Environmental Management & Stewardship Committee Minutes
Wednesday, April 16, 6 p.m.
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Committee Members Present

Alfreda Cook
Bob Hatcher, Co-Chair
Dave Hemelright
Bruce Hicks
Jennifer Kasten
Dick Ketelle
Roger Macklin
Fay Martin
Belinda Price
Ellen Smith

Others Present

Dave Adler, Department of Energy (DOE)
Steven Clemons, DOE
Sid Garland, UCOR/RSI
Spencer Gross, ORSSAB staff
Lynn Sims, UCOR/RSI

Absent

Jimmy Bell
Dale Bignell
Donna Campbell
Carmen DeLong
Susan Gawarecki
Steve Kenworthy
David Martin
Donald Mei
Gloria Mei
Lance Mezga
Norman Mulvenon
Bob Olson
Lorene Sigal
Ray Smith
Wanda Smith
Corkie Staley, Co-Chair
Curt Walker

Addition to agenda – Update on technetium-99 release into Oak Ridge sewer system

Mr. Adler updated the committee on a situation where technetium-99 had infiltrated sewer lines at East Tennessee Technology Park (ETTP) and made its way to the Oak Ridge Rarity Ridge Waste Water Treatment Plant.

The incident happened in February and Mr. Adler first reported it at the March ORSSAB meeting.

Mr. Adler said the sewage containing tech-99 cannot be disposed in any local landfill. DOE is retrieving the contaminated sludge, so the city of Oak Ridge doesn't have to manage the waste. One shipment has already been made to a commercial disposal facility in Richland, Wash. The objective is to retrieve all of the contaminated sludge and send to Washington. He estimated it would take about 20 truckloads.

Ms. Smith said that since the waste was sent off-site it indicated that the waste could not go in the on-site Environmental Management Waste Management Facility. Mr. Adler said the concentrations were low enough that it could have eventually gone into EMWMF, but the water must be removed from the sludge first, and it is more expedient to send it offsite.

He said independent health specialists were brought in to evaluate workers at the sewage plant, but found no problems.

Ms. Smith asked what has been done to prevent a re-occurrence. Mr. Adler said the sewer lines at ETTP were being isolated and some filled with concrete to prevent infiltration of water from demolition activities.

Review of the 2014 Remediation Effectiveness Report

Mr. Ketelle provided a briefing on the 17th edition of the Remediation Effectiveness Report (RER). The main points of his presentation are in Attachment 1.

The purpose of the RER is to assess performance of completed and ongoing actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and to evaluate effectiveness/compliance with long-term stewardship (LTS) requirements for each completed action.

In 2014 more than 200 checks on 55 sites, including seven treatment/collection systems, were made to ensure LTS requirements (Attachment 1, page 3).

Mr. Ketelle reviewed topics for various areas of the Oak Ridge Reservation (ORR) beginning with Upper East Fork Poplar Creek (UEFPC) at Y-12 National Security Complex.

Page 5 of Attachment 1 is a map of Y-12 where UEFPC emerges at Outfall 200, runs east through the plant, turns north near Lake Reality and leaves the plant at Station 17. The map shows locations of complete and incomplete actions and monitoring locations.

Page 6 has charts of mercury concentrations and flux. Mercury discharges into the creek at Station 17 remain elevated and the Record of Decision for UEFPC goals have not been met. When the Big Springs Water Treatment Plant began operating in 2006 mercury flux and concentrations dropped. That drop is also related to the amount of rainfall in corresponding years. Mr. Ketelle noted that mercury levels went up during work to remove mercury from the West End Mercury Area Drain Project during 2009-2011. With completion of that project mercury levels have fallen close to pre-project levels.

Page 7 is a list of project documents related to Recovery Act of 2009 funded projects and other CERCLA cleanup projects.

The diagram on page 8 shows a volatile organic compound (VOC) plume on the east end of Y-12 that goes under Scarboro Road. Mr. Ketelle said the shaded areas of the plume indicate where the plume had been reduced through pump and treat activities.

Page 9 is a map of Bear Creek Valley, which lies to the west of the Y-12 plant. The stipled area of the map indicates detections of contaminants. There are several groundwater monitoring wells in Bear Creek Valley and record of decision goals are in place at two integrations points along Bear Creek.

The chart on page 10 shows uranium levels at integration points BCK 9.2 and BCK 12.34. Flux goals at BCK 9.2 have never been met; BCK 12.34 goals have been met only when rainfall is at

or below normal. Mr. Ketelle said the uranium contributions at BCK 9.2 come from nearby Bear Creek Burial Grounds where many millions of pounds of depleted uranium are buried.

Mr. Ketelle said the three primary sources of uranium and nitrate contaminants to surface water are the S-3 Ponds at Y-12, NT-3 (north tributary), and Bear Creek Burial Grounds (Attachment 1, page 11).

At ETTP, environmental monitoring and performance focus on groundwater contaminant monitoring trends, surface water contaminants, and PCB uptake in fish in the K-1007 and K-901 Ponds.

The principal groundwater contaminants at ETTP are VOCs and monitoring data show contaminant levels are stable or gradually decreasing. However, one area of increasing concentration is K-1070-A near a waste excavation site. Disturbance of soils and changes in rainfall percolation and groundwater flow is thought to be the cause. The map on page 13 shows areas of VOC contamination and concentration levels.

VOCs and chromium in Mitchell Branch remain below water quality criteria for protection of fish and aquatic life. However, Mr. Ketelle said mercury is an emerging contaminant at ETTP. Mercury sometimes exceeds water quality criterion in Mitchell Branch and at an old sewage treatment plant. Mercury was used in instruments and process monitoring equipment at ETTP and post-demolition changes in runoff are thought to be responsible for the recent appearance of mercury (Attachment 1, page 13).

Mercury levels in Mitchell Branch fish tissue increased, but that is consistent with elevated mercury in surface water.

PCB concentrations in bluegill fillet from the K-1007 P-1 Pond were less than 1 part per million for the first time, but whole body composite samples were higher than the 2.3 parts per million goal. Mr. Ketelle said vegetation has taken over most of the pond, which is better for bluegill. Water clarity is better because there is less sediment suspension because of increased aquatic vegetation and sediment-stirring shad and grass carp have been removed.

The map on page 16 of Attachment 1 shows surface water monitoring locations in Bethel Valley where Oak Ridge National Lab is located. The locations of particular interest are at the 7500 Bridge and WOC-105 where mercury levels are measured in White Oak Creek. The charts on page 17 indicate how mercury levels have dropped at both locations since the routing of basement sump water in Building 4501 to a treatment facility. Mercury levels in White Oak Creek are at water quality criterion except for some isolated spikes. Mercury in fish tissue in Bethel Valley are at EPA accepted levels.

Strontium levels have been reduced in Bethel Valley, indicated by samples taken at the 7500 Bridge and the Northwest Tributary weir, as a result of work done around Corehole 8 and the hydrologic isolation of Solid Waste Storage Area 3 (Attachment 1, page 18).

At White Oak Dam, strontium, tritium, and cesium goals are consistently met since the completion of the Melton Valley Remediation Project in 2006 (Attachment 1, page 21). Mr. Ketelle said higher than average rainfalls have not affected contaminant levels leaving Melton Valley at the White Oak Dam integration point.

In recent years there has been some concern that contamination may be leaving the reservation in groundwater in Melton Valley, going under the Clinch River and into private wells on the west side of the Clinch. The 2014 RER noted that monitoring found no indication of strontium or

tritium in off-site wells. Chlorinated VOCs were not detected in either on-site or off-site wells. Trend evaluations indicate concentrations of constituents of concern are stable to decreasing.

For off-site monitoring, the RER reports that mercury concentrations in fish in Lower East Fork Poplar Creek still exceed EPA criteria.

In Lower Watts Bar/Clinch River/Poplar Creek, PCBs in fish are trending downward and mercury in Lower Watts Bar fish are below EPA criteria. Mr. Ketelle said an action plan is underway from the 2011 Five-year Review to try to understand why mercury in tissue of fish from LEFPC is not decreasing. He said there could be many sources of mercury in the creek and it seems to be coming from the stream bank and not the flood plain. He said mercury in groundwater could be coming from gravel pits.

Mr. Hatcher asked if there is a schedule for reaching concentration goals that have not been met. Mr. Adler said there is a schedule for building a mercury treatment plant at Y-12 in the 2020 timeframe, but he said that will not likely result in meeting mercury levels in fish in LEFPC.

Mr. Hatcher asked if there is a schedule for meeting chromium-6 and technetium-99 goals in addition to mercury goals. Mr. Adler said each watershed will have decision documents that address those issues.

A brief summary of the 2014 RER is on page 24 of Attachment 1. Any comments on the report are due July 1, 2014 (Attachment 1, page 25).

Discussion of Possible Recommendation on the RER

Mr. Hicks asked if a recommendation could be made to encourage more lab research to understand better what is being gathered in the field. Mr. Adler said that kind of request could go in a pending recommendation on the FY 2014 DOE Oak Ridge Environmental Management budget request to DOE Headquarters, but that would require a revision to the recommendation. Mr. Hemelright suggested Mr. Hicks' idea could be a separate recommendation.

Ms. Smith said there is much lab work already being done. Mr. Hicks said if that is the case then no recommendation is needed.

Ms. Cook, however, said the focus on continued research shouldn't be lost. Mr. Hemelright again suggested that could be a separate recommendation.

At this time, the committee took no action to draft a recommendation.

Report on Enhancing the Acquisition, Storage, and Retention of EM Data for Future Use – Ellen Smith, issue manager

Ms. Smith reported the Ray Smith handles the acquisition of information at Y-12. He requested the committee supply questions about its interest in data collection.

The committee suggested a numbers of questions:

- Is there a way to gather institutional knowledge of former employees?
- Is there a systematic way of gathering information?
- How is specific information mined after data are gathered?
- Is there a centralized filing system?
- How is Mr. Smith's system for gathering information different or similar to the Center for Oak Ridge Oral History?

Discussion of any possible recommendation on storage of EM data
Ms. Smith felt the issue was not at the point of a recommendation and the list of questions needed to be provided to Mr. Smith first.

Input on next month's topics: National Priorities List Boundary Definition Changes and Update on the Geographical Information System and the Land-Use Manager
Mr. Adler said this would be an informational presentation most likely provided by Pat Halsey, DOE, and Sally Brown, UCOR/RSI

There were no suggestions from the committee for points to cover in the presentation.

Review Action Items
No open action items.

Public Comment
None.

The meeting adjourned at 7:35 p.m.

Attachments (1) are available through the ORSSAB office.

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