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Internal Auditor

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Internal Auditor's Report

The County Council and County Executive of Wicomico County, Maryland:

Pursuant to Section 305(D) of the Wicomico County Code and required follow-up of the Wicomico County Fuel System Inventory Audit (report dated June 14, 2011) Internal Auditor (IA) has conducted an Audit of the Wicomico Landfill Fuel usage for calendar years 2010 and 2011. A report is submitted herewith. The purpose of the audit was to analyze the trends and variances, within defined parameters, for the audit period.

IA conducted the audit with due professional care, and IA planned and performed the audit to create a report on trends and variances for the landfill fuel use and develop questions for management concerning those trends and variances.

Respectfully submitted,

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J. Stephen Roser, CPA
Internal Auditor

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Background

Landfill Fuel Usage

Wicomico County Landfill purchases regular unleaded gasoline and diesel fuel from DPW Roads Division to use its operations including the Brick Kiln Road Landfill, numerous substations, and a dredge site for the Wicomico River dredging project. Roads division terminal is equipped with Fuelmaster pumps[1]. All gasoline is pumped at the Roads Division terminal. Diesel fuel is pumped at the Roads Division terminal and a fuel truck equipped with a similar Fuelmaster pump is used by the landfill. The landfill uses the fuel truck primarily to service field equipment.

Data

The data used for this project was gathered from the Fuelmaster database. It should be noted that due to personnel and time constraints, a complete review and recomputation of the extensive data used for this project did not take place. IA feels that, although the data may be subject to some minor adjustments due to timing or transfer from Fuelmaster to Excel, the data is sufficiently accurate for this analysis.

Audit Objective

The objectives of the audit are to:

1. Compare landfill fuel usage for calendar year 2010 with calendar year 2011
2. Explain anomalies in year over year consumption
3. Evaluate and explain seasonal spikes in fuel usage
4. Verify that fuel usage has substantially decreased upon completion of the Wicomico River dredge site

Scope of the Audit

The Scope of the Audit is open-ended. The audit period examined, on a test basis, was from January 1, 2010 to December 31, 2011. All Fuelmaster transactions for vehicles designated to Solid Waste (WCSW) for the period were reviewed. Methodology included:

- Gather fuel usage data from Fuelmaster for the test periods and compare
- Develop a set of questions for management to explain seasonal spikes and anomalies
- Analyze fuel usage for vehicles and equipment by source

[1] Please refer to the Fuel System Audit report dated June 14, 2011 for a complete report on the Fuelmaster System

Overview

For the purposes of this exercise, we divided the data into four categories:

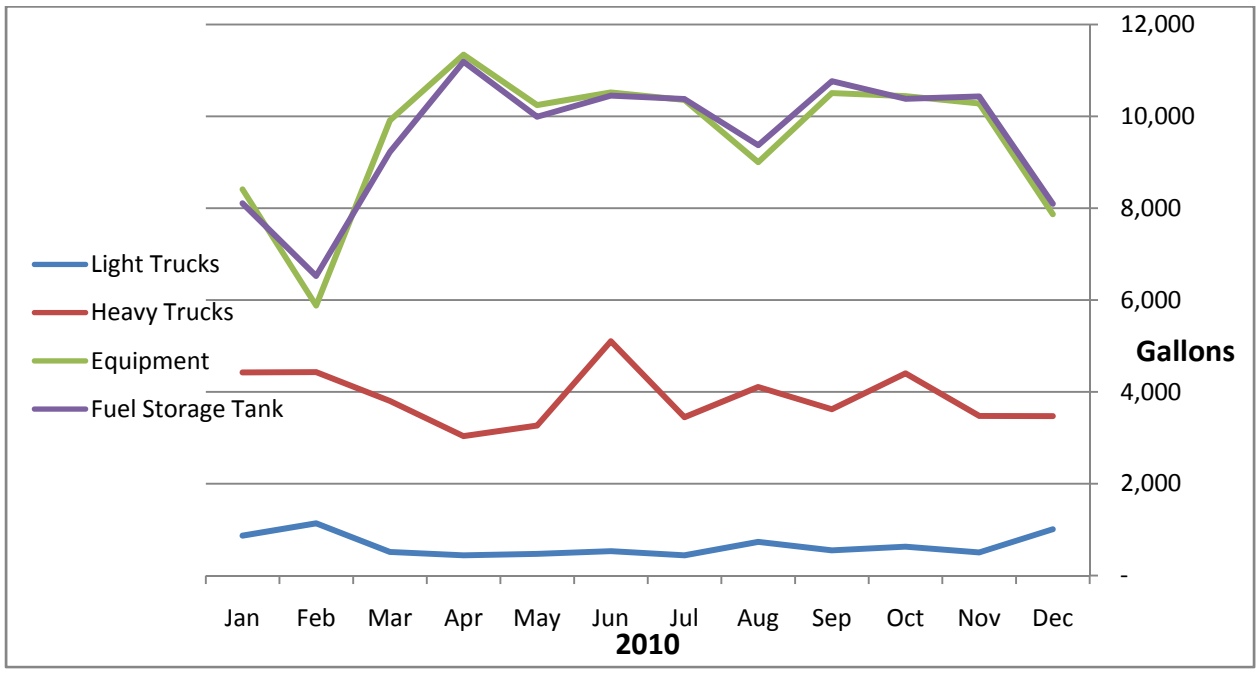
1. Light trucks
2. Heavy trucks
3. Equipment
4. Fuel storage tank

The fuel storage tank is mounted on a truck to service field equipment. It has a Fuelmaster pump that reads the AIM2 unit on the equipment and adds it to the database. The fuel pumped into the storage tank is not billed to the landfill until it is used.

Calendar Year 2010

Graphical Representation

Graphical representation of Landfill usage for calendar year 2010 is as follows:



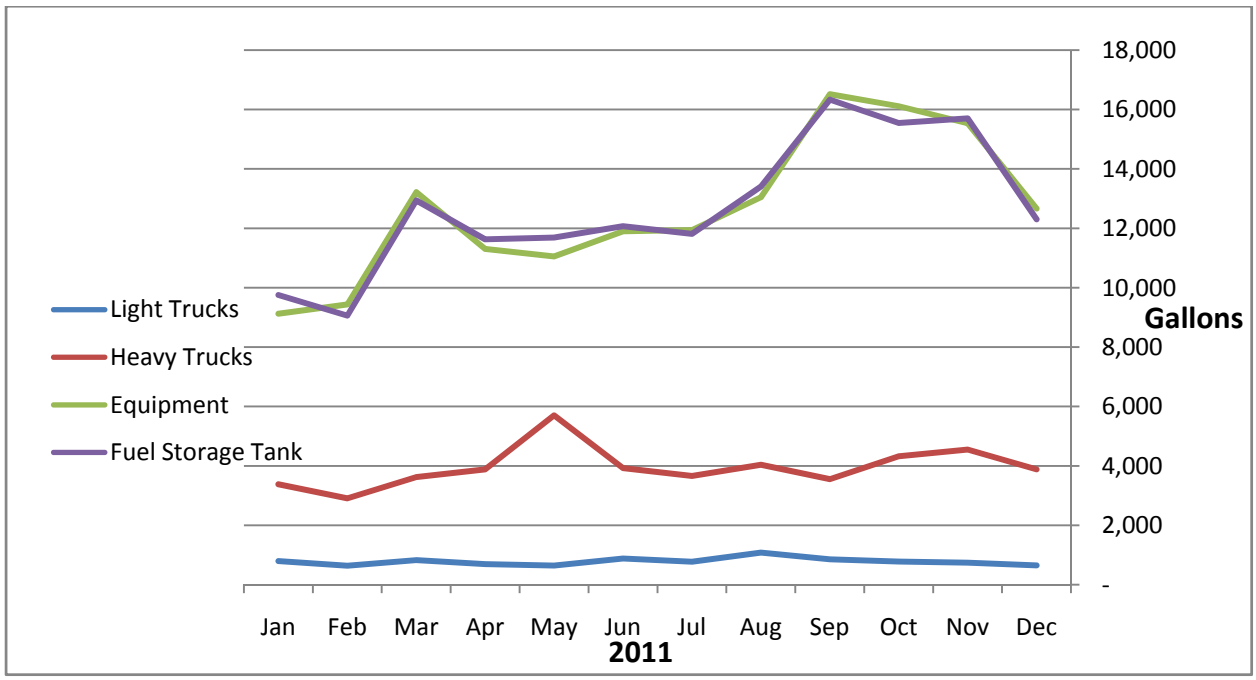
Observations

- Fuel storage tank roughly mirrors equipment usage. Slight differences appear because the fuel truck occasionally provides fuel for the Airport, the Civic Center, and some others
- Non landfill use for storage tank in 2010 was approximately 2,664 gallons
- There is a spike in equipment usage in March with a significant dip in February

Calendar Year 2011

Graphical Representation

Graphical representation of Landfill usage for calendar year 2011 is as follows:

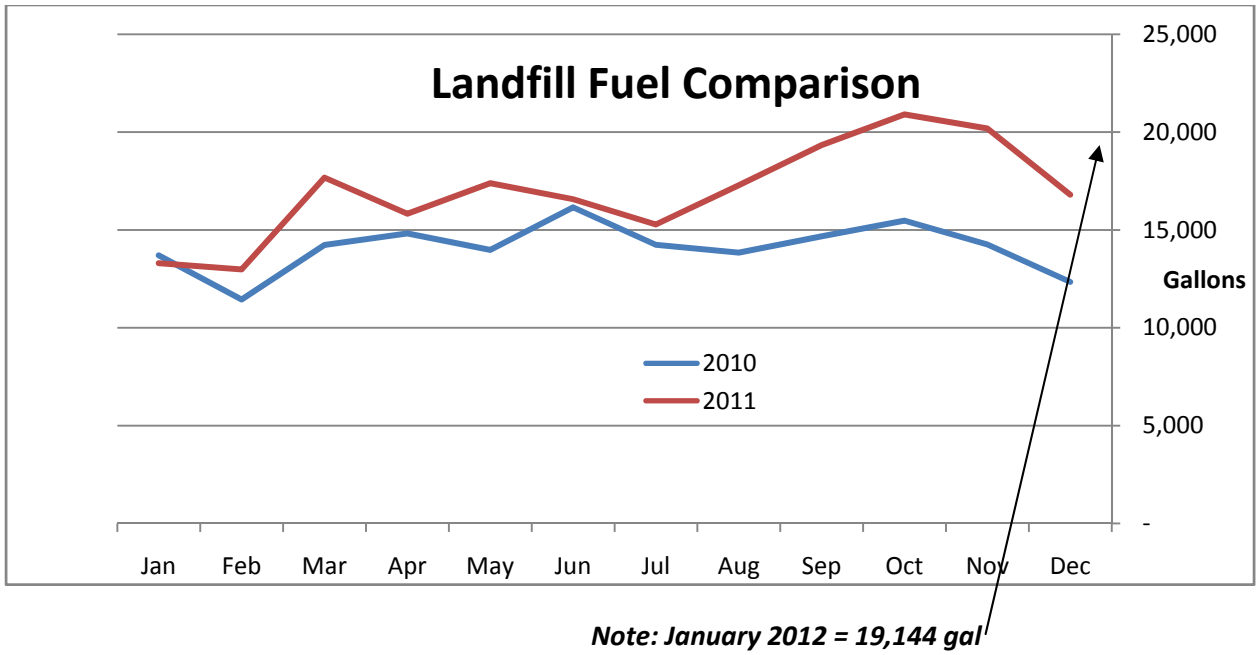


Observations

- Fuel storage tank roughly mirrors equipment usage. Slight differences appear because the fuel truck occasionally provides fuel for the Airport, the Civic Center, and some others
- The fuel truck data reveals extensive use of an emergency prokey
- Non landfill use for storage tank in 2011 was approximately 5,277 gallons
- The trend repeats 2010 with significant additional equipment use from September to November corresponding with dredge site activity
- There is a spike in equipment usage in March with a significant dip in February (similar to 2010)
- When billing is compared to calculated fuel usage variance = -191 gallons possibly due to timing

Year-over-Year Comparison Analysis

Graphical representation of year-over-year landfill fuel usage is as follows:



Observations

- There is a significant increase overall for 2011 with the exceptions of January and May
- Fuel consumption has not returned to pre-dredge site levels
- There is a significant increase for January 2012
- Emergency prokey is still in use for 2012

Auditor Comments and Recommendations

IA formulated nine questions for management based on this analysis. Appendix I contains a complete list of questions and management responses. Landfill accounting should be commended for tracking hours and keeping detailed usage records. Manually generated records, however, create risk. The Fuelmaster system, when working properly, is designed to mitigate this risk. IA recommends the following:

- Install AIM2 units on all eligible equipment and activate
- Contact Fuelmaster to determine if a method exists for installing AIM2 units on short-term leased equipment that will not violate the lease agreement
- Minimally, temporary rental equipment should have individually assigned prokeys
- Management should monitor emergency use prokey and assure minimal use

For tracking purposes, IA recommends that the county create separate accounts in Fuelmaster for regular landfill operations and special projects (dredge site, collector road, etc.). Separation will allow a more robust analysis of fuel usage. As with any increased effort, cost-benefit considerations should be made.

Auditor's Closing Remark

The landfill uses a very large amount of fuel and expends a great amount of effort accounting for its use. Landfill tracks heavy equipment hourly use against baselines and, although untested[2], is an important tool to monitor usage for off-road equipment. We found some weakness in the system in that the Landfill is not using the Fuelmaster monitoring system to its greatest potential. As such, we made some recommendations. Additionally, this process established baselines for future considerations. IA working papers (with council's permission) are available to management. IA will be glad to assist with any questions. Special thanks go to all who participated in this exercise.

[2] For materiality reasons, IA did not test the hourly recordkeeping for this follow-up exercise. Testing should take place, however, on any subsequent regular audit.

Appendix I - Management Questions, Responses, and Auditor Comment

1. Leases

What is the lease structure for the dredge site equipment?

Management Response

All leased dredge site equipment was put to open bid and awarded by price per month and availability of the equipment by each vendor.

2. Large Trucks

What causes the spike in usage for large trucks in May 2010 and 2011?

Management Response

We show all heavy trucks running in their normal range for both years.

Auditor Comment

We ran a subsequent variance analysis (as opposed to trend analysis) for large trucks. The spike for 2010 was June and not May. IA established baselines for large trucks and withdraws the question.

3. Emergency Use Prokey

Please Explain Prokey for SOLIDWAS MISC DIESEL – EMERGENCY USE

Management Response

The Misc Prokey for diesel is primarily for two small heaters used in our recycling operations during winter months. These heaters are too small to except the fuel rings that normally work with the AIMS system. This key has also been used when rings were installed but had not been programmed to the system and the named key for that piece of equipment has been prematurely turned off before programming could be finalized due to Aims system breakdowns in the computer. The remainder of the use of this key is for when the AIMS system fails and fueling must be done for continued operations. All large equipment fueled with the Misc. key is then broken down and recorded using data collected manually from the equipment at the time of fueling. All equipment is taken and logged as the number of the equipment how many gallons were dispensed into each piece how many hours that piece of equipment had operated for the gallon per hour rate then related against the manufactures hours per gallon rating for each piece of equipment.

4. Compactor

What is the history and use of Cat Compactor 836 (WCSW0526)?

Management Response

The Cat Compactor 836 is the main trash compacting machine on the landfill. It is on a purchase with buyback option every 5 years. The current compactor is 2 years old and operates 9 hours a day. Variation of fuel consumption of this machine is determined by incoming waste which may be affected by weather and machine maintenance i.e. low waste tonnage coming to the landfill would not have the need for continuous running and compaction of waste.

5. Misc. Diesel Cans

What is spike in usage for Misc Diesel Cans Jan-Mar for both years?

Management Response

Recycling heaters, pumps and generators we show there was no prokey for rental pumps until the end of March in 2010. In 2011 rings for AIMS system had been installed but not programmed or not working properly misc. diesel key was used to fuel this equipment and then broken down by individual equipment gallons and hours.

6. Equipment

What causes spike in equipment use Feb-Apr both years?

Management Response

Each year we lose employee's due to excess vacation time that must be used. When employees return after vacations all equipment returns to peak operating in this period lost time and work must be made up. During this time all landfill machinery from the Tub Grinder that does not operate in December to all other heavy equipment is used to return to normal operations and MDE compliance.

7. January 2012

What caused the spike in usage for January 2012?

Management Response

Much like the previous answer for normal operations but in mid December 2011 we completed the dredge site operation and had a period of moving equipment back to the main landfill where in the first of January 2012 we began stockpiling sand for the Westside collector project. What appears to be a spike in fuel is actually operations returning to normal pace.

8. Dredge Site

Is the dredge site is complete, and if so, why has usage not gone down to pre-dredge site levels?

Management Response

The dredge site project has been completed as of mid December. Solid waste has rolled most of the equipment and personnel onto the Westside Collector project and has been digging and drying backfill material for the road bed once the clay for Solid Waste has been removed. The pace and equipment will not be any different than the dredge project itself and will continue higher than normal fuel usage until its completion.

9. Tanker Truck

Are there two AIM2 units on the landfill tanker truck? If not, how do we account for vehicle usage?

Management Response

Yes.