

Jungo landfill concept outlined



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Representatives of Golder Associates and Recology gave technical presentations to the Humboldt Development Authority on Tuesday (Jan. 12). The presentations included a semi-technical outline as well as a conceptual design for the proposed Jungo Rd. landfill.

Representing Golder was the project engineer, Ken Haskell, and representing Recology was Erin Merrill, the project manager. Golder Associates was founded in Canada in 1960 and has grown to have offices throughout the world. In addition to waste management, the company also engineered projects for the oil/gas industry, mining, and transportation. Golder is an engineering firm contracted by Recology to design and construct the facility, should it receive permitting.

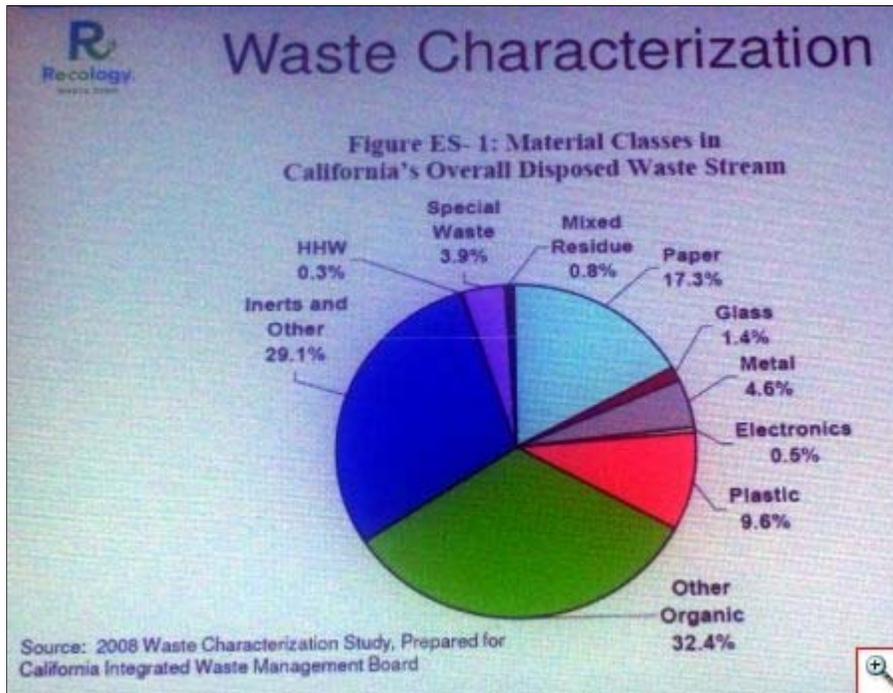
Merrill attempted to address concerns the community has previously voiced about the kind of materials that would likely go into facility. However, the information was general in nature because Recology will not be able to bid on specific waste removal contracts until the appropriate permits are obtained.

In response to a question from the audience, Merrill said the asbestos would be buried in the bags – or appropriate container -- it came in. Procedures and regulations require asbestos and asbestos-containing materials to be doubled-bagged and securely closed. Asbestos is a “special waste” and is transported separately from the general waste stream, she noted.

Salient points of Merrill's presentation included:

1. To minimize dust, the daily working area of the dump would be kept as small as possible while still providing enough room for the safe operation of heavy equipment. Working areas in other facilities are typically about one acre in size.
2. Alternative daily cover (ADC) would be spread on the working area at the end of each day. Approved ADC materials include treated (dried) sewage sludge and/or shredded tires, and/or contaminated soils -- among other materials. Haskell noted the sludge would be dried before shipping then dried again at the site. When asked about sludge with heavy-metal concentration, Merrill explained that once the concentration reaches a certain percentage it is considered a hazardous waste and Recology would not be able to transport it.
3. Longer-term coverage materials typically include a foot or so of soil moistened by fresh water combined with untreated "leachate," a fluid collected from the bottom of the lined facility through a system of sump pumps and pipes. When asked if the leachate was treated, Haskell replied in the negative and said, "I work at a lot of different sites, and I don't know of anyone treating leachate within the footprint of a lined landfill."
4. Waste from San Francisco -- where heavy recycling "diverts" all but the vilest garbage dregs -- would not flow into the Jungo "waste stream," Merrill reiterated. Instead, Jungo's stream would likely be representative of California's typical waste stream, she suggested. She showed a pie chart (see below) from the 2008 Waste Characterization Study, prepared for the California Integrated Waste Management Board. The study reportedly found that a mere 0.3 percent could be deemed "hazardous" (see the HHW, or "household hazardous waste" sector below). Meanwhile, just under four percent fell into the "special waste" category comprised of asbestos, sewage sludge, and other materials that are delivered separately, and receive special handling.





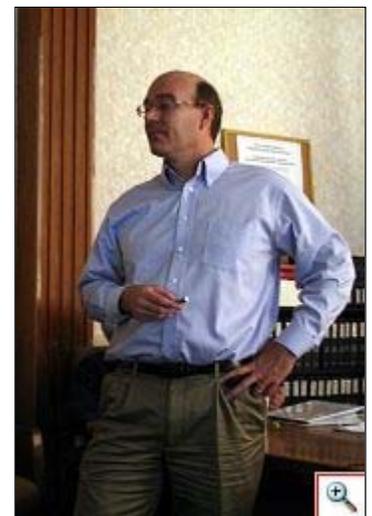
Engineering Angle

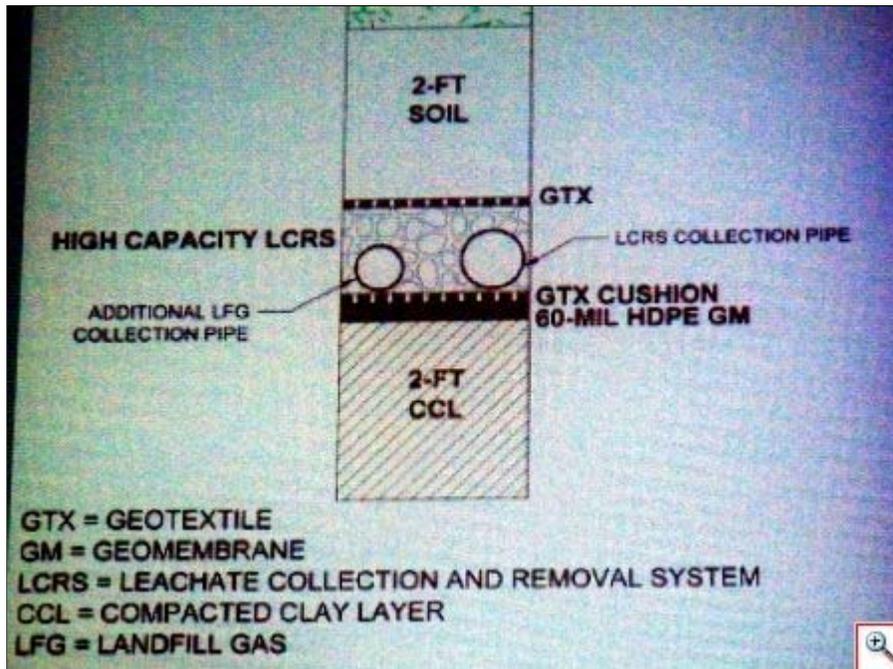
When Merrill concluded her talk, Haskell presented the proposed site's "conceptual" design.

Haskell said the ground beneath the dump would be graded into a basin and range topography, and lined with HDPE. It would be piped to collect leachate. A second pipe network would collect methane and other gases. In arid climates like Nevada, preventing gasses from carrying volatile organic compounds (VOCs) into the soil is actually a more significant problem than leachate leaks, he said. By creating a vacuum in the pipes, the facility could catch such gases, and even use them for energy production, he said.

Using slides to demonstrate his points, Haskell noted the main liner would be a 60mil layer of high-density polyethylene (HDPE). Sixty mil are equal to 0.06 inches, 1.524 millimeters, or about the thickness of ten heavy trash compactor bags. Additionally, a "cushion" of polypropylene would be placed directly atop the HDPE layer, a practice Haskell said has been shown to improve liner durability.

Below this two-ply liner, a compacted layer of organic clay liner should help slow soil infiltration indefinitely (barring cracking from earth movements). Above the liner, a layer of crushed gravel provides drainage for the fluid and gas collections systems. Above that, yet another "geotextile" filter of polypropylene helps keep out materials that could clog the collection pipes, Haskell said. Finally, the topmost layer of the liner system comprises two feet of regular old soil, there to deter physical stress on the filter and liner system by heavy equipment and refuse (which undergoes regular compaction).

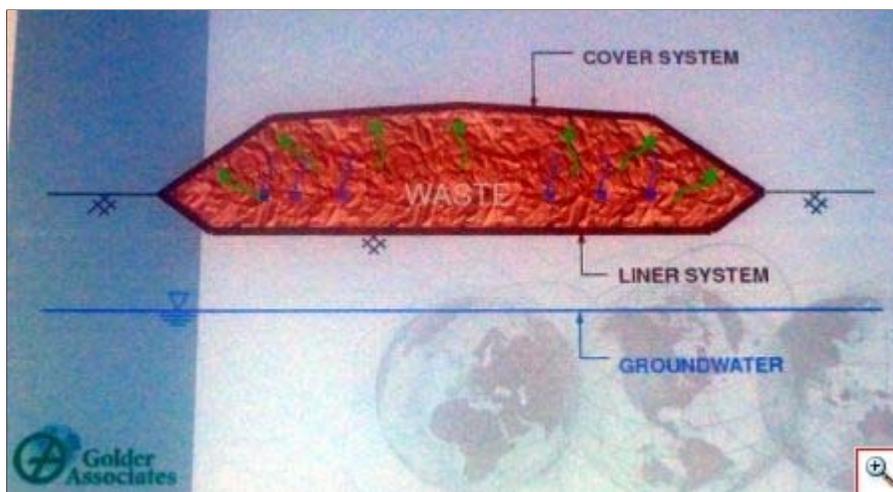




The liner system Haskell described resembles those used underneath leach pads in many local mines. Audience members familiar with the mining industry pointed out that similar liners beneath leach pads have been known to wear out in a 20-30 year timeframe. However, Haskell suggested the liner proposed for the Jungo project could last 500 years, based on "accelerated aging" tests done by an industry group.

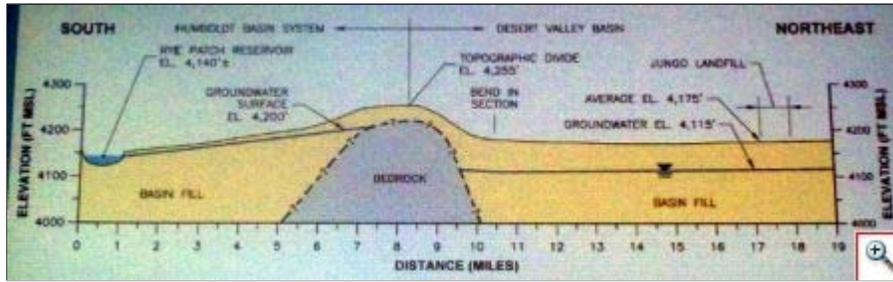
Haskell said that Golder carefully tests its liners for faults, prior to commencing landfill operation. One such "quality assurance" method involves measuring the ground's electrical potential, using a device invented by Golder Associates engineers, Haskell said.

Following the site's expected 95-year working life, the topmost surface, or "cover system," becomes the critical barrier, according to Haskell. "And that system is accessible, and can be maintained indefinitely," he said.



Risks to the Water Table

Haskell went on to describe his view of the hydro-geology beneath the proposed site. He suggested that groundwater beneath the site moves northward, toward the Black Rock Desert. Thus, he suggested that any groundwater contamination would not likely affect nearby Rye Patch Reservoir, nor the table from which nearby Winnemucca draws its water. He also pointed out that not contaminating the groundwater would be a necessary permit condition for operation of the site.



Haskell said he expected to receive an air quality permit last year, but that it had not been granted yet. He cited NEPA's wish to respond to all public comments as the cause of the delay. Meanwhile, a water quality permit process should commence shortly, and will also include a period for public comment.

Throughout the talks by both Merrill and Haskell, audience participation was vigorous. After two and a half hours of discussion, the meeting was concluded, due to a Little League Basketball referee commitment by one of the Development Authority board members.



Haskell's presentation included a wealth of fascinating technical drawings and maps. Most were previously published on the Jungo Land website. He said he hoped to add his presentation in its entirety, "within a week." The website is located [here](#).

In other news related to the landfill, local lawyers Robert Dolan and Massey Mayo, of Dolan Law Offices, will have their day in court on May 5. The two have filed a complaint against the Humboldt County Commissioners, for action taken in connection with the landfill. That story can be found [here](#).

Attachments:

File	Description	File size
Recology Presentation.pdf	Erin Merrill's presentation to the Humboldt Development Authority, Jan. 12, 2010	1265 Kb
Golder Presentation.pdf	Ken Haskell's presentation to the Humboldt Development Authority, Jan. 12, 2010	4690 Kb