Boeing Cleanup, Everett, Washington

Site Description: The Boeing Company owns and operates the Boeing Everett Plant at 3003 West Casino Road, in Everett, Washington.

Figure 1: Boeing Plant, Everett, WA

Background: The plant produces model 747, 767, 777, and 787 commercial aircraft. In 2000, Boeing began replacing joints separating large concrete slabs that make up the plant's flight line, where planes are parked for final testing before being delivered. The joints, which allow the concrete to swell and shrink as temperatures change, contain a PCB contaminated sealant. (The joints are part of the original 1960 plant construction; most PCB manufacturing, processing, distribution in commerce, and use was banned in 1979.) Old PCB transformers and substations also have been found at the site.

Contamination: Over time, the facility released hazardous substances into concrete, soils, groundwater, surface water, and sediments. These hazardous substances included:

- Chlorinated solvents (like TCE and PCE)
- Non-chlorinated solvents
- Fuels
- Oils
- PCBs
- Heavy metals

Stormwater contaminated with PCBs from the deterioration of joints sent PCBs into nearby Powder Mill Creek, which discharges into Possession Sound. Boeing also planned demolition of building 40-83 in order to build the new 777 composite wing manufacturing facility. This building contained two old substation rooms in the basement, which were contaminated with PCBs from the former transformers. PCBs also contaminated underlying soils.

Cleanup: EPA and Washington Department of Ecology (Ecology) approved Boeing's plan for concrete joint material removal, as well as disposal and remediation of concrete and soils associated with building 40-83. Concrete Joint Material is an ongoing, multi-year project. While removal is underway, Ecology required Boeing to improve the way it collected stormwater running off the flight line. Boeing changed how water is discharged from its retention pond. In a plan approved by EPA and the state, the new stormwater management system allows sediment, including sediment contaminated with PCBs, time to settle out of the water before the water is discharged into Powder Mill Creek. The PCB-contaminated sediment from the stormwater basin is now removed and taken to a facility designed to handle toxic waste.

Disposal and cleanup of the former building 40-83 was relatively straight forward as a typical dig-and-haul activity. Additionally, during the building 40-83 demolition and cleanup, Boeing was the first facility to implement the ASTM Greener Cleanup Standard at a PCB remediation

site. Implementing Greener Cleanup[1] practices allowed the cleanup to go beyond removing PCBs to also reduce the environmental footprint of the cleanup; minimize total energy use and maximize use of renewable energy; minimize air pollutants and greenhouse gas emissions; minimize water use and impacts on water resources; reduce, reuse, and recycle material and waste; and protect land and ecosystems.[2]

The remediation was also completed in a very short time - approximately 2 months from proposed plan submitted to EPA to submission of the completion report. EPA and Ecology worked to streamline the approval process in order to support redevelopment of this part of the site for the new 777 composite wing facility.

[1] Clu-In webinar. "Implementing Greener Cleanups through ASTM's Standard Guide (E2893-13)." https://clu-in.org/conf/tio/gcsg_111715/.

[2] U.S. EPA. 2009. "Green Cleanup Standard Initiative: June 2009 Update." https://clu-in.org/greenremediation/docs/GCS%20Proj%20Update%20June%202009.pdf.