OLYMPIC VIEW RESOURCE AREA

YEAR 2
ANNUAL MONITORING REPORT
2004

CITY OF TACOMA
November 30, 2004

Tacoma

Tacoma City of Tacoma
Public Works Department

November 30, 2004

Karen Keeley
US EPA, Region 10
1200 Sixth Ave., MS ECL-111
Seattle, WA 98101

Subject: Final Olympic View Resource Area Year 2 Annual Monitoring Report

Dear Ms. Keeley:

Please find enclosed responses to EPA's comments on the draft Year 2 Annual Report and the City's Final Year 2 Annual Monitoring Report submitted in accordance with the Long-Term Monitoring and Reporting Plan.

If you have any questions about this, please contact me at 253-502-2108.

Sincerely,

John O'Loughlin, P.E.
Project Manager
Environmental Services Science & Engineering

JO:sh (Final Y2AR Tran)

Enclosures

cc: Joe Marsh, ACOE (2 copies)
Joyce Mercuri, Ecology
Robert Taylor, NOAA
David Templeton, Anchor Environmental
Ed Woodfield, Foss Maritime Company
Tom Gibbons, WADNR
John Carlton, WDFW
Jennifer Steger, NOAA Restoration Center
Jay Davis, USFWS
Bill Sullivan, Puyallup Tribe of Indians
Glen St. Amant, Muckleshoot Indian Tribe
Rick Moore, Hart Crowser
Leslie Ann Rose, CHB

File: NRD - OVRA

EPA Comments on Year 2 Annual Monitoring Report 2004
Olympic View Resource Area, Tacoma, WA
City responses in italics.

1. Page 2, Surface Sediment Quality Monitoring. Revise text: "In Year 2, the LMRP did not require that monitoring be conducted to evaluate contaminant movement through the cap via diffusion or other mechanisms."

City Response: Text was modified.

2. Page 3, Section 3.2. Please define the term "field duplicate" to clarify that the sample was prepared in the field by filling two containers with the homogenized sediment.

City Response: Text was modified.

3. Page 3, Section 4.1, Line 3. Revise text: "results in Areas B, and again."

City Response: Text was modified.

4. Page 4, 1st Para, 1st sentence. Clarify that the 'isolated instances' refers only to an exceedance of an early warning level at one of the four Transect 1 stations.

City Response: Text was modified.

5. Page 4, 1st Para, 3rd sentence. Clarify that the 'nominal change' from Year 1 to Year 2 was -0.1 ft.

City Response: Text was modified. The change is -0.3 feet due to changes in Table 1 as noted below in response to Comment #11.

6. Page 4, 1st Para. Insert new 4th sentence, clarifying that based on Year 2 results for Area B, there is an approximately 13 inch buffer of clean sediment over the required cap thickness of 32 inches.

City Response: Text was modified. The buffer is 11 inches due to changes in Table 1 as noted below.

7. Page 4, 3rd Para. Revise text: "...the removal action has been successful, to date, in the physical isolation...".

City Response: Text was modified.

8. Page 4, 4th Para. Revise the first sentence to clarify that in 2004, there was only a single exceedance (at one of the four stations in Transect 1) of an early warning value.

City Response: Text was modified.

9. Page 4, Section 4.2. Clarify how sediments were obtained for the 'second' analysis – were archived sediment samples used? Were they properly handled in accordance with requirements of the LMRP QAPP? Were the mercury samples really re-run within 28 days?

City Response: Clarification was provided. Samples were re-run from original container and within holding times.

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1.0 INTRODUCTION

This document presents the Year 2 Annual Monitoring Report for the Olympic View Resource Area (OVRA) Removal Action located in Tacoma, Washington (Figure 1). The City conducted the year 2 physical and chemical monitoring activities in the spring and summer of 2004.

The OVRA is located within the boundaries of the Commencement Bay Nearshore/Tideflats Superfund Site and includes approximately 12.9 acres of intertidal and subtidal area. The Removal Action involved excavation, backfilling, and capping of approximately 2.3 acres of contaminated marine sediments within the OVRA site. Chemical constituents of concern included dioxins (polychlorinated dibenzodioxins and dibenzofurans), metals (arsenic, copper, mercury, and zinc), polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs).

To evaluate alternatives for the Removal Action, the City prepared an Engineering Evaluation/Cost Analysis (EE/CA) in April 2001. The EE/CA summarized results of previous environmental investigations at the OVRA site. Following a public comment period, the EPA published an Action Memorandum in July 2001, which documented the selected alternative for the OVRA Non-Time-Critical Removal Action. Final Design Documents describing site construction activities for the Removal Action were completed in January 2002. The City completed sediment excavation and capping for the OVRA Removal Action in October 2002, and submitted a Removal Action Completion Report (RACR) to the U.S. Environmental Protection Agency (EPA) in March 2003. All design, construction, and reporting tasks for the OVRA Removal Action were completed in accordance with requirements of an Administrative Order on Consent (AOC – Docket Number CERCLA 10-2001-0069 dated July 2001) between the City and EPA. The City submitted the final Long-Term Monitoring and Reporting Plan (LMRP) to the U.S. Environmental Protection Agency (EPA) in August 2003.

The Year 1 Annual Report was submitted to EPA in final form on April 20, 2004 and approved by EPA on April 21, 2004.

2.0 PROJECT OBJECTIVES

The removal action objective for the OVRA, as described in the 2001 AOC and EPA's 2001 Action Memorandum, is to:

- Significantly reduce the potential risk to human health and/or marine ecological receptors resulting from potential exposure to contaminants present in sediments by removing and disposing of the contaminated sediment at an acceptable disposal site, or capping contaminated sediments in the project area.

The goals of the long-term monitoring program for the OVRA are to ensure that the selected cleanup action continues to be protective of human health and the environment. The specific objectives of the long-term monitoring program are to ensure that:

- The sediment cap continues to isolate toxic concentrations of previously identified chemicals of concern (COCs) in underlying sediments from marine biota and other biological receptors; and
- The sediment cap is not recontaminated with COCs from underlying sediments.

The integrity of the capped areas is fundamental to achieving these objectives. Cap integrity depends upon maintaining the designed cap thickness to avoid potential contaminant releases, and to attain the performance standards. To ensure cap integrity, monitoring activities included the following:

Physical Integrity Monitoring. Physical integrity monitoring was used to ensure that erosion is not occurring to an extent that would compromise the ability of the cap to physically isolate contaminated sediments from environmental receptors. As a result of comments by EPA on the Year 1 Annual Report, conventional transect surveys were conducted in April to monitor and document any potential for erosion.

Surface Sediment Quality Monitoring. In Year 2, the LMRP did not require that monitoring be conducted to evaluate contaminant movement through the cap via diffusion or other mechanisms, however sediment quality monitoring was conducted to evaluate the potential for contamination migrating from the adjacent cleanup of the Middle Waterway Problem Area.

3.0 MONITORING ACTIVITIES

3.1 Physical Integrity Monitoring

Physical integrity monitoring consisted of topographic surveys and visual inspections. In year 2, the LMRP did not require any topographic surveys. However, in comments on the Year 1 Annual Report, EPA required some additional conventional, shore – based topographic survey.

Crews from the Public Works Department Survey Section, under the direction of the City's Licensed Professional Land Surveyor, conducted the conventional topographic survey transects in April 2004. The locations of these transects are shown in Appendix A, Sheet 1 of 2 and the data are listed in Table 1. The survey reoccupied Transect T1 and established a new Transect T0 to the west of T1. These field activities were schedule around the low tide events. Shore based surveys for vertical elevation have an accuracy of +0.01 foot and, for horizontal control are accurate to +0.01 foot.

Environmental professionals from the Science and Engineering Division conducted visual inspections in April, 2004 and again in August, 2004.

3.2 Surface Sediment Quality Monitoring

The LMRP requires surface sediment chemistry sampling in year 2 on the eastern boundary of the site to evaluate the potential for off-site migratory contamination related to remediation in an adjacent part of the Middle Waterway Problem Area. The samples and analyses called out in the LMRP for year 2 sediment chemistry monitoring are listed in Table 2.

Sampling for surface sediment chemistry was accomplished on September 10, 2004. The field effort was conducted at low tide and all sample grabs were obtained from the beach. City environmental samplers used conventional location control to document the locations of the grab samples. Sampling techniques were consistent with the requirements of the LRMP. Each sample was the composite of three individual grab samples from within the each sampling grid (i.e. grabs C-9A, C-9B & C-9C were composited to form sample C-9). These sample locations are shown in Appendix A, on Sheet 1 of 2 and are listed in Table 3. Qualitative sample characteristics were recorded for each sample and these forms are presented in Appendix B.

Samples were transported under chain of custody to the City's Environmental laboratory for analysis. All analyses were conducted in accordance with the LMRP.

In addition to the field samples listed in Table 3, two Quality Control samples were collected in the field as well. Sample C-11 is a field duplicate of sample C-10. The field duplicate was prepared by homogenizing sediment for the composite sample C-10 and filling 2 separate containers, one labeled C-10 and the other labeled C-11. The duplicate was submitted as a separate sample to the lab for analysis. An equipment rinseate blank (RB-2004) was collected in the field by rinsing sampling equipment with deionized water. The rinseate water was submitted to the lab for analysis of all constituents.

4.0 MONITORING RESULTS

4.1 Physical Integrity Monitoring Results

Results of survey transects are presented in Table 1 and graphically depicted in Appendix A, Sheet 2 of 2. Early warning levels are set at a loss of cap material of 0.5 feet between the as-built survey and the monitoring results in Area B, and again at a loss of 1 foot of material in this area. Early warning levels are not performance standards, but are set at more stringent levels to assess whether performance standards could be exceeded in the future. The performance standards are set at minimum cap thickness in Table 1 of the LMRP.

The survey monitoring results show that there has been no exceedance of the Performance Standards.

There was one instance of exceedance of the early warning values at 1 of 4 Transect 1 stations in capped area B in the Year 1 Annual Report. Therefore EPA required survey of Transect 1 again in April 2004 along with the establishment of the new Transect T0 to the east of T1. There were nominal changes (a loss of up to 0.3 feet) in Transect T1 between years 1 and 2, and there was no exceedance of the performance standard. The lone exceedance of the early warning value remains. For the newly established Transect T0, the April 2004 monitoring represents the baseline that future monitoring events will be compared against. Based on Year 2 results for Area B, there is an approximately 11 inch buffer of clean sediment over the required cap thickness of 32 inches.

Visual inspections were conducted during April and August of 2004. Photos and notes from the inspections are presented in Appendix C. Areas with erosion protection material were probed to confirm the presence of this larger rock. The erosion protection material appears to have remained stable and is covered with a sandy gravel – likely the habitat mix from the construction activities. The erosion protection material is estimated to be several inches thick, with a minimum of 3 to 4 inches. It appears from the visual inspections that the erosion protection material coverage is similar to the post construction condition. Photos were taken in to document the presence of the erosion protection materials. There are no apparent signs of significant erosion. Additionally close up photos of the sediments were taken as requested in EPA comments on the Year 1 Annual Report. Photo points 8B & 8C were not taken in April due to equipment failure.

While there have been some early warning value exceedances, there have been no exceedances of the performance standards for physical integrity monitoring. Therefore the removal action has been successful, to date, in the physical isolation of contaminated sediments from environmental receptors.

4.2 Surface Sediment Quality Monitoring Results

Laboratory results from the sampling described in Section 3.2 are presented in Table 4. None of the chemical analytes have exceeded the early warning values or the performance standards. (As mentioned above, there has been one exceedance of the early warning value for Physical Integrity Monitoring at one station of Transect 1.) Laboratory analysis was conducted according to the provisions of Appendix A of the LMRP. The data reports, QA/QC information and data validation reports for the year 2 monitoring samples are presented in Appendix D of the report. The samples were analyzed twice, because the original Quality Control data were outside of normal laboratory limits. The second analysis was performed on retained portions of the original sediment sample within appropriate holding times (i.e. within 28 days for mercury and 180 days for the other metals). The retained sample was handled in accordance with the approved project plans. Data, as reported, was of an acceptable quality.

All metals concentrations were less than 15% of the OVRA Sediment Quality Criteria (SQC), provided in Table 2 of the LMRP. Given that the Middle Waterway cleanup adjacent to this site was completed prior to these samples being taken, it appears that there was no cross-contamination from those cleanup activities.

The field duplicate results showed good agreement between the splits. The rinseate blank had a low level detection of zinc. However the level was much less than the associated samples and no data quality is affected.

5.0 CONTINGENCY PLANNING AND RESPONSE

Year 2 monitoring results have confirmed the continuing success of the removal action at the OVRA. Based on Year 2 monitoring results, no contingency actions are required.

6.0 SITE ACCESS AND INSTITUTIONAL CONTROLS

6.1 DNR Environmental Reserve

The Washington State Department of Natural Resources (DNR) re-evaluated the status of this site as an Aquatic Environmental Reserve under RCW 79.68. 060 and the reserve status was rescinded by order of the Commissioner of Public Lands. Therefore, DNR simultaneously invoked a new order that withdraws the OVRA project area from leasing under RCW 79.90.460. This withdrawal is intended to protect regionally valuable aquatic resources from further commercial use and potential development or commercial leasing. A copy of the Commissioner's Order is attached in Appendix E.

Table 1 Conventional Survey Transect Elevations (elevations in feet MLLW unless noted otherwise)

Transect	Capped Area	As built Elevation	Year 1 Monitoring	Diff.[1] (feet)	Year 2 Monitoring	Diff b/w Year 1&2	Diff b/w Year 2 &As built	> Early Warning	Post-constr Cap thickness[2]	Min Design Cap[3]	>Perf Std
T1	B	6.8	7.8	1.0	8.3	0.5	1.5	No			
T1	B	4.8	5.2	0.4	5.4	0.2	0.6	No			
T1	B	3.0	2.8	-0.2	2.5	-0.3	-0.5	No			
T1	B	1.8	0.9	-0.9	0.8	-0.1	-1.0	Yes	55 inches	32 inches	No
T1	No Cap	1.0	0.7	-0.3	0.6	-0.1	-0.4				
T1	No Cap	0.6	0.5	-0.1	0.5	0.0	-0.1				
T1	No Cap	0.3	0.4	0.1	0.4	0.0	0.1				
T1	No Cap	-0.1	0.2	0.3	0.1	-0.1	0.2				
T1	No Cap	-0.2	-0.1	0.1	0.0	0.1	0.2				
T1	No Cap	-0.5	-0.7	-0.2	-0.7	0.0	-0.2				
T1	No Cap	-1.0	-1.0	0.0	-0.9	0.1	0.1				
T1	No Cap	-0.9	-1.5	-0.6	-1.4	0.1	-0.5				
T0[4]	B				6.05						
T0	B				3.41						
T0	B				1.15						
T0	No Cap				0.3						
T0	No Cap				0.11						
T0	No Cap				0.14						
T0	No Cap				-0.27						
T0	No Cap				-0.58						
T0	No Cap				-0.81						
T0	No Cap				-1.24						
T0	No Cap				-1.65						
T0	No Cap				-1.76						

1 – Survey accuracy is +/- 0.01 feet in the horizontal and the vertical.
2 - Estimated post construction cap thickness in inches.
3 - Minimum design cap thickness from Table 1 of the LMRP, in inches.
4 – Transect 0 was added for the first time in year 2 monitoring. Year 2 will be the baseline for comparison in future monitoring events.

Table 2 Samples and Analyses

Sampling Area	Analyses
C-9	Arsenic, Copper, Mercury and Zinc
C-10	Arsenic, Copper, Mercury and Zinc

Table 3 Grab Sample Locations

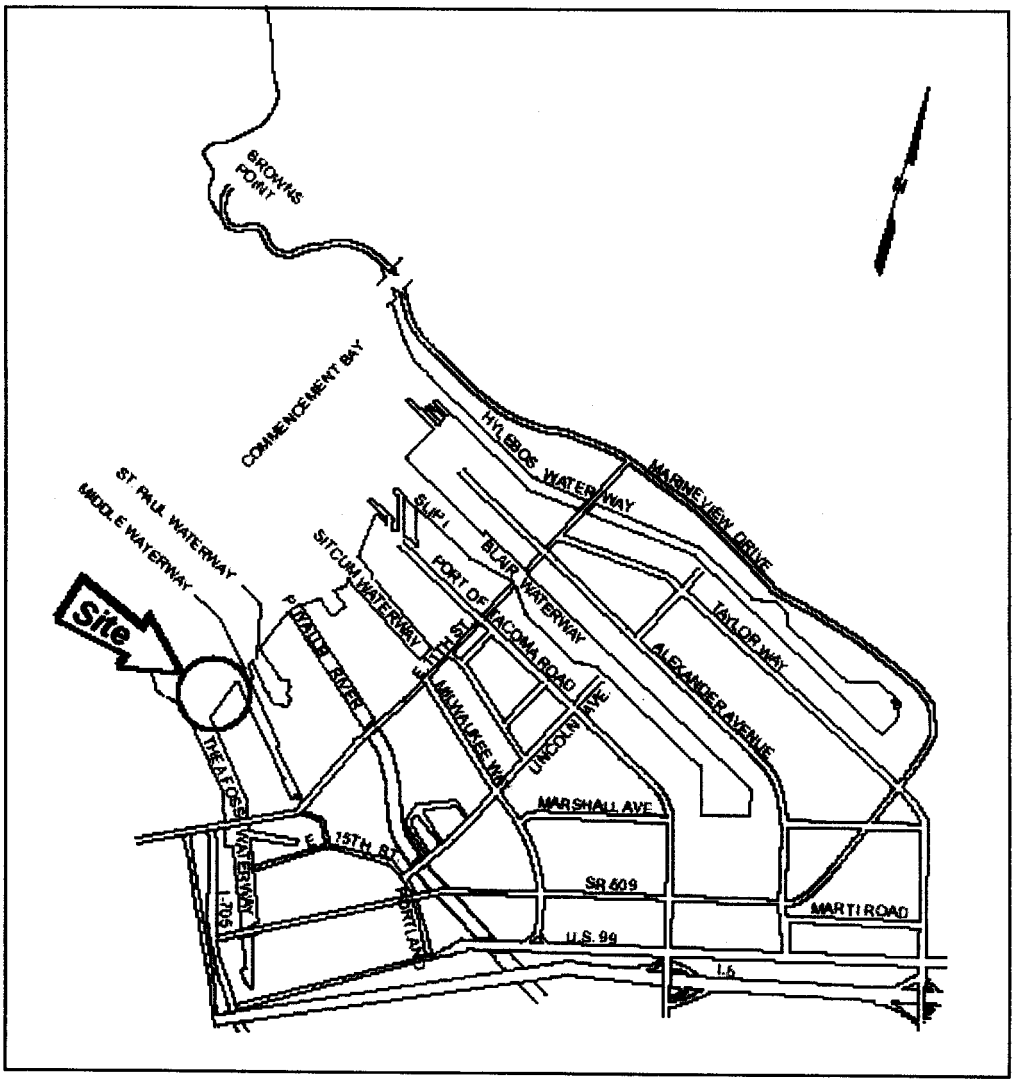
Grab Sample	Northing	Easting	Elevation
C-10A	709653.7	1160252.2	2.5
C-10B	709683.1	1160246.5	2.7
C-10C	709693.0	1160270.6	3.0
C-9A	709724.5	1160188.4	1.0
C-9B	709720.8	1160206.2	0.5
C-9C	709699.2	1160187.2	0.5

Table 4 Surface Sediment Chemistry Data

	OVRA	*Station Name*								
	SQC	**C-9**		**C-10**		**C-11**			**Rinse**	
Constituents		**0-10cm**		**0-10cm**		**0-10cm**		***Constituents***	**Blank**	
Metals (mg/kg)								**Metals (ug/L)**		
Arsenic	57	0.15	U	1.12		0.62		Arsenic	1.5	U
Copper	390	18.0	J	13.2	J	11.5	J	Copper	3.9	U
Mercury	0.41	0.0620		0.0437		0.0359		Mercury	0.050	U
Zinc	410	24.0	J	16.1	J	20.5	J	Zinc	1.3	

Data Qualifiers:
U – The analyte was not detected at or above the reported value.
J – The analyte was positively identified. The associated value is an estimate.

Note: Sample C-11 is a field duplicate of sample C-10, created by filling two separate containers (labeled C-10 and C-11) from the same homogenized sediment sample compositing bowl.



NOT TO SCALE

Figure 1

OLYMPIC VIEW RESOURCE AREA

YEAR 2
ANNUAL MONITORING REPORT
2004

APPENDIX A

DRAWINGS

CITY OF TACOMA
November 30, 2004

Tacoma

OLYMPIC VIEW RESOURCE AREA

YEAR 2
ANNUAL MONITORING REPORT
2004

APPENDIX B

QUALITATIVE SAMPLE CHARACTERISTICS FORMS

CITY OF TACOMA
November 30, 2004

Tacoma

Qualitative Sample Characteristics

Date (mm/dd/yy)	Location	Station
0911101014	1C1-10191	

Coordinates		Water Depth			Elevation	Time	Weather
North *	East *	Depth	Unit	+/-	Elev.		
						181541	SUN

Coordinates	
North DDDHHMM.MMM	West DDDHHMM.MMM

Rep	Gear	Sample Type	Penetration		Recovery		Photograph		Grain Vol	Initials	Sulfid	VOA
			Depth	Unit	Length	Unit	Roll#	Exp.				
1	spoon1	C101MP	1/16	CM								

Surficial sediment characteristics: (circle most descriptive)

Texture Smooth Fine Coarse / Clay Silt Sand Gravel Cobble

Color Light Dark / Gray Brown Black Other _____

Odor Normal Sewage Petroleum Chemical H2S None Other _____

Presence of:

	Yes/No	Percent	Describe Type
Biological structures	Y	<5	clam worm
Debris	N		
Oily sheen	N		

Vertical profile characteristics: Describe

Changes in sediment characteristics	N/A
Presence and depth of redox potential disconinuity layer (rpd)	N/A

Sample quality comments: Describe

Leakage	
Winnowing	
Disturbance	

Comment tide ~ 18"

Qualitative Sample Characteristics

Field Dup is C-11

Date (mm/dd/yy)	Location	Station
091101014	C1-1101	

Coordinates		Water Depth			Elevation	Time	Weather
North *	East *	Depth	Unit	+/-	Elev.		
						091015	

Coordinates	
North DDDHHMM.MMM	West DDDHHMM.MMM

Rep	Gear	Sample Type	Penetration		Recovery		Photograph		Grain Vol	Initials	Sulfid	VOA
			Depth	Unit	Length	Unit	Roll#	Exp.				
1	SP 10 Ø	C10 1mlp	1110	Clm								

Surficial sediment characteristics: (circle most descriptive)

Texture Smooth Fine Coarse / Clay Silt (Sand) (Gravel) Cobble

Color (Light) Dark (Gray) Brown Black Other _____

Odor Normal Sewage Petroleum Chemical H2S (None) Other _____

Presence of:

	Yes/No	Percent	Describe Type
Biological structures	Y	<5	Shell bits, clam, seaweed, worms
Debris	N		
Oily sheen	N		

Vertical profile characteristics: Describe

Changes in sediment characteristics	N/A
Presence and depth of redox potential disconinuity layer (rpd)	

Sample quality comments: Describe

Leakage	N/A
Winnowing	
Disturbance	

Comment tide ~12"

OLYMPIC VIEW RESOURCE AREA

YEAR 2
ANNUAL MONITORING REPORT
2004

APPENDIX C

VISUAL INSPECTIONS: FIELD NOTES AND PHOTOS

CITY OF TACOMA
November 30, 2004

Tacoma

Olympic View Resource Area Restoration
Monitoring Report Form

Visual Inspection per LMRP

Date April 8th, 2004 Year 0A 0B 1A 1B 2A 2B 3 4 5

Staff Present: Desirée Pooley — Survey (Al, Dan) also here.
Weather Conditions: sunny, no rain for days.
Overall health and vigor of plants: Excellent Fair Poor

Qualitative Observations:

	Riparian Area (A/B)	Salt Marsh Area	Comments
Erosion	—	—	no extreme erosion —
Sedimentation	—	—	same ↑
Wildlife	see below		
Vegetation			
Invasive	A	→	blkberry, butt. bush
Volunteer	n/a	seaweed	
Survival (%)	90%	n/a	
Animal Damage	A & B	n/a	herbivory on plants event.
Disease	—	—	
Trash	minor	minor	
Vandalism	n/a	n/a	
Large Organic Debris	RipA	yes.	

contours look very similar to last mon.

Wildlife Oberserved:
nesting goose, lots of geese activity in waves, seagulls, crows

Soil/Sediment Quality -
Odor: n/a
Sheen: n/a
Color: brown w/ much brown algae some green.
Texture: small rocks w/ fine mud, see pics for others.

General Comments:
GW seeps? — no
Sea weed growing — see pics.
Plants survived herbivory well → almost all have new spring buds — Many Doug. Fir died.
Pepperweed needs to be removed.

Photo Points: Disk Count 1 2 3

1A	1B	2A	2B	2C	3A
1	2	12	13	14	3

3B	4A	4B	4C	5A	5B
4	15	16	17	8	9

5C	5D	6A	6B	7A	7B
10	11	7 5	6	18	19

7C	8A	8B	8C		
20	31	not taken			

Quantitative Measurements: Year 1 2 5

Sediment Stake #	Current Measurement (cm)	Starting Measurement (cm)
1		
2		
3		
4		
5		
6		

Olympic View Resource Area Restoration
Monitoring Report Form

& LMRP

Date Aug 30, 2004 Year 0A 0B (1A) 1B 2A 2B 3 4 5

Staff Present: D Pooley Time: 11:32

Weather Conditions: sunny, ≈ 75°C TIDE: -1.1 @ 11:43

Overall health and vigor of plants: Excellent (Fair) Poor

Qualitative Observations:

	Riparian Area (A/B)	Salt Marsh Area	Comments
Erosion			none noticed.
Sedimentation	X	X	beach constantly changing
Wildlife			birds in water
Vegetation	O	n/a	doing ok w/o water
Invasive	Yes		pearly ever & orache
Volunteer			wild native blkberry, gumweed.
Survival (%)			~~80+~~ 85+%
Animal Damage			rabbits - although better since GEC install
Disease			n/a
Trash	X		assoc w/ high tide
Vandalism			n/a
Large Organic Debris	X		@ high tide / good recruitment

Wildlife Oberserved: caspian terns, geese, ducks, crows, pigeons,

Soil/Sediment Quality -

Odor: n/a.

Sheen: n/a

Color: brown.

Texture: sandy, coarse gravel to cobbles.

General Comments:

Pics. 23
24 / Overview from W side
25
26 - T23
27 - T3 & D area?
28 - Cap (w/ birds)
29 -
30 - from 28 looking towards beach

D2-1 - beach slope
2 - rock w/ hair

Photo Points: Disk Count: 1 2 3

1A	1B	2A	2B	2C	3A
D1, 1	D1, 2	D1, 3	D1, 4	D1, 5	D1, 10

3B	4A	4B	4C	5A	5B
D1, 11	D1, 14	D1, 15	D1, 16	D1, 6	D1, 7

5C	5D	6A	6B	7A	7B
D1, 8	D1, 9	D1, 12	D1, 13	D1, 17	D1, 18

7C	8A	8B	8C		
D1, 19	20	21	22		

12:25
-0.2
8/31/04

Quantitative Measurements: Year 1 2 5

Sediment Stake #	Current Measurement (cm)	Starting Measurement (cm)
1	—	91.5
2	80 cm	79.9
3	66.5 cm	105.5
4	93 cm	89.9
5	74 cm	93.2
6	84 cm	91.5

(2) — ~~to~~ 6 ft from end of concrete/log portion along walkway.

(3) In line w/ fence corner approx 10 feet west

(6) A.2

(4) At corner of walkway.

NOTES:
beach changing
this Spring had GED placed/repositioned around Area A & B plantings - look good. Mulch also added.

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT

BOOK
PAGE
SHEET OF

PROJECT Olympic View Res Area SUBJECT 8/30/04
COMPUTATION D. Pooley - sunny
COMPUTED BY DATE CHECKED BY DATE

9 ft radius

RA1

T4-2 (5) 74 cm sand, coarse sand/gravel

T4-3 (6) 84 cm fines, seaweed, mud, shell debris,
* rebar encrusted w/ barnacles
sm. crab seen
coarse sand.

T3-2 (4) 93 cm large gravel
some coarse sand

T2-2 (3) 66.5 cm barnacles, muscles.
barnacles on rebar
sm. gravel, fines/mud, coarse sand

12:05 pm

T1-2 (1) — missing — no longer in ground.

T1-3 (2) — under water 3" — encrusted w/ barnacles
and seaweed.
Coarse sand/fines/seaweed.
Shell bits

80 cm

Notes on Photo Point Monitoring

Photos were taken from locations noted in attached Figure 1 from the Maintenance, Monitoring and Adaptive Management Plan (MAMP). Title indicates in which direction the photo is looking.

OLYMPIC VIEW RESOURCE AREA

YEAR 2
ANNUAL MONITORING REPORT
2004

APPENDIX D

LABORATORY REPORT & QA/QC INFORMATION

CITY OF TACOMA
November 30, 2004

Tacoma

City of Tacoma
Environmental Services
Science and Engineering Division

Memorandum

TO: John O'Loughlin, NRDA Project Manager

FROM: Christopher L. Getchell, Sr. Environmental Specialist

SUBJECT: Olympic View Resource Area WBS Element ENV-00012-05-02

DATE: October 14, 2004

Attached are the analysis results for the samples collected September 10, 2004 from Olympic View Resource Area. The samples were analyzed for Total Metals and Mercury.

The Science and Engineering Division laboratory analyzed the samples for Total Metals and Mercury. The samples were analyzed twice for each method. The Matrix Spike and Matrix Spike Duplicate recoveries for the first Mercury analysis were below normal laboratory QC Limits of 75% recovery. The second analysis had recoveries within the limits of 75 to 125%. The second analysis is reported. The Matrix Spike recoveries for Arsenic, Copper, and Zinc for the first analysis were also less than the normal control limits of 75%. The second analysis was performed with more volume to provide a more homogenous mixture. The recovery for Arsenic in the second analysis was within the recovery limits, however the Copper and Zinc recoveries were still outside the limits. The Arsenic, Copper, and Zinc data from the second analysis is reported. A Quality Control Data Review report was prepared and is attached with the sample reports.

If you have any questions concerning this data, call me at (253) 502-2130. Please note the remaining portion of this sample will be discarded six months from the date of this report unless notified.

Christopher L. Getchell

Christopher L. Getchell,
Sr. Environmental Specialist.

CLG:LAZ

C:\QCWork\Sharedwd\2004\cvrlttr\40910097a.doc

Quality Control Data Review

TO: Christopher L. Getchell, Sr. Environmental Specialist

FROM: Lori A. Zboralski, Senior Laboratory Analyst LAZ

DATE: October 14, 2004

SAMPLES

This report concerns the following samples associated with **Olympic View Resource Area WBS Element ENV-00012-05-02:**

Sample Description	Lab #	Date Sampled
C-9	20040910097	09/10/2004
C-10	20040910098	09/10/2004
C-11	20040910099	09/10/2004
RB-2004	20040910100	09/10/2004

HOLDING TIMES

The samples were analyzed within the required holding times of 7 days for Total Solids, 28 days for Total Mercury, and 180 days for Total Metals.

METHODS

The samples were analyzed according to SW-846 Methods 7470 and 6010B.

CALIBRATION AND VERIFICATION

The ICP and FIMS calibrations met method requirements for linearity and accuracy. Independent mid-range standards were analyzed to monitor calibration accuracy (ICV and CCV). Acceptable recoveries must be within 90 to 110%. All ICVs and CCVs had recoveries within acceptable limits.

Standards are required to be run to measure the accuracy of ICP inter-element correction factors. These samples ICSA and ICSAB must be run at the beginning and end of each analytical run. The ICSAB recoveries for each element must be within 80 to 120% recovery. The recoveries of the ICSAB for this analysis ranged from 94 to 104%.

METHOD AND CALIBRATION BLANKS

Method and calibration blanks were analyzed at the required frequencies for the methods. The concentrations of these blanks were less than 1/5th the amount found in the sample or the detection limit at all times.

FIELD RINSEATE BLANKS

A Field Rinseate Blank was collected with the soil samples. There were no target analytes detected in the Field Rinseate Blank with concentrations greater than 1/5th the amount found in the samples.

LABORATORY CONTROL SAMPLES

Laboratory Control Samples (LCS) monitor the analytical system by carrying a standard through every step of the analytical method including digestion. The recovery limits for metals are 80 to 120% for water and the soil recovery limits are listed in the following table.

Analyte	Limits
Arsenic	44-156
Copper	74-124
Zinc	73-126

All recoveries met the limits listed above.

DUPLICATE SAMPLE ANALYSIS

Duplicate samples were analyzed for total metals and mercury. The relative percent differences were less than 35% for the total metals with concentrations greater than 5 times the Method Detection Limit (MDL).

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE ANALYSIS

The C-9 sample was analyzed with a matrix spike for Total Metals and with Matrix Spike and Matrix Spike Duplicate for Mercury. The recoveries ranged from 64 to 95%. **The recoveries were less than the lower limit of 75% for Copper (64%), and Zinc (67%). The Copper and Zinc values for C-9, C-10, and C-11 are qualified as estimated. The data reported is based on the second analysis for both ICP and Mercury methods. The first analysis for ICP had low spike recoveries for Arsenic (47%), Copper (46%), and Zinc (45%). The first Mercury analysis had low MS and MSD recoveries at 54 and 58%.**

ICP SERIAL DILUTIONS

Serial dilution of samples analyzed by ICP provides information about physical or chemical interferences that may exist due to sample matrix.

The C-9 sample was analyzed at a five-fold dilution. All analytes had %D of the diluted sample compared to the undiluted sample of less than 10% for analytes greater than 50 times the MDL.

DATA ASSESSMENT

All samples met minimum method requirements except where qualified. The samples met the minimum project reporting limits for all parameters reported.

Qualifiers assigned to these samples are the following:

U Indicates the analyte was not detected at or above the reported value.

J Indicates the analyte was positively identified. The associated value is an estimate.

City of Tacoma

Science and Engineering Division

2201 Portland Avenue Tacoma WA 98421
Phone: 253.591.5588 Fax: 253.502.2170

Project: **Olympic View Resources Area**
Date October 14, 2004

Lab#: 20040910097
Sample ID: C-9
Sample Type: Sediment/water
Sample Date: 9/10/2004

Test	Result		Units
CONVENTIONAL			
Solids	**87.5**		per cent
CV			
Mercury	**0.0620**		mg/Kg
ICP			
Arsenic	0.15	U	mg/Kg
Copper	**18.0**	J	mg/Kg
Zinc	**24.0**	J	mg/Kg

Lori A. Zboralski October 14, 2004
Reviewed By: **Date**

Flags:
- U: The analyte was not detected at or above the reported value
- UJ: The analyte was not detected at or above the reported estimated value
- NJ: There is evidence the analyte is present. The associated value is an estimate
- J: The analyte was positively identified. The associated value is an estimate
- B: The analyte was detected but is less than the reporting limit goal

City of Tacoma
Science and Engineering Division
2201 Portland Avenue Tacoma WA 98421
Phone: 253.591.5588 Fax: 253.502.2170

Project: **Olympic View Resources Area**
Date October 14, 2004

Lab#: 20040910098
Sample ID: C-10
Sample Type: Sediment/water
Sample Date: 9/10/2004

Test	Result		Units
CONVENTIONAL			
Solids	**81.6**		per cent
CV			
Mercury	**0.0437**		mg/Kg
ICP			
Arsenic	**1.12**		mg/Kg
Copper	**13.2**	J	mg/Kg
Zinc	**16.1**	J	mg/Kg

Lori A. Zboralski October 14, 2004
Reviewed By: **Date**

Flags:
U: The analyte was not detected at or above the reported value
UJ: The analyte was not detected at or above the reported estimated value
NJ: There is evidence the analyte is present. The associated value is an estimate
J: The analyte was positively identified. The associated value is an estimate
B: The analyte was detected but is less than the reporting limit goal

City of Tacoma

Science and Engineering Division

2201 Portland Avenue Tacoma WA 98421
Phone: 253.591.5588 Fax: 253.502.2170

Project: **Olympic View Resources Area**
Date October 14, 2004

Lab#: 20040910099
Sample ID: C-11
Sample Type: Sediment/water
Sample Date: 9/10/2004

Test	Result		Units
CONVENTIONAL			
Solids	**89.5**		per cent
CV			
Mercury	**0.0359**		mg/Kg
ICP			
Arsenic	**0.62**		mg/Kg
Copper	**11.5**	J	mg/Kg
Zinc	**20.5**	J	mg/Kg

Lori A. Zboralski October 14, 2004

Reviewed By: **Date**

Flags:
- U: The analyte was not detected at or above the reported value
- UJ: The analyte was not detected at or above the reported estimated value
- NJ: There is evidence the analyte is present. The associated value is an estimate
- J: The analyte was positively identified. The associated value is an estimate
- B: The analyte was detected but is less than the reporting limit goal

City of Tacoma

Science and Engineering Division

2201 Portland Avenue Tacoma WA 98421
Phone: 253.591.5588 Fax: 253.502.2170

Project: **Olympic View Resources Area**
Date October 14, 2004

Lab#: 20040910100
Sample ID: RB-2004
Sample Type: Water
Sample Date: 9/10/2004

Test	Result	Units
CV		
Mercury	0.050 U	ug/L
ICP		
Arsenic	1.5 U	ug/L
Copper	3.9 U	ug/L
Zinc	**1.3**	ug/L

Lori A. Zboralski — October 14, 2004
Reviewed By: **Date**

Flags:
- U: The analyte was not detected at or above the reported value
- UJ: The analyte was not detected at or above the reported estimated value
- NJ: There is evidence the analyte is present. The associated value is an estimate
- J: The analyte was positively identified. The associated value is an estimate
- B: The analyte was detected but is less than the reporting limit goal

City of Tacoma
Public Works - Environmental Services
Science and Engineering Division

Tacoma

Send Results & Invoice to:
Science and Engineering Division ATTN: Lab
2201 Portland Ave
Tacoma, WA 98421
(253) 502-2130
PO#:

Page 1 of 1

Chain of Custody Record

Work Order/Task:

Project Name: OVRA

Samplers (Print): John O'Loughlin

Samples Sent to:

PO#

Analysis/# of Containers

#	EPA ID	Date	Time	Matrix	Grab	Composite	Sample ID	Total Containers	Ac Cu Hg Zn						Sampler's Initials	Remarks
1		9-10	854	Sed		X	C-9	1	X						JO	Final Report by 10/18/04
2		9-10	905	Sed		X	C-10	1	X						JO	
3		9-10	915	Sed		X	C-11	1	X						JO	Draft Results by 10/1/04
4		9-10	945	H_2O			RB-2004	1	X						JO	
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

Reliquished By (Signature):	Date/Time	Received By (Signature):	Reliquished by (Signature):	Date/Time	Received for Laboratory by (Signature):
[signature]	9-14/950				[signature]

Reliquished By (Signature):	Date/Time	Received for Analysis By (Signature):	Date/Time	Remarks

Distribution: WHITE - Laboratory CANARY - Other PINK - Inorganics GOLDENROD - Organics

PWK 5235 O068 (05/03)h

OLYMPIC VIEW RESOURCE AREA

YEAR 2
ANNUAL MONITORING REPORT
2004

APPENDIX E

COMMSSIONER'S WITHDRAWL ORDER FOR THE OLYMPIC VIEW SITE

CITY OF TACOMA
November 30, 2004

Tacoma

COMMISSIONER'S ORDER

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
Doug Sutherland
Commissioner of Public Lands
Olympia, Washington 98504

WITHDRAWAL ORDER
FOR OLYMPIC VIEW SITE

The State of Washington being the owner of certain aquatic lands consisting of tidelands and bedlands, Harbor Areas and Waterways adjacent to the Puyallup River delta and Commencement Bay in Pierce County (that area of the bay between the Thea Foss and Sitcum Waterways, including the Puyallup River below the I-5 bridge) hereafter described, has found the following:

The Olympic View site establishes a permanent site for the restoration and remediation of habitat patches in the Puyallup River estuary and corridors that link to the Puyallup River "neodelta," and

The greatest diversity of fish (29 species) was found at Olympic View of all the restoration sites that were monitored in Commencement Bay, and

The site contains the only known eelgrass (*Zostera marina*) bed occurring along the face of the Puyallup delta. Estimates suggest that only 12 acres of eelgrass exist within Commencement Bay. Eelgrass is listed as a priority habitat by the Washington Department of Fish & Wildlife (WDFW) and the scarcity of eelgrass within the bay likely enhances its value. Eelgrass beds provide habitat and feeding grounds for important wildlife species including juvenile salmonids, forage fish, and great blue heron, and

Federal laws obligate the City of Tacoma, Washington State Deparment of Natural Resources (WDNR), and other parties to conduct clean up and restoration of aquatic habitat to help repair damage to the natural resources in Commencement Bay, and

Ensuring environmental protection is a management objective for state-owned aquatic lands (RCW 79.90.455(3)), and

Natural values of state-owned aquatic lands as wildlife habitat, natural area preserves, representative ecosystems or spawning areas are to be considered prior to the WDNR issuing any lease or authorizing any changes in use (RCW 79.90.460(3)), and

The WDNR may withhold from leasing lands which it finds to have significant natural values (RCW 79.90.460(3)), and

Therefore, the Commissioner of Public Lands being fully advised, and believing that the hereafter described aquatic lands between Thea Foss and Middle Waterway are a natural resource of great natural value that should be set aside for conservation purposes and that this stewardship commitment is a significant initial contribution to the recovery of Puget Sound, it is therefore,

ORDERED AND DIRECTED that the records of the WDNR shall note in accordance with provisions of RCW 79.90.460(3) that the property hereafter described possesses unique and significant natural values and shall be withdrawn from leasing, except for habitat restoration or conservation projects, for an indefinite term from the date of signature of this [illegible]

That this order supports the City of Tacoma Natural Resource Damage Assessment Agreement and Consent Decree (Civil Action C97-5336, United States District Court, Tacoma, December 30, 1997).

This order hereby rescinds the Commissioner's Order concerning Olympic View, dated May 24, 2000.

LEGAL DESCRIPTION

That portion of the harbor area fronting and abutting Blocks 29, 30 and 31 of the Amended Supplemental Plat of Tacoma Tide Lands, Sheet 4, approved by the Board of State Land Commissioners October 7, 1902, described as follows:

The portion of the harbor area bounded by the inner and outer harbor lines, the easterly line of City (Thea Foss) Waterway and the westerly line of Middle Waterway;

EXCEPTING THEREFROM, the following Use Authorizations issued by the Department of Natural Resources: lease application numbers 22-A002621, 22-A02787 and 22-002572,

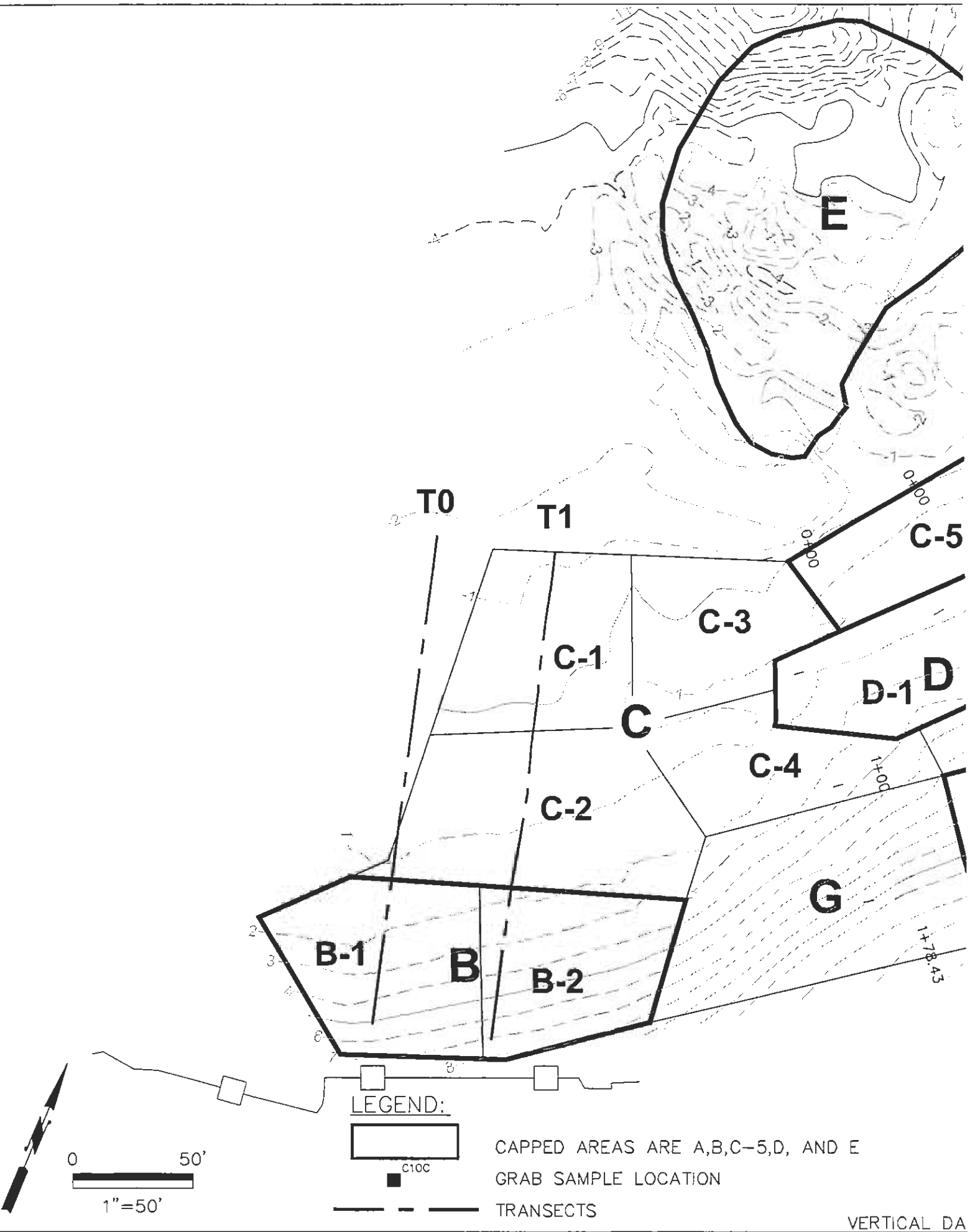
ALSO EXCEPTING THEREFROM, any first class tide lands previously sold by the State of Washington.

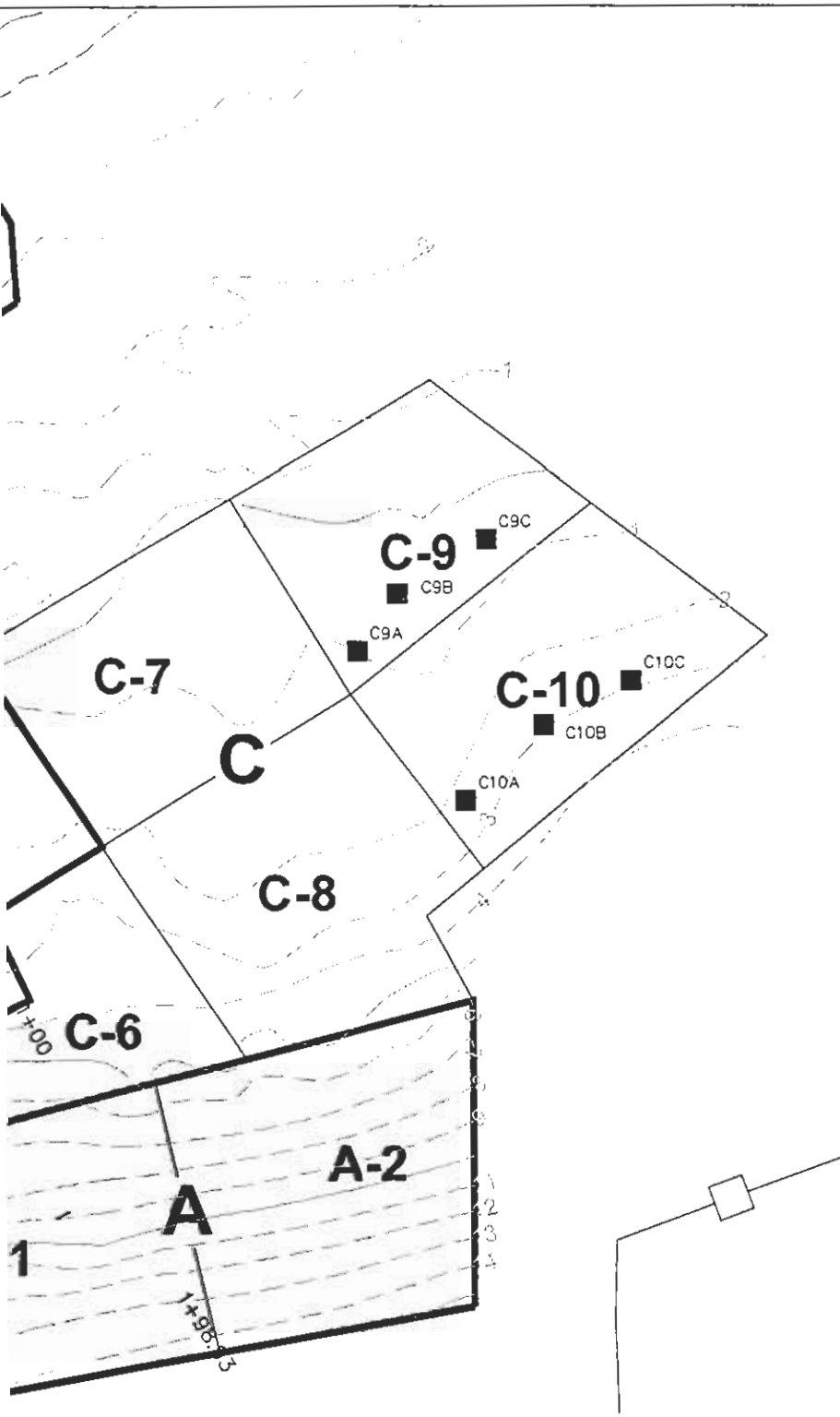
Situated in the City of Tacoma, Pierce County, Washington.

Dated this 10th day of May, 2004.

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

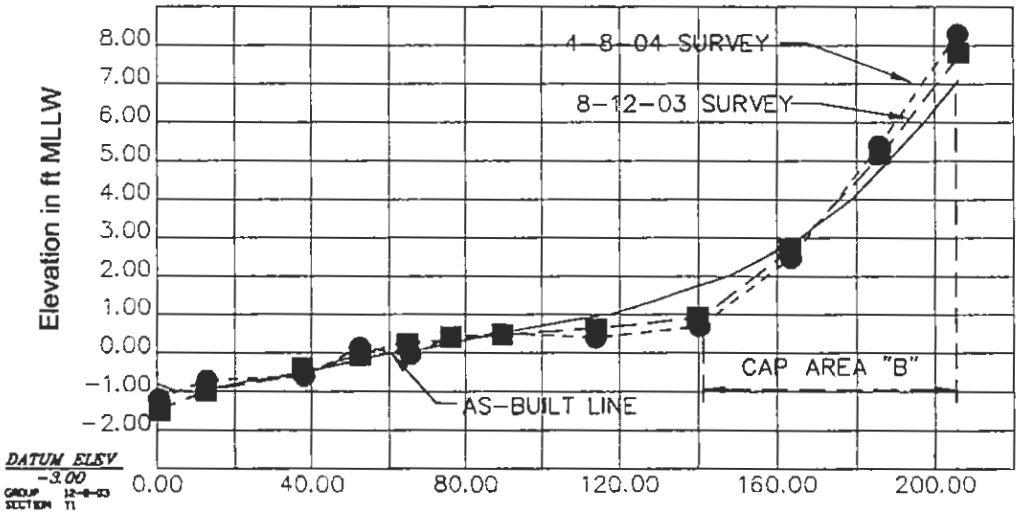
Doug Sutherland
Commissioner of Public Lands


E
T0
T1
C-5
C-3
C-1
D-1
D
C
C-4
C-2
G
B-1
B
B-2
0+00
1+00
1+78.43
LEGEND:
CAPPED AREAS ARE A,B,C-5,D, AND E
C10C
GRAB SAMPLE LOCATION
TRANSECTS
0
50'
1"=50'
VERTICAL DA



DATE 10-19-04	SCALE 1"=50'	CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS	
DESIGNED JO	CHECKED JO	**OLYMPIC VIEW** **RESOURCE AREA** **YEAR 2 MONITORING REPORT**	AK80F6
DRAWN IREG	PROJECT NAME AK80F6		SHEET NO.
DRAWING NAME 10-19-04-BASE			SHEET 1 OF 2

MLLW ACOE



TRANSECT T1

LEGEND:

MONITORING POI

MONITORING LIN

AS-BUILT LINE

MONITORING POI

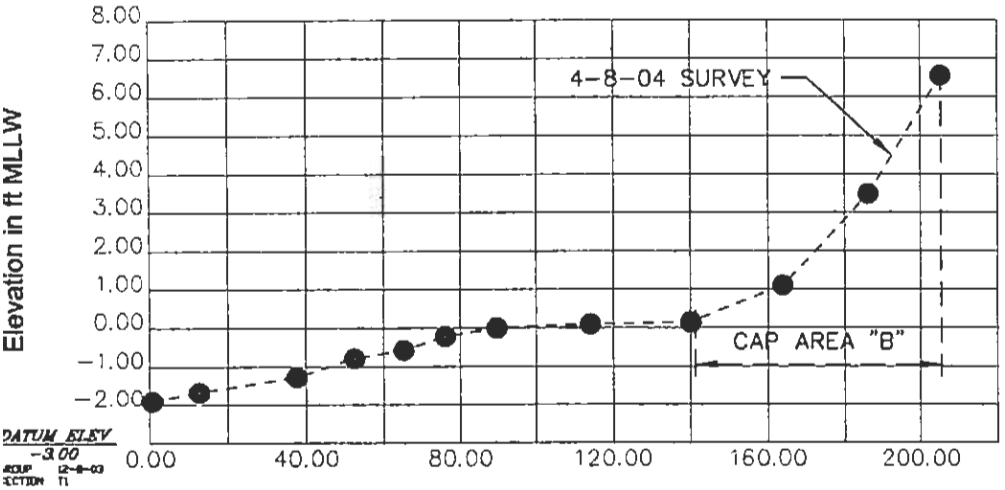
MONITORING LIN

0 50'

HORIZONTAL 1"=50'

0 5'

VERTICAL 1"=5'



TRANSECT T0

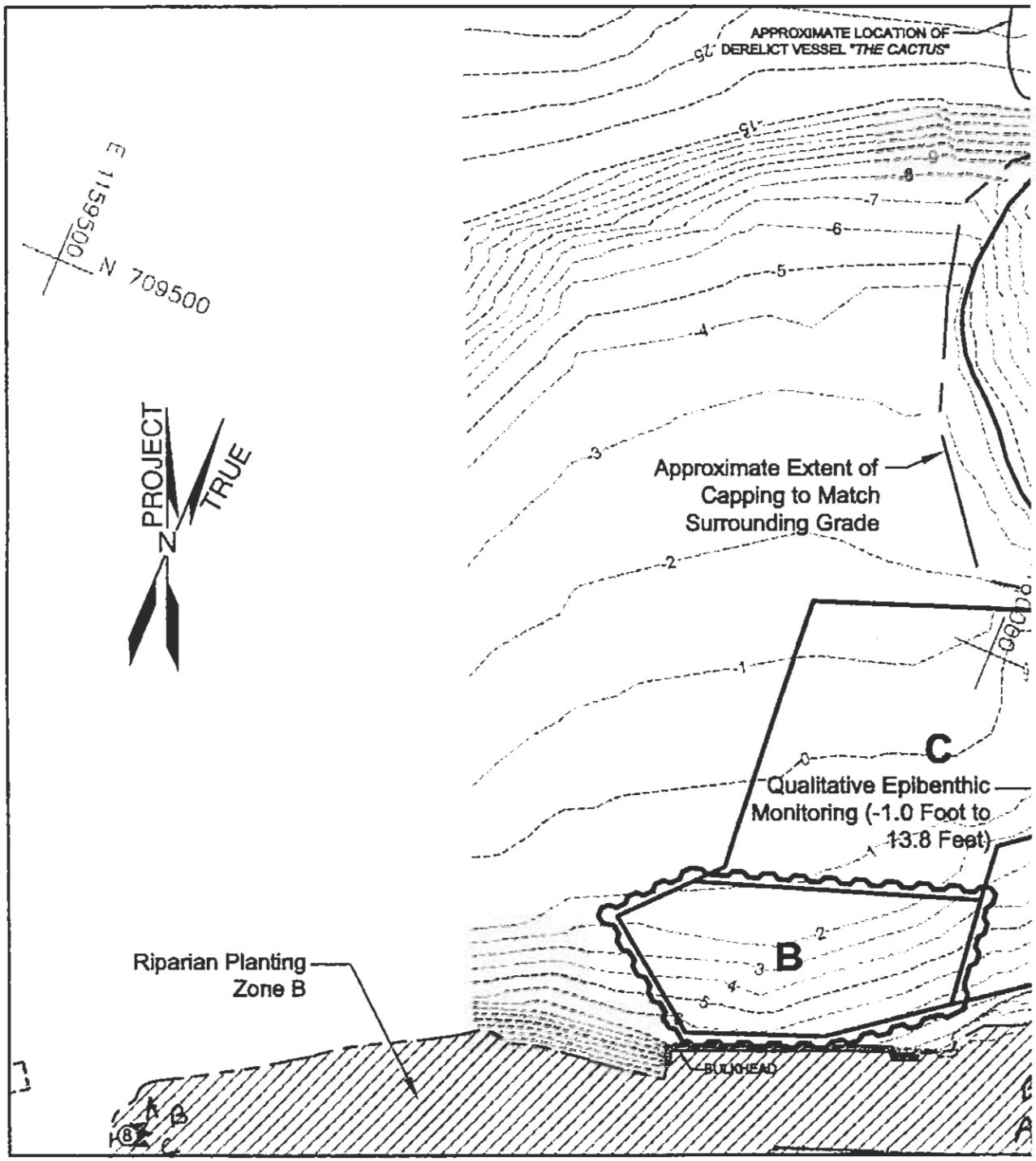
GENERAL NOTES FOR SHEETS 2 & 3

1. SEE SHEET 1 FOR PLAN VIEW OF TRANSECT LOCATIONS

2. ELEVATIONS ALONG THE MONITORING TRANSECT LINES ARE INTERPOLATED BETWEEN THE DISCRETE MONITORING POINTS WHICH ARE INDICATED BY BOXES ALONG THE LINES.

Tacoma	DATE 10-19-04	SCALE 1"=50'	CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS
	DESIGNED JO	CHECKED JO	**OLYMPIC VIEW** **RESOURCE AREA** **YEAR 1 MONITORING REPORT**
	DRAWN REG	PROJECT NAME AK80F6	AK80F6
	DRAWING NAME 10-19-04-BASE		SHEET NO. 2 OF 2

Post-Construction Habitat Restoration Monitoring Loca



Note: See Plan Sheet 9 for location of intertidal erosion protection areas.

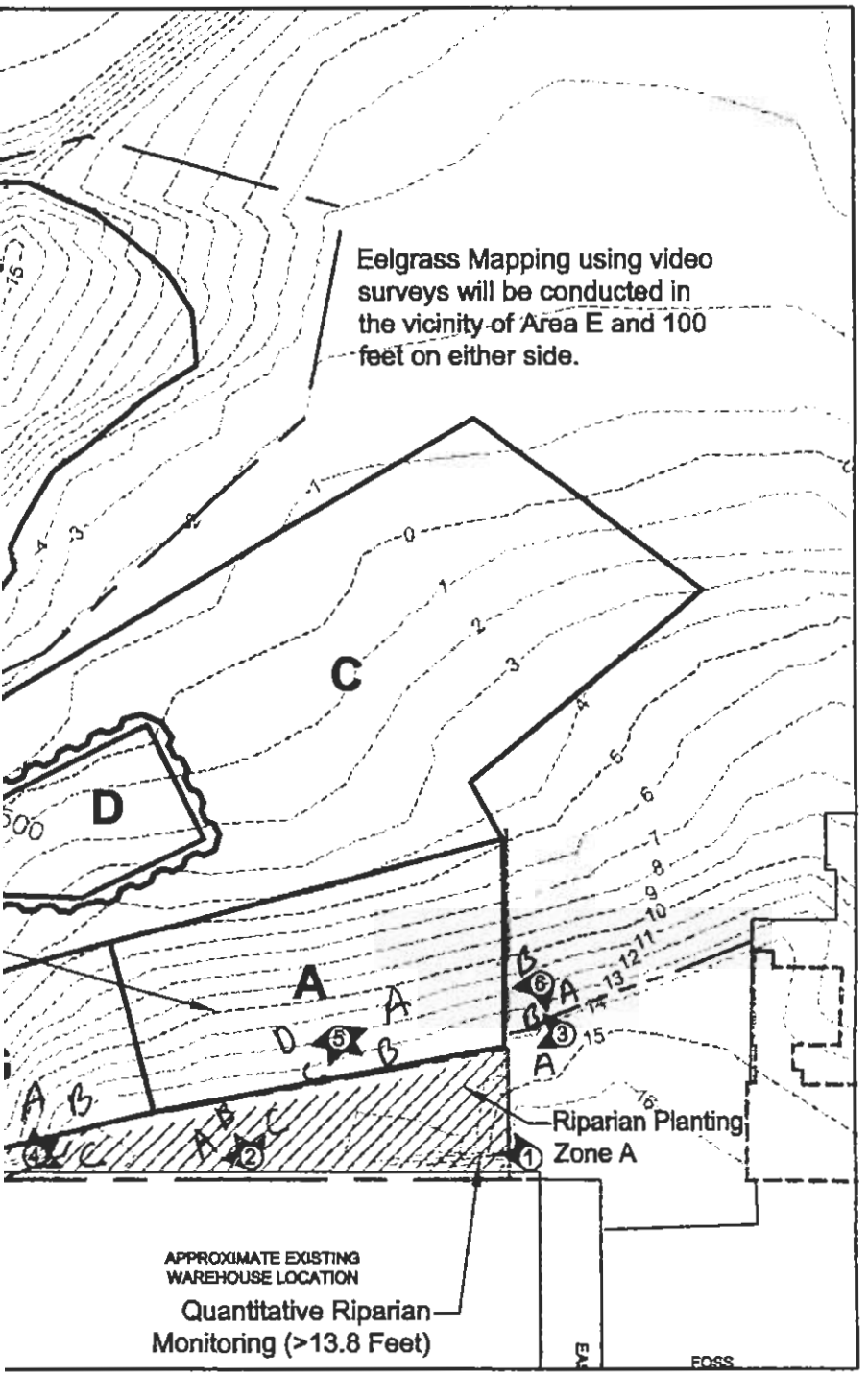
0 50 100 200

Scale in Feet

HARTCROWSER

7614 12/01

Figure 1 MAMP



Legend:

Approximate Photo Point Location and Number

Site Area Boundary and Designation

Riparian Planting Zones (See Plan Sheet 9)

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P1A to the West

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P1B to the Northwest

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P2A to the West

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P2B to the Northwest

Date: 07/14/2003

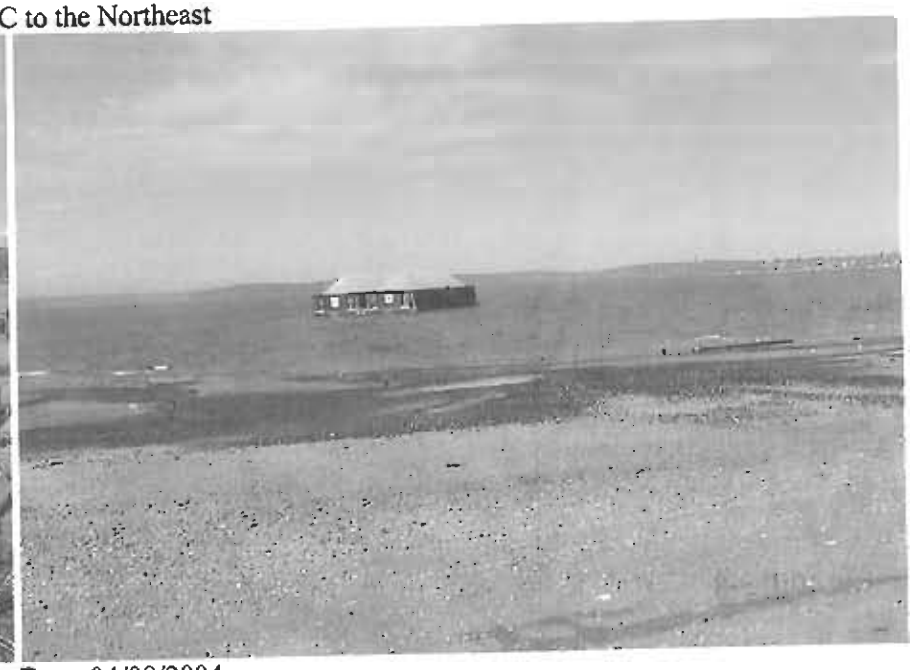
Date: 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P2C to the Northeast

Date 07/14/2003



Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P3A to the Southwest

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P3B to the Northwest

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P4A to the North

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P4B to the Northeast

Date 07/14/2003

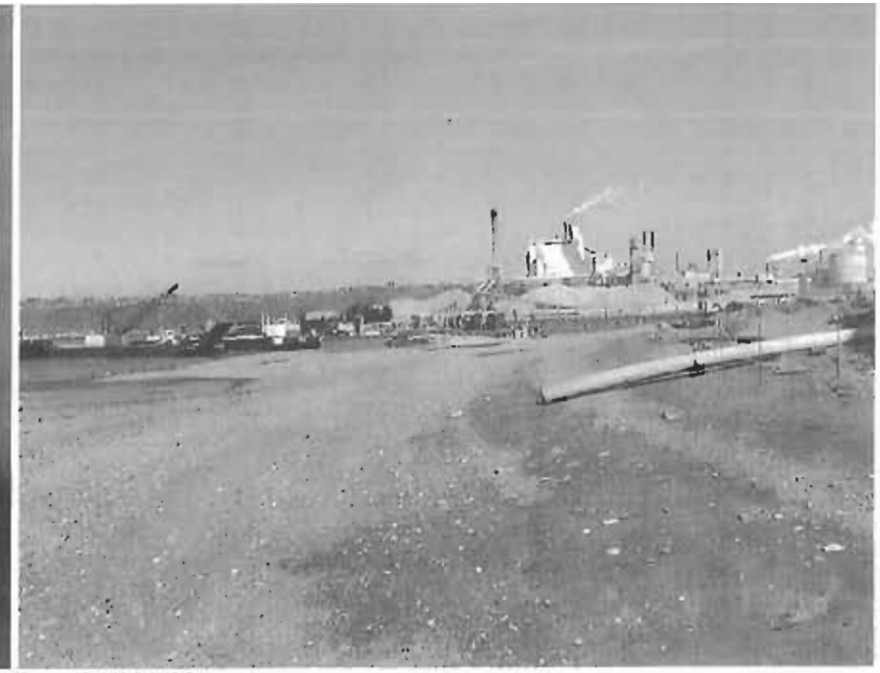
Date 4/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Points P4C to the East

Date 07/14/2003



Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P5A to the East

Date 07/14/2003

Date 04/08/2004

Date 08/30/200

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P5B to the Southeast

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P5C to the Southwest

Date 07/14/2003

Date 4/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P5D to the West

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P6A to the South

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P6B to the Southeast

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P7A to the West

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P7B to the Northwest

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point P7C to the North

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point 8A to the Northeast

Date 07/14/2003

Date 04/08/2004

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Photo Point 8B to the East

Date 07/14/2003

Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

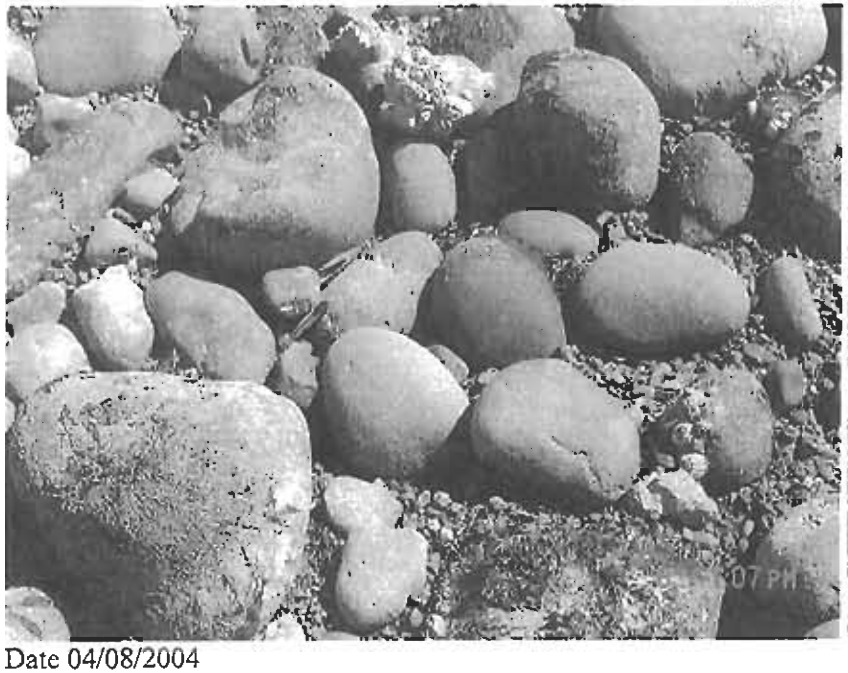
Photo Point 8C to the Southeast

Date 07/14/2003

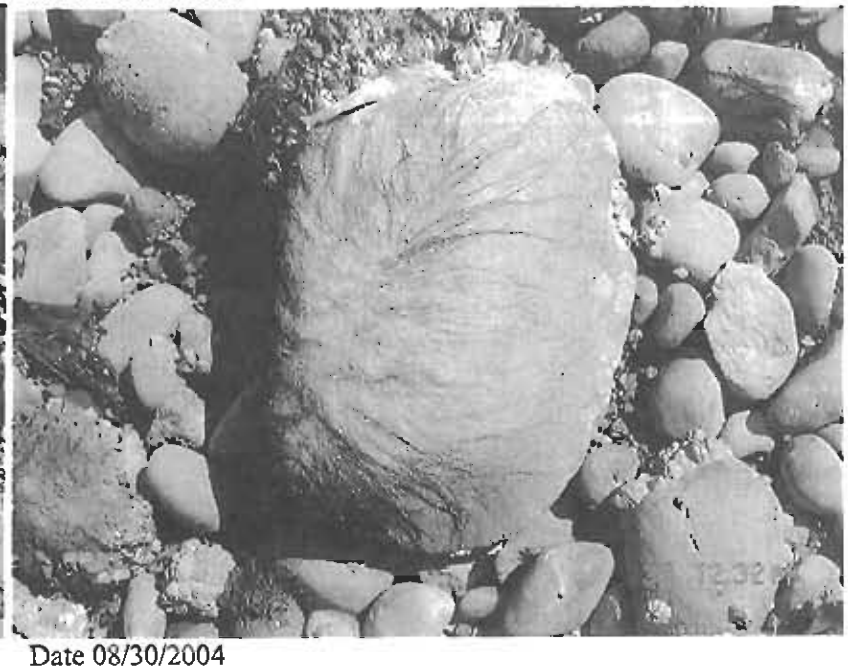
Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Erosion Protection Material A



Date 04/08/2004



Date 08/30/2004

Appendix C: Year 2 Olympic View Monitoring Photos

Erosion Protection Material B

Date 04/08/2004

Date 08/30/2004

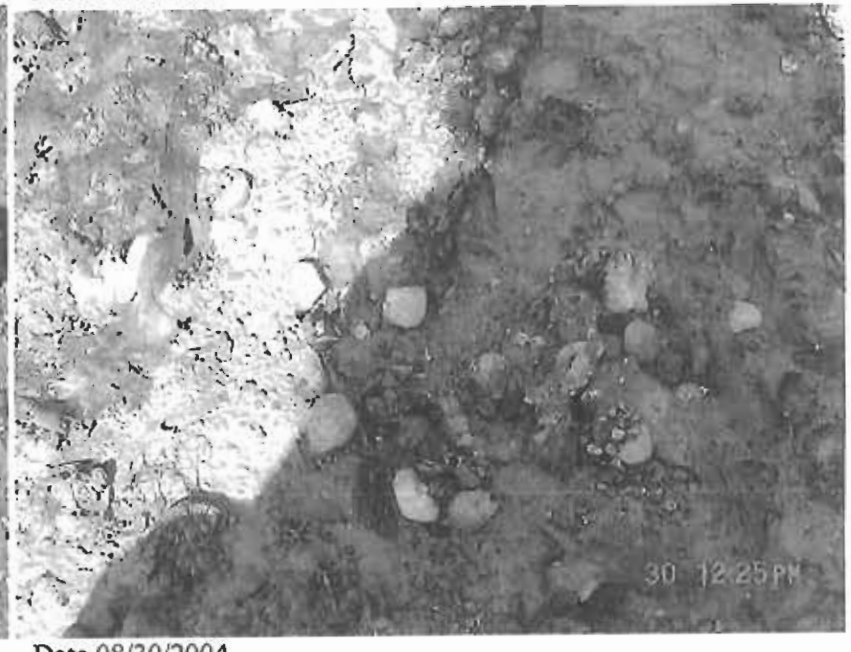
Appendix C: Year 2 Olympic View Monitoring Photos

Capped Area Close-ups

Date 04/08/2004

Date 04/08/2004

Date 08/30/2004



Date 08/30/2004

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

November 4, 2004

Reply To
Attn Of: ECL-111

John O'Loughlin
City of Tacoma, Public Works Department
Project Coordinator
Environmental Services Science & Engineering
2201 Portland Avenue
Tacoma, WA 98421-2711

Subject: EPA Comments on the Year 2 Annual Monitoring Report 2004
Prepared by the City of Tacoma (October 28, 2004)
Olympic View Resource Area, Tacoma, WA
Administrative Order on Consent for Removal Action, CERCLA 10-2001-0069

Dear Mr. O'Loughlin,

With this letter, EPA is providing comments on the above-referenced report. Pursuant to Section V.B.1(c) of the Administrative Order on Consent, a revised report is due to EPA within 30 days (December 4, 2004).

Copies of the Year 2 Annual Monitoring Report were provided by the City of Tacoma to Joyce Mercuri of the Washington Department of Ecology, Robert Taylor and Jennifer Steger of NOAA, Leslie Ann Rose of Citizens for a Healthy Bay (CHB), as well as to other Natural Resource Trustees. EPA received comments from CHB, and relevant comments have been incorporated into this letter.

In Year 3 (2005), please ensure that all aspects of Section 7 "Contingency Planning and Response" of the Long-term Monitoring and Reporting Plan are implemented.

If you have any questions, give me a call at 206-553-2141.

Sincerely,

Karen Keeley
Project Manager

FAX: 206-553-0124
E-mail: keeley.karen@epa.gov

Printed on Recycled Paper

cc:
Douglas Mosich, City of Tacoma Legal Department
Bill Sullivan, Puyallup Tribe

e-mail of letter sent to:
John Carleton, WDFW
Jay Davis, USFWS
Tom Gibbons, WDNR
Joyce Mercuri, Ecology
Leslie Ann Rose, CHB
Marla Steinhoff, NOAA
Glen St. Amant, Muckleshoot Tribe
Jennifer Steger, NOAA

EPA Comments on Year 2 Annual Monitoring Report 2004
Olympic View Resource Area, Tacoma, WA

1. Page 2, Surface Sediment Quality Monitoring. Revise text: "In Year 2, the LMRP did not require that monitoring be conducted to evaluate contaminant movement through the cap via diffusion or other mechanisms."

2. Page 3, Section 3.2. Please define the term "field duplicate" to clarify that the sample was prepared in the field by filling two containers with the homogenized sediment.

3. Page 3, Section 4.1, Line 3. Revise text: "results in Area~~s~~ B, and again."

4. Page 4, 1st Para, 1st sentence. Clarify that the 'isolated instances' refers only to an exceedance of an early warning level at one of the four Transect 1 stations.

5. Page 4, 1st Para, 3rd sentence. Clarify that the 'nominal change' from Year 1 to Year 2 was -0.1 ft.

6. Page 4, 1st Para. Insert new 4th sentence, clarifying that based on Year 2 results for Area B, there is an approximately 13 inch buffer of clean sediment over the required cap thickness of 32 inches.

7. Page 4, 3rd Para. Revise text: "...the removal action has been successful, to date, in the physical isolation...".

8. Page 4, 4th Para. Revise the first sentence to clarify that in 2004, there was only a single exceedance (at one of the four stations in Transect 1) of an early warning value.

9. Page 4, Section 4.2. Clarify how sediments were obtained for the 'second' analysis – were archived sediment samples used? Were they properly handled in accordance with requirements of the LMRP QAPP? Were the mercury samples really re-run within 28 days?

10. Page 5, Section 5. Revise text: Based on Year 2 monitoring results, no contingency actions are required.

11. Table 1. The "As Built" values shown for Transect 1, Capped Area B do not all match the values reported in the Year 1 report (e.g., 6.5 in this report vs. 6.8 in last years' report; 5.0 vs 4.8; 1.2 vs 1.0; 0.8 vs. 0.6; and -1.3 vs -1.9). Please determine why these discrepancies occur and provide accurate values in this table. These modifications will likely affect results shown in Column 4. Also, please add another column showing the difference between "As Built" and "Year 2".

12. Table 4. Add a footnote clarifying that C-11 is a field duplicate, and define the term in the footnote.

13. Sheet 2 of 2. Correct the spelling of ‘discreet’ (discrete). Add “Elevation in ft MLLW” to the vertical axis. Confirm whether the 8.3 value is accurately plotted for Transect 1 (it appears to be closer to 9.0). Also, the plotted values from 0.1 to 0 do not appear to be accurately plotted.