

GENERAL SITE INFORMATION, CHARACTERISTICS, AND STATUS

Project Name	<u>COMMENCEMENT BAY - PROJECT 2 (Sitcum Waterway)</u>	ProjectID: 10-05
Last Updated:	12/07/00	
City:	Tacoma	
County:	Pierce	
State:	WA	
Country:	USA	
Bodies of Water:	Sitcum, Blair, and Milwaukee Waterways	
US EPA Region:	X	
Status (Active, Complete, or Monitoring Only):	Complete	
Date On NPL:	1983	
ROD/ESD Date:	1989	
Operable Unit:	N/A	
Areas of Concern (length or acres):	Sitcum Waterway about 3,000 feet long by 750 feet wide; Milwaukee Waterway about 5,200 feet long by 300 feet wide; Blair Waterway	
Other Characteristics of Water Body:	The Sitcum Waterway is a deep navigational waterway, created by dredging and filling native mudflats since 1910. Land directly adjacent is owned by the Port of Tacoma.	
Contaminants of Concern:	Metals, PAHs	
Source of Contamination:	Adjacent industrial facilities, including a stormwater drain that discharges runoff from an industrial/commercial area of 170 acres.	
Contaminated Area Physical Characteristics:	Three of the seven waterways within the Commencement Bay Superfund Site. Mean high water depths of about 12 feet. Sitcum Waterway designated as one of eight problem areas within the Superfund Site.	
Type of Regulatory Action:	Superfund. Final.	
Overall Status Summary:	<p>The Commencement Bay Nearshore/Tideflats (CB/NT) was placed on the NPL in 1983 and an RI/FS at the site was completed in 1988. The RI/FS identified types and levels of chemicals of concern in sediments and developed priority areas based on the potential impact of these chemicals on humans and wildlife. In 1989, EPA issued a ROD that designated two OUs: source control (OU-5) to focus efforts on controlling upland sources and discharges to the Bay and sediment remediation (OU-1) to focus on cleanup of contaminated sediments at the CB/NT.</p> <p>In addition, the ROD selected the remedial actions to be used at eight of the nine contaminated sediment problem areas identified as being the most contaminated. These problem areas include: 1) Mouth of Hylebos Waterway, 2) Head of Hylebos Waterway, 3) Sitcum Waterway, 4) St. Paul Waterway, 5) Middle Waterway, 6) Mouth of Thea Foss Waterway, 7) Head of Thea Foss Waterway, and 8) Wheeler-Osgood Waterway. The ninth problem area, an area offshore from the Asarco Smelter, is to be addressed by a separate ROD.</p> <p>The Sitcum Waterway is located between the Blair Waterway and the Milwaukee Waterway, in the Commencement Bay Superfund Site. In 1990, the Port of Tacoma developed long-discussed plans to partially fill and pave over the Milwaukee Waterway to expand marine container terminal facilities. EPA suggested the Port combine the Sitcum cleanup and Milwaukee development in order to expedite and increase the overall cost-effectiveness of both projects, and to address the limited availability of disposal sites. An AOC between EPA and the Port of Tacoma became effective in 1991, providing for the Port to evaluate remedial options. A</p>	

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Consent Decree was agreed to in 1993 settling major elements of the Sitcum Waterway cleanup and providing for implementation of the cleanup and payment, by the Port of Tacoma, of \$12 million for natural resource damage claims.

The combined navigational and cleanup dredging project was implemented from Oct. 1993 through Sep. 1994. A total of 2.83 million cy were dredged and moved to the abandoned Milwaukee Waterway. The total included 2.4 million cy of clean sediments from the Blair Waterway and 425,000 cy of potentially contaminated sediments from the Sitcum Waterway. Only about 30% of the sediments from the Sitcum Waterway proved to be contaminated. The Milwaukee Waterway was bermed at its mouth, with a weir and overflow pipe (to the Bay) installed. After placement of the dredged material, and a multi-year period of settling, the filled waterway was paved over.

Remedial Action Planned: ☒

Risk Assessment: ☐

Remedial Action Implemented: ☒

Status of Dredging ☐

PRPs: ☒

Contacts: ☒

References: ☒

Modeling: ☐

Fishing Advisory: ☒

Key Conditions: confined disposal facility, dredging, fish spawning limitations, navigational dredging component, tidal fluctuations

REMEDIAL ACTION PLANNED

Project Name COMMENCEMENT BAY - PROJECT 2 (Sitcum Waterway) **ProjectID:** 10-05
Last Updated: 12/04/98

**Target Sediment Cleanup
Standards (TSCS):**

How TSCS Established:

**Target Bank and Floodplain
Cleanup Levels (if applicable):**

Other Target:

**Environmental Sample Data
References:**

- **Sediment:**
- **Water:**
- **Fish:**

Estimated Target Volume: 366,000 cy of sediments from Sitcum Waterway

Planned Disposal Method: Into abandoned Milwaukee Waterway and, after settling, capped by paving over.

**Estimated Calendar Time to
Implement Remedy:**

**Estimated Time to Implement
Remedy:**

**Estimated Cost to Implement
Remedy:**

**Stated Remedial Action
Objectives (and Source):** Per 1996 phone conversation with Port of Tacoma (Dick Gilmer): Project was a combined developmental and cleanup project. In the Sitcum Waterway, the scope was to dredge the contaminated sediment plus two additional feet. The two additional feet ensured that all contaminated material would be removed and, in addition, was a navigationally-required target. The Blair Waterway was dredged as part of the same project, a navigational project first identified in the 1970s. A portion of the Blair sediments were potentially-contaminated, however, the depth of dredging was dictated by navigational considerations.

**Measures of Success to
be Used:**

**Planned Monitoring and
Restoration:**

**Agency Position on Sediment
Removal (and Source):**

REMEDIAL ACTION IMPLEMENTED

Project Name:	<u>COMMENCEMENT BAY - PROJECT 2 (Sitcum Waterway)</u>	ProjectID: 10-05
Last Updated:	12/04/98	
Physical Target:	Sediments in the Sitcum Waterway and the Blair Waterway.	
Goals:	Refer to "Stated Remedial Action Objectives" in Report 02.	
Primary Contractor:	Manson (dredging contractor).	
Other Contractors:	Hartman (design and oversight)	
Generic Remediation Method:	Dredging	
Equipment:	Sitcum Waterway - dredging as part of larger (2.4 million cy) clean navigational dredging project. Small (for use between piers and obstructions) and large (for use in open waterways) hydraulic dredges, (10, 12, 26-inch) and two clamshell dredges (8 and 15 cy buckets).	
Material Handling:	The mouth of the Milwaukee Waterway was bermed, and an overflow wier and discharge pipe were installed. The normal water level was present when filling started. The material dredged by clamshell was placed into barges and moved by barge to the disposal cell, the Milwaukee Waterway, upwards of a mile distance. The hydraulic dredges pumped directly to the disposal cell. Material from the Sitcum was placed in the cell first, then material from the Blair. The Milwaukee Waterway was filled from the far end toward the discharge point and the displaced water was allowed to overflow into the Bay.	
Volume Removed:	2.83 million cy, which included 2.4 million cy from Blair and 0.425 million cy from Sitcum Waterway (only about 30% of the 425,000 proved to be contaminated).	
Calendar Time:	October 20, 1993 through September 1994 (cessation during fish window from March 25 through June 15, 1994)	
Time To Implement:	11 months; predominantly six days per week, 24 hours per day; reported production rates of 6,000 to 18,000 cy per 24-hour day.	
Total Cost:	\$17.5 million; \$6.20 per cy	
Dredging Cost:	Dredge from Blair and place: \$2-5 per cy. Dredge from Sitcum and place: \$1.50 per cy (short discharge distance, no booster pump). Dredge sideslopes at/under piers: \$25 per cy.	
Disposal of Sediment:	Barged or pumped and placed into abandoned Milwaukee Waterway, along with 2.4 million cy of clean sediments, with most contaminated placed on bottom; then settling and eventually capping (paving over), with capped area to become a container facility; 20 acres of subtidal habitat constructed at end of waterway using 800,000 cy from Blair; 200,000 cy excess from Blair went to ocean dumping.	
Volume of Water:	N/A	
Method of Water Treatment:	None. The mouth of the Milwaukee Waterway was bermed to provide containment. During placement, water was allowed to overflow into the Bay via a wier and a discharge pipe.	
Water Discharge Limit:	N/A	
Air Monitoring During Remediation:		
Water Monitoring During Remediation:	Source: Phone conversation in 1994 with Margaret Justus (EPA): Ambient water quality measurements were made for comparison purposes (i.e. background) before the dredging started	

REMEDIAL ACTION IMPLEMENTED

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and then performance standards were set for the dredging. A complicated monitoring program was developed for the project. Different compliance requirements were set at the point of dredging and at the point of disposal. Since most of the material from the Blair Waterway is clean, the monitoring requirements at the point of disposal include only such parameters as DO, turbidity, and temperature. For the Blair and Sitcum Waterway contaminated material, the monitoring frequency was set at three times per day at the point of dredging and three times per day at the point of disposal. Measurements for the appropriate parameters were made at three different depths. An EPS system was used to insure returning to the same sampling locations. The three times per day requirement was relaxed after a period of time since monitoring indicated that compliance was being met. The compliance location was set at 330 feet from the activity and so "point of dredge" apparently means 330 feet from the dredging activity. Another sampling location was established at the mid-point between the activity and 330 feet as an early indicator.

The compliance limits were set based on both elutriate sampling and theoretical modeling. The Port of Tacoma did the modeling. The contaminants of concern were metals, primarily. PAHs were initially monitored but were eventually dropped from the protocol. TSS is a compliance parameter and cyanide has also been a compliance parameter. Cyanide was identified by elutriate testing. There is an initiative to have this parameter dropped on the grounds that cyanide is ubiquitous in the northwest (not clear whether it was actually dropped).

There were reportedly no major violations of the compliance parameters. In other words, there were no major alterations of the dredging process as a result of the compliance monitoring. However, elevated zinc levels were measured. For some reason, these were not considered important enough to stop dredging, and the dredging continued up until the "fish window" date of March 25. Dredging stopped from March 25 to June 15 to accommodate the fish window.

Outcome: Target in the Sitcum Waterway was to dredge the contaminated sediment plus 2 additional feet; target in the Blair was to achieve navigational depths; verification sediment samples were taken in the Sitcum with only one post-dredging failure; results and target levels not available.

Restoration and Post-Monitoring:

Site-Specific Difficulties: The accuracy of dredging was tidally influenced. As a result, a changing float depth had to be managed, making horizontal and vertical control difficult. This provided further justification for the two-foot overdredging allowance.

Monitoring Data

References:

- Sediment
- Water:
- Fish:

POTENTIALLY RESPONSIBLE PARTIES

Project Name COMMENCEMENT BAY - PROJECT 2 (Sitcum Waterway)

ProjectID: 10-05

PRP Name: PRP INFORMATION NOT RELEASED

PRPID:

Street Address:

City:

State:

KEY CONTACTS

Project Name COMMENCEMENT BAY - PROJECT 2 (Sitcum Waterway)

ProjectID: 10-05

Last Name: KEY CONTACT INFORMATION NOT RELEASED

Contact ID:

First Name:

Title:

Company:

Address:

City:

State:

Postal Code:

Work Phone # :

Other Phone #:

Fax # :

Email Address:

REFERENCES

Project Name COMMENCEMENT BAY - PROJECT 2 (Sitcum Waterway)

ProjectID: 10-05

Reference Type: A

ReferenceID: 49

Title: *Superfund Fact Sheet - Commencement Bay Nearshore/Tideflats
Superfund Site - Sitcum Waterway
EPA Seeks Public Comment on Conditional Approval of Sitcum
Waterway Cleanup*

Location: AEM

Category: Site Update

Prepared by/Author: US EPA Region X

**Preparer/Author
Address:** 1200 Sixth Avenue
Seattle, WA 98101

Prepared For: General Public

Date Published: November 30, 1992

**Key Words and
Phrases:**

Reference Type: A

ReferenceID: 52

Title: *Superfund Fact Sheet - Commencement Bay Nearshore/Tideflats
Superfund Site - Sitcum Waterway
EPA Seeks Public Comment on Proposed Consent Decree*

Location: AEM

Category: Site Update

Prepared by/Author: US EPA Region X

**Preparer/Author
Address:** 1200 Sixth Avenue
Seattle, WA 98101

Prepared For: General Public

Date Published: August 25, 1993

**Key Words and
Phrases:**

REFERENCES

Project Name COMMENCEMENT BAY - PROJECT 2 (Sitcum Waterway)

ProjectID: 10-05

Reference Type: A

ReferenceID: 590

Title: *Superfund Fact Sheet (selected pages)*

Location: AEM

Category: Site Update

Prepared by/Author: US EPA Region X

**Preparer/Author
Address:** 1200 Sixth Avenue
Seattle, WA 98101

Prepared For: General Public

Date Published: August 1994

**Key Words and
Phrases:**

Reference Type: A

ReferenceID: 591

Title: *Superfund Fact Sheet (selected pages)*

Location: AEM

Category: Site Update

Prepared by/Author: US EPA Region X

**Preparer/Author
Address:** 1200 Sixth Avenue
Seattle, WA 98101

Prepared For: General Public

Date Published: January 1995

**Key Words and
Phrases:**

Reference Type: C

ReferenceID: 54

Title: *EPA Proposes Innovative Plan for Dealing with Harbor
Sediments (Sitcum Waterway)*

Location: AEM

Category: Site Update

Prepared by/Author:

**Preparer/Author
Address:**

Prepared For: Superfund Report

Date Published: August 1993

**Key Words and
Phrases:**

REFERENCES

Project Name COMMENCEMENT BAY - PROJECT 2 (Sitcum Waterway)

ProjectID: 10-05

Reference Type: C

ReferenceID: 62

Title: *EPA unveils key dredge plan*

Location: AEM

Category: Site Update

Prepared by/Author:

Preparer/Author

Address:

Prepared For: Engineering News-Record (ENR)

Date Published: September 6, 1993

**Key Words and
Phrases:**

Reference Type: C

ReferenceID: 322

Title: *Hartman Honored for Role in Sitcum, Blair, Milwaukee Project*

Location: AEM

Category: Site Update

Prepared by/Author:

Preparer/Author

Address:

Prepared For: International Dredging Review (IDR), 1998, Vol. 17, No. 5

Date Published: June/July 1998

**Key Words and
Phrases:**

REFERENCES

Project Name COMMENCEMENT BAY - PROJECT 2 (Sitcum Waterway)

ProjectID: 10-05

Reference Type: E

ReferenceID: 7

Title: *Evaluation of Remedial Options for the Sitcum Waterway Sediments: A Case Study*

Location: AEM

Category: Contaminated Sediments: Remedial Options/Guidance

Prepared by/Author: (1) John R. Verduin, III, (2) Garry E. Horvitz, and (3) Richard C. Gilmur

Preparer/Author Address: (1 and 2) Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, WA 98102
(3) Port of Tacoma
One Sitcum Plaza
Tacoma, WA 98421

Prepared For: Dredging 1994 - Proceedings of the Second International Conference on Dredging and Dredged Material Placement
Volumes 1 & 2

Date Published: 1994

Key Words and Phrases:

Reference Type: L

ReferenceID: 79

Title: *Memo re: Rationale for Remedy Selection at the Commencement Bay Nearshore/Tideflats Superfund Site*

Location: AEM

Category: Contaminated Sediments: Remedial Options/Guidance

Prepared by/Author: AEM, Inc.

Preparer/Author Address: Malvern, PA 19355

Prepared For: Distribution

Date Published: July 26, 2000

Key Words and Phrases:

REFERENCES

Project Name COMMENCEMENT BAY - PROJECT 2 (Sitcum Waterway)

ProjectID: 10-05

Reference Type: L
Title: *EPA's Evolving Position on Remedial Dredging*
Location: AEM
Category: ROD/Proposed Plan/Action Memo/Decision Document
Prepared by/Author: AEM, Inc.
Preparer/Author Address: Malvern, PA 19355
Prepared For: Internal Distribution
Date Published: Undated
Key Words and Phrases:

ReferenceID: 183

Reference Type: L
Title: *Memo re: Commencement Bay Site Referred to by EPA Region II*
Location: AEM
Category: Site Update
Prepared by/Author: AEM, Inc.
Preparer/Author Address:
Prepared For: General Electric
Date Published: February 9, 2001
Key Words and Phrases:

ReferenceID: 192

Reference Type: M
Title: *Remediation Underway (Blair and Sitcum Waterways, with detailed contractor bid breakdown)*
Location: AEM
Category: Site Update
Prepared by/Author: John B. Herbich
Preparer/Author Address: Consulting and Research Services, Inc.
College Station, TX
Prepared For: Distribution
Date Published: 1994 circa
Key Words and Phrases:

ReferenceID: 145

REFERENCES

Project Name COMMENCEMENT BAY - PROJECT 2 (Sitcum Waterway)

ProjectID: 10-05

Reference Type: M

ReferenceID: 374

Title: *Port of Tacoma's Sitcum/Blair Project Satisfies Multiple Objectives*

Location: AEM

Category: Site Update

Prepared by/Author: Sybil E. Hatch

Preparer/Author

Address:

Prepared For: Engineering News-Record (ENR)

Date Published: March 22/29, 1999

**Key Words and
Phrases:**

Reference Type: N

ReferenceID: 2

Title: *Details on the Dredging Project in progress in the Sitcum
Waterway as part of the Commencement Bay Project*

Location: AEM

Category: Phone Memos (Site Updates)

Prepared by/Author: Bradford S. Cushing

**Preparer/Author
Address:** AEM, Inc.,
Malvern, PA 19355

Prepared For:

Date Published: June 14, 1994

**Key Words and
Phrases:**

FISH ADVISORIES

Project Name ***COMMENCEMENT BAY - PROJECT 2 (Sitcum Waterway)***

ProjectID: 10-05

Advisory: Commencement Bay

AdvisoryID: 580

Extent: Industrially developed waterways at South end

Pollutant: PCE

Species: all bottomfish

Population: NCGP

Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: Estuary

Advisory Number: 4246

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: Dave McBride

Contact Number: 360-236-3176

Advisory: Commencement Bay

AdvisoryID: 579

Extent: Industrially developed waterways at South end

Pollutant: PCE

Species: shellfish-crab

Population: NCGP

Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: Estuary

Advisory Number: 4246

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: Dave McBride

Contact Number: 360-236-3176
