Black Butte Mine Superfund Project
Update #4

January 2014

EPA and its contractor, CDM Smith, began field work at the former Black Butte Mine in late October 2012. The initial field investigations (Phase 1) focus on an area adjacent to and including the former mine site (see updated map below). The primary objective for Phase 1 is to assess mercury movement from mercury sources at the former mine site into Garoutte Creek, which eventually becomes the Coast Fork Willamette River. Work began with the establishment of stream sampling stations and an on-site rainfall collection station that will continuously monitor stream flow and surface water quality, and collect rainfall samples. Surface water, sediment, and rainfall sampling was conducted during a storm in March 2013. Phase 1 work continued with the installation of ground-water monitoring wells in late June; subsurface soils were collected during well drilling for mercury analyses. Monitoring wells will be sampled to determine whether mercury is moving from the mine site via ground water into surface water. Sampling of surface water at the stream sampling stations and ground water from monitoring wells occurred the week of August 12th. In October, background sediment samples were collected from the creeks around the former mine site. A second storm event sampling took place the week of November 4th followed by a second round of ground water sampling. A third storm event sampling is planned in the weeks ahead, pending adequate rainfall. Risk Assessment work started with initial ecological and human health surveys in August 2013 and a follow-up ecological risk survey in September. The information gathered during these surveys provided information for developing a draft ecologic assessment and a human health risk assessment conceptual site model. A site visit to identify/flag sample locations for animal and fish tissue sampling is proposed for early 2014. CDM Smith will also be undertaking a demonstration of methods applicability (DMA) study at the mine site in February 2014. The purpose of the DMA study is to identify cost efficient methods and sampling equipment that could be used in the field to analyze mercury and other metals at the mine site.

EPA and the Battelle National Laboratory continue their evaluation of mercury in water and sediments in Cottage Grove Lake. From other studies we have come to understand that the vast majority of the mercury that accumulates in fish is an organic form of mercury, termed methylmercury. However, most of mercury transported over time from the Black Butte Mine to the lake is believed to be inorganic mercury. It is not clear what processes control the rate of conversion of inorganic mercury in sediments to methylmercury in water within the lake. Addressing this question is the objective of this study, being funded by the EPA Office of Research and Development. The research team collected water and sediment samples from locations within Cottage Grove Lake in February, May, August, and November 2013; future sampling will be based on an evaluation of the 2013 sampling data.

EPA has established an Information Repository at the Cottage Grove Library at 700 Gibbs Avenue in Cottage Grove. We will routinely add materials, including copies of these Project Updates, as they become available. For more information, contact EPA project manager, Rich Muza at 503-326-6554, muza.richard@epa.gov or Alanna Conley, EPA community involvement coordinator, at 503-326-6831, conley.alanna@epa.gov