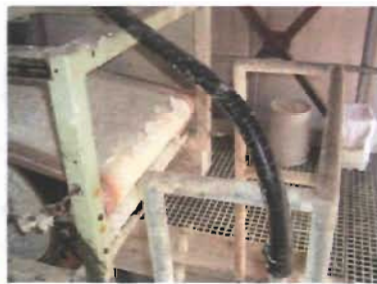
Picture 5.



Picture 6.



Picture 7.



Picture 8.



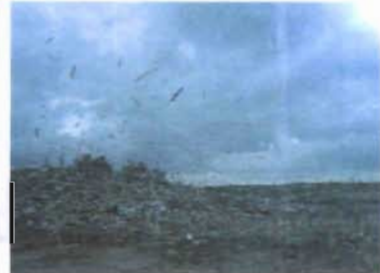
Picture 9.



Picture 10.



Picture 11.



Picture 12.



Picture 13.



Picture 14.



Picture 15.



Picture 16.



Picture 17.



Picture 18.



Picture 19.



Picture 20.



Picture 21.



Picture 22.



Picture 23.



Picture 24.



Picture 25.



Picture 26.

Draft Agenda
DEP and Okeechobee Landfill, Inc., A Waste Management Company
January 10-11, 2007

OBJECTIVE

Discuss the approach to drafting the AC/PSD Permit & Tour of Landfills

Issues with drafting of the AC/PSD Permit:

- We need the air dispersion modeling;
- Landfill PTE;
- Potential BACT; and,
- Satisfying the NPS and SED offices.

{We need the Okeechobee Landfill NPS presentation.}

TENTATIVE SCHEDULE

Wed., 1/10; 1:30 - 4:30 p.m. @ the Central Landfill in Pompano Beach

Review of the LO-Cat system.

Thurs., 1/11; 9 - 11 a.m. @ the Okeechobee (Berman Road) Landfill

Meet and discuss briefly the current scope of the Okeechobee project.

Visit and tour the size and scope of this landfill.

Follow up items

Effective 9/6/06

**CHAPTER 62-210 STATIONARY SOURCES - GENERAL
REQUIREMENTS**

62-210.200 Definitions.

(232) "Potential to Emit" - The maximum capacity of an emission unit or facility to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the emissions unit or facility to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of an emission unit or facility.

Sheplak, Scott

-file-

From: Sheplak, Scott
Sent: Thursday, July 12, 2007 5:30 PM
To: Martin, Lee
Cc: Nelson, Deborah; Linero, Alvaro; Tedder, Richard
Subject: RE: Okeechobee Landfill, DEP File Number 0930104-014-AC
Attachments: solid waste permitted rates & referenced capacities.doc

Thanks.

I am particularly interested in the Clay Farms site as the permit does not mention the phases, cells or "permitted rate" like the Berman Road permit. You had mentioned at our meeting that maybe the application dated 3/11/2005 had this information.

To this end I am trying to verify what is "permitted." In this regard I am preparing a review document (see attached).

From: Martin, Lee
Sent: Thursday, July 12, 2007 5:22 PM
To: Sheplak, Scott
Cc: Nelson, Deborah; Linero, Alvaro; Tedder, Richard
Subject: RE: Okeechobee Landfill, DEP File Number 0930104-014-AC

Good afternoon Scott, I guess it depends on what you are looking for in the way of "permitted solid waste capacities", it appears the permittee felt the "acres of landfill permitted for disposal" would suffice. The Southeast District issues solid waste disposal permits for the total expected capacity in acres and maximum elevation in feet NGVD. In looking at the normal progression of events associated with the operation of a landfill, a construct or construct/operate solid waste permit is issued by the District office, then a Certificate of Construction Completion is submitted upon completion of base construction for certain cells or phases to the District office, then an inspection is made and approval is given to begin accepting waste in those cells or phases (specific condition 14 in the Clay Farms permit). Records are kept by the permittee and in the case of the Clay Farms permit, specific condition 15, requires submittal of an annual estimate of remaining life and capacity in cubic yards of the existing landfill based on landfill dimensions provided by a registered surveyor. Also in the Clay Farms permit, specific condition 29, requires submittal of any amended design capacity report and NMOC emission rate report to the Division of Air Resources Management in Tallahassee as applicable under 40CFR60.757. The volumes provided by the permittee in the RAI response, meaning the 23,431,195 tons for Berman Rd LF and the 119,324,195 tons for Clay Farms LF, appear to be calculated based on the total acres and the maximum height permitted for each respectively and would not represent current conditions today. If that does not suffice, I will contact the District office and find out how many cells/phases have been constructed and approved to accept waste so far if that would be helpful or would the latest annual estimate of waste in place be more appropriate for your needs? Hope this helps, Lee

William "Lee" Martin, P.E.
Solid Waste Section
850-245-8734 S/C 205-8734
Lee.Martin@dep.state.fl.us

From: Sheplak, Scott
Sent: Wednesday, July 11, 2007 11:00 AM
To: Martin, Lee
Cc: Nelson, Deborah; Linero, Alvaro; Tedder, Richard
Subject: Okeechobee Landfill, DEP File Number 0930104-014-AC

Mr. Martin:

We received a response to our request for additional information from Waste Management. Al & I met with you back in April to discuss this permit application in our office. You had offered to review their response regarding the "permitted solid waste capacities" at the Berman Road landfill site and the Clay Farms landfill site. Attached to this e-mail are excerpts from their response to this question (#1.). In their response they circled in red what they believe to be the "permitted solid waste capacities" at both sites from the solid waste permits. Also, they consider both sites to

7/12/2007

comprise a single source.

The complete response from Waste Management can be found here:
<http://www.dep.state.fl.us/Air/permitting/construction/okeechobee.htm>

We understand that phases of a landfill are permitted by the solid waste permitting office. It is not clear what phase of the Clay Farms landfill site has been permitted by the solid waste permitting office.

Please review their response (comment) to question #1. Our deadline for reviewing all of the responses is July 19th. Our target date to finish this review is July 16th. I apologize for sending this to you with a short turnaround.

Thank you for your assistance. If you have any questions please call me or Al Linero at 921-9523.

Sincerely,

Scott M. Sheplak, P.E.
SunCom 291-9532
Telephone 850/921-9532

Sheplak, Scott

-file-

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Sent: Thursday, July 12, 2007 5:30 PM
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Attachments: solid waste permitted rates & referenced capacities.doc

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Cc: Nelson, Deborah; Linero, Alvaro; Tedder, Richard
Subject: RE: Okeechobee Landfill, DEP File Number 0930104-014-AC

Good afternoon Scott, I guess it depends on what you are looking for in the way of "permitted solid waste capacities", it appears the permittee felt the "acres of landfill permitted for disposal" would suffice. The Southeast District issues solid waste disposal permits for the total expected capacity in acres and maximum elevation in feet NGVD. In looking at the normal progression of events associated with the operation of a landfill, a construct or construct/operate solid waste permit is issued by the District office, then a Certificate of Construction Completion is submitted upon completion of base construction for certain cells or phases to the District office, then an inspection is made and approval is given to begin accepting waste in those cells or phases (specific condition 14 in the Clay Farms permit). Records are kept by the permittee and in the case of the Clay Farms permit, specific condition 15, requires submittal of an annual estimate of remaining life and capacity in cubic yards of the existing landfill based on landfill dimensions provided by a registered surveyor. Also in the Clay Farms permit, specific condition 29, requires submittal of any amended design capacity report and NMOC emission rate report to the Division of Air Resources Management in Tallahassee as applicable under 40CFR60.757. The volumes provided by the permittee in the RAI response, meaning the 23,431,195 tons for Berman Rd LF and the 119,324,195 tons for Clay Farms LF, appear to be calculated based on the total acres and the maximum height permitted for each respectively and would not represent current conditions today. If that does not suffice, I will contact the District office and find out how many cells/phases have been constructed and approved to accept waste so far if that would be helpful or would the latest annual estimate of waste in place be more appropriate for your needs? Hope this helps, Lee

William "Lee" Martin, P.E.
Solid Waste Section
850-245-8734 S/C 205-8734
Lee.Martin@dep.state.fl.us

From: Sheplak, Scott
Sent: Wednesday, July 11, 2007 11:00 AM
To: Martin, Lee
Cc: Nelson, Deborah; Linero, Alvaro; Tedder, Richard
Subject: Okeechobee Landfill, DEP File Number 0930104-014-AC

Mr. Martin:

We received a response to our request for additional information from Waste Management. Al & I met with you back in April to discuss this permit application in our office. You had offered to review their response regarding the "permitted solid waste capacities" at the Berman Road landfill site and the Clay Farms landfill site. Attached to this e-mail are excerpts from their response to this question (#1.). In their response they circled in red what they believe to be the "permitted solid waste capacities" at both sites from the solid waste permits. Also, they consider both sites to

7/24/2007

comprise a single source.

The complete response from Waste Management can be found here:
<http://www.dep.state.fl.us/Air/permitting/construction/okeechobee.htm>

We understand that phases of a landfill are permitted by the solid waste permitting office. It is not clear what phase of the Clay Farms landfill site has been permitted by the solid waste permitting office.

Please review their response (comment) to question #1. Our deadline for reviewing all of the responses is July 19th. Our target date to finish this review is July 16th. I apologize for sending this to you with a short turnaround.

Thank you for your assistance. If you have any questions please call me or Al Linero at 921-9523.

Sincerely,

Scott M. Sheplak, P.E.
SunCom 291-9532
Telephone 850/921-9532

Appendix SW-1, Solid Waste Permitted Rates & Referenced Capacities (Footprints)

Okeechobee Landfill Site
 Air File Number 0930104-014-AC

Berman Road Landfill

Current valid solid waste permit: Permit Number 0040842-010-SC
 Issued: April 11, 2003
 Expires: April 10, 2008

①
 Waste Management Inc. of Florida
 Okeechobee Landfill Inc.

Referenced Capacity (Footprint): Available solid waste disposal area = 194 acres ¹.
 Maximum permitted elevation = 227 N.G.V.D. ².

Solid Waste Permitted Rates

Phase	Cells	Area (Acres)	% of Total Area	Waste Disposal Rate (tons/day)	Waste Capacity (1000 tons)	% of Total Volume	Est. Life of Cells (Years)
?	1 - 16	87	45	10,000	?	?	?
?	17 - 34	107	55	?	?	?	?
Total	-	194	100	-	?	100	?

¹ Page 1 of 13 of permit.

² Specific Condition number 24. of permit.

Appendix SW-1, Solid Waste Permitted Rates & Referenced Capacities (Footprints)

Okeechobee Landfill
Air File Number 0930104-014-AC

copy

Clay Farms Landfill Site

Current valid solid waste permit: Permit Number 0247963-001-SC
Issued: December 2, 2005
Expires: December 1, 2010

Referenced Capacity (Footprint): Available solid waste disposal area = 639 acres³.
Maximum permitted elevation = 233 N.G.V.D.⁴.

Solid Waste Permitted Rates

Phase	Cells	Area (Acres)	% of Total Area	Waste Disposal Rate (tons/day)	Waste Capacity (1000 tons)	% of Total Volume	Est. Life of Cells (Years)
?	?	?	?	5 - 7,000	?	?	?
?	?	?	?	?	?	?	?
Total	-	?	100	-	?	100	?

³ Page 1 of 11 of permit.

⁴ Page 1 of 11 of permit.

Solid Waste Permit Application dated March 11, 2005 Reflects:

Phase	Cells	Area (Acres)	% of Total Area	Waste Disposal Rate (tons/day)	Waste Capacity (1000 tons)	% of Total Volume	Est. Life of Cells (Years)
?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?
Total	-	?	100	-	?	100	?

Sheplak, Scott

From: Sheplak, Scott
Sent: Wednesday, July 11, 2007 11:00 AM
To: Martin, Lee
Cc: Nelson, Deborah; Linero, Alvaro; Tedder, Richard
Subject: Okeechobee Landfill, DEP File Number 0930104-014-AC
Attachments: 0930104-014-AC response excerpts for solid waste review.pdf

Mr. Martin:

We received a response to our request for additional information from Waste Management. Al & I met with you back in April to discuss this permit application in our office. You had offered to review their response regarding the "permitted solid waste capacities" at the Berman Road landfill site and the Clay Farms landfill site. Attached to this e-mail are excerpts from their response to this question (#1.). In their response they circled in red what they believe to be the "permitted solid waste capacities" at both sites from the solid waste permits. Also, they consider both sites to comprise a single source.

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Thank you for your assistance. If you have any questions please call me or Al Linero at 921-9523.

Sincerely,

Scott M. Sheplak, P.E.
SunCom 291-9532
Telephone 850/921-9532

B. Air Construction/PSD Permit Application Items

Potential to Emit

Comment No. 1: In the application the capacity of the landfills is mentioned in the Support Documentation Section II., subsection 3.3.1. and in Appendix E, LFG (Landfill Gas) Generation Rates & Construction Schedule. The landfill capacity is important in defining the potential to emit for the facility. While on-site and as mentioned in the application, two solid waste permits apparently exist for the existing site and the proposed new site. The solid waste permits referenced are Permit Number 0040842-010-SC for the Berman Road Landfill site and Permit Number 0247963-001-SC for the Clay Farms Landfill site.

- a. In Appendix E, the memorandum indicates the capacity of each landfill was estimated by Okeechobee Landfill, Inc. to be 23,431,195 tons for the Berman Road Landfill and 119,324,195 tons for the Clay Farms Landfill. One ton of waste was assumed to be equivalent to one cubic yard. Together these two sites occupy approximately 4,300 acres. Please provide a copy of the pertinent page(s) of these solid waste permits and relevant documentation to support the cited "permitted solid waste capacities."
- b. Please provide landfill gas generation graphs for the Berman Road and Clay Farms sites, with landfill gas flow (scfm) plotted versus years.

Response:

- a. The entire property consists of 4,150 acres (corrected from the 4,300 estimate); however, the permitted solid waste disposal footprint is only 833 acres of the total property acreage. **Attachment 5** includes copies of the permit pages with the stated acreage.
- b. A landfill gas generation potential curve is at **Attachment 6** of this letter. Please note the Berman Road and Clay Farm areas are not separate stationary sources. Clay Farms is not a proposed new site, but a permitted capacity increase of the existing stationary source. The nomenclature is used to distinguish the areas.

Hydrogen Sulfide (H₂S) and Sulfur Dioxide (SO₂) Emissions

Comment No. 2: An H₂S content from the landfill gas at the Berman Road Landfill of 5,786 ppmv was used in the subject permit application.

- a. In Appendix A of the application, it was stated that municipal solid waste that is landfilled contains approximately 29% construction &



Department of Environmental Protection

Jeb Bush
Governor

APR 15 2003

Southeast District
400 N. Congress Ave. Suite 200
West Palm Beach, Florida 33401

David B. Struhs
Secretary

PERMITTEE:

Okeechobee Landfill, Inc.
ATT: Mr. Charles J. Campagna, V.P.
Waste Management Inc. of Florida
10800 N.E. 128th Avenue
Okeechobee, FL 34972

GMS I.D. NUMBER: 5147C30001
WACS ID. NUMBER: SED/47/00070436
PERMIT/CERTIFICATION NUMBER: 0040842-010-SC
DATE OF ISSUE: April 11, 2003
EXPIRATION DATE: April 10, 2008
COUNTY: Okeechobee
LATITUDE/LONGITUDE: 27°20'29"/80°41'12"
SECTION/TOWNSHIP/RANGE: 13, 24, 25, 36/T36S/R36E

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-302, 62-520, 62-522, 62-701 and 62-709, Florida Administrative Code (F.A.C.). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

Berman Road Landfill, owned and operated by Okeechobee Landfill, Inc. totals 194 acres lying within Sections 13, 24, 25 and 36. Berman Road Landfill has 107 available acres remaining for solid waste disposal and a comprehensive stormwater control system. The conceptual Environmental Resources Permit Number EC-472777746 was issued on October 31, 1996 for impacts to wetlands and the surface water management system. A consolidated Environmental Resource Permit Number EI-47-0131315-001 was issued on March 13, 1998.

TO OPERATE: A 10,000 ton/day Class I sanitary landfill consisting of 87 lined acres, identified as Cells 1 through 16. The liner system is comprised of a double composite lining system with a Geosynthetic Clay Liner (GCL) beneath the secondary liner geomembrane. The liner system includes a leachate collection system (LCS) and a leak detection system (LDS). Other systems include an active gas control system with two - 20,000 gallon per day leachate evaporators and flare systems.

TO CONSTRUCT/OPERATE: A Class I sanitary landfill consisting of 107 lined acres, identified as Cells 17 through 34 (herein referred to as the lateral expansion of the Berman Road Landfill).

Cells 17 through 34 will be constructed with the following components (from top down):

- a 2-ft. thick layer of protective cover soil;
- a LCS geocomposite;
- a primary liner 60-mil thick High Density Polyethylene (HDPE) textured geomembrane liner;
- a primary GCL;
- a LDS geocomposite;
- a secondary liner 60-mil thick HDPE textured geomembrane liner; and
- a secondary GCL.

Cells 17 through 34 shall be built in accordance with revised engineering drawings 1 through 31, received on December 2, 2002, prepared by GLOBEX Engineering & Development, engineers project no. 1329, signed and sealed by Ali Khatami, dated December 2002.



Department of Environmental Protection

Jeb Bush
Governor

Southeast District
400 N. Congress Ave. Suite 200
West Palm Beach, Florida 33401

Colleen M. Castille
Secretary

PERMITTEE:

Mr. David McConnell, Area Vice President
Waste Management Inc., of Florida
Okeechobee Landfill Inc.
10800 N.E. 128th Avenue
Okeechobee, FL 34972

WACS ID NUMBER: 00092994
PERMIT/CERTIFICATION NUMBER: 0247963-001-SC
DATE OF ISSUE: December 2, 2005
EXPIRATION DATE: December 1, 2010
COUNTY: Okeechobee
LATITUDE/LONGITUDE: 27°20'22.7"/80°41'47.6"
SECTION/TOWNSHIP/RANGE: 13, 24, 25, 36/36S/35E

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-302, 62-520, 62-522, 62-701 and 62-709, Florida Administrative Code (F.A.C.). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

Clay Farms Landfill, owned and operated by Okeechobee Landfill, Inc. is approximately 2,000 acres of Sections 13, 24, 25 and 36. Clay Farms Landfill has a total of 639 acres for solid waste disposal. Okeechobee Landfill, Inc. has a comprehensive stormwater control system for the Berman Road and Clay Farm Landfills that has been approved by the Department on October 31, 1996, DEP File No. EC-47277746.

TO CONSTRUCT/OPERATE: A 5,000 to 7,000 ton/day Class I sanitary landfill. The landfill lining systems are comprised from top to bottom of a 2 ft. thick layer of protective cover soil or approved alternative; a Leachate Collection System (LCS) geocomposite (drainage layer), which consists of a 250-mil thick geonet heat-bonded to a 6 oz/yd² nonwoven geotextile (filter) on top, and heat-bonded to a 6 oz/yd² nonwoven geotextile (friction layer) on bottom; a composite primary liner composed of a 60-mil thick textured HDPE geomembrane placed on top of a geosynthetic clay liner (GCL); a Leachate Detection System geocomposite (drainage layer), which consists of 250-mil thick geonet heatbonded to a 6 oz/yd² nonwoven geotextile (filter) on top and heatbonded to a 6 oz/yd² nonwoven geotextile (friction layer) on bottom; and a composite secondary liner composed of a 60-mil thick textured HDPE geomembrane placed on top of a GCL. An Alternate Procedure SWAP 01-01 was granted by the Department to utilize the GCL below the secondary liner in lieu of a six-inch thick prepared sub-base. Other systems will include an active gas control system, and a surface water management system. The maximum permitted elevation of the Clay Farms Landfill is 233 feet N.G.V.D.

IN ACCORDANCE WITH: An application for renewal of a permit for construction and operation of a Solid Waste Resource Recovery and Management Facility received March 11, 2005 and additional information submitted May 20, 2005. Previous documents include an application for permit received December 22, 2000, with additional information submitted on February 28, 2001, March 15, 2001 and April 27, 2001. A Notice of Application was published on January 10, 2001 with proof of publication received by the Department on January 11, 2001.

LOCATED AT: 10800 N.E. 128th Avenue, Okeechobee, FL 34972.

SUBJECT TO: General Conditions 1-15 (attached as pages 2 and 3) and Specific Conditions 1-33 (attached as pages 4 through 11).

DEP Form 62-1.201(5)
Effective August 10, 1994

Page 1 of 11

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