

**PALOS VERDES LANDFILL  
CITIZENS ADVISORY COMMITTEE MEETING MINUTES  
Monday, July 26, 2010 @ Rolling Hills Estates City Hall**

**MEMBERS PRESENT:** John Addleman, Pat Furey, David Wahba, Doug Henry, Tim Scott, Kurt Swanson, Kathleen McGowan, James Greene

**MEMBERS ABSENT:** Linda Cessna

**STAFF PRESENT:** Robert Ferrante, Kristen Ruffell, Mark McDannel, and Basil Hewitt

**GUESTS:** Rebecca Villaneda (Palos Verdes Peninsula News)

The second Palos Verdes Landfill Citizen's Advisory Committee (CAC) meeting was called to order at approximately 5:40 p.m. The May 3 minutes were approved. The Chairperson of the CAC, Mayor John Addleman, then provided a summary of the tour of the Palos Verdes Landfill and surrounding area given by Sanitation Districts' staff on July 20. Mayor Addleman reported that the tour was very informative and recommended that other people take a tour of the Palos Verdes Landfill because it would put to rest many of the concerns expressed by some members of the community. Five members of the CAC were on the tour.

Mark McDannel, Supervising Engineer in the Sanitation Districts' Energy Recovery Engineering Section, then gave an update on the proposed power plant. The existing power plant initially produced 11 Megawatts (MW) of electricity, which has now diminished to 2.4 MW as the quantity and quality of landfill gas have declined over the years. The Sanitation Districts proposed to replace the existing facility in 2006 with 8 microturbines producing 1.6 MW of electricity for sale to Southern California Edison, a 300 kW fuel cell for on-site power use, and a new ultra-low emissions flare for perimeter gases and power plant backup.

Because of objections brought by some members of the community and the South Coast Air Quality Management District (SCAQMD) permitting moratorium, the new power plant is now 2 years behind schedule. A Permit to Construct was received from the SCAQMD in March 2010, but community members have filed a petition with the US EPA challenging issuance of the Permit. Delays in project implementation have negatively impacted the technical and economic viability of the project because methane production at the landfill decreases approximately 3 to 5% per year. The two-year delay results in trading high methane production years in the beginning of the project for very low methane production years at the end of the project, resulting in 20% less methane available over the life of the proposed facility. That reduction in methane results in 20% less electricity available for sale. It is certain that there is not enough gas for both the microturbines and fuel cell. Thus, the Sanitation Districts are currently analyzing the available options for the power component of the project (i.e. microturbine only, fuel cell only, or no power component). Current analyses indicate that neither the microturbine nor fuel cell options are financially viable, but the Districts continue to work

on ways to improve the project economics. This analysis will be concluded by the end of this year.

The new flare will be needed regardless of the decision on the power component of the project. The existing flares operate satisfactorily; however, with declining methane quality and quantity the new flare will be better able to treat the landfill gas. The new flare can function on landfill gas with very low methane levels. In addition, the new flare has the ability to supplement the fuel supply with natural gas when the methane level drops below the new flares' operating range. Based on this need and the Permit to Construct issued by SCAQMD, the Sanitation Districts have gone out to bid for construction and installation of the new flare.

As part of the discussion, the CAC asked for specifics on the economics of the existing power plant. While the existing power plant has made money over its lifetime, Mark stated that currently it is losing over \$1 million per year. The CAC expressed concern about the waste of public funds involved in running the current power facility with that level of economic loss. Mark stated that the Sanitation Districts prefer to have a back-up system for landfill gas destruction prior to shutting down the power facility. The new flare could be brought online in 8 to 12 months. The new flare would be tested for approximately 3 months before it would be considered fully operational. When the new flare is fully operational and with the old flares available as a backup, the power plant could be shut down.

During the Sanitation Districts' report on the power project, the following questions were asked. Responses are included in parentheses following the question.

- (1) Why is there a different risk for the different equipment in the SCAQMD modeling? (Risk is a function of emissions and dispersion. The microturbine, fuel cell, and flare have different emissions profiles and dispersion characteristics. Therefore, the different equipment will have different risk.)
- (2) What locations were analyzed for the location of the new flares? (Two locations were evaluated based on the availability of suitable soil. One is the current location and the other is on the Crenshaw side of the landfill. Sanitation Districts' staff evaluated the benefits of moving the system to the Crenshaw side, but the current location was more beneficial.)
- (3) What is the projection to get to zero landfill gas? (Approximately 10 to 15 years from now the quantity and quality of landfill gas will be very low. However, some type of treatment will be needed for the next 40 to 50 years as long as trace amounts of landfill gas are being produced.)

Kristen Ruffell, Supervising Engineer in the Sanitation Districts' Water Quality & Soils Section, then provided a history and rationale for the groundwater monitoring program at the Palos Verdes Landfill. Kristen began with a brief history of the Palos Verdes Landfill. The site that was to become Palos Verdes Landfill was a sand, gravel and diatomaceous earth mine from 1900 to 1950. The mining operations conducted

significant excavations and dirt moving throughout the site. Kristen passed out Figures G-3 and G-10 of the Five-Year Review to show the historical canyons and the base topography of the landfill.

Landfill operations began on the portion of the site that is now the South Coast Botanic Garden in 1952. Groundwater monitoring related to the Palos Verdes Landfill began in 1964 when a portion of the Main Site was permitted to accept hazardous waste. The monitoring was conducted in three wells located in the West Coast Groundwater Basin<sup>1</sup>. On-site groundwater monitoring began in 1976 when a new engineered hazardous waste disposal area was permitted (Figure G-10)<sup>2</sup>. The new on-site wells were installed along the northeast boundary of the Main Site because this area was immediately adjacent to the new disposal area. These wells were monitored quarterly and did not detect any landfill impacts. The first groundwater contamination was discovered in 1984 when volatile organic compounds (VOC) were discovered in a boring at the northern corner of the Main Site. Because the VOCs discovered were clearly related to the landfill, the Sanitation Districts immediately began an investigation to determine the nature and extent of the contamination. As part of this effort, 22 groundwater-monitoring wells were installed. The Sanitation Districts also installed a sub-surface groundwater barrier and 11 sub-surface extraction wells in the northern corner of the Main Site to prevent further contaminant migration. The extracted groundwater is directed to the sanitary sewer and treated at the Joint Water Pollution Control Plant in Carson.

Between 1988 and 1995, the Sanitation Districts completed a number of studies under the regulation of the Department of Toxic Substances Control (DTSC) to determine the appropriate remediation at the site. The Remedial Investigation identified groundwater plumes emanating from the Main Site along the historic canyons beneath Hawthorne and Crenshaw Boulevards (Figures G-3 and A-8)<sup>3</sup>. In addition, a smaller plume was identified to emanate from the South Coast Botanic Garden along Rolling Hills Road. The final Remedial Action Plan recommended the installation of 5 additional groundwater extraction wells to prevent further migration from the landfill along these pathways. The locations of the groundwater extraction wells and the sub-surface barrier are shown on Figures A-4 and A-5 of the Five-Year Review.

The Five-Year Review of the site documents that the Remedial Action Plan has been effective at stabilizing the off-site plumes (Figures A-8 and A-9). In addition, the Five-Year Review found that the total mass of VOCs within the plumes declined by 52% between 1994 and 2006. This decline was due to the groundwater containment systems preventing additional contaminant migration and natural VOC degradation in the off-site areas.

The current monitoring wells for the landfill are shown on Figure A-6 of the Five-Year Review. The current monitoring well network was selected from the available wells to

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<sup>1</sup> These wells were presumably the nearest drinking water wells.

<sup>2</sup> The engineered disposal area was constructed by excavating into bedrock to form a pit with low-permeability base and sides. At the bottom of the excavation, an underdrain was installed to remove standing liquids.

<sup>3</sup> The historic canyons that were in the Country Hills Estates neighborhood were completely removed by the mining operations prior to landfill operations and do not represent a pathway for groundwater flow.

target the migration pathways. To provide a basis for comparison, a few background and side gradient wells are also monitored. Two of the monitoring wells shown on Figure A-6 (SW8/SW9) were located on private property and were monitored by the Sanitation Districts through an access agreement. The access agreement required the Sanitation Districts to properly abandon these wells at the end of the contract term. In accordance with the agreement, these wells were abandoned earlier this year. To replace these two wells, the Sanitation Districts have added wells M52B and M59B to the monitoring program. All wells on the monitoring program are monitored quarterly and reports are submitted to DTSC. Sampling indicates that the levels of VOCs in the impacted wells are decreasing and some have been reduced to below drinking water standards.

Doug Henry asked about two wells in his neighborhood that were not on the map. Kristen indicated that the map shows wells that are owned or sampled by the Sanitation Districts. There are many other wells in the area that are owned by other entities (gas stations and other property owners). Kristen agreed to provide more information about the wells of interest to Mr. Henry during to his tour of the landfill.

The Sanitation Districts have received multiple questions about the colored and/or bubbly seepage in Country Hills Estates and any potential links to the landfill. The occurrence of seepage in Country Hills is related to the low-permeability bedrock (Malaga Mudstone) that occurs near the surface in this area. When it rains or when the ground is over irrigated this moisture cannot percolate into the Malaga Mudstone. When the thin topsoil becomes saturated, the water seeps out of cracks in the pavement in the Country Hills area. This seepage is frequently rust or orange in color because of the levels of iron pyrite ( $\text{FeS}_2$ ) in the soil. The seepage may also appear bubbly when sulfur-reducing bacteria are present. The Sanitation Districts have sampled numerous seeps at the request of the nearby neighbors. In every case, the seepage was high in naturally occurring sulfate and iron and there were no indications of any landfill-related constituents. Rust colored and foamy seepage is also observed in other locations on the peninsula (e.g. near Quarter-Mile Bridge in George F. Canyon park).

The groundwater discussion was well received. Mayor Addleman asked the Sanitation Districts' staff to potentially give a shortened version of this presentation to the City Council and community groups.

There were no old business, new business, written communications, oral communications, and announcements presented. The meeting was adjourned at 6:55 p.m.

The next CAC meeting is scheduled for **Monday, October 25 at 5:30 p.m.** at Rolling Hills Estates' City Hall.