Report

Onondaga County
Resource Recovery Facility

NYSDEC Part 360 Permit ID No. 7-3142-00028/00011
Title V Air Permit ID No. 7-3142-00028/00009

Annual Report of Facility Performance
Operating Year 2009

Onondaga County
Resource Recovery Agency
WWW.OCRRA.ORG

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Section 1 – Introduction

In the late 1980s and early 1990s, the Onondaga County Resource Recovery Agency (OCRRA) carefully evaluated the alternatives for managing non-hazardous, non-recyclable trash generated by the local community. The alternatives considered back then are the same alternatives that exist today – namely landfilling and waste-to-energy (WTE), neither without environmental impacts. In abiding by OCRRA's mission to provide the community with environmentally sound, highly efficient, safe, and innovative solutions, OCRRA embarked on the construction of a $148 million WTE facility. In 1995 the Onondaga County Resource Recovery Facility (the "Onondaga County WTE Facility" or the "Facility") became operational.

Today, after 15 years of operation, the Onondaga County WTE Facility continues to be an integral part of OCRRA's solid waste management system, or perhaps more aptly termed, OCRRA's resource recovery system. With a recycling rate of roughly 64%, and additional OCRRA programs in the works to further increase the recycling rate, a significant portion the waste is recycled into new products. The non-recyclable, non-hazardous portion of household waste goes to the WTE Facility, which recovers valuable energy and metal from our trash and generates enough electricity to power 28,700 homes (in 2009). Only a small percentage of household waste ends up in a landfill in the form of non-hazardous ash residue from the WTE Facility.

The Onondaga County WTE Facility uses a mass burn combustion system that safely and efficiently converts non-hazardous, non-recyclable solid waste into electricity that is sold to National Grid. The Facility also recovers ferrous metals and non-ferrous metals for recycling. The by-product of the combustion process is a non-hazardous ash residue, which is about 10% of the original volume, and 25% of the original weight, of the trash processed at the Facility. The ash residue is sent to a landfill for disposal or use as alternative daily cover.

Incorporated into the operations of the Facility is an air pollution control system, which helps the Facility comply with one of the strictest air permits in the nation, meeting federal and state emissions requirements. Emissions from the Facility are carefully monitored through continuous emissions monitors (CEMs) and annual stack testing.

This report presents a summary of operational, environmental, and financial performance of the Onondaga County WTE Facility, located at 5801 Rock Cut Road (Town of Onondaga), Jamesville, New York for calendar year 2009. The Facility operates in accordance with NYSDEC Part 360 Permit ID No. 7-3142-00028/00011 (issued 11/16/01) and USEPA Title V Air Permit ID No. 7-3142-00028/00009 (issued 1/8/02). 2009 was the 15th full year of Facility operation since initial start-up on November 10, 1994. Commercial operation began on February 25, 1995.

The report is organized as follows:

- Section 2 of the report presents an Executive Summary.
- Section 3 presents a summary of the Facility's operational performance.
- Section 4 presents a summary of the Facility's environmental performance.
- Section 5 presents a summary of the Facility's financial performance.
- Section 6 provides a list of references.

Section 2 – 2009 Highlights

2009 Overview

- 2009 was a financially difficult year due to the recession. Trash tonnage was about 8% below historical levels. Electricity and metal prices reached record lows. On a positive note, the Facility's operational and environmental performance remained strong and consistent with historical performance.

2009 Operational Performance

- The Facility has been for the past 15 years, and continues to be, well operated and maintained by Covanta Onondaga.

- The Facility processed 319,136 tons of non-hazardous, non-recyclable trash (enough to overfill the Syracuse Carrier Dome) or 88% of capacity and, in doing so, generated 227,258 MWh – enough electricity to power approximately 28,700 homes, as well as the Facility itself. As mentioned above, the amount of trash processed was down about 8% due to the recession, and therefore, the amount of electricity generated was also down (about 10%).

- The Facility had a net electricity production of 619 kilowatt-hours per ton (kWh/ton) of refuse processed. This rate is 2% below the Facility's 14-year average of 631 kWh/ton but still higher than the net kWh/ton for many other comparable facilities.

- In 2009, the Facility's metal recovery systems recovered 10,205 tons of metal for recycling.

- Overall boiler availability for 2009 was 92.9%. This value reflects less downtime for scheduled maintenance and equipment malfunctions than the historical Facility average.

- Turbine-generator availability for 2009 was 97.1% with 251.4 hours of downtime. This availability is low compared to the Facility average. For many years, the turbine-generator availability has been near 100%. The 2009 availability was down due to two forced (unscheduled) turbine outages due to a blockage of steam flow to the turbine.

2009 Environmental Performance

- The 2009 annual stack testing results indicate that the Facility is performing strongly. All parameters met the corresponding air permit limits, and most were an order of magnitude below the permit limit.

- Levels of mercury in the incoming waste stream trend downward, indicating that OCRRA's mercury removal programs are effective. Furthermore, the Facility demonstrates high mercury removal efficiency. Mercury emissions from the Facility were 2% of the permit limit.

- For 2009, the estimated annual total dioxin toxic equivalence (TEQ) emissions are 0.00006 lbs (60 millionths of a pound) – an amount equivalent to 2% of the weight of a standard paper clip. Dioxin/furan emissions from the Facility were 2% of the permit limit.

- By sending the community's non-recyclable trash to the WTE Facility, rather than to a landfill, greenhouse gas emissions are avoided. As a general rule of thumb, approximately 1 ton of trash processed prevents 1 ton of carbon dioxide emissions. So in 2009, the WTE Facility avoided 319,136 tons of carbon dioxide emissions, which is the equivalent of taking about 55,350 passenger vehicles off the road.

- The WTE Facility utilizes a locally-generated feedstock – the community's non-recyclable trash to generate a significant amount of electricity; this not only reduces dependence on fossil fuels, it also achieves goals of energy independence. In 2009 alone, the WTE Facility generated enough energy to displace nearly 380,000 barrels of oil or 80,000 tons of coal – enough energy to satisfy the needs of approximately 28,700 homes in OCRRA's service area.

- With one of the highest recycling rates in New York State, Onondaga County demonstrates that WTE and recycling are highly compatible; it also supports many studies that have concluded communities with WTE facilities often have higher rates of recycling.

- In October 2009, ash residue from the Facility began being used as alternative daily cover at the landfill. This beneficial use of the ash ultimately means that other materials, such as clean soil, do not need to be used for daily cover at the landfill.

2009 Financial Performance

- Due to the recession, trash tonnage was down about 8% and electricity and metal prices were at historical lows. As a result, OCRRA's 2009 Facility-related expenses were $3.3 million more than Facility revenues. Total operating revenues were approximately $22.54 million and total (operating and bond) expenses were $25.86 million.

- The Facility's 2009 average electricity rate was 3.7¢ per kWh, including the capacity payment, compared to historical electricity rates in excess of 6¢ per kWh.

Section 3 – Operational Performance

3.1 Summary of Operations

Based on 2009 operating data, overall Facility operations continued at high levels for the 15th year of continuous operation despite low trash levels. The Facility processed 319,136 tons of municipal solid waste (MSW), 88% of the Facility's permitted throughput limit of 361,350 tons. Overall boiler availability for 2009 was 92.9%, which is higher than the average over the 15-year history of the Facility. Turbine-generator availability was at a Facility-low of 97.1%, with 251.4 hours of unscheduled downtime due to a forced outage.

The average higher heating value (HHV) of waste processed in 2009 was 5,429 British thermal units per pound (Btu/lb). The 2009 HHV, which indicates the energy embodied in the incoming waste stream, was slightly above the Facility's 15-year average (1995-2009) average HHV of 5,375 Btu/lb. The Facility had a net electricity production of 618.5 kilowatt-hours per ton (kWh/ton) of refuse processed. This rate is just slightly lower than the Facility's 15-year average of 630 kWh/ton.

In 2009, the WTE Facility generated 79,743 tons of combined ash residue, which were hauled by OCRRA to Seneca Meadows Landfill in Waterloo, NY. Based on waste processed, this amount of ash was 25.0% of the waste combusted; therefore the Facility reduced the volume of the refuse by 75%. The 2009 ash ratio is slightly less than the 14-year Facility average of 25.8%. Beginning in October 2009, ash residue from the Facility began being used as alternative daily cover at the landfill. This beneficial use of the ash ultimately means that other materials, such as clean soil, do not need to be used for daily cover at the landfill.

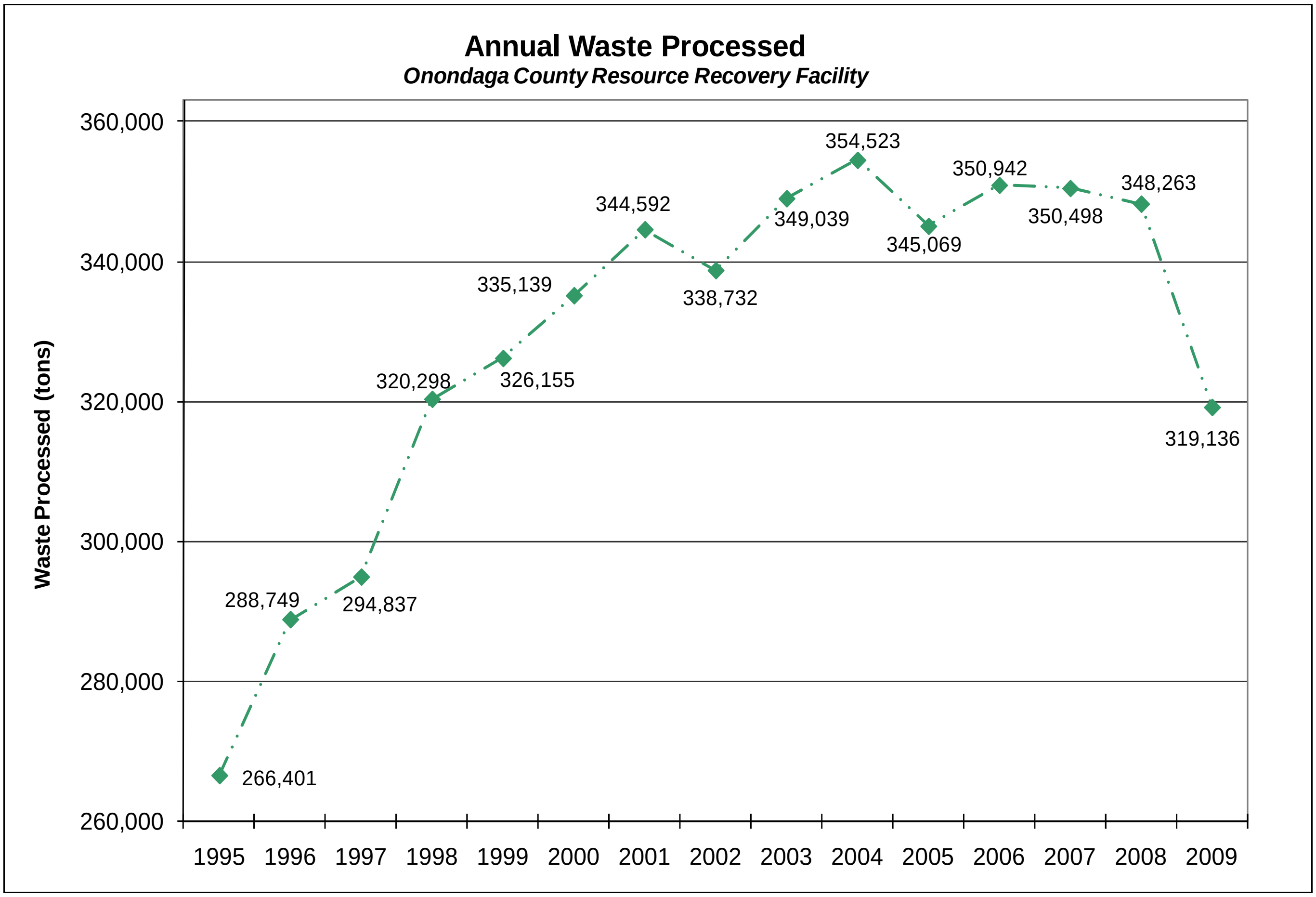
In 2009, the Facility recovered approximately 10,205 tons of ferrous metal, or 3.2% of the refuse processed, for shipment to recycling markets. The ferrous metal recovery system recovered 9,752 tons for recycling, with an average of about 800 tons per month or about 3.06% of the refuse processed. The non-ferrous metal recovery system, which uses an eddy-current separator, recovered 454 tons of metal, with an average of about 40 tons per month or about 0.14% of the refuse processed.

For 2009, the average boiler utilization was 92.6%, indicating that while the boilers were operational, they operated at less than full design levels. Unfortunately, this value is lowest in the history of the Facility and is due to the low trash tonnage for 2009. Whenever the boilers are operated at less than full capacity, their efficiency and, therefore steam production, drops. Often times, when there is not enough trash to run all three units at full capacity, one unit is taken offline so that the other units may be operated at full capacity, thereby still maximizing boiler utilization. However, it is not ideal to bring units online and offline too frequently. Another term, steam capacity, is also used to compare boiler utilization, and is defined as the ratio of actual steam to the maximum amount of steam that could be generated if the unit were running full time. For 2009, the Facility's average steam capacity was 79.5%.

3.2 Refuse Processed

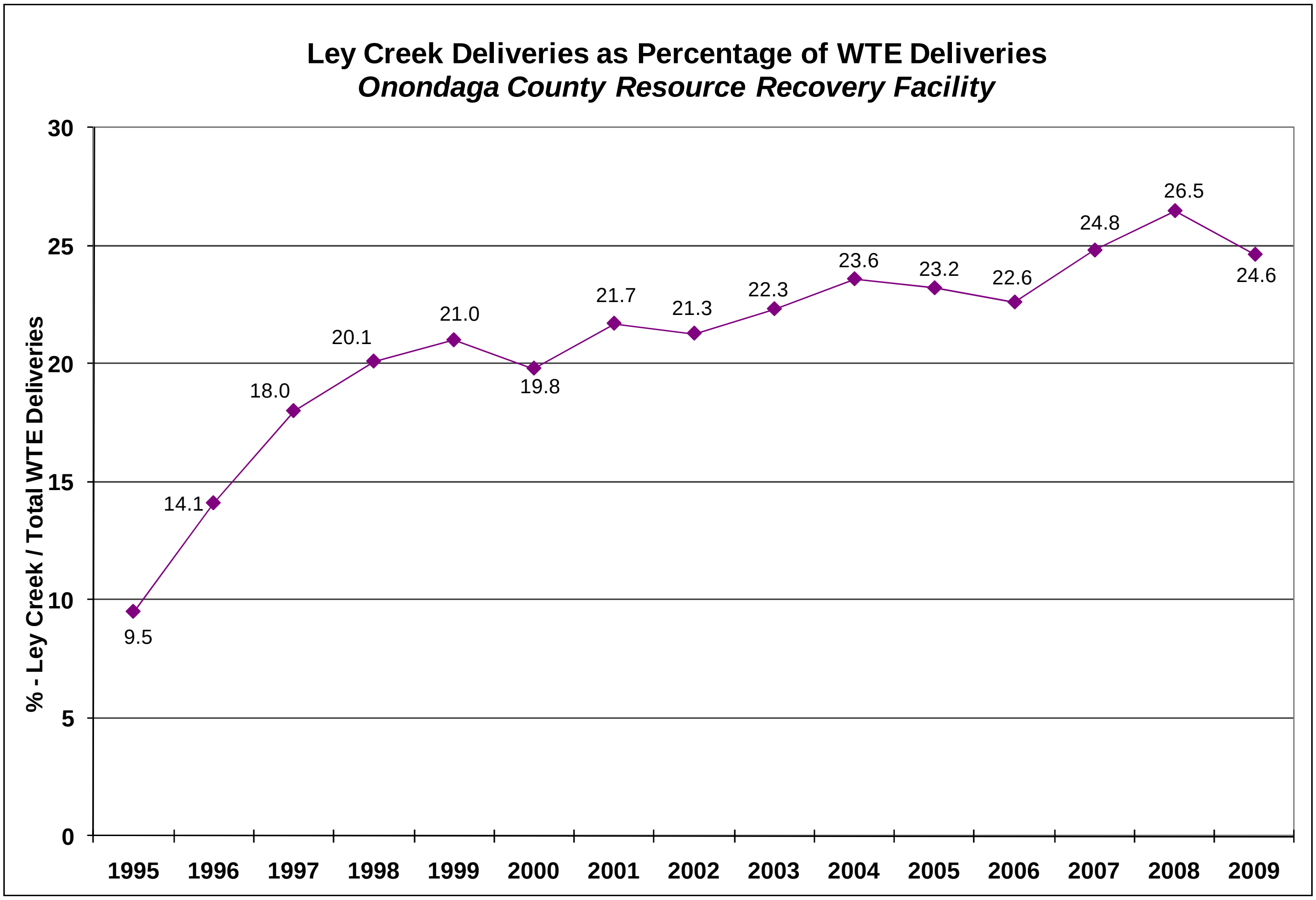
The WTE Facility received 319,626 tons of refuse during 2009, or 95% of OCRRA's total system tonnage. Only 15 tons, or less than 0.005% of the incoming waste stream, were rejected as non-processable waste. Taking into consideration the refuse received and the beginning and ending refuse pit inventory, 319,136 tons of solid waste were processed in 2009. This represents 88.3% of the Facility's permitted throughput limit of 361,350 tons, leaving 42,214 tons of unused processing capacity.

Due to the recession, waste received and processed in 2009 were significantly less than the 2008 quantities (8.3 and 8.4% decreases, respectively). The figure below shows the historical annual waste processed at the Facility.

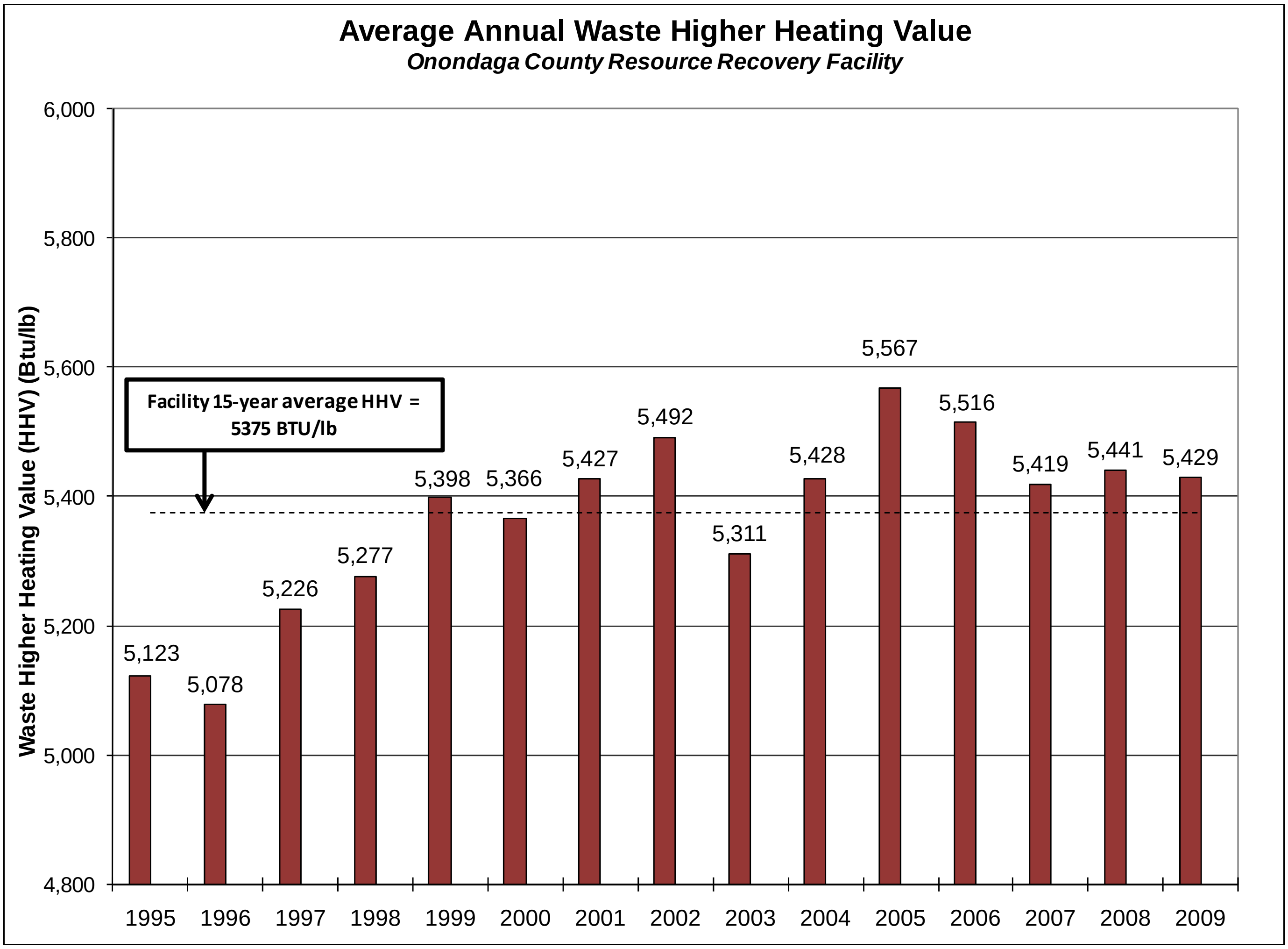


The refuse delivered to the Facility consists primarily of MSW and processable construction and demolition debris (C&D), including roofing. Licensed haulers collect Onondaga County (with the exception of the Town and Village of Skaneateles) MSW and deliver it directly to the Facility. Direct hauler deliveries generally account for about 70-75% of the tonnage processed. 2009 MSW tonnage from direct hauler deliveries was down approximately 6.3% as compared to 2008.

In addition to direct hauler MSW deliveries, OCRRA delivers MSW and processable C&D to the Facility from the Ley Creek and Rock Cut Road transfer stations (with the majority from Ley Creek). These deliveries generally account for about 25-30% of the tonnage processed at the Facility. The 2009 MSW and C&D tonnage delivered to the Facility from OCRRA's transfer stations was down 13.5% as compared to 2008. Ley Creek deliveries as a percentage of total deliveries are shown below.



The average higher heating value (HHV) of waste processed in 2009 was 5,429 British thermal units per pound (Btu/lb). The 2009 average HHV was slightly above the Facility's 15-year average (1995-2009) average HHV of 5,375 Btu/lb (see figure on next page). HHV, which is mainly determined by waste composition and moisture content, is a measure of the amount of energy contained in the waste being combusted. If other boiler operating parameters remain the same, the net effect of a greater waste HHV is increased steam production and, in turn, increased electricity generation.



For 2009, Covanta Energy reported an average HHV of 4,994 Btu/lb for all of its domestic WTE facilities (Covanta, 2010). According to a study of 13 mass burn facilities (including the Onondaga Facility), the average HHV stagnated around 5,200 Btu/lb for 2003-2008 (LoRe and Oswald, 2009).

OCRRA's average HHV is likely higher than the other averages for two main reasons – 1) the proportion of processable C&D materials and 2) OCRRA's high recycling rate. Other facilities may not process C&D materials, which generally have a higher heating value than MSW, and therefore, if present, tend to increase a facility's average HHV. In contrast, some recyclable materials, such as glass and metal, tend to have a low heating value. By removing these materials from the waste stream, a facility's average HHV will increase. Therefore, OCRRA's highly effective recycling program also plays a role in the Facility's higher-than-average HHV.

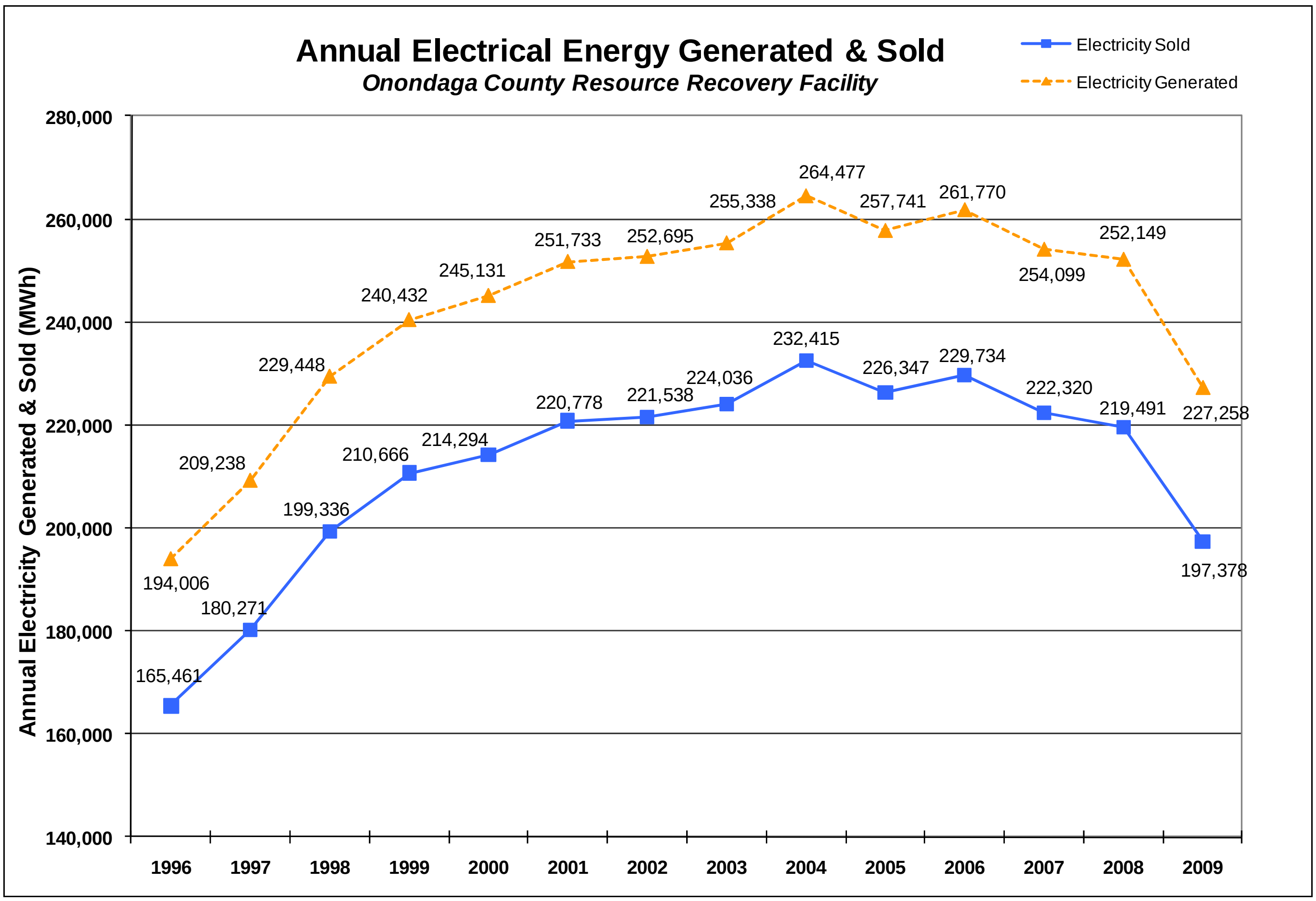
3.3 Steam Generated

Steam generated in 2009 was 2,171,508 kilopounds (klb), or 3.4 pounds of steam per pound of refuse processed. The amount of steam generated depends on the boiler efficiency and HHV of the waste being combusted. Of the total amount of steam generated, 114,545 klb of steam, or 5%, was consumed for the Facility's internal needs, such as preheating combustion air and heating boiler feedwater. The remaining 2,056,961 klb were used by the Facility's turbine-generator for electricity production.

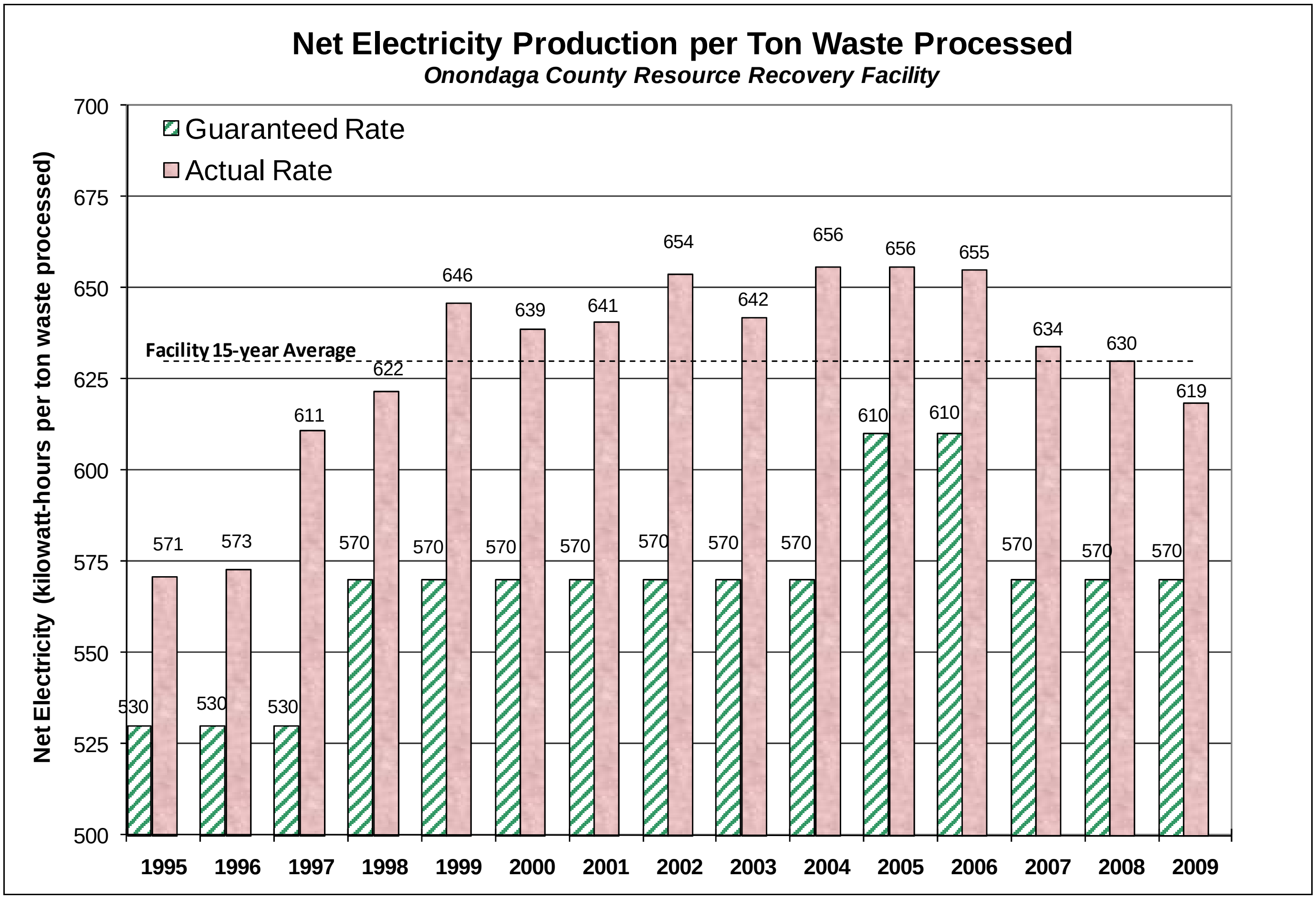
Boiler efficiency, in simplest terms, is the difference between the energy input (HHV of waste being combusted) and energy output (quantity of steam generated). Using monthly data, the 2009 overall boiler efficiency was 70.9%, a value consistent with historical levels and reported literature values.

3.4 Electricity Production

Total (gross) electricity generated for 2009 was 227,258 megawatt-hours (MWh). Of this amount, 197,378 MWh, or 87%, was sold to National Grid (net electricity). The balance, or 13%, was used for the Facility's electrical needs. The amount of electricity generated and sold in 2009 decreased by 10% over 2008 levels, with the decreases resulting from reduced tonnage to the Facility.



The Facility had a net electricity production of 618.5 kilowatt-hours per ton (kWh/ton) of refuse processed. This rate is slightly below the Facility's 15-year average of 630 kWh/ton, but significantly higher than that for other similar facilities. Furthermore, this rate exceeds the net electricity production guarantee of 570 kWh/ton (based on the average annual HHV of the waste processed, which was 5,429 Btu/lb for 2009). In their benchmarking report, LoRe and Oswald (2009) suggest an average 14-facility (including Onondaga County) net electricity production of 500 kWh/ton. Covanta reported an average net electricity production rate of 525 kWh/ton for all of their facilities (Covanta, 2010).

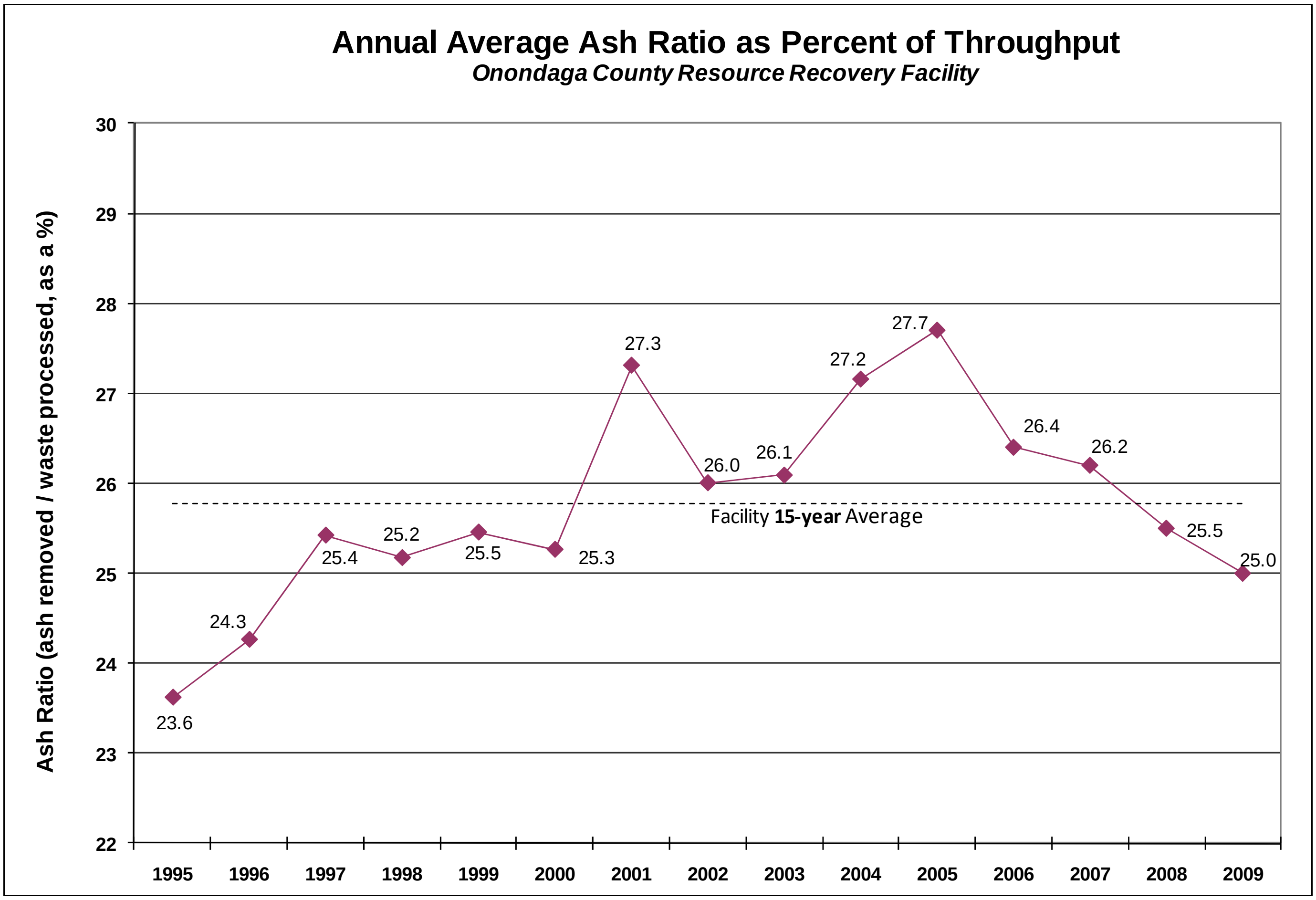


During normal Facility operation, the Facility's electrical demand is satisfied by the Facility's turbine-generator system, with the excess electricity being exported to the grid. Thus, the difference between the gross electricity produced by the turbine-generator and the net electricity sold to the grid is the Facility's electrical demand. In 2009 the Facility used an average of 96 kWh per ton of refuse. This is consistent with the Facility's long-term average, as well as that for other similar facilities. Lore and Oswald (2009) suggest a 14-facility average electricity usage of 90.4 kWh per ton.

3.5 Ash Residue Generation

In 2009, the WTE Facility generated 79,743 tons of combined ash residue, which were hauled by OCRRA to Seneca Meadows Landfill in Waterloo, NY. Based on waste processed, this amount of ash was 25.0% of the waste combusted; therefore the Facility reduced the volume of the refuse by 75%. The 2009 ash ratio is less than the 15-year Facility average of 25.8% and well below the annual contractual limit of 32% (see figure below).

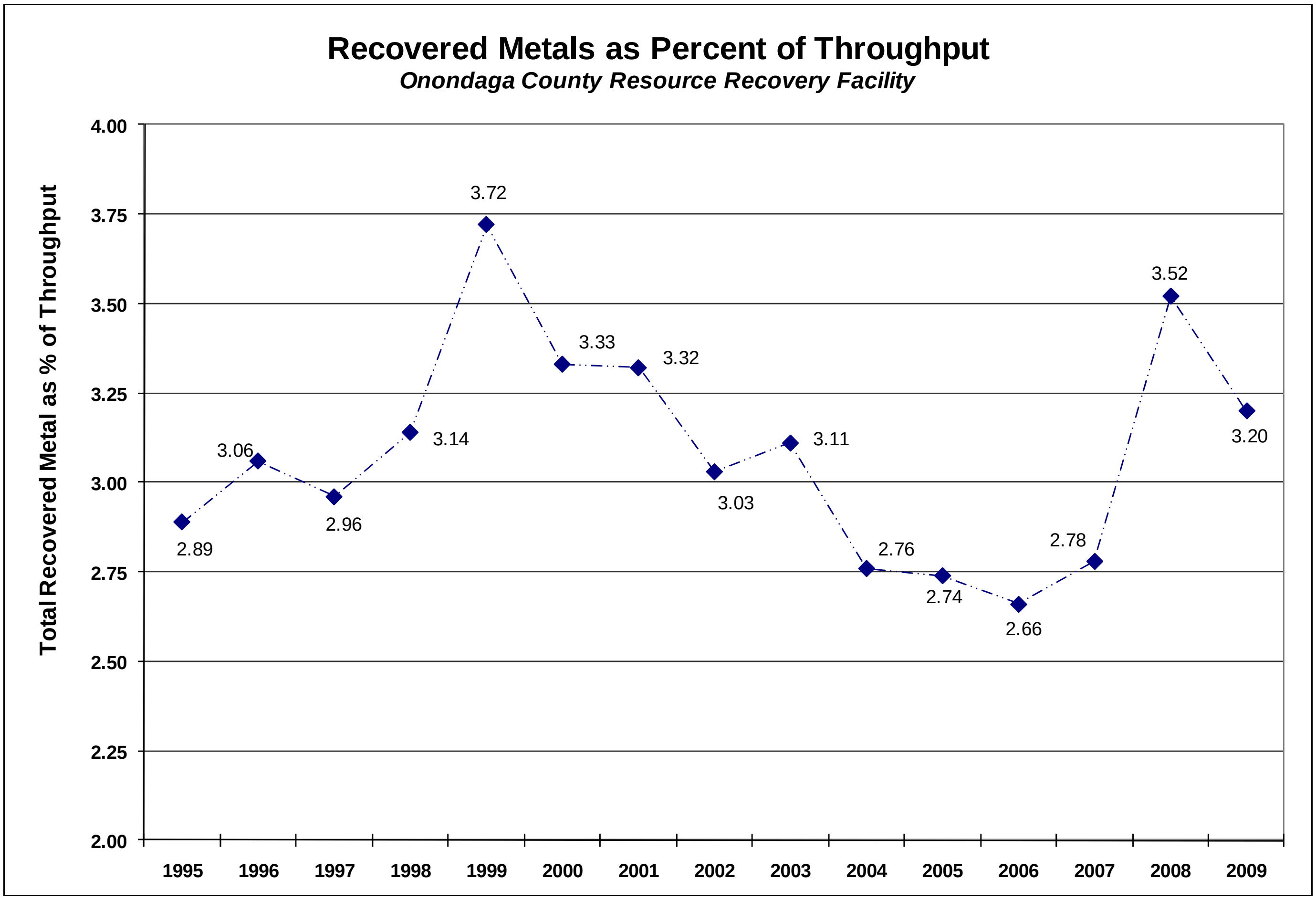
In October 2009, Seneca Meadows Landfill began using the ash residue as alternative daily cover. This beneficial reuse of the ash means that other materials, such as clean soil, do not need to be used for daily cover.



3.6 Metal Recovery

In 2009, the Facility recovered approximately 9,752 tons of ferrous metal, or 3.06% of the refuse processed, for shipment to recycling markets. In addition to recovering ferrous metals, in mid-2007, the Agency and Covanta entered into a contract amendment for the installation of a non-ferrous metal recovery system. The non-ferrous metal recovery system, which uses an eddy-current separator, became operational on June 24, 2008. The non-ferrous system recovered 454 tons of metal in 2009, averaging about 40 tons per month or about 0.14% of the refuse processed.

The graph below shows the metal recovery over the life of the Facility.



As shown, the annual quantity of recovered metal has varied over time. Recovery of metal is dependent upon the amount of metals in the incoming waste stream, as well as on the effectiveness of the Facility's metal recovery systems.

3.7 Boiler and Turbine-Generator Availability

Though the boilers and turbine-generator are designed to operate 24 hours a day, 365 days per year, a WTE facility cannot realistically achieve 100% boiler availability because of necessary and required routine and periodic maintenance. Boiler and turbine-generator availability are generally defined as the percentage of hours that the boiler/turbine-generator is available for operation, taking into account downtime related to scheduled and unscheduled maintenance. Downtime related to low refuse deliveries is not generally counted against availability. This is consistent with industry standards (LoRe and Oswald, 2009).

Facility boiler and turbine-generator availability are reported monthly and annually. 2009 availability information is presented below:

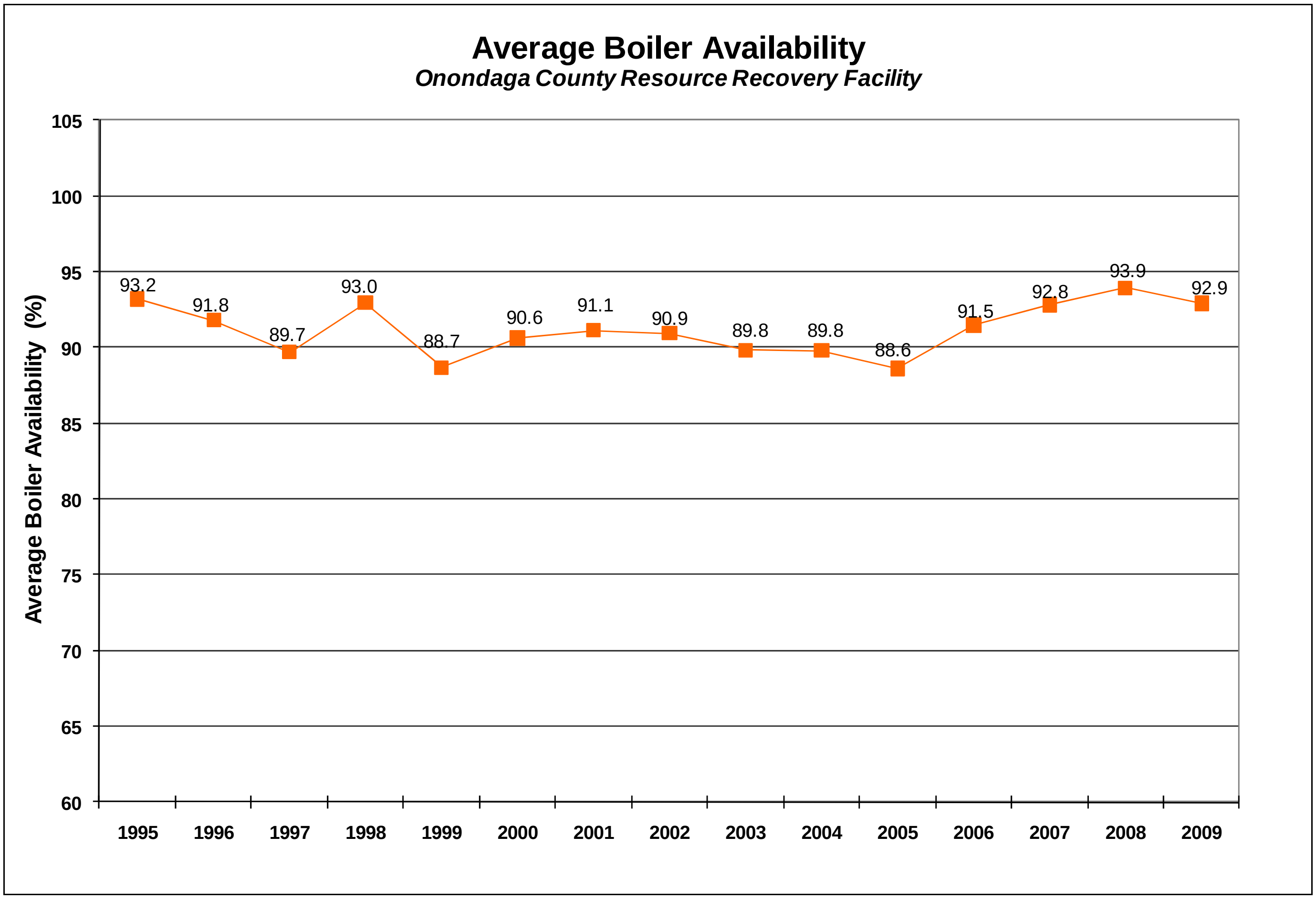
	Boiler Unit #1	Boiler Unit #2	Boiler Unit #3	Turbine/Generator
Total Scheduled Downtime (hr)	480.6	489.1	576.0	0
Total Unscheduled Downtime (hr)	0	124.6	193.2	251.4
Total Downtime (hr)	480.6	613.7	769.2	251.4
Total Downtime (days)	20.0	25.6	32.0	10.5
Availability (%)	94.5	93.0	91.2	97.1

Overall average boiler availability for 2009 was 92.9%, a fair bit higher than the Facility's 15-year (1995-2009) average of 91.2%. The 2009 average boiler availability reflects less downtime for scheduled boiler maintenance and equipment malfunctions. For comparative purposes, Covanta reported that their domestic WTE facilities had an average boiler availability of 91.6% for 2009 (Covanta, 2010) and LoRe and Oswald (2009) suggest a 15-facility average (including Onondaga County) of 90.3%.

Covanta has historically performed, and continues to perform, necessary boiler maintenance consistent with industry standards. Performing preventative maintenance remains critically important in prolonging the useful life of the boiler; replacing and repairing worn components prevents unscheduled downtime, thereby increasing boiler availability. Scheduled maintenance accounted for 100%, 80%, and 75% of downtime for Unit 1, 2, and 3, respectively.

Unscheduled boiler downtime in 2009 resulted mainly from waterwall and superheater tube leaks. Boiler Units 2 and 3 accounted for all of the unscheduled boiler downtime, accounting for 20% and 25% of boiler downtime for Units 2 and 3, respectively. Boiler Unit 1 did not have any unscheduled downtime.

The figure on the next page shows the Facility's historical average boiler availability.



The table below presents a summary of historical scheduled and unscheduled total boiler downtime.

Historical Boiler Operating Data (total hours for three boilers)

Year	Scheduled Maintenance (hours)	Unscheduled Maintenance (hours)	Total Maintenance (hours)	Total Maintenance Downtime* (%)	Downtime due to low trash deliveries (hours)	Low Trash Downtime* (%)	Total Downtime (hours)	Total Downtime* (%)
1996	1,964	196	2,160	8.2	6,954	26.5	9,114	34.7
1997	2,124	586	2710	10.3	5,985	22.7	8,695	33.0
1998	1,262	588	1850	7.0	3,541	13.5	5,391	20.5
1999	1,873	1,101	2974	11.3	3,585	13.6	6,559	25.0
2000	1,728	745	2473	9.4	1,652	6.3	4,125	15.7
2001	1,991	338	2329	8.9	2,011	7.6	4,340	16.5
2002	1,998	383	2381	9.1	1,052	4.0	3,433	13.1
2003	1,958	714	2672	10.2	1,034	3.9	3,706	14.1
2004	1,954	738	2692	10.2	777	3.0	3,469	13.2
2005	2,373	790	3163	12.0	218	0.8	3,381	12.8
2006	1,688	551	2239	8.5	171	0.7	2,410	9.2
2007	1,321	565	1886	7.2	151	0.6	2,037	7.8
2008	1,337	264	1,601	6.1	920	3.5	2,521	9.6
2009	1,546	318	1,864	7.1	1,859	7.1	3,723	14.2

* Total Maintenance Downtime, Low Trash Downtime, and Total Downtime computed as a percentage of total unit-hours in calendar year.

The 2009 unscheduled and scheduled downtime represented 7.1% of total annual hours. The downtime due to low trash levels represents an additional 7.1%. Total boiler downtime, including downtime due to low trash deliveries, for 2009 was 3,723 hours, or 14.2% of the unit-hours in the calendar year.

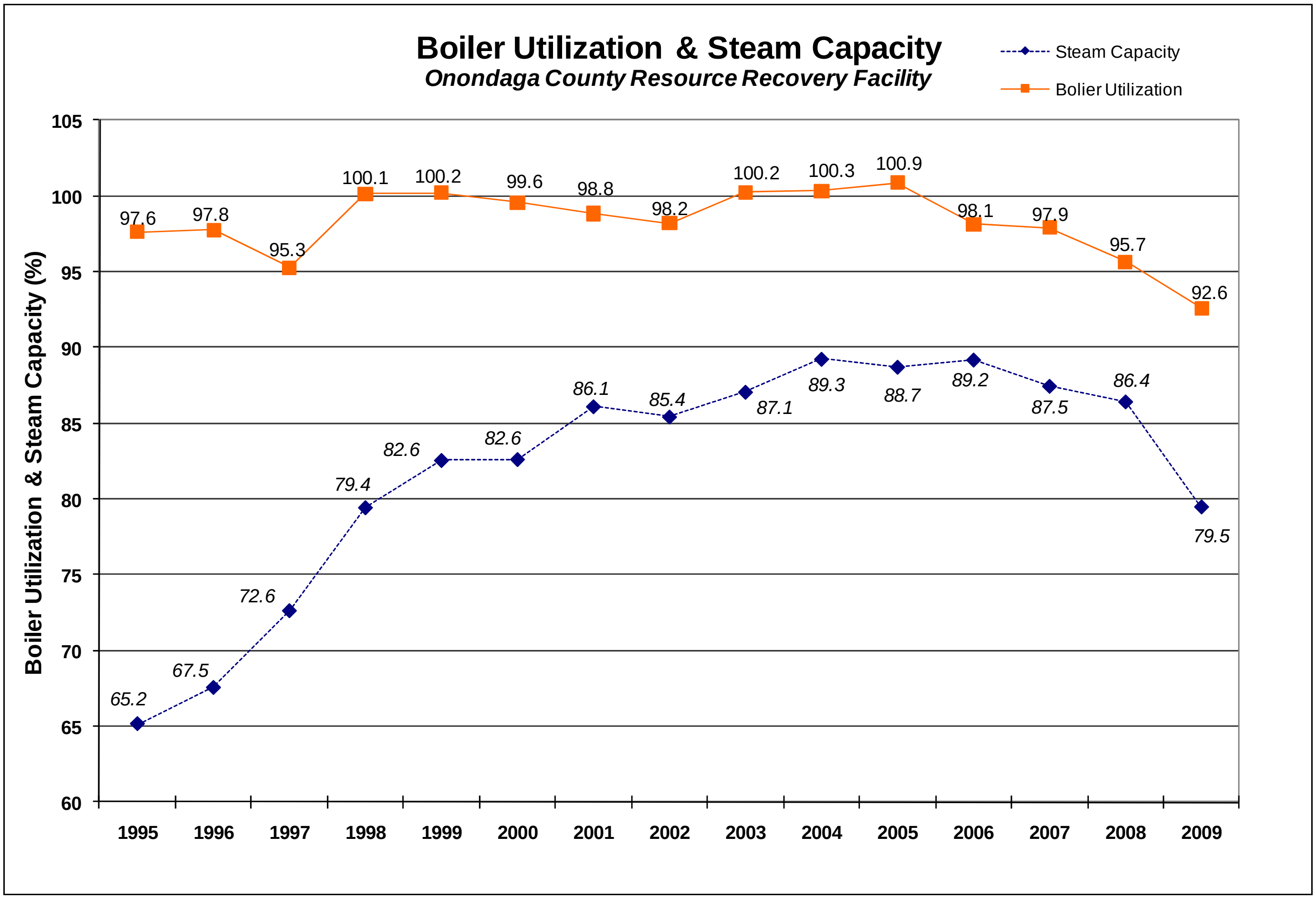
Turbine-generator availability for 2009 was 97.1% with 251.4 hours of downtime. Unscheduled outages accounted for all of the downtime. On two separate occasions after the start-up of Boiler Unit 2, the inlet screen to the turbine was impacted with a foreign material likely related to superheater tube replacement. These events caused a blockage and steam could not flow to the turbine, ultimately requiring that the turbine be shut down for inlet strainer repairs/replacement. For comparative purposes, LoRe and Oswald (2009) suggest a 14-facility average (including Onondaga County) of 96.6%. According to the Service Agreement between OCRRA and Covanta, turbine-generated outage days cannot exceed 21 days on a 3-year rolling average basis. For 2009, this total turbine-generator outage time (2007-2009) was 267.3 hours or 11.1 days.

3.8 Boiler Utilization and Steam Capacity

Another metric used to evaluate Facility efficiency is boiler utilization. Each boiler is designed with a maximum steam rate (pounds per hour) at which the unit is intended to be operated. This is referred to as the "maximum continuous rating" (MCR). The maximum design steam rating for the Onondaga Facility is 103,950 lb of steam per hour per boiler, or 311,850 lb of steam per hour for all three boiler units. Boiler utilization is the ratio of actual steam generated by the boilers to the MCR. It is important to note that boiler utilization only takes into account boiler operating time; that is, it does not include boiler downtime. Another term, steam capacity, is also used to evaluate Facility efficiency, and is defined as the ratio of actual steam to the maximum amount of steam that could be generated if the unit were running full time.

For 2009, the average boiler utilization was 92.6%, the lowest value within the range of historical data. Boiler utilization of 100% represents the most efficient mode of Facility operation, and will maximize steam production and thus electrical energy generation. Anything less than 100% indicates that while the boilers were operational, they were being utilized at less than their full steaming capacity. It is not optimal to frequently bring boilers on- and off-line, so an alternative for dealing with low trash levels is to run the boilers at less than full capacity. This was the case for 2009. For comparative purposes, LoRe and Oswald (2009) suggest a 14-facility average (including Onondaga County) boiler utilization of 96.0%. Steaming capacity, which also takes into consideration steam "lost" from boiler downtime, for 2009 was 79.5%.

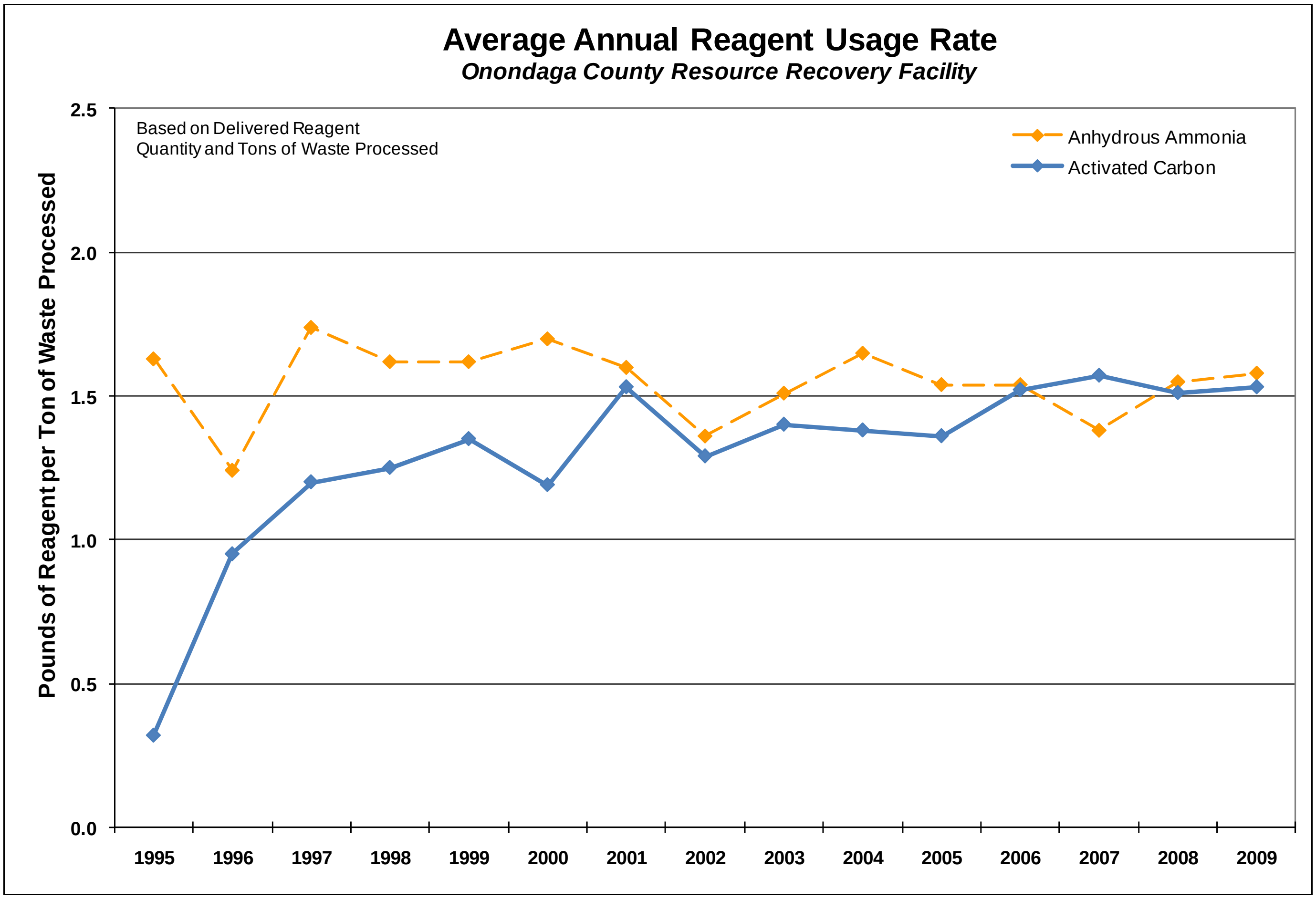
Historical data for boiler utilization and steam capacity are shown in the figure on the next page.



3.9 Pollution Control Reagent Consumption

The Facility uses several reagents for pollution control including anhydrous ammonia for control of nitrogen oxides (NO_x), carbon for mercury and dioxin/furan control, and lime for control of acid gases (as well as ash conditioning).

To control NO_x emissions, anhydrous ammonia is injected into the combustion chamber of each boiler unit. To control mercury emissions, as well as dioxin and furan emissions, powdered activated carbon is mixed into slurry and injected into the spray-dry scrubbers through the rotary atomizer. The rotary atomizer creates tiny droplets for optimal reaction. The average annual 2009 reagent usage rates for ammonia and carbon were 1.58 lb and 1.53 lb per ton of waste processed, respectively. As evident in the chart below, anhydrous ammonia and carbon usage rates have been consistent with historical rates. According to Lore and Oswald (2009), the Facility's anhydrous ammonia usage rate is consistent with other facilities that use anhydrous ammonia and the carbon usage is a bit higher than a 12-facility average (including Onondaga County) of 1.01 lb per ton.



To neutralize acid gases, namely sulfur dioxide (SO_2), hydrogen chloride (HCl), hydrogen fluoride (HF), and sulfuric acid (H_2SO_4), a calcium-based lime, referred to as pebble lime, is injected into the spray-dry scrubbers through the rotary atomizer. In 2009, the average reagent application rate was 30.3 lb of pebble lime per ton of waste processed. This is consistent with 2002 (31.0 lb of pebble lime per ton of waste processed) and 2007 and 2008 (29.2 and 28.4 lb of pebble lime per ton of waste processed, respectively) when pebble lime was the only form of lime used.

Prior to making the decision to solely use pebble lime, dolomitic lime, a lime with a higher magnesium content than pebble lime, was added to the fly ash prior to combining with the bottom ash to provide additional conditioning of the fly ash. In August 2006, dolomitic lime use was discontinued and the reagent application rate for pebble lime increased above that needed for acid gas control. While still providing satisfactory ash conditioning, this change was implemented to improve housekeeping conditions, reduce OCRRA's overall ash conditioning costs, and produce a drier, more manageable combined ash residue for disposal. In 2009, Covanta also experimented with another type of lime (in conjunction with pebble lime) called carbide lime but found it to be too abrasive.

3.10 Electricity, Natural Gas, and Water Utilization

During normal Facility operation, the Facility's electrical demand is satisfied by the Facility's turbine-generator system, with the excess electricity being exported to the grid. During those times when the turbine-generator is off-line due to maintenance or malfunction, electricity is purchased from National Grid (NG) to operate the Facility and continue combusting the incoming MSW. In 2009, 743,220 kWh of electricity was purchased from National Grid for in-plant needs, with the majority of the usage occurring during the two forced turbine-generator outages. The amount of electricity purchased during 2009 is significantly more than the Facility average, due to the relatively long time periods that the turbine-generator was offline. The Service Agreement allows for 3,348,000 kWh over a three-year rolling period and at the end of 2009 the Facility had used only 796,194 kWh for 2007-2009.

Natural gas is an auxiliary fuel used for boiler start-ups and shutdowns, and for maintaining minimum furnace temperatures when processing overly wet waste. 2009 natural gas usage was 102,146 therms. This was the least amount of gas used annually and was due to considerably fewer shutdowns and start-ups following boiler tube leaks or other equipment malfunctions.

City water satisfies all potable and process needs of the Facility, with the majority being for process use. However, the Facility is a zero discharge plant relative to process wastewater; meaning that only sanitary sewage is discharged off-site. 31,460,000 gallons were used in 2009. This amount of water translates into about 99 gallons per ton of waste combusted or approximately 60 gallons per minute. 2009 water usage remained consistent with historical levels and design parameters following initial start-up. The Onondaga Facility's water use is much lower than that of similar facilities because it is a zero-process water discharge Facility, meaning that all process water gets treated and reused thereby requiring less potable water. According to LoRe and Oswald (2009), a ten-facility average water consumption rate is 422 gallons per ton of waste processed.

3.11 Facility Inspections

In accordance with NYSDEC Part 360 regulations, an annual general Facility inspection must be undertaken to determine the operating condition of the safety, emergency, security, process, and control equipment. Covanta must have this inspection performed under the direction of a New York State licensed professional engineer. With the approval of the NYSDEC, Covanta performed the required Facility annual inspection on November 6, 2009.

The summary report was prepared through discussions with plant personnel during the inspection. Covanta's Maintenance Supervisor and Principal Operations Engineer, Edward W. Moore, Jr. P.E., certified: "*Based upon the above inspections and information, the safety, emergency, security, process and control equipment at the Onondaga County Resource Recovery Facility operated by Covanta Onondaga at 5801 Rock Cut Road, Jamesville, NY 13078 are considered to be in acceptable operating condition.*" This annual inspection report was submitted to the NYSDEC on February 26, 2010 as part of the Facility's 2009, 4th Quarter & Annual Solid Waste Report.

NYSDEC also conducted several facility inspections in 2009. The Division of Air Resources was on site for the annual stack testing activities. On September 9, 2009 the Division of Solid and Hazardous Materials visited the Facility for an inspection.

In 2009, OCRRA had its independent consultant, CDM, conduct a comprehensive 2-day site inspection. This visit focused on all various aspects of plant operations and maintenance, and coincided with the Unit #3 spring boiler outage. Based on the results of their visual inspection and experience at other WTE facilities, CDM opined that the Onondaga Facility continues to be well maintained, and is in overall good operating condition. The routine preventative maintenance and major repairs performed are consistent with the type and level of repairs observed at other facilities. The systems inspected were in good operating condition, and all equipment appeared to be operating properly. The level of daily repair and preventative maintenance observed was considered normal for facilities of the same type and age.

In addition to Facility inspections, CDM performed oversight for the annual air emissions stack testing and semi-annual ash residue testing. CDM concluded that testing was conducted in accordance with required procedures and protocols.

Section 4 – Environmental Performance

4.1 Summary of Environmental Performance

Operating under one of the strictest WTE air permits in the country, the Onondaga County WTE Facility turns the County's non-recyclable trash into energy. Over 15 million dollars worth of air pollution control equipment is in place to make sure this is done safely. Results of the Facility's annual air emissions and ash residue test results consistently demonstrate the Facility's exemplary environmental track record. Coupled with Onondaga County's nationally high recycling rate of approximately 64% for 2009 (double the national average), the Onondaga County WTE Facility generates enough renewable energy to satisfy the needs of approximately 28,700 homes in OCRRA's service area while also reducing the volume of trash that needs to be landfilled by 90%.

4.2 2009 Stack Test Results

Stack testing is an important tool that measures the amount of regulated pollutants being emitted from the Facility. Stack testing consists of a series of sampling events, in which a probe is inserted into the stack gases to collect a representative sample, over a defined amount of time. Sampling and laboratory analysis are conducted in accordance with NYSDEC and USEPA protocols. NYSDEC oversees stack testing at the WTE Facility.

In addition to annual stack testing, the Facility has a continuous emission monitoring system (CEMS) that measures equipment performance and stack emissions in order to constantly track Facility performance. The CEMS tracks carbon monoxide, carbon dioxide, oxygen, sulfur dioxide, and NOx as well as ammonia, opacity, and combustion temperatures.

The 2009 stack testing consisted of the 10 parameters that are tested annually. The results from the 2009 stack testing indicate that the Facility is operating acceptably and that the air pollution control devices are functioning properly. As shown by the summary data on the next page, many of the parameters were considerably below the permit limit.

2009 ANNUAL STACK TEST RESULTS

		Constituent	Average Measured Emissions[1] Unit 1		Unit 2		Unit 3	Permit Limit[2]	Pass/Fail? P/F
TESTED ANNUALLY	FEDERAL	Cadmium (mg/dscm @ 7% O_2)	5.37E-04		5.93E-04		3.55E-04	3.50E-02	**P**
		Cadmium (lb/hr)	7.95E-05		9.09E-05		5.71E-05	1.90E-03	**P**
		Carbon Monoxide (lb/hr)	9.40E-01		9.80E-01		1.14E+00	8.04E+00	**P**
		Dioxins/Furans (ng/dscm @ 7% O_2)	2.45E-01		1.17E+00		2.96E+00	3.00E+01	**P**
		Hydrogen Chloride (ppmdv @ 7% O_2)	1.90E+00		3.60E+00		5.79E+00	2.50E+01	**P**
		Hydrogen Chloride (lb/hr)	4.14E-01		8.71E-01		1.41E+00	5.24E+00	**P**
		Hydrogen Chloride Removal Efficiency (%)	99.7		99.5		99.3	>=95	**P**
		Lead (mg/dscm @ 7% O_2)	8.72E-03		9.55E-03		4.73E-03	4.00E-01	**P**
		Lead (lb/hr)	1.30E-03		1.47E-03		7.62E-04	3.81E-02	**P**
		Mercury (lb/hr)	1.10E-04	<	9.99E-05	<	6.98E-05	4.00E-03	**P**
		Nitrogen Oxides (lb/hr)	4.91E+01		5.49E+01		5.57E+01	5.80E+01	**P**
		Particulates (gr/dscf @ 7% O_2)	1.38E-03		9.59E-04		9.93E-04	1.00E-02	**P**
		PM_{10} (gr/dscf @ 7% O_2)	2.11E-04		4.08E-04		2.63E-04	1.00E-02	**P**
		PM_{10} (lb/hr)	7.90E-02		1.51E-01		1.03E-01	3.16E+00	**P**
		Sulfur Dioxide (lb/hr)	1.91E+00		3.85E+00		2.20E+00	1.62E+01	**P**
	STATE	Ammonia (ppmdv @ 7% O_2)	1.00E+00		5.42E-01		2.02E+00	5.00E+01	**P**
		Ammonia (lb/hr)	1.02E-01		6.09E-02		2.28E-01	4.88E+00	**P**
		Dioxins/Furans-2,3,7,8 TCDD TEQ (ng/dscm @ 7% O_2)	2.45E-03		1.09E-02		3.01E-02	4.00E-01	**P**
		Dioxins/Furans-2,3,7,8 TCDD TEQ (lb/hr)	4.18E-10		1.74E-09		4.86E-09	1.29E-07	**P**
		Mercury (µg/dscm @ 7% O_2)	7.42E-01	<	6.28E-01	<	4.34E-01	2.80E+01	**P**
		Mercury Removal Efficiency (%)	99.5	>	99.5	>	99.6	>=85	**P**
		Zinc (lb/hr)	8.36E-03		7.53E-03		5.37E-03	1.88E-02	**P**

NOTES:

[1] Based on three test runs

[2] NYSDEC Title V Permit #7-3142-00028/00009 - Draft Renewal

UNITS:

gr/dscf = grains per dry standard cubic foot

ppmdv = parts per million dry volume

lb/hr = pounds per hour

ng/dscm = nanograms per dry standard cubic meter

µg/dscm = microgramsper dry standard cubic meter

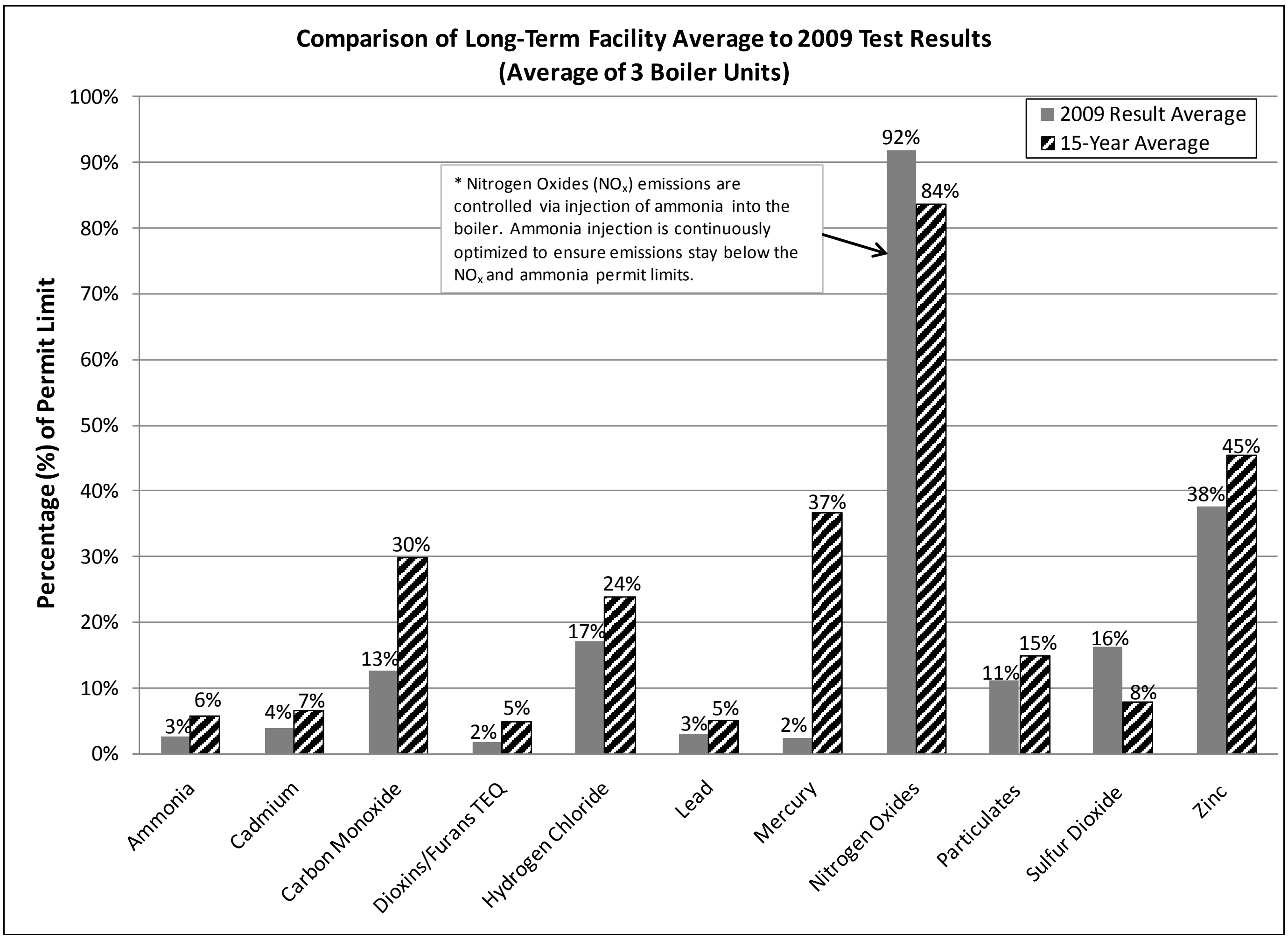
mg/dscm = milligrams per dry standard cubic meter

@ 7% O_2 = concentration corrected to 7% oxygen

4.2.1 Parameters Tested Annually

The figure below presents a comparison of the 2009 stack test results with their respective long-term (15-year) Facility averages (1995 through 2009) for the parameters tested annually. The results are graphed as a percentage of their respective permit limits. The graph shows that the 2009 results are generally below the historical averages and that the results continue to be well below regulatory limits. These results indicate that the Facility's air pollution control system continues to operate effectively, and that OCRRA's efforts in screening the incoming waste continue to be effective.

Compared to the other parameters, NO_x emissions are much closer to the permit limit. This is because NO_x emissions are controlled via injection of ammonia into the boiler. Ammonia injection is continuously optimized to ensure emissions stay below the NO_x and ammonia permit limits.



WTE facilities have significantly reduced emissions over the past decade. In 1997 a memorandum by the United States Environmental Protection Agency (USEPA) documented this progress. The table from USEPA's memorandum is provided on the following page.

Emissions From Large and Small MWC Units

Pollutant	*1990 Emissions (tpy)*	*2005 Emissions (tpy)*	*Percent Reduction*
CDD/CDF, TEQ basis*	4400	15	99+ %
Mercury	57	2.3	96 %
Cadmium	9.6	0.4	96 %
Lead	170	5.5	97 %
Particulate Matter	18,600	780	96 %
HC1	57,400	3,200	94 %
SO_2	38,300	4,600	88 %
NO_x	64,900	49,500	24 %

(*) dioxin/furan emissions are in units of grams per year toxic equivalent quantity (TEQ), using 1989 NATO toxicity factors; all other pollutant emissions are in units of tons per year.

Source: USEPA Memorandum dated 1997

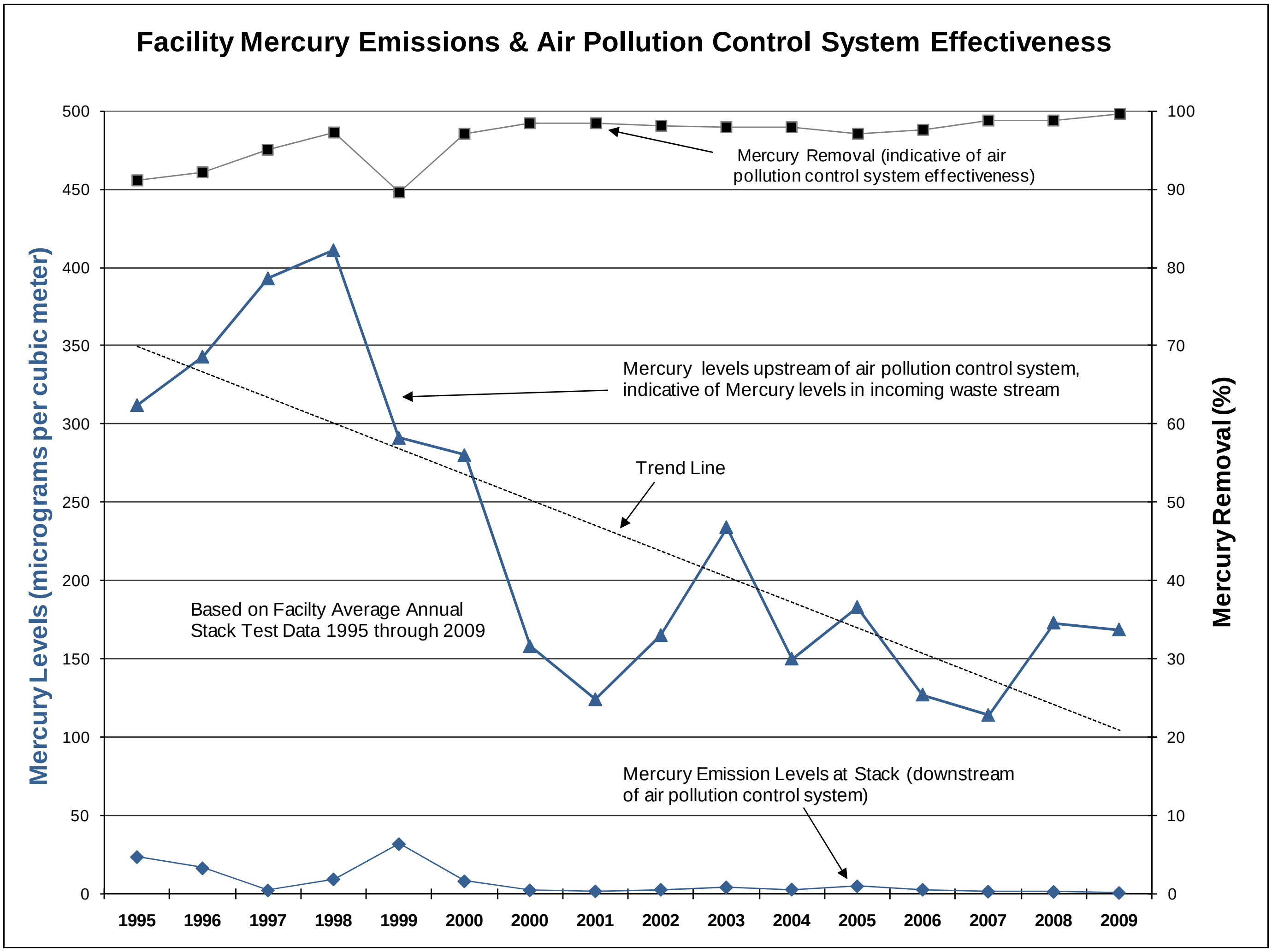
Some of these parameters will be discussed in further detail the following sections.

4.2.2 Mercury

To control mercury emissions, powdered activated carbon is mixed into slurry and injected into the spray-dry scrubbers through a rotary atomizer, which creates tiny droplets. The activated carbon reacts with the mercury in the gas exiting the boiler and forms particles that are captured in the baghouse. Still considered the most highly advanced control technology, activated carbon injection has been used at WTE facilities for the past decade; however activated carbon injection is just beginning to be used at coal-fired power plants.

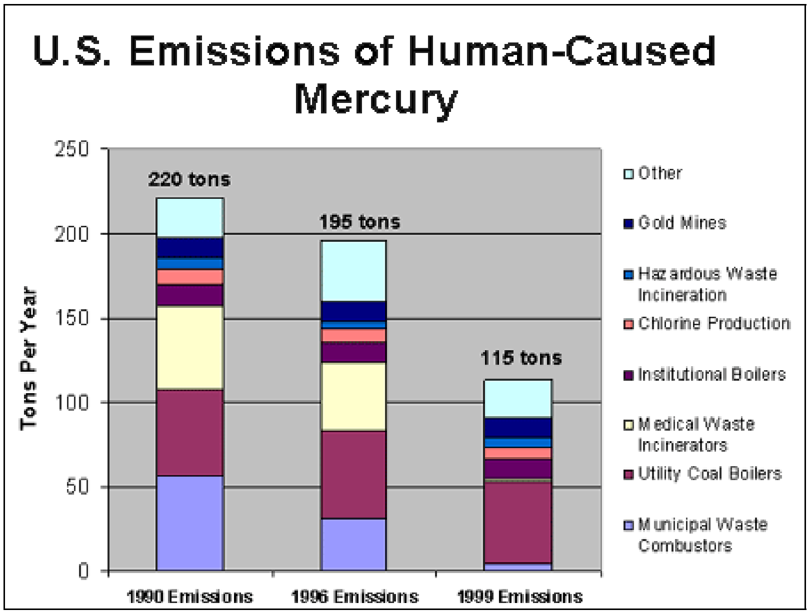
In addition to advanced control technologies, it's important to limit the amount of mercury in the incoming waste stream. OCRRA has multiple programs in place to do just that. These programs include household hazardous waste collection events, an ongoing mercury-containing thermostats and thermometer exchange at OCRRA's Rock Cut Road Transfer Station (a joint program with Covanta), partnerships with local businesses for electronic waste and household fluorescent collections, active daily sorting activities at OCRRA's transfer stations, and active daily screening at the Facility itself. Coupled with extensive public education efforts, these programs have had a significant impact.

The figure on the following page shows the effectiveness of the Facility's mercury control system, as well as the inlet and outlet (stack) average mercury concentrations. Inlet concentrations indicate the level of mercury in the incoming waste stream. As shown, inlet mercury levels since 1995 have exhibited a dramatic decrease, which has been the result of OCRRA's programs to remove mercury from the local waste stream, as well as restrictions on the mercury content of many products, most notably, alkaline batteries.



Average mercury emissions measured during 2009 annual stack testing event were 2% of the Facility's current permit limit of 28 micrograms per dry standard cubic meter and the average effectiveness of the Facility's carbon injection system for removing mercury was 99.5 % (85% removal efficiency is required).

In 1990, the contribution of atmospheric mercury from coal-fired power plants and WTE facilities were similar and substantial. During the following decade Maximum Achievable Control Technology (MACT) emission standards were imposed on municipal waste combustors (MWCs) and the contribution to atmospheric mercury from MWCs relative to coal-fired power plants dropped dramatically. According to the USEPA Memorandum mentioned previously, mercury emissions from MWCs were reduced by 96% from 1990 to 2005. While coal-fired plants still contribute over 40% of all domestic human-caused mercury emissions in the U.S., according to the USEPA, mercury emissions from WTE plants have decreased to about 4% of the total. The following chart has been provided from USEPA's website.



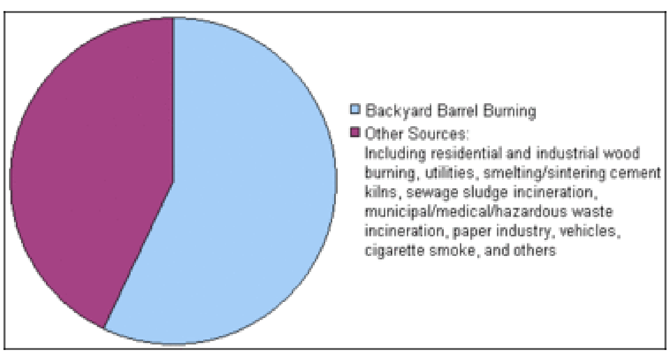
Source: USEPA website: www.epa.gov/mercury/control_emissions/emissions.htm

4.2.3 Dioxin/Furan

Like mercury emissions, dioxin and furan emissions constitute considerable environmental concern. The Onondaga County WTE Facility has several permit limits associated with dioxin/furan emissions. The 2009 results were all at least 95% below the associated permit limits. These levels are exceptionally small and indicative of effective combustion and air pollution controls.

2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) is the most toxic congener of dioxin. The total dioxin toxic equivalence (TEQ) value expresses the toxicity as if the mixture were pure TCDD. For 2009, the estimated annual TEQ dioxin/furan emissions are 0.00005 lbs (50 millionths of a pound); less than 2% of the weight of a standard paper clip.

Over the past 20 years, the WTE industry has drastically reduced dioxin/furan emissions –by more than 99% (see table from referenced EPA memo). Today, backyard burn barrels emit more dioxins and furans than all other sources combined. The pie chart below is from NYSDEC's website and it provides data from an EPA study during 2002 to 2004.



Source: NYSDEC website - http://www.dec.ny.gov/chemical/32065.html

Some good news is that NYSDEC recently passed and enacted new open burning regulations that prohibit burning household trash in burn barrels or piles statewide.

4.3 2009 Ash Testing Results

Semi-annual ash testing determines whether residual ash, the byproduct of turning non-recyclable trash into energy, should be managed as a non-hazardous or hazardous material. A representative sample of residual ash is collected according to NYSDEC and USEPA protocols. The sample is then analyzed by an independent laboratory for leachable metals, according to USEPA's Toxicity Characteristic Leaching Procedure (TCLP). TCLP analysis simulates landfill conditions (the final disposal site for the ash) and determines whether the ash exhibits hazardous characteristics. Over the life of the Facility (including 2009 results), TCLP analysis has always indicated that the ash is non-hazardous. A summary of the ash residue test results for 2009 is provided below.

2009 ASH RESIDUE CHARACTERIZATION TEST RESULTS

Semi-Annual Test Results - May 2009

Constituent	*Test Result*	*Permit Limit*	*Pass or Fail*
Cadmium	0.73 mg/L	1 mg/L	Pass
Lead	0.55 mg/L	5 mg/L	Pass

Semi-Annual Test Results - October 2009

Constituent	*Test Result*	*Permit Limit*	*Pass or Fail*
Cadmium	0.05 mg/L	1 mg/L	Pass
Lead	2.91 mg/L	5 mg/L	Pass

Ash residue does NOT exhibit a hazardous characteristic. As such, it should continue to be managed as a non-hazardous solid waste.

In 2009, 79,743 tons of combined ash residue (consisting of mixed fly and bottom ash) were sent to Seneca Meadows Landfill in Waterloo, NY. Based on waste processed, this amount of ash was 25.0% of the waste combusted; therefore the Facility reduced the volume of the refuse by 75%. Beginning in October 2009, ash residue from the Facility began being used as alternative daily cover at the landfill. This beneficial use of the ash ultimately means that other materials, such as clean soil, do not need to be used for daily cover at the landfill.

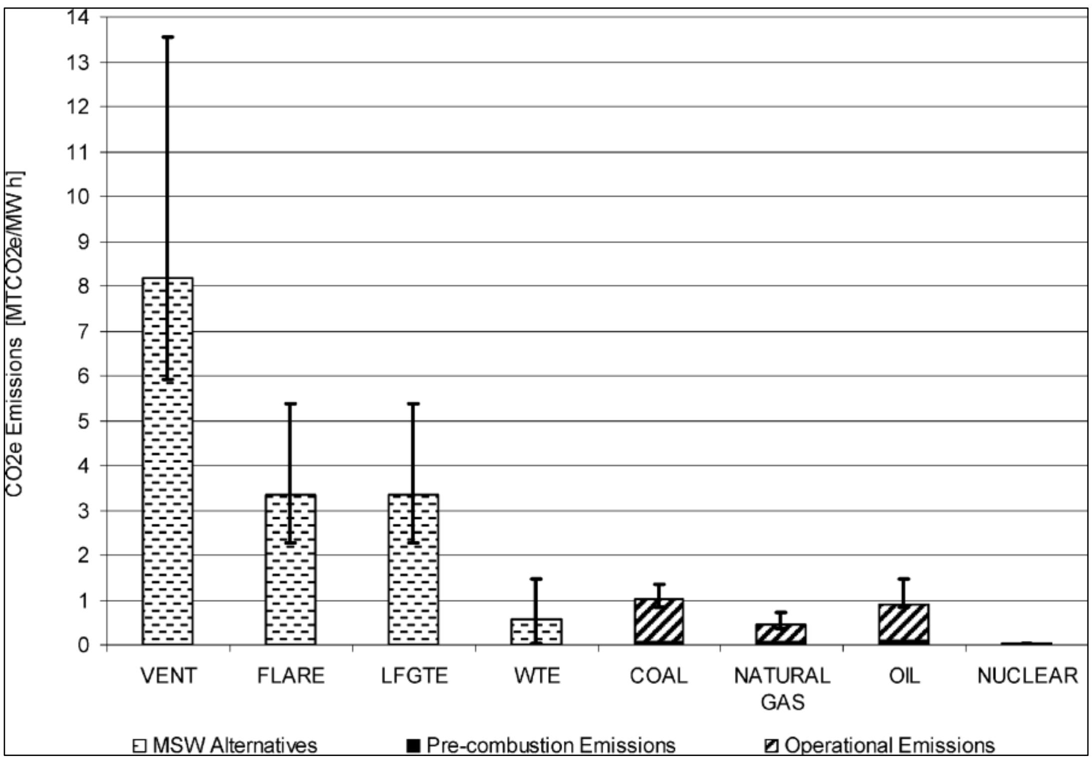
4.4 Combustion versus Landfilling

A recent USEPA-authored journal article published in Environmental Science and Technology applies a life-cycle analysis model to evaluate whether it's better to burn or bury MSW. The article is titled, "Is It Better to Burn or Bury Waste for Clean Energy Generation?" and the analysis compares greenhouse gas emissions and emissions of other pollutants for WTE and landfill gas-to-energy (LFGTE), using a life-cycle analysis model. The study states that MSW is a viable source for electricity generation and finds that WTE is a better option than LFGTE because WTE generates significantly more electricity from the same amount of waste, with fewer emissions. Though not immediately intuitive, emissions from LFGTE are due to fugitive methane emissions in a landfill, as well as emissions from combusting landfill gas in an internal combustion engine. The last paragraph of the article provides a good summary (Kaplan, Decarolis, and Thornloe, 2009):

"Despite increased recycling efforts, U.S. population growth will ensure that the portion of MSW discarded in landfills will remain significant and growing. Discarded MSW is a viable energy source for electricity generation in a carbon constrained world. One notable difference between LFGTE and WTE is that the latter is capable of producing an order of magnitude more electricity from the same mass of waste. In addition, as demonstrated in this paper, there are significant differences in emissions on a mass per unit energy basis from LFGTE and WTE. On the basis of the assumptions in this paper, WTE appears to be a better option than LFGTE. If the goal is greenhouse gas reduction, then WTE should be considered as an option under U.S. renewable energy policies. In addition, all LFTGE scenarios tested had on the average higher NOx, SOx, and PM emissions than WTE. However, HCl emissions from WTE are significantly higher than the LFGTE scenarios."

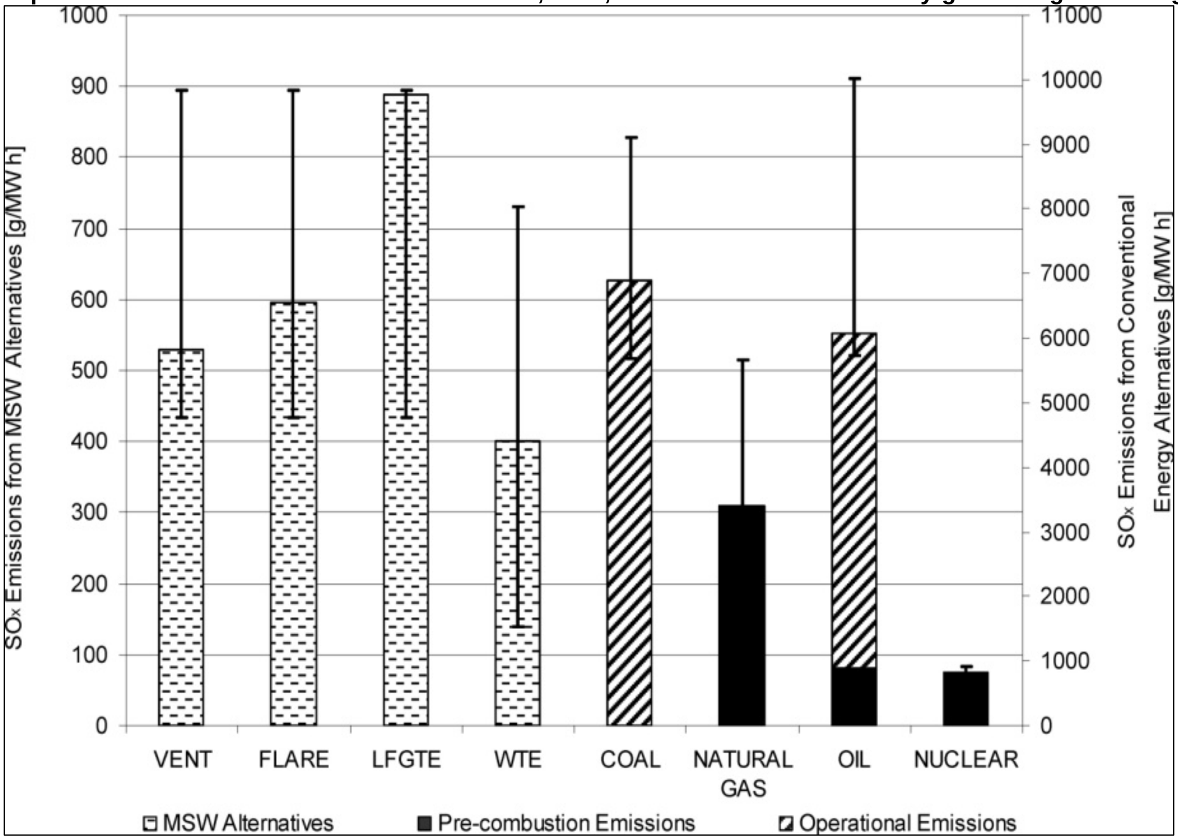
Several graphs from the article are provided below and on the next page. These graphs compare the relative emissions of greenhouse gas emissions, NO_x, and sulfur oxide (SO_x) for WTE, LFGTE, and conventional electricity generating technologies.

Comparison of greenhouse gas emissions for LFGTE, WTE, and conventional electricity-generating technologies



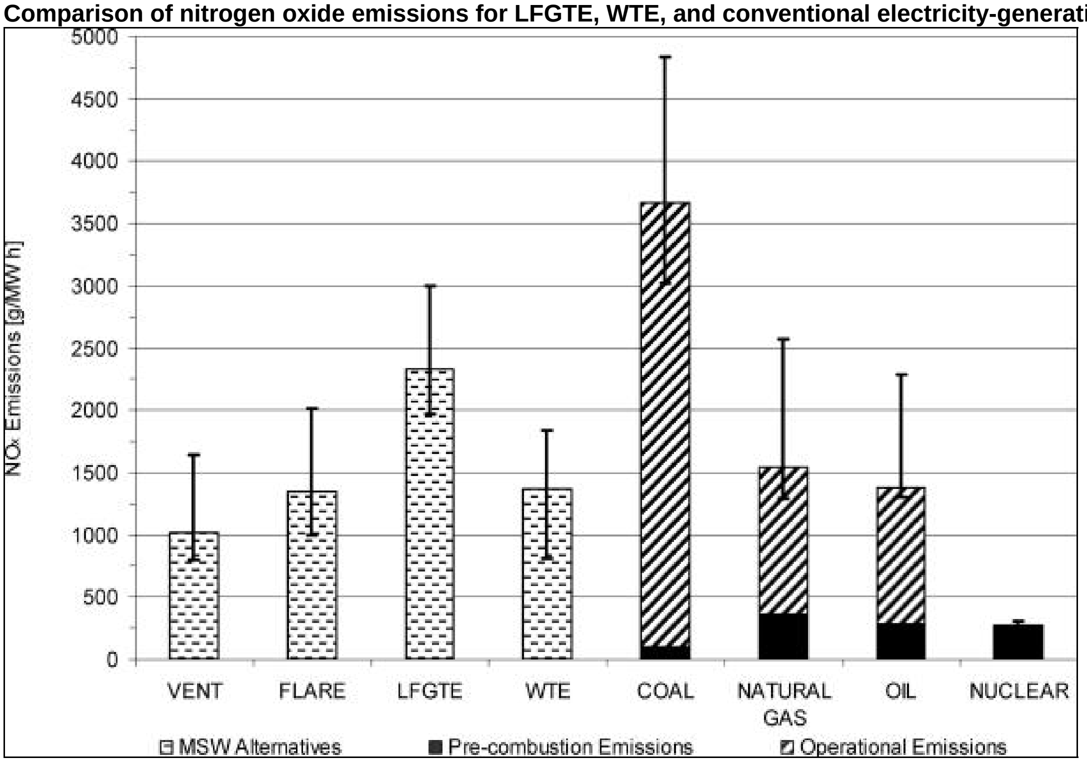
Source: Kaplan, Decarolis, and Thornloe, 2009 (Figure 2)

Comparison of sulfur oxide emissions for LFGTE, WTE, and conventional electricity-generating technologies



Source: Kaplan, Decarolis, and Thornloe, 2009 (Figure 3)

Comparison of nitrogen oxide emissions for LFGTE, WTE, and conventional electricity-generating technologies



Source: Kaplan, Decarolis, and Thornloe, 2009 (Figure 4)

4.5 Greenhouse Gas Emissions

Managing what happens to the County's non-recyclable trash is about choices. If Onondaga County did not have a WTE Facility, the County's non-recyclable trash would be destined for a landfill. Landfills generate methane (a potent greenhouse gas) as the trash degrades anaerobically. Although many landfills now have landfill gas collection systems and, ultimately, flare the landfill gas (and convert the methane to carbon dioxide), or preferably, generate electricity from the gas (landfill gas-to-energy), there are still fugitive landfill gas emissions because the landfill gas collection systems are not 100% effective. Although the Onondaga County WTE Facility generates carbon dioxide as a result of the complete combustion processes, when compared to emissions associated with landfilling, the emissions from the WTE Facility are significantly less.

In addition to having lower emissions (in terms of carbon dioxide equivalents), the WTE Facility offsets electricity that would have otherwise been generated using coal, natural gas, or nuclear fuels. According to the latest 2007 USEPA eGRID data (for 2004), New York's electricity generation resources (with associated percentages) are nuclear (29.6%), natural gas (19.6%), hydropower (16.9%), coal (16.6%), oil (15.4%), biomass (1.5%), other fossil (0.4%), and wind (0.07%). The carbon dioxide emissions associated with this profile are 907 lb/MWh. Assuming a given energy demand, the WTE Facility generates electricity that would have otherwise by generated by an alternative source.

Lastly, every year the WTE Facility recovers at least 10,000 tons of metals that would have otherwise gone to a landfill. The recovered metal is then recycled, which saves considerable energy and prevents greenhouse emissions that would have resulted from virgin metal production.

When all of these factors are considered, the Onondaga County WTE Facility reduces greenhouse gas emissions (in carbon dioxide equivalents) by one ton for every ton of waste processed. Thus, in 2009, the Facility prevented 319,136 tons of carbon dioxide equivalent greenhouse gas emissions, which is the equivalent of taking nearly 55,000 cars off the road!

USEPA recently released a study entitled, "Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices" (September 2009). The study highlights several waste management practices, including waste prevention (source reduction), reuse/recycling, and WTE (energy recovery), that can lead to significant reduction in the country's greenhouse gas emissions. The study indicates there is significant GHG reduction potential associated with WTE facilities (*i.e.,* energy recovery).

4.6 Renewable Energy and Energy Independence

The Facility utilizes a locally-generated feedstock – the community's non-recyclable trash to generate a significant amount of electricity. This not only reduces dependence on fossil fuels, it also achieves goals of energy independence. In 2009 alone, the WTE Facility generated enough energy to displace nearly 400,000 barrels of oil or 80,000 tons of coal – enough energy to satisfy the needs of approximately 28,700 homes in OCRRA's service area. That is in addition to reducing the volume of non-recyclable trash by 90% and recovering ferrous and non-ferrous metal for recycling.

In many European countries and about half of the U.S. states, WTE (or energy from waste, as it is referred in Europe), is considered a renewable energy source. Most recently, President Barack Obama signed an Executive Order on October 5, 2009 that sets sustainability goals for Federal Agencies and defines WTE (*i.e.,* energy produced by MSW) as a renewable energy source. WTE was also highlighted as one of eight "key renewable energy sectors" by the World Economic Forum's recent (January 2009) report, "Green Investing – Towards a Clean Energy Infrastructure."

In a February 2003 letter to the Integrated Waste Services Association (IWSA) (currently the Energy Recovery Council), USEPA assessed WTE as "…clean, reliable, renewable power…"; "These plants produce 2,800 megawatts of electricity with less environmental impact than almost any other source of electricity." The Onondaga County Resource Recovery Facility is leading the way in providing an environmentally sound and cost-effective method of solid waste disposal while partially providing the energy needs of a community of 450,000 people.

4.7 Preservation of Landfill Capacity and Greenfields

In the United States, landfills are the predominant disposal alternative for MSW, with 54% of MSW ending up in landfills, 13% going to WTE facilities, and 33% being recycled or composted (Municipal Solid Waste Generation, Recycling and Disposal in the United States: Facts and Figures for 2008, USEPA). Over the past couple of decades, the number of landfills has decreased dramatically, however the size of the remaining landfills is substantially larger. Due to economies of scale, these "mega-landfills" are becoming the norm. However, as you can imagine, "mega-landfills" take up massive amounts of open space.

WTE facilities preserve existing landfill capacity by reducing the volume of MSW by 90%. This means that the current landfill capacity will last longer, and that "greenfields" will not be utilized for landfill expansion projects. Had the 319,136 tons of waste processed at the Facility in 2009 been landfilled, it would have utilized over a million cubic yards of landfill space. To put this into perspective, if the waste was compacted to a 20-foot height, the landfilled waste would consume about 35 acres of land.

4.8 Compatibility with Recycling

In Onondaga County, which has one of the highest recycling rates in the State and perhaps in the nation, it seems trivial to question the compatibility of WTE and recycling. However, WTE facilities are often thought to compete with recycling. Interestingly, study after study, it has been shown that communities with WTE facilities often have higher recycling rates than communities that landfill their non-recyclable trash, both in Europe and the United States. A recent study (June 2009) entitled "A Compatibility Study: Recycling and Waste-to-Energy Work in Concert, A 2009 Update" again indicates the same conclusion.

5.1 Waste-to-Energy Facility Financial Summary

A simplified financial summary of OCRRA’s revenues and expenses associated with the WTE Facility for 2009 is provided below. Please note that the presentation of information in this report is different from the presentation in OCRRA’s financial statements. The information in this report should not be used for financial accounting purposes and is only intended to provide a simplified perspective on OCRRA’s costs and expenses associated with the WTE Facility. It should be emphasized that the revenues and expenses described in this report pertain specifically to OCRRA; Covanta Onondaga also has Facility-related operating revenues and expenses that are not described in this report.

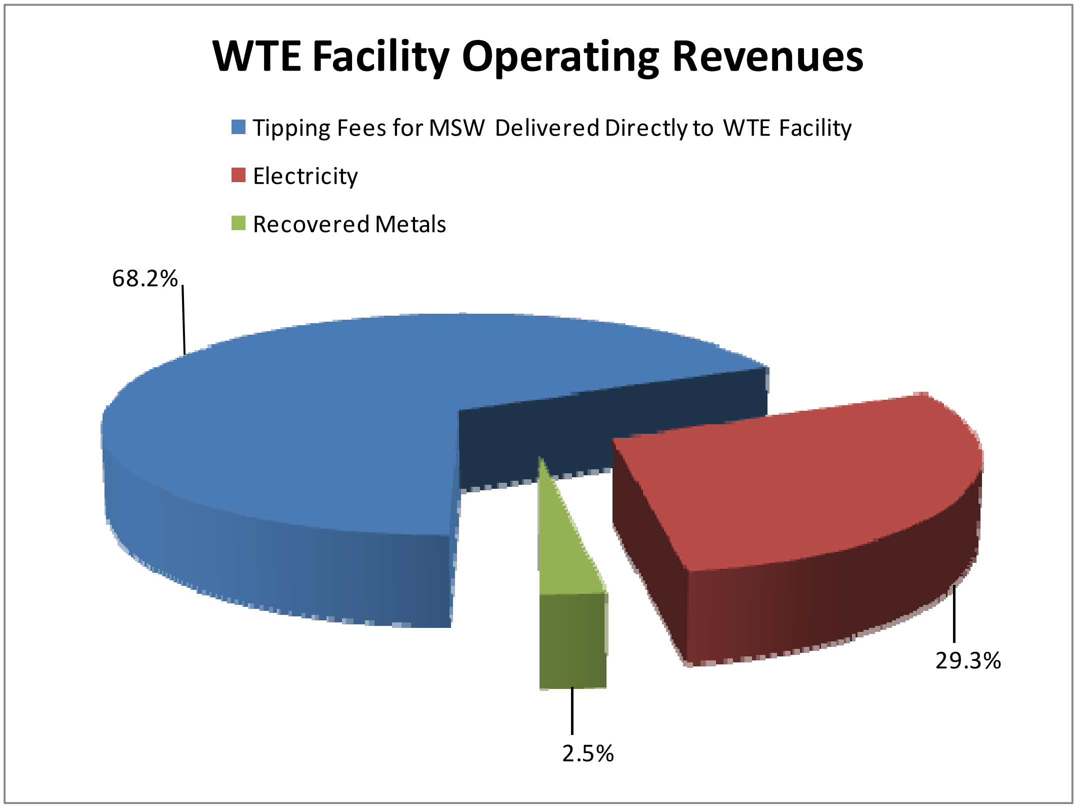
Operating Revenues		
	Tip Fee for MSW Delivered Directly to Facility………………	$15,369,900
	OCRRA's Electricity Share……………………………………	$6,614,551
	OCRRA's Recovered Metals Share…………………………	$552,753
	Supplemental Waste Tip Fee…………………………………	$2,431
	Total…………………………………………………………	**$22,539,635**
Operating Expenses		
	Operations and Maintenance Service Fee	$10,769,236
	Ash Transportation and Disposal	$3,727,178
	Excess Waste Fee	$189,908
	Pollution Control Reagents	$695,870
	Taxes/Fees	$319,947
	Utilities	$358,939
	Other Expenses (Mainly insurance)	$362,121
	Total…………………………………………………………	**$16,423,198**
Bond Expenses……………………………………………………		**$9,444,707**
Total Expenses……………………………………………………		**$25,867,905**

As evident, in 2009 OCRRA’s WTE-related expenses exceeded the WTE-related revenues (net loss of $3.3 million). These Facility-related revenues and expenses constitute a significant portion of OCRRA’s total Agency revenues and expenses. To provide some perspective, in the 2009 budget, WTE Facility-related operating and bond expenses accounted for about two thirds of OCRRA’s total Agency expenses. Similarly, WTE Facility-related operating revenues accounted for roughly two thirds of OCRRA’s total Agency revenues.

In 2009, total cost per ton of MSW processed was approximately $81 and total revenue per ton of MSW processed was approximately $71. As evident, WTE facilities like the local Facility have tremendous fixed costs. If those fixed costs are not offset by sufficient electricity revenue and tipping fees, there may be facility-related net losses, as in 2009. In 2009, the average electricity rate (including the capacity factor) was 3.7¢ per kWh, only about half of the rate for the previous few years. The low electricity rate, compounded by low trash tonnage, resulted in a net loss.

5.2 Waste-to-Energy Facility Operating Revenues

OCRRA's operating revenues associated with the WTE Facility include tipping fees for waste delivered *directly* to the Facility (not including tipping fees for waste delivered to OCRRA's transfer stations), sale of electricity generated by the Facility, the sale of metals recovered by the Facility, and revenue derived from the supplemental waste program, which was negligible for 2009. A summary of the relative contribution of these revenues is provided in the pie chart below. It should be emphasized that the revenues described in this report are revenues that pertain to OCRRA. Covanta Onondaga also receives Facility-related operating revenues that are not described in this report.



Although MSW and C&D from OCRRA's transfer stations are delivered to the WTE Facility, tipping fees are collected at the transfer stations and are therefore not included in this financial summary. Similarly, the cost of processing MSW and C&D at the transfer stations is not included in this report. However, it should be noted that electricity generated from the transfer station MSW and C&D is included in the electricity revenue.

5.2.1 Tip Fee for MSW Delivered Directly to Facility

In 2009, tipping fees for MSW delivered directly to the Facility accounted for more than two thirds of the revenues associated with the WTE Facility. In previous years, when electricity rates had been higher, tipping fees generally accounted for about half of the Facility-related revenues.

OCRRA receives the full tipping fee for MSW delivered directly to the Facility. In 2009, tipping fees were $69 per ton, with a $4 prompt payment discount. Most haulers take advantage of the prompt payment discount; therefore OCRRA generally received revenues of $65 per ton. OCRRA's office staff is responsible for billing and collecting payments from haulers.

5.2.2 OCRRA's Electricity Share

Electricity sales represent the other major revenue component associated with the WTE Facility. Historically, electricity had accounted for about 40-45% of Facility-related revenues. However, due to the low electricity rates in 2009, electricity sales accounted for less than 30% of Facility-related revenues. OCRRA receives 90% of the electricity revenues, with Covanta Onondaga receiving the remaining 10%.

For 2009, the total amount of electricity sold was 197,378 MWh, with an average electricity rate (including the capacity factor) of 3.7¢ per kWh. Prior to 2009, a contract between OCRRA/National Grid (formerly Niagara Mohawk), provided minimum floor pricing of 6¢ per kWh. Ironically, the historical annual average electricity rate had generally exceeded the floor pricing. Unfortunately, in 2009, when electricity prices took a sharp decline, the minimum floor pricing had expired. In 2009, total energy revenues were $7,349,496, with OCRRA's 90% share generating $6,614,547 in revenue. For comparison, 2008 energy revenues were $15,006,122, with OCRRA's 90% share generating $13,505,512 in revenue.

5.2.3 OCRRA's Recovered Metal Share

Although revenue from recovered metal sales generally represents about 5% of OCRRA's total Facility-related revenues, in 2009, recovered metal revenue only accounted for 2.5% of Facility-related revenues due to low metal prices. Like electricity rates, metal prices were at historical lows in 2009. OCRRA and Covanta Onondaga spilt metal recovery revenues, each receiving 50%. A breakdown of 2009 tonnage and revenues for the non-ferrous and ferrous recovery systems is provided below.

	Tonnage	*OCRRA's Revenue*
Ferrous Metal	9,752	$424,249
Non-Ferrous Metal	454	$128,504

In 2009, average ferrous and non-ferrous prices were about $90 and $550 per ton, respectively. In comparison, average ferrous and non-ferrous pricing for 2008 were about $250 and $1000 per ton, respectively.

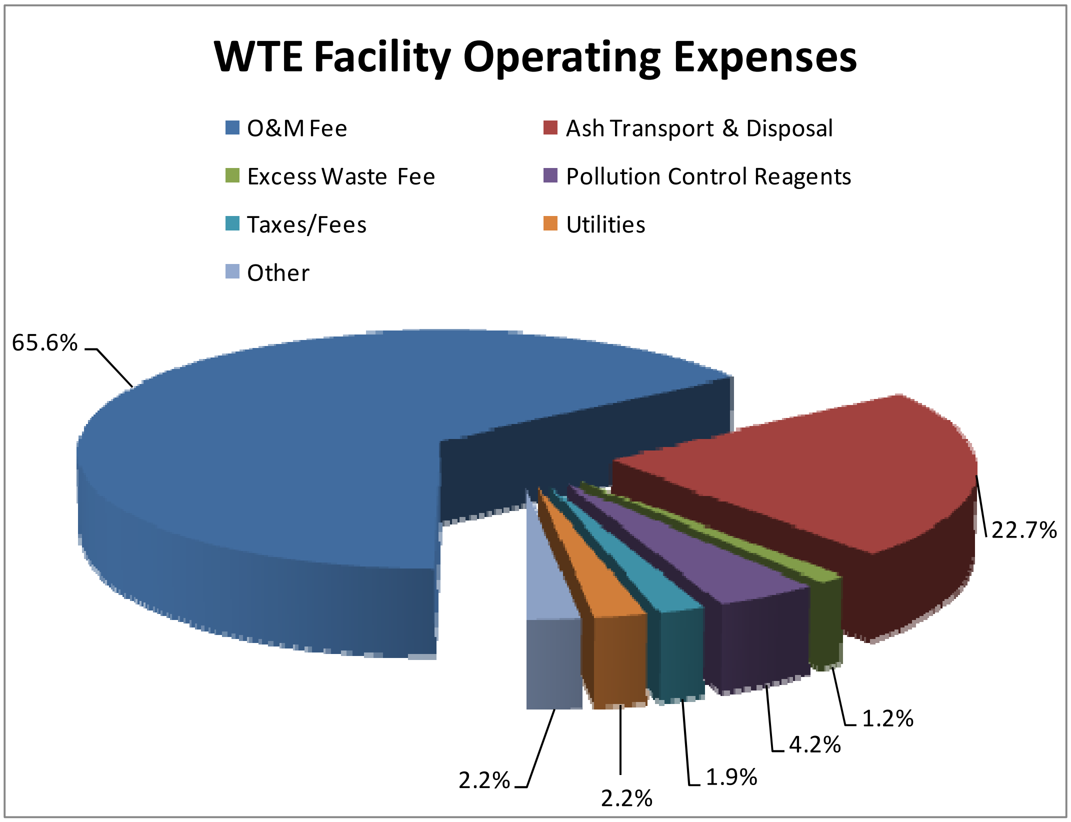
5.2.4 Supplemental Waste Tip Fee

The supplemental waste program is in place to provide proper disposal for waste streams other than MSW that may need special handling, secure destruction, or other special provisions. These wastes are carefully screened and evaluated to ensure that they will not impact Facility operations, including air emissions. Covanta Onondaga administers the supplemental waste program with oversight from NYSDEC and OCRRA. As such, Covanta receives the established tipping fee for the first 500 tons of waste and thereafter Covanta receives the established tipping fee less OCRRA's tipping fee, which OCRRA receives.

In 2009, 539.25 tons of supplemental waste was processed, generating only $2,431 in revenue for OCRRA. The types of waste processed in 2009 include pill bottles with labels (which under the HIPAA regulations require secure destruction); confiscated drugs, uniforms, and other paraphernalia from drug enforcement agencies; and pharmaceutical laboratory debris.

5.3 Waste-to-Energy Facility Operating Expenses

The operating expenses associated with the WTE Facility include an operations and maintenance (O&M) service fee paid to Covanta to maintain the Facility, the costs to transport and dispose of ash generated by the Facility, an excess waste fee payment to Covanta if more than 310,000 tons of MSW is processed at the Facility, costs associated with pollution control reagents, taxes/fees, utilities, and other miscellaneous expenses (described further below). A summary of the relative contribution of these expenses is provided in the pie chart below. It should be emphasized that the operating expenses described in this report are expenses that pertain to OCRRA. Covanta Onondaga also has Facility-related operating expenses that are not described in this report.



5.3.1 Operations and Maintenance Service Fee

OCRRA pays an operations and maintenance (O&M) service fee for Covanta Onondaga to operate, repair, and maintain the Facility in accordance with the 2003 Service Agreement between OCRRA and Covanta Onondaga. This is, by far, the largest Facility-related expense. Each calendar year the O&M fees are adjusted according to several indices (skilled labor index, producer price index, and employment cost index) and OCRRA's annual tipping fee. In 2009, the base O&M service fee was $10,730,640 and the non-ferrous O&M fee was $38,596, for a total of $10,769,236.

5.3.2 Ash Transportation and Disposal

OCRRA is responsible for transporting and disposing of ash residue generated at the Facility. The associated costs were estimated from a unit cost report and include all costs associated with handling and disposal of ash residue (salaries, fuel, tolls, tip fees, social security, insurance, and maintenance). The average unit cost for 2009 was approximately $46.74 per ton, with 79,743 tons of ash being managed. Therefore, the total ash transportation and disposal costs for 2009 were approximately $3,727,178.

5.3.3 Excess Waste Fee

According to the 2003 Service Agreement between OCRRA and Covanta, OCRRA is required to pay Covanta an excess waste fee if the Facility processes more than 310,000 tons of material in the calendar year. The unit fee per ton of waste greater than 310,000 is adjusted annually, based on the same indices as the O&M Service Fee adjustment. For 2009, the unit fee was $22.09. The excess waste fee is not applicable for supplemental waste; therefore the quantity of supplemental waste is subtracted from the amount of waste processed in excess of 310,000 tons. In 2009 the Facility processed 8,597 tons of excess waste, resulting in an excess waste fee payment to Covanta of $189,908. Historically, the excess waste fee has been between $500,000 and $800,000. The 2009 fee was significantly less because of the low waste tonnage in 2009.

5.3.4 Pollution Control Reagents

The Facility uses several reagents for pollution control including anhydrous ammonia for control of NO_x, carbon for mercury and dioxin/furan control, and lime for control of acid gases. The cost of these reagents is generally a pass-through cost to OCRRA, with the exception of lime for which OCRRA only pays a portion of the cost.

To control NO_x emissions, anhydrous ammonia is injected into the combustion chamber of each boiler unit. There are no contractual maximum levels for ammonia usage, so OCRRA is solely responsible for the expense of all ammonia used. In 2009, the cost for ammonia reagent was $137,179 for 252 tons of anhydrous ammonia at an average cost of about $545/ton. The average cost of anhydrous ammonia, which is directly proportional to the cost of natural gas, decreased by about 37% over the 2008 average cost. Given the 2009 waste tonnage processed, these figures translate into an application rate and unit cost for NO_x control of 1.58 lb and $0.43 per ton of waste processed, respectively.

To control mercury emissions, as well as dioxin and furan emissions, powdered activated carbon is mixed into slurry and injected into the spray-dry scrubbers through the rotary atomizer. The rotary atomizer creates tiny droplets for optimal reaction. There are no contractual maximum levels for carbon usage, so OCRRA is solely responsible for the expense of all carbon used. In 2009, the cost for activated carbon was $345,743 for 244 tons of activated carbon at an average cost of $1,419 per ton. The average carbon reagent application rate for 2009 was 1.53 lb per ton of waste processed, a rate within the historical range, and the unit cost was $1.08 per ton of waste processed. The 2009 average unit cost for activated carbon was nearly 23% over the 2008 unit cost.

To neutralize acid gases, namely sulfur dioxide (SO_2), hydrogen chloride (HCl), hydrogen fluoride (HF), and sulfuric acid (H_2SO_4), a calcium-based lime, commonly referred to as pebble lime, is injected into the spray-dry scrubbers through the rotary atomizer. According to an agreement between OCRRA and Covanta, OCRRA is responsible for the cost associated with the pebble lime usage in excess of 21 pounds of pebble lime per ton of waste processed, up to a maximum of 32 lb per ton of waste processed. Covanta is responsible for pebble lime reagent costs up to 21 lb per ton of waste processed and above 32 lb per ton of waste processed. In 2009, OCRRA's cost for lime was $196,159 and the average reagent application rate was 30.3 lb of lime per ton of waste processed. The cost of the lime reagent for 2009 was about $135 per ton.

5.3.5 Taxes/Fees

OCRRA is contractually responsible for the cost of the following taxes/fees:

- State and local sales taxes on Facility-related purchases – $21,060 in 2009
- Regulatory operating permit annual fees – $28,790 in 2009
- Host Community Agreement payments to the Town of Onondaga – $141,044 in 2009
- Special fire district tax assessments – $124,193 in 2009
- Special water district tax assessments – $4,860 in 2009

5.3.6 Utilities

During normal Facility operation, the Facility's electrical demand is satisfied by the Facility's turbine-generator system, with the excess electricity being exported to the grid. During those times when the turbine-generator is offline due to maintenance or malfunction, electricity is purchased from National Grid (NG) to operate the Facility and continue combusting the incoming MSW. OCRRA is financially responsible for paying for the electricity purchased during these periods. The contractual threshold levels beyond which Covanta is responsible for such costs are as follows:

Electrical Energy	3,348,000 kWh/rolling 3-year period (maximum)
Electrical Demand	4,400 kW (maximum per billing period)

In 2009, 743,220 kWh of electricity was purchased from National Grid for in-plant needs during two major unscheduled turbine-generator outages. The amount of electricity purchased during 2009 is significantly more than the average annual electricity purchased. In fact, the only time when more electricity was purchased was in 2001 when a scheduled 11-day turbine-generator outage took place. Another major turbine-generator overhaul took place in April 2010.

The 3-year rolling period total for 2007-2009 was 796,194 kWh, significantly less than the contractual maximum amount stated above. For 2009, the maximum monthly metered electrical demand was 3,888 kW. The cost of purchased power paid by OCRRA for 2009, including electrical usage and demand charges, was $155,457.

City water satisfies all potable and process needs of the Facility, with the majority being for process use. 31,460,000 gallons, representing 79% of the contractual maximum (40 million gallons per year) for which the Agency is financially responsible, were purchased in 2009. This amount of water translates into 99 gallons per ton of waste combusted or approximately 60 gallons per minute. 2009 water usage remained consistent with historical levels and design parameters following initial start-up. Total 2009 water costs were $59,456, or $1.89 per 1,000 gallons, an 14% increase from 2008.

Natural gas is an auxiliary fuel used for boiler start-ups and shutdowns, and for maintaining minimum furnace temperatures when processing overly wet waste. 2009 natural gas usage was 102,146 therms. This was the least amount of gas used annually and was due to considerably fewer shutdowns and start-ups following boiler tube leaks or low trash tonnage. The contractual maximum amount of natural gas OCRRA is financially responsible for is 110,000 therms per year, with Covanta being responsible for usage over 110,000 therms.

In 2009, natural gas was purchased under a contract with UGI Energy Services at an average rate of $1.27 per therm. A transportation charge from National Grid added an additional $0.14 per therm, for a total average annual price of $1.41 per therm. OCRRA's annual natural gas costs were $144,026.

5.3.7 Other Expenses

In 2009, OCRRA was financially responsible for several other Facility-related expenses totaling $362,121, which consisted of:

- Facility-related insurance premiums ($311,652);
- System telecommunications between Facility and National Grid ($6,347);
- Traffic signalization for the hauler entrance to the Facility ($1,653);
- OCRRA's WTE engineering consulting services related to providing technical assistance and annual stack and ash testing on-site observations ($30,460);
- Trustee fees ($10,449); and
- Other miscellaneous ($1,560).

5.4 Bond Expenses

Until May 2015, OCRRA is responsible for paying debt service on the bonds for the Facility. At that point, the Series A bonds will have been paid off and the responsibility of the Series B bonds will be transferred to Covanta Onondaga. OCRRA pays a set amount for the principal and interest on the Series A bonds; however the amount paid on the Series B bonds depends on the profitability of OCRRA in any given year. OCRRA did not have a profitable year in 2009, therefore, OCRRA did not make payments on the principal of the Series B bonds. The total payment on the Series A bonds in 2009 was $9,444,707.

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