



Cedar Hills Regional Landfill Community Meeting Notes October 22, 2014 King County Library Service Center • 960 Newport Way NW, Issaquah

In Attendance

King County Solid Waste Division staff

- Scott Barden, Operations Supervisor
- Laura Belt, Senior Landfill Engineer
- Chris Gavigan, Assistant Operations Manager
- Kathy Hashagen, Facilitator
- Matt Manguso, Communications Specialist II
- Victor Okereke, Engineering Services Manager

Other King County staff

- Marissa Alegria, Department of Natural Resources and Parks, Community Liaison

Bio Energy Washington (BEW) staff

- Don LeMaster, BEW Plant Manager

Interested Parties

- | | | |
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| • Mark Blume | • Tom Dickens | • Sean Kronberg |
| • Dion Coleman | • Don D. Dunavant | • Alan Martin |
| • Karen Dawson | • Jim Howe | • Jerry Newman |
| • Mimi Dickens | • Edie Jorgensen | • Sharon Woodruff |

Construction and Environmental Monitoring Activities

(Victor Okereke)

Victor Okereke said he would cover five topic areas:

1. Landfill gas pipeline update
2. Noise studies
3. Groundwater quality
4. “Overarching” Project
5. Planned construction

Pipeline Update

In response to the pipeline failure of Dec. 7, 2013, the Solid Waste Division (SWD) has repaired the area where the pipeline failed, tested the pipeline, installed safety systems, including a shut-off system, and sent staff to undergo training.

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SWD hired a consultant to do a “root cause analysis.” The results were published May 1, 2014. Four recommendations were made:

- SWD conduct visual inspections of 15 welds before October 2014
- Test welds for leaks using methane monitors
- Develop and implement routine pipe inspections
- Prepare and implement design revisions for these pipe sections to allow for thermal expansion and contraction and landfill settling.

Following above-ground inspections of the pipeline, a second report was published on Aug. 6, 2014 and made two recommendations, or “midterm improvements”:

- Replace the entire above-ground dual pipe section of the pipeline, 18- and 20-inch, by October 2014.
- Do inspections of the 15 welds based on daily temperatures. Less than 20 degrees Fahrenheit would require daily inspections, and less than 40 degrees Fahrenheit would require weekly inspections.

SWD completed the replacement of the above-ground section of 18- and 20-inch pipeline with a new 24-inch HPDE pipe on Sept. 30, 2014. The entire pipeline was tested on Sept. 29, 2014, and SWD is continuing the inspection program begun last year, including weekly methane monitoring.

SWD will make further operational enhancements this year – an automatic shutoff valve system to replace the manual system, and a pressure reduction system to replace the blower shutdown and manual restart. In the event of an unplanned shutdown of the BEW facility a valve on the pressure reduction system will gradually reduce the pressure that would be building up.

In response to questions regarding the pipeline, the following information was provided:

- The pipeline is made of high density polyethylene (HDPE).
- In the event of an emergency shutdown, excess pressure is not released into the atmosphere.
- *NOTE: The following information was not provided at the meeting, but addresses more information about excess pressure.*
 - *If BEW shuts down suddenly, sometimes the pressure in the line increases and the entire North Flare Station (NFS) shuts down. Previously, landfill gas operators were alerted to the situation, reported to the site, and restarted the station.*

The new pressure relief system will automatically open a valve and allow gas to flow back to the pipe that carries landfill gas to the landfill gas blowers at the NFS, reducing the pressure at the flares so the flares can be started. No landfill gas is vented into the atmosphere during this process. This valve will only

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remain open long enough to start a flare. The flare takes less than one minute to start. The lighting of the flare will reduce the pressure in the line and the pressure relief valve will close. By maintaining low pressure in the line, the flares will be able to start automatically and the station can continue operating without interruption.

- SWD did not select the option to install expansion/contraction joints because the pipeline runs over refuse, which is subject to settlement that may create restrictions at these joints. Rather than using expansion joints, the line was placed in a serpentine alignment, which also allows for expansion and contraction of the line.
- Underground sections of the pipeline have not been replaced, but the entire pipeline was pressure tested to ensure the reliability of the system.
- About 1,000 feet of above-ground pipeline was not replaced.
- Seattle-King County Department of Health, Department of Ecology, and the Puget Sound Clean Air Agency are the agencies that have regulatory authority over the landfill.
- Where buried, the pipeline depth varies from six to 18 inches.
- A weld is a joint in the pipeline where two pipes are fused together.
- The soil was not tested.

Noise Studies

After the results of a 2012 “Detailed Perimeter Noise Study at Cedar Hills Regional Landfill” were released, SWD realized it needed to supplement that study to differentiate background or ambient noises on the southern end of the landfill from landfill related noise sources. This supplemental study will be completed in April 2015 and results will be posted on the SWD website.

Groundwater Quality

Every quarter, SWD collects samples from 48 groundwater wells located throughout the landfill and tests the water quality in accordance with requirements. Results from the most recent sampling indicate there are no significant changes in groundwater quality. Those results are posted online.

In response to questions regarding groundwater quality, the following information was provided:

- Offsite testing is conducted annually.
- Surface water is also tested and those results are in the quarterly report, along with the groundwater results.
- Wetlands are not adjacent to the BEW plant.

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“Overarching” Project (Environmental Control Systems Modification Project)

The “Overarching” Project is taking longer than anticipated because of the high amount of information that needs to be collected. A data report will be completed by the end of 2014, and then SWD will know whether any modifications are needed.

Planned Construction

Planned construction is construction work done by contractors, not SWD, and is also referred to as “contractor construction activities.” SWD has two upcoming planned construction projects:

- Stage 2 Area Closure for Area 7 in 2015 (Stage 1 Area Closure for Area 7 was completed in 2014)
- Develop a new refuse area called Area 8

To properly develop Area 8, garbage needs to be removed from the South Solid Waste Area and placed in Area 7. Additionally, space needs to be made for the new Area 8, which will require the relocation of the storm water facilities. The estimated schedule for Area 8 is:

- Preliminary Design and Permitting: 2012-15
- Final Engineering Design: 2014-15
- Construction: 2015-17
- Open and operate in new cell: 2018-26
- Final Closure Construction: 2019-27 (This date does not imply closure of the entire landfill)
- This estimated final closure date does not mean the site will be closed. Current estimates indicate available capacity through 2030.

In response to questions regarding planned construction, the following information was provided:

- No new roads would be built in the buffer zone to accommodate the removal of garbage from the South Solid Waste Area and the construction of Area 8.
- The general effect of construction at the landfill will have nothing to do with what is happening offsite at Queen City Farms. Groundwater is much deeper than at the bottom of the South Solid Waste Area.

Operational Activities

(Chris Gavigan)

After reevaluating maintenance needs in the buffer zone, SWD has decided to delay those activities until spring 2015. Maintenance will involve fence repairs and landscaping. Road gravelling and leveling will also be conducted in the spring, and neighbors will receive notice alerting them of the work.

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In response to questions regarding operational activities, the following information was provided:

- Several participants asked if further efforts to reduce noise could be made, and Gavigan said he would look into those issues. Some participants commended SWD for keeping King County trucks as quiet as possible.
- Gavigan added he will find information regarding trees that were removed from the power line easement, as well as potentially finding a different route for truck traffic.

Bio Energy Washington (BEW) Plant Update Plant Operations

(Don LeMaster)

In the past six months, 2.08 billion cubic feet of landfill gas – 50 percent methane – has been processed by BEW, which was then purified and converted to 0.78 billion cubic feet of 98 percent methane, and delivered to the Williams Pipeline. This amount of methane is enough to supply approximately 10,200 homes for six months. In addition to delivering methane to the Williams Pipeline, the plant also used fuel gas (partially purified landfill gas) to generate more than 11,500 megawatt hours of electricity in the past six months. This electricity would have been lost had the fuel gas been flared. This power amounts to approximately one-half of the power that the BEW plant requires to operate and is equivalent to the power required for about 2,000 homes.

Plant Sound Levels

Don LeMaster reviewed BEW's sound monitoring program. He explained BEW has a permanent sound monitor operating 24/7 at the plant, as well as two portable sound monitors that BEW deploys offsite. BEW employees also conduct handheld Extech Sound Level readings every Tuesday at eight different locations.

Following a request made during April's community meeting, LeMaster presented a comparison of the sounds levels recorded by the permanent sound monitor at the plant and two portable sound monitors located offsite. Recordings were made from April 28 through April 30, and included a plant shutdown, maintenance period, and startup. After reviewing data collected during this three-day period, LeMaster said there was no correlation between offsite sound levels and those monitored at the plant except when background sound levels were recorded at both monitors.

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Disposal of Various Impurities and Media

In order to achieve 98 percent methane, impurities need to be removed from the landfill gas.

Various media are used to remove impurities:

- Sulfurite removes hydrogen sulfide and other sulfurs
- Pressure Swing Absorption media removes volatile organic compounds (VOCs)
- Activated carbon cleans up leftover sulfurs and VOCs
- Nitrogen Removal Unit media removes nitrogen
- Temperature Swing Absorption media removes water

VOCs are released during the pressure swing absorption regeneration cycle and sent to the thermal oxidizer to be incinerated at approximately 1650 degrees Fahrenheit.

After sampling and analysis, all of the above media have been cleared for disposal at the Cedar Hills Regional Landfill.

In response to questions regarding BEW, the following information was provided:

- A recent transformer performance issue, the initial symptom of which was a blown transformer fuse, caused the plant to be shut down for several days.
- BEW plant instrumentation measures the flow rate of landfill gas, including relative amounts of methane, oxygen, carbon dioxide, nitrogen, and other impurities coming into the plant.
- In the event of noise, neighbors were encouraged to call the provided phone number and leave a detailed message so BEW can determine whether or not the plant is the source of the noise.