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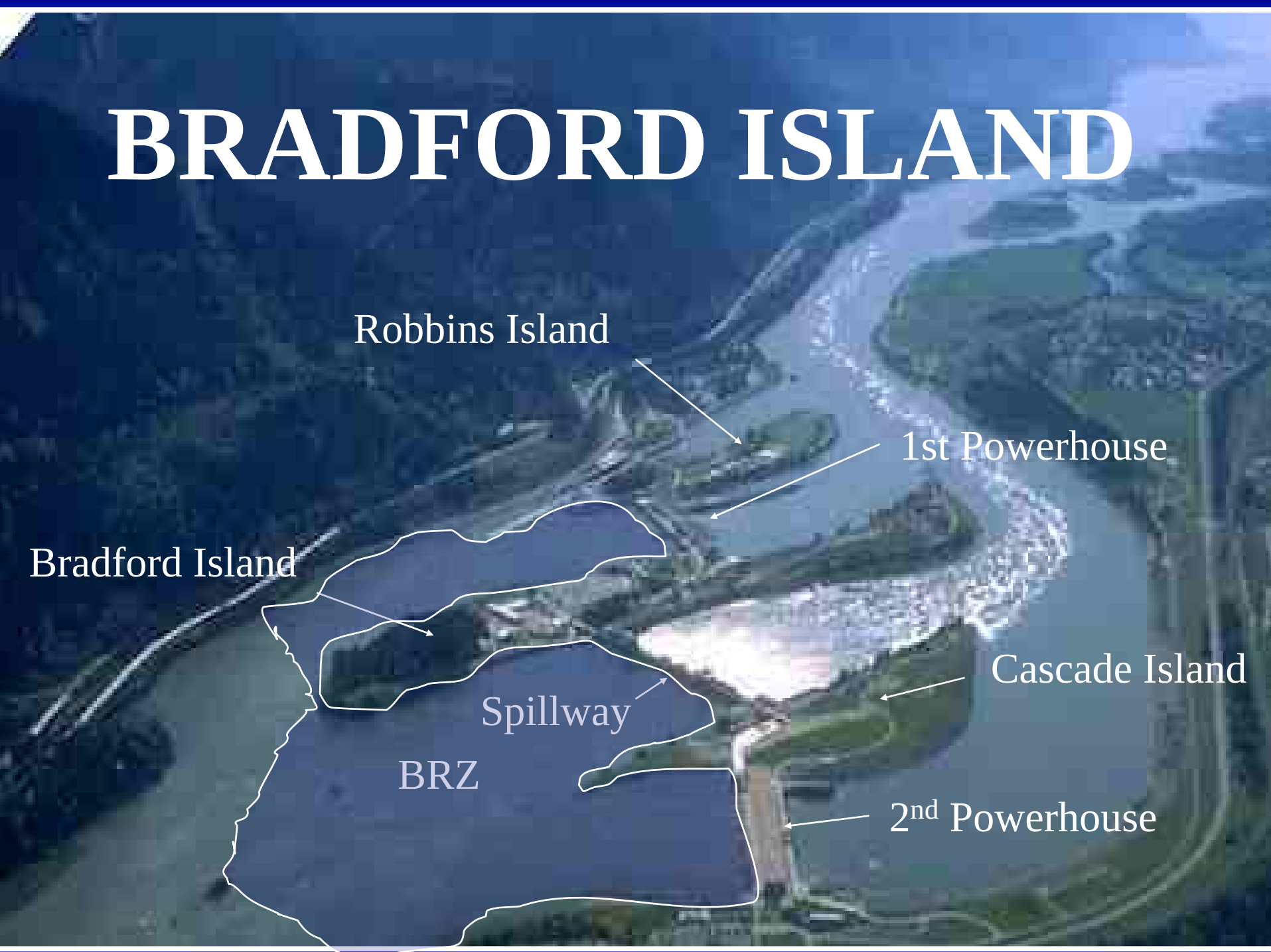
Bradford Island Cleanup

Mark Dasso
Project Manager

BRADFORD ISLAND



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BRADFORD ISLAND

- BACKGROUND
  - **HISTORY**
  - **IN-WATER SITE**
  - **UPLAND SITES**
- CURRENT PLAN
  - **RI/FS (Remedial Investigation/Feasibility Study)**
  - **NON TIME CRITICAL IN-WATER REMOVAL**

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HISTORY

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HISTORY
1930 - 1991

- Dam Constructed in 1930s
- 20 Single Family Homes - Corps Personnel
- Northeast Tip of Island Used as Landfill
- Landfill Used from 1942 to 1982
- Household Garbage and Project Waste
- Approx 8,800 CY of Fill Material

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HISTORY
1992-1999

- 1992 - ERGO Audit of Entire Bonneville Project
- 1996 - Potentially Hazardous Materials Confirmed
- 1997 - Site Assessment Report Conducted
- 1998 - Level I Site Investigation
  - Contaminants in Groundwater
  - PCBs, Metals in Soil Samples
- 1999 - Level II Site Investigation
  - Additional Soil and Well Water Samples
  - Groundwater Seep Survey
  - *Streetlight Ballasts Found on Riverbank*

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BACKGROUND

IN-WATER SITE

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IN-WATER SITE 2000-2004

- 2000 - In-Water Investigations
  - Divers Find Debris in Columbia River
  - Some Components Found to Contain PCBs
  - Sediments Show PCB Contamination
- 2001 – Design and Coordinate Removal
- 2002 – Remove In-Water Components
- 2003 – Post Removal Sediment Sampling
- 2004 – Post Removal Report

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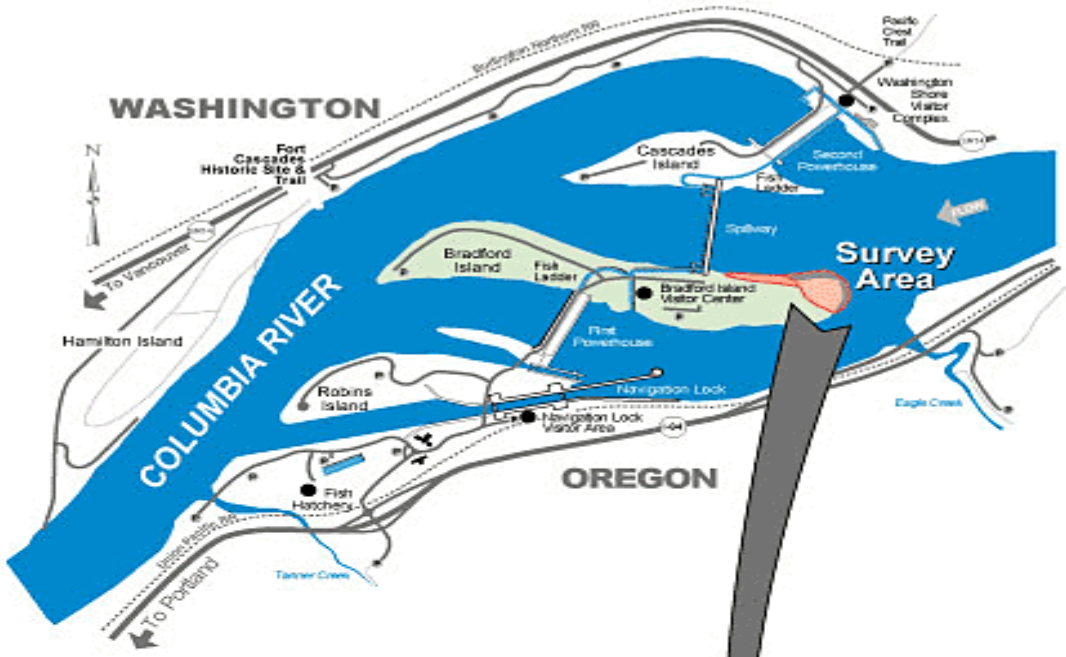
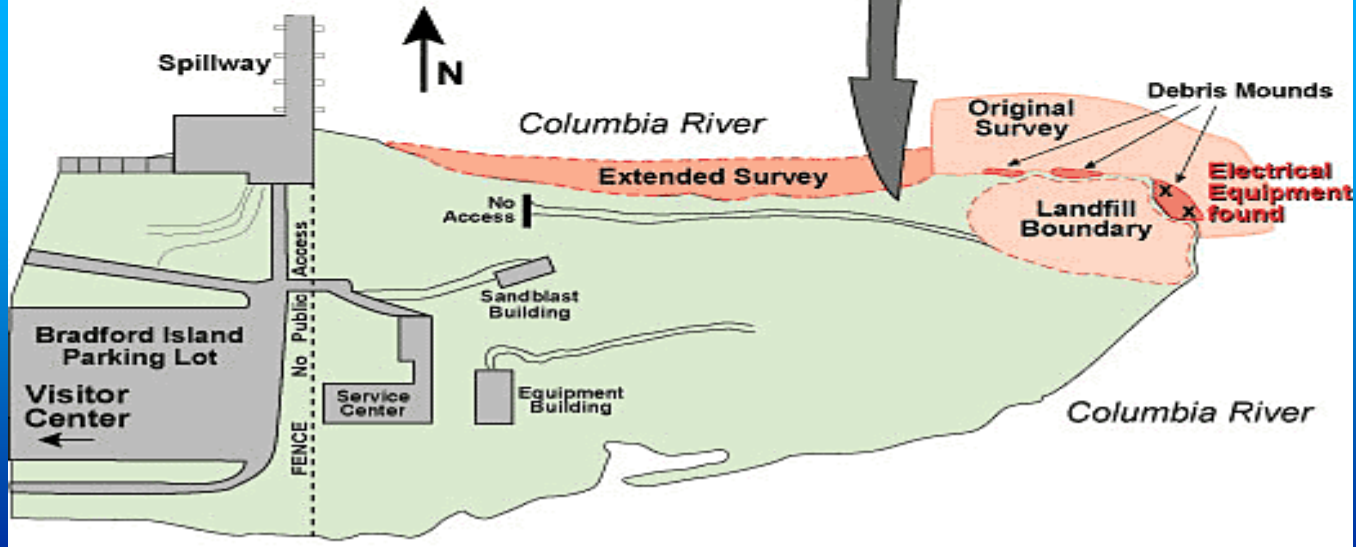
Bonneville Lock and Dam Project Area Map





Bradford Island Historic Landfill Investigation

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Contaminants of Concern

Analyte Group	Analytes
Metals	**Lead**
	Copper
PCBs	**Aroclor 1254**
SVOC	**Benzo(a)anthracene**
(10 PAHs, 1 phthalate)	**Benzo(a)pyrene**
	Benzo(g,h,i)perylene
	Benzo(b+k)fluoranthenes
	Bis(2-ethylhexyl)phthalate (BEHP)
	Chrysene
	Fluoranthene
	Indeno(1,2,3-c,d)pyrene
	Phenanthrene
	Pyrene

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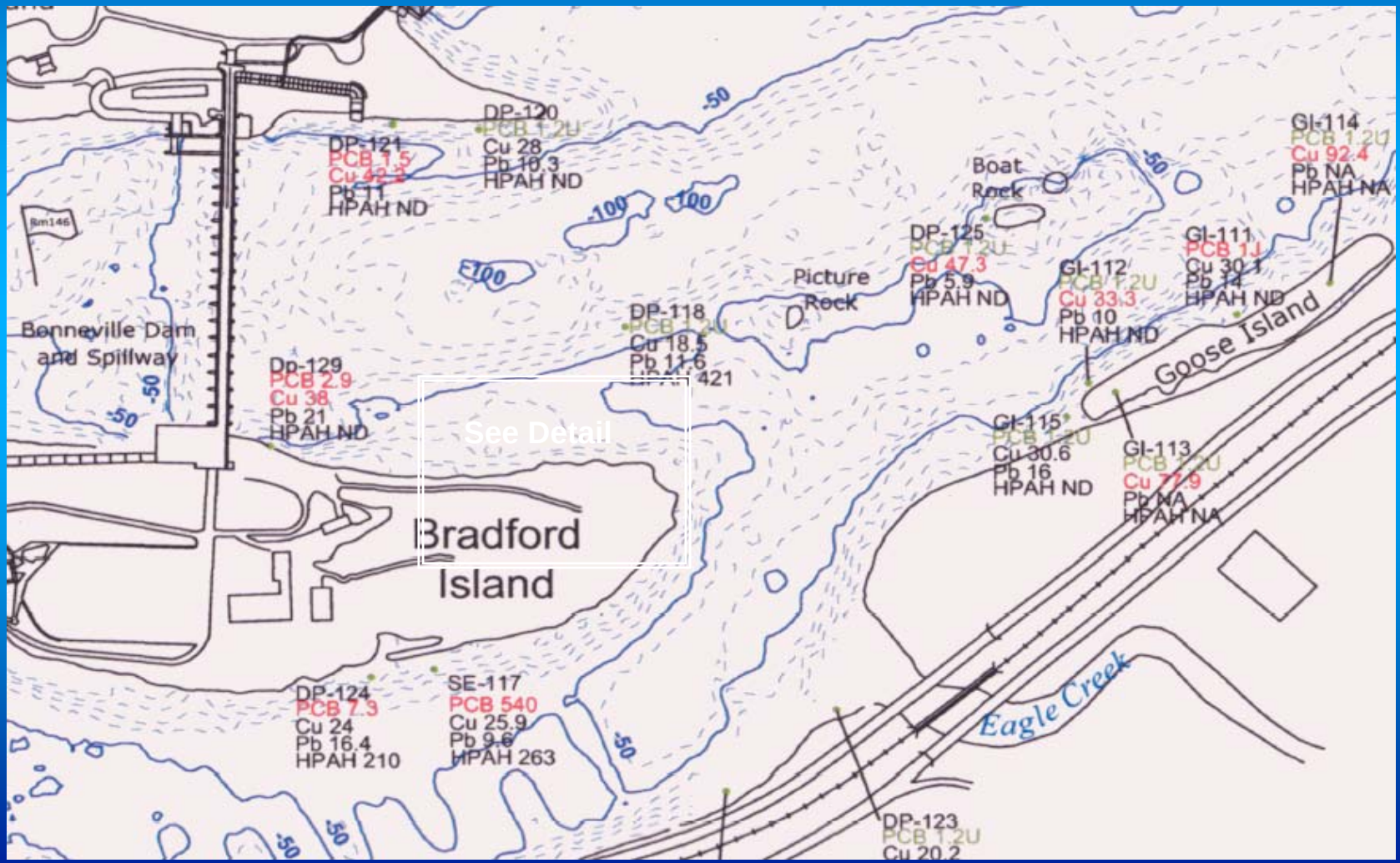
In-Water Sample Locations



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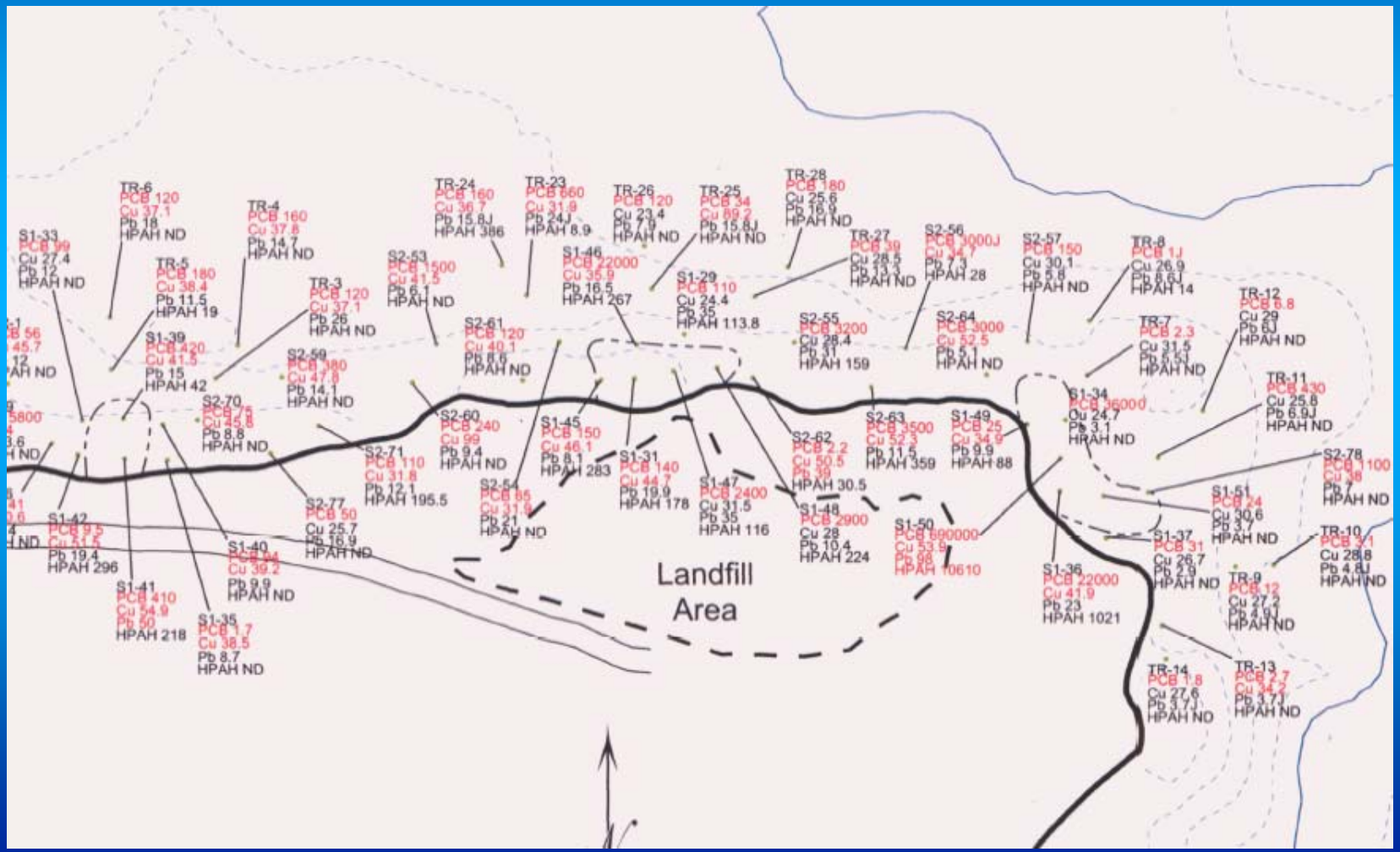
In-Water Sample Locations



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BACKGROUND

UPLAND SITES

East End of Bradford Island

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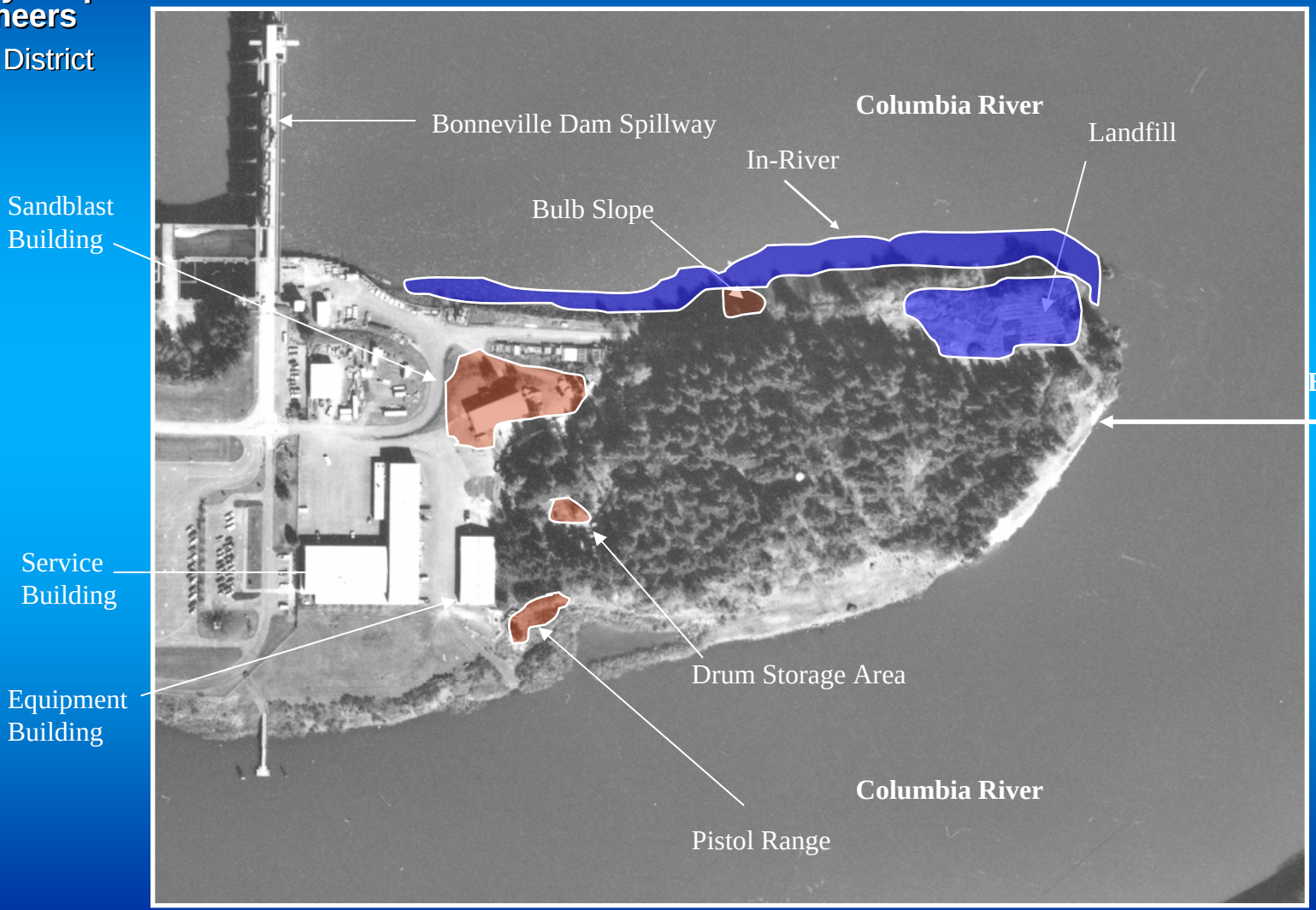

1995 aerial photograph of eastern portion of Bradford Island.

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CURRENT PLAN Under CERCLA*

- RI/FS
- IN-WATER NON-TIME CRITICAL REMOVAL

* Comprehensive Environmental Response, Compensation and Liability Act

RI and In-Water Removal Conceptual Schedule

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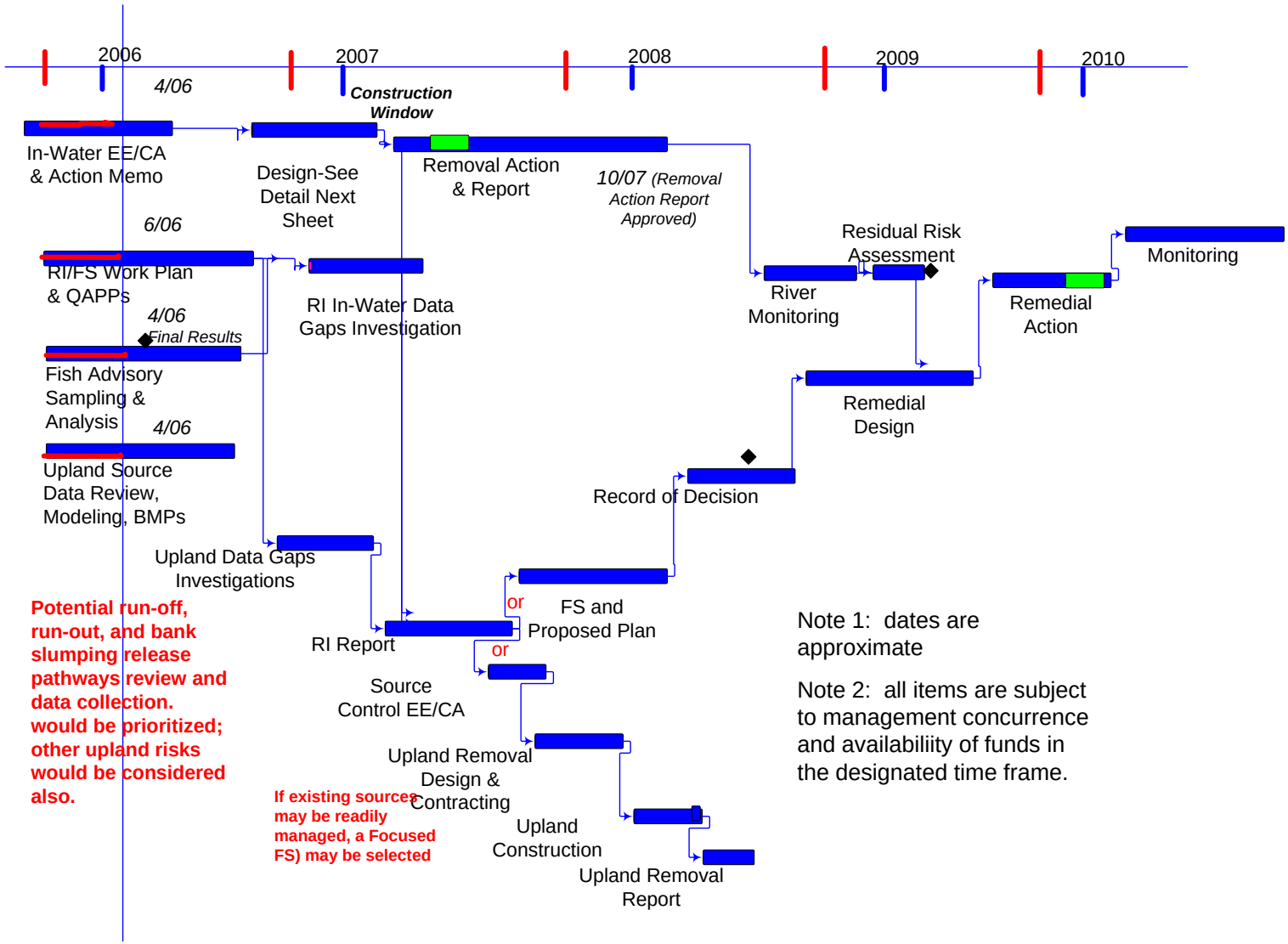

Note 1: dates are approximate

Note 2: all items are subject to management concurrence and availabiliity of funds in the designated time frame.

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CURRENT PLAN

RI/FS

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RI/FS 2006-2010

- 2006 – Complete Work Plan (June)
- 2008 – Record of Decision
- 2009 – Remedial Design
- 2010 – Remedial Action(s)

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CURRENT PLAN

NON-TIME CRITICAL REMOVAL

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NON-TIME CRITICAL IN-WATER REMOVAL 2006-2007

- **March ‘06 – Complete Public Review of EE/CA**
- **October ’06 – Complete Removal Design**
- **January ’07 – Complete Coordination**
- **2007 - Complete Removal Action**

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EE/CA ALTERNATIVES

- **No Action**
- **Dredging Removal Area**
- **Hot Spot Dredging with Capping**
- **Capping Removal Area**
- **Hot Spot Dredging & Enhanced Natural Recovery**
- *Hot Spot Dredging Only*

In-Water Area, per Draft EE/CA

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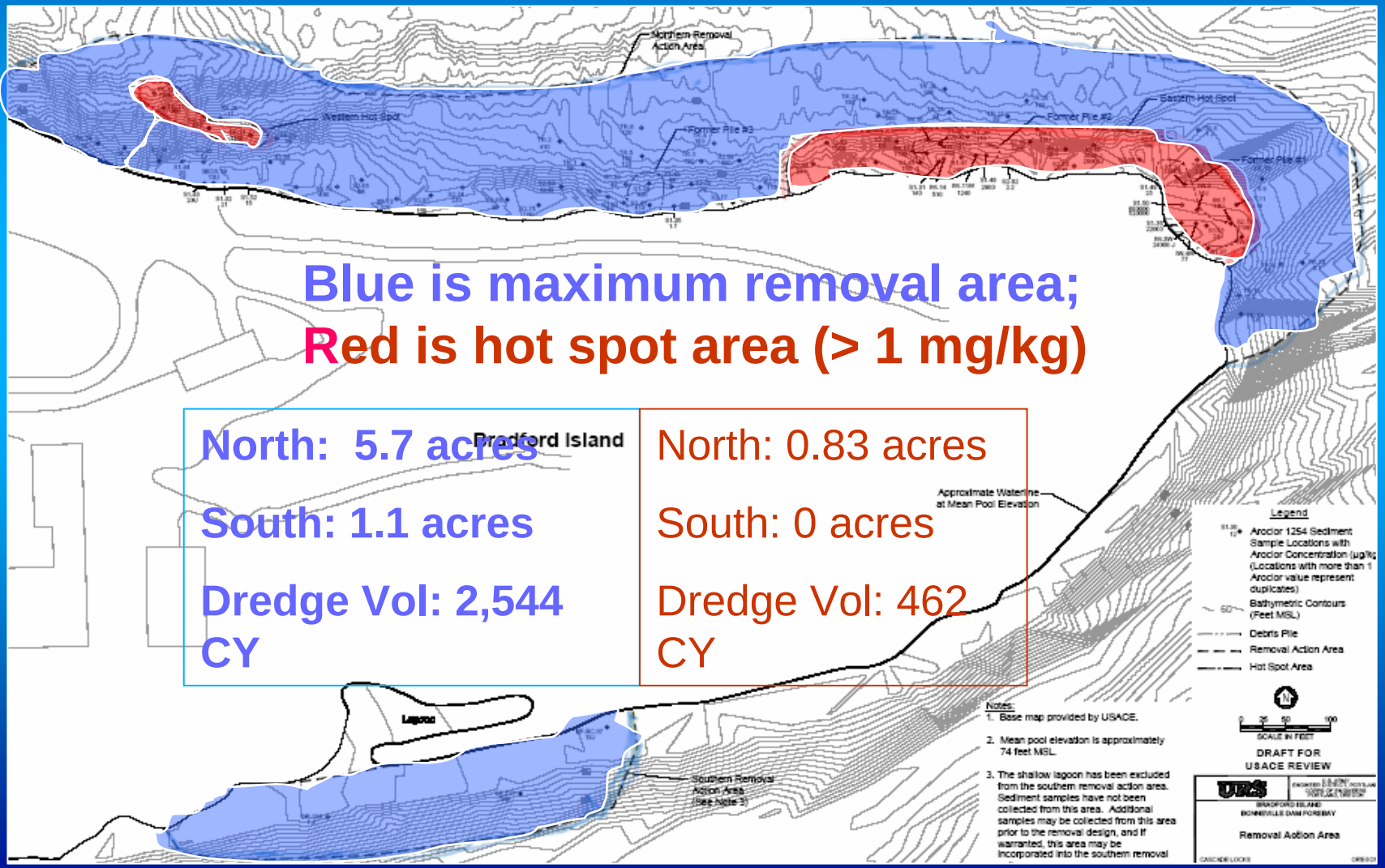

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EE/CA RECOMMENDATION

- **Hot Spot Dredging Only**
  - **Removes 94% of the PCB Mass**
  - **Very Effective at Risk Reduction**
  - **Compatible with Future In-Water Remedial Actions**
  - **May Achieve Adequate Protection Levels Without Further Action (Conservative factors used in EE/CA)**
  - **Can be Done Using Standard Methods**
  - **Least Cost (approx 50% less than any other alternative)**

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RISK FACTORS

- **Direct Contact**
  - **Access**
    - **Water (Boat Restricted Zone)**
    - **Land (Restricted from All)**
- **Ingestion**
  - **Anadromous vs. Resident Fish**
  - **Home Range of Resident Fish**
    - **Percentage of Diet from Hot Spot / Removal Area**
  - **Percentage of Diet from affected Fish**

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