OLD MOUTH OF THE COWLITZ
Local Sponsor: Cowlitz County

Project Description

The project is located approximately Columbia River mile (RM) 67.7 on the Washington side of the Columbia River just upstream of Longview, Washington. The depth is authorized to 8 feet deep and 150 feet wide from the deep water in the Columbia River to a point approximately 3,800 feet upstream (Figure 1).

Sediment

Studies have indicted that the sediment changes from medium sand at the mouth to medium silt at the end of the channel at RM 0.7. The median grain size of the fine fraction of the samples is 0.02 mm, thus is classified as a medium silt. No plastic or organic silts or clay were detected in either the laboratory or in the dispersion tests conducted in the field. During dispersion tests, water decanted from the samples cleared very rapidly, within one to two minutes. This indicates these sediments are relatively coarse and contain little or no colloidal material capable of organic pollutants. At 1.2 percent or less, the volatile solids content, an indirect measure of organic constituents, is very low.

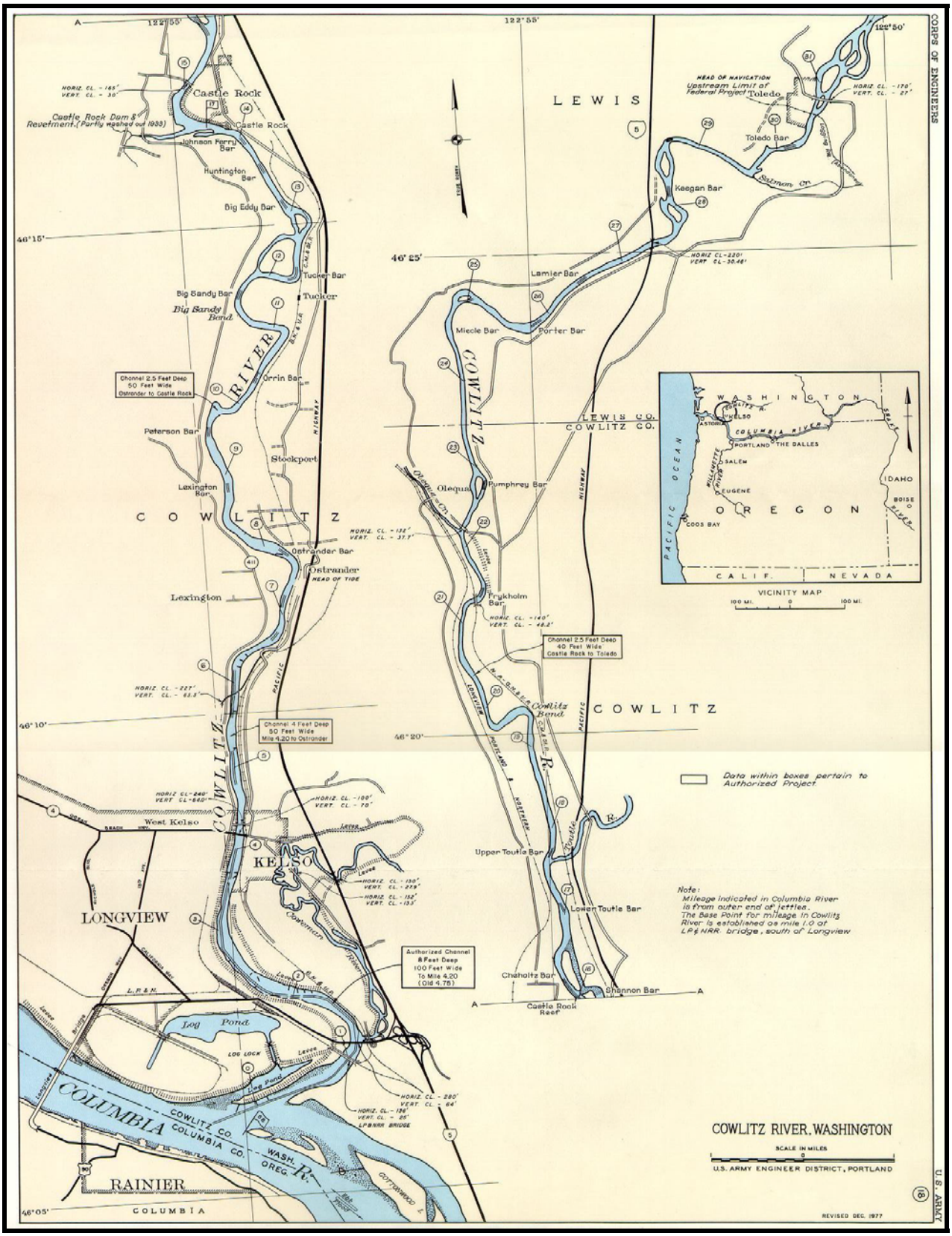

Figure 1: Old Mouth of the Cowlitz Vicinity Map

Sediment Evaluations

1991 January, sediment samples were taken from shoal areas in the project channel. Five samples were taken by vibra-core. There was no prior chemical data for sediments at this location. Chemical and physical analysis was conducted on the sediments. Chemical samples were handled accordingly it EPA/USACE methods. Based on the data the sediment to be dredged was determined to be acceptable for in-waster disposal.

1996 October. Sediment samples were taken from four locations between RM 0.0 and 0.2 in the project channel. Four samples were taken with a Benthos gravity corer. Physical analysis of the four samples obtained in 1996 showed the material to be dredged was clean sand which met exclusionary criteria and was therefore suitable for unconfined in-water disposal without chemical analyses. Chemical data for this location, taken in 1991, showed materials to be dredged to be suitable for unconfined in-water disposal.

September 10, 2003, A total of four (4) gravity core sediment samples were collected from the Old Mouth of the Cowlitz River Federal Project on September 10, 2003. All samples were submitted for physical analyses including total volatile solids. All four (4) sediment samples were analyzed for metals (9 inorganic), total organic carbon, pesticides and polychlorinated biphenyls, phenols, phthalates, miscellaneous extractables, polynuclear aromatic hydrocarbons, total (bulk) organotin and pore-water organotin.

Mean grain size for all the samples is 0.051mm, with 0.16% gravel (0.00% to 0.78% range), 25.11% sand (2.62% to 57.07% range) and 74.70% fines (42.93% to 97.38% range), with 1.75% volatile solids (range 1.55% to 2.17% range).

None of the contaminants tested were found to be at or above their screening level (SL). All sediment is determined to be suitable for unconfined, in-water placement without further characterization.

August 2006, Four vibra-core samples were collected at similar locations to 2003 (see above) allowing a comparison of different sampling devices used to collect the samples, with similar results. All samples were collected along the length of the Old Mouth of the Cowlitz authorized channel. All samples were submitted for physical analyses including total volatile solids and were, also, analyzed for metals (9 inorganic), total organic carbon, pesticides and polychlorinated biphenyls, phenols, phthalates, miscellaneous extractables, polynuclear aromatic hydrocarbon and for both total (bulk) and pore-water tributyltin.

The 2003 physical analyses resulted in mean values of 0.16% gravel (0.0% to 0.8% range), 25.1% sand (2.6% to 58.8% range), and 74.7% silt/clay (42.9 % to 97.4% range), with 1.75% volatile solids (1.26% to 2.17% range). The material is classified as silt, silty sand and silt with sand.

The 2006 physical analyses resulted in mean values of 0.08% gravel (0.00% to 2.0% range), 24.73% sand (9.6% to 46.8% range), and 74.4% silt/clay (51.2 % to 90.4% range), with 2.99%

volatile solids (2.88% to 3.14% range). The material is classified as silt, silty sand and silt with sand.

The chemical analyses indicated only very low levels of contamination in any of the samples, with all levels below their respective DMEF/SEF screening levels (SLs). Detection levels were sufficiently low enough to evaluate material proposed for dredging. The analytical results of this characterization are consistent with historical data.