UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
11201 RENNER BOULEVARD
LENEXA, KS 66219

JUL 26 2013

OFFICE OF
THE REGIONAL ADMINISTRATOR

Mr. Ed Smith
6267 Delmar Boulevard
Suite 2E
St. Louis, Missouri 63130

Ms. Kathleen Logan Smith
6267 Delmar Boulevard
Suite 2E
St. Louis, Missouri 63130

Dear Mr. Smith and Ms. Logan Smith:

This responds to questions you posed to the Environmental Protection Agency through letters dated May 23 and June 18, 2013. This agency continues to collect and analyze data to discharge its responsibilities at the West Lake Landfill Superfund site. Therefore, as noted, these responses are made in light of information now available.

For readers' convenience, these responses are grouped according to the topics your letters raised. The agency will post this letter to make it available to the interested public and media. If there is further information concerning the site that you are interested in, please feel free to contact Cecilia Tapia, Superfund Division Director, at (913) 551-7733 or tapia.cecilia@epa.gov.

Legal Authority to Evaluate Long-Term Risks

The EPA is making decisions concerning the West Lake Landfill Superfund site under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9601, *et seq.* and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300. The EPA specifically looks to Section 121 of CERCLA, Cleanup Standards, and Section 300.430 of the NCP, Remedial investigation/feasibility study and selection of remedy. Both Section 121 of CERCLA and Section 300.430 of the NCP take into account long-term risk. The EPA is also guided by applicable or relevant and appropriate requirements of other environmental statutes and regulations, known as "ARARs". An extensive discussion of the ARARs at the West Lake Landfill site is found in Section 3 of the final Supplemental Feasibility Study.

The EPA refers to numerous guidances, including "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (OSWER Directive # 9355.3-01, October 1988 and subsequently issued guidance) and "Guidance for Data Useability in Risk Assessment" (OSWER Directive #9285.7-05, October 1990.)

The EPA is overseeing work by the potentially responsible parties which includes the evaluation of risk associated with multiple disasters such as fire, tornado, and earthquake. Close cooperation with the state agencies responsible for the Bridgeton Landfill enables the EPA to assess the risks posed to the West Lake site by the subsurface smoldering event as part of this agency's responsibility to maintain the integrity of its remedial options.

Leached Barium Sulfate

The EPA is relying on the NRC's report for an accounting of leached barium sulfate from Latty Avenue. It is likely that the soil that was removed from the Latty Avenue site and mixed with the barium sulfate residue contained residual amounts of the other radiological wastes stored there. However, it is impossible to say how much radiological material this soil contained. The EPA has extensive analytical results for the materials actually present in West Lake Landfill. Since the Congo raffinate and Colorado raffinate were valuable enough to justify drying and shipping to Colorado, it is likely that very little of this material was left on-site.

Radium in Groundwater

The EPA agrees that radium concentrations in the waste at the site will increase over time as the secular equilibrium between radium and thorium is re-established in the leached barium sulfate residue. This well-known process was discussed in Section 2.2.7 of the SFS report as well as earlier documents. The increase in radium activity with time was fully considered in the landfill cap design presented in the SFS report. In fact, this issue was raised during the public comment period on the proposed plan and addressed in the responsiveness summary for the 2008 OU-1 ROD.

The EPA will have a better understanding of current groundwater conditions after the Agency, in conjunction with the U.S. Geological Survey, reviews the next two rounds of groundwater sampling. Some conditions that EPA is presently aware of are:

(a) Detections of radium in groundwater above its MCL were found across the site, in both shallow and deep wells, in locations both downgradient and upgradient of the OU-1 cells. There are also numerous wells across the site, both shallow and deep, in locations both downgradient and upgradient of the OU-1 cells, that contain radium in groundwater substantially below its MCL.

(b) Uranium and thorium, the other radiological contaminants in the OU-1 cells, were not found at elevated concentrations in the groundwater across the site. Uranium did not exceed its MCL in any of the wells sampled in July 2012, and only exceeded its MCL in one well (in the "total" groundwater sample that included suspended sediment) during the April 2013 event. Thorium (which does not have an MCL) was found in dissolved samples at a maximum concentration of 2.04 pCi/L in July 2012 and 0.99 pCi/L in April 2013.

(c) The isotopic abundances of radium in the landfill waste do not appear to match those of radium found in the groundwater samples. Both Ra-226 and Ra-228 are found in the groundwater samples, while the OU-1 soil samples contain primarily Ra-226 with little to no Ra-228.

Additional Sampling

The EPA is working with USGS to better understand the groundwater conditions at the site. At the same time, the PRPs are currently collecting another round of samples, under EPA oversight, with a plan to collect a fourth round of groundwater samples in the fall. Groundwater samples are being collected on the landfill and beyond the landfill boundary. The EPA takes splits of groundwater samples.
This work will inform a fate and transport model the PRPs are required to prepare for the EPA. Until this evaluation occurs, the recent groundwater results indicate that contamination is not migrating substantial distances from its original location where the radioactive waste was disposed.

Data collected through the Remedial Investigation and previous investigations provided information that enabled the EPA to characterize the radioactivity and define the extent of the radioactive material in OU-1. There are no current plans to collect additional soil samples.

ASPECT Data Conclusions
The ASPECT data confirmed that the radioactive material within the upper foot of soil was present in the area where it had previously been detected. The ASPECT data did not indicate that the radioactive wastes have migrated. There are no plans to fly the ASPECT plane over the site in the future. The ASPECT report was posted to the EPA's website on May 29, 2013.

Groundwater monitoring outside the Landfill
During the third round of groundwater sampling being conducted in July 2013, the EPA collected samples from several off-site locations to establish background concentrations of contaminants in the alluvial aquifer, and the PRPs plan to collect additional off-site samples to establish background concentrations of contaminants in the bedrock aquifer. Results from these samples will be evaluated as part of this sampling event, and the EPA and USGS will use this data to help understand the contaminants found in the groundwater at the site.

Smoldering Event
Region 7 has enlisted the EPA's Office of Research and Development to assist evaluation of the current data and to make recommendations concerning the subsurface smoldering event. To assure the integrity of this agency's remedy option selection process, the EPA remains in close contact with the Missouri Attorney General's office and Missouri Department of Natural Resources, the lead regulatory agency responding to the smoldering event. This agency will continue to work with these agencies, as well as the Bridgeton PRPs, as contingency plans and trigger levels are developed.

Community Interviews
The EPA conducted initial community interviews in 1994. Since that time, the EPA has canvassed community members, elected officials, and other interested stakeholders by phone and at community meetings throughout the history of the site. The EPA conducted door-to-door interviews on January 9, 2013. Follow-up phone calls were conducted with 20 community points of contact, which included residents, businesses, churches, and academia. During the last two weeks of March 2013, numerous contacts were made with members of the Spanish Village community and the nearby trailer park. The focus on the recent interviews was to talk about the EPA's upcoming meetings and to discern how residents prefer to receive information, i.e., via mail, phone, computer, etc. Community interviews and interactions are consistently used by the EPA to gather information about community concerns. Other forms of social media are also used to gauge the community climate. The EPA will continue to interact with community members and other West Lake Landfill stakeholders throughout the Superfund process. More recently, some residents have approached the EPA about forming a community advisory group and have been advised about the procedures and funding opportunities.

Interceptor Well Temperatures:
As previously noted, Region 7 is working with the EPA's Office of Research and Development on a review of the available data for the Bridgeton subsurface smoldering event. Additional temperature monitoring probe data is being collected to evaluate the performance of the interceptor wells. The EPA has drawn no conclusions on the performance of these wells at this time.

Leachate:
Recent reports on the leachate collection systems at the Bridgeton landfill site indicate the pumping system is in continuous operation. The collection and disposal of the leachate is monitored by the MDNR.

Groundwater:
The EPA has asked the PRPs to do four quarterly groundwater sampling events. The first occurred in July-August 2012, the second in April 2013, the third is currently ongoing, and the remaining event is planned for October 2013. The EPA is collecting its own split samples during each event as part of our oversight of the PRPs. The report on the second round of groundwater sampling was placed on the EPA's West Lake Landfill web page, http://www.epa.gov/region7/cleanup/west_lake_landfill/index.htm on July 25, 2013. The reports on subsequent monitoring events will be provided and posted as they become available.

A groundwater fate and transport model is being developed by the PRPs, with EPA oversight, to answer questions pertaining to the groundwater system. The USGS evaluations of site data as well as the fate and transport modeling being conducted will provide this agency with additional information about contaminant movement in the groundwater at the site.

Radon in Air:
The MDNR and MDHSS have taken air samples to assess radioactivity in the air around the site. The EPA had the PRPs collected radon emission data on OU-1 during the Remedial Investigation in the late 1990s, and this information is available in the RI report.

If you have further questions please contact Cecilia Tapia of my staff at (913) 551-7733 or tapia.cecilia@epa.gov.

Sincerely,

Karl Brooks

cc: Sara Parker Pauley, MDNR