[Shoreline evaluations, 1991].

Prince William Sound KN-113 to KN-119

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**1991 MAYSAP EVALUATION**

**SEGMENT:** KN 113  **SUB:** B  **REGION:** PWS  **SURVEY DATE:** 4/29/91

**ENVIRONMENTAL SENSITIVITIES:**
Work Window(s) **RESTRICTED** 3/1 - 9/1

Ecological/Constraints (see page two for details) **Eagle nest**

**ARCHAEOLOGICAL CONSTRAINTS:**
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

**SHPO Signature:**  [Signature]  **Date:** 5/14/91

**RECOMMENDATIONS:**

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td></td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Manual Pickup (Check as Req.)
Spot Washing
Bio-Customblen Only  **X**
Bio-Inipol/Customblen
Other
Other

**COMMENTS:**
INITIAL: Apply Customblen in area of pits 2 and 3. Apply Customblen in area of pit 4, avoiding dense mussel bed.

TAG:  **NO TREATMENT RECOMMENDED**

FOSC:

**TAG APPROVAL DATE:** 5/14/91  **FOSC APPROVAL DATE:** 5/20/91

ADEC  [Signature]  FOSC  [Signature]

EXXON  [Signature]  E. E. PAGE, CDR, USCG

USCG  [Signature]  CHIEF OF STAFF, FOSC

NOAA  [Signature]
ECOLOGICAL CONSTRANTS
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.
MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 1 SEGMENT KN-113B SUBDIVISION 8 DATE 4/29/91

ADEC
NAME JEFF CINNAMON SIGNATURE

☐ NTR ☑ TREATMENT RECOMMENDED

At South end of Segment (Pits 2-5) I would manually till (mechanical if feasible, but probably not accessible) at Pits 2-3 of OG map to loosen high sor. (Area sheening on our arrival) set snares boom to contain sheen. Arrive at low tide & till as tide rises. Oil lower in tide than most areas. I have seen. Tilling should not disturb Biotas in area. However sheen should be controlled so as to protect biota (esp. mussels) on reduce uprise west of shore.

At Pit #4 oil is almost/near recognized biota; probably detrimental to environment to work this spot.

EXXON
NAME FRANK A. Bet SIGNATURE


LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE

☐ NTR ☑ TREATMENT

Southern area (Pits 1-3) could be filled with tide to continue releasing oil having minimal to no impact on biota. Due to access, manual labor is required - UNLESS, a track hoe on a landing craft happens to be going by, the LC could pull up on the arm of the hoe to reach in and agitate. Prepare for containing sheen.

USCG/NQAA
NAME JENSEN / CHILDs SIGNATURE

☐ NTR This small segment needs to be evaluated for treatment. The biologist has some concerns regarding the mussel beds on the north side of this segment.

Subsurface oil observed in Ml - U1 over 3/8's of Subdiv - Bar reef upreech not oiled - Br OC's on upper 3/4 lower part my contribute to residual anti-oil - lower OR in middle of Subdiv. Where 3 wave energy might have contributed to degradation - biota quantities should limit treatment.
MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 1

SEGMENT KD-113

TIME 11:00 to 11:30

TIDE LEVEL +2.9 ft. to +4.1 ft.

ENERGY LEVEL: H [X] M [ ] L

SURVEYED FROM: [X] FOOT [ ] BOAT [ ] HELO

WEATHER: [ ] SUN [ ] CLOUDS [ ] FOG [X] RAIN [ ] SNOW

TOTAL LENGTH SHORELINE SURVEYED: 100 m

NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [ ] NONE

EST. OIL CATEGORY LENGTH: [ ] W [ ] m [ ] M [ ] m [ ] N [ ] m [ ] VL 75 [0] m [ ] NO 25 [ ] m [ ] US 275 [ ] m

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<table>
<thead>
<tr>
<th>LOCATION</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT TYPE</th>
<th>SHORE SLOPE</th>
<th>WIDTH</th>
<th>LENGTH</th>
<th>ZONE</th>
<th>NOTES</th>
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<tbody>
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</tbody>
</table>

DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP-1 - 7 FRAMES 23-26

<table>
<thead>
<tr>
<th>PIT NO. DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE cm-cm</th>
<th>CLEAN BELOW (cm)</th>
<th>H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
<th>NOTES</th>
</tr>
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<tr>
<td>1 55</td>
<td></td>
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<td>2 46</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>P - PG</td>
<td></td>
</tr>
<tr>
<td>3 25</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>CD - pea</td>
<td>brown globules</td>
</tr>
<tr>
<td>4 30</td>
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<td></td>
<td></td>
<td></td>
<td>pe - pe</td>
<td></td>
</tr>
</tbody>
</table>

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

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OG COMMENTS:
Shallow scour in steep rock shore.
Surface oil as S film from subsurface oil in MITZ
Subsurface oil as nodules in muddy PG substrate, over bedrock - no surface expression of this oil. Rainbow sheen w/ brown globules typical in pit water.

REVIEWED: F.W. 5/2/91
REVIEWED: M.C. 5/3/91
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #1
SEGMENT # KN 113
SUBDIVISION B
SEA STATE 2/3 ft swell, 11/2 ft seas

DATE 29 April 91
TIDAL HEIGHT (Range) +2.8 to 4.2 ft.

BIOLIGIST M. H. Fawcett
WIND SPEED/DIRECTION SE 25 knots, rain

PHOTOGRAPHS: ROLL # FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

Small pocket beach, semi-protected by chain of bedrock outcrops (see sketch). Very dense mussels on outcrop at south end of site, but no mussels or other biota (except filamentous green algae) among cobbles above burnd moss. Similar cobble area 30 m north has dense bed of 1-2 yr. old mussels and Eucnus. The mussels in both areas must be subject to frequent sheen coming from buried oil, but with no apparent effect on recruitment, growth or mortality. Treatment of buried oil at south end would probably be done with minimal negative impact, but any treatment at north end would likely destroy the mussel bed.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED SPECIES PRESENT</th>
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</thead>
<tbody>
<tr>
<td>Eagles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seabirds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterfowl</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gulls/Kittiwakes</td>
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</tr>
<tr>
<td>Shorebirds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corvids</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Birds</td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>MARINE MAMMALS</th>
<th># OBSERVED</th>
<th>SPECIES</th>
<th># OBSERVED</th>
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<tbody>
<tr>
<td>Sea Otters</td>
<td></td>
<td>1 river otter</td>
<td>1</td>
</tr>
<tr>
<td>Pinnipeds (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whales (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Shoreline subdivision map showing important biological features attached.  4

REVIEWED: 5/3/91 MC
Bio: Sketch Map
KN 113-B
29 April 91
M. H. Fawcett

Refer to OG Map

River otter resting on ledge

Very dense mussels (100% cover on outcrop) 0-3+4 yrs old

Cobble/pebbles with buried oil, no biota except filamentous green algae in MOR area

Sparse rockweed (1+ yrs old) sparse barnacles + mussels, dense filamentous red algae on bedrock upshore of cobble

Dense mussel bed among cobble, patches of dense rockweed, all post-spill - buried oil beneath

Dense rockweed, barnacles, mussels, sparse limpets on outcrop
KN 13 - B 29 April 91 Fawley, H.A. 
and 15-20 SE, raining
- small pebbly beach semi-protected
  by chain of reefs - very dense
  weeds or kelp at south end
  but more in cobble - so R
  cobble area near north end has
dune - fr moss & turf + Fucus
on top of surf zone -
-boulders behind cobble scoured,
no birds except f.t. & o.d.
spare Fucus, mussels, barnacles
Crents
1 river valve resting on
edge, core in water

Report 1130
ASAP TAG REVIEW SHEET

Segment: KN 113  Subd: A  Site: 1  Date  PRE-Review 4/4/80

Priority For Addressing In 1990

___ HIGH  ___ MEDIUM  ___ LOW  ___ NTR  (NONE)

Treatment Recommended: Manual pickup-MSOR

06 - Medium SOR

Adjacent to NOAA fuel site

If SOR picked up this year recommend no reassessment.

Priority Site For Reassessment In 1991

YES  NO  YES  NO  YES  NO  YES  NO
CG  ✔  DSEC  ✔  EXXON  ✔  LAND MGR  ✔

TAG HAD

Reassess 91
ASAP FOLLOWUP RECOMMENDATIONS

Conditions Observed: Extensive subsurface oiling from LIE - SIE. NOAA test site "Do not disturb" sign.

Followup Recommendations: Tag team visit, revisit, & determine if this is a test site, area. Also, there is a good possibility much of the clean overburden Needs Oil Spill determination assessment. Tag team revisits are necessary in late Spring 1991. Making it easier to treat SS. oil spills.

Completed by Pickup Crew: YES [ ] NO [ ]

Priority for Addressing in 1990: [ ] High [ ] Mod. [ ] Low

ADBC: John Hayes [Signature]

Comments: Oiling in all tidal zones, subsurface, relocation not feasible under June 1 stages. Depth of oiling makes tillage difficult (10-20 cm). Clean overburden will be determined.

Exxon: Montgomery [Name] [Signature]


USCG: Mr. Michael D. Brand [Signature]

Comments: SS spill needs eval, can we lose this one? Dept. Submarine oil is heavy oil, GP, Area A3 affected, 3rd by 1st October.

Land Rep.: Douglas Gibson [Signature]

Comments: No objection.

Post-it™ brand fax transmittal memo 7671 [of pages 6]
FIELD SHORELINE COMMENT SHEET

SEGMENT AS 1KN-113  SUBDIVISION:  A  SITE:  1  DATE 8/12/90

USCG
NAME: Michael G. Glenn  SIGNATURE: Michael G. Glenn
☐ YES  ☒ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

ADEC
NAME: John Huy  SIGNATURE: John Huy
☒ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
Follow up recommendation Test in AREC reports site by
Tag team or agency special rep to determine possible treatment
See oiling summary for SS oil identified. NOAA Test site

LAND MANAGER
NAME: DOUGLAS GIBSON  SIGNATURE: Douglas Gibson
☒ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
DEPOSITS OF SUBSURFACE OILING MUST BE
REASSESSSED IN '91

EXXON
NAME: Martinez HNJ  SIGNATURE: Nicholas G. Martinez
☒ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
Moderate amount of SURFACE (S)OY olling
Also Subsurface OR but very deep. Should be reassessed 1991 Note NOAA Test site
TEAM NO ONE: EXXON MARTINEZ SEGMENT AS/ KA-113

DATE 8/12/90 TIME: 12:14 TIDE LEVEL 2

TOTAL EST LENGTH OF SHORELINE SURVEYED: 392 m

SURVEYED FROM: Foot Boat Helo WEATHER: ☀ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow

OIL CATEGORY LENGTH: W 55 m M 50 m N 10 m V/L 187 m NO 90 m US 80 m

SURFACE OIL

<table>
<thead>
<tr>
<th>CHARACTER</th>
<th>DISTRIBUTION</th>
<th>OILED ZONES</th>
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<td>ASPHALT</td>
<td>✓</td>
<td>✗</td>
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<tr>
<td>S.O.R.</td>
<td>✓</td>
<td>✗ X</td>
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<tr>
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<td>✗ X</td>
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<td>✓ X</td>
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<tr>
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<tr>
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EST. SITE LENGTH 392

SUBSURFACE OIL

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<tr>
<th>SITE NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL (Y/N)</th>
<th>CLEAN BELOW (Y/N)</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
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<tr>
<td>1</td>
<td>40</td>
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<td>5-26</td>
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<td>SU UI MI</td>
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<td>X</td>
<td>BC-PS-98</td>
<td>X BC-PS-98</td>
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</tbody>
</table>

REVIEWED 8/13/90

COMMENTS: Long pebble, cobble Boulder Beach in embayment with rocky head lands at either end. Surface oiling is concentrated at the North and South ends of the Beach. At the South oil is in pebble material behind near shore rock outcrop. At the mouth across cobble Boulder Bar.
ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT KA-H3 SUBDIVISION B (2 of 2)

WORK WINDOW

BIOREMEDIATION OPEN

ARCHAEOLOGICAL CONSTRAINTS: If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-36571, 564-3658 or 564-3276).

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

NO APPLICABLE ECOLOGICAL TIME CONSTRAINTS

OTHER ECOLOGICAL CONSTRAINTS

AVOID ANY UNNECESSARY DISTURBANCE OR DAMAGE TO UNEOLED BIOTA AND SUBSTRATE.

FOSC [Signature] DATE 7-27-80

Prepared By: [Signature] Date 7/27/90
WORK PLAN ADDENDUM

Segment: KN113  Subdivision: B  Dated: 6/26/80

MODIFICATION

1. REASON FOR MODIFICATION

DNR's Request for Modification Due to High Human Use

2. ADJUSTMENT TO WORK PLAN

Change from an NTR to Bioremediation as Initially Indicated on Sketch (Attached)

SHPO APPROVAL NEEDED: YES  X  NO

SHPO SIGNATURE: [Signature]  Date: June 29, 1980

TAG APPROVAL DATE: 6/26/80

ADEC: Ray Moen

EXXON: [Signature]  Date: 6/30/80

NOAA: [Signature]  Date: [Signature]

USCG: [Signature]  Date: [Signature]
SHORELINE EVALUATION

SEGMENT ST/KN-113 SUBDIVISION B (2 OF 2) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6Y Recreation: Special use destination
No specific Ecological constraints.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
Cultural resource survey in progress. Shoreline treatment cannot proceed until field data have been assessed and a formal archaeological constraint entered on the shoreline evaluation form.

SHPO SIGNATURE: 
DATE: 4/25/90

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 105 m: Very Light 218 m: No Oil 56 m
Subsurface Oil Observed: Yes X No ___ Maximum Depth 35+ cm

RECOMMENDATIONS:
X No Treatment Recommended ___Snare/Absorbent Booms
___Treatment Recommended ___Oil Snakes (pom poms)
___Manual Pickup ___Absorents (pads, rolls, etc)
___Bioremediation ___Spot Washing: ___Wands
___Tarmat: ___Breakup ___Beach Cleaner
___Removal ___Other (see comments)

COMMENTS: The recommended treatment is bioremediation of surface and subsurface oil in area shown on attached sketch map. No specific time constraints.

SEE CONSTRAINTS ADDENDUM DATED 7/27/90

TAG COMMENTS: DUE TO ENVIRONMENTAL SENSITIVITIES RICH INTERTIDAL BIOTA DISTURBANCE SHOULD BE MINIMIZED. THEREFORE NTR RECOMMEND.

TAG APPROVAL DATE: 5/24/90
ADEC ___ EXXON ___ NOAA ___ USCG ___ FOSC: ___ DATE: 5-8-90
1991 MAYSAP EVALUATION

SEGMENT: KN 113  SUB: B  REGION: PWS  SURVEY DATE: 4/29/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s)  RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details)  Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature:  Date:

RECOMMENDATIONS:

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<tr>
<td>Manual Pickup (Check as Req.)</td>
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<tr>
<td>Spot Washing</td>
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<tr>
<td>Bio-Customblen Only</td>
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<td>Bio-Inipol/Customblen</td>
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<td>Other</td>
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<tr>
<td>Other</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

COMMENTS:

INITIAL:  Apply Customblen in area of pits 2 and 3. Apply Customblen in area of pit 4, avoiding dense mussel bed.

TAG:

FOSC:

TAG APPROVAL DATE:  FOSC APPROVAL DATE:

ADEC

EXXON

USCG

NOAA
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.
### MAYSAP FIELD SHORELINE COMMENT SHEET

**TEAM NO.** 1  
**SEGMENT** KN-113.B  
**SUBDIVISION** A  
**DATE** 4/29/91

<table>
<thead>
<tr>
<th>ADEC</th>
<th>NAME</th>
<th>JEFF GUNALIS</th>
<th>SIGNATURE</th>
</tr>
</thead>
</table>

- **NTR** □ TREATMENT RECOMMENDED

  At South End of Segment (Pits 2-3) I would manually till (mechanical if feasible, but probably not accessible) at Pits 2-3 of OA map to loosen high sheen (area sheening on our arrival) set snare boom to contain sheen. 

  At low tide & till as tide rises oil lower in rate than most areas I have seen. Tilling should not disturb biota in area. However sheen should be controlled so as to protect biota (esp musslers) on red ex uprise west of shore. 

  At Pit 4, oil is amongst/near recognized biota; probably detrimental to environment to work this spot.

<table>
<thead>
<tr>
<th>EXXON</th>
<th>NAME</th>
<th>FRANK A. Bass</th>
<th>SIGNATURE</th>
</tr>
</thead>
</table>

- **NTR** □ Subsurface oiling on the foreshore of Aug. 113.13. 

  Ergo, thick mussel bed in proximity would make evisceration difficult on the surface oil. Customer on the subsurface might be available.

<table>
<thead>
<tr>
<th>LANDMANAGER</th>
<th>NAME</th>
<th>MARSHA HALL</th>
<th>SIGNATURE</th>
</tr>
</thead>
</table>

- **NTR** □ TREATMENT

  Southern area (Pits 1-3) could be filled with tide to continue releasing oil having minimal to no impact on biota. Due to access, manual labor is required – UNLESS, a track hoe on a landing craft happens to be going by, the LC could pull up the arm of the hoe could reach in and agitate. Prepare for containing sheen.

<table>
<thead>
<tr>
<th>USC/G/NOAA</th>
<th>NAME</th>
<th>JENSEN/CHILDREN</th>
<th>SIGNATURE</th>
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</thead>
</table>

- **NTR** □ This small segment needs to be evaluated for treatment. The biologist has some concerns regarding the mussel beds on the north side of this segment.

  Subsurface oil observed in Mi - Ni over 3/4's of subdiv - Bore upper beach not oiled - BR OC's on upper 3/4 lower part may contribute to residual anta. Of oil - lower or in middle of subdiv where > wave energy might have contributed to degradation - Biota qualifies should limit treatment.
MAYSAP SHORELINE OILING SUMMARY

TEAM NO._I

OG G. MACDONALD
ADEC J. GIMBALIAS
EXXON F. BOX

BIO M. FAWCETT
LANDMANAGER M. HALL
USCG/NOAA JENSEN/CHILD

SEGMENT Kt-113
SUBDIVISION B
DATE 4/29/91

TIME 11:00 to 11:30
TIDE LEVEL +2.9 ft. to +4.1 ft.
ENERGY LEVEL: H X M L

SURVEYED FROM: FOOT BOAT HELO
WEATHER: SUN CLOUDS FOG RAIN SNOW

TOTAL LENGTH SHORELINE SURVEYED: 100 m
NEAR SHORE SHEEN: BR RB SL NO

EST. OIL CATEGORY LENGTH: W ___ m M ___ m N ___ m VL 75 m NO 25 m US 275 m

<table>
<thead>
<tr>
<th>LO</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT</th>
<th>AREA</th>
<th>NOTES</th>
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<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT</th>
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<th>NOTES</th>
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DISTRIBUTION: C = 91-100%; B = 61-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP - 1 - 7 FRAMES 23-26

<table>
<thead>
<tr>
<th>PIT</th>
<th>PIT NO.</th>
<th>PIT DEPTH</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SUBSURFACE SEDIMENTS</th>
<th>NOTES</th>
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</table>

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:
Shallow scour in steep rock shore.
Surface oil as 5 film from subsurface oil at MITZ.
Subsurface oil as may/basal in muddy PS substrate, over bedrock - no surface expression of this oil. Rainbow sheen of brown globules typical in pit water.

REVIEWS: F.W. 5/2/91
REVIEWS: M.C. 5/3/91
KH-113 B

G. MacDonald
4.29.81

REVIEWED: F.W. 5/2/91
REVISED: M.C. 5/3/91
SEGMENT: K113

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS

<table>
<thead>
<tr>
<th>Eagles</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
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</thead>
<tbody>
<tr>
<td>Seabirds</td>
<td></td>
<td></td>
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<tr>
<td>Waterfowl</td>
<td></td>
<td></td>
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<tr>
<td>Gulls/Kittiwakes</td>
<td></td>
<td></td>
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<tr>
<td>Shorebirds</td>
<td></td>
<td></td>
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<tr>
<td>Corvids</td>
<td></td>
<td></td>
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<tr>
<td>Other Birds</td>
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</tbody>
</table>

FISH OBSERVED

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<tr>
<th>SPECIES PRESENT</th>
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MARINE MAMMALS

<table>
<thead>
<tr>
<th>SPECIES</th>
<th># OBSERVED</th>
</tr>
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<tbody>
<tr>
<td>Sea Otters</td>
<td>1</td>
</tr>
<tr>
<td>Pinnipeds(specify)</td>
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</tr>
<tr>
<td>Whales(specify)</td>
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</tbody>
</table>

LAND MAMMALS

<table>
<thead>
<tr>
<th>SPECIES</th>
<th># OBSERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>River Otter</td>
<td>1</td>
</tr>
</tbody>
</table>

Shoreline subdivision map showing important biological features attached.

REVIEWED: 5/3/91 MC
Bio. Sketch Map
KN 113-B
29 April 91
M.H. Fawcett

Refer to OG Map

River otter resting on ledge

Very dense mussels (100% cover on outcrop)
0-2 yrs old

Cobble/pebbles with buried
no biota except filamentous
green algae in MOR area

Sparse rockweed (1-2 yrs old)
sparse barnacles & mussels,
dense filamentous red
algae on bedrock upshore
of cobble

dense mussel bed among
cobbie, patches of
dense rockweed, all post
spill -- buried oil beneath

dense rockweed, barnacles,
mussels, sparse limpets
on outcrop
KN-113-B 29 Apr 91 Fawley 1100

Wind 15-20 SE, raining

A small pebble beach, semi-pedestal

by chain of reefs - very dense

mudflat at south end but more in cobble - so soft

cobble area near north end has

dune 12 yr moss bed - furrow on top of turf and

- benthic behind cobble stones

no life except fl int algae -

a skate furrow, mussel, barn

cepops

1 razorfish resting on

corals above in water

Depart 1130
1991 MAYSAP EVALUATION

SEGMENT: KN 113  SUB: A  REGION: PWS  SURVEY DATE: 4/29/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: ___________________________ Date: __________________

RECOMMENDATIONS: INITIAL TAG FOSC
TREATMENT REQUIRED (Y or N)   Y   ___   ___
Manual Pickup (Check as Req.)   ___   ___   ___
Spot Washing   ___   ___   ___
Bio-Customblen Only   ___   ___   ___
Bio-Inipol/Customblen   X   ___   ___
Other   ___   ___   ___
Other   ___   ___   ___

COMMENTS:
INITIAL: Apply Inipol and Customblen at locations A4 and A6.
Apply Customblen to the pebble/cobble beach in area of pits 4-10.

TAG:

TAG APPROVAL DATE: __________  FOSC APPROVAL DATE: __________
ADEC   ___   ___   ___
EXXON   ___   ___   ___
USCG   ___   ___   ___
NOAA   ___   ___   ___
<table>
<thead>
<tr>
<th>Team No.</th>
<th>Segment</th>
<th>Subdivision</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>KN-113A</td>
<td>A</td>
<td>4/29/91</td>
</tr>
</tbody>
</table>

**ADEC**

- **Name:** JEFF GIANALIS
- **Signature:** [Signature]
- **TREATMENT RECOMMENDED**
  - **Treatment:**
    - **Note:**
      - Treatment is not needed as it is not a study site.
      - NOAA site is not a set aside site, but a study site.
      - Treatment suggested by DEC Rep. would be effective.
      - Containment should be stressed using this method.

- **Note:** NOAA HAZMAT Study Site No. 10, Loc. @ 49. Stream

---

**EXXON**

- **Name:** FRANK A. BAX
- **Signature:** [Signature]
- **TREATMENT RECOMMENDED**
  - **Treatment:**
    - **Note:**
      - Treatment is not needed as it is not a study site.
      - NOAA site is not a set aside site, but a study site.
      - Treatment suggested by DEC Rep. would be effective.
      - Containment should be stressed using this method.

---

**LANDMANAGER**

- **Name:** MARSHA HALL
- **Signature:** [Signature]
- **TREATMENT RECOMMENDED**
  - **Treatment:**
    - **Note:**
      - Treatment is not needed as it is not a study site.
      - NOAA site is not a set aside site, but a study site.
      - Treatment suggested by DEC Rep. would be effective.
      - Containment should be stressed using this method.

---

**USCG/NOAA**

- **Name:** JENSEN / CHILDERS
- **Signature:** [Signature]
- **TREATMENT RECOMMENDED**
  - **Treatment:**
    - **Note:**
      - Treatment is not needed as it is not a study site.
      - NOAA site is not a set aside site, but a study site.
      - Treatment suggested by DEC Rep. would be effective.
      - Containment should be stressed using this method.

---
OG Comments:

Surface oil as heavy oil sol, ct f 1st e side of embayment.

Subsurface oil as HOR, H 5-10 cm thick, 8m x 100m, with thicker oil E H17, thinning down beach, oil degradation evident in some pits @ > 20 cm
<table>
<thead>
<tr>
<th>PIN</th>
<th>DEPTH (cm)</th>
<th>OIL CHARACTER</th>
<th>OILED ZONE cm-cm</th>
<th>CLEAN BELOW cm</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE SUBSURFACE SEDIMENTS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>45</td>
<td>X</td>
<td>20-20</td>
<td>Y</td>
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<td>X</td>
<td>P-99S</td>
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<tr>
<td>11</td>
<td>50</td>
<td>X</td>
<td>2</td>
<td>15-15</td>
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<td>32</td>
<td>P-99</td>
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<td>P-99</td>
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<td>X</td>
<td></td>
<td>20-20</td>
<td>Y</td>
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<td>P-99V</td>
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<td>R</td>
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<td>P-99V</td>
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<tr>
<td>16</td>
<td>25</td>
<td>X</td>
<td></td>
<td>5-20</td>
<td>R, B</td>
<td>X</td>
<td>P-99</td>
<td>B globules</td>
</tr>
</tbody>
</table>

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:

REVIEWED: R.W. 5/1/91
REVIEWED: M.E. 5/1/91
W.YSU? BIOLOGICAL SUMMARY FORM

TEAM: II

SEGMENT: KN 113

TIDAL HEIGHT (Range) -2.0 to +2.8

SUBDIVISION: A

BIOLOGIST: M.H. Fawcett

SEA STATE: 2 ft swell

WIND SPEED/DIRECTION: SE 25 knots

PHOTOGRAPHS: ROLL 1

FRAMES

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):
Approx. 250m long beach with rock walls at each end, large 8ft high outcrop in middle plus several other outcrops, boulder areas near ends, wide unstable pebble areas, and 3 small non-raindrainage streams (see sketch). Redrock areas from about +2.3 to -8ft have well-developed communities with dense barnacles, rockweed, mussels, limpets, etc., and new recruits at all of above (below about +3ft the bedrock is scour ed by sediment movement - no life except new barnacle spats which won't survive). SoR and buried oil areas near a northern end of site are surrounded by healthy young limpets, breeding littorinids, rockweed, barnacles, mussels, except for area above about +3ft. All these organisms have recruited since the spill and are coexisting with the remaining oil residue, so it would be best not to destroy them with intrusive cleanup - bioremediation probably OK, if desired. The wide pebble area near center of site has no macro benthos, so is not sensitive to cleanup or buried oil.

At south end of beach benthic community is not as diverse and well-developed among boulders as at north end, but also shows good recruitment and growth of key species, despite residual oil.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS

<table>
<thead>
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<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>SPECIES PRESENT</th>
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</thead>
<tbody>
<tr>
<td>Eagles</td>
<td>1</td>
<td>2 (pair)</td>
<td>prickleshack[comma in LT2]</td>
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<tr>
<td>Seabirds</td>
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<tr>
<td>Waterfowl</td>
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<td>Corvids</td>
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<tr>
<td>Other Birds</td>
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FISH OBSERVED

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<tr>
<th>SPECIES PRESENT</th>
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<tbody>
<tr>
<td>pricklebacks commuting</td>
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LAND MAMMALS

<table>
<thead>
<tr>
<th>SPECIES</th>
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<tr>
<td>Sea Otters</td>
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<tr>
<td>Whales(specify)</td>
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Shoreline subdivision map showing important biological features attached.

REVIEWED: M.C. Stiles
DATE: 5/1
Arrive 0820
Wind 255° S E

\[\text{Diagram of an area with labels: BR, N, HD, PM, FUN, etc.}\]

- Water from bank on wall
- Scattered musk ox
- Dense musk ox
- Moderate willows
- Lit, Ulva, C prairie
- Prickly deaks
- Stream

- Fil swept, mounds
- Moderate barn, fences
- Mound, Lit, ample
- 96 ft. 1 ft. deep
- Fill green in the run

September 15, brisk wind 15.32

- Littorina's laying eggs under rock
- With bio of SAR - lots of Lit
- Scutula in Euxinus
- Dead 1 yr. old barns by scutula
- Fucus recovers among old Fucus
- Pebbles, new barns, spat, shrimp
- Fil ed, many N. chang. on large barns
- Massed, barn, 1 yr. old
- Overall, L. scutula quite a land as seen by Halocynthia Septispicata
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SHORELINE EVALUATION

SEGMENT ST/ KN-113 SUBDIVISION A (1 OF 2) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6Y Recreation: Special use destination
No specific Ecological constraints.

SUBDIVISION ECOCLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS: Consultation and inspection with an Exxon archaeologist is required prior to treatment. Specific on-site monitoring requirements will be determined at that time.

SHPO SIGNATURE: DATE: 5/17/90

OILING CATEGORIZATION:
Wide 210 m: Medium 70 m: Narrow 23 m: V.Light 89 m: No Oil 0 m
Subsurface Oil Observed: Yes X No ___ Maximum Depth 65+ cm

RECOMMENDATIONS:
___ No Treatment Recommended
X Treatment Recommended
X Manual Pickup
X Bioremediation
_____ Tarmat: Breakup
_____ Removal
_____ Snare/Absorbent Booms
_____ Oil Snares (pom poms)
_____ Absorbents (pads, rolls, etc)
_____ Spot Washing: X Wands
_____ Beach Cleaner
_____ Other (see comments)

COMMENTS: Recommended treatment includes 1) manual pick up of oiled debris, 2) spot wash with wands, using pom poms and boom to control sheen, 3) bioremediation of surface and subsurface oil remaining after wash. No specific working time constraints.

TAG COMMENTS: Mechanically till prior to bioremediation, control sheens with mechanical boom. Use boom strainers along shoreline. Manually race with rising tips to enhance liberation of oil from sediments after mechanically tilling.

TAG APPROVAL DATE: 4/24/90
ADEC Art (Picker Art) Wrenn
EXXON [Signature] DATE: 5/11/90
NOAA [Signature] M. J. Hall
USCG [Signature]
FROM YUKON RIVER TO SSAT DATA PAGE 9

Boulder Beach
Patches of tar on
Boulder boulders
8 meters wide 50% coated coverage
Rainbow sheen along
Low intertidal zone

No oil observed on sand.
But subsurface oil was present
And sheen was found in seeps & tide pools. Patches of tar coat
were observed on occasional
Bedrock outcrops in sand/cobble
Area.

2 meter wide band brown
TAR & OIL FROM LOWER INTRATIDAL BOUND TO SNOW LINE.
MOBILE OIL PRESENT

Sign Posted
NOAA HAZMAT
STUDY SITE
NO. 10
Do Not Disturb
286-526-6317

Neve Length (m): 30 to 40
Subdivision: 1.5
Station: W
Wetlands: L
Forest: B
Snow: U
Trees: T
Cobble: C
Forest: F
Sand: S
Tide Pools: TP
WORK PLAN ADDENDUM

Segment WN 113  Subdivision B  Dated 6/26/90

MODIFICATION

1. REASON FOR MODIFICATION

DNR'S REQUEST FOR MODIFICATION DUE TO HIGH HUMAN USE

2. ADJUSTMENT TO WORK PLAN

CHANGE FROM AN NTR TO BIOREMEDIATION AS INITIALLY INDICATED ON SKETCH (ATTACHED)

SHPO APPROVAL NEEDED YES X  SHPO SIGNATURE  Chuck Adams  June 29, 90

TAG APPROVAL DATE  6/26/90

ADEC  Ray Merck's  Raymond  FOSC  5/2/90  DATE  6/26/90

EXXON  Movita Baker  FOSC  5/26/90  DATE  6/26/90

NOAA  Joseph C. Koch  FOSC  6/15/90  DATE  6/26/90

USCG  G.A. Nelson  SA. MENTER  6/26/90  DATE  6/26/90
WORK PLAN ADDENDUM

Segment KN113  Subdivision A  Dated 6/04/90

MODIFICATION

1. REASON FOR MODIFICATION

REQUEST MADE JOINTLY BY ALL THREE FIELD REPRESENTATIVES
AS PER ATTACHED.

2. ADJUSTMENT TO WORK PLAN

1. REMOVE HEAVILY OILED SEDIMENTS (MOUSSE + SEGMENT MIX) APPROX 4 INCH DEPTH.
2. RELOCATE REMAINING OILED GRAVELS TO MITZ
3. BIOREMEDIATE RELOCATED + REMAINING OILED GRAVELS
4. REMOVE OILED DEBRIS/VEGETATION
5. SPOT WASH OILED LOGS IF REQUIRED.

SHPO APPROVAL NEEDED YES [ ]  SHPO SIGNATURE [ ]
NO [ ]  Inspection constraint applies.

TAG APPROVAL DATE 6/04/90
WORK PLAN MODIFICATION RECOMMENDATION

SEGMENT KN113  SUBDIVISION A  DATED 30 MAY 90

MODIFICATION

1. REASON FOR MODIFICATION

Area was indicated as a no-go test site when the work order was completed therefore it was not addressed. A clarification has been made which allows work in this area.

2. SUGGESTED ADJUSTMENT TO WORK PLAN

A. Remove heavily oiled gravel to about 4 inch depth
B. Relocate remaining oiled gravel to MITZ, apply custom clean to gravel remaining in pockets
C. Bio remediate gravel relocated to MITZ with HMX
D. Remove oiled debris/vegetation

3. TIMING ISSUES

A. NONE FOR SENSITIVITIES  
B. Request work authorization immediately to avoid unnecessary return after squad relocates

Post-It® brand fax transmittal memo 7671  2 of 2 pages

To:  CDR ROME  From: LCDR KRANE
Co.:  FOSC-ANGLIA  Co.:  USCG ICP AWS
Dept.: OPERATIONS  Phone #: 001.872.150.0656
Fax #: 243-1736  Fax #: 001.872.150.1526

ADEC  !j!\ucuo \icu ne ADec 5/30/90
EXXON  H. Upfer  5/30/90
USCG  H. Keane  LCDR USCG  5/30
LAND MANAGER  Mark Meiter  (If field rep is on scene)
FOSC SIGNATURE _______________________________  DATE _ _ _ _ _ _ _ _ _ _ _ _ _ _
NO OIL OBSERVED ON SAND.

BUT SUBSURFACE OIL WAS PRESENT AND SHEEN WAS FOUND IN SEEDS AND TIDE POOLS. PATCHES OF TAR COAT WERE OBSERVED ON OCCASIONAL BEDROCK OUTCROPS IN SAND/Cobble AREA.

TOTAL P.02
SHORELINE EVALUATION

SEGMENT ST/KN-113 SUBDIVISION B (2 OF 2) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6Y Recreation: Special use destination
No specific Ecological constraints.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
Cultural resource survey in progress. Shoreline treatment cannot proceed until field data have been assessed and a formal archaeological constraint entered on the shoreline evaluation form.

SHPO SIGNATURE: [signature] DATE: 5/25/90

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 105 m: V.Light 218 m: No Oil 56 m
Subsurface Oil Observed: Yes X No Maximum Depth 35+ cm

RECOMMENDATIONS:
X No Treatment Recommended ___Snare/Absorbent Booms
X Treatment Recommended ___Oil Snare (pom poms)
___Manual Pickup ___Absorbents (pads, rolls, etc)
___Bioremediation ___Spot Washing: ___Wands
___Tarmat: ___Breakup _______ Beach Cleaner
___Removal ___Other (see comments)

COMMENTS: The recommended treatment is bioremediation of surface and subsurface oil in area shown on attached sketch map. No specific time constraints.

TAG COMMENTS: DUE TO ENVIRONMENTAL SENSITIVITIES, RICH INTEGRATION BIOTA, DISTURBANCE SHOULD BE MINIMIZED. THEREFORE, NTIR RECOMMENDED.

TAG APPROVAL DATE: 5/24/90
ADEC ART WESSEL DATE: 5/24/90
EXXON DATE: 5/8/90
NOAA JOSEPH LAMO Date: 5/8/90
USCG W. J. HALL
1991 MAYSAP EVALUATION


ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

Consultation and inspection with an Exxon archaeologist is required prior to treatment. Specific on-site monitoring requirements will be determined at that time. PHONE 564-3276; 564-3657; (Anchorage) or 229-1514 (24 hrs.).

SHPO Signature: [Signature] Date: 5/10/91

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N) INITIAL TAG FOSC
Manual Pickup (Check as Req.) Y Y Y
Spot Washing ______ ______ ______
Bio-Customblen Only ______ ______ ______
Bio-Inipol/Customblen X X X
Other MANNW RAKE ______ ______ ______
Other ______ ______ ______

COMMENTS:
INITIAL: Apply Inipol and Customblen at locations A4 and A6.
Apply Customblen to the pebble/cobble beach in area of pits 4-10.

TAG: MANUALLY RAKE PRIOR TO INIPOL AT AREAS A4, A6, AND A7. AT A5, RAKE TOWARDS AND ITZ IN A NORTH-SOUTH DIRECTION. CHECK AREA ESE JUST BEYOND THE BERM FOR OILING CONDITIONS REQUIRING RAKING + BIO.

FOSC:

TAG APPROVAL DATE: MAY 10 1991 FOSC APPROVAL DATE: 5/15/91

ADEC [Signature] [Signature]
EXXON [Signature] E. E. PAGE, CDR, USCG
USCG [Signature] CHIEF OF STAFF, FOSC
NOAA [Signature]
MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. _ SEGMENT KN-113A SUBDIVISION A DATE A/3/91

ADEC
NAME JEFF CANALAS SIGNATURE

☐ NTR ☒ TREATMENT RECOMMENDED

Recommend MECHANICAL, BEGINNING UITE (PIRT 5S 0G MAP) WOULD TILL DOWN TO
HOR ABOV BAND GOING OUTDOW WBACH. OIL APPEARS TO BE IN LENS, THICKER
AT UITE, TAPERING AT MITE. TILLING SHOULD FOLLOW THE LENS, WHICH IS FAIRLY
DEEP (BEGINS IN UITE AT 20-35 CM) BUT WITH CARE NOT TO DAMAGE PEAT LAYER BELOW.
Some Biota below heavy lens at PRT 6, but tilling/exposure can occur without damage.
Center of BEACH ENVIRONMENTALLY BADER AT PRTS 12 & 13 (NOAA SITE & CORENIT TEST AREA)
Confer with TREATMENT RECOMMENDED (SMALL BUCKET PREFFABLE) COME BEHIND GRANULS AT PRT 12 AND
COAST FROM I WOULD MECHANICAL,TREATMENT RECOMMENDED. COME BEHIND GRANULS AT PRT 12 AND
PUSH INTO MITE. SAME AT TORNADO AT PRT 13. IN ALTERNATIVE, I WOULD MANUALLY TILL 1/4 MITE.
Oil at PRTS 2-4 AND 16-18 I WOULD LEAVE TO NATURAL PROCESSES.

EXXON
NAME FRANK A. Box SIGNATURE Frank A. Box

☐ NTR Oil base runs pretty much throughout the segment,

Subsurface noted as well as surface indications.

Fails heavy deposit of oil in a gravel bar by stream mouth.

Perhaps take the top portion of surface oil and bid.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☐ NTR ☒ TREATMENT

NOAA site is NOT a SET ASIDE SITE, but a STUDY SITE. I
believe work MAY OCCUR. RECREATIONAL area is more than being
on a sunny day, surface oil will contaminate and run.
Treatment suggested by DEC rep. would be effective.
Containment should be stressed using this method.

USCG/NOAA
NAME JENSEN CHILDREN SIGNATURE ROBERT JENSEN/20C

☐ NTR North end of segment has some SOR with some sheening
Tidel area shows sea life doing well and the biologist
feels further removal operations might cause more
environmental harm than good. However, the remainder
of the table beach has subsurface oil and needs
to be evaluated regarding additional treatment.
MIDDLE INTERTIDAL ZONE CONTAINS HOR OVER ENTIRE SUBMERGE AREA INCREASING
UP BEACH FACE - UP ZONE APPEARED UNOILED - SOR APPEARED ON
NO ABNORM ELONGATED LARGE STREAM & CT 7 ST ON VEGETATION ROCK SURFACE.

↓NOTE: NOAA HAZMAT STUDY SITE NO,10 LOC @ LG STREAM ←}
### MAYSAP SHORELINE OILING SUMMARY

**TEAM NO. 1**

**OG**  G. MACDONALD  **BIO**  M. FALCETT  **SEGMENT**  KH-113

**ADEC**  J. GUILLIES  **LANDMANAGER**  M. HALL  **SUBDIVISION**  A  **DATE**  4/29/96

**EXXON**  F. B.  **USCGNOAA**  JENSEN/CHUCHES

**TIME**  08:20  **TIDE LEVEL**  -2' ft. to +1' ft.  **ENERGY LEVEL**  N

**SURVEYED FROM:**  X FOOT  □ BOAT  □ HELO  **WEATHER:**  □ SUN  □ CLOUDS  □ FOG  □ RAIN  □ SNOW

**TOTAL LENGTH SHORELINE SURVEYED:**  335 m  **NEAR SHORE SHEEN:**  □ BR  □ RB  □ SL  □ NONE

**EST. OIL CATEGORY LENGTH:**  W - m  M - 115 m  N - m  VL - m  NO - 220 m  US - 57 m

### SURFACE OIL CHARACTER

<table>
<thead>
<tr>
<th>LOC</th>
<th>OIL CHARACTER</th>
<th>SEDIMENT TYPE</th>
<th>SLOPE</th>
<th>WIDTH</th>
<th>LENGTH</th>
<th>ZONE</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>P</td>
<td>V</td>
<td>1</td>
<td>10</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>P</td>
<td>B P</td>
<td>M</td>
<td>5</td>
<td>C</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
| A3  | P             | P             | R     | 2     | 2      | X    | 10-15H OR
| A4  | P             | S             |       | 10    | 3      | X    | behind bern: high |
| A5  | P             | P             | R     | 0.5   | 10     | X    | log   |
| A6  | P             | P             | R     | 3     | 15     | X    |       |
| A7  | P             | M             | 4     | 7    | X      | X    | low sor |

### DISTRIBUTION:

- C = 61-100%
- B = 51-90%
- P = 11-50%
- S = 1-10%
- T = <1%

### SLOPE:

- V = VERTICAL
- H = HIGH ANGLE
- M = MEDIUM ANGLE
- L = LOW ANGLE

### PHOTO ROLL # MAYSAP:

1 - 7 FRAMES 2-23

### PIT NO./DEPTH

<table>
<thead>
<tr>
<th>NO.</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW</th>
<th>H2O</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>1</td>
<td>x</td>
<td>0</td>
<td>3</td>
<td>B</td>
<td>R</td>
<td>BC-PS</td>
<td>R/H B globules</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>x</td>
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<td>2</td>
<td>B</td>
<td>X</td>
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<td>5</td>
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<td>X</td>
<td>BC-PS</td>
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</tr>
<tr>
<td>4</td>
<td>x</td>
<td>17-25</td>
<td>3</td>
<td>B</td>
<td>X</td>
<td>BC-PS</td>
<td>R/H B globules</td>
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<tr>
<td>5</td>
<td>x</td>
<td>35-55</td>
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<td>B</td>
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<td>BC-PS</td>
<td>R/H B globules</td>
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<tr>
<td>6</td>
<td>x</td>
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<td>BC-PS</td>
<td>R/H B globules</td>
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<tr>
<td>7</td>
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<td>BC-PS</td>
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<td>9</td>
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<td>B</td>
<td>X</td>
<td>BC-PS</td>
<td>R/H B globules</td>
<td></td>
</tr>
</tbody>
</table>

### SHEEN COLOR:

- B = BROWN
- R = RAINBOW
- S = SILVER
- N = NONE

### OG COMMENTS:

- Surface oil as heavy oil on soil, ct 1st e side of embayment.
- Subsurface oil as HOR, 2-5.0 cm thick, 18m x 200m, with thicker oil at HHR, thinning down beach. Oil degradation evident in some pits @ > 20 cm deep.

**REVIEWED:** F.W. 5/1/91

**REVIEWED:** M.C. 5/1/91
<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW</th>
<th>H20 LEVEL</th>
<th>SHEEN COLOR</th>
<th>SUBSURFACE SEDIMENTS</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>10</td>
<td>45</td>
<td>X</td>
<td>20-30 Y</td>
<td>-</td>
<td>15</td>
<td>P</td>
<td>G-DS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>50</td>
<td>X</td>
<td>15</td>
<td>-</td>
<td>X</td>
<td>P</td>
<td>G-P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>35</td>
<td>X</td>
<td>5-15 Y</td>
<td>32 R</td>
<td>X</td>
<td>P</td>
<td>G-P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>30</td>
<td>X X</td>
<td>5-15 Y</td>
<td>-</td>
<td>X</td>
<td>P</td>
<td>G-P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>50</td>
<td>X</td>
<td>5-20 Y</td>
<td>30 R</td>
<td>X</td>
<td>P</td>
<td>G-P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>35</td>
<td>X</td>
<td>5-20 Y</td>
<td>30 R</td>
<td>X</td>
<td>P</td>
<td>G-P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>20</td>
<td>X</td>
<td>5-20 Y</td>
<td>30 R, B</td>
<td>X</td>
<td>P</td>
<td>G-P</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SHEEN COLOR:** B = BROWN; R = RAINBOW; S = SILVER; N = NONE

**OG COMMENTS:**
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #1

DATE 29 April 91

SEGMENT # KN 113

TIDAL HEIGHT (Range) -2.0 to +2.8

SUBDIVISION A

BIOLOGIST M. H. Fawcett

SEA STATE 2 ft swell

WIND SPEED/DIRECTION SE 25 knots

PHOTOGRAPHS: ROLL # FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

Approx 250m long beach with rock walls at each end, large 8ft high outcrop in middle plus several other outcrops, boulder areas near ends, wide unstable pebble areas, and small non-anadromous streams (see sketch). Bedrock areas from about +2.5 ft to +8 ft have well-developed communities with dense barnacles, rockweed, mussels, limpets, etc. and new recruitment of all of above; below about +7 ft the bedrock is scoured by sediment movement - no biota except new barnacle spat (which won't survive). SoR and buried oil areas near northern end of site are surrounded by healthy young limpets, breeding littorinids, rockweed, barnacles, mussels except for area above about +9 ft. All these organisms have recruited since the spill and are coexisting with the remaining oil residue, so it would be best not to destroy them with intrusive cleanup - bioremediation probably OK, if desired. The wide pebble area near center of site has no macro-biota, so is not sensitive to cleanup or buried oil.

At south end of beach, biotic community is not as diverse and well-developed among boulders as at north end, but also shows good recruitment and growth of key species, despite residual oil.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles</td>
<td>1</td>
<td></td>
<td>pricklebacks common in LTZ</td>
</tr>
<tr>
<td>Seabirds</td>
<td></td>
<td>2 (pair)</td>
<td></td>
</tr>
<tr>
<td>Waterfowl</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gulls/kittiwakes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shorebirds</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corvids</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Birds</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MARINE MAMMALS</th>
<th># OBSERVED</th>
<th>SPECIES</th>
<th># OBSERVED</th>
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</thead>
<tbody>
<tr>
<td>Sea Otters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pinnipeds (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whales (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LAND MAMMALS</th>
<th># OBSERVED</th>
<th>SPECIES</th>
<th># OBSERVED</th>
</tr>
</thead>
</table>
| Shoreline subdivision map showing important biological features attached.
Boulders with dense young rockweed and fil. red algae, sparse littorinids, 0.0 to 4+ ft
dense barnacles 3-6
dense fil. green algae
Sparsely Fucaceae
no grazers 6+ to +9 ft

Spars & biota, mainly filam. algae
barnacles - no biota in SOR pebble

Dense barnacles, mussel
Rockweed - new recr of rockweed, mussels, barnacles, limpets, littorinids on all sid.

Pair of eagles

MOR

No biota except
filam. algae, lichen
above about 9 ft

No biota except
filam. algae, lichen
above about 9 ft

Refer to OG map

dense barnacles + spot; sparse patchy mussels on wall below and seaward of CT

Dense barnacles + spot: mussels, barnacles, limpets, littorinids on all sides

Moderately dense mussels, barnacles, lim
Rockweed (all 0-2 yrs old)
Littorinids, filamentous green algae, Rhodomela, amphipods in oiled area
+6 to +9 ft
KN 1134  29 April 91  Fawcett

Arrive 0820

Wind 132°8N, S.E.

First from  bank on wall

scattered numbers of
smaller Focused Rock

BR - 2½ ft, moderate whelks, 2

littoral UA, C, pella

Bail stream

prickle back

groove

fil green in fur rane

nephtsterion, anchyris to 1.72

Littorina laevigata under rock

with bit of SAR - lots of littl

sculata in Eu runoff, area
dense 1 yr old barnacles, scattered

Fucus recruits among oldest Fucus

tall carriages, 20 m depth

studies depicted

about 250 m hea

mussel, large, 1-2 ft

small L sculata equally a band as side of Halosaccus, Surphitor
NV13A (cont) Forrest 29 Apr 91

- burned in trench 7 Apr
- remaining 4-8 ft. surrounded by
  - 4000 boul/edges, barnacle, 1 brid, young Focus
  - etc. on cobbles
- bedrock has long barn, mussel

- Francis - moderate mum, lift. Cement:
  - 1+ recruit, 2 mm lap recruit
  - 3 mm mussel, dense barn/spar from
    - 0.5 to 1 ft. - area from 0 to
    - 2 ft. felt underlaid by pebbles,
      so these spar won't survive

- 4mm wide band of patchy CT
  - among barnacles, some cored
    but OK - heavier CT
  - up (above 1 ft.) but no wire
  - except in bay, timber, green -
    - non-value stream goes underground
      behind C, some turf, oil along banks
      - very loose, mobile gravel, pebbles
  - no bio.

- State TAG reps: John, James, others
  - visited at 09:55 hrs

- boulders/cobbles in area
- with dense young Focus 5 ft. red
  - 0 to 4 ft., dense barn +3 to 6 ft.
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/KN-113

SUBDIVISIONS: A (1 OF 2)
SHORELINE EVALUATION

SEGMENT ST/ KN-113 SUBDIVISION A (1 OF 2) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6Y Recreation: Special use destination
No specific Ecological constraints.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiided biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
Cultural resource survey in progress. Shoreline treatment cannot proceed until field data have been assessed and a formal archaeological constraint entered on the shoreline evaluation form.

SHPO SIGNATURE: _____________________ DATE: _____________________

OILING CATEGORIZATION:
Wide 210 m: Medium 70 m: Narrow 23 m: V.Light 89 m: No Oil 0 m
Subsurface Oil Observed: Yes X No ___ Maximum Depth 65+ cm

RECOMMENDATIONS:
____ No Treatment Recommended X Snare/Absorbent Booms
X Treatment Recommended X Oil Snares (pom poms)
X Manual Pickup ______ Absorbents (pads, rolls, etc)
_____ Bioremediation X Spot Washing: X Wands
_____ Tarmat: _____ Breakup _____ Beach Cleaner
_____ Removal _____ Other (see comments)

COMMENTS: Recommended treatment includes 1) manual pick up of oiled debris, 2) spot wash with wands, using pom poms and boom to control sheen, 3) bioremediation of surface and subsurface oil remaining after wash. No specific working time constraints.

TAG COMMENTS: ________________________________

TAG APPROVAL DATE: _______________________

ADEC EXXON FOSC: DATE: ___________
NOAA USCG

FIELD SHORELINE COMMENT SHEET

SEGMENT ST 113 SUBDIVISION: A DATE 9/5/90

USCG NAME David A. Smith SIGNATURE David A. Smith

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

This area has a thick band of oil in the sub-surface in the upper and middle tidal zone. The oil is still sheening and there is a tacky consistency to the oil on the surface. There is also a band of oil on the Boulder Wall that is approximately 60 meters from the NOAA Site. Bio remediation should be considered for this area. There should also be some hand removal as well.

ADEC NAME M. Cunningham SIGNATURE M. Cunningham

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

Surface coat: Bio remediation; Stem beam: Debris removal; Oiled logs: Burn/sink
Subsurface oil: Yes there was a near continuous layer throughout the beach... but what to do about it? My biological instincts tell me to leave it alone, with non-invasive cleaning techniques only (ie bio remediation), however these same instincts also tell me to question the efficacy of burning on oil burned out 15 cm even if still aerobic.

This segment is notorious for sheens (in part due to NOAA site) but there is a significant oil there. There is a part of me which suggest washing a moderately large section of beach (from pots 4-6) with H2O (1:1:1) but I'm honestly unsure if the recoverable oil amounts to anything significant, may warrant such an approach. Mid section of beach is open and size which may accommodate heavy equipment operations

LAND MANAGER NAME Steven Phillips SIGNATURE Steven Phillips

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

This beach would support heavy equipment operations. Subsurface oil is thick enough that bio remediation would be ineffective. Chronic sheens should be eliminated through clean up and absorbent booms. Oiled logs extensive enough for burning or removal. Vegetation, trash, debris in supertidal is well oilied. Till or rock wash.

* NOAA study site 10 is very gross. Suggest TAG review of at least control sheens. When
**SHORELINE OILING SUMMARY**

**USCG Greg Chaney, Land Rep. Dave Syvester, Segment ST/KN13**

**TIME: 15:50 to 17:30, DATE: April 15, 1990**

**UPLANDS DESCRIPTION:** Grass, Forest, Rock, Snow

**SURFACE OIL**

<table>
<thead>
<tr>
<th>CHARACTER</th>
<th>DISTRIBUTION</th>
<th>OIL/FILM COLOR</th>
<th>IMPACTED ZONES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Pavement</td>
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<td>X</td>
<td>X</td>
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<tr>
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<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
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</tr>
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<td>Mousse</td>
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<tr>
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<tr>
<td>Tarballs</td>
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<tr>
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</tbody>
</table>

**SURFACE OIL**

- PAVEMENT: H F S —- sq. m by —- cm
- Patties/Tarballs —- Bags
- Near Shore Sheen? NO - BR RW SL TL

**SUBSURFACE OIL**

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL (cm)</th>
<th>OIL/FILM COLOR</th>
<th>PIT ZONE</th>
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<td>X</td>
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<td>GS</td>
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**COMMENTS**

- Pit #1 - Shallow due to large number of boulders in substrate. Brown oil floating on top of water in pit. Oiled debris located in supertidal but it was impossible to determine the quantity due to snow cover.
- Pit #6 - Hard pan made further digging impractical.

**REVIEWED DATE**
**SHORELINE OILING SUMMARY**

**SEGMENT** KNL3 **SUBDIVISION** A

### SUBSURFACE OIL (CONTINUED)

| PIT NO. | PIT DEPTH (cm) | SUBSURFACE OIL CHARACTER | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL (CM-ON) | OILED INTERVAL 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SHORELINE ECOLOGICAL SUMMARY

**Segment ST** / **KN 113**  **Subdivision**  **A**  **Date (mo/day/yr)**  **April 5, 90**

- **A** - Substrate type and % of segments:
  1. Bedrock
  2. Boulder
  3. Cobble
  4. Pebble
  5. Sand
  6. Silt

- **B** - Overall % cover of biota (% of segment):
  - Dense: 10%
  - Moderate: 30%
  - Low: 60%

- **C** - Density, substrate preference (by number from A, above), & vertical zonation of major taxa:
  - Barnacles: (upper-U; mid-M; low tidal-L)
  - Mytilus
  - Gastropods
  - Fucus

**Photographs:**
- Roll No. **ST-7-2**
- Frames **4-7, 9**

**Wildlife Observations/ General Comments:**
- Lots of hermit crabs in *Littorina shells*, *Littorina cincta*, *Mizze* 3d earrings
- Nitella common in *Mizze/Boulder*; Somewhere very small in *Mizze/Cobble/Pebble*
- Beach hoppers (*Amphora*) in *Littorina/Cobble/Pebble*; *Amphora* locally dense on *Mizze/Boulder*

**Ecological Considerations:**
- Oil in *Littorina* (E. end of Subdivision)
- **GY** - Special Use Designation
- Sign near south end of Subdivision: "NOAA HAZMAT Study Site #10"
- Yellow rebar stakes in *Mizze/Cobble* and buoy offshore: DEC Study Site?
PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
Salmon stream mouth - spawning (7/10 to 8/31)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.

1C Salmon fry nursery area (4/31 to 7/31)
1D Esther Hatchery release (4/15 to 6/1)
1E Main Bay Hatchery release (4/20 to 5/10)
1F Sewmill Bay Hatchery release (4/15 to 6/1)
1G Cannery Creek Hatchery release (4/21 to 6/1)
1H Remote release site

1I Gill net area (6/7 to 8/31)
1J Purse seine area (7/20 to 9/30)
1K Purse seine hook-off (7/20 to 9/30)
1L Set net sites (6/11 to 7/25)
For Codes 1C through 1L contact ADF&G for specific dates and locations.

2M Herring spawning (4/1 to 6/15)
Restrict boat traffic to essential minimum. Avoid damage to unciled intertidal and subtidal algae and seagrass.
Contact ADF&G for specific dates and locations.

3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.

3O, 3Q Seabird colony (5/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.

5R Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic.

5S All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.

6U Recreation:
Tent sites (6/1 to 9/15)
Anchorages (6/1 to 9/15)
Forest Service cabins (6/1 to 9/15)
Lodge (6/1 to 9/15)
Special use destination

7Z Subsistence area:
Salmon harvesting (5/1 to 9/30)

7H Finfish harvesting

7I Deer harvesting (9/15 to 2/28)

7JJ Invertebrate harvesting
For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.
Boulder Beach: Patches of tar on boulder boulders 8 meters wide 50% coated coverage Rainbow sheen along low intertidal zone

No oil observed on sand. But subsurface oil was present and sheen was found in seeps & tide pools. Patches of tar coat were observed on occasional bedrock outcrops in sand & cobble area.

25 meter wide band brown tar & oil from lower intertidal zone to snow line, mobile oil present

Sign posted:

NOAA HAZMAT
STUDY SITE
NO. 10
Do Not Disturb
286-526-6317
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/KN-113

SUBDIVISIONS: B (2 OF 2)
SHORELINE EVALUATION

SEGMENT ST/ KN-113 SUBDIVISION B (2 OF 2) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6Y Recreation: Special use destination
No specific Ecological constraints.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
Cultural resource survey in progress. Shoreline treatment cannot proceed until field data have been assessed and a formal archaeological constraint entered on the shoreline evaluation form.

SHPO SIGNATURE:_________________________ DATE:_________________________

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 105 m: V.Light 218 m: No Oil 56 m
Subsurface Oil Observed: Yes X No_____ Maximum Depth 35+ cm

RECOMMENDATIONS:
____ No Treatment Recommended
X Treatment Recommended
____ Manual Pickup
____ Bioremediation
____ Tarmat: Breakup
____ Removal
_____ Other (see comments)

COMMENTS: The recommended treatment is bioremediation of surface and subsurface oil in area shown on attached sketch map. No specific time constraints.

TAG COMMENTS:

TAG APPROVAL DATE:______________
ADEC
EXXON __________________________ FOSC:____________ DATE:________
NOAA __________________________
USCG __________________________
FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ 113 SUBDIVISION: B DATE 4/5/90

USCG NAME David Sylvester SIGNATURE BM3 David Schatz

☑ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS
The marine life appears to be recovering. The oil is visible in a bathtub ring. The ring is primarily in the upper and middle tidal zone. There is surface oil present as well as oil in the upper tidal zone. There is a NOAA site #10 where oil is on the surface and sheening is present. As in the areas around this one there is definite progress with the weathering process. Due to the geography of the land there would be little progress with hand cleaning.

ADEC NAME M. Cunningham SIGNATURE Michael Cunningham

☑ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS
Yes there was oil in sediments however the boulder/cobble/gravel beach near Site 1-3 was perhaps the most biologically rich (in numbers/diversity) as I've noticed anywhere. I flipped one rock to count 2 eel blennies, dozens of Hermit Crabs, Limpet Chitons, Snails etc... & with sub surface oil present. I question even bioremediation unless someone shows me evidence that it is non toxic to nursery areas such as this. (no surface oil)

LAND MANAGER NAME Steven Phillips SIGNATURE Steve Phillips

☑ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS
Check for debris.
Pocket beach needs 1st bioremediation or other subsurface treatment. Not much room for equipment.
Rock faces with "Narrow" bands of tar need scraping and any further removal of coats 1mm thick.

* Is the northern most rock face part of NOAA study site #10?
### Shoreline Oil Spill Summary

**OG Greg Chaney** (USCG) **Dave Sylvester** (Exxon) **Land Rep Steve Phillips** (USCG) **Subdivision B**

**Team No.** 7 **Tide Level:** 1 ft. to 3 ft. **Date:** April 15, 1990

**Estimated Subdivision Length:** 403 m

**Uplands Description:**
- Sun
- Clouds
- Fog
- Rain
- Snow

**Surveyed From:**
- Foot
- Boat
- Helo

**Subdivision Surveyed:**
- North to South

**Surface Sediments:**
- R 35%
- B 10%
- C 5%
- S 10%
- M 5%
- V 5%

**Slope:**
- Lang 20%
- Hang 30%
- Vert 50%

**Wave Exposure:**
- Low
- Med
- High

**Oil Category Length:**
- W = m
- M = m
- N = m

**Surface Oil**

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**Pavement:**
- H F S

**Patties / Tarballs:**
- Bags

**Near Shore Sheen:**
- No

**Photographs:**
- Roll No.: ST - 7 - 2
- Frames: 10, 11

**Subsurface Oil**

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**Comments:**

Pit #1: Cobble were cemented together and further digging became impossible.

A actual surface of small pocket lead has very little oil present. However some free oil is still present at depth.

**Reviewed**

**Reviewed Date**
SHORELINE ECOLOGICAL SUMMARY

Segment ST/ KN 113 Subdivision B

Time (24 hr) 1V 18:22 Biologist Roth

(A) Substrate type and % of segments:
(1) Bedrock 50 (2) Boulder 20 (3) Cobble 20 (4) Pebble 20 (5) Sand 20 (6) Silt

(B) Overall % cover of biota (% of segment): Dense 50 Moderate 30 Low 20

(C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L):
juveniles/adults (x), new settlement (3)

BARNACLES

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MYTILUS

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ASTRIPODS

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Wildlife Observations/General Comments: A DIVERSE SITE: Lots of limpets (Notacena scutum) on Mite/Berde; Kathelina very common (ca. 50%) Mite Berde; in Mite Pools: Littorina; 3 Pycnopodia, 1 Equisetum, Anthopleura xanth, Nucella 30; Tegula carnea corus, Calline Smalis Anconius on Mite Boulder/Berde. Locally dense Mysius on Mite/Berd. Despite the GY - SPECIAL USE DESIGNATION [DOES THIS APPLY ONLY TO KN 113?], SNAILS ON SHELLS (see photo).

Bleniies observed, Hermit crabs observed under rocks by DSC B.D. M.CUNNINGHAM; examination of this interesting site interrupted by departure for ship due to worsening weather (wind/snow/fog).
SKETCH MAP

Exposed Rock Faces Snow Little
Trace of Tar But Protected Cracks
Shelter Bands up to 1.5 Meters Wide

Small Pocket Beach
Bedrock Cliff
Low Rocks

Clear Slope
Snow

Bedrock Cliff
Forest
Trees

100% Cover

100 Meters

LEGEND

1 A
Pt. No. Subdivision OI

COV:
Covered Section

SP:
Subdivision Plan

PL:
Plan Distribution

PT:
Property Distribution

O:
Owner

Date: 5-30

OG: Gary Shanny
SEGMENT B KN-113
ARCHAEOLOGICAL INSPECTION/CONSULTATION REQUIRED.

>>> PHONE 564-3274 (Anchorage) OR 229-1508 (24 hrs.) <<<

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

No ecological time constraints.

OTHER ECOLOGICAL CONSIDERATIONS

Avoid any unnecessary disturbance or damage to unoiled biota and substrate.
SHORELINE EVALUATION

SEGMENT ST/KN-113 SUBDIVISION A (1 OF 2) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6Y Recreation: Special use destination
No specific Ecological constraints.

SUBDIVISION ECOCLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS: Consultation and inspection with an Exxon archaeologist is required prior to treatment. Specific on-site monitoring archaeological requirements will be determined at that time.

SHPO SIGNATURE: [Signature] DATE: 5/12/90

OILING CATEGORIZATION:
Wide 210 m: Medium 70 m: Narrow 23 m: V.Light 89 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 65+ cm

RECOMMENDATIONS:
_____ No Treatment Recommended X Snare/Absorbent Booms
X Treatment Recommended X Oil Snare (pom poms)
X Manual Pickup Absorbs (pads, rolls, etc)
X Bioremediation Spot Washing: X Wands
_____ Tarmac: Breakup Beach Cleaner
_____ Removal Other (see comments)

COMMENTS: Recommended treatment includes 1) manual pick up of oiled debris, 2) spot wash with wands, using pom poms and boom to control sheen, 3) bioremediation of surface and subsurface oil remaining after wash. No specific working time constraints.

TAG COMMENTS: MECHANICALLY TILL PRIOR TO BIOREMEDIATION, CONTROL SHEENS WITH MECHANICAL BOOMING, USE SHORELINE STRIPLING ALONG SHORELINE. MANUALLY RAKE WITH RISING TIDE TO ENHANCE LIBERATION OF OIL FROM SEBBEDS AFTER MECHANICALLY TILLING.

TAG APPROVAL DATE: 4/24/90
ADEC [Signature] NOA [Signature] USCG [Signature]
EXXON [Signature] NOAA [Signature] USCG [Signature]
FOSC: [Signature] DATE: 5/12/90
1991 MAYSAP EVALUATION

SEGMENT: KN 014  SUB:  A  REGION:  FWS  SURVEY DATE:  5/4/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s)  OPEN

Ecological/Constraints (see page two for details)  NONE

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature:  Date:  5/17/91

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N)  N  N  1
Manual Pickup (Check as Req.)
Spot Washing
Bio-Customblen Only
Bio-Inipol/Customblen
Other
Other

COMMENTS:

INITIAL:  ____________________________________________________________

TAG:  --------------------------

FOSC:  ______________________

TAG APPROVAL DATE:  MAY 17 1991  FOSC APPROVAL DATE:  5 MAY 1991

ADEC  \________________    FOSC  \________________

EXXON  \________________    E. E. PAGE, CDR, USCG

USCG  \________________    CHIEF OF STAFF, FOSC

NOAA  \________________
TEAM NO. 3  SEGMENT Kx 14  SUBDIVISION A  DATE 5/14/91

ADEC
NAME Wesley Ghormley  SIGNATURE Wesley Ghormley

☐ NTR  ☑ TREATMENT RECOMMENDED
- During treatment period in bay of isles send a person to this segment to survey SUTZ that was covered with snow in search of clean-up debris...
- No oil was on segment -

EXXON
NAME Jon P Czarnecki  SIGNATURE Jon Czarnecki

☑ NTR  No oil present on segment. Healthy beach with good turtle lift.

LANDMANAGER
NAME John Atteny  OF Chugach  SIGNATURE

☐ NTR

USCG/NOAA
NAME Money J. Agost  SIGNATURE

☑ NTR  Segment comprises of gravel, pebbles, and sand no surface or subsurface oil found.
**MAYSAP SHORELINE OILING SUMMARY**

**TEAM NO. 3**

**SEGMENT** KN-14

**DATE** 4 May 91

**TIME** 11:40 to 12:00

**SURVEYED FROM:** FOOT BOAT HELO

**WEATHER:** SUN CLOUDS FOG RAIN SNOW

**TOTAL LENGTH SHORELINE SURVEYED:** 328 m

**NEAR SHORE SHEEN:** NO

**EST. OIL CATEGORY LENGTH:** W 0 m M 0 m N 0 m VI 0 m NO 328 m US 0 m

<table>
<thead>
<tr>
<th>TIME</th>
<th>TIDE LEVEL</th>
<th>ENERGY LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:40 to 12:00</td>
<td>1.40 ft. to 1.81 ft.</td>
<td>M</td>
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</table>

**SURVEYED FROM:**

- FOOT
- BOAT
- HELO

**WEATHER:**

- SUN
- CLOUDS
- FOG
- RAIN
- SNOW

**TOTAL LENGTH SHORELINE SURVEYED:** 328 m

**NEAR SHORE SHEEN:** NO

**EST. OIL CATEGORY LENGTH:**
- W 0 m
- M 0 m
- N 0 m
- VI 0 m
- NO 328 m
- US 0 m

<table>
<thead>
<tr>
<th>L O</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT</th>
<th>SHORE AREA</th>
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</thead>
<tbody>
<tr>
<td>C AP MS TB SOF CV CT ST FL DB NO</td>
<td>K</td>
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</table>

**NOTES**

- NO OIL

**DISTRIBUTION:**

C = 01-100%; B = 01-50%; P = 11-50%; S = 1-10%; T = <1%

**SLOPE:**

- V = VERTICAL
- H = HIGH ANGLE
- M = MEDIUM ANGLE
- L = LOW ANGLE

**PHOTO ROLL # MAYSAP-**

3

**FRAMES** 22

**PIT NO.**

- OIL CHARACTER
- SUBSURFACE OIL CHARACTER
- OILED ZONE
- CLEAN ZONE
- H2O LEVEL
- SHEEN COLOR
- PIT ZONE
- SURFACE-SUBSURFACE SEDIMENTS

**PIT NO.**

- DEPTH (cm)
- OP
- HOR
- MOR
- LOR
- TR
- NO
- cm-cm
- Y/N (cm)
- B R S N
- S
- U M L

**SHEEN COLOR:**

- B = BROWN
- R = RAINBOW
- S = SILVER
- N = NONE

**OG COMMENTS:**

- No surface or subsurface oil was identified (one isolated patch collected).

**OG 1073**

**Remarks:** We 5/91

**Checked:** May 8
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 3  DATE 5/4/91
SEGMENT # KN 14  TIDAL HEIGHT (Range) +1'
SUBDIVISION A  BIOLOGIST  STOKER
SEA STATE 0-1'  WIND SPEED/DIRECTION E 5-10

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):
Fairly sheltered, low energy beach of pebble/pebble/pebble/bedrock,
transected by a small stream.

Birds in the mid to lower intertidal appear healthy and
relatively abundant, consisting primarily of gulls and moderately
dense new-growth fucus, some patches of barnacles and spat,
dense patches or small limpets, adult littorina with egg masses,
dense patches of attached Mytilus and extensive dense intertidal
Mytilus (sparse to moderate densities of limpets, clusters of
small limpets, and protothecae staminata colonies).
No oil observed on this segment.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
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<tbody>
<tr>
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<tr>
<td>Seabirds</td>
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<tr>
<td>Waterfowl</td>
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<td></td>
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<tr>
<td>Gulls/Kittiwakes</td>
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<td></td>
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<tr>
<td>Shorebirds</td>
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<tr>
<td>Corvids</td>
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LAND MAMMALS

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<th># OBSERVED</th>
<th>SPECIES</th>
<th># OBSERVED</th>
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<tr>
<td>Sea Otters</td>
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<tr>
<td>Pinnipeds(specify)</td>
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Shoreline subdivision map showing important biological features attached.
1991 MAYSAP EVALUATION

SEGMENT: KN 114  SUB: A  REGION: PWS  SURVEY DATE: 5/16/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s)  RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details)  Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: [Signature]  Date: 5/20/91

RECOMMENDATIONS:

INITIAL  TAG  FOSC

TREATMENT REQUIRED (Y or N)  N  N  N

Manual Pickup (Check as Req.)  
Spot Washing  
Bio-Customblen Only  
Bio-Inipol/Customblen  
Other  
Other  

COMMENTS:
INITIAL:  

TAG:  

FOSC:  

TAG APPROVAL DATE:  5/29/91  FOSC APPROVAL DATE:  6/13/91

ADEC  
EXXON  
USCG  
NOAA  

E. E. PAGE, CDR, USCG  CHIEF OF STAFF, FOSC
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.
TEAM NO. SEGMENT KNO114 SUBDIVISION A DATE 5/16/91

ADEC
NAME JEFF GINSBURG SIGNATURE

☑ NTR I recommend no treatment, not because of lack of oil but because I know of no feasible means of recovery. Subsurface oil exists throughout the segment, now heavy in the north code. It runs from the Hitz Bar along the north end from MOR (Bordering HUR) to LOR. As you proceed south and down toward the Hitz. The lens is relatively close to the surface (15-20 cm) and easily exposed with dish. Lens thickness varies from 3-10 cm, thus some substantial oil is present, even though fresh water wash throughout much of beach. Manual exposure and removal impractical as too large an area, and mechanical not feasible as large shovel/bedrock mix/Litz. Oil recovery simple simply by using considering.

EXXON
NAME RANDALL K. BOYER SIGNATURE

☑ NTR Coats and stain on vertical faces of large rock surfaces and some subsurface residue were identified on this subdivision. To exemplify the healthy lower infection, footing was slippery because of algae growth. The beach looks alive with living organisms above & below rocky surfaces. Canada Geese were seen flying above in the vicinity of the survey. No further treatment would be required, the recovery process is ongoing.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE

☐ NTR Treatment I'm wondering if this MOR will thicken up once spring run off stops. Agitate soil with foot, produce a rainbow sheen which runs down beach, shear on beaches to the north turns very dark brown.

USCG/NOAA
NAME SCHATZ CHILDS SIGNATURE

☑ NTR Oil found in this segment, the oil exists in some quantity, is at this time not recoverable.

Pocket Beach with associated near vent beach surfacing - Mudable lower energy w/subangular sed. Oil observed as sori/crib on near vertical faces across most of beach-in sea at MOR/lor/sor/sufficer-to sheen after agitation (see picture 1-32-92) - Subsurface lor & sor mor.

No - END BEACH 316 Boulder (Photo 1-32-92 1819)
## MAYSAP SHORELINE OILING SUMMARY

**TEAM NO. 1**

**MAY 16**

**BIO** M. FAWCETT

**LANDMANAGER** M. HALL for DNR

**USCG/NOAA SCHULTZ/CHILDS**

**TIME** 07:35 to 08:45

**TIDE LEVEL** -0.5 ft. to -3.5 ft.

**ENERGY LEVEL** H M X L

**WEATHER** SUN CLOUDS FOG RAIN SNOW

**TOTAL LENGTH SHORELINE SURVEYED:** 605 m

**NEAR SHORE SHEEN:** BR RB SL X NONE

**EST. OIL CATEGORY LENGTH:**

<table>
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<th>L</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT TYPE</th>
<th>SLOPE</th>
<th>WIDTH</th>
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<tr>
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<td>S S</td>
<td>BC M 10 120</td>
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<td>P</td>
<td>CB M 1 2</td>
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<tr>
<td>E</td>
<td>S S</td>
<td>BC M 17 60</td>
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**DISTRIBUTION:**
- **C:** 91-100%
- **B:** 91-90%
- **P:** 11-50%
- **S:** 1-10%
- **T:** <1%

**SLOPE:**
- **V:** VERTICAL
- **H:** HIGH ANGLE
- **M:** MEDIUM ANGLE
- **L:** LOW ANGLE

**PHOTO ROLL:** MAYSAP-1-23 FRAMES 17-23

**OG COMMENTS:**

Low energy rocky shore w/ mod. angle coarse-grained beach.

Surface oil as two distinct distributions:

1) CT & ST & SUTZ; on steep R - black, powdery, occasionally slightly tacky, often w/ sprite needle.

---

**REVISED 5/19/94**

**REVIEWED CB 15 MAY**
OG COMMENTS: Surface oil cont'd:

(ii) CI & ST D up MITZ - MITZ; across beachface on C & B; grey brown, algae coated, tacky; associated w/ subsurface oil. Small soill to patch D to MITZ. Trace silver sheen typical C lower MITZ. Walking over BC/GC beach is sufficient to flush silver & rainbow sheens C MITZ.

SUBSURFACE OIL: Broad mor jiar, w/ heavier oil on north beach. Pitting produces instant brown & rainbow sheen in well-flushed, permeable substrate. Brown clumps under B common. Depths to top of oil = 3-10 cm, thickness 6 cm. Some typical. About 20 supplementary pits established the estimated dimensions.

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>DEPTH (cm)</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW</th>
<th>H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
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<td>25</td>
<td>3</td>
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<td>PEOY</td>
<td>Peat</td>
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<td>x</td>
<td>B-GY</td>
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</tbody>
</table>

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE
TEAM 1

DATE 16 May 91

SEGMENT # KN 1/4

TIDAL HEIGHT (Range) -2.0 to +1.2 ft MLLW

SUBDIVISION A

BIOLOGIST Michael Fawcett

SEA STATE 2 ft swell, seas 1 ft

WIND SPEED/DIRECTION NE 10-15 knots, rain

PHOTOGRAPHS: ROLL # FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

Two main beaches in this subdivision, both with similar 8 1/8c/p/g mixed substrate and moderate wave energy. The northern beach has typically diverse abundant biota in LTZ and typical distribution of barnacles, rockweed, seaweed, limpets, littorinids, whelks etc. in MTZ despite buried oil and SAR among the organisms. The second beach is influenced by freshwater stream runoff across a large part of the beach; diversity is reduced in runoff area, so that only species tolerant of low salinity are common (barnacles, rockweed and dense green algae). Enteromorpha see sketch map for descriptions of sites near oiled areas.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
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</thead>
<tbody>
<tr>
<td>Eagles</td>
<td>1</td>
<td>2 adults</td>
<td>black prickleback</td>
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<td>Seabirds</td>
<td></td>
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<td>northern clingfish</td>
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<tr>
<td>Waterfowl</td>
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<tr>
<td>Gulls/Kittiwakes</td>
<td>2(3)</td>
<td>10</td>
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<td>Shorebirds</td>
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<tr>
<td>Corvids</td>
<td></td>
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<tr>
<td>Other Birds</td>
<td></td>
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</tbody>
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<thead>
<tr>
<th>MARINE MAMMALS</th>
<th># OBSERVED</th>
<th>SPECIES</th>
<th># OBSERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea Otters</td>
<td></td>
<td></td>
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Shoreline subdivision map showing important biological features attached.
Bio Sketch Map
KW 114-A, 5/16/91
M. H. Faulkett

CT on wall above sparse barnacles; moderate barnacles, rockweed, mussels, limpets, littorinids 4m downshore

Buried oil in MTZ among moderate dense barnacles, patchy young rockweed; p'1's littorinids breeding under rocks on topsoil limpets, whelks; SOR & CT from MTZ to SUTZ at +12 ft - some among and just above dense, live barnacles, with rockweed, whelks, limpets, anemones, littorinids, etc., below. LTZ has rich biota: variety of algae, fishes, starfish, anemones, clams, sea urchins, etc.

CT 48-12 ft on massive rock covering some old, live barnacles & mussels; dense barnacles, mussels, whelks below

SOR 4-12 ft in SUTZ; no biota nearby; moderate rockweed, limpets, littorinids, sparse barnacles 4m downshore at +9 ft
KN 114A  16May 91  Fawcett

CT in UTZ channel on wall
- North end of submerged
  sponges, barnacles, barn, molt barn
- T erra, muss, lim, HT downer
- 4.5m
  -BC PG head, some marine
  blubbers, dense algae, LGZ, mold
  MTZ

- 2 lots terns
- 2 Kittiwakes
  -m eagle aerobics near island
  -fly nest
  -brown cow 5-6ft among
  MTZ, wood, barnacles, patchy
  young, foxes, Rhals, cempt, lily
  -limpets, breeding 1 lily, wire\t
  sunken rocks - healthy typical
  stornes hallefield - band of
  SOR4 CT spans upp MTZ UTZ
  up to +10-12 ft
  - CT 9-10 ft
  CT great boulder setting in MTZ
  among with above dense barnacles
  - Foxes, Rhals, 1 wt, lim, Rhals,
  brown below - LGZ downstar

6 more terns
K. W. 114(Cant.) 11-May-91  Farnell

-LTZ rich  &

-Modi Line Villa
Rhoda  Farnell
-alto  Hal  residence
Cigarettes  leaf,  red   -  fl.  grass
- purple  clings  fish,  Leptocara
- Epacris,  clumps  (Prostheca
Stenocardium,  wreath,  impidus
Hardon,  seal -  animal &  plant

-LTZ  normal  distribution appen
healthy -  new records of man

- musk  line  &  harn,  otoliths  &
best  left  alone

- 2 glass  Flewby

- EMR  2 - 1967  &  1971  Q54

- 50
- 13  feet  -  350  2  -  16  0  0

- Mod  Farnell  line,  lft,  spears
- base  ft  insta.  10
- Stream  runoff  influence  30 m
wide  area  of  beach  -  LTZ  MZ

-Boulders  w/  Farnell  barides
- alone  Entheromast

Tall  Pitchers,  3,  in  mddle  of  MTZ
- 10  ft  lft  of  3  -  12  feet  corin

- native  bracken,  1,  30  m

- dense  brack,  Whales,  Young

-  LTZ  not  as  dense  in  run-off  area

- similar  area  east  past  Madei  end  0845
1991 MAYSAP EVALUATION

SEGMENT: KN 114    SUB: A    REGION: PWS    SURVEY DATE: 5/16/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details) Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: ___________________________ Date: ___________________________

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N)    INITIAL    TAG    FOSC
N    ___________________________    ___________________________    ___________________________

Manual Pickup (Check as Req.)    ___________________________    ___________________________    ___________________________
Spot Washing    ___________________________    ___________________________    ___________________________
Bio-Customblen Only    ___________________________    ___________________________    ___________________________
Bio-Inipol/Customblen    ___________________________    ___________________________    ___________________________
Other    ___________________________    ___________________________    ___________________________
Other    ___________________________    ___________________________    ___________________________

COMMENTS:
INITIAL: ___________________________

________________________________________

________________________________________

________________________________________

TAG: ___________________________

________________________________________

________________________________________

FOSC: ___________________________

________________________________________

________________________________________

TAG APPROVAL DATE: ___________________________
FOSC APPROVAL DATE: ___________________________

ADEC: ___________________________
EXXON: ___________________________
USCG: ___________________________
NOAA: ___________________________
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.
### ADEC

**NAME:** Jeff Simmons

**SIGNATURE:** [Signature]

**NTR** 1 recommends no treatment, not because of lack of oil but because of no feasible means of recovery. Subsurface oil exists throughout the segment, more heavily in the north end. It runs from the MITZ toward the MITZ, ranging from 1-6 (bordering MOR) to 20, as you proceed south and down toward the MITZ. The lens is relatively close to the surface (1-20 cm) and easily dispersed with disks. Lens thickness varies from 3-10 cm; thus some substantial oil is present, even though fresh water washes throughout much of the beach. Manual collection and removal impractical as too large an operation; any mechanical, not feasible as large bubblers/sedxick MITZ-LITZ. Oil relatively stable to (subsurface conning).

### EXXON

**NAME:** Randall K. Boyer

**SIGNATURE:** [Signature]

**NTR** Coats and stain on vegetation faces of large rock surfaces and some subsurface residue were identified on this subdivision. To exemplify the highly lower-infection footing was slippery because of algae growth. Beach looks alive with living organisms above and below rocky surfaces. Canadian geese will soon flying above in the vicinity of the survey. No further treatment would be required, the recovery process is ongoing.

### ANDMANAGER

**NAME:** Marsha Hall

**SIGNATURE:** [Signature]

**NTR** Treatment is wondering if this MOR will thicken up once spring runoff stops. Agitate soil with foot, produce silver rainbow sheen which runs down beach. Sheen on beaches to the north turns very dark brown.

### USCG/NOAA

**NAME:** [Name]

**SIGNATURE:** [Signature]

**NTR** Oil found in this segment, the it exists in some quantity, is at this time not recoverable.

- Pocket seeps, associated near vent beach surrounding - and small lower patches in sub-aqueous sed. Oil observed as sor; CT is on near vertical faces across most of beach in S/L - at MF to sor surface.
- 0 sheepy action abita - (see photo 1-23-32) - subsurface sor P/2001.
- Nor - to this - 316 Boulder (P/sh 1-23-18619)
MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 1

SEGMENT 1K - 114
SUBDIVISION A
DATE 5/16/93

TIME 07:35 TO 08:45
TIDE LEVEL -0.5 ft. to -3.5 ft.
ENERGY LEVEL: [H M X L]

SURVEYED FROM: [X] FOOT [ ] BOAT [ ] HELO
WEATHER: [ ] SUN [ ] CLOUDS [ ] FOG [ ] RAIN [X] SNOW

TOTAL LENGTH SHORELINE SURVEYED: 605 m
NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH:

<table>
<thead>
<tr>
<th>L</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT</th>
<th>SHORE SLOPE</th>
<th>AREA HEIGHT / M</th>
<th>LENGTH / M</th>
<th>ZONE S</th>
<th>UI</th>
<th>MI</th>
<th>LI</th>
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<tbody>
<tr>
<td>A</td>
<td>P5</td>
<td>2</td>
<td>V</td>
<td>0.2</td>
<td>30</td>
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<td>B</td>
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<td>D</td>
<td>P</td>
<td>CB</td>
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<td>E</td>
<td>S5</td>
<td>BC</td>
<td>M</td>
<td>17</td>
<td>60</td>
<td>X</td>
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</tbody>
</table>

DISTRIBUTION: C = 91-100%; B = 81-90%; P = 71-80%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP -1-23 FRAMES 17-23

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW ZONE</th>
<th>H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
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<td>CB-GO</td>
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<td>X</td>
<td>CB-GO</td>
<td></td>
</tr>
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</table>

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:
Low energy rocky shore w/ mod. angle course-grained beaching.
Surface oil in two distinct distribution:
1) CT S. SUTZ; on steep R - black, powdery, occasionally slightly tacky, often w/ spruce needlelor.

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Surface oil in two distinct distribution:
1) CT S. SUTZ; on steep R - black, powdery, occasionally slightly tacky, often w/ spruce needlelor.

REVISED 5/19/93
REVIEWED CB 5/18/93
OG COMMENTS:

Surface oil cont'd:

(ii) CT of ST C up WITZ - MITZ; across beachface on
C; B; grey brown; algae coated, tacky; associated
w/ subsurface oil. Small oil slick patch @ low MITZ.
Trace silver sheen typical @ lower MITZ. Walking
over BC/GC beach is sufficient to flush silver @
rainbow sheens @ MITZ.

SUBSURFACE OIL: Broad mor/rock, w/ heavier oil on north
beach. Pitting produces instant brown; rainbow sheens
in well-flushed, permeable substrate. Brown droplets under
B common. Depths to top of oil @ 3-10 cm; thickness of
>Some typical. About 20 supplementary pits established the
estimated dimensions.

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN CM</th>
<th>zone</th>
<th>+H2O LEVEL</th>
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SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

Reviewed 5/19/97
Reviewed by MATT
KN-114 A

G. MACDONALD  S. 6.91

SUBSURFACE OIL
LOR-MOR ≤ 8 x 60 m
@ UMITZ

CT 40°
D. 0.20 x 30 m
rock clinched

SUZI (E)
5. SOR 1 x 2 20%

N10 x 120 m
CT, ST ≤ 10%
over beachface Be

BeG/R

CT, ST ≤ 20%
2 x 250 m
on fl. 8/10

SUBSURFACE OIL
MOR-LOR ≤ 6 x 100 m
MITZ - HITZ

ct, st ≤ 10%
typ. annor beachface
0.12 x 60 m

CT, ST = 10%
typ. annor beachface
0.12 x 60 m

N

PROFIE

0 100 200 m

reviewed 5.19 94
REVIEWED CP 15 MAY
**MAYSAP BIOLOGICAL SUMMARY FORM**

**TEAM #: 1**

**DATE: 16 May 91**

**SEGMENT #: KN 1/4**

**SUBDIVISION: A**

**SEA STATE: 2 ft swell, seas 1 ft**

**WIND SPEED/DIRECTION: N = 10-15 knots, ra.**

**PHOTOGRAPHS: ROLL #:**

**FRAME #:**

**COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):**

Two main beaches in this subdivision, both with similar RB/IC/G mixed substrate and moderate wave energy. The northern beach has typically diverse a bountiful bota in LTZ, and typical distribution of barnacles, rockweed, shaldors, limpets, limpets, whels, etc in MBZ, despite buried oil and silt among the organisms. The second beach is influenced by freshwater stream runoff across a large part of the beach: diversity is reduced in runoff area, so that only species tolerant of low salinity are common (barnacles, rockweed, and dense green algae). Enter something to show sketch map for descriptions of data near oiled areas.

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Shoreline subdivision map showing important biological features attached.

**REVIEWED (by 19 May)**

**Paul S. 11/2/91 DFR**
Bio Sketch Map
KM 114-A, 5/16/91
M. H. Faucett
KN 114A  16 May 91  Faust

CT in VT2 channel on wall
North end of subdivision
Spars, barnacle laden, mid bay
Faucs, mussel line, lift downriver

BCF G bend, some massive
boulders dense algae LT2, mud

MT2

2 breakers
2 Kilowatts

No eagle activity near island
up river

- Boulders 10-12 ft among
MT2 with barnacle patch
young Fauns, Rhods, Leaps, Littles

- Littles, breeding Littles, Welds
- Oiled, rocky - heavily, typically

Dense ballast field, band of
30+ CTs span upper MT2/VT2
up to +10-12 ft, +8-10 ft

On great boulders setting in MT2
among 4 above dense barnacles
Faucs, fauns, leapers, rhods

Another below - LT2 downstream

Stevie

BCP LT2
C-PG VT2
Swell 2 ft
Said left

Wind NE 15
Cold rain

6 more terms
KN 114 (cont.) 16 May 91

LTZ, Rich bks - Maudine Ville.
- BODY: Fura, -aeli Hale, junior
- Cigarette, left hand: fall, open
- Bubbles, clinging, Leptastius
- Porotic, dense, Protobasal
- Circumdium: Inching, limp clothes
- Harman seal - animals & plant
- Have normal distribution, 
  appear healthy - new rescue of barn
  muscle, lime, pain, orthopedic
  best left alone
- 2 bottle flies

- begin (2) - help, bowl, Osten
  - 503 +12-13 bd S LTZ - no bids
- mod Fura, limp left spine
- barn + in farm store +1970
- Stream, runoff, influence 30 w
  with area of beach - LTZ-"m2"
- beehive w/Furc 5 banded
  dense Entomacly
  tall 1st leaf in middle of LTZ
  cl on pole + 9-12 feet covering
  marine, barnacle (PT) +5 cm mussel
- dense barn, Whales, young
  mussel below

- LTZ not as dense in run/m area as
  in similar area just west Maudine cd 0845
1991 MAYSAP EVALUATION

SEGMENT: KN 014  SUB: A  REGION: FWS  SURVEY DATE: 5/4/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: __________________________ Date: __________________

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N)  N

Manual Pickup (Check as Req.)
Spot Washing
Bio-Customblen Only
Bio-Inipol/Customblen
Other
Other

COMMENTS:
INITIAL: __________________________________

TAG: ______________________________________

FOSC: ______________________________________

TAG APPROVAL DATE: ____________  FOSC APPROVAL DATE: ____________

ADEC __________________________
EXXON __________________________
USCG __________________________
NOAA __________________________
<table>
<thead>
<tr>
<th>TEAM NO.</th>
<th>SEGMENT</th>
<th>SHEET</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Kw 14</td>
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<table>
<thead>
<tr>
<th>ADEC</th>
<th>NAME: Wesley Glavenley</th>
<th>SIGNATURE: Wesley Glavenley</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>NTR □</td>
<td>Treatment Recommended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>During treatment period in bay of isles send a person to this segment to survey suit that was covered with snow in search of clean-up debris.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No oil was on segment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXXON</th>
<th>NAME: Jon P. Czarnecki</th>
<th>SIGNATURE: Jon Czarnecki</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NTR □</td>
<td>No oil present on segment. Hardy beach with good debris left.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LANDMANAGER</th>
<th>NAME: Basil Stagner</th>
<th>SIGNATURE: Basil Stagner</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NTR □</td>
<td>One half day noted.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USCG/NOAA</th>
<th>NAME: Rooney/Brooks</th>
<th>SIGNATURE: Rooney/Brooks</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ NTR</td>
<td>Segment comprised of gravel, pebbles, and sand. No surface or subsurface oil found.</td>
<td></td>
</tr>
</tbody>
</table>
No surface or subsurface oil was identified (one isolated entry collected).
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 3  DATE  5/4/91
SEGMENT # KN 14  TIDAL HEIGHT (Range) 7'
SUBDIVISION A  BIOLoGIST STOKER
SEA STATE A-1  WIND SPEED/DIRECTION E 5-10
PHOTOGRAPHS: ROLL #  FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):
Fairly sheltered, low energy beach of pebbles/pebbles/boulder/bedrock
Transacted by a small stream.
Seaweed in the mid to lower intertidal appears healthy and
relatively abundant, consisting primarily of patchy and moderately
dense, new-growth Zostera, dense patches of barnacle and spat,
dense patches or small kelping, adult kelping with egg masses
dense patches of attached Mytilus, and extensive dense intertidal
Mytilus species to moderate densities of limpet, clusters of
small bryosteges, and protosteges, stemmace (clams).
No oil observed on this segment.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
<th>SPECIES PRESENT</th>
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<tbody>
<tr>
<td>Eagles</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Seabirds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterfowl</td>
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<tr>
<td>Gulls/Kittiwakes</td>
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<tr>
<td>Shorebirds</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Corvus</td>
<td></td>
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<tr>
<td>Other Birds</td>
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<table>
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<tr>
<th>MARINE MAMMALS</th>
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<th>SPECIES</th>
<th># OBSERVED</th>
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<tr>
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</tr>
<tr>
<td>Pinnipeds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whales</td>
<td></td>
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</table>

LAND MAMMALS

Shoreline subdivision map showing important biological features attached.
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/KN-114

SUBDIVISIONS: A (1 OF 1)
SHORELINE EVALUATION

SEGMENT ST/ KN-114       SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T All bald eagle nest (3/1 to 6/1)-Active eagle nest (3/1 to 9/1)
6Y Recreation: Special use destination
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: ___________________ DATE: ___________________

OILING CATEGORIZATION:
Wide 65 m: Medium 332 m: Narrow 277 m: V.Light 51 m: No Oil 122 m
Subsurface Oil Observed: Yes X No__ Maximum Depth 25 cm

RECOMMENDATIONS:

No Treatment Recommended _ Snare/Absorbent Booms
Treatment Recommended _____ Oil Snare (pom poms)
Manual Pickup _____ Absorbents (pads,rolls,etc)
Bioremediation Spot Washing: Wands
Tarmat: Breakup ____ Beach Cleaner
Removal ____ Other (see comments)

COMMENTS: Recommend removal of oil debris and bioremediation of areas indicated on sketch map. Work should be conducted after 6/1 and with approval from ADF&G and USFWS regarding eagle nests.

TAG COMMENTS:

TAG APPROVAL DATE: __________
ADEC ______________ Exxon ______________
NOAA ______________ USCG ______________
PWS ECOLOGICAL CONSTRAINTS

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.

1C Salmon fry nursery area (4/31 to 7/31)
1D Esther Hatchery release (4/15 to 6/1)
1E Main Bay Hatchery release (4/20 to 5/10)
1F Sawmill Bay Hatchery release (4/20 to 5/10)
1G Cannery Creek Hatchery release (4/21 to 6/1)
1H Remote release site
1I Gill net area (6/7 to 8/31)
1J Purse seine area (7/21 to 9/30)
1K Purse seine hook-off (7/20 to 9/30)
1L Set net sites (6/11 to 7/25)
For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.

2M Herring spawning (4/1 to 6/15)
Restrict boat traffic to essential minimum. Avoid damage to unoilied intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.

3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.

5R Seabird colony (5/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.

5S Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic.

5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (8/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 400m. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.

6U Recreation: Tent sites (6/1 to 9/15)
6V Anchorages (6/1 to 9/15)
6W Forest Service cabins (6/1 to 9/15)
6X Lodge (6/1 to 9/15)
6Y Special use destination

7Z Subsistence area: Salmon harvesting (6/1 to 9/30)
7HH Finfish harvesting
7II Deer harvesting (8/15 to 2/28)
7JJ Invertebrate harvesting
For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.
FIELD SHORELINE COMMENT SHEET

SEGMENT ST: KN 114  SUBDIVISION:  DATE: 4/6/90

USCG NAME: David A. Sykstus  SIGNATURE: David A. Sykstus

☐ NO TREATMENT RECOMMENDED  ☑ TREATMENT SUGGESTED

COMMENTS

Oil still in thick bands in the subsurface as well as on the bedrock face in the upper tidal zone. When we dug our pit, often there would be sheens as well as sticky or tacky oil residue. Most of the oil in the bedrock is baked on for. Bioremediation would be a good choice in this section. Something should be done for the subsurface as well.

ADEC NAME:  M. Cunningham  SIGNATURE: Michael Cunningham

☐ NO TREATMENT RECOMMENDED  ☑ TREATMENT SUGGESTED

COMMENTS

Bioremediate low angle boulders along entire segment w/special repeated covering on beach face(s) where pits dug. Leave island alone inspite of subsurface oil - but if you must do something there - biorem. Only area near pit #1 Extensive biota. Check storm berm for debris. One could till sections of beach berm pts 3 & 4 to s. end beach

LAND MANAGER
NAME:  Steven Phillips  SIGNATURE:  Steven Phillips

☐ NO TREATMENT RECOMMENDED  ☑ TREATMENT SUGGESTED

COMMENTS

Check storm berm for debris.
Beaches: Disturb (till or rip) areas with surface & subsurface oil. Use absorbant booms and oil skimmers (get the mobile oil up), bioremediate after flushing.
Rock faces: scrape taras over 2mm thick, extend treatment to 1mm thickness if techniques developed (remove dried surface, underside is softened). Remove heavily oiled logs - burn these when they dry awhile.
**SHORELINE OILING SUMMARY**

**BIO:** Greg Chaney  USCG  Dave Sylvester  SEGMENT ST/ KN-144  
**LAND REP:** Steve Phillips  
**EXXON:** Ray Santos  ADEC  Mike Cunningham  
**TEAM NO.:** 7  
**TIDE LEVEL:** 0.10  
**DATE:** April 16, 1990  
**EST. SUBDIVISION LENGTH:** 988 m  
**SURVEYED FROM:** Foot  
**SURFACE SEDIMENTS:**  
**SURFACE OIL**  

<table>
<thead>
<tr>
<th>CHARACTER</th>
<th>DISTRIBUTION</th>
<th>OIL / FILM COLOR</th>
<th>IMPACTED ZONES</th>
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<tbody>
<tr>
<td>ASPHALT PAVEMENT</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>POOLED</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>COVER</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>COAT</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>STAIN</td>
<td>X</td>
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</tr>
<tr>
<td>MOUSSE</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>PATTIES</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>TAR BALLS</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>FILM</td>
<td>X</td>
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<tr>
<td>NO OIL</td>
<td>X</td>
<td>X</td>
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</tbody>
</table>

**PAVEMENT:** H F S sq. m by cm  
**PATTIES / TAR BALLS:** BAGS  
**NEAR SHORE SHEEN:** NO BR RW TL  
**OILED DEBRIS:**  
<table>
<thead>
<tr>
<th>AMOUNT</th>
<th>DEBRIS COLLECTED</th>
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<tbody>
<tr>
<td>Logs</td>
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<tr>
<td>Vegetation</td>
<td></td>
</tr>
<tr>
<td>Trash</td>
<td></td>
</tr>
<tr>
<td>Debris</td>
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</tr>
</tbody>
</table>

**OIL CATEGORY LENGTH:** W 90 m M 305 m N 467 m Vl 60 m NO 20 m  
**OIL CATEGORY:**  
**OIL LIBRARY:**  
**PHOTOGRAPHS:**  

**SUBSURFACE OIL**  

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL</th>
<th>BELOW OIL / FILM COLOR</th>
<th>PIT ZONE</th>
<th>ANA</th>
<th>SUBSURFACE SEDIMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 15</td>
<td>X</td>
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<td>0.15</td>
<td>X</td>
<td>X</td>
<td>13PG</td>
<td>BPG</td>
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<tr>
<td>2 15</td>
<td>X</td>
<td>X</td>
<td>0.2</td>
<td>X</td>
<td>X</td>
<td>BPG</td>
<td>Mobile Oil</td>
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<td>2.10</td>
<td>X</td>
<td>X</td>
<td>CPG</td>
<td>CPG</td>
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<td>3 30</td>
<td>X</td>
<td>X</td>
<td>0.5</td>
<td>X</td>
<td>X</td>
<td>CPG</td>
<td>CPG</td>
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<tr>
<td></td>
<td>X</td>
<td>X</td>
<td>5.30</td>
<td>X</td>
<td>X</td>
<td>CPG</td>
<td>CPG</td>
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</tbody>
</table>

**COMMENTS:** Mobile oil was still present on the beaches in this segment. Many of the pits had black and brown floating on top of the water which filled the pits as they were dug. In some places thin mobile oil was found on the under sides of large boulders.
**SHORELINE OILING SUMMARY (PAGE 2 of )**

**SEGMENT ST/ K-114 SUBDIVISION NONE**

**SUBSURFACE OIL (CONTINUED)**

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL</th>
<th>BELOW</th>
<th>OIL / FILM COLOR</th>
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<td>BC</td>
</tr>
</tbody>
</table>

**COMMENTS**

#9 Pit has brown droplets of oil in water in pit. Very little oil could be seen in sediments. Impossible to dig deeper due to large boulders.
SHORELINE ECOLOGICAL SUMMARY

**Segment ST1 KN14 Subdivision**

Date (mo/day/yr) **Apr 6 90**

**Time (24 hr)** LV 1805 **Biologist** **Roth**

(A) Substrate type and % of segments:
1. Bedrock 60
2. Boulder 20
3. Cobble 10
4. Pebble 5
5. Sand 5
6. Silt

(B) Overall % cover of biota (% of segment):
1. Dense 30
2. Moderate 50
3. Low 20

(C) Photographs:
- Roll No. **ST-7-2**
- Frames **12-18**

### BARNACLES

<table>
<thead>
<tr>
<th></th>
<th>Dense</th>
<th>Moderate</th>
<th>Sparse</th>
<th>Rare</th>
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### MYTILUS

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### GASTROPODS

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### FOCUS

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Wildlife Observations/General Comments:
- A RICH AND VARIED INTERTIDAL FAUNA DESPITE CONSIDERABLE OIL. IN MITE COBBLE: NUMEROUS ANNEAL NORMS (OLIGOCARPS?) UNDER ROCKS; LOTS OF NORTHEA SCUTUM; LITTORINA SITKANA WITH EGG-MASTERS; ABUNDANT HERMIT CRABS IN LITTORINA SHELLS; IDOTIA SP. IN LITE TIDEPOLLS; Goby; Golley Cells; IDOTIA; G. NORMOSMAEBOMA; HERMIT CRABS VERY ABUNDANT; LIMERS; BRYOCEPHALUS.

Ecological Considerations:
- EELGRASS (ZOSTERRA), AGASSUM IN LITE COBBLE UNDERWATER.
- PULMONADIA IN LITE.

**GY Special Use Designation**
ADDENDUM: SUBDIVISION CONSTRAINTS
SEGMENT KN-114 SUBDIVISION A (1 of 1)

WORK WINDOW

<table>
<thead>
<tr>
<th>Manual Pickup</th>
<th>CLOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioremediation</td>
<td>CLOSED</td>
</tr>
</tbody>
</table>

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T Bald Eagle Nest  USFWS 6/1/90 map indicates an active nest in Subdivision A. Closed to manual pickup and bioremediation within 400m of active nest.

OTHER ECOLOGICAL CONSIDERATIONS

If eagle nest constraint is removed, other ecological considerations will apply.

Date 6-10-90

Prepared by 6-10-90
SHORELINE EVALUATION

SEGMENT ST/ KN-114 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
ST All bald eagle nest (3/1 to 6/1)-Active eagle nest (3/1 to 9/1)
6Y Recreation: Special use destination
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: Date: 4/25/90

OILING CATEGORIZATION:
Wide 65 m; Medium 332 m; Narrow 277 m; V.Light 51 m; No Oil 122 m
Subsurface Oil Observed: Yes X No Maximum Depth 25 cm

RECOMMENDATIONS:
_____ No Treatment Recommended _____ Snare/Absorbent Booms
X Treatment Recommended _____ Oil Snare (pom poms)
X Manual Pickup _____ Absorbents (pads, rolls, etc)
X Bioremediation _____ Spot Washing: Wands
_____ Tarmat: Breakup _____ Beach Cleaner
_____ Removal _____ Other (see comments)

COMMENTS: Recommend removal of oil debris and bioremediation of areas indicated on sketch map. Work should be conducted after 6/1 and with approval from ADF&G and USFWS regarding eagle nests.

TAG COMMENTS: Motrues to assess storm are to determine need for extension of treatment in this area.

NOTE: The north pocket beach may be a bioremediation study site. Monitor to clear prior to treatment.

TAG APPROVAL DATE: 4/23/90
ADEC N.E. Welch
EXXON M. J. Hall
NOAA Tony Telbirt
USCG
SHORELINE EVALUATION

SEGMENT ST/ KN-114   SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T All bald eagle nest (3/1 to 6/1) - Active eagle nest (3/1 to 9/1)
6Y Recreation: Special use destination
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance/damage to unoiled biota and substrate.

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If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE:_________________________ DATE: 4/25/90

OILING CATEGORIZATION:
Wide 65 m: Medium 332 m: Narrow 277 m: V.Light 51 m: No Oil 122 m
Subsurface Oil Observed: Yes X No___ Maximum Depth 25 cm

RECOMMENDATIONS:

No Treatment Recommended    Snare/Absorbent Booms
X Treatment Recommended    Oil Snares (pom poms)
X Manual Pickup    Absorbents (pads, rolls, etc)
X Bioremediation    Spot Washing: Wands
Tarmat: Breakup    Beach Cleaner
Removal    Other (see comments)

COMMENTS: Recommend removal of oil debris and bioremediation of areas indicated on sketch map. Work should be conducted after 6/1 and with approval from ADF&G and USFWS regarding eagle nests.

TAG COMMENTS:   MONITORS TO ASSESS SITUS BEAVER TO DETERMINE THE NEED FOR EXTENSION OF TREATMENT TO THIS AREA

NOTE: THE NORTH POCKET BEACH MAY BE A BIOREMEDIATION STUDY SITE
    MONITORS TO CLARIFY PRIOR TO TREATMENT

TAG APPROVAL DATE: 4/13/90
ADEC_________________________ DATE: 5-3-90
EXXON_________________________ PSC:_________________
NOAA_________________________ NSC:_________________
USCG_________________________
1991 MAYSAP EVALUATION SURVEY ADDENDUM

SEGMENT: KN 015  SUB: A  REGION: PWS  SURVEY DATE: 6/13/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s)  RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details)  Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: ______________________  Date: ______________________

RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
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</thead>
<tbody>
<tr>
<td>N</td>
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</table>

Manual Pickup (Check as Req.)  __________  __________  __________
Spot Washing  __________  __________  __________
Bio-Customblen Only  __________  __________  __________
Bio-Inipol/Custumblen  __________  __________  __________
Other________________________  __________  __________  __________

COMMENTS:
INITIAL: Original survey (5/12/91), interrupted because of eagle activity. Survey addendum (6/13/91) completed survey.

TAG: ______________________________________

FOSC: _____________________________________

TAG APPROVAL DATE: __________  FOSC APPROVAL DATE: __________

ADEC________________________  FOSC________________________
EXXON________________________
USCG________________________
NOAA________________________
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USFWS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.
To: File
From: Julie Arin
Date: June 17, 1991
Subject: MAYSAP Subdivisions EL-106C, GR-103B, GR-103C, & KN-15A

Additional surveying was performed on the subdivisions listed above. These subdivisions were not completed during the initial survey due to eagles in the area. These survey reports are addenda to the survey information previously submitted (EL-106C was not previously surveyed).
ADEC
NAME: Marianne Paffitz
SIGNATURE: Marianne Paffitz

☐ NTR Mousseline Pebble, cobbles, small boulder in TH, 1-2 x 3cm. Thick on undersides and around boulder. Very easy access. Roll small boulders, remove Mousseline on sorbent pads to wipe boulders.
Area H. Partial AP/SOR removal. This area should be used again. After crew headed down shore, boulders/cobbles moved to expose additional AP/SOR - 1 to 2 people 30 min.

EXXON
NAME: Rex Coulter
SIGNATURE: Rex R. Coulter

☐ NTR Breakup/removal of AP/SOR was done in all areas as much as time permitted. Although SOR was heavy in isolated small piles, recovery was material contained a large percentage of equipment. Any additional time remaining could recover very little oil. A considerable mass of material. As noted by the biologist, the oiling we found apparently has little or no impact on the surrounding biota. For this reason as well as the fact that we recovered/broke up a major portion of what was found, I feel we did no additional work.

LANDMANAGER
NAME: 
SIGNATURE: 

☐ NTR LANDMANAGER NOT PRESENT.

ADEC COMMENTS CONTINUED: This area has been discussed at TAG Meeting 6/13/91.

USCG/NAME: CWO R. SPURD
SIGNATURE: 

☐ NTR Manual pickup of remaining AP/SOR indicated in 06 maps as area 1 is recommended. This area is easily accessible for workers.
MAYSAP SHORELINE OILING SUMMARY
ADDENDUM

TEAM NO. 00
OG Bryan Trimm
ADEC Marianna Profitta
EXXON Rex Coulter

MAYSAP SHORELINE OILING SUMMARY
ADDENDUM

TEAM NO. 00
OG Bryan Trimm
ADEC Marianna Profitta
EXXON Rex Coulter

BIO Deborah McCormick
LANDMANAGER (No representative)
USCG/NOAA CWO Spurr

DATE June 13/91
TIME 16:55 to 17:58
TIDE LEVEL 2.52 ft. to 1.31 ft.
ENERGY LEVEL: H M X L

SURVEYED FROM: X FOOT BOAT HELO
WEATHER: SUN CLOUDS FOG RAIN SNOW

TOTAL LENGTH SHORELINE SURVEYED: 610 m
NEAR SHORE SHEEN: BR RB SL X NONE

EST. OIL CATEGORY LENGTH:
W 0 m M 4 m N 0 m VL 40 m NO 560 m US 614 m

* ABOVE VALUES DO NOT INCLUDE 12 17 MAY 91 SURVEYS

<table>
<thead>
<tr>
<th>LOC</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT</th>
<th>SHORE SLOPE</th>
<th>WIDTH</th>
<th>LENGTH</th>
<th>ZONE</th>
<th>AREA</th>
<th>NOTES</th>
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<td>C</td>
<td>AP MS TB SOR CV CT ST FL DB NO</td>
<td>TYPE</td>
<td>V</td>
<td>H</td>
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<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN</th>
<th>H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
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SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:
- 2 ft wide high angled beach with angular sediments.
- Heavy Oil under 3/4 between cobbles and boulders. Mouse found in sockets of cobbles.
  Boulders 5 ft is typically 3cm thick.

REVIEWED CG 18 SUN
Oiling area (G) (steincoat) This oil-soaked reach was an abundance of surface submersives high into the UITZ, including European litter snails (Littorina), mussel (Mytilus), etc. The oiling conditions are right, no oil-impacted birds was observed at G on comparison to the lower UITZ. Heavy recruitment of all of the indicator species is evident at all travels on this reach.

Area (H) Same abundant recruitment observed here as in "G" above. New settlers observed on undersides of adorners and cobble also, juvenile intertidal (Littorina) were common in the UITZ; egg cases of the common mussel (Mytilus) were seen on undersides as well. High-polluted blennius were fairly common here. Lower UITZ had a different mix/blue green algal cover over much of the subaqueous. Overall surface crusta cover was notably 10-20% in the UITZ 30-60% cover in the M-UITZ. Clam shells littered the UITZ throughout the subdivision, including butter (Sax. Bonus) and little neck (Patella) clams.

BIRDS

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<tr>
<th>BIRD</th>
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<td>Waterfowl</td>
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<td>Gulls/Kittiwakes</td>
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<td>Shorebirds</td>
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<tr>
<td>Corvids</td>
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<tr>
<td>Other Birds</td>
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WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

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<tr>
<th>MARINE MAMMALS</th>
<th># OBSERVED</th>
<th>SPECIES</th>
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<tr>
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<td>Pinnipeds(specify)</td>
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<td>Es(specify)</td>
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LAND MAMMALS

Shoreline subdivision map showing important biological features attached.

Reviewed MB 6/17/1
BIO MAP
D. McCormick
6/3/91

LOST MARA
Jellyfish (Cyanea capillata) abundant in the Bay

BAY OF ISLES

Angular Boulders - Cobble

Debris + diverse algal cover throughout subtidal

Saxiforges (butter clams) + Patinopecten (little neck clams) shells litter most of the LITZ

Same conditions as G & H for LITZ below mid to lower zones have moderate to dense cover of surface macrofauna. Barnacle cobble & boulders: 50% empty breaking starfish (also many juvenile) employing hard shell eggs. Blue mussels settlement near larger areas of LITZ.

Area of heaviest oiling. Bio in immediate vicinity of oil include sparse bottom dweller species and barnacles. Most of these were in the type of larger cobble and boulders rather than within the small boulder sediments. Oligochaetes were within or in very proximate to oil film.
KN-17

KN-16

Subdivision Field Map
Map Key: KN1KH0015Ab
Name: Trim
Addendum to 12/17 May 91
Date: 13 Jun 91
Date Entered:

Surface Oil Category 1 Map

XXX Wide
/// Medium
--- Narrow
TTTT Very Light
0000 No Oil

ADEC Subsegment Length: 1186m
METERS

100 200
1991 MAYSAP EVALUATION

SEGMENT: KN 115  SUB:  A  REGION:  PWS  SURVEY DATE:  5/16/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s)  RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details)  Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature:  [Signature]  Date:  6/03/91

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N)  N  TAG  N  FOSC  N

Manual Pickup (Check as Req.)  ______  ______  ______
Spot Washing  ______  ______  ______
Bio-Customblen Only  ______  ______  ______
Bio-Inipol/Customblen  ______  ______  ______
Other  __________________________  ______  ______
Other  __________________________  ______  ______

COMMENTS:

INITIAL: ______________________________________________________

TAG: ______________________________________________________

FOSC: ______________________________________________________

TAG APPROVAL DATE:  4/3/91  FOSC APPROVAL DATE:  6/18/91

ADEC  [Signature]  FOSC  [Signature]

EXXON  [Signature]  E. E. PAGE, CDR, USCG

USCG  [Signature]  CHIEF OF STAFF, FOSC

NOAA  [Signature]
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.
**TEAM NO.: 1  SEGMENT: KN0115  SUBDIVISION: A  DATE: 5/16/91**

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<tr>
<td>ADEC</td>
<td>Jeff Ginalis</td>
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**NTR**

It is with reluctance that I recommend no treatment for this segment, as subsurface oil is present throughout this area, with some areas containing concentrated amounts (usually oil map sites "E & D"). The subsurface layers run from hot to cold across the suite to lite, easily exposed at 5-10 cm and running 10-15 cm deep for most part. Benches are cobble/boulder and morphologic shape and size of lenses makes manual treatment unrealistic. Mechanical not feasible at site D, while site E may be possible, but extremely difficult (possible use of lite). As Bio notes reflect, benches in early successive stages, thus accretional treatment will not seriously impair beach life cycle. A loss of further success.

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<tr>
<th>Name</th>
<th>Signature</th>
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<tbody>
<tr>
<td>Exxon</td>
<td>Randall E. Boyer</td>
</tr>
</tbody>
</table>

**NTR**

Oiled vegetation was identified in the upper tide zone in the middle of the subdvision. The NPS survey crew spent some time collecting the material and completed the project. Coating on boulders, veiny rock faces of boulders were identified. Arts revealed subsurface oil residue. Comparative study between survey data should reveal lower percentage oiling in 1991. No environmental benefit to continue intrusive cleanup methods on this subdvision.

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
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<tbody>
<tr>
<td>Landmanager</td>
<td>Marsha Hall</td>
</tr>
</tbody>
</table>

**NTR**

Treatment of all the little beach pockets, I sincerely feel that at least areas C, D, E should be addressed by a crew. Area E provides upland access, (LOR Berm) oil is close to surface. I feel sites E and D may be accessible to equipment and should be evaluated by TPH, the low energy sites

**USCG/NOAA**

**NTR**

Furher removal operations may cause more environmental harm than the oil to be removed.

---

Steep rocky embayment with pockets of boulder, cobble, pebble, major accumulation of oil situated in the interior most part ("C, D, E") subaerial acumulation as a non-hydrocarbons subsurface at more than 5 to 20 cm below surface contained in the upper most of the embayment (A, B, D) contains mostly CTST (specific areas 1

---

Note: Eagle Nest in zone between "E" site.
MAYSAP SHORELINE OILING SUMMARY

TEAM No. 1

ADEC J. GINARAS
LANDMANAGER M. HALL for DNIA

EXXON R. BOYER
USCG/NOAA SCHMIDT/CHILDS

TIME 09:00 to 11:30 TIDE LEVEL -3.4 ft. to 0.0 ft. ENERGY LEVEL: □ H □ M X L

SURVEYED FROM: □ FOOT □ BOAT □ HELO WEATHER: □ SUN □ CLOUDS □ FOG □ RAIN □ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 680 m NEAR SHORE SHEEN: □ BR □ RB □ SL □ NONE

EST. OIL CATEGORY LENGTH: W - m M 10 m N - m V1 460 m m NO 210 m US _m

<table>
<thead>
<tr>
<th>LOC</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT</th>
<th>SHORE SLOPE</th>
<th>WIDTH</th>
<th>LENGTH</th>
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</table>

DISTRIBUTION: C = 81-100%; B = 61-80%; P = 1-10%; T = <1%
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW</th>
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SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:
Rocky cove w well-flanked, coarse-grained beach
Surface oil as hi sol C/E, in Hitz-suz; plus cr, st on R walls of massive-boulders, and across beachface E most beaches - often coated by algae. Oiled vegetation C/E used removed.

Revised 5/24/94, Ken G.
OG COMMENTS:

Subsurface oil common; typically mol-xol, across uf water to lower MIZ; well flushed, permeable substrates contain oil within a few centimeters of surface, and instant brown sheens were noted to depths of 35 cm (with about 20 cm avg. depth, yet not clean below). Walking E to MIZ over B m g, often liberated some silver & rainbow sheens. Although other sand-grain beaches in this segment were not surveyed, they likely hold similar subsurface oil.

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW</th>
<th>H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>20</td>
<td>X</td>
<td>2-15</td>
<td>H?</td>
<td>5 B</td>
<td>X</td>
<td>Pc-Cap</td>
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<td>9</td>
<td>30</td>
<td>X</td>
<td>3-20</td>
<td>H</td>
<td>10 B</td>
<td>X</td>
<td>CP-GC</td>
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<td>10-25</td>
<td>H?</td>
<td>15 B</td>
<td>X</td>
<td>Pc-GC</td>
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<td>11</td>
<td>25</td>
<td>X</td>
<td>5-15</td>
<td>Y</td>
<td></td>
<td>X</td>
<td>Pc-GCB</td>
<td>brown</td>
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<tr>
<td>12</td>
<td>20</td>
<td>X</td>
<td>5-20</td>
<td>H</td>
<td></td>
<td>X</td>
<td>P-Pc</td>
<td>oiled brown</td>
<td></td>
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<tr>
<td>13</td>
<td>20</td>
<td>X</td>
<td>0-15</td>
<td>H</td>
<td>5 B</td>
<td>X</td>
<td>B-GC</td>
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<td>H?</td>
<td>5 B</td>
<td>X</td>
<td>CP-GPC</td>
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<tr>
<td>15</td>
<td>20</td>
<td>X</td>
<td>0-15</td>
<td>H?</td>
<td>5 B</td>
<td>X</td>
<td>P-GC</td>
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<tr>
<td>16</td>
<td>20</td>
<td>X</td>
<td>0-10</td>
<td>Y</td>
<td>0 B</td>
<td>X</td>
<td>Pc-Pcm</td>
<td>B globules</td>
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<td>10-25</td>
<td>H</td>
<td>5 B</td>
<td>X</td>
<td>CB-GC</td>
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<td></td>
</tr>
<tr>
<td>18</td>
<td>25</td>
<td>X</td>
<td>0-10</td>
<td>Y</td>
<td></td>
<td>X</td>
<td>Pc-GCB</td>
<td>surrounded by lola</td>
<td></td>
</tr>
</tbody>
</table>

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE
MAYSAP BIOLOGICAL SUMMARY FORM

DATE 16 May 91

TEAM # 1

SEGMENT # K N 115

TIDAL HEIGHT (Range) -2.9 to -0.1 ft MLW

SUBDIVISION A

BIOLOGIST Michael Fawcett

SEA STATE 2 ft swell

WIND SPEED/DIRECTION NE 10-15 Knots

PHOTOGRAPHS: ROLL # FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

This subdivision encompasses a small arm of Herring Bay and includes vertical walls, rugged outcrops, and pocket beaches with and without freshwater streams. See accompanying sketch map for descriptions of hu ta near oiled sites. The oiled areas near the head of the bay and on the south shore appear to have relatively low populations of grazing animals (limpets and mussels), with correspondingly dense populations of ephemeral algae (filamentous green, red, and brown algae). The grazers' preferred foods, low abundance of grazers may or may not be related to oil spill or cleanup efforts. The existing intertidal community at these sites may be considered to be one of relatively low diversity dominated by opportunistic, early successional species (filamentous algae), i.e., species that quickly colonize available, cleared substrate. Thus, the existing community is viewed as being not particularly sensitive to disturbance. Although the remaining oil residue is probably not having any significant negative impact on the intertidal community, further cleanup treatment, if desired, could probably be conducted with no more than a short-term impact (delayed succession).

WILDLIFE OBSERVATIONS TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS # OF SPECIES TOTAL BIRDS FISH OBSERVED SPECIES PRESENT

<table>
<thead>
<tr>
<th>Category</th>
<th># of Species</th>
<th>Total Birds</th>
<th>Species Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles</td>
<td>2 (Herring gull)</td>
<td>2</td>
<td>Black bristleback</td>
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<tr>
<td>Seabirds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterfowl</td>
<td>1 (barnacle goose)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Gulls/kittiwakes</td>
<td>2 (Mew, Kittiwake)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Shorebirds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corvids</td>
<td>1 (Steller's Jay)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other Birds</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MARINE MAMMALS # OBSERVED SPECIES

<table>
<thead>
<tr>
<th>Category</th>
<th># Observed</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea Otters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pinnipeds(specify)</td>
<td>3</td>
<td>Sea lions</td>
</tr>
</tbody>
</table>

LAND MAMMALS

<table>
<thead>
<tr>
<th>Category</th>
<th># Observed</th>
</tr>
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</table>

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 5/26/91
buried oil beneath CIP with dense film of green algae, sparse barnacles, limpets; just downslope are patches of dense rockweed, barnacles, mussels, filamentous red algae Ulva; dense kelp (Agarum), Ulva & Enteromorpha in LTZ

CT high on BR/B near stream (410-460) no kelp nearby but dense barnacles + Fucus downstream

buried oil in MT2 + UT2 above +50 ft among either bare cobble or sparse barnacles + young Fucus, barnacle spat, and dense green algae (Ulva, Enteromorpha); LT2 has sparse algae, few animals, except on BR

same as above but richer LT2 biota

Mor +25 + up among dense filamentous red, green, + brown algae covering moderately dense barnacles, rockweed, + barnacle spat - few grazers to control algae

et on walls +60 ft among upper edge of barnacles; dense barnacles, mussels, sparse littorinids, limpets, rockweed, whelks below

Bio Sketch Map
KN115A, 16 May 91
M. H. Fawcett
KN 158 5/16/91 Page 71

Ap 0900 Nth wind
- CT on walls at 1st pocket
  top lift on barnacle, dense barnacles, sparse live Litt. Feces below, whales
- Bah. 2
- 15 y Kittiwakes, Feeding, 4 tvy
  3 sea lions
  - Bluff pocket
  - dam Ula, enter = hold mast 7
  - dun key (Agadrum) 1/4
  - L Tz - 2 ft
  - patchy dense fng, barn, mussle, fil ed, Ula
  - below burned at + 1 ft
  - 4 ft - burned oil on deck
cp under dome, green algae, brown, barnacle baby - QT in Sutz -
  No other
- next water inlet of
  
  L Tz with sparse, mixed algae (Gulf)
  depauperate form (Gulf)
Kaffirs (cont.) [May 7] 7:45 p.m.

- Warm bath, Eucalyptus steam.
- Spasms muscles in BR cleft.
- Neither pocket - dead man.

- Pocket in front pocket.
- Pocket in side of pocket - dead man.

- Pocket in inside of BR cleft.

- Pocket in side of front pocket:
  - 1st pocket (3 cm. 3 cm. of each
    side):
  - BR wall up + 10:14 ft
  - Bore up in S. 1/2 of nearly 15
    1/2 ft.
  - Visions (Viva - Ending) Odor.

- Pocket in back of BR cleft
  - Face: Sparrowish looks.

- Pocket in South end of day
  - 4 p.m. Green + 10 1/2 ft.

- Pocket in South end of day
  - 4 p.m. Green + 10 1/2 ft.

- Pocket in South end of day
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- Pocket in South end of day
  - 4 p.m. Green + 10 1/2 ft.
KN 153A (cont) Korea Fairwell
4 und nun
1 Pkg. gullenot
2 Hyaluronic
End 11/30
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/KN-115

SUBDIVISIONS: A (1 OF 1)
SHORELINE EVALUATION

SEGMENT ST/ KN-115 SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: __________________________ DATE:________________________

OILING CATEGORIZATION:
Wide 254m: Medium 329 m: Narrow 1037 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No ___ Maximum Depth 15 cm

RECOMMENDATIONS:
___ No Treatment Recommended ___ Snare/Absorbent Booms
X Treatment Recommended ___ Oil Snares (pom poms)
X Manual Pickup ___ Absorbents (pads, rolls, etc)
X Bioremediation ___ Spot Washing: Wands
X Tarmat: ___ Breakup ___ Beach Cleaner
X Removal ___ Other (see comments)

COMMENTS: Recommend removal of oiled debris, vegetation, and logs if oiled >10%. Remove tarmat; Bioremediate areas indicated on sketch map. Work should be conducted after 6/1 and with permission of USFWS due to eagle nesting constraint.

TAG COMMENTS: ______________________________________________________

TAG APPROVAL DATE:__________
ADEC ____________________ FOSC: ____________ DATE:__________
EXXON ____________________
NOAA ____________________
USCG ____________________
PWS ECOLOGICAL CONSTRAINTS

1A
Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B
Salmon stream mouth - spawning (7/10 to 8/31)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.

1C
Salmon fry nursery area (4/31 to 7/31)

1D
Esther Hatchery release (4/15 to 6/1)

1E
Main Bay Hatchery release (4/20 to 5/10)

1F
Sawmill Bay Hatchery release (4/20 to 5/10)

1G
Cannery Creek Hatchery release (4/21 to 6/1)

1H
Remote release site

1I
Gill net area (6/7 to 8/31)

1J
Purse seine area (7/21 to 9/30)

1K
Purse seine hook-off (7/20 to 9/30)

1L
Set net sites (6/11 to 7/25)
For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.

2M
Herring spawning (4/1 to 6/15)
Restrict boat traffic to essential minimum. Avoid damage to unoiled intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.

3N, 3P
Harbor seal and sea lion pupping (5/15 to 7/1)

3O, 3Q
Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.

5R
Seabird colony (5/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from haulouts.

5S
Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic.

5T
All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.

6U
Recreation:
Tent sites (6/1 to 9/15)

6V
Anchorages (6/1 to 9/15)

6W
Forest Service cabins (6/1 to 9/15)

6X
Lodge (6/1 to 9/15)

6Y
Special use destination

7Z
Subsistence area:
Salmon harvesting (5/1 to 9/30)

7HH
Finfish harvesting

7II
Deer hunting (8/15 to 2/28)

7JJ
Invertebrate harvesting
For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.
FIELD SHORELINE COMMENT SHEET

SEGMENT ST 1 KN-115 SUBDIVISION: None DATE 4/4/90

USCG NAME W. E White  SIGNATURE W. E. White

☐ NO TREATMENT RECOMMENDED  ☑ TREATMENT SUGGESTED

COMMENTS

Manual pick up. Removal of oil logs also

Debris include: oiled logs from 30% to 50% and oiled vegetation in the pit. Recommended treatment includes

ADEC NAME Dianne Munson SIGNATURE Dianne Munson

☐ NO TREATMENT RECOMMENDED  ☑ TREATMENT SUGGESTED

COMMENTS strongly suggest further treatment. In pit #4, black mobi oil surfaces in interstitial water. I measured the free floating oil's thickness at 2-3 mm. There is a strong smell of crude. The segments surface contains asphalt, pavements, coats and covers. Debris include: oiled logs from 30% to 50% and oiled vegetation in the pit. Recommended treatment includes

TILLING and washing to remove subsurface oil, spot washing, to remove surface coats, removal of oiled logs and vegetation and manual-removal of asphalt and pavements. Note: Bald Eagles

LAND MANAGER NAME David Mantrella  SIGNATURE David Mantrella

☐ NO TREATMENT RECOMMENDED  ☑ TREATMENT SUGGESTED

COMMENTS

Upper and mid tidal zones have heavily impacted zones with different characters of surface and subsurface oil. Residuals exist in the vicinity of pits 1 and 4. translucent sheens in tidal pools and pits.

Suggested cleaning techniques include: Manual pickup of asphalt pavement patches. Placement of sensors where sheens are forming, and to collect oil after mechanical and/or manual tilling and sea water flushing.
**SHORELINE OILING SUMMARY**

**OG. Sawyer**  USCG White  **SEGMENT ST/ KN115**

**Bio Benson**  LAND REP. Mandrella (PS)  **SUBDIVISION** A (1041)

**ADEC Munson**  **TIME** 16:15 to 17:45

**AM NO.**  3  **TIDE LEVEL**  +1 to +2  **DATE** Apr. 1 4 90

**EST. SUBDIVISION LENGTH**  1789 m

**UPLANDS DESCRIPTION**  
- Grass
- Forest
- Rock

**SURVEYED FROM**  
- Foot
- Boat
- Halo

**WORKING DIRECTION**  
- W to E

**SURFACE SEDIMENTS**  
- R 60%
- B 15%
- C 15%
- P 10%
- G 0%
- S 0%
- M 0%
- V 0%
- O 0%

**SLOPE**  
- Lang 40%
- Hang 0%
- Vea 60%

**WAVE EXPOSURE**  
- Low
- Med
- High

**OIL CATEGORY LENGTH**  
- W 270 m
- M 520 m
- N 999 m
- VL 0 m

**SURFACE OIL**

<table>
<thead>
<tr>
<th>CHARACTER</th>
<th>DISTRIBUTION</th>
<th>OIL / FILM COLOR</th>
<th>IMPACTED ZONES</th>
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<tbody>
<tr>
<td>ASPHALT PAVEMENT</td>
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</tr>
<tr>
<td>POOLED</td>
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<td></td>
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</tr>
<tr>
<td>COVER</td>
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<td>COAT</td>
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</tr>
<tr>
<td>MOUSSE</td>
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</tr>
<tr>
<td>PATTIES</td>
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<td></td>
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</tr>
<tr>
<td>TARBALLS</td>
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<td></td>
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<tr>
<td>ILN</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>NO OIL</td>
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</tr>
</tbody>
</table>

**PAVEMENT:**  
- H 15 sq. m by 8 cm
- F 15 sq. m by 8 cm

**PATTIES / TARBALLS**  
- 0 BAGS

**NEAR SHORE SHEEN?**  
- NO

**OILED DEBRIS**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs</td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td></td>
</tr>
<tr>
<td>Trash</td>
<td></td>
</tr>
<tr>
<td>Debris</td>
<td></td>
</tr>
</tbody>
</table>

**NEAR OILED AMOUNT**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs</td>
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</tr>
<tr>
<td>Vegetation</td>
<td></td>
</tr>
<tr>
<td>Trash</td>
<td></td>
</tr>
<tr>
<td>Debris</td>
<td></td>
</tr>
</tbody>
</table>

**PEACE**

- H F

**NEAR SHORE DEBRIS COLLECTED**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>AMOUNT</th>
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</thead>
<tbody>
<tr>
<td>Sand</td>
<td></td>
</tr>
<tr>
<td>Shells</td>
<td></td>
</tr>
<tr>
<td>Debris</td>
<td></td>
</tr>
</tbody>
</table>

**OIL FILM COLOR PIT A SUBSURFACE ZONE**

<table>
<thead>
<tr>
<th>OILED INTERVAL</th>
<th>OIL / FILM COLOR</th>
<th>IMPACTED ZONES</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.15 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5 cm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUBSURFACE OIL**

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL</th>
<th>OILED SEDIMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td></td>
<td>0.15 cm</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td></td>
<td>0.25 cm</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>30</td>
<td></td>
<td>0.5 cm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>20</td>
<td></td>
<td>0.15 cm</td>
<td></td>
</tr>
</tbody>
</table>

SHORELINE ECOLOGICAL SUMMARY

Segment ST / KN 115 Subdivision None Date (mo/day/yr) 4/4/90

Biol. John Benson

Time (24 hr) 16:25-17:45

(A) Substrate type and % of segments:

(B) Overall % cover of biota (% of segment): Dense 80 Moderate 40 Low 30

(C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa:

<table>
<thead>
<tr>
<th></th>
<th>Dense</th>
<th>Moderate</th>
<th>Sparse</th>
<th>Rare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnacles</td>
<td>1U 1M</td>
<td>1L</td>
<td>1U 1M</td>
<td>1L</td>
</tr>
<tr>
<td>Mytilus</td>
<td>1U 1M</td>
<td>1L</td>
<td>1U 1M</td>
<td>1L</td>
</tr>
<tr>
<td>Gastrophods</td>
<td>1U 1M</td>
<td>1L</td>
<td>1U 1M</td>
<td>1L</td>
</tr>
<tr>
<td>Fucus</td>
<td>1U 1M</td>
<td>1L</td>
<td>1U 1M</td>
<td>1L</td>
</tr>
</tbody>
</table>

Wildlife Observations/General Comments:
2. Mergansers

The overall % cover of biota was higher than suggested by the 4 major categories due to the presence of green filamentous algae, especially where freshwater inputs flow into the intertidal. This segment is biologically very sensitive: 6V (rec. anch.) heterogeneous. The southwest shore supports a fairly diverse & productive community, but the east & northeast shores have very low % cover of everything but green filamentous algae above the low intertidal zone.
ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT KN-115 SUBDIVISION A (1 of 1)

<table>
<thead>
<tr>
<th>WORK WINDOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Pickup &amp; Tarmat Removal</td>
</tr>
<tr>
<td>Outside USFWS Established Buffer Zone</td>
</tr>
<tr>
<td>OPEN</td>
</tr>
<tr>
<td>Manual Pickup &amp; Tarmat Removal</td>
</tr>
<tr>
<td>Inside USFWS Established Buffer Zone</td>
</tr>
<tr>
<td>CLOSED</td>
</tr>
<tr>
<td>Bioremediation Outside USFWS Established Buffer Zone</td>
</tr>
<tr>
<td>OPEN</td>
</tr>
<tr>
<td>Bioremediation Inside USFWS Established Buffer Zone</td>
</tr>
<tr>
<td>CLOSED</td>
</tr>
</tbody>
</table>

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T Bald Eagle Nest

USFWS 6/1/90 map indicates an active nest in adjacent subdivision. Closed to manual pickup, tarmat removal and bioremediation within USFWS buffer zone identified 5/10/90 by Mike Lockhart (see map). No constraints to manual pickup, tarmat removal, and bioremediation in areas outside USFWS established buffer zone.

OTHER ECOLOGICAL CONSIDERATIONS

Restrict air traffic and all disturbance to essential minimum. No personnel or boat traffic within 400m of active nests. Air approach and takeoff from and to seaward only; maintain 400m horizontal, 300m vertical distance from active nests. Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

FOSC

Date 6-10-90

Prepared by

Date 6/10/90
SHORELINE EVALUATION

SEGMENT ST/ KN-115 SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T All bald eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: [Signature] DATE: 4/4/90

OILING CATEGORIZATION:
Wide 254 m: Medium 329 m: Narrow 1037 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 15 cm

RECOMMENDATIONS:
___ No Treatment Recommended ___ Snare/Absorbent Booms
X Treatment Recommended ___ Oil Snares (pom poms)
X Manual Pickup ___ Absorbents (pads, rolls, etc)
X Bioremediation ___ Spot Washing: ___ Wands
X Tarmat: ___ Breakup ___ Beach Cleaner
_____ Removal ___ Other (see comments)

COMMENTS: Recommend removal of oiled debris, vegetation, and lose of oiled 18t. Remove tarmat. Bioremediate areas indicated on sketch map. Work should be conducted after 6/1 and with permission of USFWS due to eagle nesting constraint.

TAG COMMENTS:

TAG APPROVAL DATE: 4/19/90
ADEC [Signature] DATE: 4/26/90
EXXON [Signature]
NOAA [Signature]
USCG [Signature]
SHORELINE EVALUATION

SEGMENT ST/ KN-115    SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T All bald eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE:        DATE: 4/29/90

OILING CATEGORIZATION:
Wide 254 m: Medium 329 m: Narrow 1037 m: V. Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 15 cm

RECOMMENDATIONS:

____ No Treatment Recommended   ____ Snare/Absorbent Booms
X  Treatment Recommended     ____ Oil Snares (pom poms)
X  Manual Pickup           ____ Absorbents (pads, rolls, etc)
X  Bioremediation         ____ Spot Washing: ____ Wands
X  Tarmat: ____ Breakup   ____ Beach Cleaner
X  Removal                ____ Other (see comments)

COMMENTS: Recommend removal of oiled debris, vegetation, and logs if oiled 10%. Remove tarmat; Bioremediate areas indicated on sketch map. Work should be conducted after 6/1 and with permission of USFWS due to eagle nesting constraint.

TAG COMMENTS:

______________________________

TAG APPROVAL DATE: 4/19/90
ADEC     EXXON     NOAA     USCG

FOSC DATE: 4/26/90
SEGMENT ST/KN115
SUBDIVISION HERRING BAY
DATE: Apr 14 90

CHECKLIST
- N Av Post
- Approx. Scale
- Seep/Sub Beddy
- Oil Dist.
- Width
- Length
- % Cover
- Substrate Character
- Est. HML/WL
- SSL
- Profile Location(s)
- Photo(s)
- Pit Location(s)

LEGEND
- Pt - No Subsurface Oil
- Pt - Subsurface Oil

CONCENTRATED DISTRIBUTION
- CT/F
- CT/P

PATCHY DISTRIBUTION
- CT/F
- CT/P

SPLASHED DISTRIBUTION
- CT/F
- CT/P

OILED VEGETATION
- Oiled Vegetation

PHOTO LOCATIONS, DIRECTIONS, AND distances

Oil Character Length (m): AP 10 PO 0 CV 2.9 CT 700 ST 0 MS 0 PT 0 TB 0 FL 80 NO 0
1991 MAYSAP EVALUATION

SEGMENT: KN 115   SUB: A   REGION: PWS   SURVEY DATE: 5/16/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details) Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: __________________ Date: ______________

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N) N   TAG   FOSC

Manual Pickup (Check as Req.) _____   _____   _____
Spot Washing _____   _____   _____
Bio-Customblen Only _____   _____   _____
Bio-Inipol/Customblen _____   _____   _____
Other ______________________   _____   _____
Other ______________________   _____   _____

COMMENTS:

INITIAL: __________________________

TAG:________________________________

FOSC:________________________________

TAG APPROVAL DATE: ___________   FOSC APPROVAL DATE: ___________

ADEC_____________________________   FOSC_____________________________

EXXON____________________________

USCG____________________________

NOAA____________________________
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.
TEAM NO. 1  SEGMENT KNO115  SUBDIVISION A  DATE 5/16/91

ADEC NAME  JEFF GINAWAS  SIGNATURE

NTR IT IS WITH RELUCTANCE THAT I RECOMMEND NO TREATMENT FOR THIS SEGMENT, AS SUBSURFACE OIL IS PRESENT THROUGHOUT THIS CONE, WITH SOME AREAS CONTAINING CONCENTRATED AMOUNTS (NOTABLY ON MAP SITES E & F). THE SUBSURFACE LENS RAN FROM HOE TO LOR ACROSS THE SUITE TO LOR, EASILY EXPOSED AT 5'-10' CM AND RUNNING 10'-15' CM DEEP. FOR MOST PART, BENCHES ARE CABLE/BOUND AND NONPOROUS. DIMENSIONS OF LENS MAKES MANUAL TREATMENT UNREALISTIC. MECHANICAL NOT FEASIBLE AT SITE D, WHILE SITE E MAY BE POSSIBLE, BUT EXTREMELY DIFFICULT. AS NO NOTES REFER, BENCHES IN EARLY SUCCESSIVE STAGES, THIS AGGRESSIVE TREATMENT WILL NOT SERIOUSLY IMPAIR BENCH LIFE CYCLE. AT A LOSS FOR FURTHER SUCCESS.

EXXON NAME  RANDALL E. BOWIE  SIGNATURE  RANDALL E. BOWIE

NTR OILED VEGETATION WAS IDENTIFIED IN THE UPPER TIDE ZONE IN THE MIDDLE OF THE SUBDIVISION. THE VEO SURVEY CREW SPENT SOME TIME COLLECTING THE MATERIAL AND COMPLETED THE PACKET. COATINGS ON BUILDING VERTICLE ROCK FACES OF POCKETS WERE IDENTIFIED. ARTS INCREASED SUBSURFACE OIL RESOURCES. COMPARATIVE STUDY BETWEEN SURVEY DATA SHOULD REVEAL LOW OIL CONTENT OIL IN 1991. NO ENVIRONMENTAL BENEFIT TO CONTINUE INTRINSIC CLEAN UP METHODS ON THIS SUBDIVISION.

LANDMANAGER NAME  MARSHA HALL OF DNR  SIGNATURE

NTR  TREATMENT OF ALL THE LITTLE BEACH POCKETS, I SINCERELY FEEL THAT AT LEAST AREAS C, D, E SHOULD BE ADDRESSED BY A CREW. AREA E PROVIDES LITTLE ACCESS, (LOR BERM) OIL IS CLOSE TO SURFACE. I FEEL SITES E AND D MAY BE ACCESSIBLE TO EQUIPMENT AND SHOULD BE EVALUATED BY THAT. LOW ENERGY SITES NEED THE ASSISTANCE OF AGITATOR FOR FURTHER CLEANSING.

USCG/NOAA NAME  SCHULTZ / Childs  SIGNATURE  J. Childs

NTR FURTHER REMOVAL OPERATIONS MAY CAUSE MORE ENVIRONMENTAL HARM THAN THE OIL TO BE REMOVED.

STEW ROCKET EMPLOYMENT WITH POCKETS OF BALLAST, CABLE, PROFILE, MAJOR ID. OF OIL SITUATE IN THE INTERIOR MANTLE PART ("C, D, E") SUITABLE ACCUMULATIONS AS MAJOR HISTORIC SUBSURFACE OIL FROM SEDimentary OIL FIELD CONTAINED IN THE UPER TIDE PLAYS OR THE EXTRUDER (A, B, E) CONTAINS MAINLY CT'S STRONG OILS AND V & ROCK FACES BUT STILL NO SUBSURFACE LINEAR POCKET OIL.) NOTE! ENGAGEMENT IN THE ZONE BETWEEN "E", "F."
## MAYSAP SHORELINE OILING SUMMARY

**Team No.** __
**Bio.** __
**Land Manager.** __
**USCG/NOAA Schmitt/Childs.** __

**Time:** 09:00 to 11:30
**Tide Level:** -3.24 to 0.0 ft
**Energy Level:** H M L

**Surveyed From:** X Foot □ Boat □ Helo
**Weather:** □ Sun □ Clouds □ Fog □ Rain □ Snow

**Total Length Shoreline Surveyed:** 626 m
**Near Shore Sheen:** □ BR □ RB □ SL □ None
**Est. Oil Category Length:** W __ m M __ m N __ m VL __ m NO __ m US __ m

### Surface Oil Character

<table>
<thead>
<tr>
<th>LOC</th>
<th>Surface Oil Character</th>
<th>Surface Sediment</th>
<th>Shore Slope</th>
<th>Width</th>
<th>Length</th>
<th>ZONE</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Distribution:** C = 91-100%; B = 81-90%; P = 61-80%; S = 1-10%; T = <1%
**Slope:** V = Vertical; H = High Angle; M = Medium Angle; L = Low Angle

### Subsurface Oil Character

<table>
<thead>
<tr>
<th>Pit No.</th>
<th>Pit Depth (cm)</th>
<th>Subsurface Oil Character</th>
<th>Oiled Zone</th>
<th>Clean Below</th>
<th>H20 Level</th>
<th>SHEEN Color</th>
<th>Pit Zone</th>
<th>Subsurface Sediments</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>__ __</td>
<td></td>
<td></td>
<td>__ __</td>
<td>__ __</td>
<td>__ __</td>
<td>__ __</td>
<td>__ __</td>
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</tr>
<tr>
<td>B</td>
<td>__ __</td>
<td></td>
<td></td>
<td>__ __</td>
<td>__ __</td>
<td>__ __</td>
<td>__ __</td>
<td>__ __</td>
<td></td>
</tr>
</tbody>
</table>

**Sheen Color:** B = Brown; R = Rainbow; S = Silver; N = None

**OG Comments:** Rocky core of well-flanked, coarse-grained breccia.

Surface oil as hi sol G, in Hitz-sitz; plus CT, ST on 2 panels of massive boulder, and across beach face e most beaches - often coated by algae. Oiled vegetation G & B was removed.
OG COMMENTS:

Subsurface oil common; typically nor-xol, across up to lower Hitz; well flushed, permeable substrates contain oil within a few centimeters of surface, and instant brown sheens were noted to depths of 35 cm, (with about 20 cm avg. depth, yet not clean below).

Walking E Hitz over B m C, often liberated some silver & rainbow sheens. Although other coarse-grain beaches in this segment were not surveyed, they likely held similar subsurface oil.

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>DEPTH (cm)</th>
<th>OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW</th>
<th>H2O LEVEL (cm)</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>20</td>
<td>X</td>
<td>2-15</td>
<td>H?</td>
<td>5</td>
<td>B</td>
<td>X</td>
<td>Pc-cGP</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>30</td>
<td>X</td>
<td>3-20</td>
<td>N</td>
<td>10</td>
<td>B</td>
<td>X</td>
<td>CP-cGP</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td>X</td>
<td>10-25</td>
<td>N?</td>
<td>15</td>
<td>B</td>
<td>X</td>
<td>Pc-cGc</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>25</td>
<td>X</td>
<td>5-15</td>
<td>Y</td>
<td></td>
<td></td>
<td>x</td>
<td>Pc-vGc born</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>20</td>
<td>X</td>
<td>5-20</td>
<td>H</td>
<td></td>
<td></td>
<td>x</td>
<td>P-vC oiled born</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>20</td>
<td>X</td>
<td>0-15</td>
<td>N</td>
<td>5</td>
<td>B</td>
<td>x</td>
<td>B-cGc</td>
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<td>25</td>
<td>X</td>
<td>0-15</td>
<td>N?</td>
<td>5</td>
<td>B</td>
<td>x</td>
<td>CB-cGc</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>Pe-vGc</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>20</td>
<td>X</td>
<td>0-10</td>
<td>Y</td>
<td></td>
<td></td>
<td>x</td>
<td>Pc-Pam B globules</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>25</td>
<td>X</td>
<td>10-25</td>
<td>N</td>
<td>5</td>
<td>B</td>
<td>x</td>
<td>CB-cGc</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>26</td>
<td>X</td>
<td>0-10</td>
<td>Y</td>
<td></td>
<td></td>
<td>x</td>
<td>BC-cGB surrounded by loh</td>
<td></td>
</tr>
</tbody>
</table>

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

REVIEWED: F.W. 5/31/94
(REVIEWED: 5/21/99)
MAI'SAP BIOLOGICAL SUMMARY FORM

TEAM 1
SEGMENT K N 115
SUBDIVISION A
ENVIRONMENTAL BIOMARKER

TIDAL HEIGHT (Range) -2.9 to -0.1 ft MLLW

BIOMARKER

WIND SPEED/DIRECTION NE 10-15 knots

PHOTOGRAPHS: ROLL #, FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

This subdivision encompasses a small arm of Herring Bay and includes vertical walls, rugged outcrops, and pocket beaches with and without freshwater streams. See accompanying sketch map for descriptions of biota near oiled sites. The oiled areas near the head of the bay and on the south shore appear to have relatively low populations of grazing animals (littorinids and limpets), with corresponding dense populations of ephemeral algae (Filamentous green, red, and brown algae), the grazers' preferred foods. However, abundance of grazers may or may not be related to oil spill or cleanup efforts. The existing intertidal community at these sites may be considered to be one of relatively low diversity, dominated by opportunistic, early successional species (Filamentous algae), i.e. species that quickly colonize available, cleared substrate. Thus, the existing community is viewed as being not particularly sensitive to disturbance. Although the remaining oil residue is probably not having any significant negative impact on the intertidal community, further cleanup treatment, if desired, could probably be conducted with no more than a short-term impact (delayed succession).

WILDLIFE OBSERVATIONS TO BE COMPLETED IN ALL SUBDIVISIONS

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED SPECIES PRESENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles</td>
<td>2 (Herring gull)</td>
<td>5</td>
<td>Black prickleback</td>
</tr>
<tr>
<td>Seabirds</td>
<td>2 (Glaucous-winged gull)</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Waterfowl</td>
<td>1 (Harlequin duck)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Gulls/kittiwakes</td>
<td>12 (Kittiwake)</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Shorebirds</td>
<td>1 (Steller's Jay)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Corvids</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Birds</td>
<td></td>
<td></td>
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</tbody>
</table>

MARINE MAMMALS

<table>
<thead>
<tr>
<th># OBSERVED</th>
<th>SPECIES</th>
<th># OBSERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea Otters</td>
<td>3</td>
<td>Sea Lions</td>
</tr>
<tr>
<td>Pinnipeds (specify)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Whales (specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LAND MAMMALS

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 3/6/91
buried oil beneath C/P with dense film of green algae, sparse barnacles, limpets; just downstream are patches of dense rockweed, barnacles, mussels, filamentous red algae (Ulva); dense kelp (Agarum), Ulva, Enteromorpha in LTZ.

CT on walls +10 ft among upper edge of barnacles; dense barnacles, mussels, sparse limpets, limpets, rockweed, whelks below.

Barnacle spot on cobbles among mor; dense Fucus, barnacles or BR/B above; within + below mor area; dense SL; red algae in LTZ, influenced by few streams.

Two high on BR/B near stream (7/10-14 ft); no biota nearby; but dense barnacles + focus downstream.

Buried oil in MTZ + UTZ above +10 ft among either bare cobbles or sparse barnacles + young Fucus, barnacle spot, and dense green algae (Ulva, Enteromorpha); LTZ has sparse algae, few animals, except on BR.

MOR +2 ft + up among dense filamentous red, green, brown algae covering moderately dense barnacles, rockweed, + barnacle spot ... few grazers to control algae.

Same as above, but richer LTZ.

Bio Sketch Map
KN 115 A, 16 May 91
M. H. Fawcett

Reviewed M.B. 5/2/91
KH 15A 5/16/91 Fayvett

Art. 0900 north end
- CT on well at 1st post
- Tarp on bannikks, dense
- bany mowed, sparse line LRT. Fence below whole
- Reach 2
- 15 b. Kill with aFeeling in bax
- 3 sea ions
- 6 b. Pocket
- dens. IL, a. eastern baiain+7
- dense keep (Agathz) 11 k
- LTZ - 2 k
- patchy dense, Tye, bass,
- masses, finer, wing,
- below bungled at +1 kR.
- 11 qk - imbedoil, Tsgd
- 2 ½ line dense, film green, airy stems
- bany, limp - OT in SRT
- No bica
- next make int Sit
- matching, easier
- LTZ 8 k ft - in bare, cobble - no
- bala except bblq, bany, spot
- on nearby g. clad baiainks
- LTZ will pass, mixed algae
- depaerated farms (SHF)
May 21, 1974

- Mac, 9h, white, done Sept.
- Spotted muskellunge or BR eel
- Side of pocket - smart man
- 4 FL seats on lower bay up
- 2nd pocket (20 m of 0.5 m each
- has CT & CV on top side of
- BR way up + 10-14 ft.
- bowed at 111 ft, P/B near at
- 5-6 ft Among Ulah Fencing, Clarks
- 50m from bank, 9 patches very
- Fucks & Pansa lift 1 m -
- rel. opaque & close in LTZ MZ
- 2 flats - Generally not sensitive
- c & w open, on BR/8 + 10-14 ft
- No big, but darn good, facer
- the dam was 8.10 m

- Pocket south of wood - some
- detection in R/C/P - BR at
- sides facing down, in MTZ: LTZ
- breeding salmon - Acipenser
- osmosurus, F. salmoneus - F. rub
- Clarks grade long hammer (Rigby)
- predicted 0.34 m, hank, clearly seen
- No mud or silt, 0.3' algae present
- 5'1000 per half/m 1030 km

- Pocket on south side of bay
- c/a, 9h, white, done by 11-14 ft
- No big but darn good, facer
- the dam was 8.10 m

- Pocket south of wood - some
- detection in R/C/P - BR at
- Side facing down, in MTZ: LTZ
- breeding salmon - Alticorpus
- osmosurus, F. salmoneus - F. rub
- Clarks grade long hammer (Rigby)
- predicted 0.34 m, hank, clearly seen
- No mud or silt, 0.3' algae present
- 5'1000 per half/m 1030 km
KN 45A (cot) lina Fairall
4 und muster
1 P.D. quelled
2 Hygien
End 31.30
1991 MAYSAP EVALUATION

SEGMENT: KN 116  SUB: A  REGION: PWS  SURVEY DATE: 5/16/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s)  RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details)  Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature:  
Date: 6/04/91

RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Pickup (Check as Req.)</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Spot Washing</td>
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<td></td>
<td></td>
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<tr>
<td>Bio-Customblen Only</td>
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<tr>
<td>Bio-Inipol/Customblen</td>
<td></td>
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<tr>
<td>Other</td>
<td></td>
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</tbody>
</table>

COMMENTS:

INITIAL: 

TAG: 

FOSC: 

TAG APPROVAL DATE: June 4, 1991  FOSC APPROVAL DATE: 6/10/91

ADEC  

EXXON  

USCG  

NOAA  

E. E. PAGE, ODR, USCG  CHIEF OF STAFF, FOSC
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1  DATE 16 May 91
SEGMENT # KN 11b  TIDAL HEIGHT (Range) -0.1 to +1.3 ft MLW
SUBDIVISION A  BIOLOGIST Michael Fawcett
SEA STATE 1 ft swell  WIND SPEED/DIRECTION NE 5-10 knots
PHOTOGRAPHS: ROLL #  FRAMES

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

Site A: moderate to high energy pocket beach--low boulders
polished by pebble abrasion, sparse algae except barnacle
spat. Redrock walls and a massive boulder in the center
of the beach have very dense barnacle cover and patches
of dense young (0-2 year old) mussels. Oil coat on the side
of massive rock in upper edge of barnacles. LTZ boulders
have dense cover of ephemeral algae, few grazers, but relatively
dense predators beneath them (3 spp. of starfish, Arenopodia,
Evasterias, and numerous Leptasterias (brooding eggs)).

Sites B & C: Small narrow channels or pockets in bedrock,
typical biota, ct at upper edge of dense barnacles.

See sketch map for descriptions of biota near
each oiled site.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
<th>SPECIES OBSERVED</th>
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<tbody>
<tr>
<td>Eagles</td>
<td></td>
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</tr>
<tr>
<td>Seabirds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterfowl</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gulls/Kittiwakes</td>
<td>2 Allegheny Kittiwake</td>
<td>~100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shorebirds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corvids</td>
<td></td>
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<tr>
<td>Other Birds</td>
<td></td>
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LAND MAMMALS

<table>
<thead>
<tr>
<th>MARINE MAMMALS</th>
<th># OBSERVED</th>
<th>SPECIES</th>
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<tbody>
<tr>
<td>Sea Otters</td>
<td></td>
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<tr>
<td>Pinnipeds(specify)</td>
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</tbody>
</table>

Shoreline subdivision map showing important biological features attached.
KN 116 16 May 91 Farrell

Start 1130

rod, enjoy, pocket - B/P - 1 more

boulders W, debris bays/ruled (young 0-2 yr) - sand on BRs - smaller

boulders polished by abrasion -

spot - 2000 ft. (cue spot) deeper in

bit of big rock - stream in back

gone underground

CT - 50 R. +10 C

CT on line of big rock

at + 20 ft. upper edge of debris

barnacle, some crested alga dead

no birds in problem

- HT  - pullers - crew at gum

(All these errors so far in KN 115 & 116 - load to have shad

goose, done aquatic algae

dead - leathery in budding -

pullers - E. 

pneumophora

= 100 kubik at gull near 13:27

- S/2 with small channel BR =

Barnard - CT + 8-12 ft. - deep

modified breeder @

End 12:05 - low fog of spud

CT at upper edge of dense

pair - arch
1991 MAYSAP EVALUATION

SEGMENT: KN 016  SUB: A  REGION: FWS  SURVEY DATE: 5/18/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details) Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: ______________________ Date: ______________________

RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
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<th>FOSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
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<td></td>
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</tbody>
</table>

Manual Pickup (Check as Req.)  
Spot Washing  
Bio-Customblen Only  
Bio-Inopol/Customblen  
Other __________________________  
Other __________________________

COMMENTS:
INITIAL:

TAG:

FOSC: __________________________

TAG APPROVAL DATE: ______________

FOSC APPROVAL DATE: ______________

ADEC______________________  
EXXON______________________  
USCG______________________  
NOAA______________________
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USFWS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.
MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. Three SEGMENT KN046 SUBDIVISION A DATE 5/18/91

ADEC NAME Wesley Ghormley SIGNATURE Wesley Ghormley

□ NTR □ TREATMENT RECOMMENDED
- This oil has been present since ASAP survey. Recommend Manual removal of Sor - AP. The oil is protected and seems to be not getting the forces of nature. I believe it is finally time to remove it only for all.

EXXON
NAME Jon P. Czarnecki SIGNATURE Jon Czarnecki

□ NTR There is some Sor and small patches of AP. The beach is thriving and healthy. There are numerous birds on this island. The AP sor are in protected location and pose little potential problems to marine life in the area. It is Recoverable however the amount to be recovered is quite small.

LANDMANAGER
NAME Dave Blumert OF USFS SIGNATURE Dave Blumert

□ NTR Moderate Erosion Environment. Small Island with Beached Shores with Some Fractured in water zone. Rock Cover. Patches of Sor Found in Areas of Beached Rock and Finer Sediment. Sor was broken up or removed where found. This requires moving Boulder & Cobble to keep at the Oil. Probable remaining Oil that could be worked.

USCG/NOAA
NAME Jansen Jeffrey Thiele SIGNATURE Jeffrey Jansen

□ NTR I believe that further removal operations would cause more environmental harm than the small amount of degraded Sor oil remaining. The area is accessible but the Sor is patchy at best. As it was we disturbed an Oystercatcher's nest when we landed.

There is very little oil on this beach and an Oystercatcher nest. Not enough oil is present to make disturbing the area for cleanup
MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 3

GO Harper

BIG Stoker

ADCO Shormley

Landmanager: Runyon for F3

Exxon: Carneiki

USCG/NOAA: Gleeson/Drake

Time 08:15 to 09:45

Tide Level: 5.00 ft. to 3.32 ft.

Energy Level: ☐ M ☐ W ☐ N

Surveyed From: ☑ Foot ☐ Boat ☐ Helo

Weather: ☐ Sun ☐ Clouds ☐ FOG ☐ Rain ☐ Wind

Total Length Shoreline Surveyed: 282 m

Near Shore Sheen: ☐ BR ☐ RB ☐ SL ☐ None

Est. Oil Category Length: W 0 m M 2 m N 7 m V 25 m No 248 m US 0 m

<table>
<thead>
<tr>
<th>LOC</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SHORE SEDIMENT</th>
<th>AREA</th>
<th>ZONE</th>
<th>NOTES</th>
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<tbody>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>B</td>
<td>CP M</td>
<td>2</td>
<td>3</td>
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<tr>
<td>A2</td>
<td>S</td>
<td>CPB M</td>
<td>1</td>
<td>5</td>
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<tr>
<td>B</td>
<td>S</td>
<td>CPA M</td>
<td>3</td>
<td>3</td>
<td></td>
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<tr>
<td>C</td>
<td>B</td>
<td>PCB M</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>B</td>
<td>PCB W</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>S</td>
<td>CPB/PT W</td>
<td>15</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

DISTRIBUTION: C = 91-100%; B = 81-90%; P = 61-80%; S = 1-10%; T = <1%

SLOPE: V = Vertical; H = High Angle; M = Medium Angle; L = Low Angle

PHOTO ROLL # MAYSAP- 3 - 18 - FRAMES 4

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>DEPTH</th>
<th>SUSSURFACE OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN below</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>1</td>
<td>50</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>2</td>
<td>30</td>
<td></td>
<td>X</td>
<td>X</td>
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</tbody>
</table>

Sheen Color: B = Brown; R = Rainbow; S = Silver; N = None

OG COMMENTS: This small section receives partial protection from waves by some existing islands. The shoreline is primarily sandy with a handful of reverse-slope pocket beaches.

Surface oiling was confined to the sediment pockets and consists of surface residual oil and the small area of fluvial deposits. No subsurface oiling was identified.
**HAYSAP Biological Summary Form**

<table>
<thead>
<tr>
<th>TEAM #</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEGMENT #</td>
<td>KN 16</td>
</tr>
<tr>
<td>SUBDIVISION</td>
<td>A</td>
</tr>
<tr>
<td>DATE</td>
<td>5/18/91</td>
</tr>
<tr>
<td>TIDAL HEIGHT (Range)</td>
<td>2-4'</td>
</tr>
<tr>
<td>BIOLOGIST</td>
<td>STOKER</td>
</tr>
<tr>
<td>SEA STATE</td>
<td>1-2</td>
</tr>
<tr>
<td>WIND SPEED/DIRECTION</td>
<td>E 15-20</td>
</tr>
<tr>
<td>PHOTOGRAPHS: ROLL</td>
<td>FRAME</td>
</tr>
</tbody>
</table>

**Comments/Observations** (to be completed in oiled subdivisions only):

Small, bedrock island with a few small beach areas of broken cobble/boulder rubble, generally high to moderate exposure/wave energy.

Biota on bedrock characterized by generally dense Fuca, dense barnacles and seafloor clusters of small limpets and kelp in sheltered crevices, sparse mussels.

Rubble bed rock biota consists of patchy no-growth Fuca filamentous green algae, generally dense barnacles and seafloor sparse to moderate density limpets and Kelparia (some egg masses), and patchy dense attached and interbedded mussels.

Biota within or adjacent to residual surface oil locations.

A tern P consists of sparse barnacles and moderately dense limpets. Biota increases downslope to include moderately dense no-growth Fuca filamentous green algae, generally dense barnacles and seafloor sparse to moderate density limpets, small limpets, and Kelparia with egg masses and patchy or interbedded and attached mussels.

Biota within/adjacent to location E consists of sparse to moderately dense barnacles, sparse limpets and Kelparia (some egg masses).

Shoreline biota shows generally sparse Fuca, moderately dense barnacles and seafloor sparse patches of interbedded mussels and generally sparse limpets and Kelparia.

Any additional cleaning should proceed with as little disturbance as possible to established biota. No personnel on top of the island above the intertidal, due to nesting shorebirds.

**Wildlife Observations**
To be completed in all subdivisions

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
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<tbody>
<tr>
<td>Eagles</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Seabirds</td>
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<td></td>
</tr>
<tr>
<td>Waterfowl</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Gulls/kittiwakes</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Shorebirds</td>
<td>Least P sandpipers</td>
<td>8</td>
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</tr>
<tr>
<td>Sandpipers</td>
<td>Turn</td>
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<tr>
<td>Other Birds</td>
<td>Oystercatchers + nest</td>
<td>2</td>
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<table>
<thead>
<tr>
<th>MARINE MAMMALS</th>
<th># OBSERVED</th>
<th>SPECIES</th>
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<tbody>
<tr>
<td>Sea Otters</td>
<td></td>
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<tr>
<td>Pinnipeds (specify)</td>
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<td>Whales (specify)</td>
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<tr>
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</table>

Shoreline subdivision map showing important biological features attached.

Reviewed 6/3 13/91
Reviewed 10/5/91
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/KN-116

SUBDIVISIONS: A (1 OF 1)
SHORELINE EVALUATION

SEGMENT ST/ KN-116 SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: __________________ DATE:__________________

OILING CATEGORIZATION:
Wide__ M: Medium__132 M: Narrow__127 M: V.Light__78 M: No Oil__0 M
Subsurface Oil Observed: Yes__ X__ No___ Maximum Depth 12 cm

RECOMMENDATIONS:
_____ No Treatment Recommended _____ Snare/Absorbent Booms
X__ Treatment Recommended _____ Oil Snares (pom poms)
X__ Manual Pickup _____ Absorbents (pads, rolls, etc)
X__ Bioremediation _____ Spot Washing: _____ Wands
_____ Tarmat: _____ Breakup _____ Other (see comments)
_____ Removal _____ Beach Cleaner

COMMENTS: Recommend bioremediation of pocket beach as indicated on sketch map and removal of plywood and oiled debris.

TAG COMMENTS: ____________________________________________________________

TAG APPROVAL DATE:__________________
ADEC ______________________ FOSC:________________ DATE:_________
EXXON _______________________
NOAA _______________________
USCG _______________________

FIELD SHORELINE COMMENT SHEET

SEGMENT ST 1 KN 116 SUBDIVISION: None DATE 4-3-90

USCG
NAME: W. E. WHITE SIGNATURE: [Signature]

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

Treatment suggested - Water flushing in the pocket beach and washing in the crevice.

ADEC
NAME: Dianne Musson SIGNATURE: [Signature]

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

The heaviest oil within this segment is in a crevice in the bedrock outcropping (broken cover). There is one pocket beach with residual subsurface oil to 12 cm. Primarily the segment is coated bedrock cliff from 1-3 meters. Recommended treatment includes water flushing in the pocket beach and spot washing in the crevice.

LAND MANAGER
NAME: David Mandrelle SIGNATURE: [Signature]

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

Majority of segment consists of vertical bedrock cliff with narrow band of sporadic coats in upper intertidal zone. Priority areas which warrant treatment include a heavily covered crevice on bedrock about 3 meters northwest of south boundary of segment. Spot washing of crevice should be conducted in a manner that will minimize impacts on a productive and diverse biotic community. The small beach cove could benefit I... [additional comments]
**SHORELINE OILING SUMMARY**

**OG Sawyer** USCG White  
**BIO Ryanon**  
**SON Natsimailis ADE Munson**  
**SEGMENTS: LAND REP Mandrella (FS)**  
**TIME 14:45 to 16:00**  
**DATE Apr. 4/ 90**  
**TIDE LEVEL: +2.0 to +1.0**  
**EST. SUBDIVISION LENGTH: 1262 m**

### SURFACE OIL

<table>
<thead>
<tr>
<th>CHARACTER</th>
<th>DISTRIBUTION</th>
<th>OIL / FILM COLOR</th>
<th>IMPACTED ZONES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Pavement</td>
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<td></td>
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</tr>
<tr>
<td>Paved Cover</td>
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<tr>
<td>Paved Coat</td>
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<tr>
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### SUBSURFACE OIL

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<th>OILED / FILM COLOR</th>
<th>BENELOW OIL / FILM COLOR</th>
<th>PIT ZONE</th>
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**COMMENTS**


Reviewer: [Signature] 4/0/90
SEGMENT ST. KN116

SUBDIVISION: none

DATE: Apr. 14 90

CHECKLIST

- N Arper
- Approx. Scale
- Seg/Safe Safety
- Oil Discl
- Width
- Length
- % Cover
- Substrate Character
- Est. Halflife
- SSL
- Profile Location(s)
- Profile(s)
- Pit Location(s)
- Photo Location(s)

LEGEND

1. A
   - Ph: No Subsurface Oil

2. A
   - Ph: Subsurface Oil
     - CT/C: Continuous Distribution
     - CT/B: Broken Distribution
     - CT/P: Patchy Distribution
     - CT/Z: Splashed Distribution

Oil Vegetation

- Photo location, direction, and number

---

KNIGHT ISLAND

Bedrock Cliffs

Clear horizon

Upper boundary

2 sheets of plywood

Rake Bio Packet

Herring Bay

3m wide or less

Low angle boulder beach

CT/S

CT/S

CT/S

CT/P

N

Oil Character Length (m): AP... PO... CV... 20 ft/1093 ST... MS... PT... TB... R... 50 NO...
SHORELINE ECOLOGICAL SUMMARY

Segment ST/KN116 Subdivision None Date (mo/day/yr) 4/4/90

Time (24 hr) 1455-1600 Biologist John Benson

(A) Substrate type and % of segments:
(1) Bedrock (2) Boulder (3) Cobble (4) Pebble (5) Sand (6) Silt

(B) Overall % cover of biota (% of segment): Dense 80 Moderate 15 Low 5

(C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L):
juveniles/adults (X), new settlement (3)

BARNACLES

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Wildlife Observations/General Comments:
one male & one female goldeneye duck

Ecological Considerations:
Sensitivities: 6V (recreational anchorages)
and its substrate heterogeneity (crevices & tidepools).

Photographs:
Roll No. ST-8-2
Frames 7-8

NOT PRESENT

NOT PRESENT

NOT PRESENT
PWS ECOLOGICAL CONSTRAINTS

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage.
No bioengineering or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.

1C Salmon fry nursery area (4/31 to 7/31)
1D Esther Hatchery release (4/15 to 6/1)
1E Main Bay Hatchery release (4/20 to 5/10)
1F Sewmill Bay Hatchery release (4/20 to 5/10)
1G Cannery Creek Hatchery release (4/21 to 6/1)
1H Remote release site
1I Gill net area (6/7 to 8/31)
1J Purse seine area (7/21 to 9/30)
1K Purse seine hook-off (7/20 to 9/30)
1L Set net sites (6/11 to 7/25)
For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.

2M Herring spawning (4/1 to 6/15)
Restrict boat traffic to essential minimum. Avoid damage to unclogged intertidal and subtidal algae and seagrass.
Contact ADF&G for specific dates and locations.

3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O, 3Q Harbor seal and sea lion molting (6/15 to 5/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.

5R Seabird colony (5/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from haulouts.

5S Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic.

5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 300m 3/1 to 9/1. Air approach and takeoff from and to seaward only, maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.

6U Recreation:
Tent sites (5/1 to 9/15)
6V Anchorages (6/1 to 9/15)
6W Forest Service cabins (6/1 to 9/15)
6X Lodge (6/1 to 9/15)
6Y Special use destination

7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
7HH Finfish harvesting
7II Deer harvesting (8/15 to 2/26)
7JJ Invertebrate harvesting
For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.
ADDENDUM: SUBDIVISION CONSTRAINTS
SEGMENT KN-116 SUBDIVISION A (1 of 1)

WORK WINDOW

<table>
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<th>Manual Pickup</th>
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<tbody>
<tr>
<td>Bioremediation</td>
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ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

3N,O,P,Q Harbor Seal and Sea Lion Pupping and Molting Area NO TIME CONSTRAINT. Authorized per memorandum dated 5/14/90 from Kathryn Frost/ADF&G to Mark Kuwada/ADF&G.

OTHER ECOLOGICAL CONSIDERATIONS

Do not apply bioremediation to specific areas where seals are observed to haulout. Do not chase or harass seals or sea lions, and do not approach pups under any circumstances. When working on or near haulouts, complete the job as quickly as possible with minimum personnel, equipment, noise and disturbance. Keep boats and personnel as far from actual haulouts as is practical to do the work specified. Minimize air traffic near haulouts, maintain elevation as is practical, and avoid repeated overflights of the same haulout areas. Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

Prepared by: [Signature]
Date: 5/21/90
ECOLOGY MAP
SEGMENT KN-116

SUBDIVISION A (1 of L)

METERS

Exxon Company, USA
May 11, 1990

Exxon Map Key: KN-101-116

1 inch = 1274 feet

★ Seabird Colony
▲ Eagle Nest
SHORELINE EVALUATION

SEGMENT ST/ KN-116 SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOCLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: [Signature] DATE: 4/4/90

OILING CATEGORIZATION:

Wide 0 m: Medium 132 m: Narrow 1127 m: V. Light 78 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 12 cm

RECOMMENDATIONS:

No Treatment Recommended
X Treatment Recommended
X Manual Pickup
X Bioremediation
X Tarmat: Breakup
X Removal

Snare/Absorbent Booms
Oil Snare Pom Pom
Absorbents (pads, rolls, etc)
Spot Washing: Wands
Beach Cleaner
Other (see comments)

COMMENTS: Recommend bioremediation of pocket beach as indicated on sketch map and removal of plywood and oiled debris.

SEE ADDENDUM DATED 5/20/90

TAG APPROVAL DATE: 4/19/90
ADEC ART WESNER
EXXON ANN YAN
NOAA 8601
USCG
SHORELINE EVALUATION

SEGMENT ST/ KN-116  SUBDIVISION A (1 OF 1) DATE  4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

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If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: [Signature]  DATE: 4/4/90

OILING CATEGORIZATION:
Wide 0 m; Medium 132 m; Narrow 1127 m; V.Light 78 m; No Oil 0 m
Subsurface Oil Observed: Yes X No  Maximum Depth 12 cm

RECOMMENDATIONS:

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<tr>
<td>Treatment Recommended</td>
<td>Oil Snares (pom poms)</td>
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<tr>
<td>Manual Pickup</td>
<td>Absorbents (pads, rolls, etc)</td>
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<td>Bioremediation</td>
<td>Spot Washing: Wands</td>
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<tr>
<td>Tarmac: Breakup</td>
<td>Other (see comments)</td>
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<tr>
<td>Removal</td>
<td>Beach Cleaner</td>
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COMMENTS: Recommend bioremediation of pocket beach as indicated on sketch map and removal of plywood and oiled debris.

TAG COMMENTS:

TAG APPROVAL DATE: 4/19/90
ADEC  ART WEINER, Proj. Mgr.  FOSS: [Signature]  DATE: 4/25/90
EXXON  AMY TAYLOR  [Signature]
NOAA  [Signature]
USCG  [Signature]
SEGMENT ST/KN116

BEDROCK CLIFFS

LEGEND

- Ph - No Substrate Oil
- Ph - Substrate Oil
- CT/E - Continuous Distribution
- CT/B - Broken Distribution
- CV/P - Paced Distribution
- CV/S - Splashed Distribution

CHECKLIST

- N Anom
- Approx. Scale
- Seg/Sub Entry
- Oil Dis.
- Wash
- Length
- % Cover
- Substrate Character
- Est. HWL/LWL
- SSL
- Profile Location(s)
- Pit Location(s)
- Prop Location(s)

DATE: Apr 14 90

SUBDIVISION: None

0 100 200 300m

OIL CHARACTER LENGTH (m): AP CV 120 CT 1093 ST 0 MS 0 PT 0 TB 0 FL 50 NO 0
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/KN-117

SUBDIVISIONS: A (1 OF 1)
SHORELINE EVALUATION

SEGMENT ST/ KN-117 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: __________________ DATE: __________________

OILING CATEGORIZATION:
Wide 81 m: Medium 198 m: Narrow 627 m: V.Light 198 m: No Oil 0 m
Subsurface Oil Observed: Yes X No____ Maximum Depth 40 cm

RECOMMENDATIONS:
____ No Treatment Recommended X Treatment Recommended
X Manual Pickup X Bioremediation
X Tarmat: _X_Breakup
X Removal

____ Snare/Absorbent Booms _____ Oil Snares (pom poms)
_____ Absorbents (pads, rolls, etc) _____ Spot Washing: ______ Wands
____ Beach Cleaner _____ Other (see comments)

COMMENTS: Recommended treatment includes 1) removal of tarmats and asphalt, 2) raking followed by bioremediation of area indicated on attached sketch map and 3) bioremediation only of area shown on sketch map.

TAG COMMENTS: __________________

TAG APPROVAL DATE: __________
ADEC _______________ FOSC: __________ DATE: __________
EXXON _______________ NOAA _______________
USCG _______________
PWS ECOLOGICAL CONSTRAINTS

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1B Salmon stream mouth - spawning (7/10 to 8/31)
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No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior
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For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.

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Restrict boat traffic to essential minimum. Avoid damage to unoiled intertidal and subtidal algae and seagrass.
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vertical distance. Contact ADF&G and USFWS prior to treatment.

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Restrict all activity to essential minimum, especially air traffic.

5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
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and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to
treatment for confirmation of dates.

6U Recreation: Tent sites (6/1 to 9/15)
6V Anchorages (6/1 to 9/15)
6W Forest Service cabins (6/1 to 9/15)
6X Lodge (6/1 to 9/15)
6Y Special use destination

7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
7HH Finfish harvesting
7II Deer harvesting (8/15 to 2/28)
7JJ Invertebrates harvesting
For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.
FIELD SHORELINE COMMENT SHEET

SEGMENT ST / KN117 SUBDIVISION: —— DATE 4-6-90

USCG NAME: David A. Sylvester SIGNATURE: David A. Sylvester

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

There is definite bands along the super tidal zone. Bio-
remediation would be a good choice of attack in this area.
There was subsurface oil in places as much as 30 cm in
depth. There was some mousse in the small streams created
by the snow melting, there was also light sheens in some
of the tidal pools in the lower and intermediate tidal
zones. The bands in the super tidal zone were approximate
1-2 cm thick. They ranged from 1 meter to 1 meter wide and almost

ADEC NAME: M. Cunningham SIGNATURE: M. Cunningham

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

Bio-remediate low angle boulders and pocket beaches
Manual-tilling of beach where pits 1-3 dm in dip over
boulders, aerate sediments, bio-remediate, rework. Runoff
unit would work at the scale of these beaches. We
probably removed all the trash as there was little snow or
It is to bad exam doesn't design a substantial piece of equi
which would remove the tar code on vertical surfaces... like

LAND MANAGER NAME: Steven Phillips SIGNATURE: Steven Phillips

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

Remove Asphalt sections
Scrape covers of tar on vertical and high angle beaches
when thickness is 2mm or more. Disturb and
wash "wides" bands of oil to depth (10-50cm deep).
Remove mobile bands of oil.
If technology developed, remove tar on vertical faces
and boulders which exceed 1mm thickness.
cont:
a high pressure cold water omni barge with a highly mobile articulated arm. The pressure would have to be on the order of 12-1500 PSI but it would remove the tar. just as I believe the smaller Lambda units will do.
## SURFACE OIL

<table>
<thead>
<tr>
<th>CHARACTER</th>
<th>DISTRIBUTION</th>
<th>OIL / FILM COLOR</th>
<th>IMPACTED ZONES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Pavement</td>
<td>X ✗ ✗ ✗ ✗ ✗</td>
<td>SU WV M U</td>
<td>✗ ✗ ✗ ✗ ✗</td>
</tr>
<tr>
<td>Pooled</td>
<td>☑</td>
<td>SU WV M U</td>
<td>✗ ✗ ✗ ✗ ✗</td>
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<tr>
<td>Cover</td>
<td>☑</td>
<td>SU WV M U</td>
<td>✗ ✗ ✗ ✗ ✗</td>
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<tr>
<td>Coat</td>
<td>☑</td>
<td>SU WV M U</td>
<td>✗ ✗ ✗ ✗ ✗</td>
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<td>Stain</td>
<td>☑</td>
<td>SU WV M U</td>
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<tr>
<td>Mousse</td>
<td>☑</td>
<td>SU WV M U</td>
<td>✗ ✗ ✗ ✗ ✗</td>
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<tr>
<td>Patties</td>
<td>☑</td>
<td>SU WV M U</td>
<td>✗ ✗ ✗ ✗ ✗</td>
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<tr>
<td>Tarballs</td>
<td>☑</td>
<td>SU WV M U</td>
<td>✗ ✗ ✗ ✗ ✗</td>
</tr>
<tr>
<td>Film ☑</td>
<td>SU WV M U</td>
<td>✗ ✗ ✗ ✗ ✗</td>
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</tr>
<tr>
<td>No Oil</td>
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</tr>
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</table>

**Pavement:** H ☆ @ \(3\) sq. m by \(10\) cm

**Patties/Tarballs:** 0 bags

**Near Shore Sheen:** No     ☑      ☑

**Oil Film Color:** Pit Zone

**Surface Sediments:**

- EDP 90% B 20%None
- Soil 5% G 0% S 0% M 0% V 0%

**Slope:** Lang 35% Hang 30% Ver 35%

**Wave Exposure:** Low Med High

**OIL CATEGORY LENGTH:** W: 58 m M: 161 m N: 772 m V: 161 m NO: 0 m

## SUBSURFACE OIL

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL</th>
<th>OILED INTERVAL (CAL-COL)</th>
<th>OILED INTERVAL</th>
<th>OILED INTERVAL (CAL-COL)</th>
<th>PIT ZONE</th>
<th>ANA</th>
<th>SUBSURFACE SEDIMENTS</th>
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<tbody>
<tr>
<td>1 10</td>
<td>X</td>
<td>O: 10</td>
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<td>X</td>
<td>O: 10</td>
<td>X X X X X X</td>
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<td>X X X X X X</td>
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<td>X</td>
<td>O: 10</td>
<td>X X X X X X</td>
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</table>

**Comments:**

Mobile oil was observed along this segment, and it seemed to be found primarily in breaks in the redrock cliffs. In these cracks it collected at the base of large boulders.

**Reviewed by:** JW    **Date:** 4/10/90
SEGMENT ON KN-117
SUBDIVISION None
DATE 6/30/90

CHECKLIST
- N/A
- Appr. Scale
- Seg/Sub Entry
- Oil Det.
- Width
- Length
- % Cover
- Substrate Character
- Est. Haul WL
- SSL
- Profile Location(s)
- Plot(s)
- Pit Location(s)
- Photo Location(s)

LEGEND
1 A
Pit - No Subsurface Oil

2 A
Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

CT/P Patchy Distribution

CT/S Sprinkled Distribution

Oil Vegetation

Photo Location, direction, and number

Oil Character Length (m): AP 3 PO 0 CV 8 CT 990 ST 200 MS 0 PT 0 TB 0 FL 100 NO 0
SHORELINE ECOLOGICAL SUMMARY

Segment ST/KN 117 Subdivision _____________________________ Date (mo/day/yr) Apr 6, 90

Time (24 hr) 13:35 Biologist__________ Rott

(A) Substrate type and % of segments:

(B) Overall % cover of biota (% of segments): Dense — 10 Moderate — 50 Low — 40

(C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidai-L); juveniles/adults (X), new settlement (3)

<table>
<thead>
<tr>
<th></th>
<th>Dense</th>
<th>Moderate</th>
<th>Sparse</th>
<th>Rare</th>
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<tr>
<td>1M</td>
<td>2</td>
<td>4</td>
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<td>XX</td>
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<td>1L</td>
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<td>XX</td>
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<tr>
<td>6</td>
<td>2</td>
<td>4</td>
<td>XX</td>
<td>XX</td>
</tr>
</tbody>
</table>

Wildlife Observations/General Comments:
1. Sea Otter seen in water.
2. Adult bald eagle flew from perch in segment.
3. Oystercatcher on bedrock islet.
4. Oil sheen in lift, mid (see DG report).
5. Starrk: Aequorea, Demeasterias, Hendelia; small peanut worm; nemertian

Ecological Considerations: (Paramecia); Blenny Eel; Tetra Cragicornus; CV - Recreation Anchorage Nucella.
SHORELINE EVALUATION

SEGMENT ST/ KN-117  SUBDIVISION A (1 of 1)  DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Sensitivity code and general time constraints. See attached sheet for specific constraints and contacts. LV 6/11-9/15

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid any unnecessary disturbance or damage to unoiied substrate and biota.

ARCHAEOLOGICAL CONSTRAINTS: If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: __________________ DATE: __________________

OILING CATEGORIZATION:
Wide 61 m: Medium 198 m: Narrow 627 m: V. Light 198 m: No Oil 0 m
Subsurface Oil Observed: Yes X No __ Maximum Depth 20 cm

RECOMMENDATIONS:
No Treatment Recommended  Snare/Absorbent Booms
Treatment Recommended  Oil Snares (pom poms)
Manual Pickup  Absorbents (pads, rolls, etc)
Bioremediation  Spot Washing: Wands
Tarmat: Breakup  Beach Cleaner
Removal  Other (see comments)

COMMENTS: Removal of Oiled Area

TAG COMMENTS:__________________________________________

TAG APPROVAL DATE:__________________
ADEC  EXXON  FOSC:__________________ DATE:__________________
NOAA  USCG
ADDENDUM: SUBDIVISION CONSTRAINTS
SEGMENT KN-117 SUBDIVISION A (1 of 1)

WORK WINDOW

<table>
<thead>
<tr>
<th>Manual Pickup</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tarmat Removal</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Bioremediation</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Raking</td>
<td></td>
</tr>
</tbody>
</table>

ARCHAEOLOGICAL STANDARD CONSTRAINT
If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

3N, O, P, Q Harbor Seal and Sea Lion
Pupping and Molting
NO TIME CONSTRAINT. Authorized per
memorandum dated 5/14/90 from Kathryn
Frost/ADF&G to Mark Kuwada/ADF&G.

OTHER ECOLOGICAL CONSIDERATIONS
Do not apply bioremediation to specific areas where seals are observed to haulout. Do not chase
or harass seals or sea lions, and do not approach pups under any circumstances. When working
on or near haulouts, complete the job as quickly as possible with minimum personnel, equipment,
noise and disturbance. Keep boats and personnel as far from actual haulouts as is practical to do
the work specified. Minimize air traffic near haulouts, maintain elevation as is practical, and avoid
repeated overflights of the same haulout areas. Avoid any unnecessary disturbance or damage to
unooled biota and substrate.

TAG ADDENDUM DATE 5/21/90
ADEC
EXXON
NOAA
USCG
Prepared by: Andrew Meyer
Date: 5/21/90

FOSC

DATE 5-21-90
SHORELINE EVALUATION

SEGMENT ST/ KN-117 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: DATE: 4/6/90

OILING CATEGORIZATION:
Wide 81 m; Medium 198 m; Narrow 627 m; V.Light 198 m; No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 40 cm

RECOMMENDATIONS:

No Treatment Recommended X Treatment Recommended Oil Snare/Absorbent Booms
X Manual Pickup X Bioremediation Oil Snare (pom poms)
X Bioremediation X Tarmat: Breakup Absorbents (pads, rolls, etc)
X Tarmat: Breakup X Removal Spot Washing: Wands

COMMENTS: Recommended treatment includes 1) removal of tarmats and asphalt, 2) raking followed by bioremediation of area indicated on attached sketch map and 3) bioremediation only of area shown on sketch map.

TAG COMMENTS:__________________________________________

TAG APPROVAL DATE: 4/19/90
ADEC JOHN BAUER
EXXON ANDY LEE
NOAA
USCG

FOSC: DATE: 4/22/90

TAG APPROVAL DATE: 4/19/90
ADEC JOHN BAUER
EXXON ANDY LEE
NOAA
USCG

FOSC: DATE: 4/22/90
SHORELINE EVALUATION

SEGMENT ST/ KN-117 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: D. Z. Han DATE: 4/6/90

OILING CATEGORIZATION:
Wide 81 m: Medium 198 m: Narrow 627 m: V.Light 198 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 40 cm

RECOMMENDATIONS:
  - No Treatment Recommended
  - Treatment Recommended
  - Manual Pickup
  - Bioremediation
  - Tarmat: Breakup
  - Removal
  - Snare/Absorbent Booms
  - Oil Snare (pom poms)
  - Absorbents (pads, rolls, etc)
  - Spot Washing: Wands
  - Beach Cleaner
  - Other (see comments)

COMMENTS: Recommended treatment includes 1) removal of tarmats and asphalt, 2) raking followed by bioremediation of area indicated on attached sketch map and 3) bioremediation only of area shown on sketch map.

TAG COMMENTS:

TAG APPROVAL DATE: 4/18/90
ADEC John N. Bauer
EXXON
NOAABulk Weather
USCG
1991 MAYSAP EVALUATION

SEGMENT:  KN 117  SUB:   A   REGION:  PWS  SURVEY DATE:  5/16/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s)  RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details)  Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: ___________________________ Date: __________________

RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Pickup (Check as Req.)</td>
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</tr>
<tr>
<td>Spot Washing</td>
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<tr>
<td>Bio-Customblen Only</td>
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<tr>
<td>Bio-Inipol/Customblen</td>
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<tr>
<td>Other</td>
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<tr>
<td>Other</td>
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COMMENTS:
INITIAL: ________________________________________________________________

TAG: ________________________________________________________________

FOSC: ________________________________________________________________

TAG APPROVAL DATE: __________  FOSC APPROVAL DATE: __________

ADEC________________________  FOSC________________________

EXXON______________________

USCG______________________

NOAA______________________
ECOLOGICAL CONSTRAINTS  
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.
<table>
<thead>
<tr>
<th>TEAM NO.</th>
<th>SEGMENT</th>
<th>SUBDIVISION</th>
<th>DATE</th>
<th>ADEC</th>
<th>NAME</th>
<th>SIGNATURE</th>
<th>TREATMENT RECOMMENDED</th>
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<tr>
<td></td>
<td>KNO117</td>
<td>A</td>
<td>5/16/91</td>
<td>JEFF</td>
<td>GWINAS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- AT CG MAP SITES (A&B) MOUSSE AND SOFT ASPHALT (W/ HIGH SOE)
  - WHITE BAND SUITZ-ULZ EASILY RECOVERABLE BY MANUAL TEAM, ONE DAY.
  - Requires flushing a few boulders & trail work around rocks. Area should also be backfilled where possible.
  - Proposed treatment high on beach, plus now unwise to lower lying bloom. Remainder of segment: sporadic oiling which does not require treatment.

<table>
<thead>
<tr>
<th>EXXON</th>
<th>NAME</th>
<th>SIGNATURE</th>
<th>TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RANDALL K. BOY CE</td>
<td></td>
<td>TWO SMALL POCKETS (A&amp;B) HAVE THE POTENTIAL OF REQUIRING SOME PASSIVE CLEANUP EFFORTS. THE OPERATIONAL ZONE CONTAINS SMALL AREAS OF SOFT AP AND MOUSSE IN BOULDERS AND COBBLES. INTENSIVE METHODS OF CLEANUP SHOULD NOT BE CONSIDERED, MOLLUSK AND Echinacea ARE PROFUSIVE AND CREATURES CAN BE FOUND ACTIVE ABOVE AND BELOW ROCKY ALMO. SEALS WERE SEEN JUST OFFSHORE.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LANDMANAGER</th>
<th>NAME</th>
<th>SIGNATURE</th>
<th>TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARSHA HAL L</td>
<td>MARSHA HALL</td>
<td></td>
<td>THE MOUSSE AND SOFT ASPHALT SHOULD BE MANUALLY REMOVED. CENS EXTENDS FROM ONE FOOT TO SUPER. ZONE. AT AREA A.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USCG/NOAA</th>
<th>NAME</th>
<th>SIGNATURE</th>
<th>TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHULTZE</td>
<td>SCHULTZE</td>
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<td>SITES A &amp; B HAVE REMOVABLE OIL WHICH COULD BE EASILY ACCOMPLISHED BY A MANUAL TEAM. THE REST OF THE SEGMENT REQUIRES NO FURTHER INTRUSION.</td>
</tr>
</tbody>
</table>

Hi Angle Bedrock outcrop shoreline W/ BC CUTATH S. Typicial patchy CT SI ST W/ ASSOCIATED SPoT TREMORS IN THE UL & SE OR NEAR VERTICAL RK FACES - Hi Sor/Se In Rock Cuts - Some subsurface oil in @ 8 & 10. Had m- Hi Sor/Se under BC Cover - Seo9 Below UV sheen instantly when disturbed for 3 mo in @ located in LT - DEP TR ON ISCA.
TEAM NO. __

MAYSAP SHORELINE OILING SUMMARY

SEGMENT _KN-117_

TEAM: GOG, M. MacDonald

ADEC: J. Gillman

EXXON: R. Enyer

SEGMENT: A

DATE: 5/16/93

TIME: 12:25 to 13:20

TIDE LEVEL: +3.0' to -6.0'.

ENERGY LEVEL: 0

SURVEYED FROM: [FOOT] [BOAT] [HELO]

WEATHER: [SUN] [CLOUDS] [FOG] [RAIN] [SNOW]

TOTAL LENGTH SHORELINE SURVEYED: 565 m

NEAR SHORE SHEEN: [BR] [RB] [SL] [NONE]

EST. OIL CATEGORY LENGTH:

<table>
<thead>
<tr>
<th>L.O.</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT TYPE</th>
<th>SHORE PROFILE WIDTH</th>
<th>AREA</th>
<th>ZONE</th>
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<tr>
<td>C</td>
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</tbody>
</table>

DISTRIBUTION: C = 81-100%; B = 51-90%; P = 11-50%; T = <11%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP - 1 - 24 FRAMES 13x1

PIT NO. | OILED ZONE | CLEAN BELOW | SHEEN COLOR | PIT ZONE |
<table>
<thead>
<tr>
<th></th>
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<td>OP</td>
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<td>cm-cm</td>
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</tbody>
</table>

PIT NO. | SUBSURFACE OIL CHARACTER | OILED ZONE | CLEAN BELOW | SHEEN COLOR | PIT ZONE |
<table>
<thead>
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<tr>
<td>OP</td>
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</tbody>
</table>

OG COMMENTS:

Low exposure, steep rocky shore w/ ca. drilled gullies and ec/p substrates.

Surface oil as two distributions, type:

(i) CT, ST at HTZ-surf on steep lead to B m gullies.

(ii) hi' lo sol/I, MS/I C gullie A & B

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

REVIEWED: ME 5/12/93

REVISED: JY 5/10/93
OG COMMENTS:

Sub-surface oil associated w/ Sool @ 0; typically
more patchy &; sheens are constant & O; oil
extends about 0 - 2 cm and is heavier @ MTR in the
gullies. The steep rocky shore @ 0 had horizontal
at depths from 0 - 2 cm; w/ greatest oil concentrated in
up MTR.

<table>
<thead>
<tr>
<th>PIT NO</th>
<th>PIT DEPTH (cm)</th>
<th>OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW</th>
<th>H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>9</td>
<td>15</td>
<td>X</td>
<td>-</td>
<td>5</td>
<td>B</td>
<td>X</td>
<td>CBR - PGR</td>
<td></td>
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<tr>
<td>10</td>
<td>15</td>
<td>X</td>
<td>-</td>
<td>0</td>
<td>B, R</td>
<td>X</td>
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<td>-</td>
<td>-</td>
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<td>X</td>
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<td>X</td>
<td>CPB - PR</td>
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<tr>
<td>14</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>CPB - PR</td>
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SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

Reviews: MC 5/16/91
B2

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<tr>
<th>Pit #</th>
<th>Photo</th>
<th>Type</th>
<th>SED</th>
<th>Zone Sheet</th>
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<tbody>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M-Hi Sor &lt;20% ~5m x 25m Behind &amp; Beneath Building</td>
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<tr>
<td>10</td>
<td>1-2</td>
<td>M-SOR</td>
<td>CPB</td>
<td>H-MI-BR w/Globules</td>
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<tr>
<td>11</td>
<td>3</td>
<td>Hi Sor/</td>
<td>CPB</td>
<td>H-S Oil Saturated Grass, Needles, &amp; Organics</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>4</td>
<td>Hi Sor/</td>
<td>CPB</td>
<td>H-UI-</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>5</td>
<td>Hi Sor/</td>
<td>CPB</td>
<td>H-UI Oil w/Needles &amp; Debris</td>
<td>PG</td>
</tr>
<tr>
<td>14</td>
<td>6</td>
<td>Hi Sor/</td>
<td>CPB</td>
<td>H-MI Rock Overture - Br/Sheen Flowed - BR Bottom</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>7</td>
<td>Hi Sor/</td>
<td>CPB</td>
<td>H-UI Rock Flow &amp; PG Diluted Hi Sheen / Oil Flow</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>8-14</td>
<td>M/I-CPE</td>
<td>CPB</td>
<td>H-UI Rock Overture - CT on Bottom of Rim - Hi Patch Behind &amp; Beneath</td>
<td></td>
</tr>
</tbody>
</table>

- Pits 9-14 show various types of sediment and oil saturation.
- Pits 15-16 depict rainbow sheen in Gulf water ~5m x 15m dispersed by prop of ship.
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1
SEGMENT # KN 117
SUBDIVISION A
SEA STATE 1 ft swell
PHOTOGRAPHS: ROLL # FRAME #

DATE 16 May 91
TIDAL HEIGHT(Range) +3.0 to +6.0 ft MLW
BIOLOGIST Michael Fawcett
WIND SPEED/DIRECTION NE 5-10 knots

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

Site A: Pocket beach with stream -- SOR mainly at +10-12 ft
above all biota except lichen. MTZ dominated by very dense
barnacles with patches of young rockweed Saccorhiza, and
filamentous red algae.

Site B: Buried oil as low on beach as +15 ft(determined by
disturbing substrate with stick a matching sheen rise to water
surface). The beach is mostly fine gravel and cobbles with sparse
barnacles, mussels, rockweed & limpets restricted to cobbles. Bedrock
wells and large boulders have very dense barnacles and dense
patches of young mussels.

Site C: Similar to B, but young(0-2 yr old) mussels have
coloured gravel on top of buried oil in MTZ(+3.5 ft).

See sketch map.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS # OF SPECIES TOTAL BIRDS FISH OBSERVED
Eagles 1 1 flying SPECIES PRESENT
Seabirds
Waterfowl
Gulls/kittiwakes
Shorebirds
Corvids
Other Birds

LAND MAMMALS

MARINE MAMMALS # OBSERVED SPECIES # OBSERVED
Sea Otters
Pinnipeds(specify) 1 harbor seal
Whales(specify)

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 5/22/91
Dense barnacles, sparse rockweed and other algae in MTZ downshore from SOR + buried oil

Buried oil in LTZ-MTZ gravel + cobble among sparse barnacles, mussels, rockweed, littorinids, limpets (abundance limited by sediment instability), dense barnacles + moderate mussels, etc., on large boulders and BR walls; moderately dense mussels in MTZ gravel at A-B site.

Bio Sketch Map
KN 117A 5/16/91
M. H. Fawcett

Reviewed M. B. 5/24/91
KN 117 16 May 91  Fawcett
Start 1235
Pocket beach BC/pl - bidmarsh +1.5 ft up to - mostly gravel
& Cable in L72 - patchy mussel & Fucus al crop
< Frame limp 0.3 ft
- very dense brownes on BR &
large fingered med. wrack
- patchy young wrack
- Sub surface oil area & bilge,
not very rich due to unstable
substrate, small sed (gravel)
- easy access
1 eagle ray
- many Kitt wade out in bay
- Rotten
1 hardy seal
- and spot see 91/2 B/B as
penguin, but has most
mussel bed (1-2 yrs)
- Rotten & in gravel with
burned oil +3-15 ft
- dense brownes on wrack
1 ft + 11 ft, for small young
Fucus
KN 117A (cont) 16 May 91
Forrest
CT on BR +8 ft; upper edge of barnacles
- continuing toward head
- 45-60 cm continuous at base
- bowl +8 ft - a

After end of segment
prototheca thin out a lot
- dense barnacles, mussels
- along BR/B narrow below (crystal)

Then slope at first little pocket
- more dense BR/P w/ sparse
- barnacles, mussels, sponge 3 ft

Ww Farm above +4 ft

1210 - returned to 1st site
(1st boat skiffed earlier)
- dense barnacles RTZ - SAR
- barnacle above RTZ - most
- SAR w/ 10-12 ft, no beta
- Stream w/ green filament
- algae up to +1 ft
- patchy young Fenugreek
- as Fil, red algae dense between
- in M+Z +4-8 ft, can't
- see LTZ

Finish ~ 1320
1991 MAYSAP EVALUATION

SEGMENT: KN 118  SUB: A  REGION: PWS  SURVEY DATE: 5/17/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s)  RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details)  Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: __________________________ Date: __________________

RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
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</tr>
</tbody>
</table>

Manual Pickup (Check as Req.)
Spot Washing
Bio-Customblen Only
Bio-Inipol/Customblen
Other
Other

COMMENTS:

INITIAL: ____________________________________________________

TAG: ______________________________________________________

FOSC: ____________________________________________________

TAG APPROVAL DATE: ____________  FOSC APPROVAL DATE: ____________

ADEC ______________________
EXXON ______________________
USCG ______________________
NOAA ______________________
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.
TEAM NO.: 1  SEGMENT: KNO118  SUBDIVISION: A  DATE: 5/17/91

ADEC
NAME: JEFF GINNUS  SIGNATURE: [Signature]

☒ NTR
Low energy, rocky shoreline, contains occasional stain/coat on boulders, sporadic LSOR present. Boulders VITZ. When looking up & down, boulder remaining 50 feet appears to be remnant of a band treated last year (park where boulders rolled last year. No recoverable oil.

EXXON
NAME: RANDALL K. BOYER  SIGNATURE: RANDALL K. BOYER

☒ NTR
No treatable oiling conditions on this subdivision. As other Hermit Bay shorelines, there is coating on vertical rock faces and at the base of boulders, but lower intertidal zones are reported recovering and are healthy looking. During the survey, care was taken to not trample mussel beds. I do not suggest further reassessment for treatment.

LANDMANAGER
NAME: MARSHA ALLAN OF DNR  SIGNATURE: MARSHA HALL

☒ NTR
Ribbons wrapped around rocks at Area C and D, LSO R spots broken up along area E.

USCG/NOAA
NAME: SCHULTZ [illegible]  SIGNATURE: [Signature]

☒ NTR
Nothing of significant remains, no further treatment warranted.

MED SLOPE SHELTERED - LO ENERGY CB SHORELINE, SURFACE OIL DETECTED AS DEGRADATION CT* IT IN SLOPE - LSO R ON SHELTERED SHORE AT "E"
MAYSAP SHORELINE OILING SUMMARY

TEAM NO. [REDACTED]

NAME: G. MACDONALD
BIO: M. FAWCETT

ADEC: J. CRANFORD
LANDMANAGER: M. HALL

EXXON: R. DOWELL
USCG/NOAA: SCHINZ/CITRICKS

SEGMENT: KN-118
SUBDIVISION: A
DATE: 5/17/91

TIME: 08:00 to 09:20
TIDE LEVEL: +2.2 ft. to -1.9 ft.
ENERGY LEVEL: [Blank]

SURVEYED FROM: [X] FOOT [ ] BOAT [ ] HELO
WEATHER: [ ] SUN [X] CLOUDS [ ] FOG [ ] RAIN [ ] SNOW

TOTAL LENGTH SHORELINE SURVEYED: 1440 m
NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [ ] NONE

EST. OIL CATEGORY LENGTH:

| L | C | O | S | M | T | B | S | R | C | T | S | L | I | NOTEEEEEES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP:

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW</th>
<th>H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
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<td>G-GMV</td>
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</tr>
</tbody>
</table>

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:

Sheltered rocky shore w/ CB/R and occasional foamy -
granular accumulations @ mitz Litz;
Surface oil only, [X] black, powdery, well weathered ct'f s't @ Hitz &
Satz; plus trace to salt/I @ Satz on low angled, lee shore.
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM  
SEGMENT #  KN118  
SUBDIVISION  A  
SEA STATE  calm  
PHOTOGRAPHS: ROLL #  
DATE  17 May 91  
TIDAL HEIGHT (Range)  -1.5 to +2.6 ft  
BIOLIST  Michael Faucett  
WIND SPEED/DIRECTION  E 5 knots

 COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

This subdivision has an intertidal community typical of protected bays in this region: Gravel and muds in the LTZ-upper subtidal zone support beds of eelgrass and clams with associated species such as horse crabs, sun stars and moon snails. MTZ areas usually have dense barnacles and patches of dense rockweed on cobble boulders and sparse to dense beds of mussels embedded in the gravel or pebbles. Greater density of rockweed around stream mouths and on bedrock is typical. Algal diversity is low compared to more exposed shores. Typical species are Laminaria and Ulva Enteromorpha and mats of filamentous red and brown species in LTZ-MTZ. Breeding little terns, belcher, and nudibranchs (Lamellodora) were observed at several locations. Large numbers of pelagic euphausid shrimp were found stranded in the intertidal zone in this segment. Bits of pink chitin are stuff were also stranded throughout this & other segments in Stering Bay -- these appeared to be local pellets from some fish that had been eating pink crustaceans, possibly euphausids. Seagull regurgitation deposits in this area also contained a lot of pink crustacean-shell material. Large flocks of kittiwakes & gulls seen feeding in the center of the bay may be feeding on a swarm of euphausids that drifted into the area.

WILDLIFE OBSERVATIONS  
TO BE COMPLETED IN ALL SUBDIVISIONS

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
<th>SPECIES PRESENT</th>
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<tr>
<td>Eagles</td>
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<td>2</td>
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<td>takeout (stranded)</td>
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<td>Seabirds</td>
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<td>2</td>
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<td>black prickleback</td>
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<td>Waterfowl</td>
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</tr>
<tr>
<td>Gulls/Kittiwakes</td>
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<td></td>
<td></td>
<td></td>
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<td>Shorebirds</td>
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</tr>
<tr>
<td>Corvids</td>
<td></td>
<td></td>
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<tr>
<td>Other Birds</td>
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<tr>
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<th># OBSERVED</th>
<th>SPECIES</th>
<th># OBSERVED</th>
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<tbody>
<tr>
<td>Sea Otters</td>
<td></td>
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<tr>
<td>Pinnipeds(specify)</td>
<td>1</td>
<td>harbor seal</td>
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<tr>
<td>Whales(specify)</td>
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LAND MAMMALS

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<th>SPECIES</th>
<th># OBSERVED</th>
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Shoreline subdivision map showing important biological features attached.
Limpets, litorinids among lower edge of SOR; barnacles, rockweed, mussels downshore in MTZ; clams in LTZ.

CT in SUTZ above barnacles, limpets, litorinids.

CT above biota (except lichen); barnacles, rockweed, limpets, litorinids, mussels downshore.

SOR in UTZ among healthy mussels & barnacles, sparse limpets, litorinids.

Reviewed: F.W. 5/21/91
KV 118 17 May 91  Fauckett

Air line 0800
Mussel bed, dense barnacles in C1/P
around head of Bay, scattered
Forams dense in patches - typical shelter
Bay head - case LTZ down
mod. littorina (all ages) + limp
CT + some on BR + just above mkt
barnacles, piddock, young mkt + 8 ft
(oyster)

100 ft. kelp, kelped on way in most
sitting in water, some feeding
LTZ at head, Scyto, Enteromorpha
tall, red, mod. Forams - most of to be
quartz foraminifera, common thing at
head near water, R. contortus a settling
pool - under mkt in FR are vs. (5-6 cm)
dense mussel, Littorina dropping
littorina, protorhod ochre
- clouding in rock crevice pool, also
Fusinochiton cooperi
- kelped along shore to
other pools, - no mkt
1 harbor seal

2 eagles
- clambered in gravel dunes getting
- bit of CR + CR, occurred S/P

along route 800.
- mass stranding of echinoids along
- shift
- stranded tubes -

17 May 91  Fauckett

Start KV 119 0920
- Harbor seal - continues after 0915
- quiet bay seal - Bir/P6-
- case LTZ - other holes - eelgrass
- subtidal - Pygopus - dense to mkt
- piddock mueller + 3-6 ft
- CT/ST/STR bits U72 - S72 among
- lichen - no shrubs - littorina is abundant
- raven on beach
- 5 Harlequins
- 6W gull x 3

N/A set aside near shore -
came type mussel bed instead, soft
mud, eelgrass, clam bed -
trace CT SOR LTZ among sparse
barn, littorina - F. case - Forams, little
dense along crags - dense reef bed
of mussels & F. case on bar in cove.
1991 MAYSAP EVALUATION

SEGMENT: KN 118    SUB: A    REGION: FWS    SURVEY DATE: 5/17/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details) Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: ___________ Date: 6/3/91

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N)    INITIAL    TAG    FOSC

Manual Pickup (Check as Req.)    ___________    ___________    ___________
Spot Washing    ___________    ___________    ___________
Bio-Customblen Only    ___________    ___________    ___________
Bio-Inipol/Customblen    ___________    ___________    ___________
Other    ___________    ___________    ___________
Other    ___________    ___________    ___________

COMMENTS:

INITIAL: ____________________________________________________

TAG: ______________________________________________________

FOSC: _____________________________________________________

TAG APPROVAL DATE: MAY 31 1991    FOSC APPROVAL DATE: 6/3/91

ADEC   ___________    FOSC    ___________

EXXON   ___________

USCG   ___________

NOAA   ___________

E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.
TEAM NO. 1  SEGMENT KN0118  SUBDIVISION A  DATE 5/17/91

ADEC
NAME  JEFF GINNULS  SIGNATURE

NTR  Low energy, rocky shoreline. Contact's occasional sand/soil on
boulders. Sporadic LR between boulders. When looking up & down
beach remaining soil appears to be remnants of a band treated last
year (path where boulders roiled last year. No recoverable oil

EXXON
NAME  RANDALL K. BOYER  SIGNATURE  RANDALL K. BOYER

NTR  No treatable oiling conditions on this subdivision.
As other Herring Bay shorelines, there is coating on vertical
rock faces and at the base of boulders. But lower intertidal
zones appear recovering and are healthy looking. During the
survey, care was taken to not trample mussel beds. I do not
suggest further reassessment for treatment.

LANDMANAGER
NAME  MARSHA HALL OF DNR  SIGNATURE  MARSHA HALL

NTR  Ribbons wrapped around rocks at Area C
and D. Lo sor pattys broken up
along area E.

USCG/NOAA
NAME  SCHULTZ / CIRICOS  SIGNATURE  J. SCHULTZ

NTR  Nothing of significance remains, no further treatment warranted

MEO SLOPE  SHELTERED - LOW ENERGY CB SHORELINE, SURFACE OIL
DETECTED AS DEXRODO CT @ ST IN SI / UI ~ LO SOR ON SHELTERED SHORE
AT "E"
MAYSAP SHORELINE OILING SUMMARY

TEAM No. ____________

BIO M. FAWCETT

LANDMANAGER M. HATHAWAY

USCG/NOAA SCHWARTZ/CHILDS

TIME 08:00 to 09:20

TIDE LEVEL +2.7 ft. to -1.9 ft.

ENERGY LEVEL: H M X L

SURVEYED FROM: FOOT BOAT HELO

WEATHER: SUN CLOUDS FOG RAIN SNOW

TOTAL LENGTH SHORELINE SURVEYED: 1440 m

NEAR SHORE SHEEN: ORB ORB OR L NONE

EST. OIL CATEGORY LENGTH: W __ m M __ m N __ m V L __ m O __ m

SURVEYED FROM: FOOT BOAT HELO

TOTAL LENGTH SHORELINE SURVEYED: 1440 m

NEAR SHORE SHEEN: ORB ORB OR L NONE

EST. OIL CATEGORY LENGTH: W __ m M __ m N __ m V L __ m O __ m

<table>
<thead>
<tr>
<th>L</th>
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<th>OIL CHARACTER</th>
<th>OIL CHARACTER</th>
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<th>OIL CHARACTER</th>
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<td>A</td>
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<td>DD M</td>
<td>S 1 N 200 x</td>
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<td>0.05 20 x</td>
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<td>D</td>
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<td>TT</td>
<td>B 2 8</td>
<td>M 6 420 x</td>
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<td>5</td>
<td>S</td>
<td>TT</td>
<td>B 2 8</td>
<td>M 51 230 x</td>
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DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP- ____________

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<td>oil</td>
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</table>

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS: Sheltered rocky shore w/ CB/R and occasional peaty-granule accumulations @ MITZ LITZ; surface oil only, as black, powdery, well weathered crystals @ MITZ LITZ; plus trace to oil on lower angled, lee shore.

REVISED 6.19 SY

REVIEWED: F.W. SHY 91
This subdivision has an intertidal community typical of protected bays in this region. Gravel and muds in the LTZ—upper subtidal zone support beds of eelgrass and clams, with associated species such as horse crabs, sea stars, and moon snails. MTZ areas usually have dense barnacles and patches of dense rockweed on cobble and boulders, and sparse to dense beds of mussels embedded in the gravel or pebbles. Greater density of rockweed around stream mouths and on bedrock is typical. Algal diversity is low compared to more exposed shores. Typical species are laminaria in LTZ and Ulva, Enteromorpha, and mats of filamentous red and brown species in MTZ—LTZ. Breeding kittiwakes, whelks, and nudibranchs (Lamellibrachia) were observed at several locations. Large numbers of pelagic euphausid shrimp were found stranded in the intertidal zone in this segment. Ribs of pink chitin in soft water were also stranded throughout this and other segments in Herring Bay—these appeared to be local pelts from some fish that had been eating pink crustaceans, possibly euphausids. Seagull regurgitation deposits in this area also contained a lot of pink crustacean spill material. Large flocks of kittiwakes & gulls seem feeding in the center of the bay may be feeding on a swarm of euphausids that drifted into the area.

### Wildlife Observations

**To be completed in all subdivisions**

<table>
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<tr>
<th>Birds</th>
<th># of Species</th>
<th>Total Birds</th>
<th>Fish Observed</th>
<th>Species Present</th>
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<tbody>
<tr>
<td>Eagles</td>
<td>1</td>
<td>2</td>
<td></td>
<td>tubeshoot (stranded)</td>
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<tr>
<td>Seabirds</td>
<td></td>
<td></td>
<td>black prickleback</td>
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<tr>
<td>Waterfowl</td>
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</tr>
<tr>
<td>Gulls/kittiwakes</td>
<td>(1 bl. leg: kitti)</td>
<td>100</td>
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<tr>
<td>Shorebirds</td>
<td>(G-W Gull)</td>
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<tr>
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<tr>
<td>Other Birds</td>
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### Marine Mammals

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<td>1</td>
</tr>
<tr>
<td>Pinnipeds (specify)</td>
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</tr>
<tr>
<td>Whales (specify)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Land Mammals</th>
<th># Observed</th>
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</thead>
<tbody>
<tr>
<td>Harbor Seal</td>
<td>1</td>
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</tbody>
</table>

Shoreline subdivision map showing important biological features attached.
Limpets, littorinids among lower edge of SOR; barnacles, rockweeds, mussels downshore in MTZ; clams in LTZ.
KN 118 17 May 91  Foutz

Arrive 0800
Mussel bed, dense barnacles on C/I
around Head of Bay scattered
Fouling dense in patches - typical shelled
bay head - claws LTZ down
mod. littorine (allerges) + lamp
cT & clams on BR or just above mod.
barnacles, palace young mussels + 8 ft (water
overhang)
1 log on C/I. Kitingworth on way in mast
-sitting in water, cause freed

1 LTZ at head, So leather, Eelgrass, red, mod. Fucal - rest of fl is strong green seaweed very thick covering all
-sea near waterfall, looks like a settling pond - under will only under B are clear
(5-6 cm) all mussel, barnacles, mudding
Little egrets, porpoise black-footed albatross
- chains in rock case pool, also
- Inchnochiton cooperi
- skippal along shore to other pools - no al
- harbor seal

1 harbor seal

2 eagles

- clammed in gravel shallow C/I
- bit of C/I 5 ft, occasional SOF

17 May 91  Foutz

along nest of gannet
- mass stranded phoebas along
drift
1 stranded turtle nest

end 0920

Start KN 119 0920

1 harbor seal - continues after 113
- quiet bay head - B1c/A16 -
- claws LTZ - other algae - eelgrass
- Sublittor - Pyura - dense barnacles
- palace mussels 3 - 6 ft
cT/ST/ST6 LI T Z LI T Z LI T Z LI T Z among
- Tichen - no birds - little herring on sand
- ravens on beach
- 5 Harlequins

- G W gulls 3

NOAA set out near clammers -
same type mussel bed inside, soft
mud, eelgrass, clams near
-traces C/I or LTZ among sparse
-barn, lot lamp - spun fish - more
dense along cTZ - dense mussels bed
of mussel, gulls on bay in creek

month
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/KN-118

SUBDIVISIONS: A (1 OF 1)
SEGMENT ST/ KN-118  SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: __________________ DATE: ___________________

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 743 m: V.Light 1000 m: No Oil 391 m
Subsurface Oil Observed: Yes____ No X ____ Maximum Depth _____

RECOMMENDATIONS:
_____ No Treatment Recommended  _____ Snare/Absorbent Booms
X Treatment Recommended  _____ Oil Snares (pom poms)
_____ Manual Pickup  _____ Absorbents (pads, rolls, etc)
X Bioremediation  _____ Spot Washing: _____ Wands
_____ Tarmat: _____ Breakup  _____ Beach Cleaner
_____ Removal  _____ Other (see comments)

COMMENTS: Recommend bioremediation of areas shown on attached sketch map. No specific time constraints identified.

TAG COMMENTS:

TAG APPROVAL DATE: ____________
ADEC ___________________________ FOSC: ____________ DATE: ____________
EXXON ___________________________ NOAA ___________________________
NOAA ___________________________ USCG ___________________________
FIELD SHORELINE COMMENT SHEET

SEGMENT ST / KN 118 SUBDIVISION: None DATE 4/4/90

USCG NAME Pat Malay SIGNATURE

□ NO TREATMENT RECOMMENDED □ TREATMENT SUGGESTED

COMMENTS ⇒ Sick Leave

ADEC NAME M. Cunningham SIGNATURE M. Cunningham

□ NO TREATMENT RECOMMENDED □ TREATMENT SUGGESTED

COMMENTS

Bioremediate low angle sediments where coat visible. Ch. for debris. This segment is in fairly good shape and should clean-up nicely when it warms up... it was ice covered much of the time

LAND MANAGER NAME Steven Phillips SIGNATURE

□ NO TREATMENT RECOMMENDED □ TREATMENT SUGGESTED

COMMENTS

Scout storm berm for debris.
Bioremediate on segment portions with "narrow" oiling
SHORELINE OILING SUMMARY

(Greg Changy, USCG (Patrick Malay)) SEGMENT ST/FK-118

BIO LAND REP: Steve Phillips  ADEK: Mike Cunningham

TIDE LEVEL: 0.0 to 2.0+ DATE: April 24, 1990

EST. SUBDIVISION LENGTH: 155 m

SURVEYED FROM: Foot Boat Helo WORKING DIRECTION: West to East

SURFACE OIL

<table>
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<tr>
<th>CHARACTER</th>
<th>DISTRIBUTION</th>
<th>OIL/FILM COLOR</th>
<th>IMPACTED ZONES</th>
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<tr>
<td>ASPHALT PAVEMENT</td>
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<td>POOLED COVER</td>
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<td>COAT STAIN</td>
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<td>MOUSSE</td>
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<tr>
<td>PATTIES TARBALLS</td>
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<tr>
<td>FILM</td>
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<tr>
<td>NO OIL</td>
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PAVEMENT: H F S ____ sq. m by ____ cm

PATTIES/TARBALLS ________ BAGS

NEAR SHORE SHEEN? NO BR (RW) SL TL

OILED DEBRIS AMOUNT

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<td>Vegetation</td>
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<td>Trash</td>
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<td>Debris</td>
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Photographs:

Roll No. ST-7-2
Frame(s) __

SUBSURFACE OIL

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<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL</th>
<th>OILED INTERVAL (CM)</th>
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SUBSURFACE SEDIMENTS

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COMMENTS

Pits #3 & #4 trace of translucent sheen on ground water which filled the pits.

Ice Dam Across Bay Seems To Have Trapped Sheen.

"Bathtub ring" of rainbow sheen was observed around embayment.

Oiled interval of 0-1 cm in Pit 3#1 does not constitute...
SHORELINE ECOLOGICAL SUMMARY

Segment ST/KN 118 Subdivision __________________________ Date (mo/day/yr) Apr 4, 90

Time (24 hr) LV 1505 Biologist: Roth

(A) Substrate type and % of segments:

(B) Overall % cover of biota (% of segment): Dense 10, Moderate 30, Low 60

(C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles/adults (%) new settlement (3)

BARNACLES

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MYTILUS

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GASTROPODS

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FUCUS

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</tbody>
</table>

Wildlife Observations/General Comments:

1) Sea otter feeding near segment
2) Can't see lower zone at this tide; only Fucus estimates possible.

Ecological Considerations:

GV - Recreation Anchorages
Salmon stream mouth - fry outmigration (3/1 to 5/15)
Salmon stream mouth - spawning (7/10 to 8/31)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage.
No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.

Salmon fry nursery area (4/31 to 7/31)
Estuary Hatchery release (4/15 to 6/1)
Main Bay Hatchery release (4/20 to 5/10)
Sewmill Bay Hatchery release (4/15 to 6/1)
Cannery Creek Hatchery release (4/21 to 6/1)
Remote release site
Gill net area (6/7 to 8/31)
Purse seine area (7/20 to 9/30)
Purse seine hook-off (7/20 to 9/30)
Set net sites (6/11 to 7/25)
For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.

Herring spawning (4/1 to 6/15)
Restrict boat traffic to essential minimum. Avoid damage to uneoiled intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.

Harbor seal and sea lion pupping (5/15 to 7/1)
Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.

Seabird colony (5/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.

Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic.

All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.

Recreation:
Tent sites (5/1 to 9/15)
Forest Service cabins (6/1 to 9/15)
Lodge (6/1 to 9/15)
Special use destination

Subsistence area: Salmon harvesting (5/1 to 9/30)
Finfish harvesting
Deer harvesting (6/15 to 2/28)
Invertebrate harvesting

For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.
ADDENDUM: SUBDIVISION CONSTRAINTS
SEGMENT KN-118 SUBDIVISION A (1 of 1)

ARCHAEOLOGICAL STANDARD CONSTRAINT
If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS
No time-dependent ecological constraints.

OTHER ECOLOGICAL CONSIDERATIONS
Avoid disturbance/damage to unoDed biota and substrate.

TAG ADDENDUM DATE 5/16/90
ADEC Art Weiner DATE 5/17/90
EXXON
NOAA
USCG

Prepared by: LKH Date: 5/14/90
SHORELINE EVALUATION

SEGMENT ST/ KN-118 SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: DATE: 4/4/90

OILING CATEGORIZATION:
Wide_0 m: Medium_0 m: Narrow_743 m: V.Light_1000 m: No Oil_391 m
Subsurface Oil Observed: Yes No Maximum Depth

RECOMMENDATIONS:
____ No Treatment Recommended ______ Snare/Absorbent Booms
____ Treatment Recommended ______ Oil Snares (pom poms)
____ Manual Pickup ______ Absorbents (pads, rolls, etc)
____ Bioremediation ______ Spot Washing: ______ Wands
____ Tarmat: ______ Breakup ______ Beach Cleaner
____ Removal ______ Other (see comments)

COMMENTS: Recommend bioremediation of areas shown on attached sketch map. No specific time constraints identified.

CHECK FOR DEBRIS PRIOR TO BIOREMEDIATION.

TAG COMMENTS:

TAG Approval Date: 4/18/90
ADEC ART WEIMER ART WEIMER
EXXON AMY G. EXXON DATE:
NOAA G. WHITE G. WHITE
USCG G. A. WHITE G. A. WHITE
SHORELINE EVALUATION

SEGMENT ST/ KN-118 SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: [Signature] DATE: 4/4/90

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 743 m: V.Light 1000 m: No Oil 391 m
Subsurface Oil Observed: Yes ___ No X ___ Maximum Depth ________

RECOMMENDATIONS:
X Treatment Recommended ___ Share/Absorbent Booms
_____ Manual Pickup ___ Oil Snares (pom poms)
X Bioremediation ___ Absorbents (pads, rolls, etc)
_____ Tarmat: _____ Breakup ___ Spot Washing: _____ Wands
_____ Removal ___ Beach Cleaner _____ Other (see comments)

COMMENTS: Recommend bioremediation of areas shown on attached sketch map. No specific time constraints identified.

CHECK FOR DEBRIS PRIOR TO BIOREMEDIATION.

TAG COMMENTS:

TAG APPROVAL DATE: 4/18/90
ADEC Art Weimer Art Weimer
EXXON Andy Tch. [Signature]
NOAA [Signature] [Signature]
USCG [Signature] [Signature]

DATE: 4-22-96
1991 MAYSAP EVALUATION

SEGMENT: KN 119  SUB: A  REGION: PWB  SURVEY DATE: 5/17/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) __OPEN________________________

Ecological/Constraints (see page two for details) __NONE________________________

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature:________________________ Date:________________________

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N) __N________________________

Manual Pickup (Check as Req.) __________
Spot Washing __________
Bio-Customblen Only __________
Bio-Inipol/Custmblen __________
Other __________
Other __________

COMMENTS:
INITIAL:________________________________________

TAG:________________________________________

FOSC:________________________________________

TAG APPROVAL DATE:____________  FOSC APPROVAL DATE:____________

ADEC________________________  FOSC________________________
EXXON________________________
USCG________________________
NOAA________________________
**ADEC**

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<th>SEGMENT</th>
<th>SUBDIVISION</th>
<th>DATE</th>
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<td>1</td>
<td>KN0119</td>
<td>A</td>
<td>5/17/91</td>
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<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>JEFF Ginals</td>
<td>![Signature]</td>
</tr>
</tbody>
</table>

- NTR: Not enough oil on segment to justify treatment. Heavy only at Site C (COG map) with high sor amongst boulders and cobbles (3kts).

- NTR: Low impact. Impact area has normal growth above it and below water saturated slat layer. sheeting is heavy upon migration. However, due to large heavy flush growing on & below impact area, plus high coker-fication of peat, it appears area would benefit more by no disturbance than treatment. Plenty of fresh water constantly flushing area showed no natural recovery. This area just east of Norm room site. Rest of area light impact (COG/SMW) NTR.

---

**EXXON**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Randal L. Boyd</td>
<td>![Signature]</td>
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- NTR: This subdivision contains a NOAA research site. Just east of this site near the stream, a sub-surface lens of moist oil residue was discovered. I would not recommend treatment in this area because of the soft peat substrate. This sensitive zone would suffer from foot traffic of clean-up crews. The recovery would not serve any environmental benefit as algae, mussel, shells and other living organisms are absent here.

---

**ANDMANAGER**

<table>
<thead>
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<th>SIGNATURE</th>
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<tbody>
<tr>
<td>MARSHA HALL OF DNR</td>
<td>![Signature]</td>
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</table>

- NTR: Treatment stakes placed in the LITE could pose future problems at the NOAA study site. I'd like to get the oil out of area C. Good beach for recreational activity - however the sensitivity of peat is a concern. It's a tough call.

---

**USCG/NOAA**

<table>
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<td>![Signature]</td>
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- NTR: Not enough oil to warrant treatment or further intrusion.

- SHELTERED ROUGH SHORELINE - 'B' & 'C' contained peat under cobble/pea.
- CT 8 ST were present across subfloor 4100C area & patchy at UI6/S.
- 'H' SOR/2 DETECTION @ D' concentrated on peat. Lo SoR @ UI-S & CIP over at BI & BB.

---

8
**MAYSAP SHORELINE OILING SUMMARY**

**TEAM NO.**
- Exxon
- USCG/NOAA

**TIME**
09:20 to 10:30

**TIDE LEVEL**
-1.8 ft to -2.8 ft

**ENERGY LEVEL**
- X

**DATE**
5/17/9

**EXXON**
- TIME:
- F: 7:40 to 8:00
- TIDE:
- LEVEL: -8 ft to -25 ft

**SURVEYED FROM:**
- FOOT
- BOAT
- HELO

**WEATHER:**
- SUN
- CLOUDS
- FOG
- RAIN
- SNOW

**TOTAL LENGTH SHORELINE SURVEYED:** 425 m

**NEAR SHORE SHEEN:**
- NO
- BR
- RB
- BL
- NONE

**EST. OIL CATEGORY LENGTH:**
- W - 1 m
- M - 15 m
- N - 1 m
- VI - 470 m
- US - 75 m

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<tr>
<th>L</th>
<th>O</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT TYPE</th>
<th>SHORE AREA</th>
<th>ZONE</th>
<th>NOTES</th>
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<tr>
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<td>TB</td>
<td>SOR</td>
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<td>110</td>
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<td>P</td>
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<td>CBL</td>
<td>3</td>
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**SURFACE SLOPE:**
- V = VERTICAL
- H = HIGH ANGLE
- M = MEDIUM ANGLE
- L = LOW ANGLE

**PHOTO ROLL:**
- MAYSAP-1

**DISTRIBUTION:**
- C = 81-100%
- B = 61-80%
- P = 11-60%
- S = 1-10%
- T = <1%

**SHEEN COLOR:**
- B = BROWN
- R = RAINBOW
- S = SILVER
- N = NONE

**OG COMMENT:**
- Shielded, medium to large oil, sandy shore, oil patchy accumulations on lower angle slope.
- Surface oil only, as (i) CT, CV, ST, <1m, Haze-Silt, and local patches of 10 sol.
- (ii) br sol/1 @ 10%, as brown oil beaded under br and over saturated 10x/10x, rainbow sheen @ waterline.

---

**EXXON**
- TOTAL LENGTH SHORELINE SURVEYED: 425 m
- NEAR SHORE SHEEN: NO
- EST. OIL CATEGORY LENGTH: W - 1 m, M - 15 m, N - 1 m, VI - 470 m, US - 75 m

---

**OG COMMENT:**
- Shielded, medium to large oil, sandy shore, oil patchy accumulations on lower angle slope.
- Surface oil only, as (i) CT, CV, ST, <1m, Haze-Silt, and local patches of 10 sol.
- (ii) br sol/1 @ 10%, as brown oil beaded under br and over saturated 10x/10x, rainbow sheen @ waterline.
KN-119A
G. Macdonald
5.17.31

Profile - typical of segment

Note: Spots of non-foam seen throughout segment.

A

CT, ST, EV
< 10%

B

10% 9.1
1/4 x 150 m
CT, ST < 10%

C

< 40%; ≤ 3 x 15 m
In SOR/peat under B
as B oil on water-saturated peat layer; wisps of SOR
H12, MITZ; Sheen

Review: 5.19.41
5/20/41 F.O.
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1  DATE 17 May 91
SEGMENT # KW 119  TIDAL HEIGHT (Range) -2.8 to -1.5 ft MLLW
SUBDIVISION A  BIOLOGIST Michael Fawcett
SEA STATE calm  WIND SPEED/DIRECTION E S Knots
PHOTOGRAPHS: ROLL # FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):
This subdivision has an intertidal community typical of protected bays in this region. Gravel and muds in MTZ-upper subtidal zone support beds of eelgrass and clams, with associated species such as horse crabs (Talmunna), sun stars (Pisaster) and moon snails (Polinices). MTZ areas usually have dense barnacles and patches of dense rockweed on cobbles and boulders, and sparse to dense mussels embedded in gravel or pebbles. Greater density of rockweed around stream mouths and in depressions is typical. Algal diversity is low compared to more exposed shores; typical species are Laminaria zechellii in LTZ, and Ulva, Enteromorpha, and mats of filamentous red and brown species in MTZ-LTZ.

See sketch map for descriptions of biota near oil residue.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

<table>
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<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
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<tbody>
<tr>
<td>Eagles</td>
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<tr>
<td>Seabirds</td>
<td></td>
<td></td>
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<tr>
<td>Waterfowl</td>
<td>1 (harlequin duck)</td>
<td>5</td>
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<tr>
<td>Gulls/Kittiwakes</td>
<td>1 (Gull)</td>
<td>3</td>
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<tr>
<td>Shorebirds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corvids</td>
<td>1 (Raven)</td>
<td></td>
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<tr>
<td>Other Birds</td>
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<th>MARINE MAMMALS</th>
<th># OBSERVED</th>
<th>SPECIES</th>
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<tr>
<td>Sea Otters</td>
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<td>Pinnipeds(specific)</td>
<td>1</td>
<td>harbor seal</td>
<td></td>
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<tr>
<td>Whales(specific)</td>
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<th>LAND MAMMALS</th>
<th># OBSERVED</th>
<th>SPECIES</th>
<th># OBSERVED</th>
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Shoreline subdivision map showing important biological features attached.
**KN-115 A**  
B10 Sketch Map  
M. Fawcett  
5/17/91

- **A:** No biota except lichen near oil residue, barnacles, limpets, etc. 2m downshore
- **B:** Same as (B) and (A)
- **C:** Some among dense mussels and barnacles, also limpets, pricklebacks, rockweed, *Sextosiphon*, filamentous red algae; limpet breeding in cobble upshore; clams (5-6 cm), starfish, nudibranchs, fishies, rock jingles, top snails (*Calliotropis*), 2m downshore from SOR
- **D:** Limpets (M. perversa), limpets, barnacles just below CT 4
e

**Review:** RF 5/20/11
17Mar21 Fruitz

FV/19 (Cboat) -麗

Re: Call #36056 CDFR/41 - YF, 17mar21 -丽

3SF on feet, 6SF on head - YF

三脚架与地面皆为3SF, YF

Anniversary, 17Mar21 -丽

2021年3月17日周年纪念 -丽

Boarding "Aluna" -丽

登船 "阿露娜" -丽

Pearl Diving, "Aluna" -丽

珍珠潜水 "阿露娜" -丽

Soft Rebreathing - 3SF on head -丽

软呼吸3SF于头 -丽

2-3SF Rebreathing - 丽

2-3SF呼吸 -丽

Soft Rebreathing - Aluna -丽

软呼吸 "阿露娜" -丽

2002年6月21日 -丽

17Mar21 Fruitz -丽

17Mar21 Fruitz -丽
1991 MAYSAP EVALUATION

SEGMENT: KN 119  SUB: A  REGION: PWS  SURVEY DATE: 5/17/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s)  OPEN

Ecological/Constraints (see page two for details)  NONE

ARCHAEOLOGICAL CONSTRAINTS:
If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: ___________________________ Date: 5/30/91

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N)  N
Manual Pickup (Check as Req.)  N
Spot Washing  N
Bio-Customblen Only  N
Bio-Inipol/Customblen  N
Other  N
Other  N

COMMENTS:
INITIAL: __________________________________________________________

TAG: ____________________________________________________________

FOSC: __________________________________________________________

TAG APPROVAL DATE: MAY 27 1991  FOSC APPROVAL DATE: 6/15/91

ADEC  EXXON  USCG  NOAA

E. E. PAGE, CDR. USCG  CHIEF OF STAFF, FOSC
TEAM NO. 1  SEGMENT KN0119  SUBDIVISION A  DATE 5/17/91

ADEC
NAME JEFF GINALING  SIGNATURE

\[ \text{NTR NOT ENOUGH OIL ON SEGMENT TO JUSTIFY TREATMENT. HAD MESS AT SITE E (OG MAP) WITH HIGH SOR AMONGST BOULDERS AND COBBLES (3X15") FROM UTI THRU MITZ. IMPACT AREA HAS ALGAE GROWTH ABOVE IT MITZ, AND BELOW WATER SATURATED PEAT LAYER SHEENS RANDOM UPON AGITATION. HOWEVER, DUE TO LARGE HIDRROLOGIC BLOB ON IT BEHIND IMPACT AREA, PLUS HIGH OCCURRENCE OF PEAT, IT APPEARS AREA WOULD BENEFIT MORE BY NO DISTURBANCE THAN TREATMENT. PLOWING OF FRESH WATER CONTINUOUSLY FLUSHING AREA SHOULD AID NATURAL RECOVERY. THIS AREA JUST EAST OF NOAA STUDY SITE. REST OF AREA LIGHT MESS (SAND/SLUSH); NTR.} \]

EXXON
NAME RANDALL BOYER  SIGNATURE RANDALL K. BOYER

\[ \text{NTR THIS SUBDIVISION CONTAINS A NOAA RESEARCH SITE. JUST EAST OF THIS SITE NEAR THE STREAM, A SUB SURFACE LENSE OF MOIST MUCK WERE DISCOVERED. I WOULD NOT RECOMMEND TREATMENT IN THIS AREA BECAUSE OF THE SOFT SOFT SUBSTRATE. THIS SENSITIVE ZONE WOULD SUFFER FROM FOOT TRAFFIC OF CLEAN UP CEROS. THE RECOVERY WOULD NOT SERVE ANY ENVIRONMENTAL BENEFIT AS ALGAE, MUSSELS, SNAILS AND OTHER LIVING ORGANISMS ARE ABUNDANT HERE.} \]

NDMANAGER
NAME MARSHA HALL  SIGNATURE MARSHA HALL

\[ \text{NTR \ X treatment SHAKES PLACED IN THE LTE COULD} \]

\[ \text{TREAT FUTURE PROBLEMS AT THE NOAA STUDY SITE. I'D LIKE TO GET THE OIL OUT OF AREA C. GOOD BEACH FOR RECREATIONAL ACTIVITY—HOWEVER THE SENSITIVITY OF PEAT IS A CONCERN. IT'S A TOUGH CALL.} \]

USCG/NOAA
NAME SCHOLTZ/CHRIS  SIGNATURE JESUS/CHRIS

\[ \text{NTR NOT ENOUGH OIL TO WARRANT TREATMENT OR FURTHER INTRUSION} \]

SHELTERED ROCKY SHORELINE - 'B' & 'C' CONTAINED PEAT UNTIL COBBLES PEAT CT & ST WERE PRESENT ACROSS SLOPE, 2100'+ COVE 4 PATCHY AT UE/SE. HI SOR/E DETECTED D D' CONTAINED ON PEAT, 2050R @ UE/SE 1% VC AT B1 & B2.
MAYSAP: SHORELINE OILING SUMMARY

TEAM NO. 1
OG: G. Macdonald  BIO: M. Fawcett
ADEC: J. Ginalias  LANDMANAGER: M. Hall
EXXON: R. Bovee  SCHUTZ/CHAS

TIME: 07:20 to 10:30  TIDE LEVEL: +1.8 ft to -2.8 ft
SURVEYED FROM: ☑ FOOT ☑ BOAT ☑ HELO  WEATHER: ☑ SUN ☑ CLOUDS ☑ FOG ☑ RAIN ☑ SNOW
TOTAL LENGTH SHORELINE SURVEYED: 425 m  NEAR SHORE SHEEN: ☑ BR ☑ RB ☑ OR ☑ NONE
EST. OIL CATEGORY LENGTH: W: __ m  M: __ m  N: __ m  V/L: __ m  US: __ m

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<th>O</th>
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<th>SURFACE SEDIMENT TYPE</th>
<th>SLOPE</th>
<th>AREA WIDTH</th>
<th>LENGTH</th>
<th>ZONE</th>
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<tr>
<td>A</td>
<td>S</td>
<td>S S</td>
<td>CBEL</td>
<td>M</td>
<td>11</td>
<td>75</td>
<td>X X</td>
<td>10 Sol</td>
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<td>B</td>
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<td>T T</td>
<td>CBEL</td>
<td>M</td>
<td>-112</td>
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<td>M</td>
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<td>110</td>
<td>X X</td>
<td>hi Sol, under B</td>
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<td>D</td>
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<td>S S S</td>
<td>CBEL</td>
<td>M</td>
<td>3</td>
<td>150</td>
<td>X X</td>
<td>10 Sol/I</td>
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DISTRIBUTION: C = 91-100%; B = 51-90%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE  PHOTO ROLL # MAYSAP-__-24 FRAMES 29x26

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<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE CM-CM</th>
<th>CLEAN BELOW</th>
<th>H2O LEVEL (cm)</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
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SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:
Sheltered, medium angled rocky shore, wi pasty accumulations on lower angled rocks; Surface oil only, as (i) CT, CV, ST, CI <10%, HITZ-SNIZ and local patches of lo Sol.
(ii) hi Sol/I C C, as brown oil beaded under B and over saturated past; - Silver & rainbow sheen @ waterline.

Reviewed 5/19, 94
5/20/94 P.U.
KN-119A

G. MACDONALD
5.17.91

N

0

60 m

rivulet

CT, ST, <10%

NOAA

Notice

1/4 x 15m

<10%

CT, ST, l, 50m

1/4 x 15m

CT, ST

<10%

CT, EV, ST, <10%

CS12, MITZ

3x x 200m

massive B

ST on bottom

B

A

<10%

Hi SOF; under B,

as B oil on water saturated

peat layer; weight of 5.5

MITZ; sheet

Note: spots of non-AWS far throughout segment.

CT, ST, CV

<10%

Hi SOF/peat

CT, ST, CV

<10%

Hi SOF/peat

Profile -

typical of segment.

reviewed 5.19.91

5/20/91 P.W.
### MAYSAP BIOLOGICAL SUMMARY FORM

**TEAM #:** 1  
**DATE:** 17 May 91

**SEGMENT #:** KW 119  
**TIDAL HEIGHT (Range):** -2.6 to -1.5 ft MLLW

**SUBDIVISION:** A  
**BIOLOGIST:** Michael Fawcett

**SEA STATE:** Calm  
**WIND SPEED/DIRECTION:** E 5 Knots

**PHOTOGRAPHS:** ROLL #  
**FRAME #:**

**COMMENTS/OBSERVATIONS:**

This subdivision has an intertidal community typical of protected bays in this area. Gravel and muds in LITZ-upper subtidal zone support beds of sea grass and clams, with associated species such as horse crabs (Tachypleus), sun stars (Echinaster) and moon snails (Polinices). MTZ areas usually have dense barnacles and patches of dense rockweed on cobble and boulders, and sparse to dense mussels embedded in gravel or pebbles. Greater density of rockweed around stream mouths and an interrock is typical. Algal diversity is low compared to more exposed shores; typical species are Laminaria setchellii in LITZ. and Ulva, Enteromorpha, and mats of filamentous red and brown species in MTZ-LITZ.

See sketch map for descriptions of data near oil residue.

---

### WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

#### BIRDS

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<th>Birds</th>
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<th>Total Birds</th>
<th>Species Present</th>
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<td>Seabirds</td>
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<td>Waterfowl</td>
<td>1 (Harlequin Duck)</td>
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<tr>
<td>Gulls/Kittiwakes</td>
<td>1 (Gull)</td>
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<td>Shorebirds</td>
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<tr>
<td>Corvids</td>
<td>1 (Raven)</td>
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<td>Other Birds</td>
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#### MARINE MAMMALS

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<th># Observed</th>
<th>Species</th>
<th># Observed</th>
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<td>Harbor Seal</td>
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<tr>
<td>Pinnipeds (specify)</td>
<td>1</td>
<td>Harbor Seal</td>
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<tr>
<td>Whales (specify)</td>
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#### LAND MAMMALS

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Shoreline subdivision map showing important biological features attached.
KN-119 A
Bio Sketch Map
M. Fawcett
5/17/91

 Rivulet

NOAA Notice

CPB/R

Limpets (H. perspecta), Littorinids, barnacles just below CT & CV.

Massive

C)

Same as A:
Clams, eelgrass, Pycnopodia, LT 2; dense mussel patches MTZ

Same as B:
Clams, eelgrass, Pycnopodium in LT 2; dense mussel patches MTZ

No biota except lichen near oil residue; barnacles, Littorinids, limpets, etc. 2m downshore

2m downshore from SOR

SOR among dense mussels and barnacles; also Littorinids, limpets, pricklebacks, rockweed, seastar, filamentous red algae; Littorinids breeding in cobble upshore; clams (5-6 cm), starfish, nudibranchs, fishes, rock jingles, top snails (Calliostoma)

Reviewed: F.W. 5/20/91
17 May 91

Faucoff

along west shore - mass strandings of enhaoids along drift
1 stranded takes note

end 920

Start KN 119 6920
1 Heron egg - continue after 118
- quiet bay back - Blk/A6
- clear LT2 - other birds - eelgrass
- subtidal - Paramore - dense kelp beds
- patchy mussel bed +3-6 ft
- CT/SR birds LT2 - SUTZ among
- canary - no birds - looking for Andou
- 4 karsen on beach
- 5 Harlequins
- GW gull 3

NAPA set mice near shelter -
same type mussel bed upright, soft mud, eelgrass -
- traces of CT SR LTZ among space
- barn, willow - G-park - Fords -
dense along creek - dense near bed of mussel - G-fence on bay in creek

Month
KN/19 (Coast) 17 May 91

SmR on past Beryl Hill called Mt
just east of stream - arrow

Dense muskeg forming - dead &


Sapota, Ficus - soft mud

Religious claims demonstrated

- Little breeding in cobble above

- SmR only 2-3 m up pine

Soft sediment - dense N palms or

1st of Pygmy in LT -

also Jingles, Calypso lycaen

puddle tracks, 5-6 species clams

Evantrias, Limnibius breeding

on BR

end segment 10:30
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/KN-119

SUBDIVISIONS: A (1 OF 1)
SHORELINE EVALUATION

SEGMENT ST/ KN-119 SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOCLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: ____________________ DATE: ____________________

OILING CATEGORIZATION:
Wide 0 m: Medium 219 m: Narrow 76 m: V.Light 160 m: No Oil 57 m
Subsurface Oil Observed: Yes X No Maximum Depth 10 cm

RECOMMENDATIONS:

X_ Treatment Recommended
___ No Treatment Recommended
X__ Manual Pickup
___ Bioremediation
___ Tarmat: Breakup
___ Removal
___ Breakup
___ Removal

Snare/Absorbent Booms
Oil Snares (pom poms)
Absorbents (pads, rolls, etc)
Spot Washing: Wands
Spot Washing: Wands
Beach Cleaner
Beach Cleaner

Other (see comments)

COMMENTS: Recommend manual pick up of debris as indicated on attached sketch map and bioremediation of areas indicated on map.

TAG COMMENTS:

TAG APPROVAL DATE: __________
ADEC _______________________
EXXON _____________________ FOSC: __________ DATE: _______
NOAA ______________________
USCG ______________________
SEGMENT ST: KN119  SUBDIVISION: NONE  DATE: 4/4/90

JSCG  NAME: Pat Malay  SIGNATURE  

☐ NO TREATMENT RECOMMENDED  ☐ TREATMENT SUGGESTED

COMMENTS: Sick leave

ADEC  NAME: M. Cunningham  SIGNATURE  

☐ NO TREATMENT RECOMMENDED  ☒ TREATMENT SUGGESTED

COMMENTS: Bioremediate surface "coat" when visible. There was only minor penetration of oil lens into substrate. Check for debris/Trash. Segments covered by winter ice sheet.

LAND MANAGER  NAME: Steven Phillips  SIGNATURE  

☐ NO TREATMENT RECOMMENDED  ☒ TREATMENT SUGGESTED

COMMENTS: Storm terms should be rechecked (snow cover), pick up scattered tar balls.
Bioremediate "Narrow" bands of oil. Leave the rest alone.
SHORELINE OILING SUMMARY

OG Greg Chaney USCG Patrick Maloy SEGMENT ST/KN-119
BIO: Jon Roth LAND REP: Steve Phillips SUBDIVISION: Area A (1 of 1)
EXXON: Req 90 TEAM: ADEC Mike Cunningham TIME: 00:10:56
TEAM NO: 7 TIDE LEVEL: 2.0 ft to 1.0 ft DATE: April 14, 1990
EST. SUBDIVISION LENGTH: 499 m Sun Clouds Fog Rain Snow

UPLANDS DESCRIPTION: Grass Forest Rock SNOW
SURVEYED FROM: Foot Boot Helo WORKING DIRECTION: West to East
SURFACE SEDIMENTS: R B 20% G 30% P 10% S % M % V %
SLOPE: Lang Hang20% Vert 20% WAVE EXPOSURE: Low Med High
OIL CATEGORY LENGTH: W m M 150 m N 80 m V 200 m NO 0 m

SURFACE OIL

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<th>DISTRIBUTION</th>
<th>OIL / FILM COLOR</th>
<th>IMPACTED ZONES</th>
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<tr>
<td>TARBALLS</td>
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<tr>
<td>NO OIL</td>
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PAVEDMENT: H F S sq. m by cm
PATTIES/TARBALLS less than 1 BAGS
NEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS AMOUNT

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<td>Debris</td>
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Photographs:
Roll No.
Frames

SUBSURFACE OIL

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<th>PIT NO.</th>
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<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL</th>
<th>BELOW OIL / FILM COLOR</th>
<th>PIT ZONE A N A</th>
<th>SUBSURFACE SEDIMENTS</th>
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COMMENTS
Ice dam across bay seems to have trapped shear. "Bathtub" ring of rainbow shear was observed around embayment.

Page 1 of

REVIEWED / DATE 4-8-90
SHORELINE ECOLOGICAL SUMMARY

Segment ST/KN119 Subdivision __________________________ Date (mo/day/yr) Apr 4, '90

Time (24 hr) 14:50 Biologist ___________ ROTH

(A) Substrate type and % of segments:
   (1) Bedrock 20 (2) Boulder 40 (3) Cobble 30 (4) Pebble 10 (5) Sand — (6) Slit —

(B) Overall % cover of biota (% of segment): Dense 20 Moderate 50 Low 30

(C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L; juveniles/adults (X), new settlement (3))

BARNACLES

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FUCUS

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Wildlife Observations/ General Comments:
1. BALD EAGLE ADULT SEEN ON WING.
   CAN ONLY SEE TOP OF LOWER INTRITAL ZONE.
   A LOW ENERGY SITE.

Ecological Considerations:
GV– RECREATION ANCHORAGES
PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

Salmon stream mouth - fry outmigration (3/1 to 5/15)
Salmon stream mouth - spawning (7/10 to 8/31)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage.
No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.

Salmon fry nursery area (4/31 to 7/31)
Esther Hatchery release (4/15 to 6/1)
Main Bay Hatchery release (4/20 to 5/10)
Sawmill Bay Hatchery release (4/15 to 6/1)
Cannery Creek Hatchery release (4/21 to 6/1)
Remote release site

Gill net area (6/7 to 8/31)
Purse seine area (7/20 to 9/30)
Purse seine hook-off (7/20 to 9/30)
Set net sites (6/11 to 7/25)
For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.

Herring spawning (4/1 to 6/15)
Restrict boat traffic to essential minimum. Avoid damage to unoiled intertidal and subtidal algae and seagrass.
Contact ADF&G for specific dates and locations.

Harbor seal and sea lion pupping (5/15 to 7/1)
Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.

Seabird colony (5/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.

Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic.

All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 5/1)
Restrict air traffic to essential minimum. No personnel within 400m. 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.

Tent sites (6/1 to 9/15)
Forest Service cabins (6/1 to 9/15)
Lodge (6/1 to 9/15)
Special use destination

Subsistence area: Salmon harvesting (5/1 to 9/30)
Finfish harvesting
Deer harvesting (8/15 to 2/28)
Invertebrate harvesting

For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.
ADDENDUM: SUBDIVISION CONSTRAINTS
SEGMENT KN-119 SUBDIVISION A (1 of 1)

WORK WINDOW

<table>
<thead>
<tr>
<th>Manual Pickup</th>
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<tbody>
<tr>
<td>Bioremediation</td>
<td>OPEN</td>
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ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

No time-dependent ecological constraints.

OTHER ECOLOGICAL CONSIDERATIONS

Avoid disturbance or damage to unoiled biota and substrate.
SEGMENT ST/KN-119  SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: DATE: 4/18/90

OILING CATEGORIZATION:
Wide 0 m; Medium 219 m; Narrow 76 m; V.Light 160 m; No Oil 57 m
Subsurface Oil Observed: Yes X No Maximum Depth 10 cm

RECOMMENDATIONS:
X No Treatment Recommended  X Snare/Absorbent Booms
X Treatment Recommended  X Oil Snare (pom poms)
X Manual Pickup  X Absorbents (pads, rolls, etc)
X Bioremediation  X Spot Washing: Wands
X Tarmat: Breakup  X Beach Cleaner
   X Removal  X Other (see comments)
   X Spot Washing: Wands

COMMENTS: Recommend manual pick up of debris as indicated on attached sketch map and bioremediation of areas indicated on map.

TAG COMMENTS:

TAG APPROVAL DATE: 4/18/90
ADEC ART WEIGMA DATE: 4/22/90
EXXON ANDY TAY DATE: 4/22/90
NOAA ROBERT DATE: 4/22/90
USCG CA WEBER DATE: 4/22/90
SHORELINE EVALUATION

SEGMENT ST/ KN-119 SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6V Recreation: Anchorages (6/1 to 9/15)
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X Treatment Recommended X Oil Snares (pom poms)
X Manual Pickup X Absorbents (pads, rolls, etc)
X Bioremediation X Spot Washing: Wands
____ Tarmat: _____ Breakup _____ Beach Cleaner
_____ Removal _____ Other (see comments)

COMMENTS: Recommend manual pick up of debris as indicated on attached sketch map and bioremediation of areas indicated on map.

TAG COMMENTS:

TAG APPROVAL DATE: 4/18/90
ADEC ___________ EXXON ___________ NOAA ___________ USCG ___________ FOSC: ___________ DATE: 4-22-90