

A photograph of a forested shoreline. In the foreground, there is a body of water with ripples. In the middle ground, a pier with a metal railing extends from the shore into the water. A boat with a blue roof is docked at the pier. The background is a dense forest of tall evergreen trees.

**HAGGITT CONSULTING**

**2007 Bark Monitoring Dive and Video Survey Report**

**Hobart Bay LTF/ LSA**



APRIL 23, 2007 AND APRIL 24, 2007 SURVEY

# Hobart Bay Log Transfer Facility and Log Storage Area

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Submitted to:  
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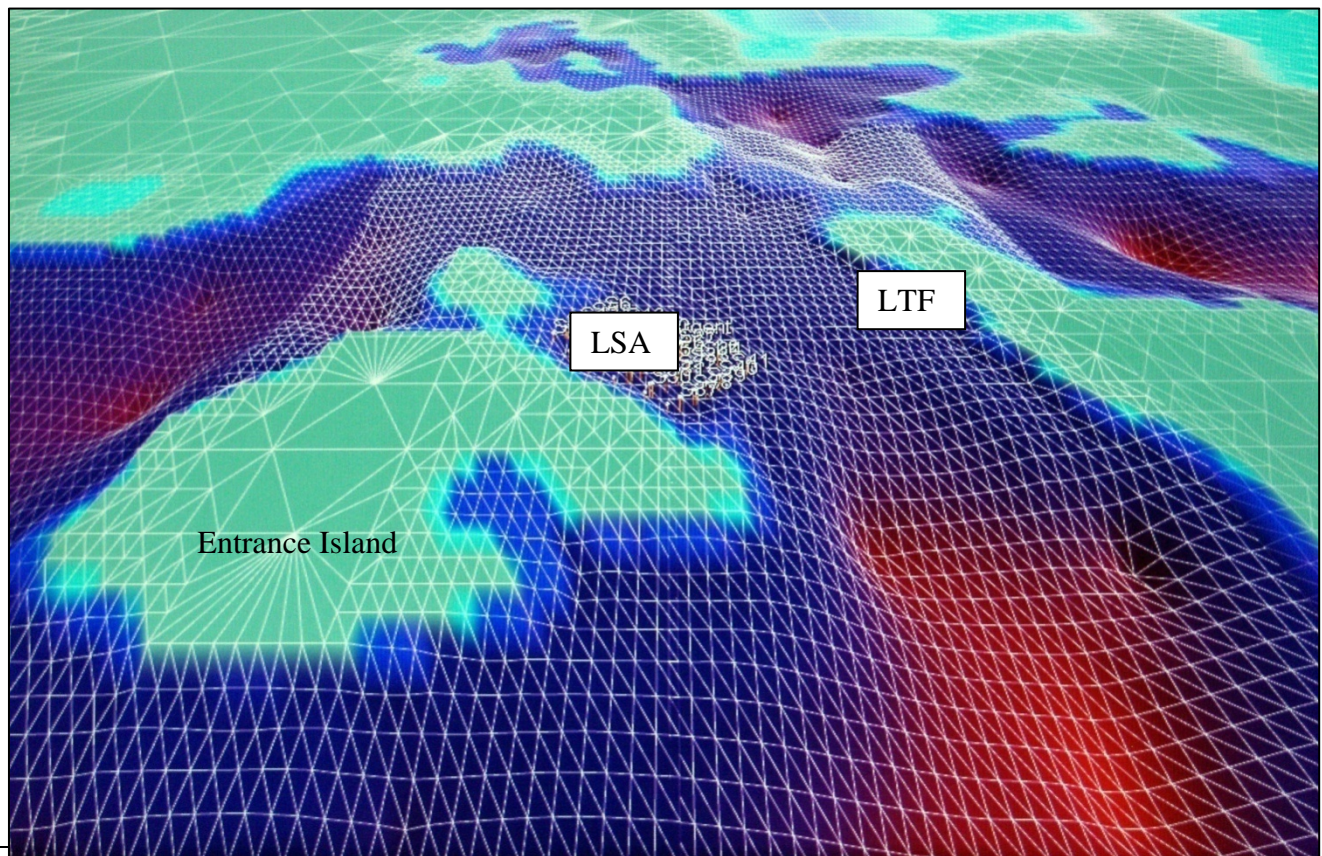
## *Abstract*

An underwater reconnaissance was conducted on April 23, 2007 and April 24, 2007 at the Hobart Bay Log Storage Area (LSA) and Log Transfer Facility (LTF) to determine the extent of bark debris accumulation on the ocean bottom. Hobart Bay is located on the west coast of the Southeast Alaska mainland midway between Petersburg and Juneau. The LSA is located in Hobart Bay on the east coast of Entrance Island and the LTF is located due east of that facility on a peninsula from the Alaska mainland.

This inspection was done under contract to the Alaska Department of Environmental Conservation to assess the current extent of bark debris coverage in the former LSA and LTF.

The parallel pattern used to Plan View Video survey the LSA site, consisted of 6 transects at 200 foot spacing intervals. The sampling frequency was at 100 foot intervals. The diving survey utilized nine parallel transects at a 100 foot interval. The dive survey sampled at intervals of 25 feet along those transects. The survey methods remained in compliance with the standard and alternate methods that can be found in “**Required Method for Bark Monitoring Surveys under the LTF General Permits**”.

The survey documented that the LTF and LSA contained no continuous coverage by bark debris and only a few small patches of discontinuous coverage by bark debris. The Log Storage Area survey using the Plan View Video quantified the extent of the total survey area as 13.78 acres. The Log Transfer Facility quantified the total survey area as 3.82 acres.



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## Introduction

The Hobart Bay LTF/LSA has not operated for several years. The Log Storage area is located in the western portion of Hobart Bay, with a southern exposure. The weather conditions and underwater visibility were fair during this bark assessment survey. The bathymetric conditions at the site are that of a flat grade at an average elevation of -42 ft MLLW. Bark debris and other organic debris were noted in discontinuous coverage and tended to congregate at areas where log rafting had been extensively used.

A summary of the approach and techniques used in the LTF/LSA survey is provided below in the Methods Section. The result of the survey is then presented together with estimates of the spatial extent and thickness of bark cover on the seafloor.

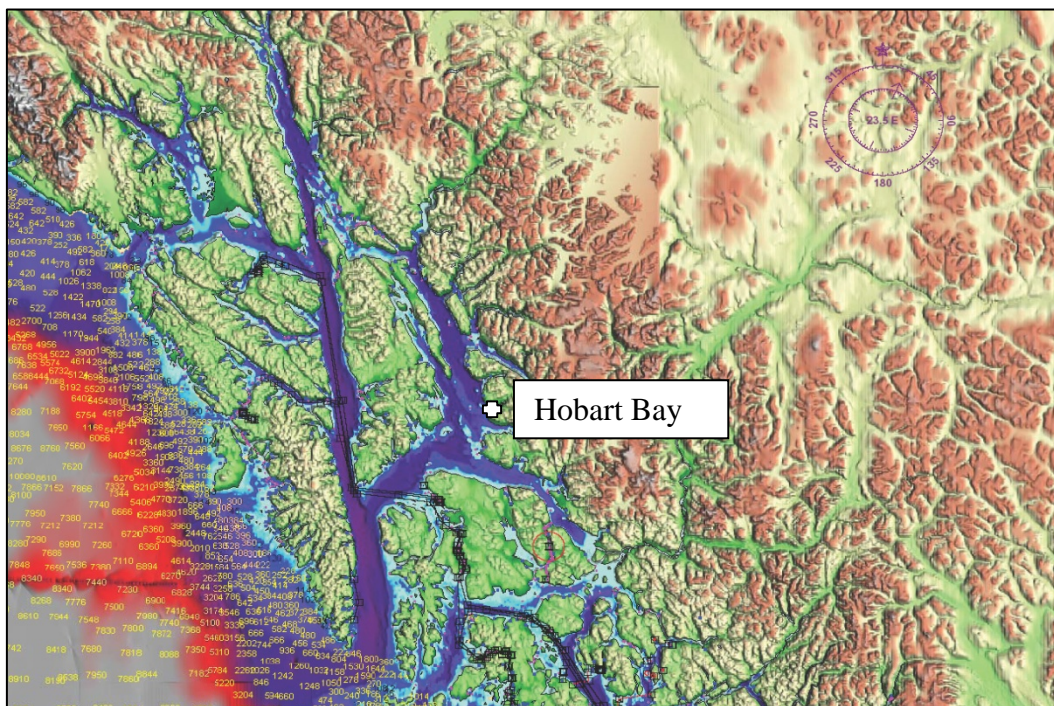


Figure 1 Satellite Vector Map

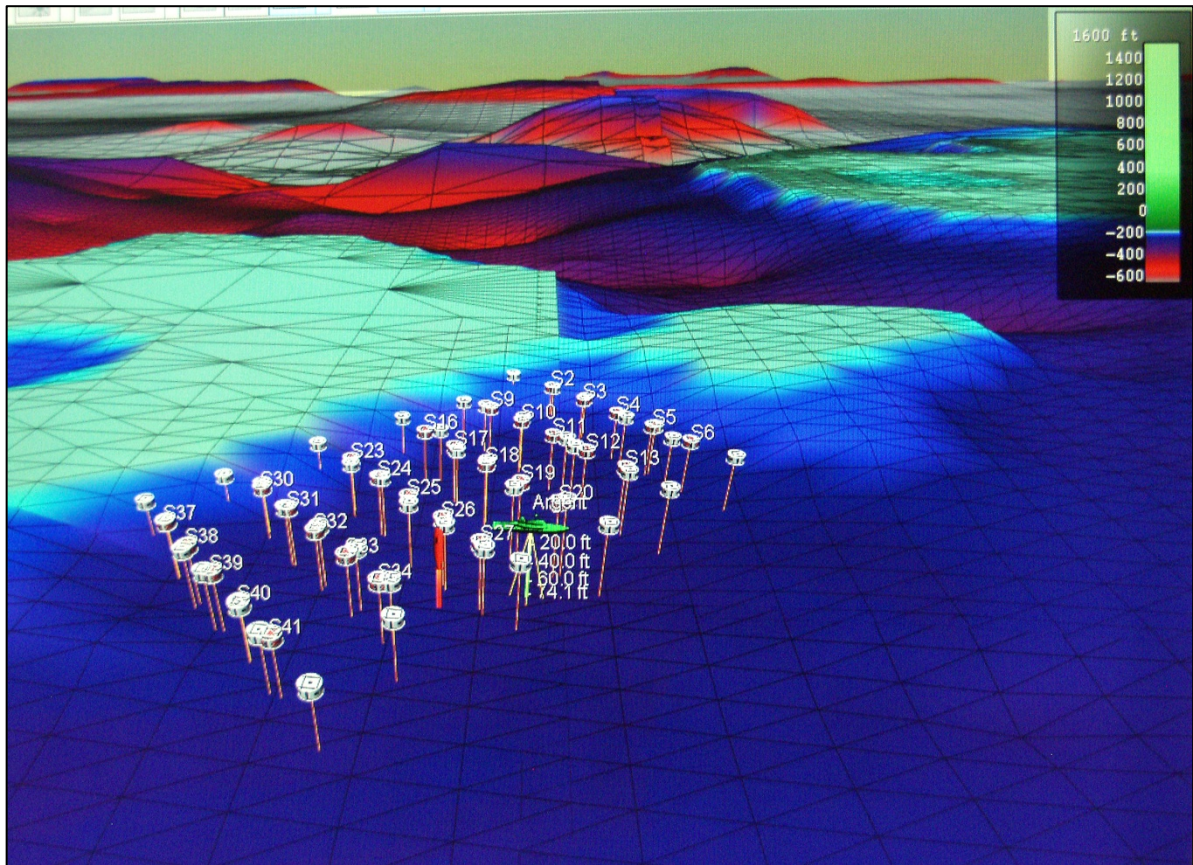


**Figure 2 US Topographic Map**



**Figure 3 Vector Map with transects and depth contours**





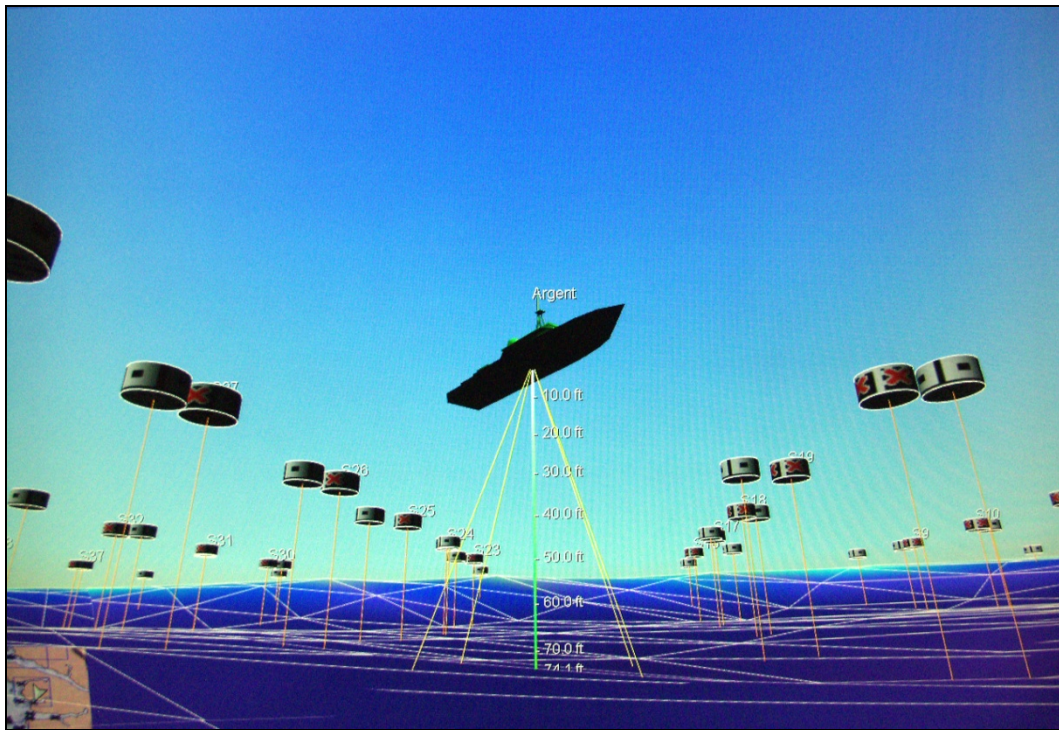
## Dive Survey Methods

Standard diving methods were used to survey the Hobart Bay Log Transfer Facility. The methods used can be found in the publication “Required Method for Bark Monitoring Surveys under the LTF General Permits.”

Vessel based personnel monitored the surface supplied air diver’s progress and used radio/diver-telephone communications for course adjustments. Transect end points were recorded on DGPS to provide actual headings traveled.

The parallel transect interval spacing was set at 100 feet. The transects were terminated by the requisite of beyond the area of significant bark accumulation, or at a depth of 60 feet MLLW if the cover is discontinuous. In the event continuous cover is observed at 60 feet MLLW transects will continue until 100 feet of seawater; or the end of continuous cover, whichever comes first.

Observations were taken at sample point intervals of 25 linear feet along each parallel transect. This interval distance was established with the use of a rolling tape measure, the accuracy is reported as +/- 3 inches at 1000 feet. Each sample point was an approximate three-foot square on the bottom surface. At each sample point the “percent coverage” by bark was recorded to the nearest 10 percent. The estimated thickness of the bark cover was measured by probing with a handheld ruler. A plan view photograph of the bottom surface was taken with a Nikon professional digital camera to record bark debris present, algal life, animal life, and substrate. At each sample point observations were noted on the abundance and type of marine organisms present, the native vegetation, and composition of the substrate. Data including the water depth, current direction, and estimated current velocity also were incorporated into the field notes. Each of the sample points also included relevant observations on operational debris and existing bark debris. Sample location depth notations are based on readings from a Cochran Consulting Nemeses IIA dive computer calibrated for saltwater and altitude.



## Video Survey Methods

The Video survey system is comprised of a 12 channel satellite receiver providing DGPS and WAAS coordinates to shipboard navigation and infrared camera equipment. The satellite receiving antenna is located directly above the sample point

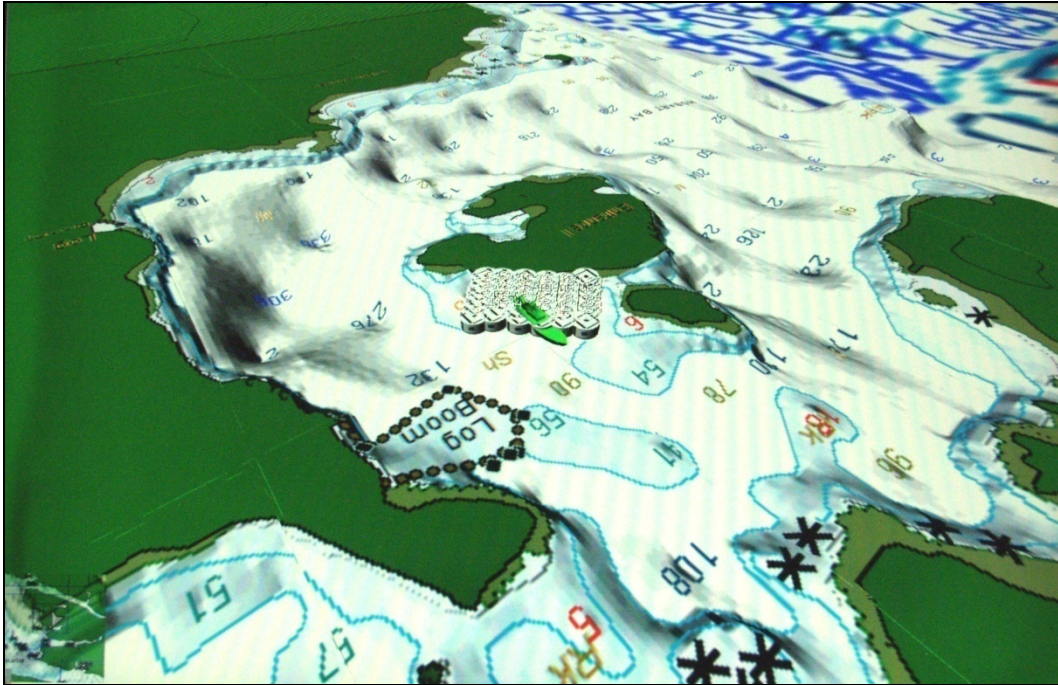
being observed. The camera is weighted and lowered on lead line from the vessel to within 2 vertical feet of the sample point. The infrared camera records the substrate condition for at least 60 seconds, this video feed is combined with a live satellite data stream that includes; Latitude and Longitude (to the fourth decimal point), speed, heading, time (Greenwich mean time) and date. The video is then edited to the 30 second segment that includes the projected sample point location. This survey also included Video “stills”.

The live data and tapes that result from this survey are reviewed by professional bark monitoring divers to determine the percent of bark coverage at each sample point. Observations of the debris viewed over the full 60 seconds of tape are compared against the representative clip of the sample point to ensure fair portrayal of the intended sample point. Observations are recorded in data tables and a coverage map is produced. Each report includes a video appendix of the sample points observed.

A pre-drafted and approved survey design is completed and recorded in the Quality Assurance Project Plan. However, individual site conditions present at the time of the survey may require that plan be altered to account for unexpected conditions or to best delineate the debris at the site. In such cases the fixed hub reference points for the transects delineating bark debris areas are selected by observing the site conditions, operational history and positioning the hubs (baseline) in a location that would provide the best survey coverage of the area used as a Log Storage Area or Log Transfer Facility. This survey did not require adjustments to the survey design contained in the Quality Assurance Project Plan.

During the survey DGPS/WAAS coordinates are acquired at the hub and each sample point along the transect to facilitate relocation. Transects were established at 023 degrees magnetic and 200 foot intervals for the Plan View Video Survey. Transects and sample points were pre-plotted onto an electronic chart, with coordinates. The vessel tracked on this chart using a satellite receiver that provides data for the electronic chart software to trace the vessels progress along the transect. Transect sample point intervals were set at 100 feet.

The transects were terminated by the requisite of beyond the area of significant bark accumulation, physical barrier or the required scope of services.



*Bathymetric view with a vector chart overlay, the log boom in this view is no longer at the site.*

### **Area of Bark Cover**

For each survey, the percentage of bark coverage was determined by using the protocol for operating a bark-monitoring program given in the EPA General Permit. The area calculation used in this report is outlined in the ADEC publication "Required Method for Bark Monitoring Surveys under the LTF General Permits".

Area calculations were accomplished by drafting scaled transect diagrams from the sample point tables in TurboCAD Professional V10. The TurboCAD program then accomplished the area calculations. ADEC has approved the use of AutoCAD programs for area calculations.

# Hobart Bay LTF/LSA Dive and Video Survey

*Surveyed on April 23 and April 24, 2007*

**T**he survey was conducted under contract to the Alaska Department of Environmental Conservation.

An underwater reconnaissance was requested to determine the representative condition of an area formally operating as a Log Transfer Facility (LTF) and a Log Storage Area (LSA). The dive and video survey was conducted on April 23, 2007 and April 24, 2007. The LTF site surveyed is located in Hobart Bay, on the south east Alaskan mainland. The LSA site is situated in Hobart Bay, between Entrance Island and the LTF; located on the Alaska mainland.

This investigation documented findings according to the Alaska Department of Environmental Conservation (ADEC), Environmental Protection Agency (EPA) and NPDES requirements. The percentage of bark coverage was determined by using the protocol for operating a bark-monitoring program given in the EPA General Permit. The area calculation used in this report is outlined in the ADEC publication “**Required Method for Bark Monitoring Surveys under the LTF General Permits**”.

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## Findings

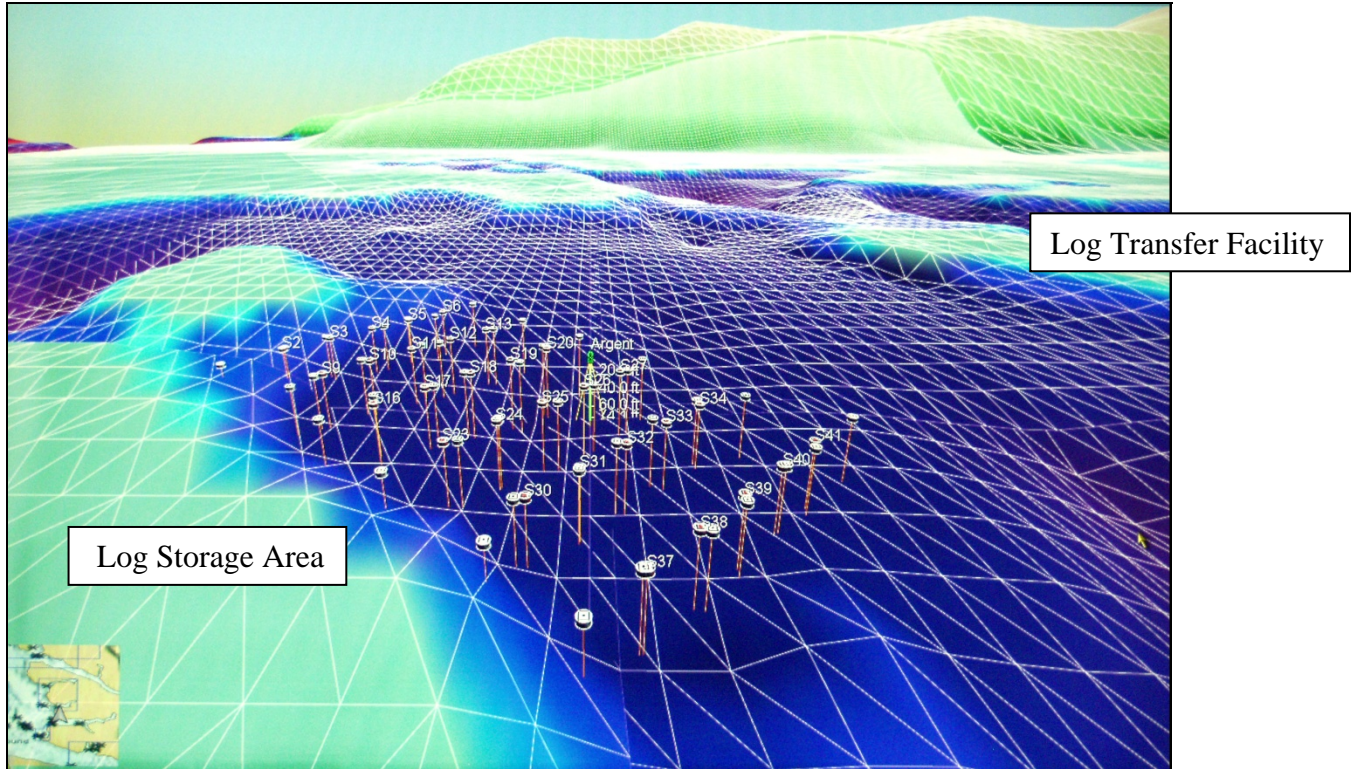
### Dive Survey Results:

Continuous Coverage	Discontinuous Coverage	Total Survey Area
0.00 Acres / 0.00 M <sub>2</sub>	0.00 Acres / 0.00 M <sub>2</sub>	3.82 Acres / 15, 465 M <sub>2</sub>

### Video Survey Results:

Continuous Coverage	Discontinuous Coverage	Total Survey Area
0.00 Acres / 0.00 M <sub>2</sub>	0.00 Acres / 0.00 M <sub>2</sub>	13.78 Acres / 55, 779 M <sub>2</sub>

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**Log Storage Area**

Weather conditions during the survey consisted of overcast skies with winds at less than 5 knots. Surveying by video camera commenced on April 23, 2007; during mid water. The tidal station (subordinate station #1715) was used to correct depths to MLLW. The station reported a tide level of 8.2 ft at 9 a.m. The current conditions remained negligible. Seawater temperature was recorded at 41 degrees F. The horizontal visibility was estimated to be 10 feet.

The Log Storage Area utilized six parallel transects perpendicular to the shoreline. These transects emanated from a bearing line located at the east shore of Entrance Island, traversing the bottom on bearings labeled: T1 - T6 at 023 degrees. A total of 42 sample locations at a 100 foot interval distance were assessed.

The Log Transfer Facility utilized nine parallel transects emanating from the shoreline of the mainland peninsula in a perpendicular arrangement. These transects were assessed by standard bark monitoring methods. A total of 82 sample points were observed during the dive survey. Site conditions remained steady with winds less than 5 knots and overcast skies. Surveying concluded at 6 p.m. on April 24, 2007 during mid tide. The tidal station (subordinate station #1715) was used for depth corrections, reporting a 6.2 ft tide level at 6 p.m. The tidal current velocity was estimated to be 0.0 knots. The horizontal visibility remained constant and was estimated to be 10 feet. The grade for these transects remained fairly flat.



Figure 4 Drive Down Ramp **Hub Coordinates: 57 25 153 N 133 25 538 W**

## Observations

### Dive Survey

Surface supplied diving apparatus was used that included voice communications with surface personnel.

The bark debris encountered varied from trace to 10% coverage. No evidence was found of bark pieces mixed in with natural substrate. All the pieces were fine in character and resided on the surface of a fairly hard substrate of sand and gravel.

Visibility conditions remained constant throughout the balance of the survey. At depths of 15 feet, the horizon of visibility reduced to about five linear feet as conditions grew darker. This may have been a result of seasonal plankton blooms common throughout Southeast Alaska during this time of year. However, the visibility did not hamper the assessments of surface bark debris.

The bark debris observed, all appeared to be brittle in nature. Absent from the diver observations was any indications of *Beggiatoa*.

### Plan View Video Survey

The Plan View Video Survey at the former LSA site recorded bark that was mostly zero or trace coverage, with a single point of 50 percent bark cover, and a few points of lesser bark cover. Again, there was no continuous coverage by bark debris. The video survey covered nearly 14 acres of the Log Storage Area and the bark debris encountered was easily distinguishable from the bottom sediments. The pieces tended to be larger in size than those observed at the LTF dive survey and ranged between one to six inches in size. The bark appeared to be brittle and was easily disturbed when the PVV camera ballast weight dragged through it. Viewing the areas that the cameras' ballast weight dragged through, revealed natural a gravel substrate only a few inches below the area that had been previously covered in bark. The observations are of small areas of discontinuous cover that are thin in thickness and brittle in nature.

The bark cover at both the LTF and LSA was not consistent enough to map any contiguous areas of discontinuous cover. No single point of continuous cover was observed at any station.

Generally, the observations are that of a 4:1 grade of sand and gravel. The bark debris appears to be brittle, and not mixed with the top few inches of the substrate. Marine life is considered average in abundance in comparison with other bays with comparative flushing.

This determination is based on the calculations derived from the transect data collected for this report only. For further service regarding this report, please direct inquiries to (253) 209-9380 or e-mail at [Haggitt1@juno.com](mailto:Haggitt1@juno.com).

Respectfully submitted,

Stephen Haggitt  
December 19, 2007



## Survey Summary

The Hobart Bay LTF and LSA contain only insignificant amounts of bark debris from industrial sources. These sites appeared to have nearly completed, a full recovery from any adverse effects logging activity may have once had on them. The remaining bark debris is brittle in nature, small in size and well dispersed.

This survey used standard reporting methods and included only coverage that was determined to be 10% to 90% in the reported discontinuous coverage area. Determinations of bark debris coverage at 100% is reported as continuous coverage and determinations of bark debris coverage of less than 10% are reported as zero or trace coverage.



Figure 5 DNR Vicinity Grid

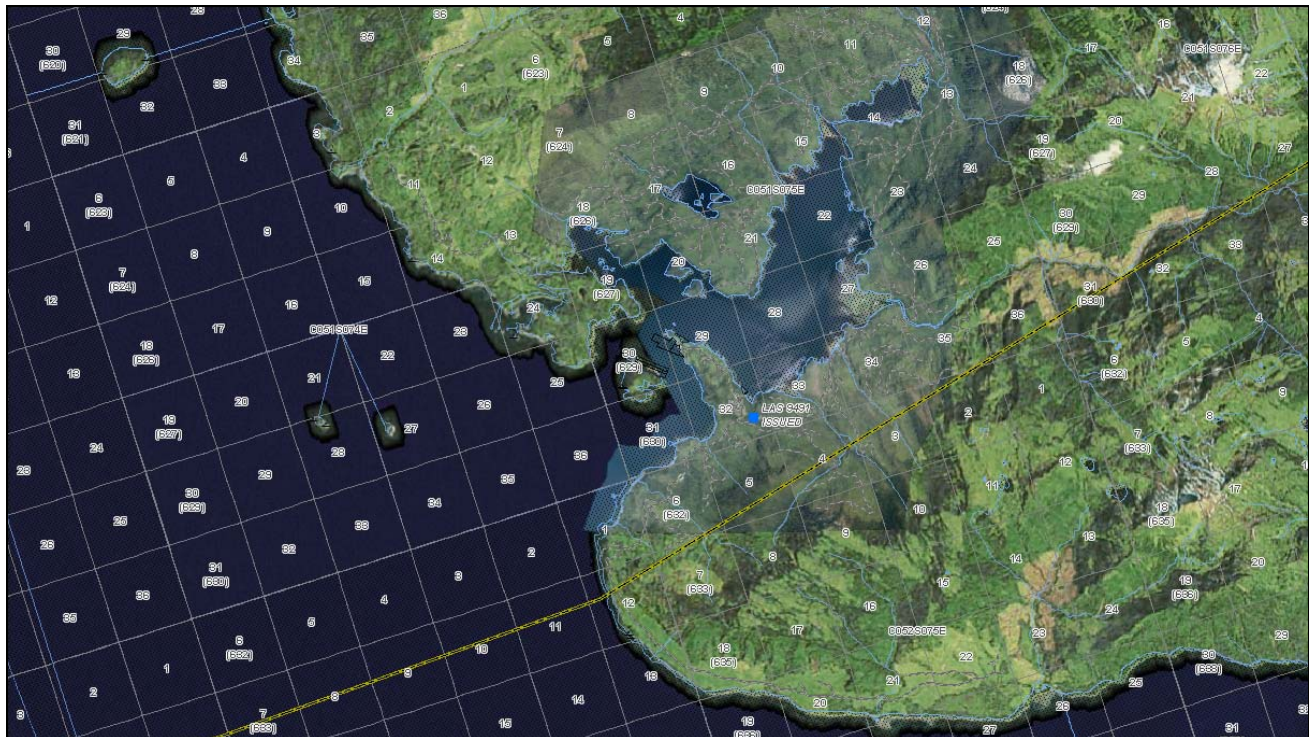


Figure 6 DNR Area Grid

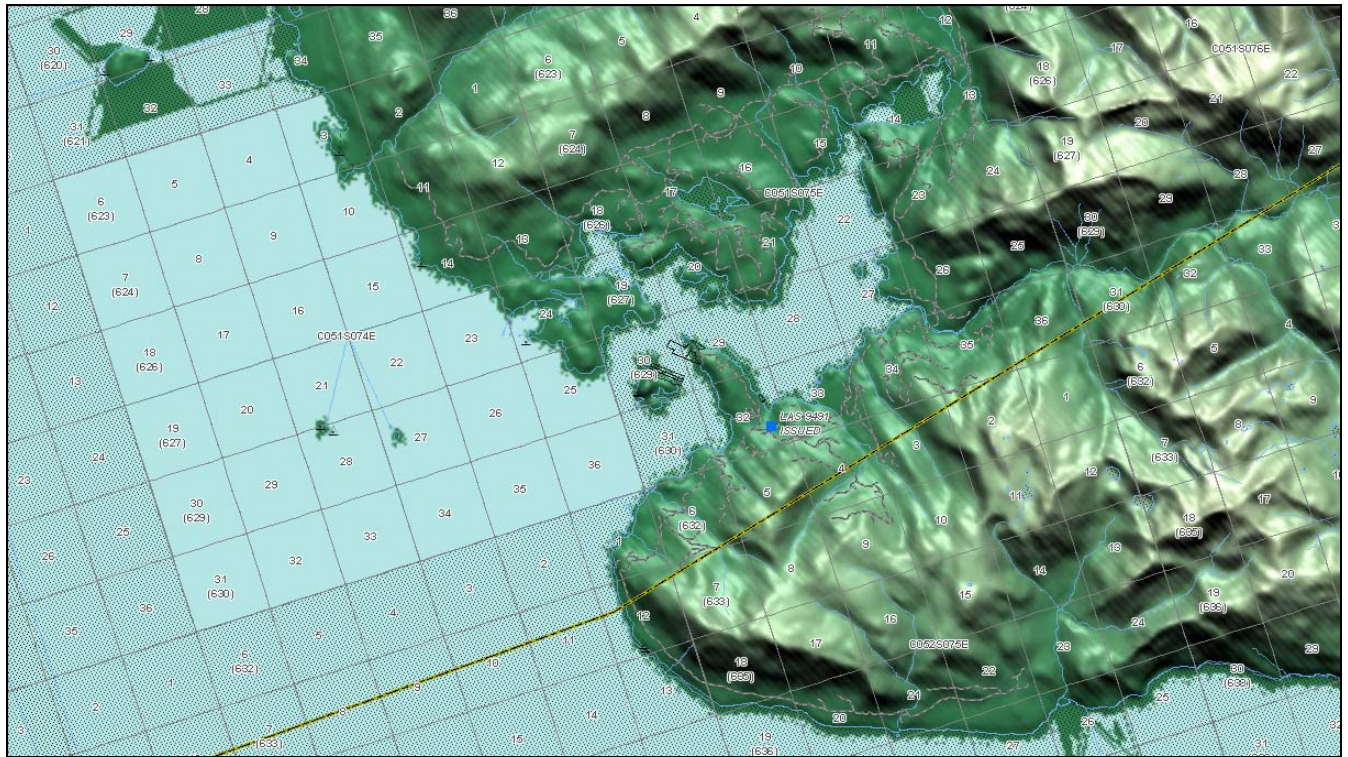


Figure 7 DNR Vicinity view with grids and land contours

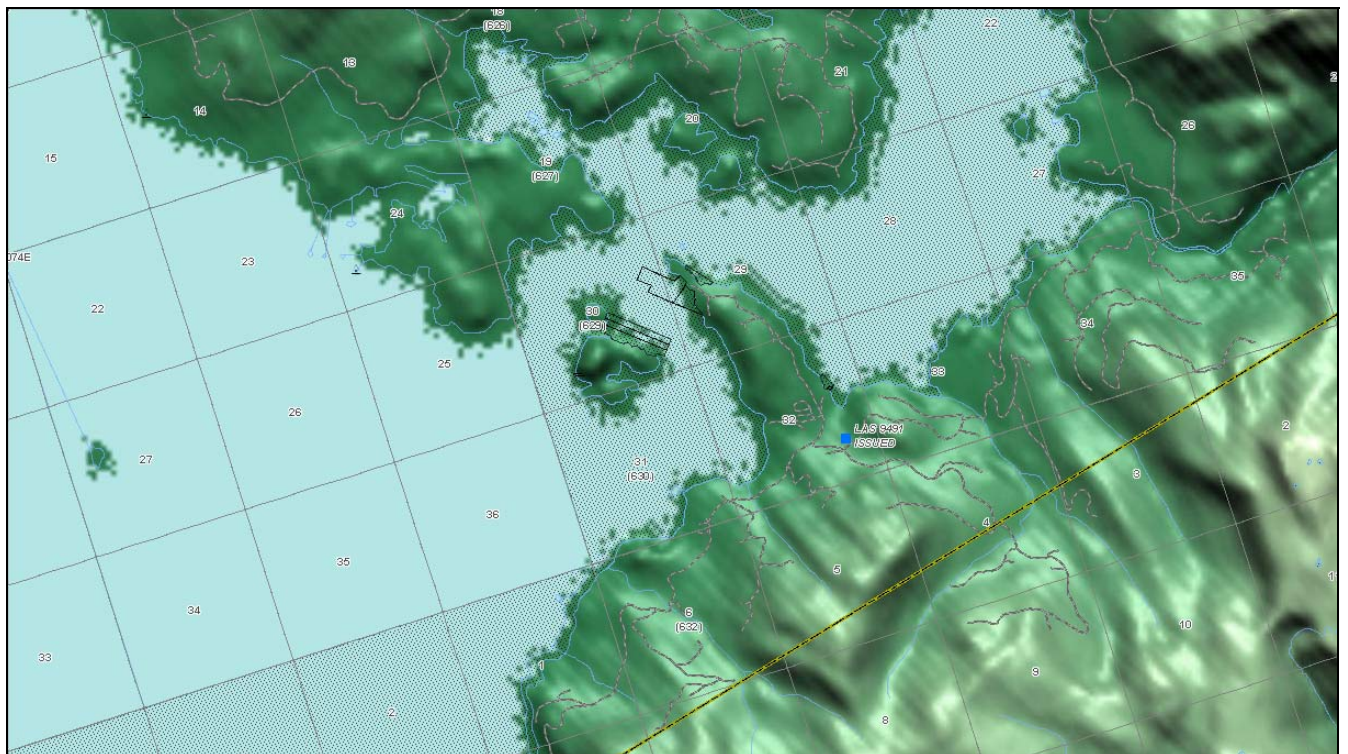


Figure 8 DNR Area view with grids and land contours



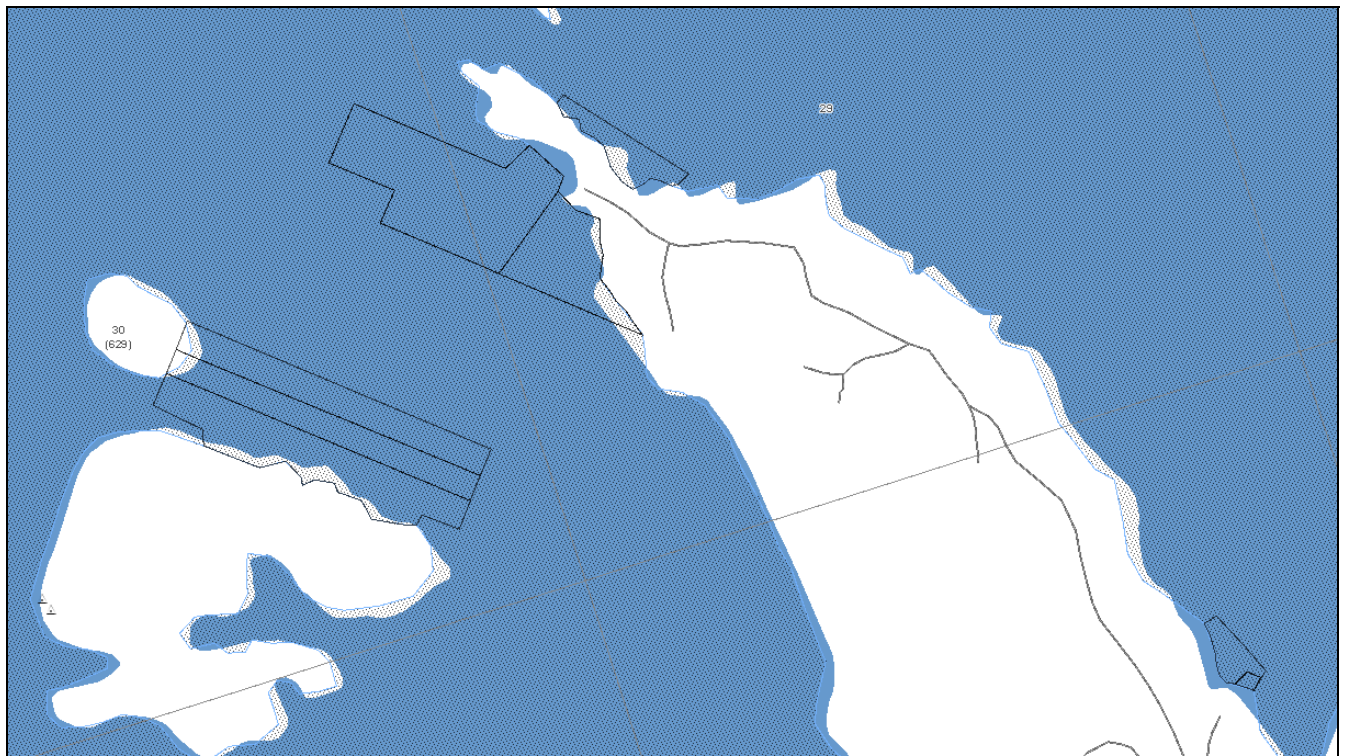
**Figure 9 DNR LTF and LSA leased area overview**



**Figure 10 DNR LTF and leased storage area**



**Figure 11 Satellite and ownership map**



**Figure 12 DNR Water Estates map with leased LTF and LSA areas**

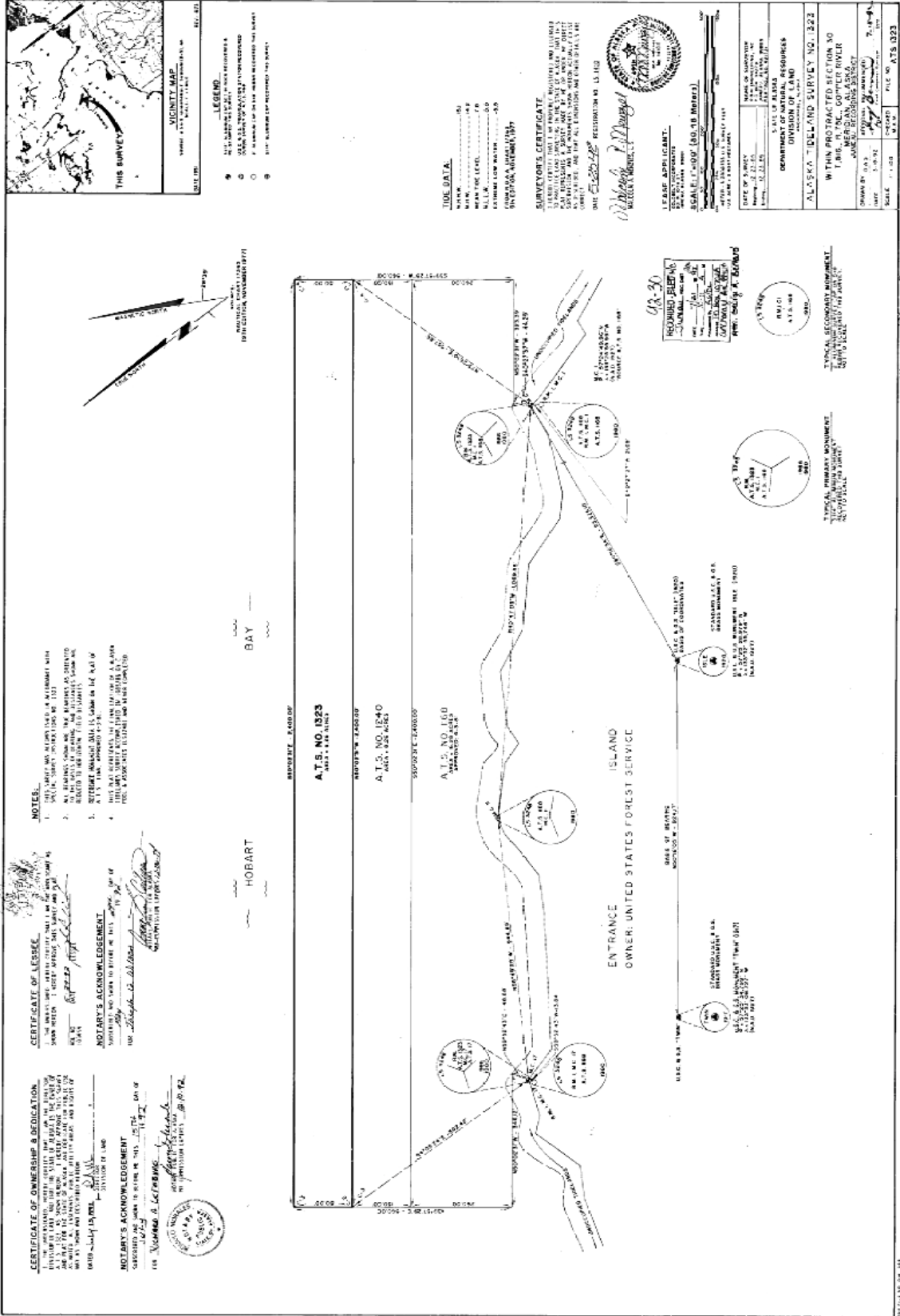


Figure 13 Survey map of Log Storage Area on Entrance Island 12/22/1985

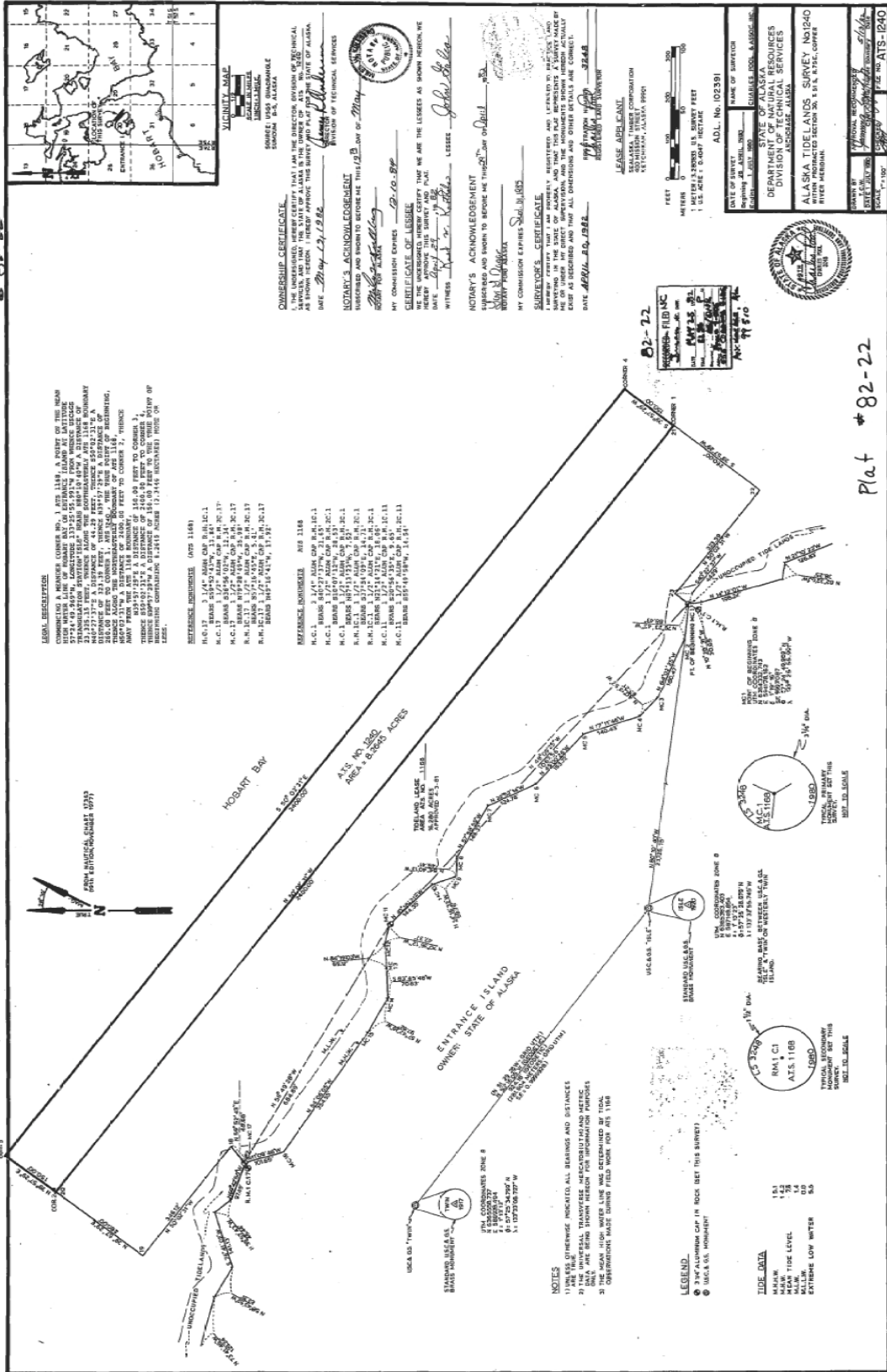


Figure 14 Survey map of Log Storage Area on Entrance Island ADL 102391





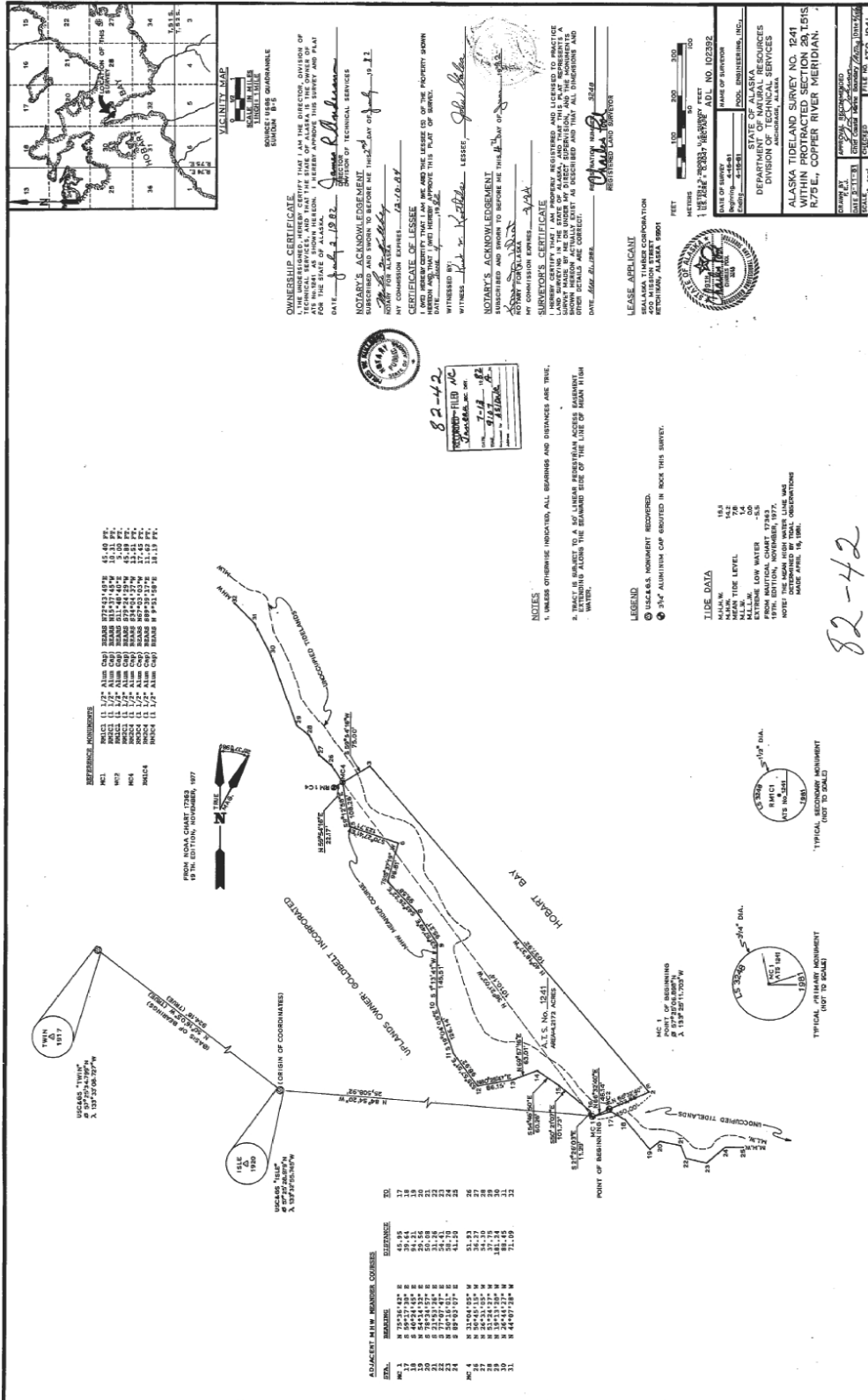


Figure 16 Survey map of Log Storage Area on Entrance Island 04/16/1981

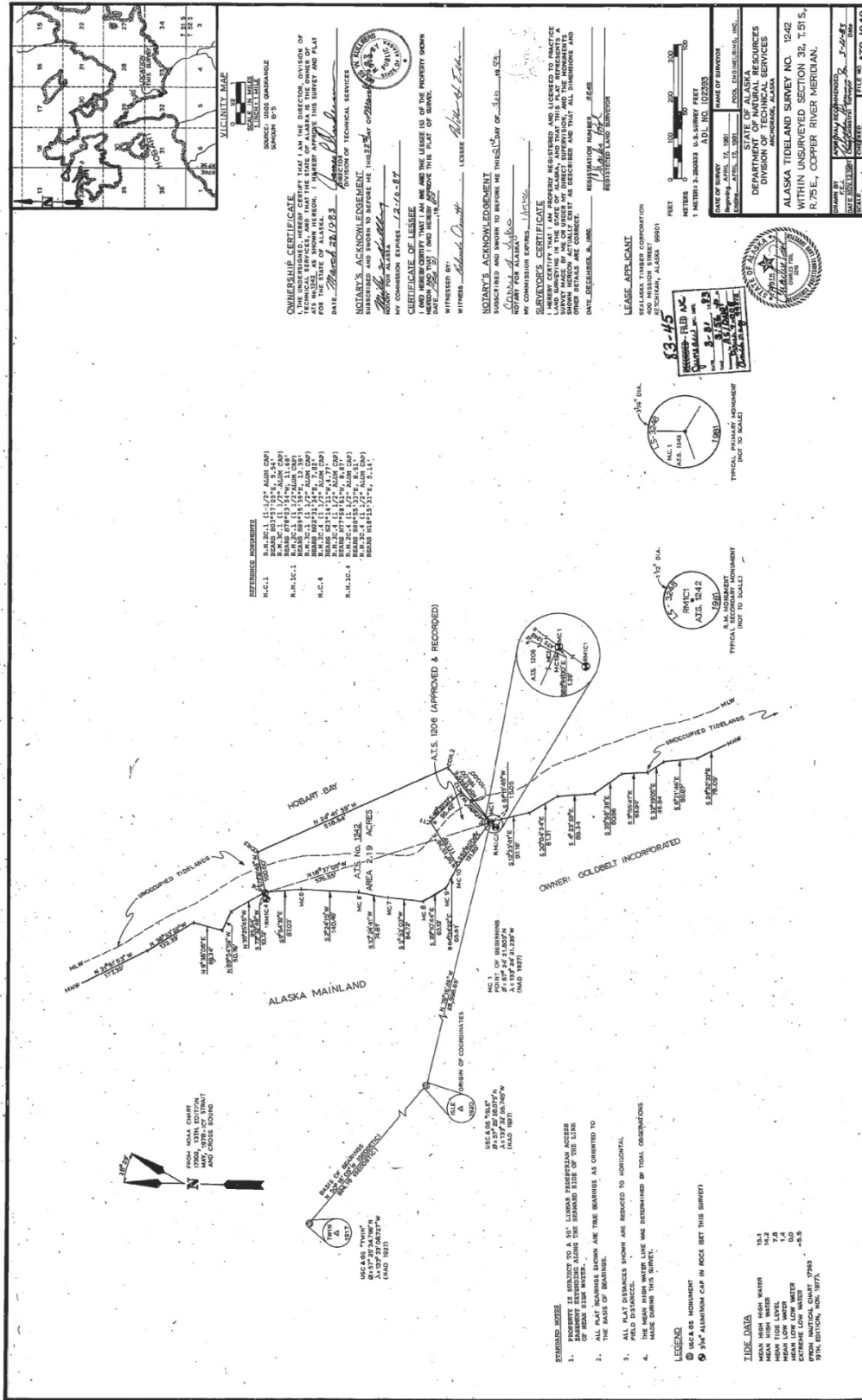


Figure 17 Un-surveyed former LTF on east side of the mainland peninsula

TOWNSHIP 51 S RANGE 75 E OF THE COPPER RIVER MERIDIAN, ALASKA

SUBDIVISION SE 1/4 ENWISE		LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY -OR- PURPOSE OF ORDER	SERIAL FILE -OR- ORDER NUMBER	DATE OF ACTION	DATE POSTED	REMARKS - E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
			See Remarks	5,015.00	Offshore Pt. Per.	18621	8-10-62	12-26-63	Eff. 9-1-62; Term: 2 yrs. Excl. all Tuls. & Uplds. Sec. 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34; All; Sec. 19, 22, 27, 31, 32, 33, 34; Sec. 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. Closed.
			Secs. 13, 14, 15, 21, 22, 27, 33, 34; All; See Rec.		do	do	do	do	
			Sec. 20, 29, 31, 32; Sec. 28; 28; 28; Excl. uplds.	2,495.00	Offshore Pt. Per.	45212	5-13-69	5-15-69	Sec. 28; 28; 28; Excl. uplds. Eff. 6-1-69, Term: 10 yrs. Terminated 6-1-73, case closed.
			Secs. 18, 19, 30; Excl. uplds.		Offshore Pt. Per.	45211	5-13-69	5-21-69	Eff. 6-1-69, Term: 10 yrs. 0ch. Top: T-515, R-74E, CBM. Terminated 6-1-73, case closed.
			Sec. 18, 19, 30; Excl. uplds.		do	45210	5-13-69	5-21-69	do
			Sec. 18, 19, 30; Excl. uplds.		Offshore Pt. Per. Terminated	Begin. 8-1-72	8-1-72	8-1-72	Tr. 972-8-23; 0ch. Top: T-515, R-74E, CBM.
			Sec. 18, 19, 30; Excl. uplds.		Offshore Pt. Per.	58354	10-4-72	10-19-72	Eff. 11-1-72, term: 10 yrs. 0ch. Top: T-515, R-74E, CBM. Terminated 11-1-74, case closed.
			Sec. 20, 29, 31, 32; Sec. 28; 28; 28; Excl. uplds.	2,250.00	Offshore Pt. Per.	do	9-1-73	9-1-73	Tr. 973-9-26; 0ch. Top: T-515, R-74E, CBM. Terminated 9-1-73, case closed.
			Sec. 12-17, 21, 22, 27, 33, 34; Sec. 28; Excl. See Re.	2,497.00	do	do	do	do	Tr. 973-9-97; 30ch; Excl. uplds. Tr. 973-9-97; Resource Mgmt.
			Secs. 22-32; all A/S 1168, w/in Sec. 30, w/in Sec. 29; A/S 1306, w/in Sec. 32; A/S 1167, w/in Secs. 29, 30.	1,829.00 242.54 4,217.2 2.5 28.3	01. TOL. Lsa do do do	SE-50-093 102931 102932 102933 102934	12-10-80 6-20-81 do do do	1-12-81 9-3-81 do do do	Aptn. road. do do do do

Archived site records from 1962 to 1981

### Tidal Graphs

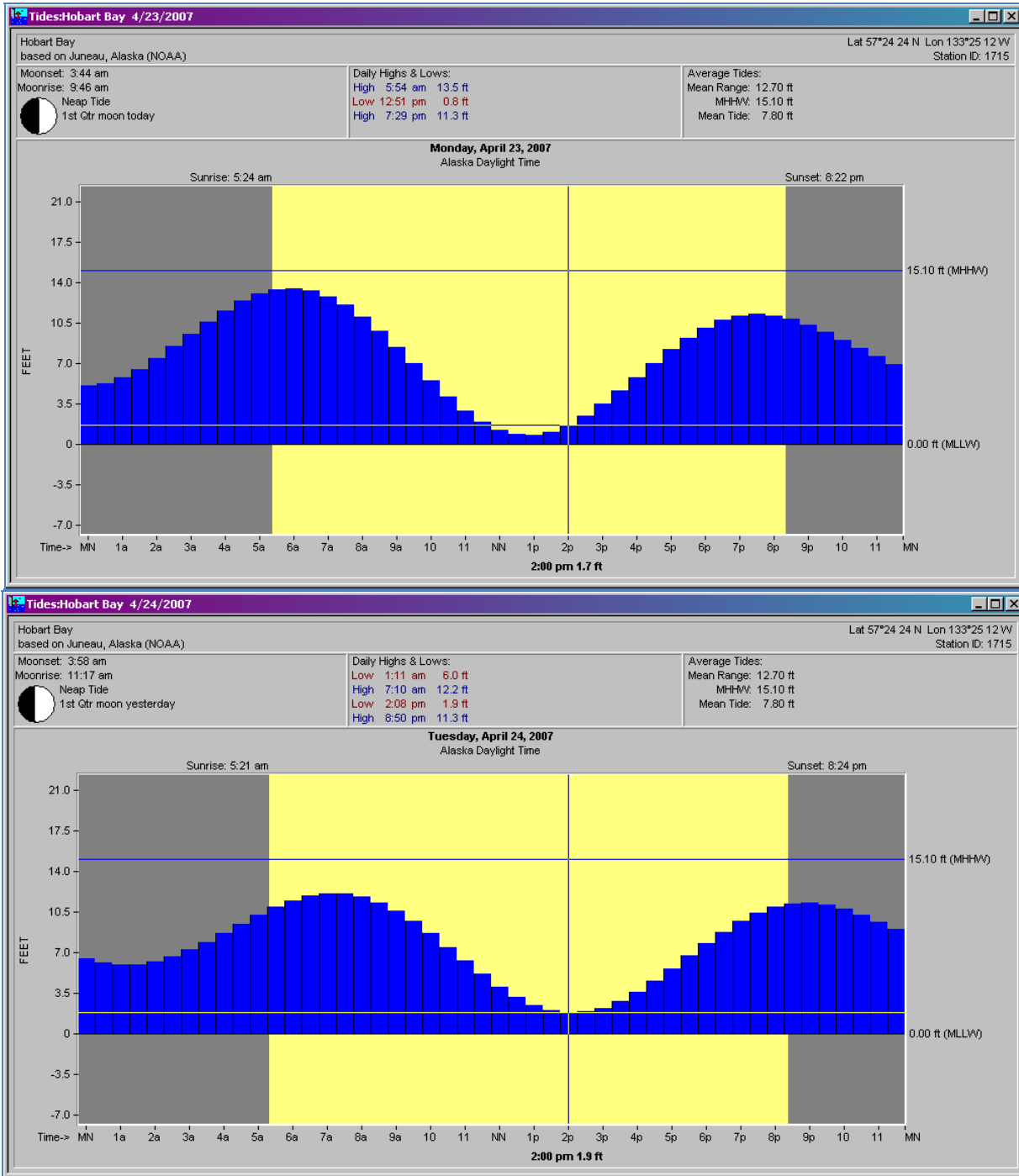
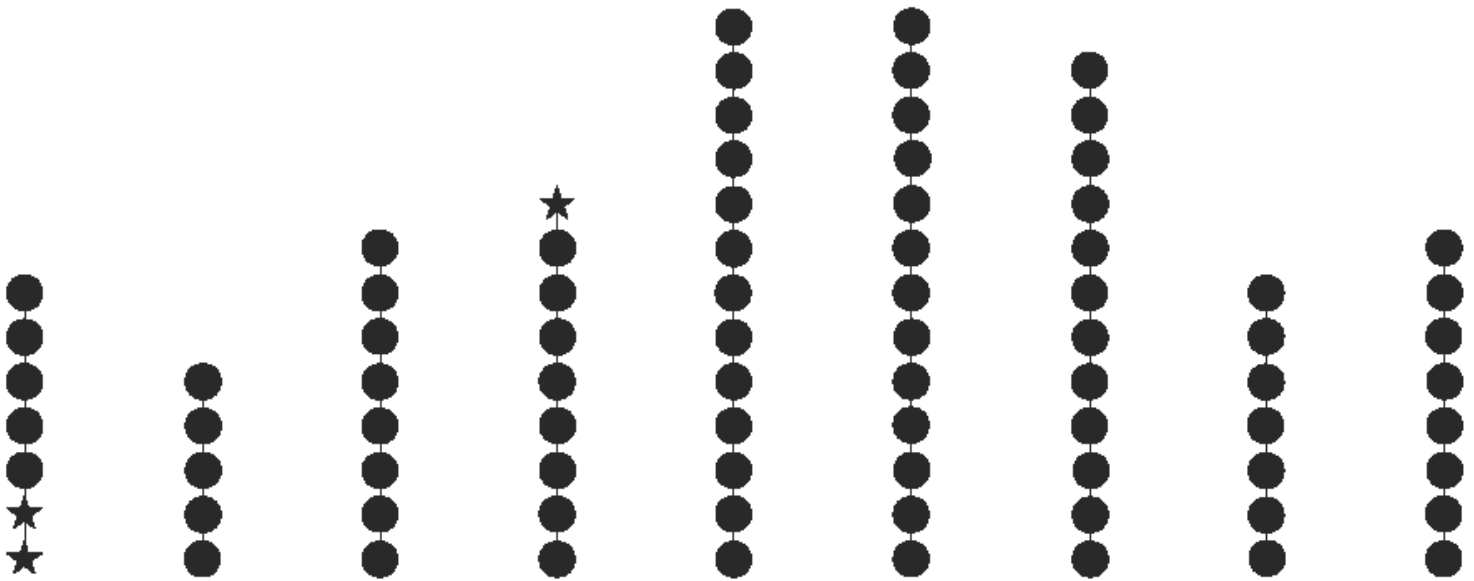


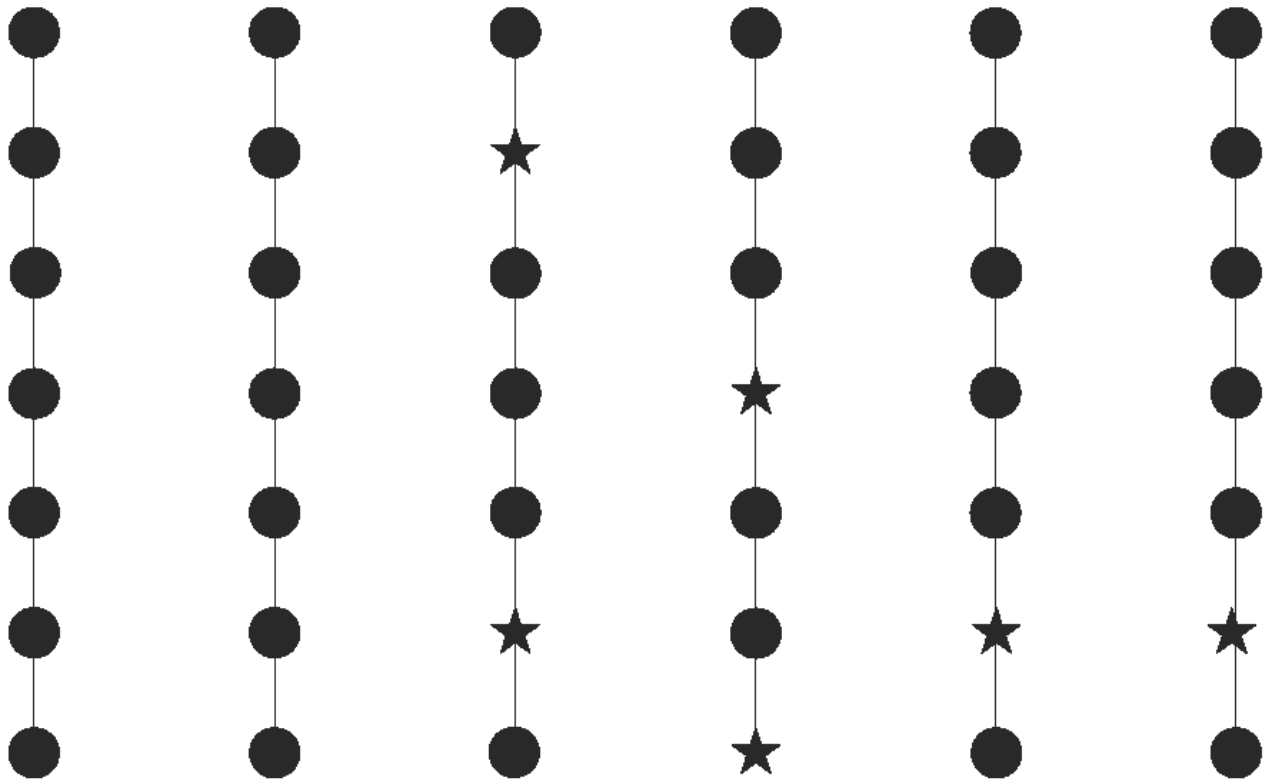
Figure 18 Tidal Graphs

## Dive Survey Calculation Diagram



Blocks	100% Cover
Stars	10%--99% Cover
Circle	0%--9% Cover

## Plan View Video Calculation Diagram



Blocks 100% Cover  
Stars 10%--99% Cover  
Circle 0%--9% Cover

## Dive Data Tables

### Transect 1 240 Degrees

Sample Point	Depth at MLLW	Bark Depth (Inches)	% of Cover	Substrate Type
1	5	0	0	R
2	9	0	TRACE	R
3	25	0	TRACE	R
4	39	0	TRACE	R
5	59	0	TRACE	R
6	67	<1	10	R
7	72	<1	10	R
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Key:

Substrate Type; S=Sand, M=Mud, SL=Silt, R=Rock, C=Cobble, G=Gravel

Bark Depth Recorded in Inches

**Transect 2 240 Degrees**

<b>Sample Point</b>	<b>Depth at MLLW</b>	<b>Bark Depth (Inches)</b>	<b>% of Cover</b>	<b>Substrate Type</b>
1	4	0	0	R
2	22	0	0	R
3	38	0	TRACE	R
4	52	0	TRACE	R
5	78	0	TRACE	R
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Key:

Substrate Type; S=Sand, M=Mud, SL=Silt, R=Rock, C=Cobble, G=Gravel  
 Bark Depth Recorded in Inches



**Transect 3 240 Degrees**

<b>Sample Point</b>	<b>Depth at MLLW</b>	<b>Bark Depth (Inches)</b>	<b>% of Cover</b>	<b>Substrate Type</b>
1	5	0	TRACE	R, S
2	11	0	TRACE	R, S
3	17	0	TRACE	R, S
4	25	0	0	S
5	36	0	TRACE	R
6	44	0	0	R
7	65	0	0	R
8	80	0	0	R
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Key:

Substrate Type; S=Sand, M=Mud, SL=Silt, R=Rock, C=Cobble, G=Gravel  
 Bark Depth Recorded in Inches

**Transect 4 240 Degrees**

<b>Sample Point</b>	<b>Depth at MLLW</b>	<b>Bark Depth (Inches)</b>	<b>% of Cover</b>	<b>Substrate Type</b>
1	6	0	0	R, S
2	10	0	0	R
3	22	0	0	R, S
4	29	0	0	S
5	34	0	TRACE	S
6	41	0	TRACE	S
7	49	0	TRACE	S
8	59	0	TRACE	S
9	78	<1	10	S
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Key:

Substrate Type; S=Sand, M=Mud, SL=Silt, R=Rock, C=Cobble, G=Gravel  
 Bark Depth Recorded in Inches

**Transect 5 240 Degrees**

<b>Sample Point</b>	<b>Depth at MLLW</b>	<b>Bark Depth (Inches)</b>	<b>% of Cover</b>	<b>Substrate Type</b>
1	5	0	0	R
2	6	0	0	R
3	10	0	0	R
4	12	0	0	R
5	13	0	0	R
6	14	0	0	R
7	14	0	0	R
8	20	0	0	S, R
9	20	0	0	R, S
10	29	0	0	S
11	42	0	0	S
12	70	0	TRACE	S
13	75	0	0	S
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**Key:**

Substrate Type; S=Sand, M=Mud, SL=Silt, R=Rock, C=Cobble, G=Gravel  
 Bark Depth Recorded in Inches

**Transect 6 240 Degrees**

<b>Sample Point</b>	<b>Depth at MLLW</b>	<b>Bark Depth (Inches)</b>	<b>% of Cover</b>	<b>Substrate Type</b>
1	4	0	0	S
2	8	0	0	S
3	11	0	0	S
4	12	0	0	S
5	11	0	0	S
6	7	0	0	R
7	10	0	0	R
8	15	0	0	R, S
9	21	0	0	R, S
10	31	0	0	R, S
11	51	0	0	R
12	57	0	TRACE	R, S
13	75	0	TRACE	R, S
14				
15				
16				
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34				

**Key:**

Substrate Type; S=Sand, M=Mud, SL=Silt, R=Rock, C=Cobble, G=Gravel  
 Bark Depth Recorded in Inches

**Transect 7 240 Degrees**

<b>Sample Point</b>	<b>Depth at MLLW</b>	<b>Bark Depth (Inches)</b>	<b>% of Cover</b>	<b>Substrate Type</b>
1	6	0	0	R
2	9	0	0	S
3	11	0	0	S
4	12	0	0	S
5	16	0	0	S
6	9	0	0	S
7	7	0	0	R
8	16	0	0	S
9	24	0	0	S
10	22	0	0	R, S
11	52	0	0	S
12	75	0	0	S
13				
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**Key:**

Substrate Type; S=Sand, M=Mud, SL=Silt, R=Rock, C=Cobble, G=Gravel  
 Bark Depth Recorded in Inches

**Transect 8 240 Degrees**

<b>Sample Point</b>	<b>Depth at MLLW</b>	<b>Bark Depth (Inches)</b>	<b>% of Cover</b>	<b>Substrate Type</b>
1	9	0	0	R
2	15	0	0	R
3	25	0	0	R
4	39	0	0	R
5	49	0	0	S
6	69	0	TRACE	S
7	75	0	TRACE	S
8				
9				
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Key:

Substrate Type; S=Sand, M=Mud, SL=Silt, R=Rock, C=Cobble, G=Gravel  
 Bark Depth Recorded in Inches

**Transect 9 240 Degrees**

<b>Sample Point</b>	<b>Depth at MLLW</b>	<b>Bark Depth (Inches)</b>	<b>% of Cover</b>	<b>Substrate Type</b>
1	5	0	0	R
2	17	0	0	R
3	34	0	0	S
4	44	0	0	S
5	52	0	TRACE	S
6	67	0	TRACE	S
7	72	0	0	S
8	77	0	0	S
9				
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34				

Key:

Substrate Type; S=Sand, M=Mud, SL=Silt, R=Rock, C=Cobble, G=Gravel  
Bark Depth Recorded in Inches

## PVV RESULTS TABLE

Depth MLLW	Sample Point Identifier	Percent of Bark Cover	Substrate
61	HBTS1	0	G, S
73	HBTS2	0	G, S
73	HBTS3	0	G, S
70	HBTS4	0	G, S
79	HBTS5	0	G, S
95	HBTS6	0	G, S
103	HBTS7	0	S
81	HBTS8	0	G, S
97	HBTS9	TRACE	G, S
85	HBTS10	0	G, S
77	HBTS11	0	G, S
99	HBTS12	0	G, S
107	HBTS13	0	G, S
113	HBTS14	0	S
101	HBTS15	0	G, S
121	HBTS16	50	S
122	HBTS17	0	S
121	HBTS18	0	S
116	HBTS19	0	R, S
117	HBTS20	20	G, S
111	HBTS21	TRACE	R
87	HBTS22	30	G, S
113	HBTS23	0	S
114	HBTS24	TRACE	S
101	HBTS25	10	G, S
98	HBTS26	TRACE	G, S
103	HBTS27	TRACE	G, S
122	HBTS28	TRACE	S
88	HBTS29	0	G, S
104	HBTS30	90	S
94	HBTS31	TRACE	S
80	HBTS32	TRACE	S
84	HBTS33	0	S
87	HBTS34	0	S, G
116	HBTS35	0	S
74	HBTS36	0	G, S
80	HBTS37	30	G, S
70	HBTS38	0	G, S
53	HBTS39	0	S



HOBART BAY APRIL 23 AND 24, 2007 BARK MONITORING SURVEY.

Depth MLLW	Sample Point Identifier	Percent of Bark Cover	Substrate
76	HBTS40	0	S
96	HBTS41	TRACE	S
117	HBTS42	TRACE	S

-TABLE 1. HOBART6 BAY SAMPLING LOCATION COORDINATES <sup>a</sup>				
Depth	Sample ID	Latitude	Longitude	Comments
1	HBT1S1	57° 25.022' N	133° 26.323' W	PROPOSED
2	HBT1S2	57° 25.034' N 57° 25.035' N	133° 26.301' W 133° 26.300' W	PROPOSED PVV
3	HBT1S3	57° 25.046' N 57° 25.047' N	133° 26.279' W 133° 26.282' W	PROPOSED PVV
4	HBT1S4	57° 25.058' N 57° 25.061' N	133° 26.257' W 133° 26.250' W	PROPOSED PVV
5	HBT1S5	57° 25.069' N 57° 25.070' N	133° 26.069' W 133° 26.238' W	PROPOSED PVV
6	HBT1S6	57° 25.081' N 57° 25.075' N	133° 26.215' W 133° 26.218' W	PROPOSED PVV
7	HBT1S 7	57° 25.092' N 57° 25.093' N	133° 26.194' W 133° 26.195' W	PROPOSED PVV
8	HBT2S8	57° 25.000' N 57° 25.000' N	133° 26.277' W 133° 26.266' W	PROPOSED PVV
9	HBT2S9	57° 25.011' N 57° 25.009' N	133° 26.256' W 133° 26.260' W	PROPOSED PVV
10	HBT2S10	57° 25.022' N 57° 25.023' N	133° 26.236' W 133° 26.241' W	PROPOSED PVV
11	HBT2S11	57° 25.034' N 57° 25.039' N	133° 26.215' W 133° 26.211' W	PROPOSED PVV
12	TBT2S12	57° 25.045' N 57° 25.041' N	133° 26.194' W 133° 26.200' W	PROPOSED PVV
13	HBT2S13	57° 25.057' N 57° 25.058' N	133° 26.173' W 133° 26.168' W	PROPOSED PVV
14	HBT2S14	57° 25.070' N 57° 25.069' N	133° 26.149' W 133° 26.149' W	PROPOSED PVV
15	HBT3S15	57° 25.977' N 57° 25.979' N	133° 26.232' W 133° 26.233' W	PROPOSED PVV
16	HBT3S16	57° 25.988' N 57° 25.994' N	133° 26.211' W 133° 26.215' W	PROPOSED PVV
17	HBT3S17	57° 25.000' N 57° 25.001' N	133° 26.190' W 133° 26.186' W	PROPOSED PVV
18	HBT3S18	57° 25.012' N 57° 25.012' N	133° 26.168' W 133° 26.172' W	PROPOSED PVV
19	HBT3S19	57° 25.023' N 57° 25.021' N	133° 26.147' W 133° 26.141' W	PROPOSED PVV
20	HBT3S20	57° 25.035' N 57° 25.037' N	133° 26.126' W 133° 26.129' W	PROPOSED PVV
21	HBT3S21	57° 25.047' N 57° 25.049' N	133° 26.104' W 133° 26.105' W	PROPOSED PVV

-TABLE 1. HOBART6 BAY SAMPLING LOCATION COORDINATES <sup>a</sup>				
Depth	Sample ID	Latitude	Longitude	Comments
22	HBT4S22	57° 25.955' N 57° 25.952' N	133° 26.186' W 133° 26.185' W	PROPOSED PVV
23	HBT4S23	57° 25.967' N 57° 25.967' N	133° 26.165' W 133° 26.159' W	PROPOSED PVV
24	HBT4S24	57° 25.978' N 57° 25.979' N	133° 26.143' W 133° 26.143' W	PROPOSED PVV
25	HBT4S25	57° 25.990' N 57° 25.990' N	133° 26.122' W 133° 26.114' W	PROPOSED PVV
26	HBT4S26	57° 25.001' N 57° 25.002' N	133° 26.100' W 133° 26.095' W	PROPOSED PVV
27	HBT4S27	57° 25.013' N 57° 25.014' N	133° 26.079' W 133° 26.074' W	PROPOSED PVV
28	HBT4S28	57° 25.025' N 57° 25.024' N	133° 26.057' W 133° 26.064' W	PROPOSED PVV
29	HBT5S29	57° 24.931' N 57° 24.928' N	133° 26.144' W 133° 26.134' W	PROPOSED PVV
30	HBT5S30	57° 24.943' N 57° 24.942' N	133° 26.122' W 133° 26.127' W	PROPOSED PVV
31	HBT5S31	57° 24.955' N 57° 24.954' N	133° 26.101' W 133° 26.101' W	PROPOSED PVV
32	HBT5S32	57° 24.966' N 57° 24.966' N	133° 26.080' W 133° 26.084' W	PROPOSED PVV
33	HBT5S33	57° 24.978' N 57° 24.980' N	133° 26.059' W 133° 26.065' W	PROPOSED PVV
34	HBT5S34	57° 24.989' N 57° 24.991' N	133° 26.039' W 133° 26.039' W	PROPOSED PVV
35	HBT5S35	57° 25.001' N 57° 24.995' N	133° 26.015' W 133° 26.012' W	PROPOSED PVV
36	HBT6S36	57° 24.909' N 57° 24.909' N	133° 26.099' W 133° 26.099' W	PROPOSED PVV
37	HBT6S37	57° 24.921' N 57° 24.921' N	133° 26.078' W 133° 26.079' W	PROPOSED PVV
38	HBT6S38	57° 24.932' N 57° 24.932' N	133° 26.057' W 133° 26.052' W	PROPOSED PVV
39	HBT6S39	57° 24.944' N 57° 24.941' N	133° 26.035' W 133° 26.035' W	PROPOSED PVV
40	HBT6S40	57° 24.956' N 57° 24.956' N	133° 26.014' W 133° 26.012' W	PROPOSED PVV
41	HBT6S41	57° 24.967' N 57° 24.285' N	133° 25.992' W 133° 25.994' W	PROPOSED PVV
42	HBT6S42	57° 24.979' N 57° 24.981' N	133° 25.969' W 133° 25.964' W	PROPOSED PVV

## Abundance Tables

Scientific Name	Common Name	Abundance
<b>Plants</b>		
<i>Ulva / Monstroma spp.</i>	Sea lettuce	C
<i>Lithothamnion spp.</i>	Crustose red algae	L
<i>Agarum clathratum</i>	Sieve Kelp	L
<i>Laminaria saccharina</i>	Suger kelp	L
<i>Zostera marina</i>	Eel Grass	L
<b>Invertebrates</b>		
<i>Mediaster aequalis</i>	Red star	L
<i>Luidia foliolata</i>	Sand star	C
<i>Pycnopodia helianthoides</i>	Sunflower star	L
<i>Pisaster ochraceus</i>	Ochre star	L
<i>Pododesmus macrochisma</i>	Jingle	L
<i>Cucumaria miniata</i>	Orange sea cucumber	C
<i>Dermasterias imbricata</i>	Leather star	L
<i>Solaster sp.</i>	Sun star	L
<i>Ophiuroidea spp.</i>	Brittle star	L
<i>Chionoecetes bairdi</i>	Tanner crab	L
<i>Cancer products</i>	Red rock crab	L
<i>Pandalus spp.</i>	Shrimp	C
<i>Pagurus spp.</i>	Hermit crab	L
<i>Bankia setacea</i>	Shipworm	L
<i>Protothaca staminea</i>	Littleneck clam	C
<i>Beggiatoa sp.</i>	Bacteria	A
<i>Polyplacophora spp.</i>	Chiton	L
<i>Unidentified Benthic Infauna</i>	Benthic Infauna	L
<i>Metridium senile</i>	Anemone	L
<i>Parastichopus californicus</i>	Sea cucumber	C
<b>Invertebrates</b>		
<i>Cottidae spp.</i>	Sculpin	L
<i>Hexagrammos decagrammus</i>	Kelp greenling	L