Vancouver Lake & Flushing Channel EPA Site Assessment

Vancouver Lake Watershed Partnership Meeting

December 15, 2010

History

- Fall 2007: EPA received a Citizen's Petition from the Rosemere Neighborhood Association to conduct a Preliminary Assessment (PA) at Vancouver Lake
- Summer 2008: EPA completed the PA and concluded that additional investigation was necessary
- Spring 2009: EPA conducted sediment sampling
- June 2009: EPA provided a status report at the Vancouver Lake Watershed Partnership meeting

History (Cont.)

- Fall 2009: EPA conducted clam sampling
- January 2010: EPA determined that samples should be reanalyzed using lower detection limits.
- May 2010: SI report completed

Site Sampling

- 33 sediment samples
- 6 clam samples
- Samples were analyzed for:

  -Metals

  -PCBs

  -Pesticides

  -Semi-volatile organic compounds

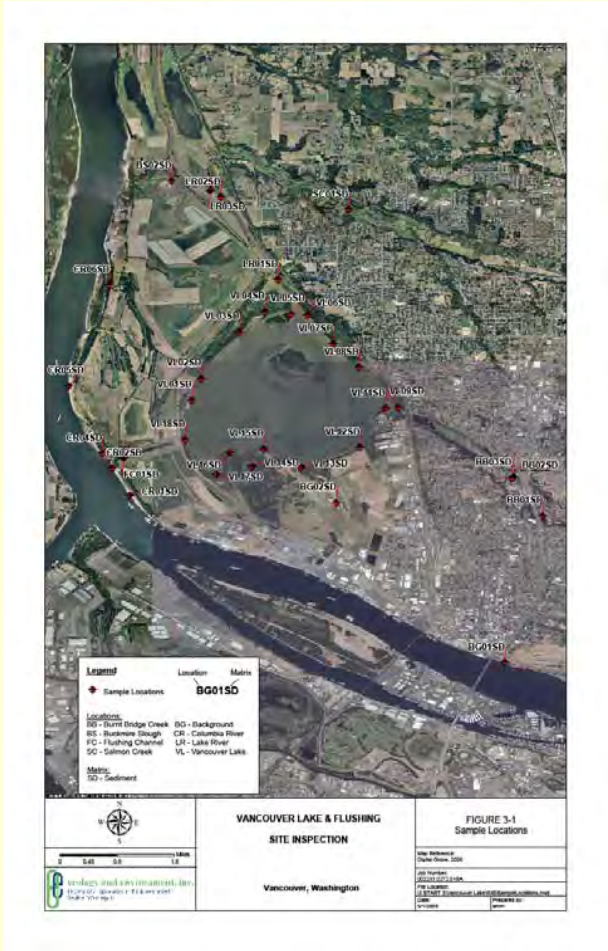
Sampling Locations

Sediments

- Vancouver Lake
- Flushing Channel
- Columbia River
- Burnt Bridge Creek
- Lake River

Clams

- Vancouver Lake
- Flushing Channel
- Columbia River
- Burnt Bridge Creek



Site Assessment

- Results were compared to “Background” samples
- Contamination is considered “elevated with respect to background” when:

  1) A contaminant is present in the site sample but not in the background sample; or

  2) If a contaminant is present in the background sample (common with metals), then it has to be at least **3 times** that level in the site sample.
- Sediment sample results were also compared to NOAA SQUIRT Tables

Sediment Sample Results

- Contaminants included:

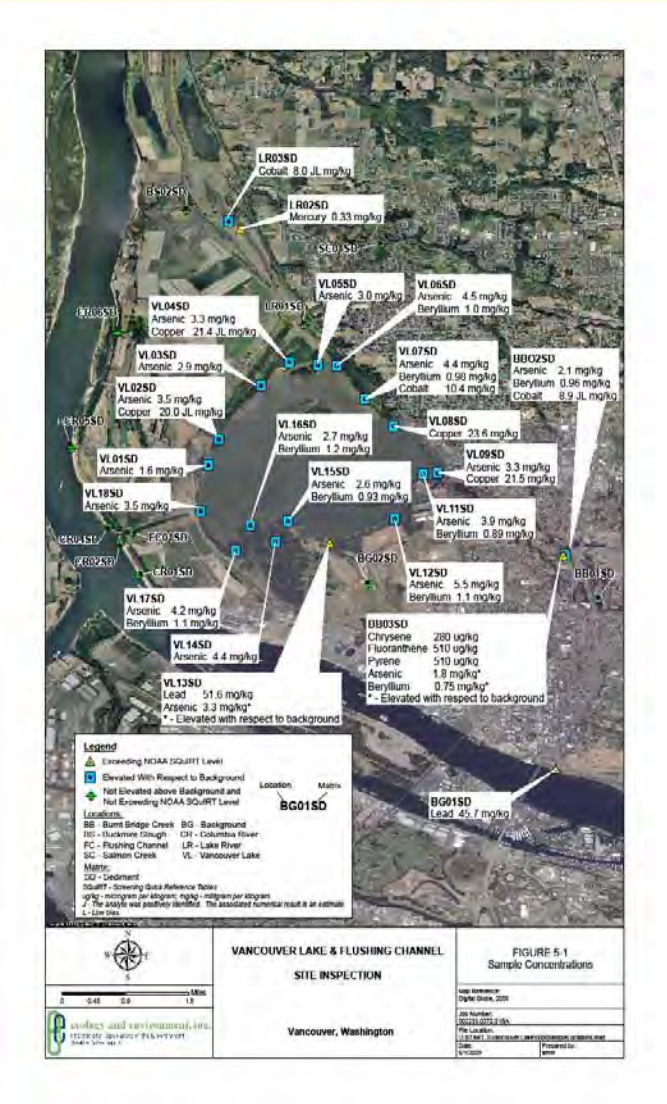
  --Metals: Arsenic, Beryllium, Cobalt,

  Copper, Lead, Mercury

  --PCBs: Arochlor 1248 and 1254

  --Semi-volatile organics (*one sample)*: Chrysene, Flouranthene, and Pyrene

Sediment Sampling Locations



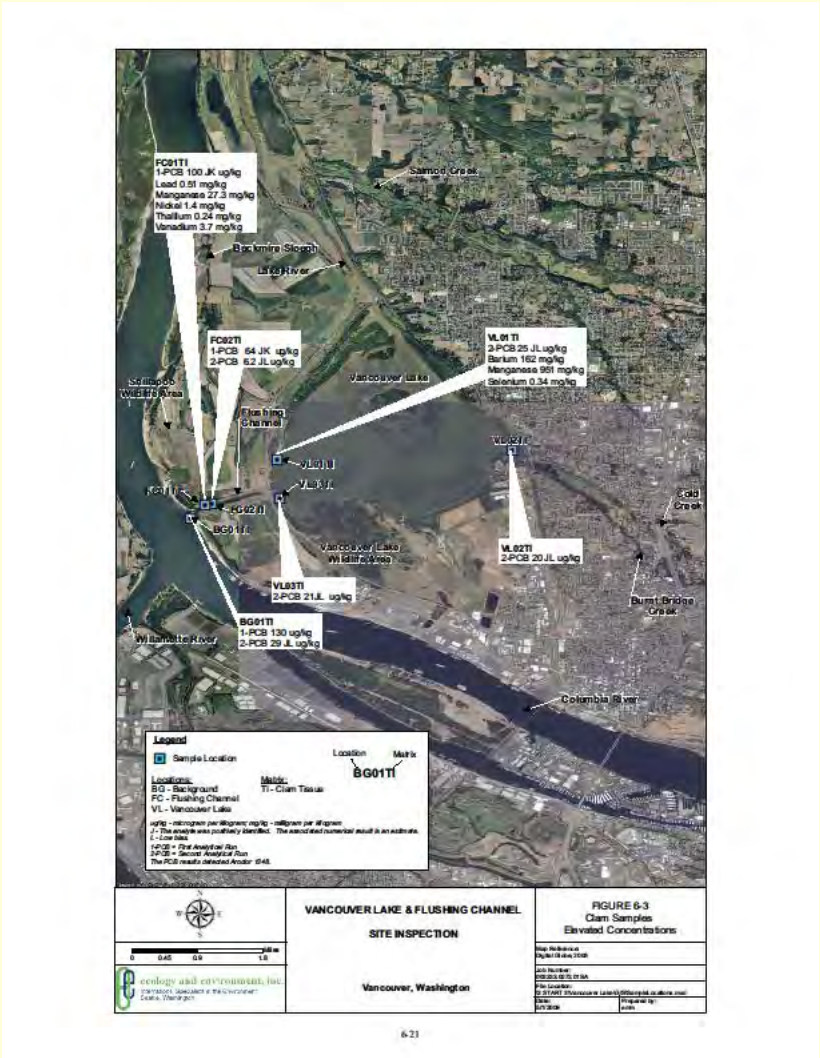
Clam Sample Results

- Contaminants included:

  --Metals: Barium, Manganese, Nickel, Selenium, Thallium and Vanadium

  --PCBs: Arochlor 1248

Clam Sampling Locations



NOAA SQuirTs

- National Oceanic & Atmospheric Administration (NOAA)--Screening Quick Reference Tables (SQuiRTs)
- Screening levels used to initially identify substances which may threaten resources of concern to NOAA
- Not intended to be used as cleanup levels

NOAA SQuirTs

Sediment sampling results were compared to:

- Threshold effects levels (TEL) Concentrations below these levels pose no potential threat
- Probable effects levels (PEL) Concentrations above these levels probably have toxic effects

Four samples contained concentrations that exceeded TELs

No samples contained concentrations that exceeded PELs

Sediment Samples that Exceed NOAA SQUIRT TELs

Looking at the Whole Picture

Contaminant	Range of significant Concentrations (Sediments)	# samples w/significant concentrations/ total # samples	NOAA SQuirT (TEL)	# exceeds TEL/ #samples
Copper	20.0 - 24.7 ppm	7/33	35.7 ppm	0/33
Mercury	0.33 ppm	1/33	.174 ppm	1/33
Lead	45.7 ppm	1/33	35 ppm	2/33
Arochlors	7.8 - 27 ppb	5/33	34.1 ppb	0/33
Crysene	280 ppb	1/33	57.1 ppb	1/33
Flouranthene	510 ppb	1/33	76.4 ppb	1/33
Pyrene	510 ppb	1/33	44.27 ppb	1/33

EPA Decision

- Site was evaluated site using the Hazard Ranking System
- EPA determined that no further remedial action is warranted for this site
  - Site is not NPL caliber
  - Site does not present a significant risk to human health and the environment
- Stakeholders will be notified of EPA's decision

A Note About Arsenic

- Arsenic was the most common compound found in this assessment
- However, it should be noted that arsenic occurs naturally in soils throughout the Pacific Northwest
- In Clark County, naturally occurring levels of arsenic are between 1.45 ppm and 6.89 ppm[1]
- All of the sample results fall within that range

[1] *"Natural Background Soil Metals Concentrations in Washington State", Toxic Cleanup Program-Department of Ecology, October 1994.*