

OIL SPILL PUBLIC INFO. CENTER



3 6653 00006446 3

EVOS
GC
1552
.P75
S42
1991
v.50

[Shoreline evaluations, 1991].

Prince William Sound KN-113 to KN-119

Title supplied by cataloger. This title page is supplied by Alaska Resources Library and Information Services (ARLIS).

ARLIS

Alaska Resources Library & Information Services
Library Building, Suite 111
3211 Providence Drive
Anchorage, AK 99508-4614

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: Rebel Dean O'neal

Date: 5/14/91

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

Y

N

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

X

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:

MAY 14 1991

FOSC APPROVAL DATE:

5/20/91

ADEC

FOSC

EXXON

E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC

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-113B SUBDIVISION 3 DATE 4/29/91

ADEC

NAME

JEFF CINALIAS

SIGNATURE

[Signature]

☐ 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 OG MAP TO LOOSEN HIGH SOR. (AREA SHEENING ON OUR ARRIVAL) SET SNARE BOOM TO CONTAIN SHEEN. ARRIVE AT LOW TIDE & TILL AS TIDE RISES OIL LOWER IN MITE THAN MOST AREAS I HAVE SEEN. TILLING SHOULD NOT DISTURB BIOTA IN AREA, HOWEVER SHEEN SHOULD BE CONTROLLED SO AS TO PROTECT BIOTA (ESP MUSSELS) ON BEDROCK UPRISE WEST OF SHORE. AT PIT #4, OIL IS AMONGST/NEAR RECOLONIZED BIOTA; PROBABLY DETRIMENTAL TO ENVIRONMENT TO WORK THIS SPOT

EXXON

NAME

FRANK A. Box

SIGNATURE

[Signature]

☐ NTR

Subsurface oiling in the pocket beach of Seg. 113-B. Very heavy mussel bed in proximity would make in-situ difficult on the surface oil. Customblen on the subsurface might be workable.

LANDMANAGER

NAME

MARSHA HALL OF DNR

SIGNATURE

[Signature]

☐ NTR

☒ TREATMENT

(repeatedly/couple hours a day 2-3 days)

Southern Area (pits 1-3) could be tilled 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.

USCG/NOAA

NAME

Jensen/Childs

SIGNATURE

[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 MI - UI OVER 2/3'S OF SUBDIV - BORE UPPER BEACH NOT OILED - BR OC'S ON UPPER & LOWER PART MAY CONTRIBUTE TO RESIDUAL AMT. OF OIL - LOWER OR IN MIDDLE OF SUBDIV. WHERE > WAVE ENERGY MIGHT HAVE CONTRIBUTED TO DEGRADATION - BIOTA QUANTITIES SHOULD LIMIT TREATMENT.

PAGE 1 OF 1

RECEIVED: M.C. 5/3/91

G. MACDONALD
4.29.91

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

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1

DATE 29 April 91

SEGMENT # KN 113

TIDAL HEIGHT(Range) +2.8 to 4.2 ft.

SUBDIVISION B

BIOLOGIST M. H. Fawcett

SEA STATE 2 1/2 ft swell, 1 1/2 ft seas 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 buried MGR. Similar cobble area 30 m north has dense bed of 1-2 yr. old mussels and Fucus. 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 beds.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/kittiwakes			
Shorebirds			
Corvids			
Other Birds			

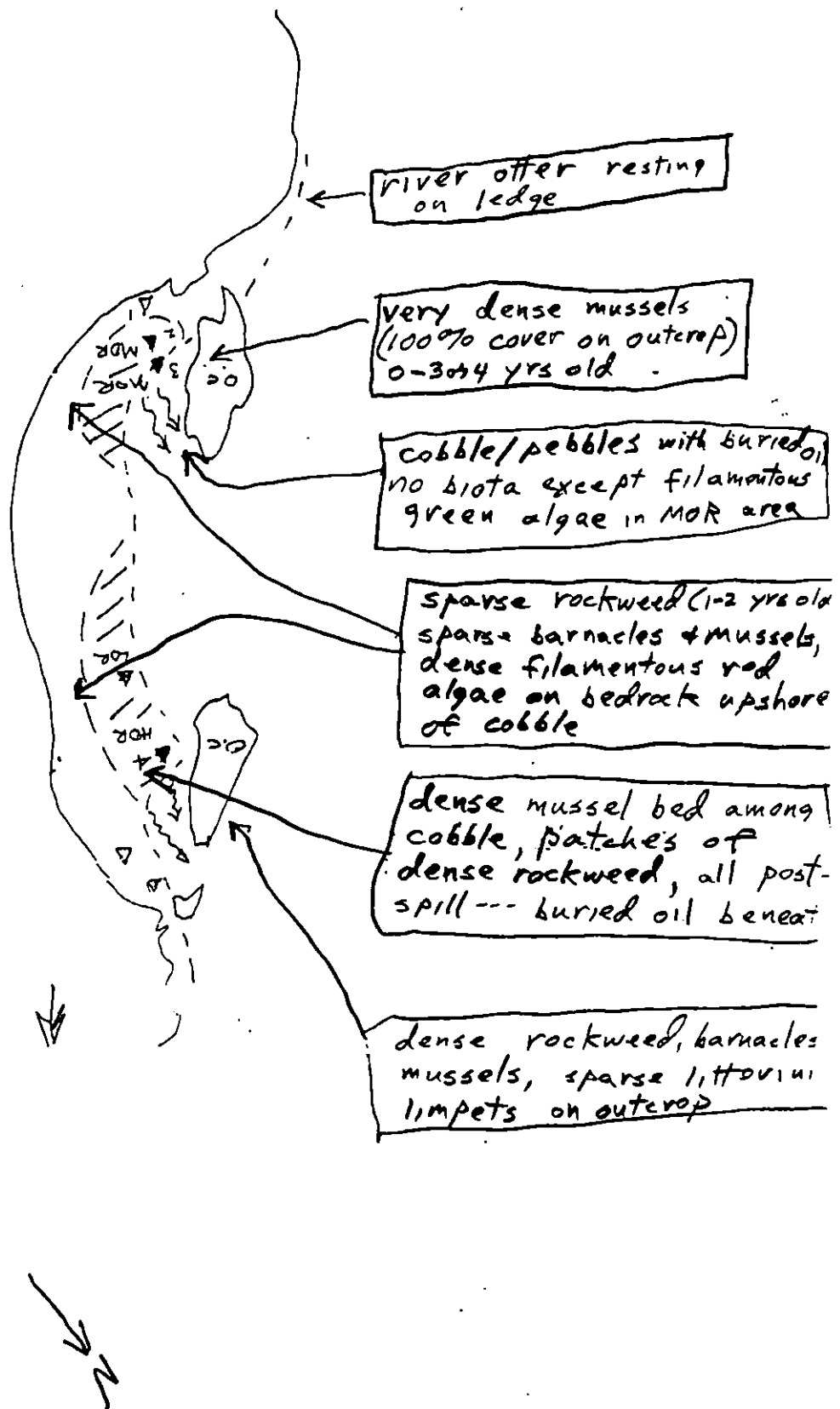
MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		1 river otter	1
Pinnipeds(specify)			
Whales(specify)			

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

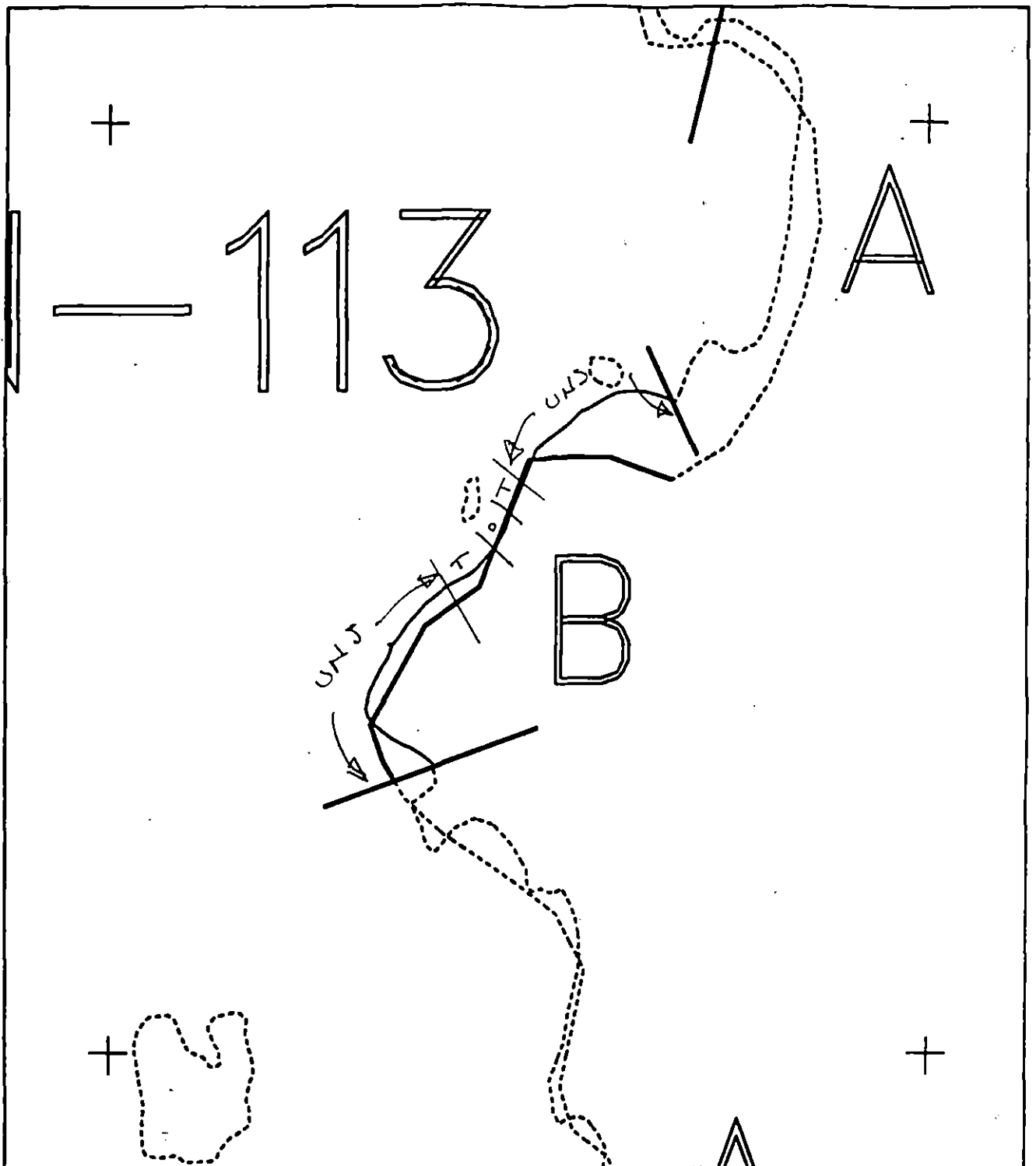
refer to OG Map



KN-113-B 29 Apr / 91 Fawcett 11:00
wind 15-20 SE, raining

- small pocket beach semi-protected
by chain of reefs - very dense
mussels on bedrock at south end
but none in cobble - so ^{buried} R area -
cobble area near north end has
dense 1-2 yr mussel bed + Fucus
on top of buried ool -
- bedrock behind cobble scoured,
no ool except fil. red algal
sparse Fucus, mussels, barn,
C. ~~gates~~
1 river otter resting on
edge, dove in water

Depart 1130



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

KN0113 B
 ADEC Subsegment Length: 379m
 METERS
 0 100 200
 AK State Plane Zone 4
 22N01135



Subdivision Field Map
 Map Key: KN1KN0113B
 Name: GM
 Date: 4.29.91
 Date Entered:

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

ASAP TAG REVIEW SHEET

Segment: KN 113 Subd: A Site: L Date 14 AUG 90
 PRE-Review

Priority For Addressing In 1990

 HIGH MEDIUM LOW NTR NONE
 Treatment Recommended: Manual pickup - M SOR AS PER RECOM. SHEET.

06 - Medium SOR

Adjacent to NOAA test site

If SOR picked up this
yes recommend no assess next
year ↓

Priority Site For Reassessment In 1991

YES NO YES NO YES NO YES NO
 CG X X ADEC X EXXON X LAND MGR

TAG HAV

Reassess 91

ASAP FOLLOWUP RECOMMENDATIONS

Segment: AS/ KN-113 Subd.: A Site: 1 Date: 8/12 1990

Conditions Observed: Extensive subsurface oiling from
LITZ-572

NOAA test site "Do not disturb" sign

Followup Recommendations: Tag team visit beach and determine
feasible treatment. Group consensus to leave alone in 1990
as this is a test site area. Also there is a good
possibility much of the clean overburden will not be
there in late spring 1991 making it easier to treat ss. oil
if determined necessary.

Completed by Pickup Crew: ☐ YES ☐ NO

Priority for Addressing in 1990: ☐ High ☐ Mod. ☐ Low

ADEC

Jaha Hoyer
(name)

(signature)

Comments: Oiling in all tidal zones subsurface, relocation not feasible
under done in stages. Depth of oiling makes tilling difficult
approx 10-30cm. of clean overburden. See OG report. Treatment in 1991.

Exxon

Marjorie Nij
(name)

(signature)

Comments: Have no objections to tag team work beyond
that would leave site to further studies &
research in 1991

USCG

MR Michael D. Brown
(name)

(signature)

Comments: NOA RIGHT NEEDS EVAL, did we lose this one??
Subsurface oil is heavy on the CP, AREA IS PARCELED IN 54 BY
16 BUCKERS.

Land Rep.

DOUGLAS GIBSON
(name)

(signature)

Comments: no objection

Post-It™ brand fax transmittal memo 7671 # of pages 6

To	SCAT	From	Marjorie Nij
Co.	Exxon	Co.	Exxon
Dept.		Phone	Adole Cavities
Fax #		Fax #	

FIELD SHORELINE COMMENT SHEET

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

USCG

NAME Michael D. Brown SIGNATURE Michael D. Brown

☐ YES ☒ NO PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

ADEC

NAME John H. Hays SIGNATURE John H. Hays

☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

Follow up recommendations sent in, ADEC. requests report by
Tag team or agency + industry reps to determine feasible 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
REASSESSED IN '91

EXXON

NAME Martinez M.D. SIGNATURE Martinez M.D.

☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

Moderate amount of surface (SOR) oiling
Also Subsurface OR but very deep, should
be reassessed 1991 Note NOAA test
site.

TEAM NO. ONE EXXON MARTINEZ SEGMENT AS/ KAL-113
 OG Reimer USCG BROWN SUBDIVISION A
 ADEC HAYES LAND REP. GIBSON TOTAL NO. SITES 1
 DATE 8/12/90 TIME 11:50 to 12:45 TIDE LEVEL 2 to 3
 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 VL 87 m NO 90 m US 0 m

SURFACE OIL

SITE 1

CHARACTER	DISTRIBUTION				OILED ZONES			
	/C	/B	/P	/S	SU	UI	MI	LI
ASPHALT								
S.O.R.	✓		2	X	✓	X	X	
POOLED								
COVER			X	X		X	X	
COAT		✓	X	X		X	X	
STAIN			X	X		X	X	
MOUSSE								
PATTIES/T.B.								
FILM								
NO OIL								X
EST. SITE LENGTH					392			

SITE 2

CHARACTER	DISTRIBUTION				OILED ZONES			
	/C	/B	/P	/S	SU	UI	MI	LI
ASPHALT								
S.O.R.								
POOLED								
COVER								
COAT								
STAIN								
MOUSSE								
PATTIES/T.B.								
FILM								
NO OIL								
EST. SITE LENGTH								

SITE 3

CHARACTER	DISTRIBUTION				OILED ZONES			
	/C	/B	/P	/S	SU	UI	MI	LI
ASPHALT								
S.O.R.								
POOLED								
COVER								
COAT								
STAIN								
MOUSSE								
PATTIES/T.B.								
FILM								
NO OIL								
EST. SITE LENGTH								

SUBSURFACE OIL

SITE NO.	PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER				OILED INTERVAL (cm)	CLEAN BELOW (Y/N)	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS
			OP	OR	OF	NO			SU	UI	MI	LI	
1	1	40		M			5-26	Y	X				CP-PGS
1	2	35		H			15-35	N				X	CP-PGS-H ₂ O
1	3	40		M			8-40	N			X		PG-GS-Rock
1	4	58		M			20-58	Y		X			PG-GS
1	5	65		H			15-65	N		X			CP-GS-Hole casing in. Pooled Bkr. Oil at bottom.
1	6	15		M			0-5	Y			X		BC-GS
							.						
							.						
							.						
							.						
							.						
							.						
							.						
							.						

Photographs:

Roll No. ASAP-01-05

Frames 10

REVIEWED

8/13/90

[Signature]

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 North across Cobble/Boulder Beach.

Kernel

SEGMENT ST/113

SUBDIVISION A

DATE 8/12/90

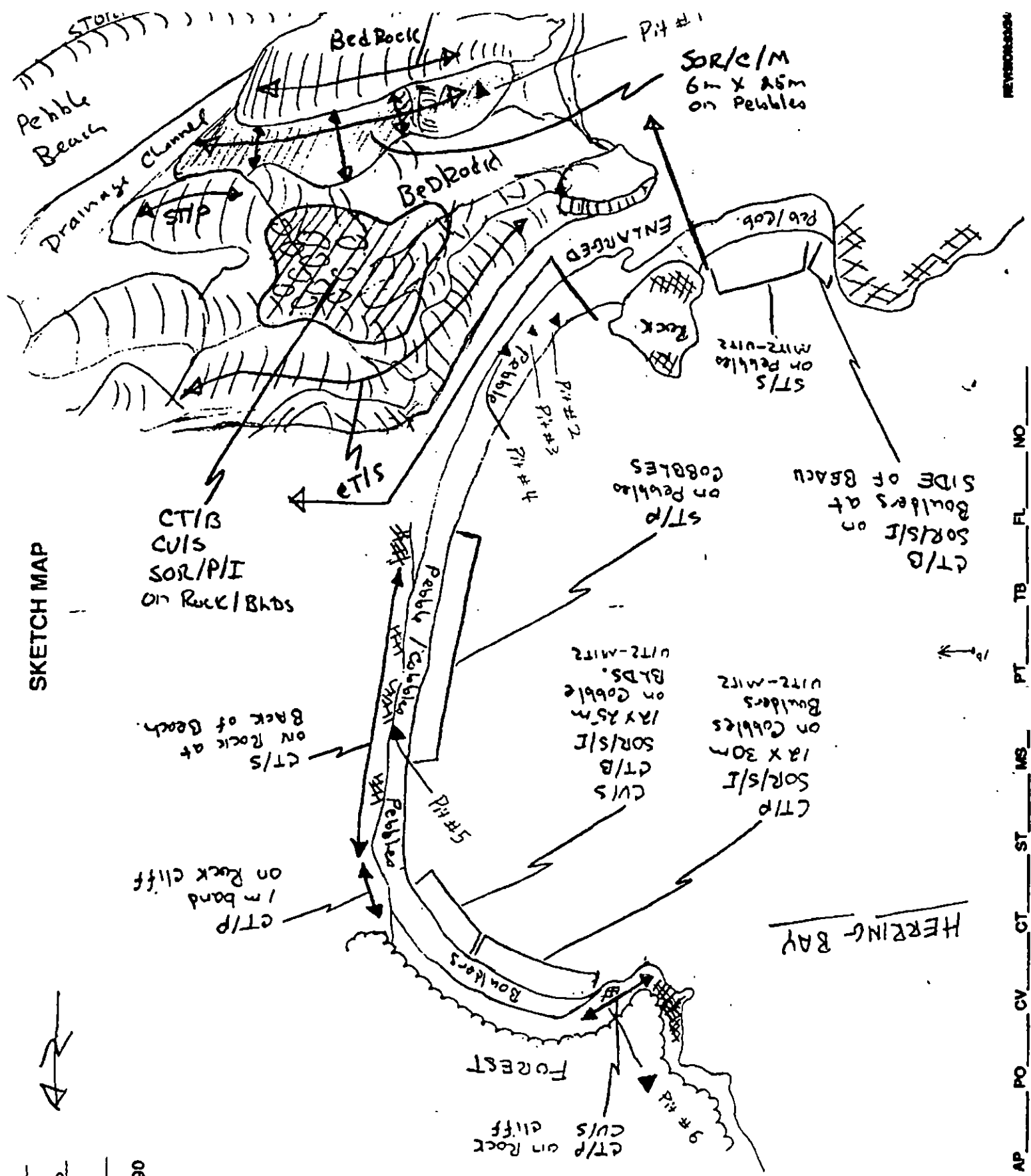
CHECKLIST

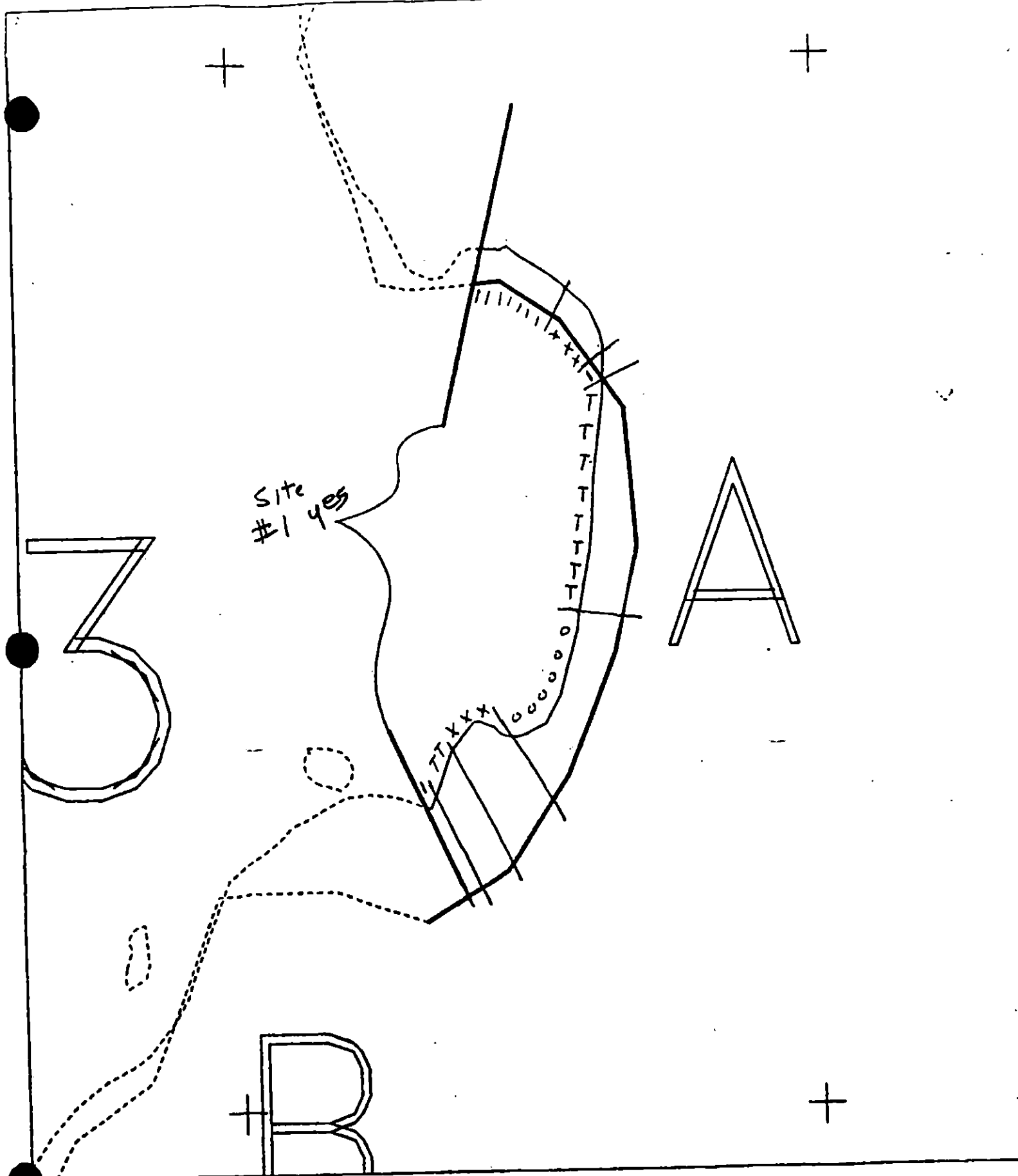
- N Arrow
- Approx. Scale
- Seg/Sub Entry
- Oil Dist.
- Width
- Length
- % Cover
- Substrate Character
- Est. HW/LWL
- SSL
- Profile Location(s)
- Profile(s)
- PH Location(s)
- Photo Location(s)

LEGEND

- 1 Δ No Subsurface Oil
- 2 Δ Subsurface Oil
- PH - Subsurface Oil
- CT/C Continuous Distribution
- CT/B Broken Distribution
- CT/P Patchy Distribution
- CT/S Splashed Distribution
- Oiled Vegetation
- 1 $\rightarrow$ Photo location, direction, and number

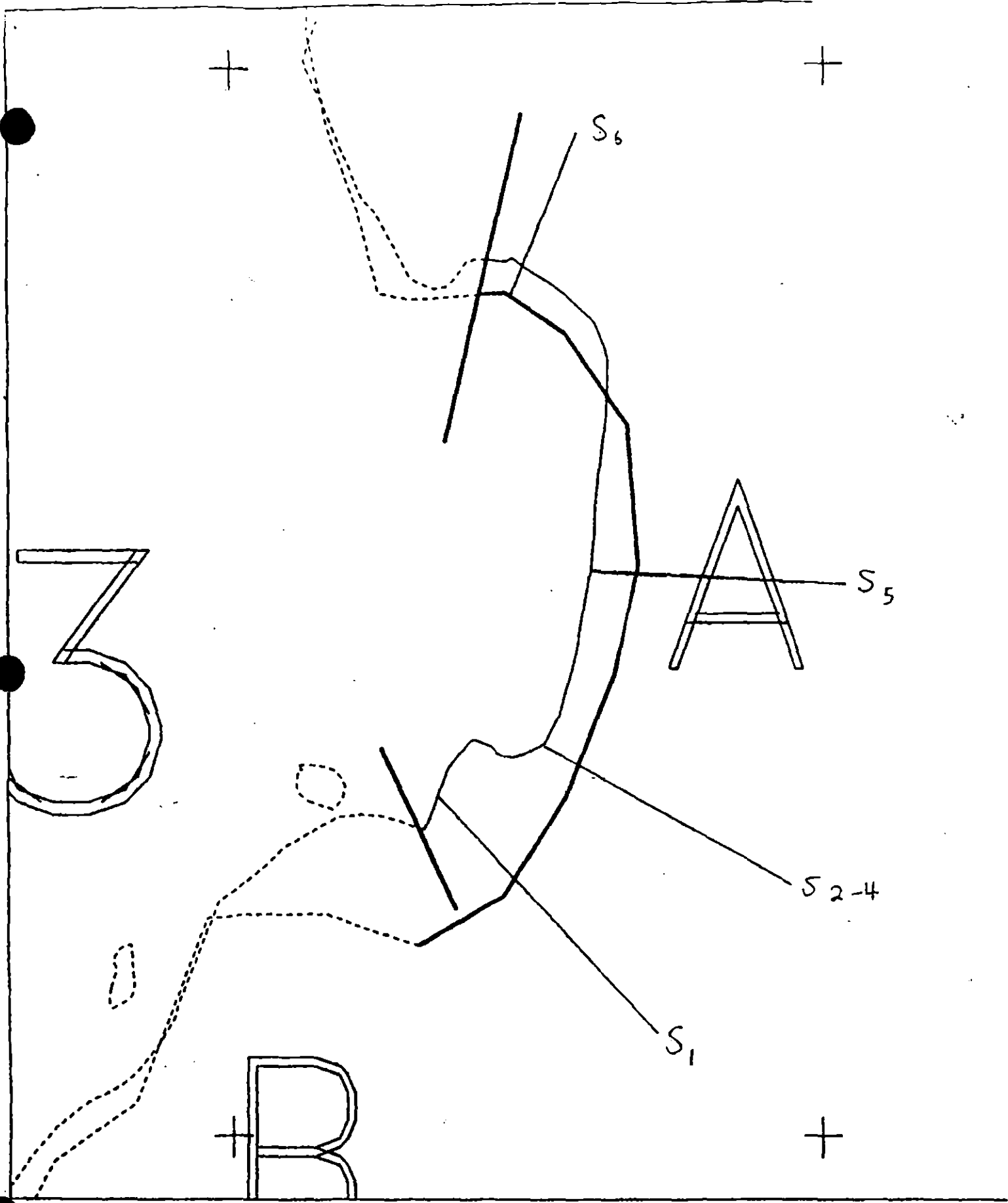
SKETCH MAP





XXXX Wide
 //// Medium
 --- Narrow
 TTTT Very Light

EXON



XXXX Wide
 //// Medium
 --- Narrow
 TTTT Very Light
 0000

KN-113 A
 ADEC Subsegment Length: 382m
 METERS
 0 66 120
 AK State Plane Zone 4 1:2520

Subdivision Field No.
 Map Key: KN1KN-113A
 Name: Reimer
 Date: 8/12/90
 Date Entered:



ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT ~~KN-113~~ 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 (564-3657; 564-3658 or 564-3276).

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

NO APPLICABLE ECOLOGICAL TIME CONSTRAINTS

OTHER ECOLOGICAL CONSTRAINTS

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

FOSC

DATE

7-27-90

Prepared By:

Date

7/27/90

KN-112

KN-103

KN-113

work
area

KN-114

KN-115

KN-116



Exxon Company, USA

Map Key: PMS-KN-113

June 09, 1990

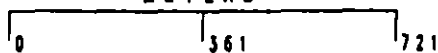


ECOLOGY MAP

SEGMENT KN-113

SUBDIVISION --- (--- of ---)

METERS



Seabird Colony



Active Eagle Nest



Inactive Eagle Nest

1 inch = 1183 feet

WORK PLAN ADDENDUM

Segment KN 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
NO

SHPO SIGNATURE Chuck Homan June 29 '90

TAG APPROVAL DATE 6/26/90

ADEC Ray Morris, R. Hoffman

EXXON AMATEL

NOAA Joseph C. Talbot

USCG G.A. Deiter G.A. Deiter

FOSC R. J. Murphy DATE 6/30/90

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: *Chuck Hoffner*

DATE: 4/25/90

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:

☒ No Treatment Recommended	☐ Snare/Absorbent Booms
☒ Treatment Recommended	☐ Oil Snares (pom poms)
☐ Manual Pickup	☐ Absorbents (pads, rolls, etc)
☒ Bioremediation	☐ Spot Washing: <u> </u> Wands
☐ Tarmat: <u> </u> 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 PP

TAG COMMENTS:

DUE TO ENVIRONMENTAL SENSITIVITIES, RICH INTERIOR BIOTA, DISTURBANCE SHOULD BE MINIMIZED. THEREFORE NTR RECOMMENDED.

TAG APPROVAL DATE: 4/24/90

ADEC *Art Weimer*

EXXON *Art Weimer*

NOAA *Joseph Takall*

USCG *M. J. Hall*

FOSC: *[Signature]*

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:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

Y

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

X

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 _____

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.

MAYSAP FIELD SHORELINE COMMENT SHEET

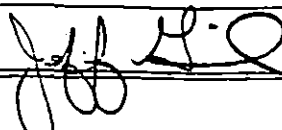
TEAM NO. 1 SEGMENT KN-113B SUBDIVISION 3 DATE 4/29/91

ADEC

NAME

JEFF GUALIAS

SIGNATURE


☐ 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 OG MAP TO LOOSEN HIGH SOR. (AREA SHEENING ON OUR ARRIVAL) SET SNARE BOOM TO CONTAIN SHEEN. ARRIVE AT LOW TIDE. & TILL AS TIDE RISES OIL LOWER IN MIZE THAN MOST AREAS I HAVE SEEN. TILLING SHOULD NOT DISTURB BIOTA IN AREA. HOWEVER SHEEN SHOULD BE CONTROLLED SO AS TO PROTECT BIOTA (ESP MUSSELS) ON BEDROCK UPRISE WEST OF SHORE. AT PIT #4, OIL IS AMONGST/NEAR RECOLONIZED BIOTA; PROBABLY DETRIMENTAL TO ENVIRONMENT TO WORK THIS SPOT

EXXON

NAME

FRANK A. Box

SIGNATURE


☐ NTR

Subsurface oiling in the pocket beach of Seg. 113-B. Very heavy mussel bed in proximity would make in-situ difficult on the surface oil. Customblen on the subsurface might be workable.

LANDMANAGER

NAME

MARSHA HALL OF DNR

SIGNATURE


☐ NTR☒ TREATMENT

(repeatedly/couple hours a day 2-3 day)
Southern Area (pits 1-3) could be tilled 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.

USCG/NOAA

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 MI - LI OVER 2/3 OF SUBDIV - BORE UPPER BEACH NOT OILED - BR OC'S ON UPPER & LOWER PART MAY CONTRIBUTE TO RESIDUAL ANTH. OF OIL - LOWER OR IN MIDDLE OF SUBDIV. WHERE > WAVE ENERGY MIGHT HAVE CONTRIBUTED TO DEGRADATION - BIOTA QUANTITIES SHOULD LIMIT TREATMENT.

PAGE 1 OF 1

DATE 4 / 29 / 9.

ENERGY LEVEL: ☐ H ☒ M ☐ L

EST. OIL CATEGORY LENGTH: W 1 m M 1 m N 1 m VL 75 m NO 25 m US 279 m

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

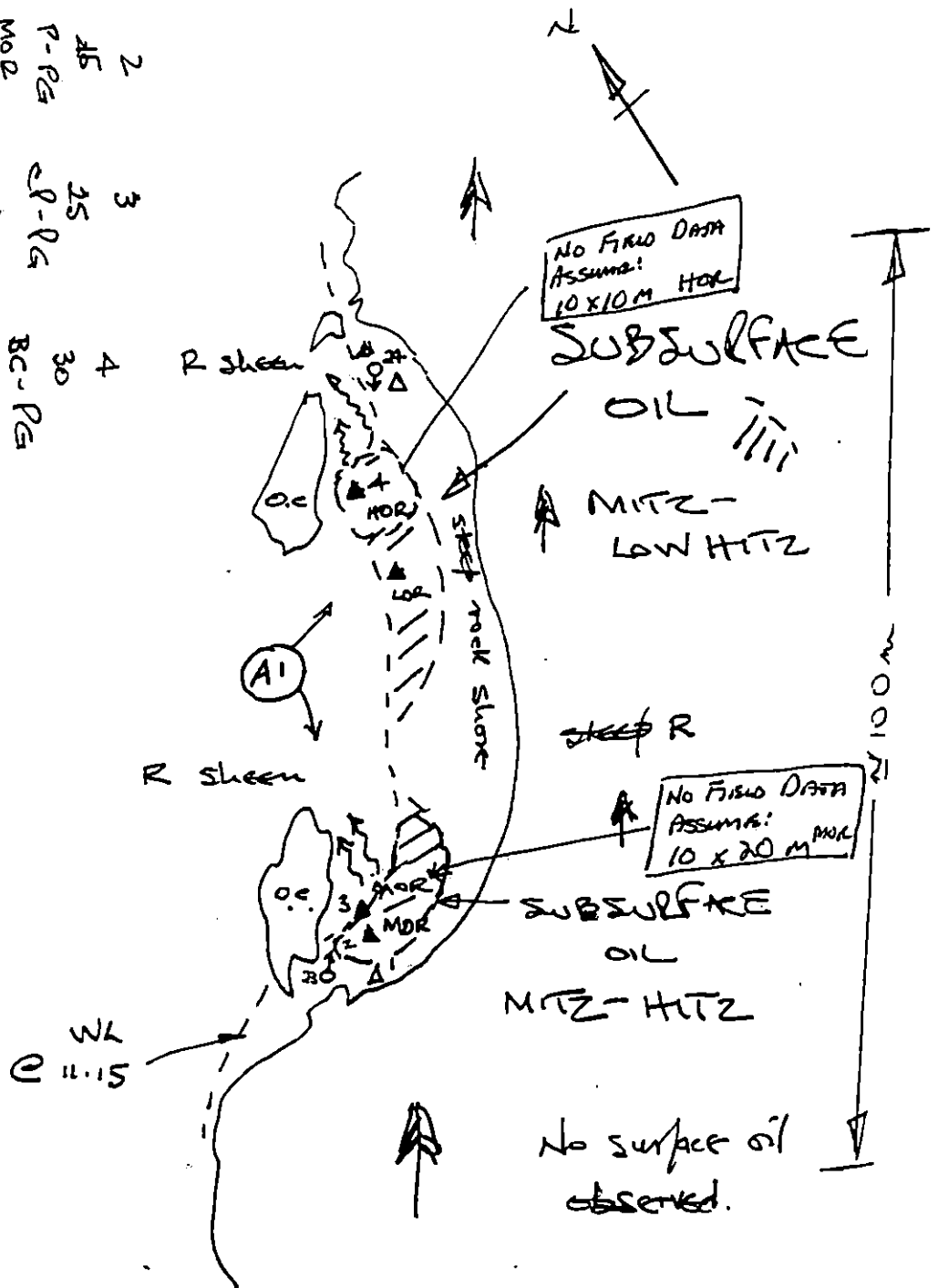
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP- 1 - 7 FRAMES 23-26

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

REWARD: M.C. 5/3/91

E. MACDONALD
4.29.91

1	2	3	4
56	46	25	30
P-P	P-PG	2P-PG	BC-PG
ϕ	MOR	MOR	HOR
oil	20-45	5-25	10-30
clean	N	N	N
III	-	5	5
		B,R	B,R



REVIEWED: F.W. 5/2/91
REVISID: M.C. 5/3/91 2

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1

DATE 29 April 91

SEGMENT # KN 113

TIDAL HEIGHT(Range) +2.8 to 4.2 ft.

SUBDIVISION B

BIOLOGIST M. H. Fawcett

SEA STATE 2 1/2 ft swell, 1 1/2 ft seas 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 buried MOR. Similar cobble area 30 m north has dense bed of 1-2 yr old mussels and Eucys. 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 beds.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/kittiwakes			
Shorebirds			
Corvids			
Other Birds			

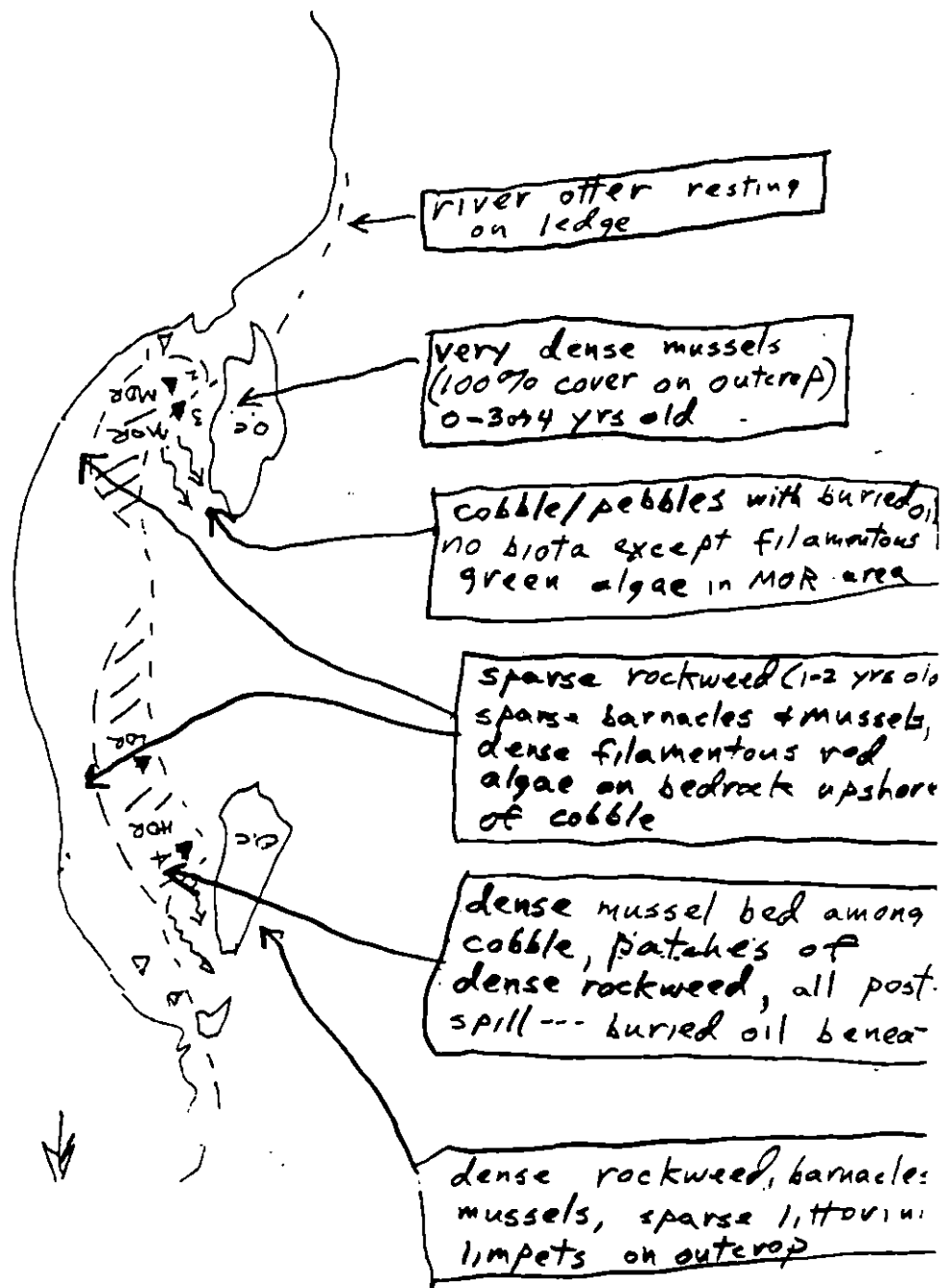
MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		1 river otter	1
Pinnipeds(specify)			
Whales(specify)			

Shoreline subdivision map showing important biological features attached. 4

REVIEWED: 5/3/91 MC

B10. Sketch Map
KN 113-B
29 April 91
M.H. Fawcett

Refer to OG Map



KN-113-B 29 Apr/91 Fawcett 1102

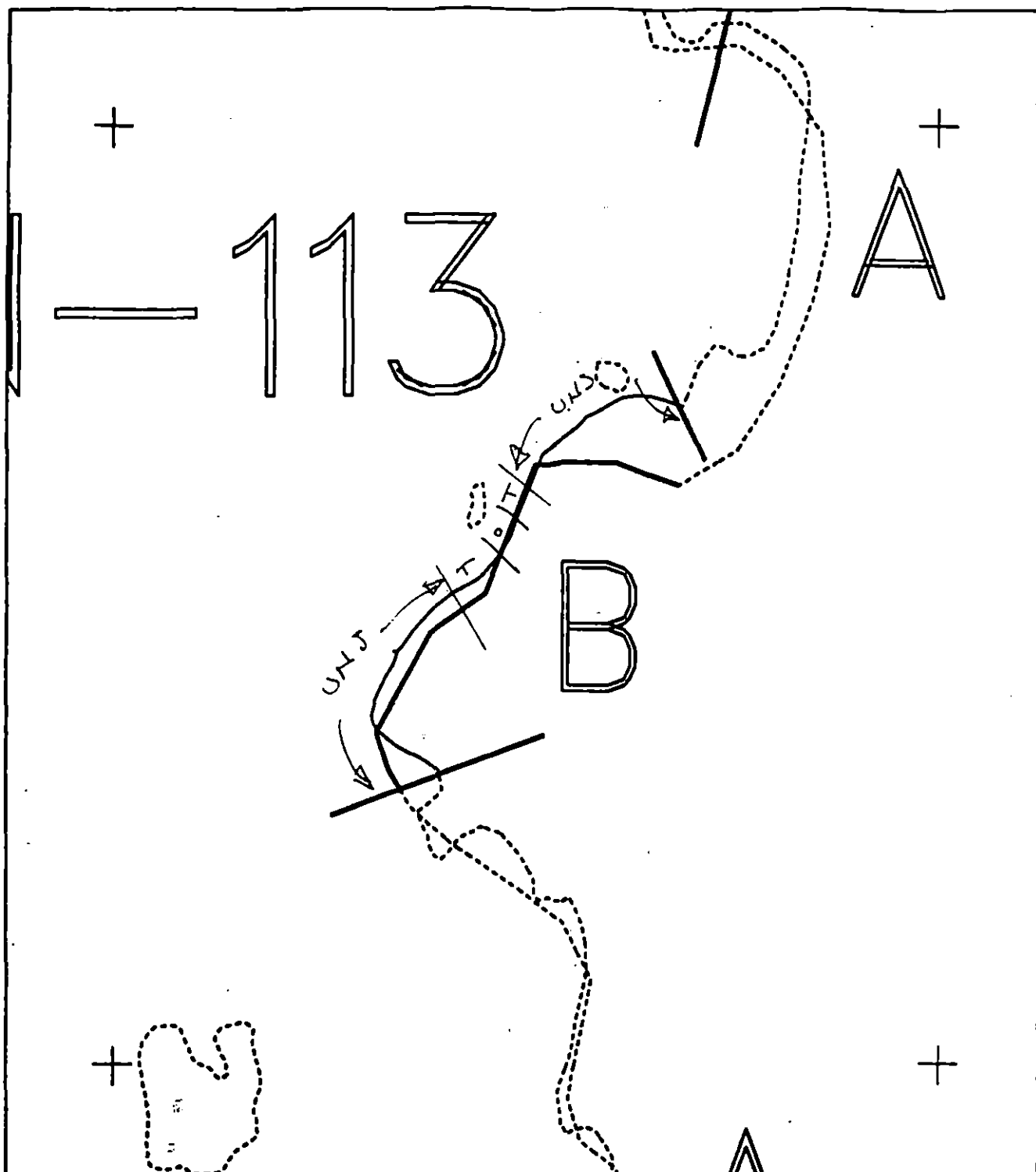
wind 15-20 SE, raining

- small pocket beach semi-protected
by chain of reefs - very dense
mussels on bedrock at south end,
but none in cobble - so R^{ear} area -
cobble area near north end has
dense 1-2 yr mussel bed + Fucus
on top of buried ool -

- bedrock behind cobble scoured,
no rock except fil + red algal
sparse Fucus, mussels, barn,
Carpenteria

1 river otter resting on
edge, dove in water

depart 1130



XXXX	Wide	KN0113 B ADEC Subsegment Length: 379m METERS 0 100 200 AK State Plane Zone 4 660113b	Subdivision Field Map
////	Medium		Map Key: KNKN01130
----	Narrow		Name: <u>GM</u>
TTTT	Very Light		Date: <u>4.29.91</u>
0000	No Oil		Date Entered:

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

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

Other

Other

X

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: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

ADEC

NAME JEFF GINALIAS SIGNATURE [Signature]

☐ NTR ☒ TREATMENT RECOMMENDED

RECOMMEND MECHANICAL. BEGINNING UITE (PIT #5 OG MAP) WOULD TILL DOWN TO HOR ALONG BAND GOING SOUTH DOWN BEACH. 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 PIT 5, BUT TILLING/EXPOSURE CAN OCCUR WITHOUT DAMAGE. CENTER OF BEACH ENVIRONMENTALLY BARE AT PITS 12 & 13 (NOAA SITE & COREXIT TEST AREA) COAT/FILM I WOULD MECHANICALLY (SMALL BOBCAT PREFERABLE) COME BEHIND GRAVELS AT PIT 12 AND PUSH INTO MITE. SAME AT TOMBOLO AT PIT 13. IN ALTERNATE, I WOULD MANUALLY TILL INTO MITE. OIL AT PITS 2-4 AND 16-18 I WOULD LEAVE TO NATURAL PROCESSES.

EXXON

NAME FRANK A. BOX SIGNATURE [Signature]

☐ NTR Oil base was pretty much throughout the segment, Subsurface noted as well as surface indications. Fairly heavy deposit of oil in a gravel bar by stream was off. Perhaps rake the top portion of surface oil and bio.

LANDMANAGER

NAME MARSHA HALL OF DNR SIGNATURE [Signature]

☐ NTR ☒ TREATMENT

NOAA SITE IS NOT A SET ASIDE SITE, BUT A STUDY SITE. I believe WORK MAY OCCUR. Recreational area. (more than rain cold days) 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 / Childs SIGNATURE [Signature]

☐ NTR

North end of segment has some SOR with some sheening. Tidal 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 cobble beach has sub-surface oil and needs to be evaluated regarding additional treatment. MIDDLE INTERTIDAL ZONE CONTAINS HOR OVER ENTIRE SUBDIV & ARTS INCREASE UP BEACH FOLE - UE ZONE APPEARED UN OILED - SOR APPEARS ON NLY PORT END, UP LARGE STREAM & CT 1, ST ON VERE. ROCK FACES.

→ NOTE: NOAA HAZMAT STUDY SITE NO. 10 LOC @ LG. STREAM ←

TEAM NO. 1OG G. MACDONALDBIO M. FAWCETTSEGMENT K4-113ADEC J. GINALIASLANDMANAGER M. HALL for DNRSUBDIVISION AEXXON F. BoxUSCG/NOAA JENSEN/CHILDSDATE 4/29/93TIME 08:20 to 10:50TIDE LEVEL -2.0 ft. to +1 1/2 ft.ENERGY LEVEL: ☐ H ☒ M ☐ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 335 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W - m M 115 m N - m VL - m NO 220 m US 57 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A1						P					R	V	1	10		X	X		
A2						P					BP	M	5	6		X	X		
A3				P		P					PR	M	2	2	X	X			10-15 sor
A4				P		S							10	3	X				behind berm; hi sol
A5										P	R	H	0.5	10	X				log
A6				P							PR	H	3	15		X			
A6						P	P				PR	H	10	10		X			
A7				P		P						M	6	70		X	X		low sor

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 2-25

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	15							X	-		0	-	X				B - CPLG	
2	20			X	X				0 - 15	Y	3	B, R		X			BC - PG	R + B globules
3	20			X					2 - 15+	Y	5	B	X				B - PG	
4	35			X					5 - 20	Y	-				X		C - SGP	upper M.TZ
5	25		X						17 - 25	Y	-			X			BG - GP	
6	55		X						35 - 55	N	-			X			P - PGC	
7	30			X					5 - 15	Y	-				X		PC - GCV	peat
8	10		X	X					20 - 40	N	-				X X		P - GP	HOR + MOR
9	50							X	-		-			X			P - GPS	

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

OG COMMENTS:

Surface oil as heavy & lo sor, CT & ST e sides of embayment.

Sub-surface oil as HOR, ~5-10 cms thick, ~8m x 200m, with thicker oil @ HRTZ; thinning downbeach. Oil degradation evident in some pits @ > 30 cms dep.

Reviewed: F.W. 5/1/91

Reviewed: M.C. 5/1/91

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 3 small non-anadromous streams (see sketch). Bedrock areas from about +2-3ft to +8ft have well-developed communities with dense barnacles, rockweed, mussels, limpets, etc., and new recruits of all of above (below about +3ft the bedrock is scoured by sediment movement -- no biota except new barnacle spat (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 +9ft. 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 O.K., 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

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2 (pair)	pricklebacks common
Seabirds			in LTZ
Waterfowl			
Gulls/kittiwakes			
Shorebirds			
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED: M.C. Sja/9:
 DM 51:

#10. SKETCH MAP
KN 113-A
29 April 91
M.H. Fawcett

Refer to OG map

dense barnacles & spat;
sparse patchy mussels
on wall below and
seaward of CT

Boulders with dens
young rockweed and
fil. red algae, sparse
Littorinids, 0.0 to +4f
dense barnacles 3-1
dense fil. green alga.
Sparse Fucus & bar
& no grazers +6 to +9.

sparse biota, mainly filam. algae,
barnacles - no biota in SOR pebbles

Dense barnacles, muss
Rockweed - new recr
of rockweed, mussels,
barnacles, limpets,
Littorinids on all 5/6

Pair of
eagles

young barnacles, limpets
Rockweed, mussels
on cobble

barnacles (incl. spat),
mussels (incl 2mm recruits),
limpets, littorinids,
on outcrops

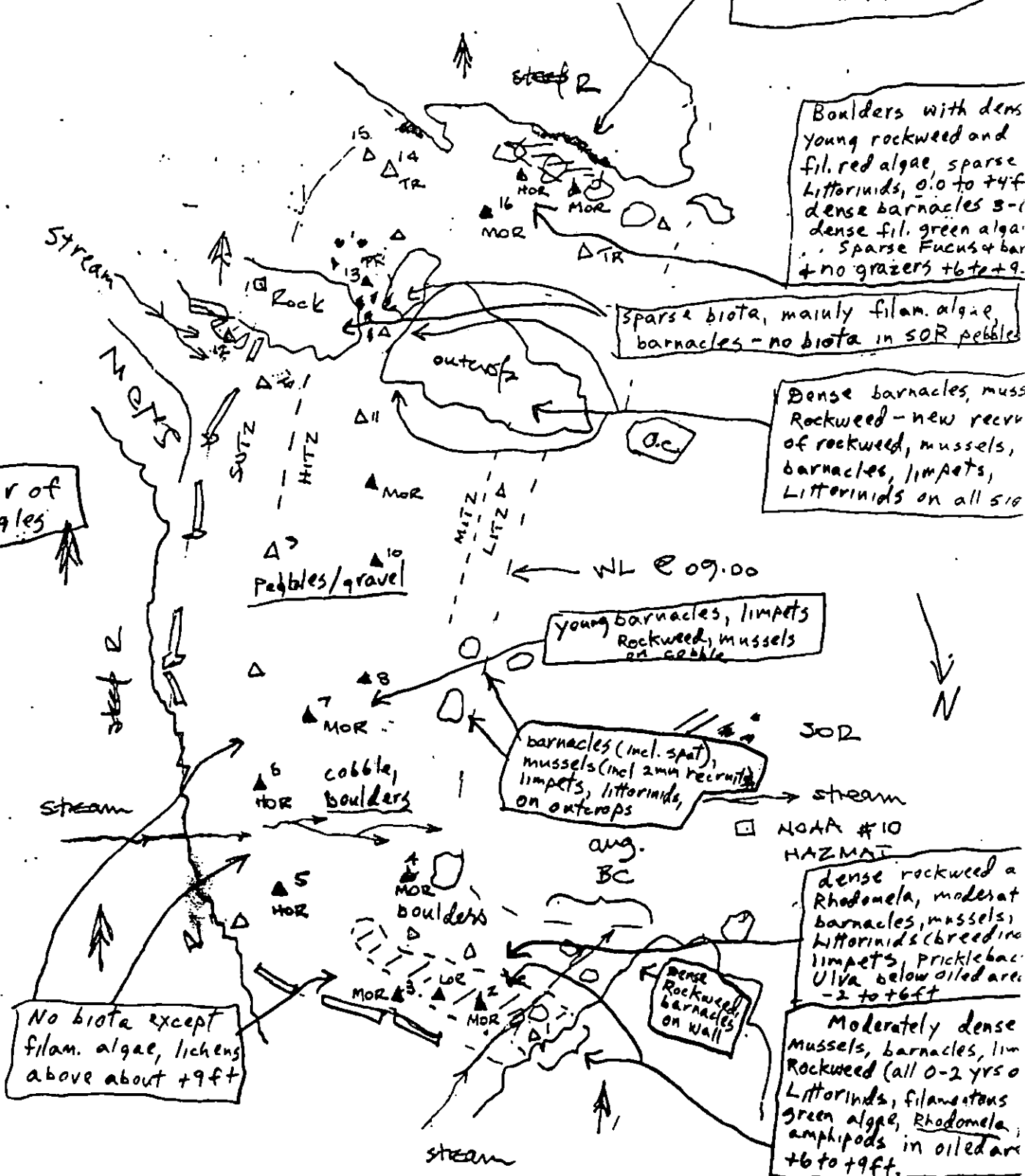
SOR

NOAA #10
HAZMAT

dense rockweed a
Rhodomela, moderat
barnacles, mussels,
Littorinids (breeding)
limpets, Pricklebac
Ulva below oiled area
-2 to +6ft

Moderately dense
Mussels, barnacles, lim
Rockweed (all 0-2 yrs o
Littorinids, filamentous
green algae, Rhodomela,
amphipods in oiled area
+6 to +9ft.

No biota except
filam. algae, lichens
above about +9ft



wind 25k < E

bonjour

~~Perogram~~

balls

Pebb/sand

③ Δ MOR
↑ +84
Wahr
Ergebnis

2-3 mm muscle,
barn 3 part,
white fangs
+ 4-8 ft
sparse dentition
paradigital
litter fines
old carious
on a.p. side

shoreline depicted
about 250 m from

Not a study site #1
5/19/21

Just Focus, hair on wall

$$\text{BR } -26 + 6\beta +$$

Stream

160/112

Scattered ~~insects~~
dense ~~Ficus~~ ~~of~~ ~~had~~
moderate ~~white~~ ~~fls~~
Litt, UVA, c petal,
prickle backs

Fil sp., Rhizoid
moderate bar., Fucus,
Mussel, Litt, amph
at 16 to 19 ft. deep

fil green in the rain

Leptasterias, Anichthys, CTZ

Litteriness lay, no eggs: under rock
with bit of SOR - lots of Litt.
scabulata in FW runoff area
dense 1 yr old L. barbatula, scattered
Fucus recruits among older Fucus
patches of new barn spat about 40
- fil. red, many N. Emurg. on large boulders
- mussels sparse, 1-2 yrs
- overall, L. scabulata equally abundant as site
of Halosaccus, Scrupoph.

KN113A (cont) Fairweather 29 Apr 91

buried oil in vicinity of (B) on
Lagoon +8-10 ft surrounded by
0930 kelp, barnacles, l. pots, young Fucus
etc. on cobbles

(C) bedrock has dense barn, mussels
Fucus - moderate limp, litt, Scytosiphon
Litt recruits, 2mm limp recruits

3mm mussel, dense barn. spat from
0.0 to +8 ft - area from 0 to
+3 feet abraded by pebbles,
so those spat won't survive

1/2 m wide band of patchy CT
among barnacles, some coated
but OK - heaves CT higher
up (above 10 ft, but no biota
except lichens, filament green -

non-abrad stream goes underground
behind (C), some buried oil along banks

- very loose mobile gravel & pebbles

no biota

state TAG Reps $\leftarrow$ Ken Middleton
John Barnes & others
visited at 0955 hrs

boulders/cobbles Br in area (D)

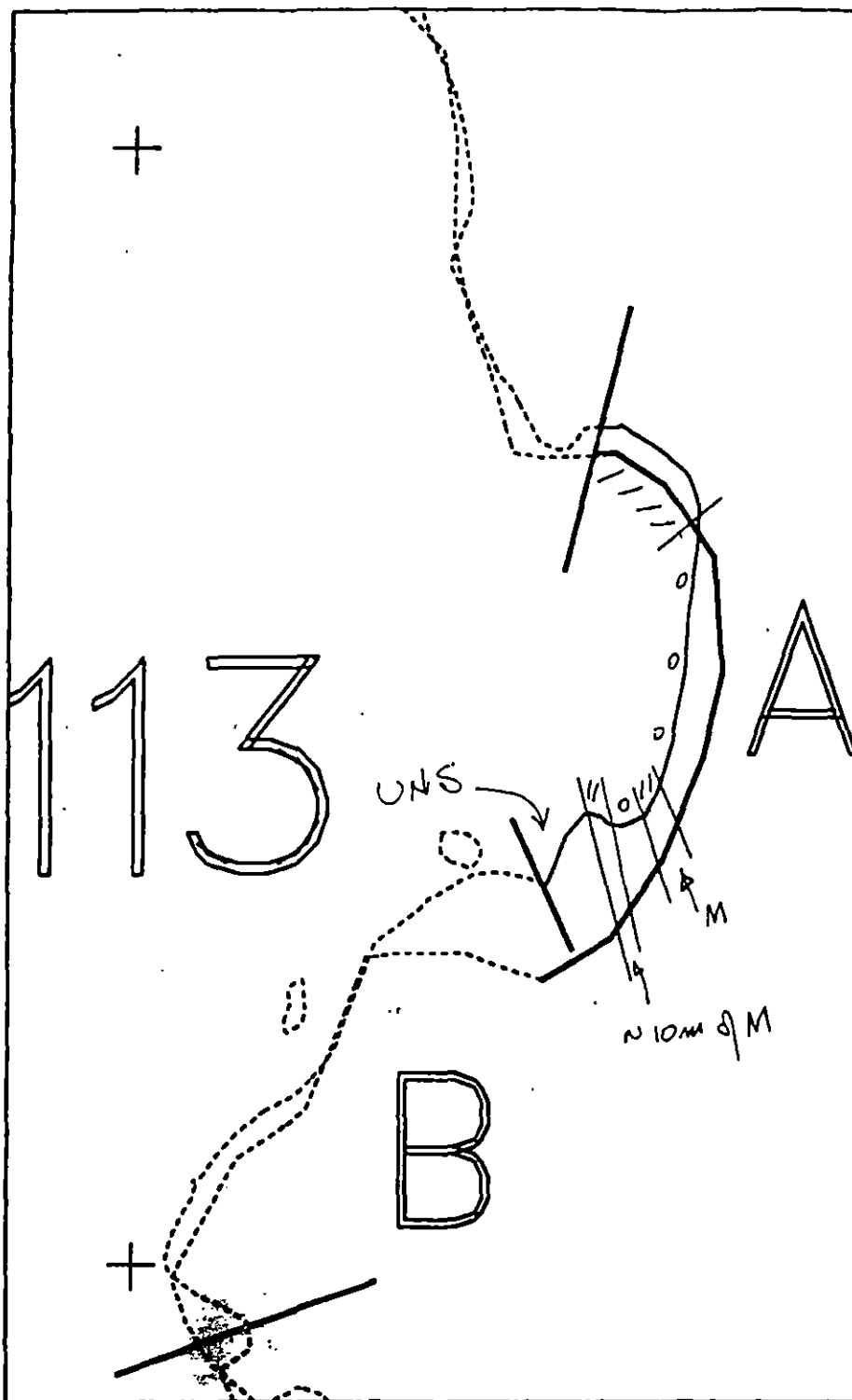
with dense young Fucus & fil red
0 to +4 ft, dense barn +3 to 6 ft

sparsely barn. litt; dense fil green
sparsely Fucus + 6 to 9 ft - few graze
to eat green algae

Wall (E) dense barnacles, sparse
patchy mussel +2-8'

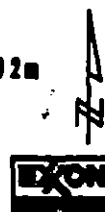
1m wide CT above & 8', sparse
barnacles below (CT doesn't extend
out to more exposed part where
barn denser)

pair of eagles circled once
then left
departed 1050



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

KN0113 A
 ADEC Subsegment Length: 302m
 METERS
 AK State Plane Zone 4
 KN0113a



Subdivision Field Map
 Map Key: KNKN0113A
 Name: G. M.
 Date: 4-29-91
 Date Entered:

REVIEWED: F.W. 5/1/91
 REVISED: M.C. 5/1/91

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 unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS: Consultation and inspection with an Exxon archaeologist is required ~~cannot proceed~~ prior to treatment. Specific on-site monitoring archaeological requirements will be determined at that time. *MM*

SHPO SIGNATURE: *J. D. ...* DATE: 5/8/90

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 Snares (pom poms)
X Manual Pickup Absorbents (pads, rolls, etc)
X 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: MECHANICALLY TILL PRIOR TO BIOREMEDIATION, CONTROL SHEENS WITH NEARDHORE BOOMING, USE SNARE STRINGERS ALONG SHORELINE. MANUALLY RAKE WITH RISING TIDE TO ENHANCE LIBERATION OF OIL FROM SEDIMENTS AFTER MECHANICALLY TILLING.

TAG APPROVAL DATE: 4/24/
ADEC ART WIGNER
EXXON JOY TEH
NOAA Joseph Abbott
USCG M. J. HALL

FOSC: DATE: 5-12-90

SEGMENT ST/4-113

ALBION

DATE: April 15 1990

CHECKLIST

10

2000

Section 1

ORDER

61

1997

10

NOTES

5-24-11

London

[illegible]

Pin Location(s)

Photo Location

ONSET

1

W - No Suburbs On

2

Chlorophyll

1001

27

www.pearson.com

013

References

10

1

1

THE

— 3 —

● 2017年12月15日

RESEARCH

●

Highly Impregnable, Guarded

1

Character Length (m): AP — BO — CV 25 CT 200 ET 100 IS — RT — TB — EI 300 NO 100

KN-113

B

KN-114

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

KN-113A

KN-113A 370 meters

ADEC Segment Length: 770m

EXXON Segment Length 773m



Map Key: PWS-294

Name: Grag Chaney

Date: April 5 1990

Scale: 1:100,000

WORK PLAN ADDENDUM

Segment KN 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
NO

SHPO SIGNATURE Chuck Homan June 29 '90

TAG APPROVAL DATE 6/26/90

ADEC Ray Morris, R. Morris

EXXON Andreas

NOAA Joseph C. Talbot

USCG G.A. Deiter G.A. DEITER

FOSC D. Zampieri DATE 6/30/90

WORK PLAN ADDENDUM

Segment PWS
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 + SEDIMENT 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 ☒ NO ☐

SHPO SIGNATURE Charles E. Hines 6/6/90
Inspection constraint applies.

TAG APPROVAL DATE 6/04/90

ADEC Ray Moore's

EXXON Andy Teal

NOAA Joseph Talbott

USCG G.A. Reiter

FOSC

[Signature]

DATE 07 June 90

WORK PLAN MODIFICATION RECOMMENDATION

SEGMENT KN113SUBDIVISION ADATED 30 MAY 90

MODIFICATION

1. REASON FOR MODIFICATION

AREA WAS INDICATED AS A NOAA 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 CEMENT/SLURRY TO GRAVEL REMAINING IN POCKET.
- C. BIO REMEDIATE GRAVEL RELOCATED TO MITZ WITH INIPOL.
- D. REMOVE OILED DEBRIS/VEGETATION

3. TIMING ISSUES

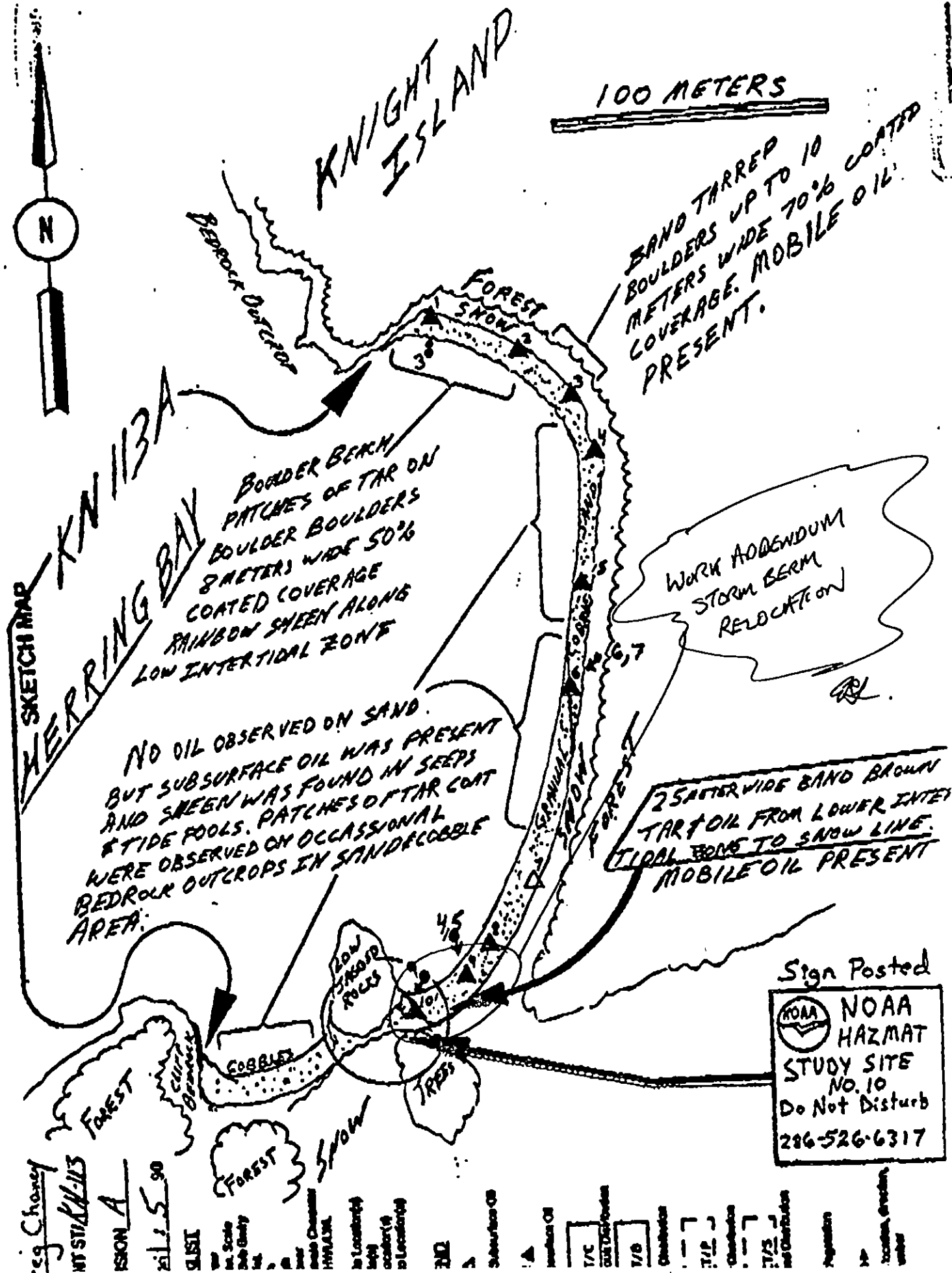
- A. NONE FOR SENSITIVITIES.
- B. REQUEST WORK AUTHORIZATION IMMEDIATELY TO AVOID UNNECESSARY RETURN AFTER SQUAD RELOCATES

Post-It™ brand fax transmittal memo 7571		# of pages = 2
To	CDR ROME	
From	LCDR KEANE	
Co.	FOSC - ANCHORAGE	
Co.	USCG ICP PWS	
Dept.	OPERATIONS	
Phone #	001 872 150 0656	
Fax #	263-1736	
Fax #	001 872 150 1526	

ADEC Richard McKean ADEC 5/30/90EXXON M. J. Moore 5/30/90USCG L. Keane LCDR, USCG 5/30LAND MANAGER Marsha Martin (If field rep is on scene)

FOSC SIGNATURE _____

Date _____



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: 4/25/90

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:

☒ 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: 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 INTERTIDAL BIOTA, DISTURBANCE SHOULD BE MINIMIZED. THEREFORE NTR RECOMMENDED.

TAG APPROVAL DATE: 4/24/90
ADEC Art Weiner
EXXON Art Weiner
NOAA Joseph T. [Signature]
USCG M. J. Hall

FOSC: [Signature] DATE: 5-8-90

REVISED: 02/24/99

KN-113

KN-114

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

KN-113B

KN-113B 403 METERS

ADEC Segment Length: 770m

EXXON Segment Length 773m



Map Key: PWS-294

Name: Greg Chaney

Date: April 5, 1990

data entered.

1991 MAYSAP EVALUATION

SEGMENT: KN 113 SUB: A REGION: PWS SURVEY DATE: 4/29/91ENVIRONMENTAL SENSITIVITIES:Work Window(s) OPENEcological/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: Shirley E. Holmes Date: 5/10/91

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

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 A6 RAKE TOWARDS MID ITZ IN A NORTHERLY
DIRECTION. CHECK AREA ESE JUST BEYOND THE BERM
FOR OILING CONDITIONS REQUIRING RAKING + BIO.

FOSC: TAG APPROVAL DATE: MAY 10 1991FOSC APPROVAL DATE: 5/15/91ADEC [Signature]FOSC [Signature]EXXON [Signature]E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSCUSCG [Signature]NOAA [Signature]

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

ADEC

NAME JEFF GINALIAS SIGNATURE Jeff Ginalias☐ NTR☒ TREATMENT RECOMMENDED

RECOMMEND MECHANICAL, BEGINNING UITE (PIT #5 OG MAP) WOULD TILL DOWN TO HOR ALONG BAND GOING SOUTH DOWN BEACH. 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 PIT 5, BUT TILLING/EXPOSURE CAN OCCUR WITHOUT DAMAGE. CENTER OF BEACH ENVIRONMENTALLY BARE AT PITS 12 & 13 (NOAA SITE & COREXIT TEST AREA) COAT/FILM I WOULD MECHANICALLY (SMALL BOBCAT PREFERABLE) COME BEHIND GRAVELS AT PIT 12 AND PUSH INTO MITE. SAME AT TOMBOLO AT PIT 13. IN ALTERNATE, I WOULD MANUALLY TILL INTO MITE. OIL AT PITS 2-4 AND 16-18 I WOULD LEAVE TO NATURAL PROCESSES.

EXXON

NAME FRANK A. BOX SIGNATURE Frank A. Box☐ NTR

Oil here was pretty much throughout the segment, Subsurface noted as well as surface indications. Fairly heavy deposit of oil in a gravel bar by stream was off. Perhaps take the top portion of surface oil and bio.

LANDMANAGER

NAME MARSHA HALL OF DNRSIGNATURE Marsha Hall☐ NTR☒ Treatment

NOAA site is not a SET ASIDE site, but a study site. I believe work MAY OCCUR. Recreational area. (more than rainy cold days) 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 / ChildsSIGNATURE Phil Jensen / 22☐ NTR

North end of segment has some SOR with some sheening. Tidal 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 cobble beach has sub-surface oil and needs to be evaluated regarding additional treatment. MIDDLE INTERTIDAL ZONE CONTAINS HOR OVER ENTIRE SUBDIV & ANTS INCREASE UP BEACH FACE - UZ ZONE APPEARED UNOILED - SOR APPEARS ON NLY NOT END; UP LARGE STREAM & CT 2, ST ON VERT. ROCK FACES.

→ NOTE: NOAA HAZMAT STUDY SITE NO. 10 LOC @ Lg. STREAM ←

MAYSAP SHORELINE OILING SUMMARY

PAGE 1 OF 2

TEAM NO. 1OG G. MACDONALDBIO M. FAWCETTSEGMENT K4-113ADEC J. GINALIKSLANDMANAGER M. HALL for DNRSUBDIVISION AEXXON F. BoxUSCG/NOAA JENSEN/CHUDSDATE 4/29/91TIME 08:20 to 10:50TIDE LEVEL -2.0 ft. to +1 1/2 ft.ENERGY LEVEL: ☐ H ☒ M ☐ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 335 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W - m M 115 m N - m VL - m NO 220 m US 57 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE V H M L	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A1						P					R	V	1	10		x	x		
A2						P					BP	M	5	6		x	x		
A3				P		P					PR	M	2	2	x	x			10-hi sor
A4				P		S							10	3	x				behind berm; hi sor
A5									P		R	H	0.5	10	x				log
A6				P							PR	H	3	15		x			
A6						P	P				PR	H	10	10		x			
A7				P		P						M	6	70		x	x		low sor

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 2-23

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	15							X	-		0	-	X				B - CPG	
2	20			X	X				0 - 15	Y	3	B, R		X			BC - PG	R w/ B globules
3	20			X					2 - 15+	Z	5	B	X				B - PG	
4	35			X					5 - 20	Y	-				X		C - SGP	upper MITZ
5	25		X						17 - 23	Y	-			X			BG - GP	
6	55		X						35 - 55	N	-			X			P - PGC	
7	30			X					5 - 15	Y	-				X		PC - GCV	peat
8	40		X	X					20 - 40	N	-			X	X		P - GP	HOR + MOR
9	50							X	-		-			X			P - GPS	

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

OG COMMENTS:

Surface oil as heavy & lo sor, CT & ST @ sides of embayment.

Sub-surface oil as HOR, ~ 5-10 cms thick, ~ 8m x 200m, with thicker oil @ MITZ, thinning down beach. Oil degradation evident in some pits @ > 30 cms deep.

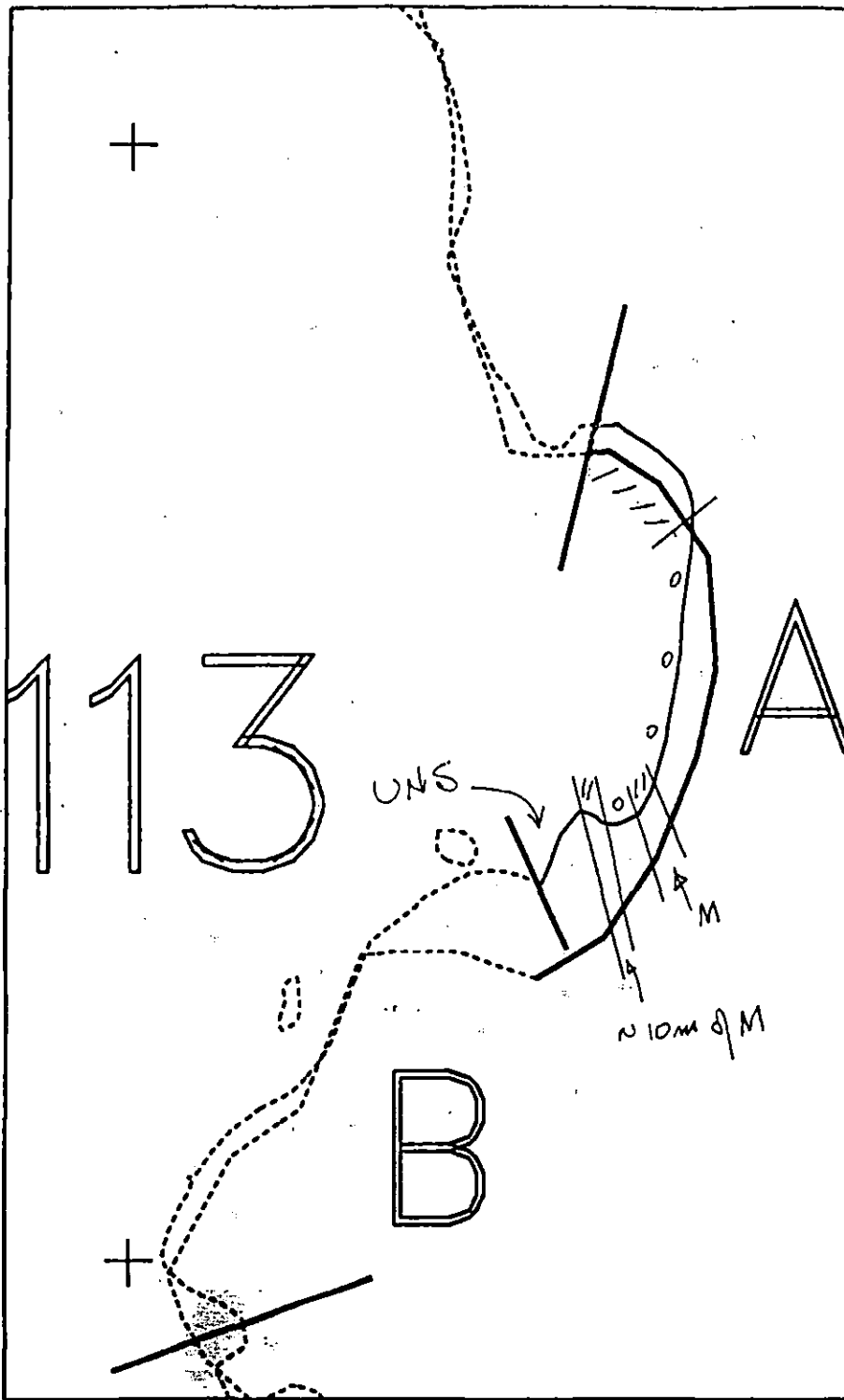
Reviewed: F.W. 5/1/91
 REVIEWED: M.C. 5/1/91

[illegible]

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

OG COMMENTS:

REVIEWED: F.W. 5/1/91
REVIEWED: M.C. 5/2/91

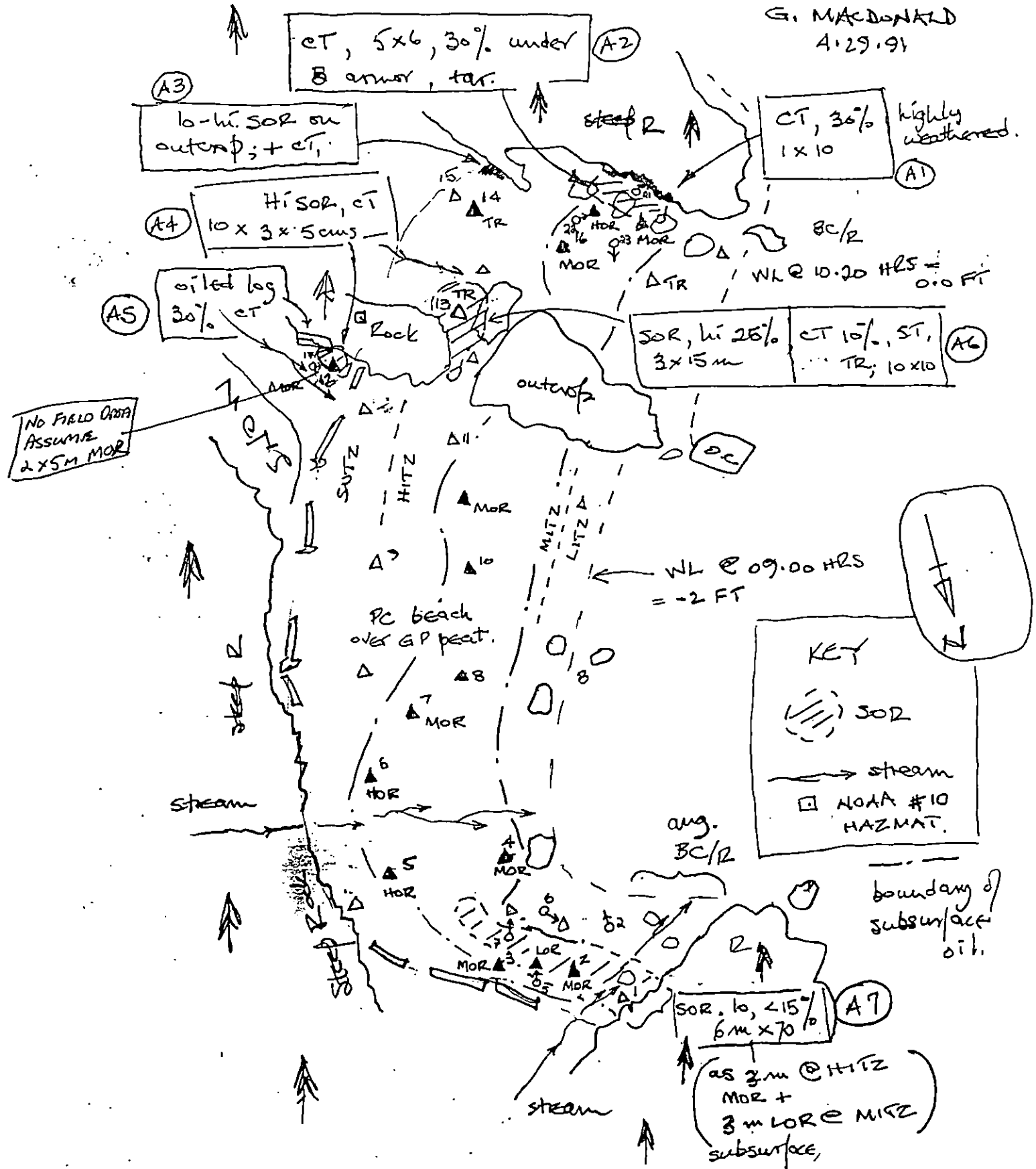


XXXX	Wide	KN0113 A ADEC Subsegment Length: 392m METERS AK State Plane Zone 4 kn0113a	 	Subdivision Field Map
////	Medium			Map Key: KN1KN0113A
----	Narrow			Name: <u>G. M.</u>
TTTT	Very Light			Date: <u>4-29-91</u>
0000	No Oil			Date Entered:

REVIEWED: F.W. 5/1/91
 REVISION: M.C. 5/1/91

KN-113A

G. MACDONALD
4.29.91



REVIEWED: F.W. 5/1/91
REVISED: M.C. 5/1/91

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 3 small non-anadromous streams (see sketch). Bedrock areas from about +2-3ft to +8ft have well-developed communities with dense barnacles, rockweed, mussels, limpets, etc., and new recruits of all of above (below about +3ft the bedrock is scoured by sediment movement -- no biota except new barnacle spat (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 +9ft. 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

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2 (pair)	pricklebacks common
Seabirds			in LTZ
Waterfowl			
Gulls/kittiwakes			
Shorebirds			
Corvids			
Other Birds			

LAND MAMMALS

MARINE MAMMALS	# OBSERVED	SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED: M.C. SJA/91
 DM 5/2/91

refer to OG map

Boulders with dense
young rockweed and
fil. red algae, sparse
Littorinids, 0.0 to 74 ft
dense barnacles 3-6
dense fil. green algae
Sparse Fucus & barn.
+ no grazers +6 to +9 ft

Dense barnacles, mussel
Rockweed - new recruit
of rockweed, mussels,
barnacles, limpets,
Littorinids on all side.

young barnacles, limpets
Rockweed, mussels
on pebbles

502

dense rockweed or
Rhodomela, moderate
barnacles, mussels,
littorinids (breeding),
limpets, pricklyback
Ulva below oiled area
-2 to +6ft

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

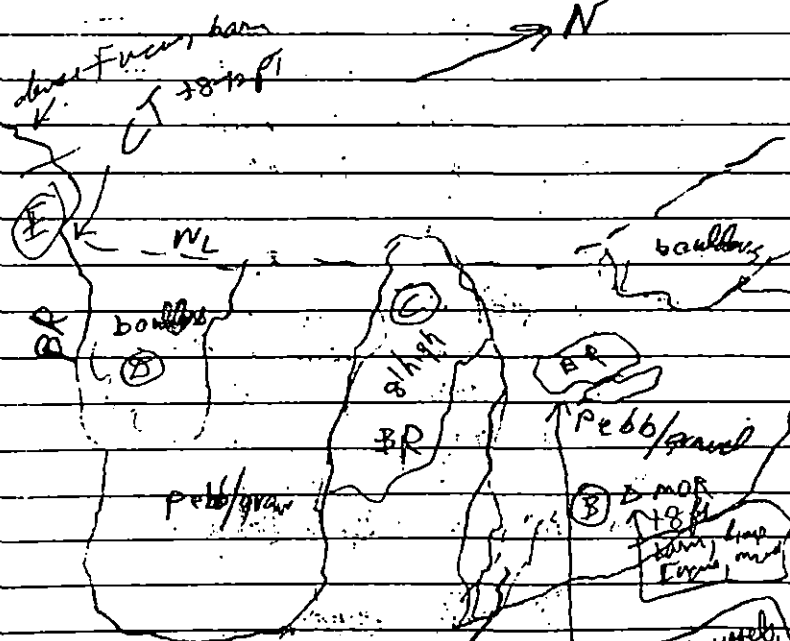
No biota except
filam. algae, lichens
above about +9ft

Dense
Rockweed,
barnacles
on wall.

KN 113A 29 April 91 Fawcett

Arrive 0820

wind 25k SE



shoreline depicted
about 250 m long

North study site #11

line Fucus barn on wall

BR -26+6 ft

stream

scattered mussels
dense Fucus, Rhodospira
moderate whelks,
Litt, U/Va, C pella,
prickle backs

Fil gh. Rhodospira
moderate barn Fucus,
Mussel, Litt, amph.
26 to 49 ft. deep

fil green in fw runoff

Leptasterias, Pricklebacks, L.T.Z

Littorines laying eggs under rock
with bit of SOR - lots of Litt
scutulata in fw runoff area
dense 1 yr old barnacles, scattered
Fucus recruit among older Fucus
patches of new barn spat about 4 ft
fil, red, many N. emarg. on large boulder
- mussels sparse, 1-2 yrs
- overall, L. scutulata equally abundant as site
of Halosaccus, Saccophora

KN113A (cont) Fawcett 29 Apr 91

buried oil in vicinity of (B) on
lagoon +8-10ft surrounded by
0930 heavily barnacles, limpets, young Fucus
(B) etc. on cobbles

(C) bedrock has dense barn, mussels
Fucus - moderate limps, litt, Scytosiphon
Litt recruits, 2mm limps recruits

3mm mussel, dense barn. spat from
0 to +8ft - area from 0 to
+3 feet abraded by pebbles,
so those spat won't survive

1/2m wide band of patchy CT
among barnacles, some coated
but OK - heavier CT higher
up (above 10ft, but no biota
except lichens, filament green -

non-aerial stream goes underground
behind (C), some buried oil along banks
- very loose mobile gravel & pebbles
no biota

state TAG Reps ^{Ken Middleton} John Barnes & others
visited at 0955 hrs

boulders/cobb/Br in area (D)
with dense young Fucus & fil red
0 to +4ft, dense barn +3 to 6 ft

sparse barn, litt; dense fil green
sparse Fucus + 5 to 9 ft - few grazers
to eat green algae

hill (E) dense barnacles, ^{spat} sparse
patchy mussel +2-8'

1m wide CT above ~8', sparse
barnacles below (CT doesn't extend
out to more exposed part where
barn densest)

pair of eagles circled once
then left
departed 1050

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 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: _____ 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	☒ 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: 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 _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

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

USCG Bm3

NAME David A. Sylvester SIGNATURE David A. Sylvester

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

This area has a thick band of oil in the subsurface 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 ~~is not~~ 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: Bioremediation; Stumbers: debris removal; oiled logs: burn/remove
Subsurface oil: Yes there was a near continuous layer thru-out beach... but what to do about it? My biological instincts tell me to leave it alone, with non-invasive cleaning techniques only (ie bioremediation) however these same instincts also tell me to question the efficacy of bioremediation on oil buried over 15cm even if still aerobic. This segment is notorious for sheens (in part due to NOAA site) but there is a significant amount of oil there. There is a part of me which suggests washing a moderately large section of beach (from pnts 4-6) with H₂O (PT, TP) but I'm honestly unsure if the recoverable oil is amount to anything significant to warrant such an approach. Mid section of beach is of type and size which may accommodate heavy equipment operation

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 bioremediation would be ineffective. Chronic sheens should be eliminated through clean up and absorbant booms. Oiled logs extensive enough for burning or removal. Vegetation, trash, debris in supertidal is well oiled. Till or rock wash. * NOAA study site #10 is very gross. Suggest TAG review to, at least control sheens. When

SHORELINE OILING SUMMARY

REVISION NO. 05/22/90

OG Greg Chaney USCG Dave Sylvester SEGMENT ST/ KN1/3
 BIO Jim Roth LAND REP Steve Phillips SUBDIVISION A (122)
 EXXON Reg Satele ADEC Mike Cunningham TIME 15:50 to 17:30
 TEAM NO.: 7 TIDE LEVEL: 2 ft to 1 ft DATE April 15 / 90
 EST. SUBDIVISION LENGTH: 370 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☒ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock SNOW
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: North to South
 SURFACE SEDIMENTS: R 5 % B 25 % C 25 % P 25 % G 10 % S 10 % M — % V — %
 SLOPE: Long 80 % Hang 20 % Vert — % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 200 m M 115 m N 20 m VL 25 m NO — m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IS	IP	IR	OP	OR	OL	OF	NO	LO	LI	LE	SU	UI	ME	U
ASPHALT PAVEMENT																
POOLED																
COVER	X				X								X	X	X	X
COAT		X								X			X	X	X	X
STAIN			X							X			X	X	X	X
MOUSSE																
PATTIES																
TARBALLS																
FILM		X			X	X								X	X	X
NO OIL																

PAVEMENT: H F S — sq. m by — cmPATTIES / TARBALLS — BAGSNEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs		X	
Vegetation	X		
Trash	X		
Debris	X		

DEBRIS COLLECTED
☒ YES ☐ NOTYPE rope#BAGS 1

Photographs:

Roll No. ST-7-2Frames 3, 4, 5, 6, 7, 8, 9, 10, 11

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CL)	BELOW	OIL / FILM COLOR								PIT ZONE	A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO			UO	UC	OP	OR	OL	OF	NO	LO	LI		
1	15				X		0.15	X	X	X							X		BPC
2	15	X					0.15	X									X		BCP
	-				X		0.15	X									X		BCP
3	25						hard pan										X		GS
"	"				X		20.25	X									X		GS
4	35				X		0.20	X									X		SGP

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 supra tidal but it was impossible to determine the quantity due to snow cover
 Pit #6 - hard pan made further digging impractical.

SEGMENT ST/ KN/13 SUBDIVISION A

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UG	UG	1/2	1/4	1/8	1/16	1/32	1/64	1/128	1/256	SU	U	M	L		
4	35		X				20-30		X		X							X					BPC
						X	30-35		X									X					"
5	45					X	0-40	X											X				GPC
			X				40-45	X				X							X				"
6	45					X	0-5	X											X				GS
			X				5-30	X				X							X				"
		X					30-40	X		X									X				"
			X				40-45	X			X								X			X	"
7	60					X	0-60		X									X					GS
8	50					X	0-20	X											X				CGSM
		X					20-45	X		X									X				"
						X	45-50		X										X				"
9	30				X		0-30	X		X										X			CGS
10	65				X		0-5	X		X										X			CGS
		X					5-65	X		X										X			"

COMMENTS

Pit #5: Impossible to dig beyond 45 cm. due to buried logs.

Pit #6: At bottom of this pit (40 to 45 cm). a layer of clay & pebble was observed which smelled like sulfur.

Oiled debris is probably in supratidal snow bank.

In general the northern & southern portions of this ^{sub}segment did not appear very different from oiled sites I visited last year. Mobile brown & black oil was observed in pits and the beach smells like an old gas station grease pit.

REVIEWED _____ DATE _____

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/23/90

Segment ST/ KN113 Subdivision A Date (mo / day / yr) Apr 5, '90
 Time (24 hr) ARR 1550 LV 1730 Biologist ROTH

- (A) Substrate type and % of segments:
 (1) Bedrock 5 (2) Boulder 25 (3) Cobble 25 (4) Pebble 25 (5) Sand 20 (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: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (O)

Photographs: ST-7-2
 Roll No. ST-7-2

Frames 4-7, 9

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	X	X	X	2	2	2
3	3	3	3	3	3	X	X	X	X	X	X
4	4	4	4	4	4	4	4	4	X	X	X
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

MYTILUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	X	X	X	2	X
3	3	3	3	3	3	3	X	X	X	X	X
4	4	4	4	4	4	4	4	4	X	X	X
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

GASTROPODS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	X	2	2	X	X	2	2	X
3	3	3	3	X	3	3	X	X	3	X	X
4	4	4	4	4	4	4	4	4	X	X	X
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

FUCUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	X	2	2	X	X	X	2	2
3	3	3	3	X	3	3	X	X	X	X	3
4	4	4	4	4	4	4	4	4	X	X	X
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

Wildlife Observations/ General Comments:

LOTS OF HERMIT CRAB IN LITTORNA SHELLS, LITZ/COBBLE; SEMIBALANUS CARIOSUS MITE BEDS
 NUCULA COMMON IN MITE/BOULDER; SOME MYTILUS VERY SMALL IN MITE/COBBLE/PEBBLE
 BEACH HOPPERS (AMPHIPODA) IN LITZ/COBBLE/PEBBLE; MYTILUS LOCALLY DENSE ON MITE/BOULDER
 Ecological Considerations: OIL IN LITZ (S. END OF SUBDIVISION)

6Y- SPECIAL USE DESIGNATION

SIGN NEAR SOUTH END OF SUBDIVISION: "NOAA HAZMAT STUDY SITE #10"
 YELLOW RE-BAR STAKES IN BEACH COBBLE AND BUOY OFFSHORE: DEC STUDY SITE?

PWS, SEWARD AND HOMER 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 (4/15 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, locations and constraints.
2M	Herring spawning (4/1 to 6/15) Restrict boat traffic to essential minimum. Avoid damage to uncoiled intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.
3N, 3P 3O, 3Q	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.
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 (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	Anchorage (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	Invertebrate harvesting For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.



John P. Anderson.

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 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: _____ 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	☐ 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: 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 _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

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

USCG ²⁴³
NAME David Sylvester SIGNATURE BM3 David Sylvester

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

The marine life appears to be recovering. The oil is visible in a ~~bathtub~~ bathtub ring. The ring is primarily in the upper and middle tidal zone. There is sub surface oil present as well as oil in the upper tidal zone. ^{Adjacent} here 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/gr beach nr sites 1-3 was perhaps the most biologically rich (in numbers + diversity) as i've noticed anywhere! I flipped over one rock to count 2 eel blennies, dozens of Hermit crabs, Limpets, chitons, snails etc. etc. & w/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 Steven Phillips

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

Check for debris

Pocket beach needs ~~ext~~ bio remediation or other sub surface treatment. Not much room for equipment. Rock faces with "Narrow" bands of tar need scraping and any further removal of coats 1+mm thick.

* Is the northern most rock face part of NOAA study site #10?

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Greg Chaney USCG Dave Sylvester SEGMENT ST/ KN-13
 BIO Jim Roth LAND REP Steve Phillips SUBDIVISION B (212)
 EXXON Reg Satele ADEC Mike Cunningham TIME 17:30 to 18:25
 TEAM NO.: 7 TIDE LEVEL: 1 ft. to 3 ft. DATE April 15 / 190
 EST. SUBDIVISION LENGTH: 403 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☒ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock SNOW
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: North to South
 SURFACE SEDIMENTS: R 85 % B 10 % C 5 % P — % G — % S — % M — % V — %
 SLOPE: Long 20 % Hang 30 % Vert 50 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W — m M — m N 180 m VL 60 m NO 263 m

G.C.

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	15	17	18	20	25	30	35	40	45	50	55	SU	UI	MI	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT	X	O	✓	□	X	X	X	X	X	X	X	X	X	X	X	X
STAIN		X				X							X			
MOUSSE																
PATTIES																
TARBALLS																
FILM			X			X										X
NO OIL																

PAVEMENT: H F S — sq. m by — cmPATTIES / TARBALLS — BAGSNEAR SHORE SHEEN? NO BR (RW) SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash	X		
Debris			

DEBRIS COLLECTED
☒ YES ☐ NOTYPE Circuit board#BAGS less than 1

Photographs:

Roll No. ST-7-2Frames 10, 11

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR								PIT ZONE	A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	UC	20	25	30	35	40	45	50	55			
1	35		X				0-35	X		X								X		CG
2	50					X	0-50		X									X		GP
3	20					X	0-10	X											X	CPG
		X					10-20		X	X										

COMMENTS

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

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

SHORELINE ECOLOGICAL SUMMARY

REVISION: 09/22/90

Segment ST/ KN 113 Subdivision B Date (mo / day / yr) APR 5, '90
 Time (24 hr) ARR 1730 LV 1822 Biologist ROTH

- (A) Substrate type and % of segments:
 (1) Bedrock 40 (2) Boulder 20 (3) Cobble 20 (4) Pebble 20 (5) Sand — (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)

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

BARNACLES

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

MYTILUS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

GASTROPODS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments: A DIVERSE SITE: LOTS OF LIMPETS (*NOTAEMEA SEVUM*) ON MITZ/BEDE; *KATHERINA* VERY COMMON (CA. 5/M²) MITZ BEDR; IN MITZ POOLS: *LITHOTHAMNUS*, 3 *PYCNOPODIA*, 1 *EVASTERIAS*, *ANTHOPELERA XANTH*, *NUCCIA* sp., *TEALIA CRASSICORNIS*, *CALLINectes SEMIBALANUS CARIOSUS* ON MITZ BOUL/BEDE. LOCALLY DENSE MYTILUS ON MITZ/BEDE.

Ecological Considerations: GY - SPECIAL USE DESIGNATION [DOES THIS APPLY ONLY TO KN113A?] DESPITE 0 ON SHELLS (SEE PHOTO)

BLENARY EGGS, HERMIT CRABS OBSERVED UNDER ROCKS BY DEC REP. M. CUNNINGHAM; EXAMINATION OF THIS INTERESTING SITE INTERRUPTED BY DEPARTURE FOR SHIP DUE TO WORSENING WEATHER (WIND/SNOW/FOG).

OG Grey Chaney
SEGMENT ST/ KN-113

SUBDIVISION B

DATE April 5 90

CHECKLIST

- ☐ N Arrow
- ☐ Appret. Scale
- ☐ Seg/Sub Entry
- ☐ Oil Dist.
- ☐ Well
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HML/AUL
- ☐ SCL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ PI Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ

PI - No Subsurface Oil

2 Δ

PI - Subsurface Oil

CT/C
Contributor Distribution

CT/B
Broken Distribution

CT/P
Patchy Distribution

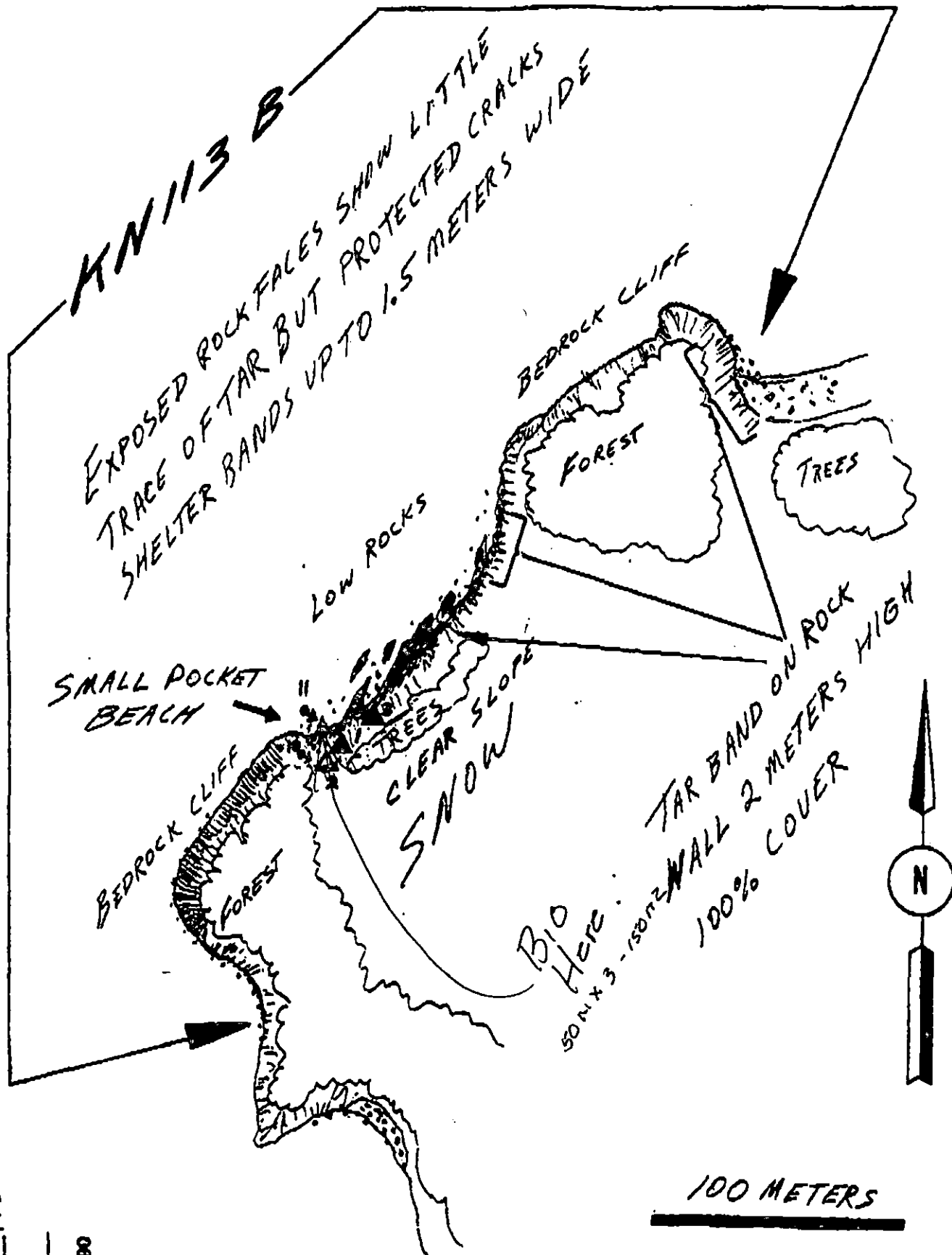
CT/S
Smeared Distribution

CT/V
Clad Vegetation

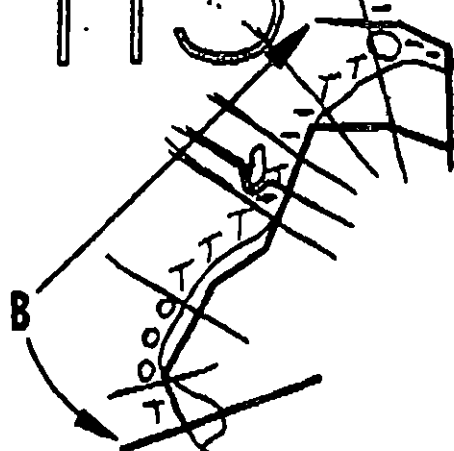
1 0-0

Photo location, direction, and number

SKETCH MAP



KN-113



KN-114

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

KN-113B

KN-113B 403 METERS

ADEC Segment Length: 770m

EXXON Segment Length 773m

0 100 200 300



Map Key: PWS-294

Name: Greg Chaney

Date: April 5 1990

Data Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT KN-113 SUBDIVISION A (1 of 2)

WORK WINDOW	
Manual Pickup	OPEN
Bioremediation	OPEN
Manual Raking	
Mechanical Tilling	
Spot Washing	
Other Approved Treatment	

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 unloiled biota and substrate.

TAG APPROVAL DATE 5/29/90.
ADEC ART WEINER
EXXON ANDY TOL
NOAA B. Wascott
USCG G.A. REITER

FOSC [Signature] DATE MAY 29 1990

Prepared By: Anders Meyer WTK

Date 5/28/90

KN-112

▲ 34

KN-103

KN-113

WORK
AREA

▲ 35
KN-114

KN-115

▲ 36

KN-116



Exxon Company, USA
Map Key: KN-101-113
May 11, 1990



ECOLOGY MAP
SEGMENT KN-113
SUBDIVISION *A* (1 of 2)



- ★ Seabird Colony
- ▲ Eagle Nest

1 inch = 1183 feet

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 unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

Consultation and inspection with an Exxon archaeologist is required cannot proceed prior to treatment. Specific on-site monitoring archaeological requirements will be determined at that time.

SHPO SIGNATURE: [Signature]

DATE: 5/8/90

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	☒ 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: 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 NEARSHORE BOOMING, USE SNARE STRINGERS ALONG SHORELINE, MANUALLY RAKE WITH RISING TIDE TO ENHANCE LIBERATION OF OIL FROM SEDIMENTS AFTER MECHANICALLY TILLING.

TAG APPROVAL DATE: 4/24/

ADEC ART WENGER
EXXON MYSTER
NOAA Joseph Abbott
USCG M. J. HALL

FOSC: [Signature]

DATE: 5-12-90

1991 MAYSAP EVALUATION

SEGMENT: KN 014 SUB: A REGION: PWS 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: Rachel Jan Oau Date: 5/17/91

RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>N</u>	<u>N</u>
Manual Pickup (Check as Req.)	<u> </u>	<u> </u>	<u> </u>
Spot Washing	<u> </u>	<u> </u>	<u> </u>
Bio-Customblen Only	<u> </u>	<u> </u>	<u> </u>
Bio-Inipol/Customblen	<u> </u>	<u> </u>	<u> </u>
Other	<u> </u>	<u> </u>	<u> </u>
Other	<u> </u>	<u> </u>	<u> </u>

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 17 1991

FOSC APPROVAL DATE: 25 MAY 1991

ADEC [Signature]

FOSC [Signature]

EXXON [Signature]

E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC

USCG 2 M. Murphy

NOAA [Signature]

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 3 SEGMENT Kw 14 SUBDIVISION A DATE 5/4/91

ADEC

NAME Wesley Ghermley SIGNATURE Wesley Ghermley

☐ 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 Carnecki SIGNATURE Jon Carnecki

☒ NTR No oil present on segment. Healthy beach with good broke left.

LANDMANAGER

NAME Solo Solo OF Chugach SIGNATURE [Signature]

☐ NTR

AK COY
one two party notes

USCG/NOAA

NAME MOONEY / BREAS SIGNATURE Tim Mooney

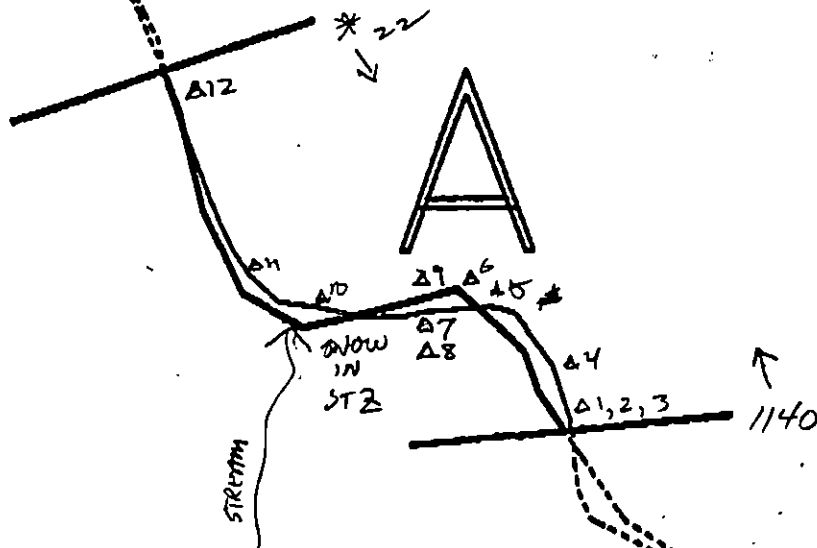
☒ NTR SEGMENT COMPRISES OF GRAVEL, PEBBLE, AND SAND NO SURFACE OR SUBSURFACE OIL FOUND.

PAGE 1 OF 1

OG 1 of 3

4

14



A1 UITE 20
P/S/G N.O.

A2 MIT 20
P/S/G N.O.

A3 LITE 20
P/S/G
LIVE CLAM

A4 UITE
P/S/G N.O.

A5 LITE
P/S/G N.O.

A7 UITE NO 30
P/S/G

A8 ST2 P N.O. 30

A9 LITE P/S/G 20
N.O.

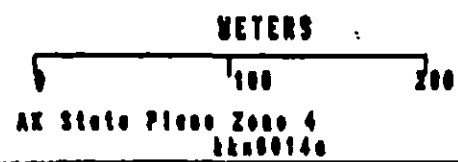
A10 UITE G/G N.O.

A12 MIT 20
P/S/G N.O.

CALCAREOUS SAND IN SUBSURFACE " A12 20
G/G N.O.

XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
OOOO No Oil

KN0014-A
ADEC Subsegment Length: 328m



Subdivision Field Map
Map Key: KNKN0014A
Name: HARPER
Date: 4 MAY 91
Data Entered:

OG 2 of 3

REVIEWED: 5/9/91 MC ES reviewed, 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
 PHOTOGRAPHS: ROLL # FRAME #

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

Fairly sheltered, low energy beach of pebble/cobble/boulder/bedrock, transected by a small stream.
 Biotin in the mid to lower intertidal appears healthy and relatively abundant, consisting primarily of patchy and moderately dense new-growth *Fucus*, dense patches of barnacles and spat, dense patches of small *Littorina*, adult *Littorina* with egg masses, dense patches of attached *Mytilus* and extensive dense interbedded *Mytilus*, sparse to moderate densities of limpets, clusters of small *Leptasterias*, and *Prothaca staminea* (clams).
 No oil observed on this segment.

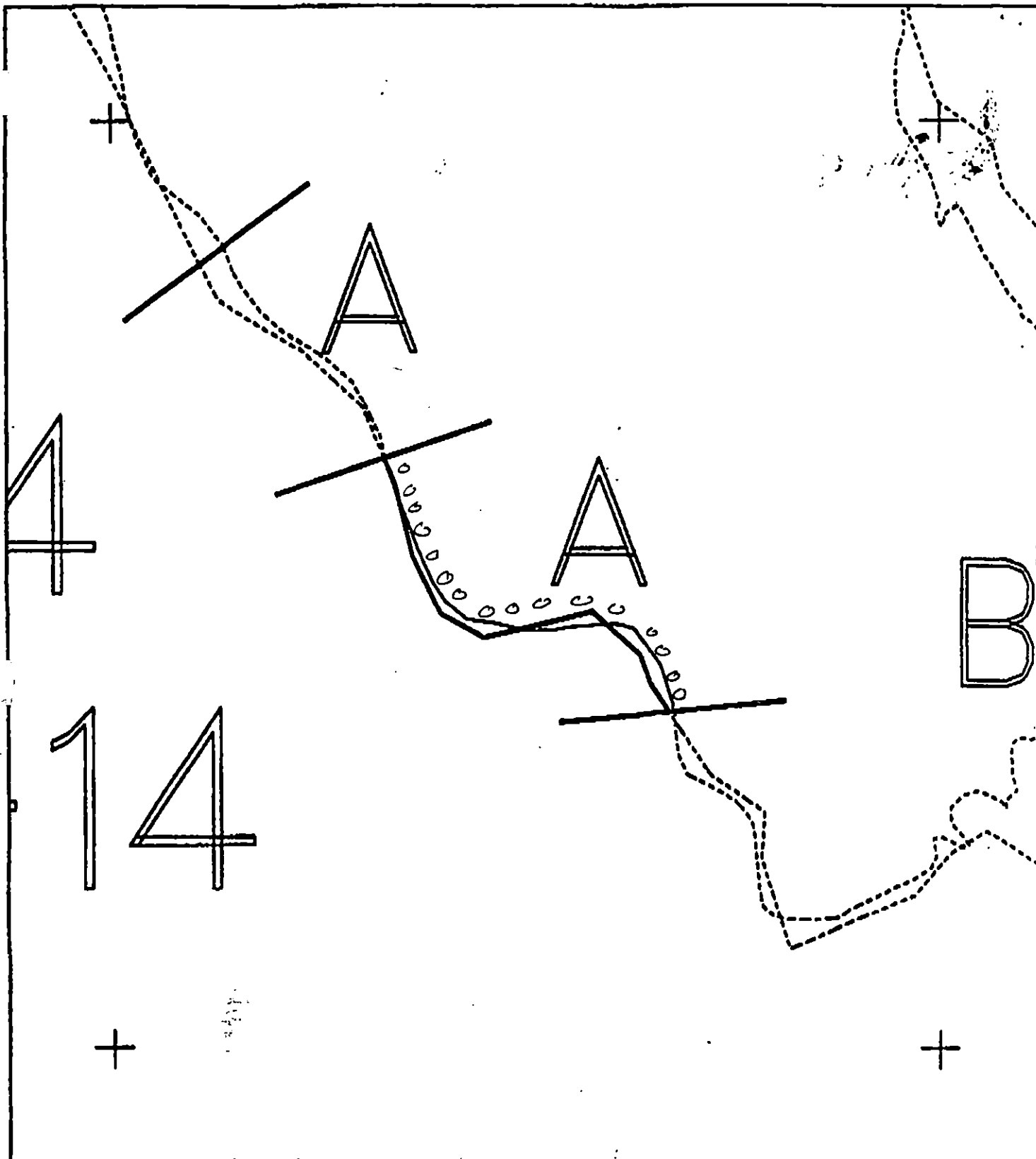
WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	3	
Seabirds			
Waterfowl	Mergansers	7	
Gulls/kittiwakes	Glau-winged	10	
Shorebirds			
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1		
Pinnipeds(specify)			
les(specify)			

Shoreline subdivision map showing important biological features attached.



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

KN0014/A
 ADEC Subsegment Length: 328m
 METERS
 0 100 200
 AR State Plane Zone 4
 14N00140

Subdivision Field Map
 Map Key: KNKN0014A
 Name: HARPER
 Date: 7 MAY 91
 Date Entered:



SURFACE OILING SUMMARY MAP

OG 3 of 3

Reviewed: 5/9/91 MC ES reviewed, May 8

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: Timothy A. Smith Date: 5/30/91

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: MAY 29 1991

FOSC APPROVAL DATE: 6/15/91

ADEC

FOSC

EXXON

E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC

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 KN0114 SUBDIVISION A DATE 5/16/91

ADEC

NAME JEFF GINALIAS SIGNATURE JEFF G

- ☒ 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, MORE HEAVILY ^{IN} THE NORTH COVE. IT RUNS FROM THE MITE THROUGH THE MITE, RANGING FROM MOR (BORDERING TOR) TO LOR, AS YOU PROCEED SOUTH AND DOWN TOWARDS THE MITE. THE LENS IS RELATIVELY CLOSE TO THE SURFACE (15-20 CM) AND EASILY EXPOSED WITH DIGGING. 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 OPERATION, AND MECHANICAL NOT FEASIBLE AS LARGE Boulders / BEDROCK MITE-LITE. OIL RELATIVELY STABLE (SURPRISING CONSIDERING FLUSH & AMOUNT). SHEEN READILY OBSERVABLE. NOT SURE WHAT TO DO. MONITOR FOR MOBILITY AS TEMPERATURE RISES.

EXXON

NAME RANDALL K. BOYER SIGNATURE Randall K. Boyer

- ☒ NTR COATS AND STAIN ON VERTICIE FACES OF LARGE ROCKY SURFACES AND SOME SUBSURFACE RESIDUE WERE IDENTIFIED ON THIS SUBDIVISION. TO EXEMPLIFY THE HEALTHY LOWER INTERTIDAL, FOOTING WAS SLIPPERY BECAUSE OF ALGAL GROWTH. ^{THE} BEACH LOOKS ALIVE WITH LIVING ORGANISMS ABOVE & BELOW ROCKY SURFACES. CANADIAN GESE WERE SEEN FLYING ABOVE IN THE VICINITY OF THE SURVEY. NO FURTHER TREATMENT WOULD BE REQUIRED, THE RECOVERY PROCESS IS ON GOING.

LANDMANAGER

NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

- ☐ NTR ☒ treatment I'm wondering if this MOR will thicken up once spring runoff stops. Azitote soil with foot, produce silver & rainbow sheen which runs down beach. Sheen on beaches to the north turns VERY dark brown.

USCG/NOAA

NAME SCHWITZ / CHILDS SIGNATURE Schwartz / Childs

- ☒ NTR OIL FOUND IN THIS SEGMENT, THO IT EXISTS IN SOME QUANTITY, IS AT THIS TIME NOT RECOVERABLE.

POCKET BEACH. W/ ASSOCIATED NEAR VERT BEDROCK SURROUNDING - MOD ANGLE LOWER ENERGY W/ SUB ANGULAR SEDS. OIL OBSERVED AS SOR. CT: ST ON NEAR VERTICAL FACES ACROSS MOST OF BEACH - IN SI - AT ME LO SOR SUFFICIENT TO SHEEN AFTER AGITATION (SEE PHOTO 1-23-22) - SUBSURFACE LOR & MOR MORE - NOR - END BEACH 316 BOULDER (PHOTO 1-23-18 & 19)

PAGE 1 OF 2

revised 5.19 94
REVIEWED CE 15 MAY

SEGMENT

KH-114

SUBDIVISION

A

DATE 5 / 16 / 81

surface oil cont'd :

(ii) CT & ST @ up 41TZ - 41TZ; across beachface on C & B; grey brown, algae coated, tacky; associated w/ subsurface oil. Small soft to patch @ 10.50TZ.

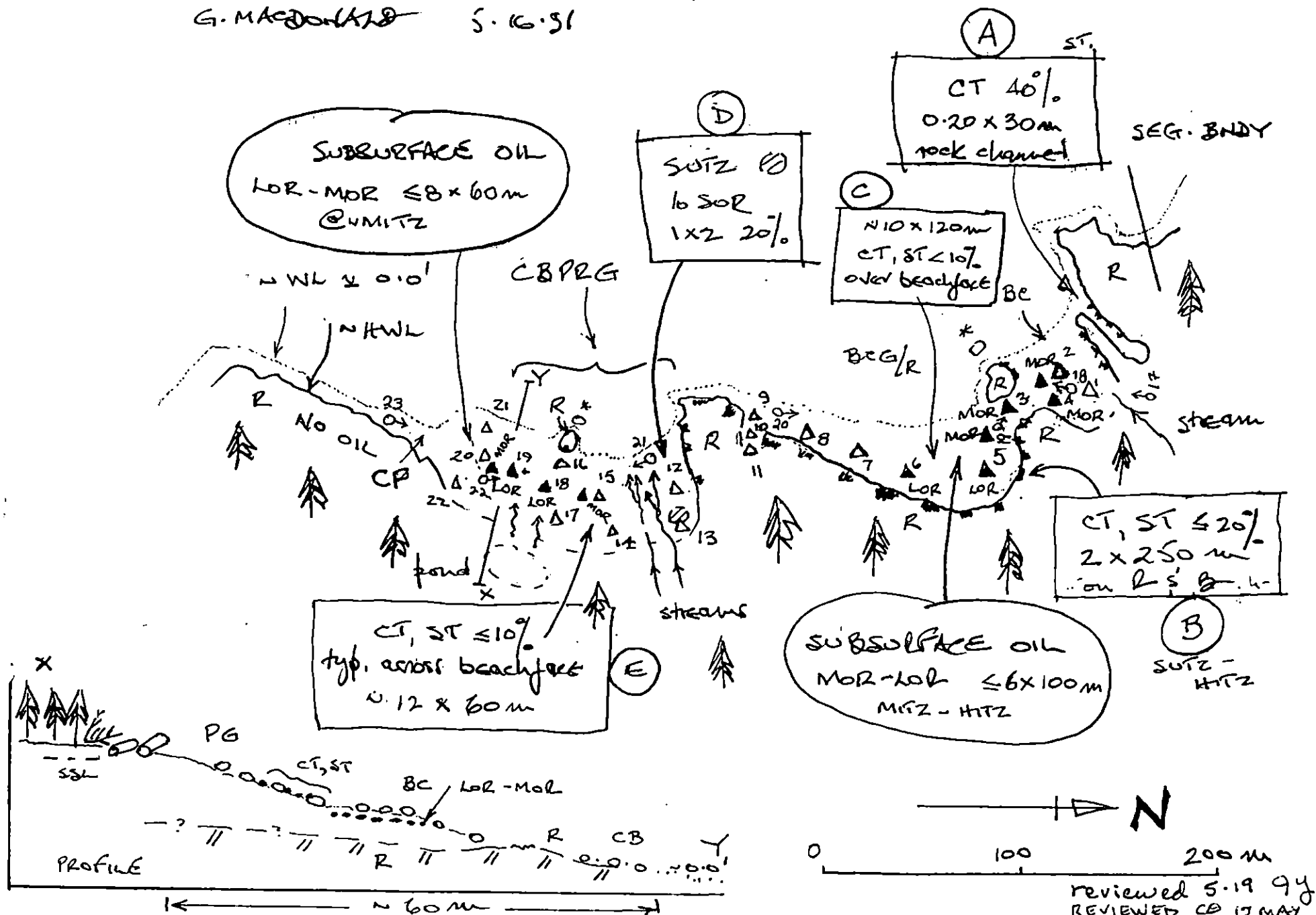
Trace silver sheen typical @ lower MITZ. Walking over BC/GC beach is sufficient to flush silver & rainbow sheens @ MITZ.

SUBSURFACE OIL : Broad MOR & LOR, w/ heavier oil on north beach. Pitting produces instant brown & rainbow sheen in well-flushed, permeable substrate. Brown droplets under B common. Depth to top of oil $\approx$ 3-10 cms, thickness of $\geq$ 5 cms typical. About 20 supplementary pits established the estimated dimension.

[illegible]

reviewed 5.19.42
REVIEWED CO BMT

G. MACDONALD 5.16.51



MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 16 May 91
 SEGMENT # KN 114 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 S/B/C/P/G mixed substrate and moderate wave energy. The northern beach has typically diverse & abundant biota in LTZ, and typical distribution of barnacles, rockweed, rhodomecia, limpets, littorinids, whelks etc in MTZ despite buried oil and SOR 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 biota near oiled areas.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2 adults	black prickletack
Seabirds			northern clingfish
Waterfowl			
Gulls/Kittiwakes	2 (Bl. Leg. Kittiwake Arctic tern)	10	
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.

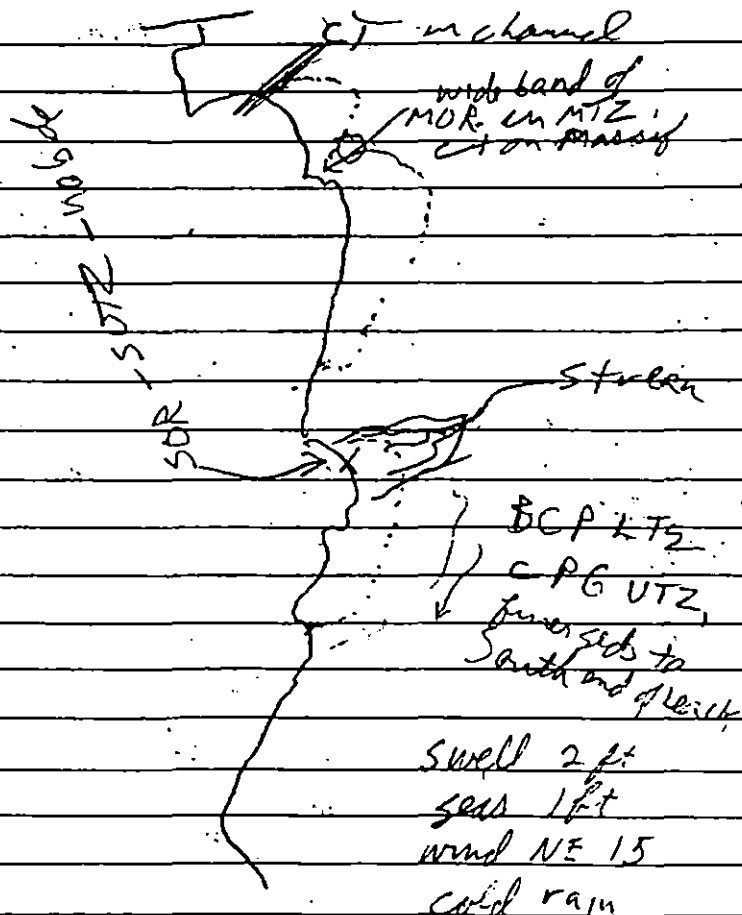
REVIEWED 19 MAY 91

D. J. L. L. L.

KN 114A 16 May 91 Farwell
 210735

- CT in VTZ channel on wall
~~west~~ North end of Subdivision
 sparse barnacles below, mod barn,
 Eucus, mms; limp, litt downshore
 4m
- BCPG heard, some massive
 boulders - dense algae LTZ, mod
 MTZ
 - 2 Great terns
 - 2 Kittiwakes
 - no eagle activity near island
 w/ nest
 - boulders + 5-6 ft among
 MTZ mod. barnacles patchy
 young Fucus, Rhod, limp, litt
 - limps, breeding litt, whelks
 under rocks - healthy, typical
 dense ballfield - band of
 SOR & CT spans upper MTZ & VTZ
 up to + 10-12 ft - CT 8-10 ft
 on great boulders sitting in MTZ
 among & above dense barnacles -
 Fucus, whelks, litt, limp, Rhod,
 anemones below - LTZ downshore

KN 114



6 more terns

KN 114 (cont) 16 May 91 Fauroll

- LTZ rich bry - mod dense Ulva,
Rhodo, Fucus, - also Halosaccion
Gigartina, leafy reds - fl green -
- pebbles, cling fish, Leptasterias
- Epiactis, clams (Proclitaea
Ctenocardium, urchins, limp, chitons
1 harbor seal - animals & plants
have normal distribution & appear
healthy - new recruits of barn,
mussels, limp, barn, ocher algae
best left alone

- 2 eagles flew by

- bca 11 (2) - Dcip, bca 11 / 03 stream
- 505 + 12-13 ft SWTZ - no birds

- mod Fucus, limp, litt, sparse

barn & in barn area, 19 ft

- stream runoff influences 30 m

wide area of beach - LTZ - MTZ

boulders w/ Fucus, barnacles,

dense Enteromorpha

tall OUTcrop in middle of MTZ

CT on lee side + 8-12 feet covering

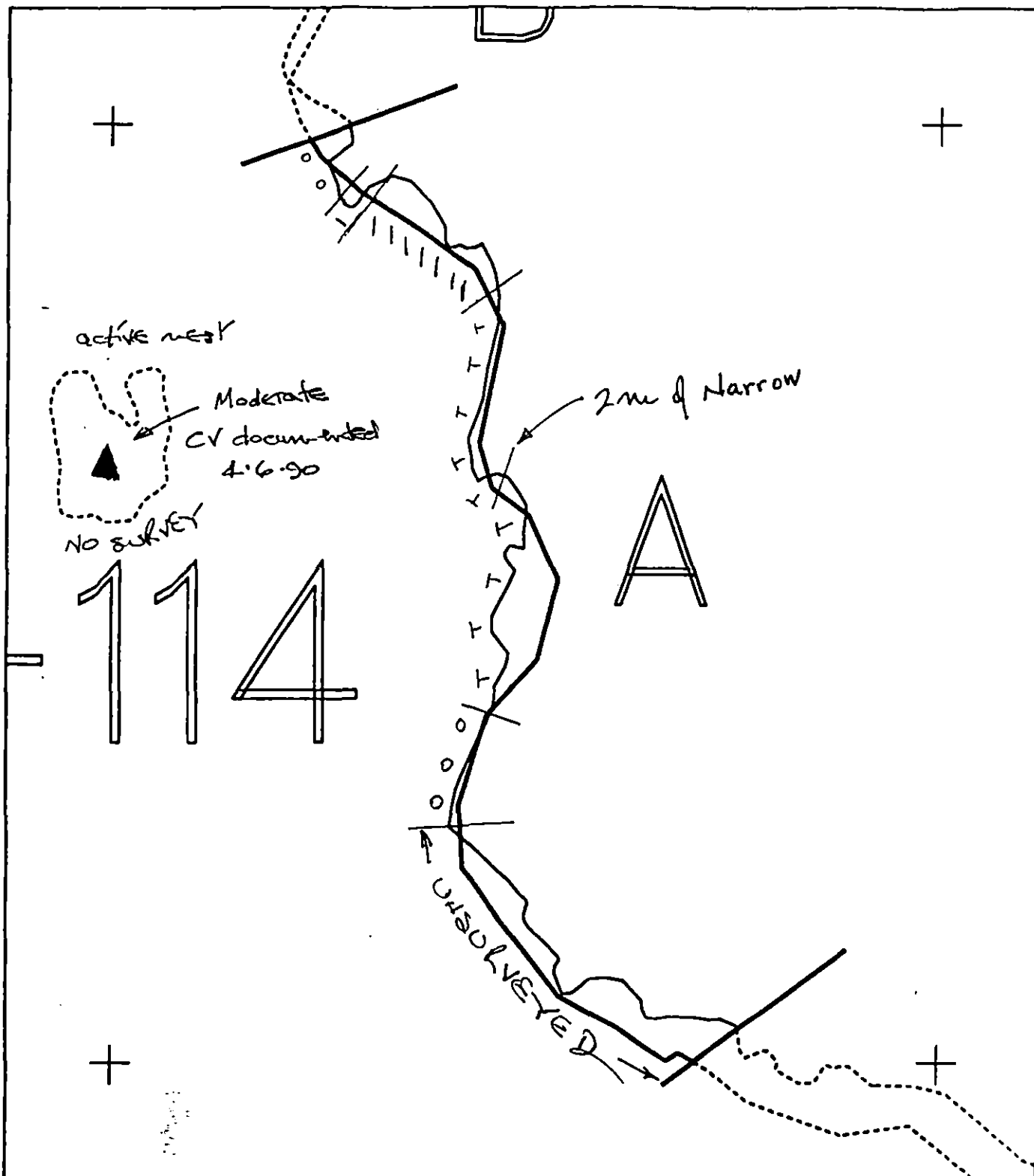
main barnacle (DK) & some mussels

- dense barn, whelks, young

mussels below

- LTZ not as diverse in runoff area as

101 similar area just past runoff end 0845



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

KN0114 A
 ADEC Subsegment Length: 846m
 METERS
 0 100 200
 AK State Plane Zone 4
 660114a



Subdivision Field Map
 Map Key: KNKN0114A
 Name: G.M
 Date: 5.16.91
 Date Entered:

revised 5.19 91
 REVISED CO 15 MAY

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:

INITIAL

TAG

FOSC

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 _____

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

KN0114

SUBDIVISION

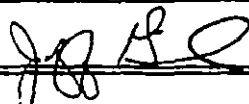
ADATE 5/16/91

ADEC

NAME

JEFF GINGLIAS

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, MORE HEAVILY ^{IN} THE NORTH CORE. IT RUNS FROM THE HITE THROUGH THE MITZ, RAYING FROM MOR (BORDERING MOR) TO LOR, AS YOU PROCEED SOUTH AND DOWN TOWARD THE MITZ. THE LENS IS RELATIVELY CLOSE TO THE SURFACE (15-20 CM) AND EASILY EXPOSED WITH DIGGING. 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 OPERATION, AND MECHANICAL NOT FEASIBLE AS LARGE Boulders / BEDROCK MITZ-LITZ. OIL RELATIVELY STABLE (SURPRISING CONSIDERING FLUSH & AMOUNT), SHEEN EASILY OBSERVABLE. NOT SURE WHAT TO DO; MONITOR FOR MOBILITY AS TEMPERATURE RISES.

EXXON

NAME

RANDALL K. BOYER

SIGNATURE

Randall K. Boyer☒ NTR

COATS AND STAIN ON VERTICIE FACES OF LARGE ROCK SURFACES AND SOME SUBSURFACE RESIDUE WERE IDENTIFIED ON THIS SUBDIVISION. TO EXEMPLIFY THE HEALTHY LOWER INTERTIDAL, FOOTING WAS SLIPPERY BECAUSE OF ALGAL GROWTH. ^{THE} BEACH LOOKS ALIVE WITH LIVING ORGANISMS ABOVE & BELOW ROCKY SURFACES. CANADIAN GEESE WERE SEEN FLYING ABOVE IN THE VICINITY OF THE SURVEY. NO FURTHER TREATMENT WOULD BE REQUIRED, THE RECOVERY PROCESS IS ON GOING.

ANDMANAGER

NAME

MARSHAHALLOF DNR

SIGNATURE

Marsha Hall☐ NTR☒ treatment

I'm 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

SCHULTZ/CHILDS

SIGNATURE

[Signature] /T2☒ NTR

OIL FOUND IN THIS SEGMENT, THO IT EXISTS IN SOME QUANTITY, IS AT THIS TIME NOT RECOVERABLE.

POCKET BEACH - w/ ASSOCIATED NEAR VERT BEDROCK SURROUNDING - MOD + LATE LOWER ENERGY w/ SUB ANGULAR SECS. OIL OBSERVED AS SOR; CT: ST ON NEAR VERTICAL FACES ACROSS MOST OF BEACH - IN SI - AT ME LO SOR SUFFICIENT TO SHEEN AFTER AGITATION (SEE PHOTO 1-23-22) - SUBSURFACE LOR & MOR MOD - END BEACH 316 BOULDER (PHOTO 1-23-18 & 19)

PAGE 1 OF 2

DATE 5 / 16 / 31

ENERGY LEVEL: ☐ H ☐ M ☒ LWEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W 1 m M 120 m N 25 m VL 330 m NO 130 m US 241 m

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 - 23 FRAMES 17-23

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

(i) CT & ST @ SUTZ; on steep R - black, powdery, occasionally slightly tacky, often w/ spruce needles.

revised 5.19 94
REVIEWED CA 15 MAY

SEGMENT KN-114

SUBDIVISION A

DATE 5 / 16 / 91

(ii) CT & ST @ up 4TZ - 11TZ ; across beachface on C & B; grey brown, algae coated, tacky ; associated w/ subsurface oil. Small soft to patch @ 10.50TZ.

Trace silver sheen typical @ lower MITZ. Walking over BC/GC beach is sufficient to flush silver & rainbow sheens @ MITZ.

SUBSURFACE OIL : Broad MOR & LOR, w/ heavier oil on north beach. Pitting produces instant brown & rainbow sheen in well-flushed, permeable substrate. Brown droplets under B common. Depth to top of oil $\approx$ 3-10 cms, thickness of $\geq$ 5 cms typical. About 20 supplementary pits established the estimated dimension.

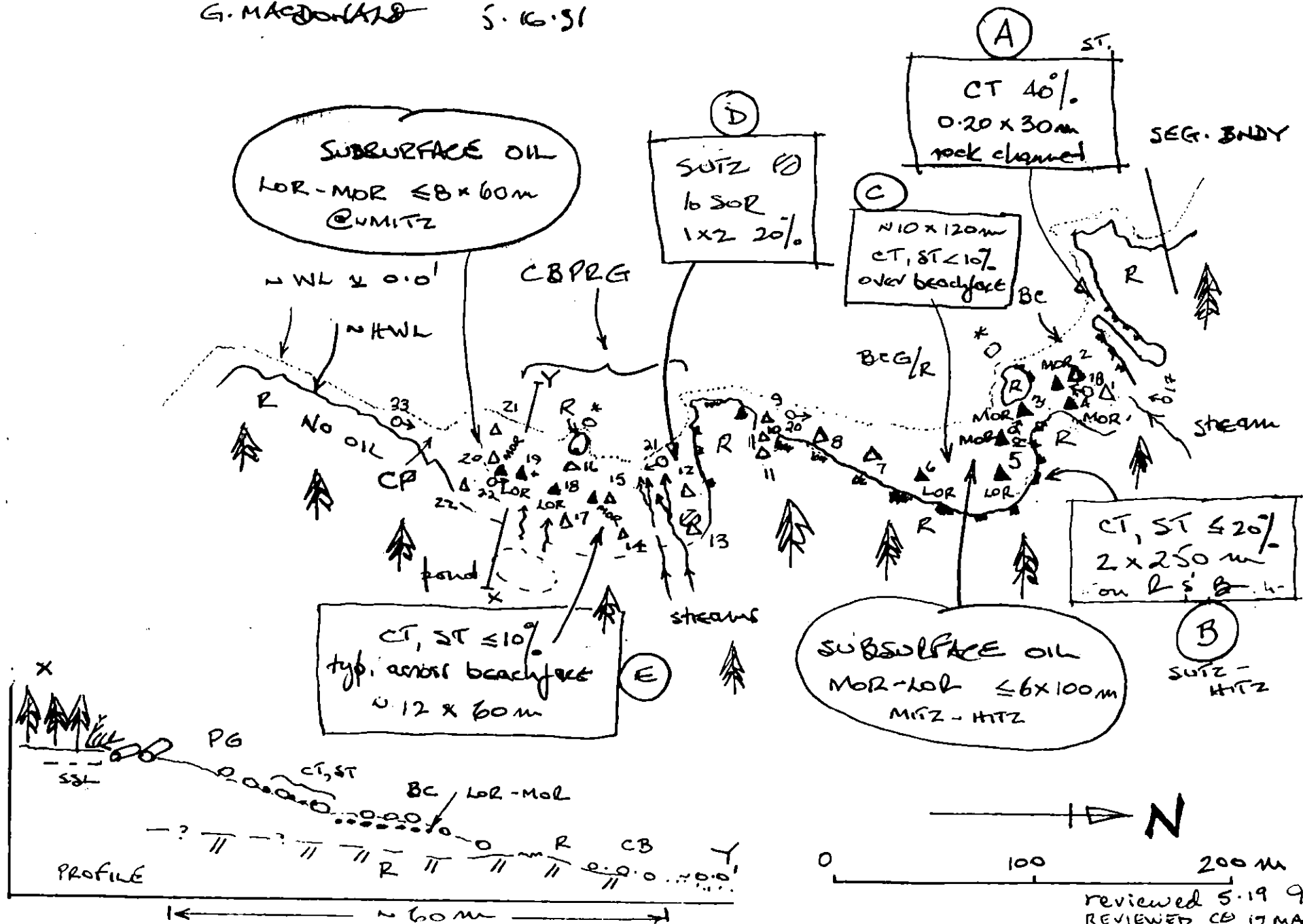
[illegible]

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

reviewed 5.19 by 2
REVIEWED CO BARRY

KN-114A

G. MACDONALD S. 16.91



MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 16 May 91
 SEGMENT # KN 114 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, ra
 PHOTOGRAPHS: ROLL # _____ FRAME # _____

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

Two main beaches in this subdivision, both with similar R/B/C/P/G mixed substrate and moderate wave energy. The northern beach has typically diverse & abundant biota in LTZ, and typical distribution of barnacles, rockweed, rhodomeela, limpets, littorinids, whelks etc in MTZ, despite buried oil and SOR 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 biota near oiled areas.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2 adults	black prickleback
Seabirds			northern clingfish
Waterfowl			
Gulls/kittiwakes	2 (Bl. Leg. Kittiwake Arctic tern)	10	
Shorebirds			
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds(specify)	1 harbor seal		
Whales(specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED 16 19 MAY 91
 Rev'd 5/16/91 DM

Bio Sketch Map
 KN 114-A, 5/16/91
 M. H. Fawcett

SEG. BODY

RCBPG

(A) CT on wall above sparse barnacles, moderate barnacles, rockweed, mussels, limpets, littorinids 4m downshore

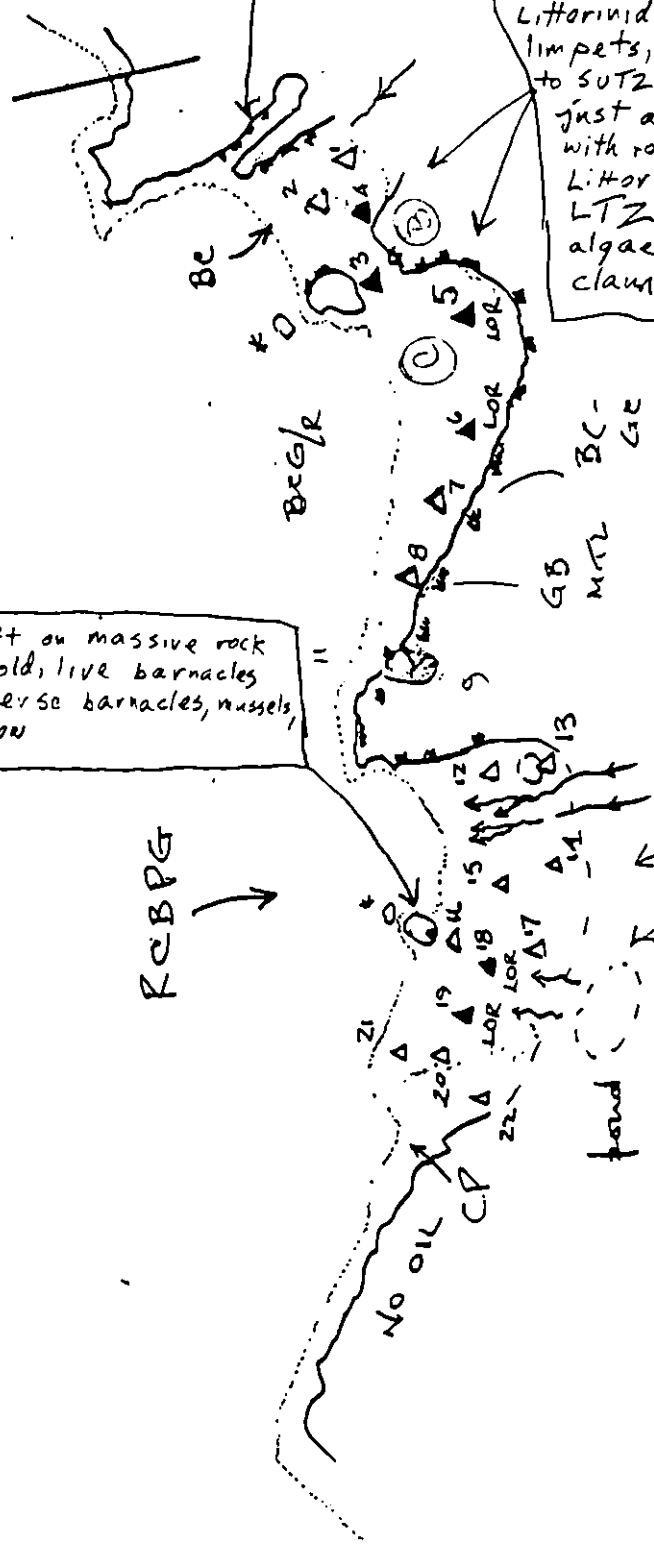
buried oil in MTZ among moderate dense barnacles, patchy young rockweeds. lots of Littorinids (breeding under rocks on top of oil limpets, whelks; SOR & CT from 11-2 to SUTZ at +12ft -- some anemones and just above dense, live barnacles, with rockweed, whelks, limpets, anemones, Littorinids, etc. below --- LTZ has rich biota: variety of algae, fishes, starfish, anemones, clams, sea urchins, etc.

(D)

CT +8-12 ft on massive rock covering some old, live barnacles & mussels; dense barnacles, mussels, whelks below

(E)

SOR +12-13 ft in SUTZ, no biota nearby; moderate rockweed, limpets, littorinids, sparse barnacles 4m from shore at +9ft



KN 114A 16 May 91 Farwell
an 10735

CT in VTZ channel on wall
~~west~~ North end of subtidal
sparse barnacles below, mod barn,
Fucus, muss, limp, litt downshore
4m

- BCPG beach, some massive
boulders - dense algae LTZ, mod
MTZ

- 2 least terns

2 Kittiwakes

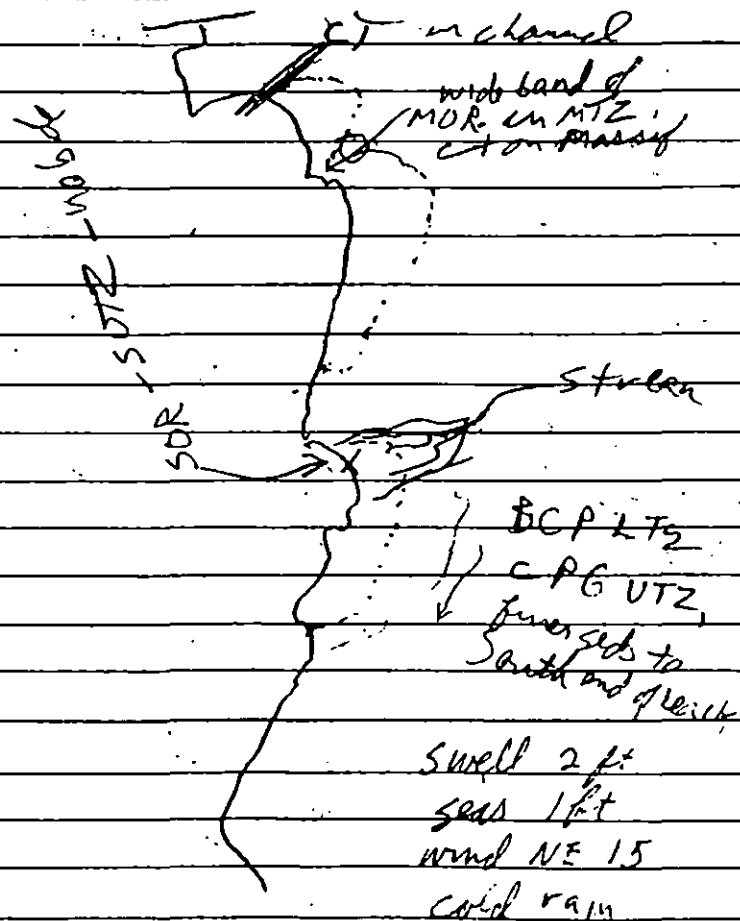
- no eagle activity near island
w/ nest

- banded rail + 5-6 ft among
MTZ mod. barnacles, patchy
young Fucus, Rhod, limp, litt
- limpets, breeding litt, wrasses
under rocks - healthy, typical

diverse boulderfield - band of
SOR & CT spars V. approx MTZ & VTZ

up to 7-10-12 ft - CT 8-10 ft
on great boulders sitting in MTZ
among & above dense barnacles -
Fucus, whelks, litt, limp, Rhod,
anemones below - LTZ downshore

KN 114



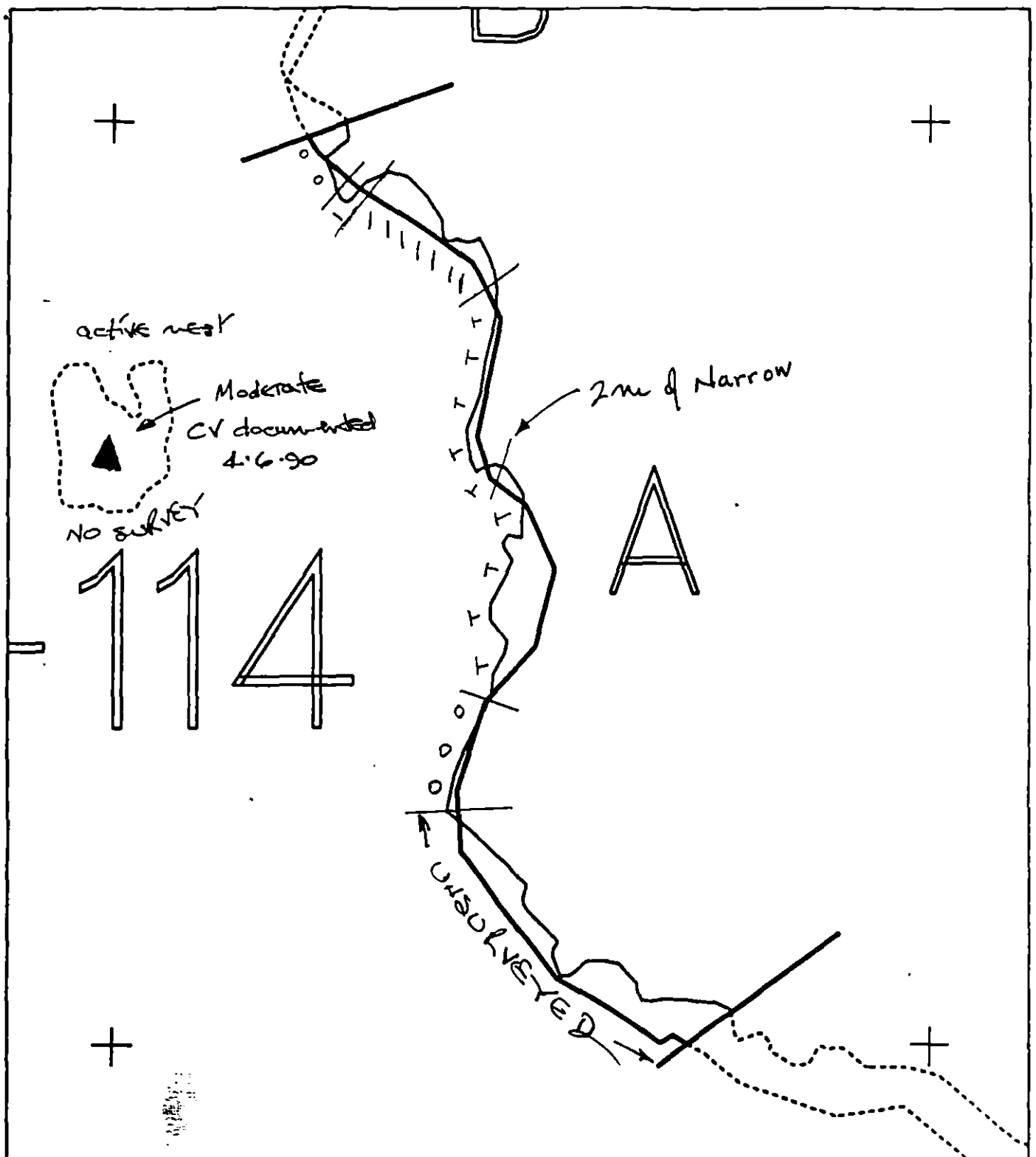
6 more terns

KN 114 (cont) 16 May 91 Fauroll

- LTZ rich bry - mod dense Ulva, Rhodo, Fucus, - also Halosaccion Gigartina, leafy reds - fl green -
- pucblas, cling fish, Leptasterias
- Epiactis, clams (Proclitella), Cardium, urchins, limp, chitons
- 1 harbor seal - animals & plants have normal distribution & appear healthy - new recruits of barn, mussels, limp, barn, or bry algae best left alone

- 2 eagles & hawk by
- bear (2) - Blcp, bry / Ostraea
- 50s + 12-13 ft SWTZ - no bldg
- mod Fucus, limp, ltt, sparse barn & in barn core, 19 ft
- stream runoff influences 30 m into area of beach - LTZ - MTZ
- boulders w/ Fucus bar 44 ft, dense Enteromorpha

tall Ostraea in middle of MTZ
CT on bed rock + 8-12 feet covering natural barnacles (2 ft) & some mussels
- dense barn, whelks, young mussel below
- LTZ not as diverse in runoff area as in similar area just past runoff end 0845



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

KN0114 A
 ADEC Subsegment Length: 848m
 METERS
 0 100 200
 AK State Plane Zone 4
 kn0114a

Subdivision Field Map
 Map Key: KNKN0114A
 Name: G.M.
 Date: 5.16.91
 Date Entered:

revised 5.19 91
 REVISED CO 19 MAY

1991 MAYSAP EVALUATION

SEGMENT: KN 014 **SUB:** A **REGION:** PWS **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:

INITIAL

TAG

FOSC

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 _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

TRAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 3 SEGMENT Kw 14 SUBDIVISION A DATE 5/4/91

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 dune left.

LANDMANAGER

NAME Solo Schem OF Chugach SIGNATURE [Signature]

☐ NTR

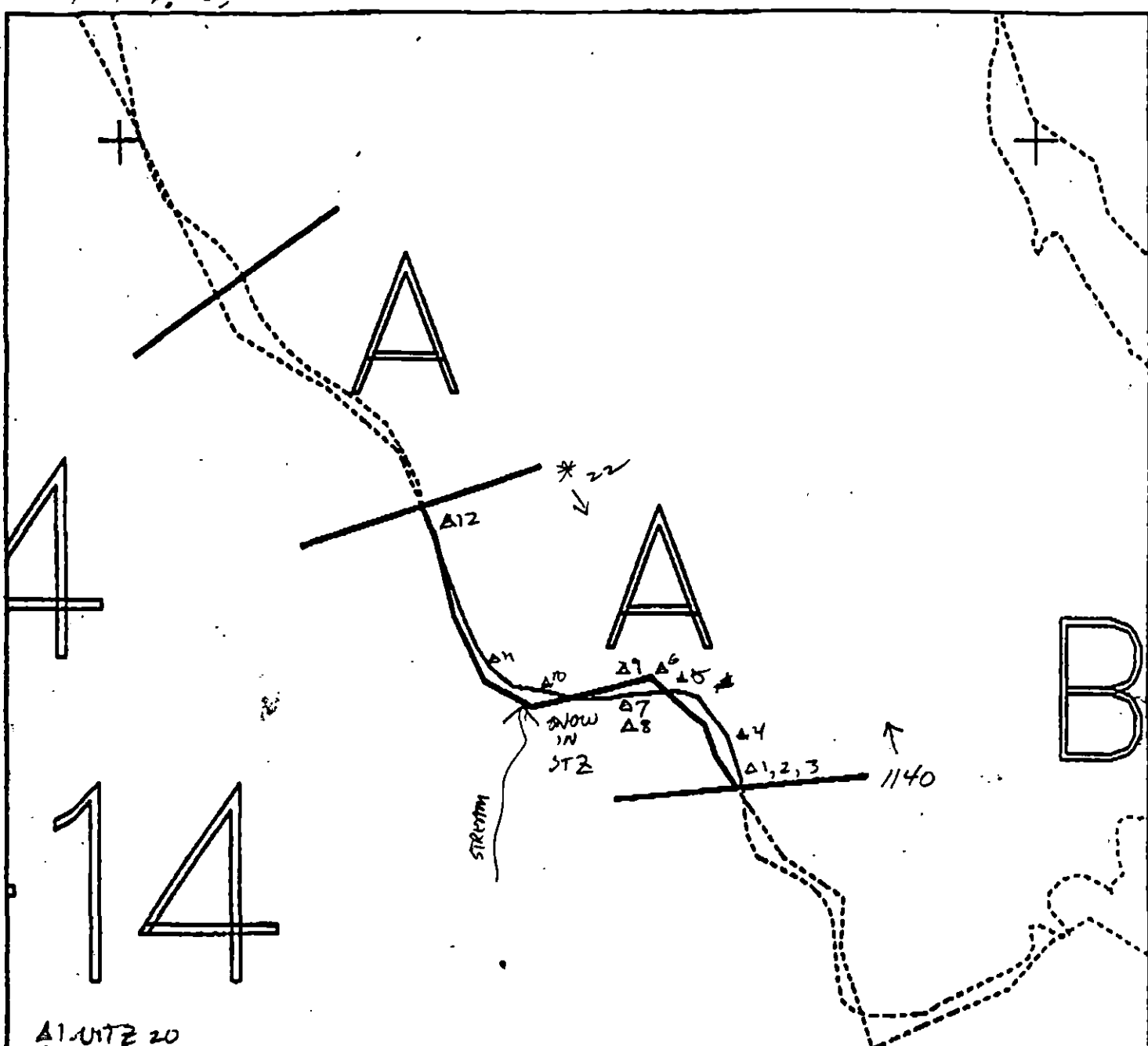
AK COY
one two party notes

USCG/NOAA

NAME MOONEY / BEATS SIGNATURE Ving Mooney

☒ NTR Segment comprises of Gravel, Pebble, and Sand. NO SURFACE OR SUBSURFACE OIL FOUND.

06 1 of 3



A1 UITE 20
 P/S6 N.O.
 A2 MIT 20
 P/S6 N.O.
 A3 LITE 20
 P/S6
 LIVE CLAM
 A4 UITE
 P/S6 N.O.
 A5 LITE
 P/S6 N.O.
 A6 UITE NO 30
 P/S6
 AOSTE P N.O 30
 A9 LITE P/S6 20
 N.O.
 A10 UITE G/G N.O.
 A11 UITE 20
 G/G N.O.
 A12 MIT 20
 P/S6 N.O.

XXXX	Wide	KN0014-A ADEC Subsegment Length: 328m METERS 0 100 200 AS State Plane Zone 4 14N00140	Subdivision Field Map Map Key: KNIK0014A Name: <u>HARPER</u> Date: <u>4 May 91</u> Date Entered:
////	Medium		
----	Narrow		
TTTT	Very Light		
0000	No Oil		

OG 2 of 3
 REVIEWED: 5/9/91 MC ES reviewed, Man 3

NAVSAP 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
 PHOTOGRAPHS: ROLL # FRAME #

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

Fairly sheltered, low energy beach of rubble/cobble/boulder/bedrock, transected by a small stream.
 Bioten in the mid to lower intertidal appears healthy and relatively abundant, consisting primarily of patchy ~~and~~ moderately dense new-growth *Fucus*, dense patches of barnacles and *Spart*, dense patches of small *Littorina*, adult *Littorina* with egg masses, dense patches of attached *Mytilus* and extensive dense interbedded *Mytilus*, sparse to moderate densities of limpets, clusters of small *Leptasterias*, and *Protothaca staminea* (clams).
 No oil observed on this segment

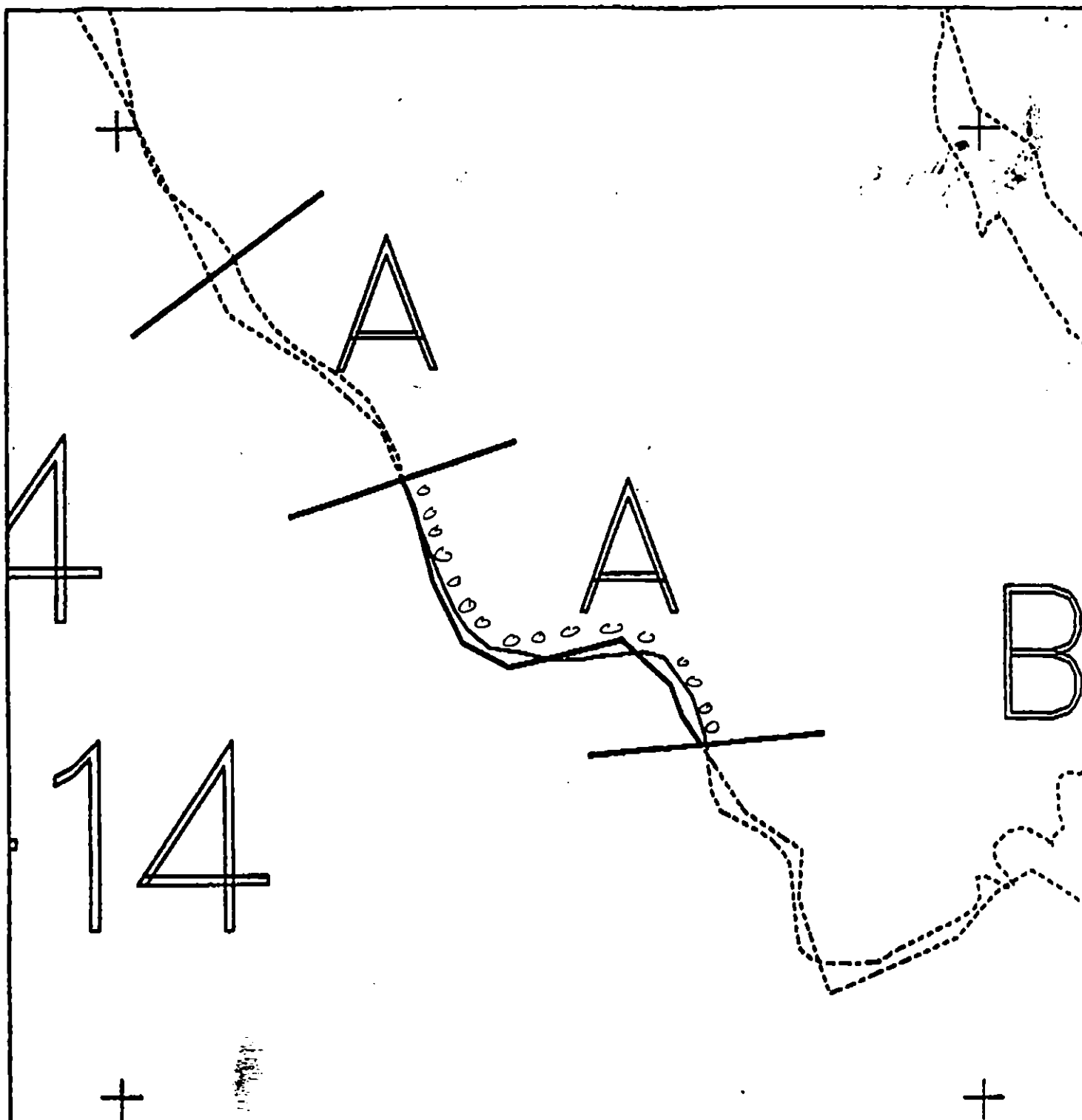
WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	3	
Seabirds			
Waterfowl	Mergansers	7	
Gulls/Kittiwakes	Glaucous-winged	10	
Shorebirds			
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1		
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.



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

KN0014 A
 ADEC Subsegment Length: 328m
 METERS

0 100 200
 AK State Plane Zone 4
 KN0014a

Subdivision Field Map
 Map Key: KNKN0014A
 Name: HARPER
 Date: 7 MAY 91
 Data Entered:



SURFACE OILING SUMMARY MAP

OG 3013

Reviewed: 5/9/91 MC ES reviewed, May 8

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 Snares (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 _____

FOSC: _____ DATE: _____

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 unopened 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 (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 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 4/6/90USCG BM3
NAME David A. Sylvester SIGNATURE David A. Sylvester☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

Oil still in thick bands in the sub surface 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 tar. Bioremediation would be a good choice in this section. Something should be done for the sub surface 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 coverage on beach faces) 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 btwn pts 3 + 4(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 or skimmers (get the mobile oil up), bioremediate after flushing.
Rock Faces: scrape tars over 2mm thick, extend treatment to 1mm thickness if techniques developed (remove dried surface, underside is softer). Remove heavily oiled logs - burn these when they dry awhile.

SHORELINE OILING SUMMARY

REVISION NO. 03/23/90

OG Greg Chaney USCG Dave Sylvester SEGMENT ST/ KN-114
 BIO Jim Roth LAND REP Steve Phillips (PS) SUBDIVISION NAF A (1051)
 EXXON Ray Sotelo ADEC Mike Cunningham TIME 15:15 to 18:10
 TEAM NO.: 7 TIDE LEVEL: 5.05 to 10.45 DATE April 16 1990
 EST. SUBDIVISION LENGTH: 9.88 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock SNOW
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: North to South
 SURFACE SEDIMENTS: RG0 % B 20 % C 10 % P 5 % G 5 % S 0 % M 0 % V 0 %
 SLOPE: Lang 40 % Hang 30 % Vert 30 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 90 m M 305 m N 463 m VL 40 m NO 20 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	B	P	A	SP	OR	OL	OP	NO	BU	U	M	U	U	U	U
ASPHALT																
PAVEMENT																
POOLED																
COVER	X												X			
COAT	X	0	✓	□									X	X	X	X
STAIN	X	✓											X	X	X	X
MOUSSE																
PATTIES																
TARBALLS																
FILM		X				X	X									X
NO OIL																

PAVEMENT: H F S 0 sq. m by 0 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? NO BR (RW) (SL) TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs		X	
Vegetation			
Trash			
Debris	X		

DEBRIS COLLECTED
☒ YES ☐ NOTYPE Yellow ROPE#BAGS 1 /

Photographs:

Roll No. ST-7-2Frames 12, 13, 14, 15, 16, 17, 18

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm-cm)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	VO	SP	OR	OL	OP	NO	BU	U	M	U	U	U	U		
1	15				X		0-15	X		X								X					BPG
2	15		X				0-2	X		X								X					BPG
		X					2-10	X		X								X					" Mobile Oil
						X	10-15	X										X					"
3	30		X				0-5	X		X								X					CPG
						X	5-30	X										X					CPG

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 2)

REVISION 03/22/90

SEGMENT ST/ KN-114 SUBDIVISION NONE

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR	PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC		SU	U	M	U		
4	15				X		0.5		X	X					X	BCG
						X	5.15		X						X	BCG
5	25					X	0.15	X							X	PG
					X		15.25		X	X					X	PG
6	25	X					0.25		X	X					X	PG
7	25				X		0.25		X					X		BPG
8	30				X		0.30		X					X		BPG
9	25				X		0.5	X						X		BPG
					X		5.25		X	X	X			X		BPG
10	40	X					0.15		X		X	X				CPG
					X		15.40		X							CPG
11	30				X		0.5	X						X		CG
		X					5.15		X	X				X		CG
12	25				X		0.25							X		BG

COMMENTS #9 Pit has brown droplets of oil in water in pit. Very little oil could be seen in sediments, ^{it was} impossible to dig deeper due to large boulders.

REVIEWED WDATE 4/10/90

06 Greg January
 SEGMENT ST/ KN-114

SUBMISSION None

DATE April 16 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Sample Study
- ☐ On DML
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HML/LWL
- ☐ SSI
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pk Location(s)
- ☐ Photo Location(s)

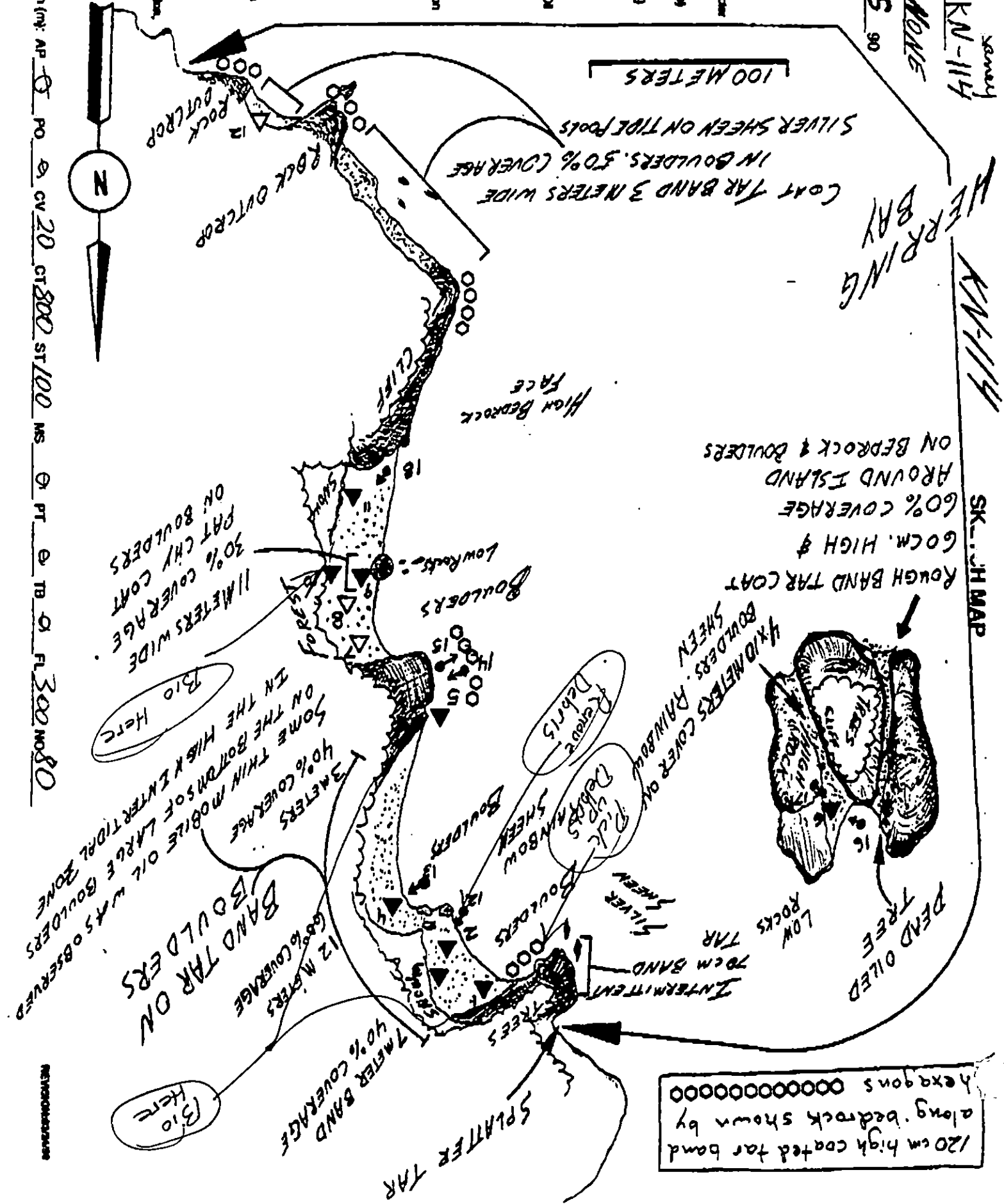
LEGEND

- 1 Δ Pk - No Subsurface Oil
- 2 Δ Pk - Subsurface Oil
- CT/C Coarsest Distribution
- CT/B Broken Distribution
- CT/P Patchy Distribution
- CT/S Splashed Distribution
- Dead Vegetation
- Photo location, elevation, and number

KN-114

SKETCH MAP

HERRING BAY



Character Length (m): AP 0 PO 0 CV 20 CT 800 ST 100 MS 0 PT 0 TB 0 FL 300 MOD 80

REVISIONS

SHORELINE ECOLOGICAL SUMMARY

REVISION: 08/22/90

Segment ST / KN114 Subdivision Date (mo / day / yr) APR 6, 90
 Time (24 hr) APR 1310 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): Dense 30 Moderate 50 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 (O)

Photographs:
 Roll No. ST-7-2

Frames 12-18

BARNACLES

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	X	2	X	2	X	2	2	2	2	2	2	
3	X	3	X	3	X	X	3	3	3	3	X	
4	4	4	4	4	4	4	X	4	4	4	X	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

MYTILUS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	X	2	2	2	2	X	2	2	2	2	2	
3	X	3	3	3	3	X	3	3	X	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

GASTROPODS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	X	2	2	2	2	2	
3	3	3	3	3	3	X	3	3	3	3	3	
4	4	4	4	4	4	X	4	4	X	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

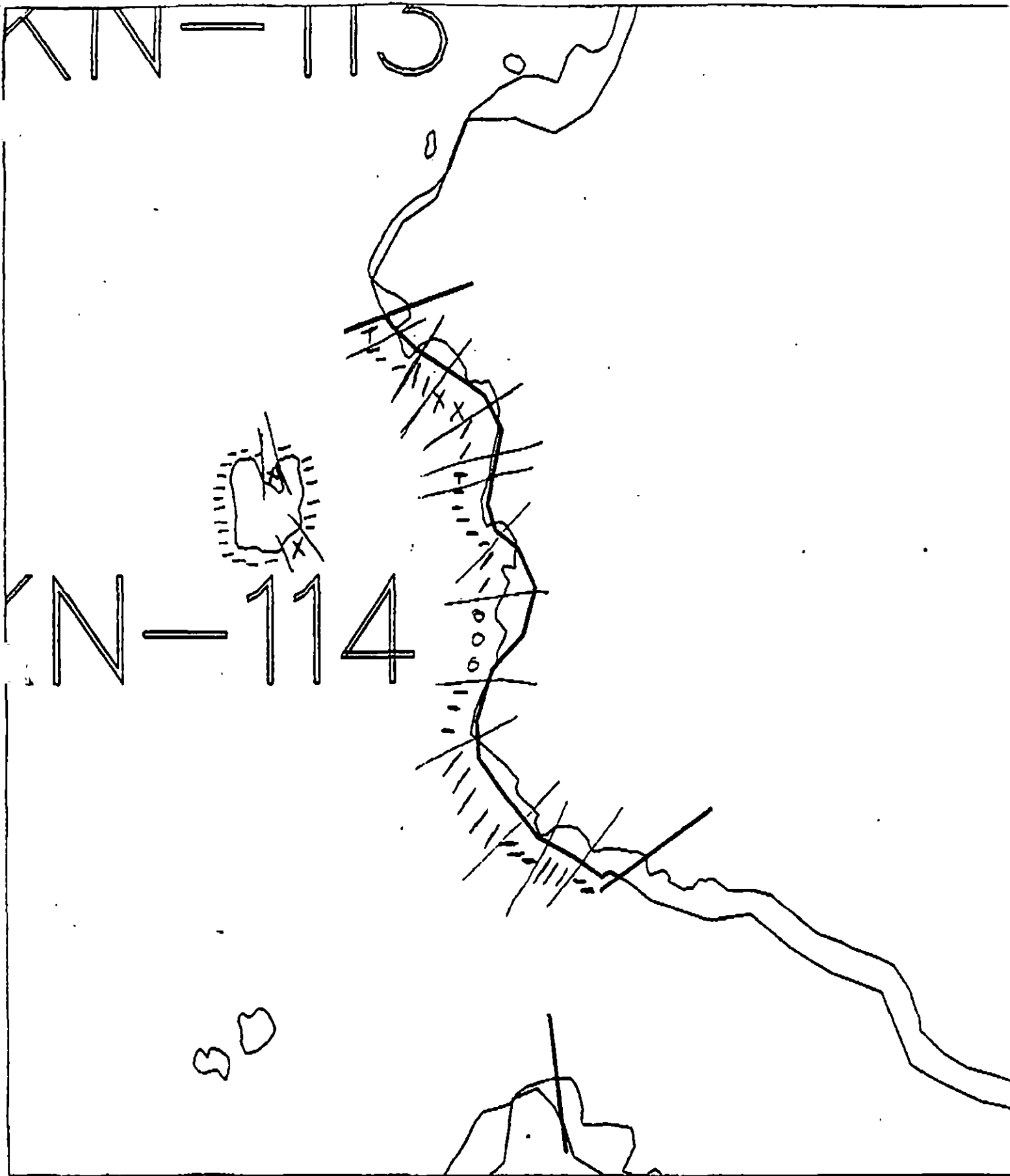
Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	X	2	2	2	2	2	
3	3	3	3	3	3	X	3	3	3	3	3	
4	4	4	4	4	4	X	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments: A RICH AND VARIED INTERTIDAL FAUNA DESPITE CONSIDERABLE OIL. IN MITE COBBLE: NUMEROUS 1" ANNELED WORMS (OLIGOCHAETES?) UNDER ROCKS; LOTS OF NOTACMEA SCUTUM; LITTORINA SITKANA WITH EGGMASSSES; ABUNDANT HERMIT CRABS IN LITTORINA SHELLS; IDOTEA SP. IN LITZ TIDEPOLLS: GOBIES; SLENNY CELS; IDOTEA:

Ecological Considerations: GNORHOMOPOMA; HERMIT CRABS VERY ABUNDANT; LIMBETS; BRACHIOPOD.

GY- SPECIAL USE DESIGNATION

EELGRASS (ZOSTERA), AGARUM IN LITZ COBBLE UNDERWATER. Pycnopodia in LITZ.



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

KN-114

ADEC Segment Length: 846m
Exxon Segment Length 988

Map Key: PWS-295

Name: Greg ChaneyDate: April 6 1990

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT KN-114 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup	CLOSED
Bioremediation	CLOSED

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.

FOSC

Date

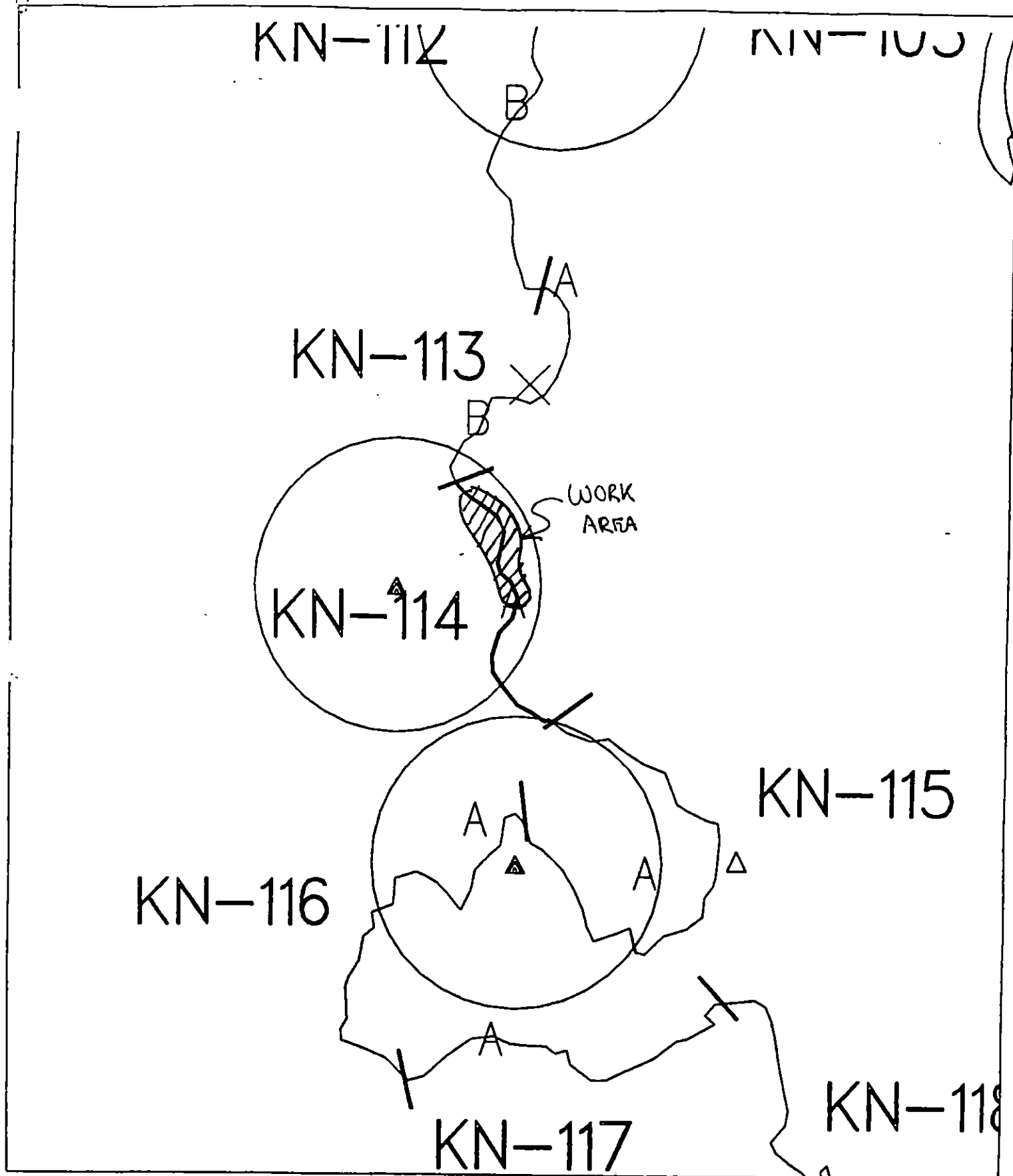
6-10-90

Prepared by

J.P. Phillips ⁶⁻¹⁰⁻⁹⁰ *mm*

Date

6/10/90



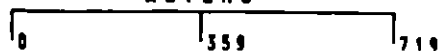
Exxon Company, USA

Map Key: PMS-KN-114

June 09, 1990



ECOLOGY MAP
SEGMENT KN-114
SUBDIVISION A (1 of 1)
METERS



- ★ Seabird Colony
- ▲ Active Eagle Nest
- △ Inactive Eagle Nest

1 inch = 1170 feet

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: *Charles H. Hume*

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:

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

SEE ADDENDUM DATE 4/6/90, R

TAG COMMENTS:

MONITORS TO ASSESS STORM BERM 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: 4/23/90

ADEC ART WERNER

EXXON AMSTER

NOAA JOSEPH TALBOT

USCG M. J. HALL

FOSC: W L

DATE: 5-3-90

NFS comments noted.

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: *Charles H. Hume*

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:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u>X</u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> </u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> 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 SEASON BEGINS TO DETERMINE THE NEED FOR EXTENSION OF TREATMENT TO THIS AREA.

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

TAG APPROVAL DATE: 4/23/90

ADEC ART WERNER

EXXON AMSTER

NOAA Joseph Talbot

USCG M. J. HALL

FOSC:

DATE: 5-3-90

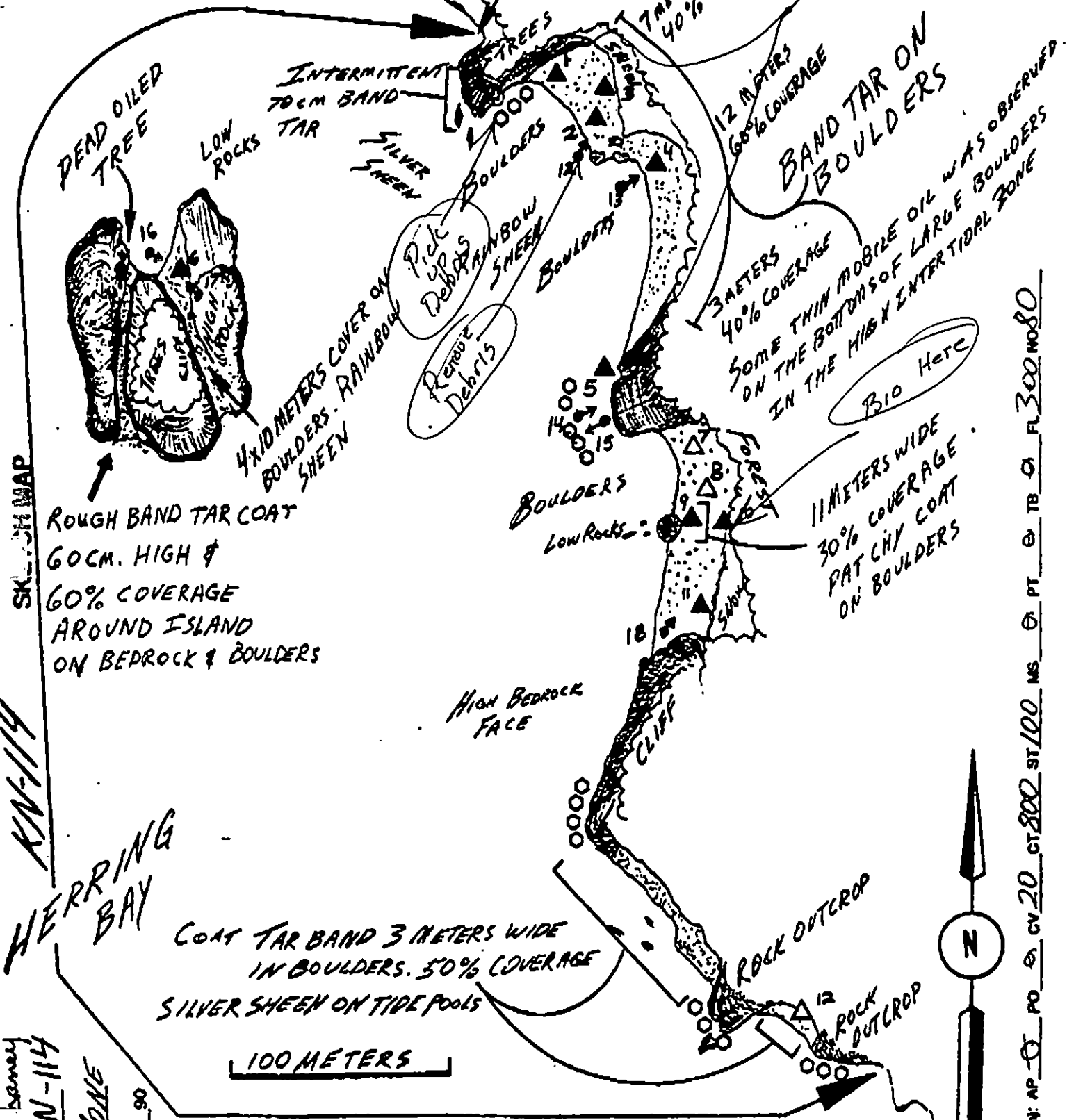
NFS Comments noted.

Greganey
KN-114

KN-114

SKETCH MAP

120 cm high coated tar band
along bedrock shown by
hexagons



SUBMISSION NONE

DATE April 16 90

- CHECKLIST
- ☐ N Arrow
 - ☐ Approx. Scale
 - ☐ Seg/Sub Entry
 - ☐ Oil Dist.
 - ☐ Width
 - ☐ Length
 - ☐ % Cover
 - ☐ Substrate Character
 - ☐ Est. HML/LHL
 - ☐ SSL
 - ☐ Profile Location(s)
 - ☐ Profile(s)
 - ☐ Pic Location(s)
 - ☐ Photo Location(s)

LEGEND

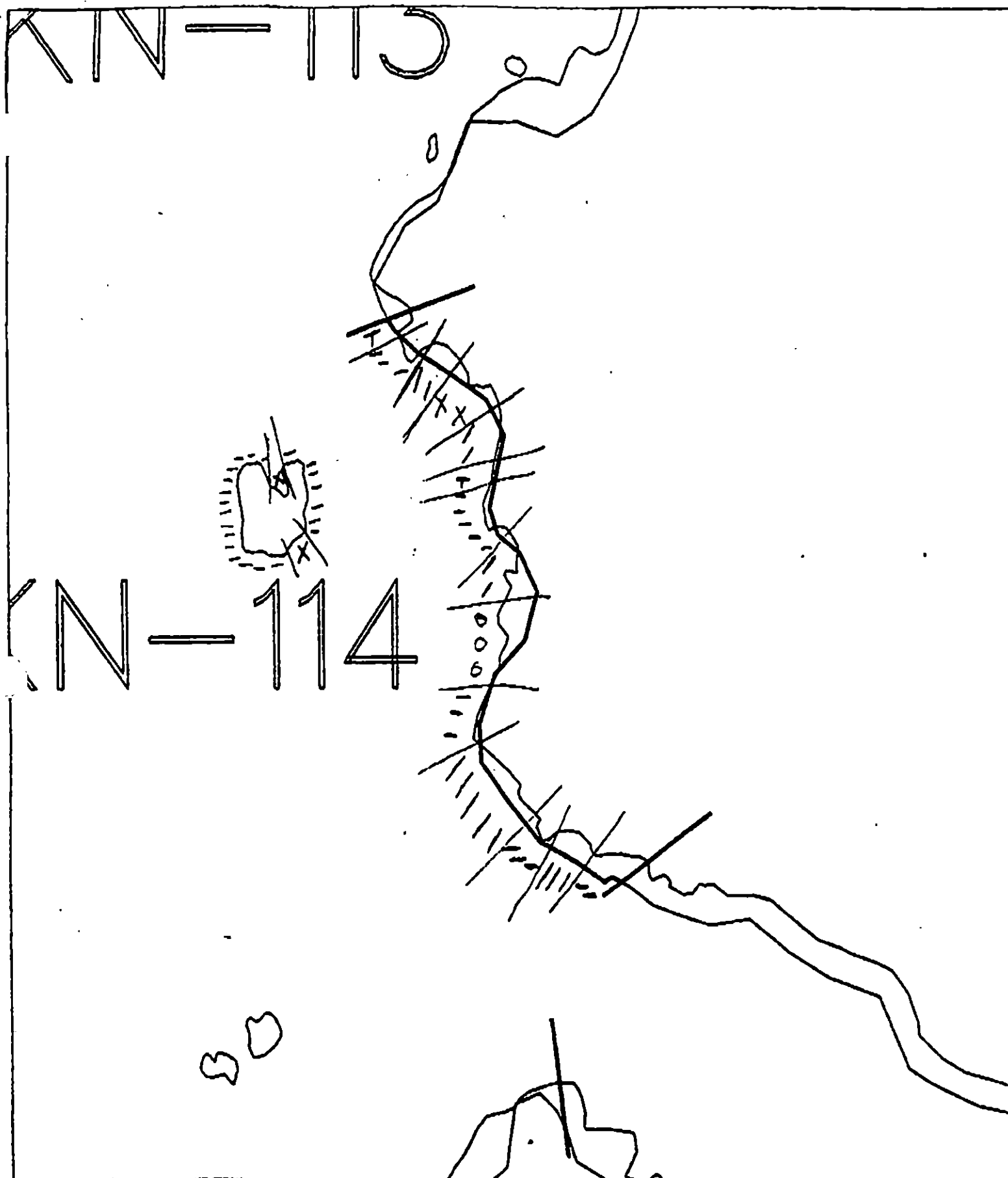
- 1 Δ PH - No Subsurface Oil
- 2 Δ PH - Subsurface Oil
- CT/C Continuous Distribution
- CT/B Broken Distribution
- CT/P Patchy Distribution
- CT/S Spotted Distribution
- Clad Vegetation
- 1 $\oplus$ Photo location, direction, and number



If Character Length (m): AP $\oplus$ PO $\oplus$ CV 20 CT 800 ST 100 MS $\oplus$ PT $\oplus$ TB $\oplus$ FL 300 NO 80

KN-115

KN-114



XXXX Wide

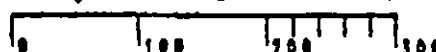
//// Medium

--- Narrow

TTTT Very Light

KN-114

ADEC Segment Length: 846m
Exxon Segment Length: 988



Map Key: PWS-295

Name: Greg Cheney

Date: April 6 1990

SEGMENT: KN 015 SUB: A REGION: PWS SURVEY DATE: 6/13/91ENVIRONMENTAL SENSITIVITIES:Work Window(s) RESTRICTED 3/1 - 9/1Ecological/Constraints (see page two for details) Eagle nestARCHAEOLOGICAL 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)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

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. USF&WS
authorization required. Maintain 1000' vertical and 1/4 mile
horizontal buffer.

EXXON COMPANY, U.S.A.
ALASKA OPERATIONS

M E M O R A N D U M

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).

CENTRAL FILE
OFFICIAL COPY

ADDENDUM

TEAM NO. 00 SEGMENT KN015 SUBDIVISION A DATE 13 Jun/91

ADEC

NAME Marianne Profita SIGNATURE Marianne Profita

- ☐ NTR Mousse in Pebble. cobble, small boulder in the UITE. Mousse 0-3cm. thick on undersides and around boulder. Very easy access. Roll small boulders-Remove Mousse OP/SOR - use sorbent pads to wipe boulders. Area H. Partial AP/SOR removal. This area should be worked again - After crew headed down shore, boulders/cobble 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 AREAS, RECOVERED MATERIAL CONTAINED A LARGE PERCENTAGE OF SEDIMENT. ANY ADDITIONAL TREATMENT WOULD RECOVER VERY LITTLE OIL BUT 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 RECOMMEND NO ADDITIONAL WORK.

LANDMANAGER

NAME _____ OF _____ SIGNATURE _____

- ☐ NTR LANDMANAGER NOT PRESENT.

ADEC COMMENTS continued: This area has been discussed at TAG meeting 6/13/91.

USCG/NOAA

NAME CWO R SPURA SIGNATURE R. Spura

- ☐ NTR Manual pickup of remaining AP/SOR indicated on OS maps area I is recommended. This area is easily accessible for workers.

PAGE 1 OF 1

SEGMENT KNØ15

SUBDIVISION A

DATE June / 13 / 91

ENERGY LEVEL: ☐ H ☐ M ☒ L

WEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☐ RAIN ☐ SNOW

NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

* ABOVE VALUES DO NOT INCLUDE 12 & 17-MAY-91 SURVEYS

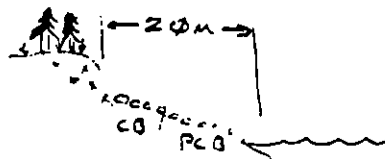
DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

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

PHOTO ROLL # MAYSAP- 00 - 03 FRAMES* 2-5

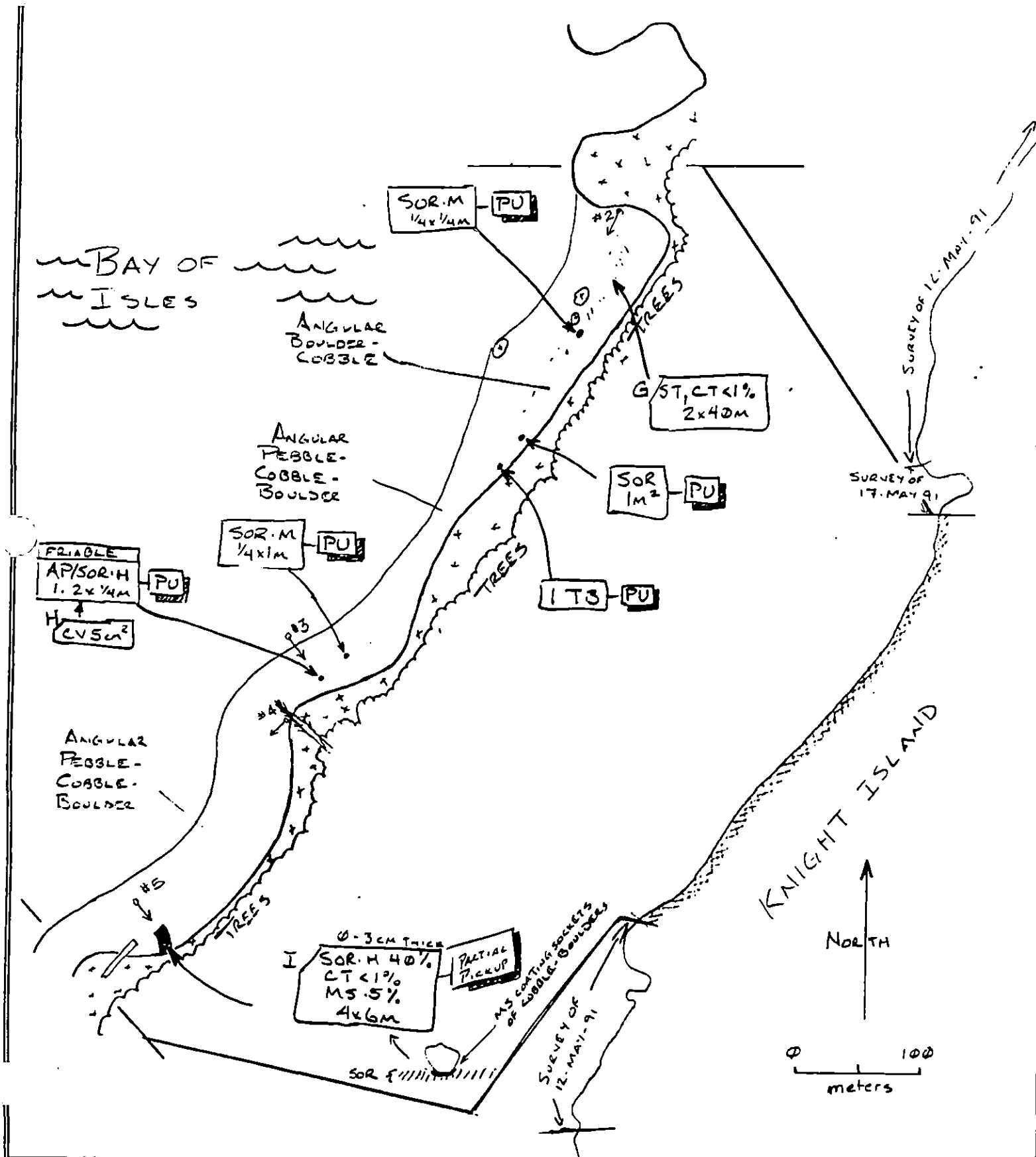
SHEEN COLOR: B = BROWN: R = RAINBOW: S = SILVER: N = NONE

• 20m wide high angled beach with angular sediments,
• heavy sor under & between cobbles & boulders. Mousse found in sockets of cobbles & boulders sor is typically 3cm thick



REVIEWED CG 18 JUN

KNØ15-A
ADDENDUM
OG SKETCH MAP
13-JUN-91
0655-0756
BRYAN TRIMM



REVISED 10 JUN

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 06 DATE 6/13/91
 SEGMENT # KN 015 TIDAL HEIGHT (Range) -2.5 ~ -1.5'
 SUBDIVISION A BIOLOGIST D. McCORMICK
 LA STATE 0.0' WIND SPEED/DIRECTION Calm
 PHOTOGRAPHS: ROLL # — FRAME # —

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

Oiling area (G) (Stems coast) This steep-angled reach has an abundance of surface microfauna high into the LITZ, including barnacles, littorine snails, limpets, mussels, & *Fucus*. The oiling conditions are light; no oil-impacted benthos was observed at G or downslope to the Lower ITZ. Heavy recruitment by all of the indicator species is evident at all excavations on this beach.

Area (H) Same abundant recruitment observed here as in "G" above. New settlement observed on undersides of boulders & cobbles also; juvenile star fish (*Leptasterias*) were common in the LITZ; egg cases of the carnivorous snail *Nucella* were seen on undersides as well. Amphipods & scud were fairly common here. Lower ITZ had a diatom mat/blue green algal cover over much of the substrate. Overall surface benthos cover was nearly 100% in the LITZ 30-50% cover in the M-LITZ. Clam shells littered the LITZ throughout the subdivision including butter (*Sax. domus*) and little neck (*Patella*) clams.

(I) HSOP CT + MS - oil in finer substrate, not impacting the barnacles, snails & limpets that occur primarily on the larger cobbles & boulders, and is definitely not impacting the benthos downslope where a diverse and dense algal & faunal community occurs. Algal spp. include *Laminaria*, *Costaria*, *Ulva*, *Balanus*, *Siphonophora*, encrusting periwinkle. Subtidally, eelgrass beds were seen throughout the subdivision; herring were seen in the nearshore area, as well as 2 species of sea stars, (*Derasterias imbricata* & *Pycnopoda helianthoides*) which were common.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	3	Herring
Seabirds	—	—	oil blennies
Waterfowl	—	—	
Gulls/Kittiwakes	—	—	
Shorebirds	—	—	
Corvids	—	—	
Other Birds	—	—	

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	/	/	
Pinnipeds (specify)	/	/	
Es (specify)	/	/	

Shoreline subdivision map showing important biological features attached.

Reviewed MB 6/17/91

BIO MAP
D. McCORMICK
6/13/91

KN015-A
ADDENDUM
SKETCH MAP
13-JUN-91
0655-0758

Long Mare

Jellyfish (*Cyanea capillata*) abundant in the Bay

BAY OF
ISLES

ANGULAR
BOULDER-
COBBLE

ANGULAR
PEBBLE-
COBBLE-
BOULDER

Herring in
the nearest
eelgrass beds

Dense +
diverse algal cover
throughout subdivision
in LITZ

ANGULAR
PEBBLE-
COBBLE-
BOULDER

Sea stars
(*Dernasteris* +
Ptenopoda) common
in the subtidal

barnacles (spat + adults)
Extend to the UITZ; strong
recruitment of mussels, littorines
and limpets - most abundant in the
mid-to-lower UITZ but common
in the UITZ adjacent to ST + CT 17 MAY 91
Black lichen extensive throughout
entire subdivision in UITZ
No obviously oil-impacted biota at G

Saxidomus (butter clams) + *Prototheca* (little-
neck clams) shells litter most of the
LITZ

Same conditions as G above for UITZ biota
mid-to-lower zones have moderate to dense
cover of surface macrofauna. Beneath
cobble + boulders: sea urchins, brooding
starfish (also many juveniles), amphipods, *Nereis*
Nereis egg cases. Blue-green algae + diatom
mats cover large areas of LITZ.

Area of heaviest oiling. Bio in immediate
vicinity of oil include sparse littorines,
limpets and barnacles but most of these
were on the tops of larger cobbles and
boulders rather than within the
oil smaller sediments.
Oligochaete worms within or in
close proximity to oil here.

SURVEY OF 12-MAY-91

KNIGHT ISLAND

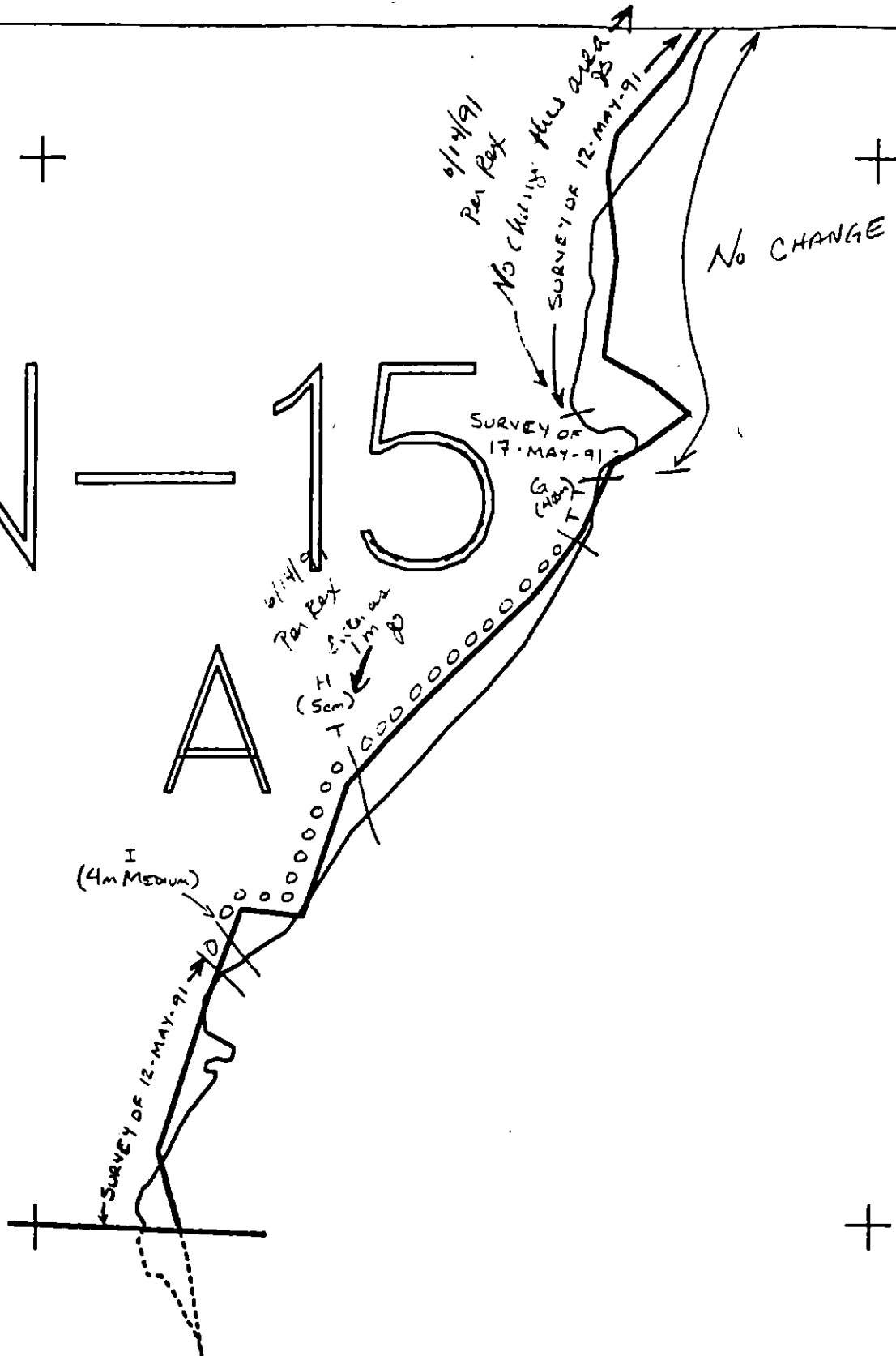
NORTH

0 100
meters

Reviewed MB 6/17/91

N-15

A



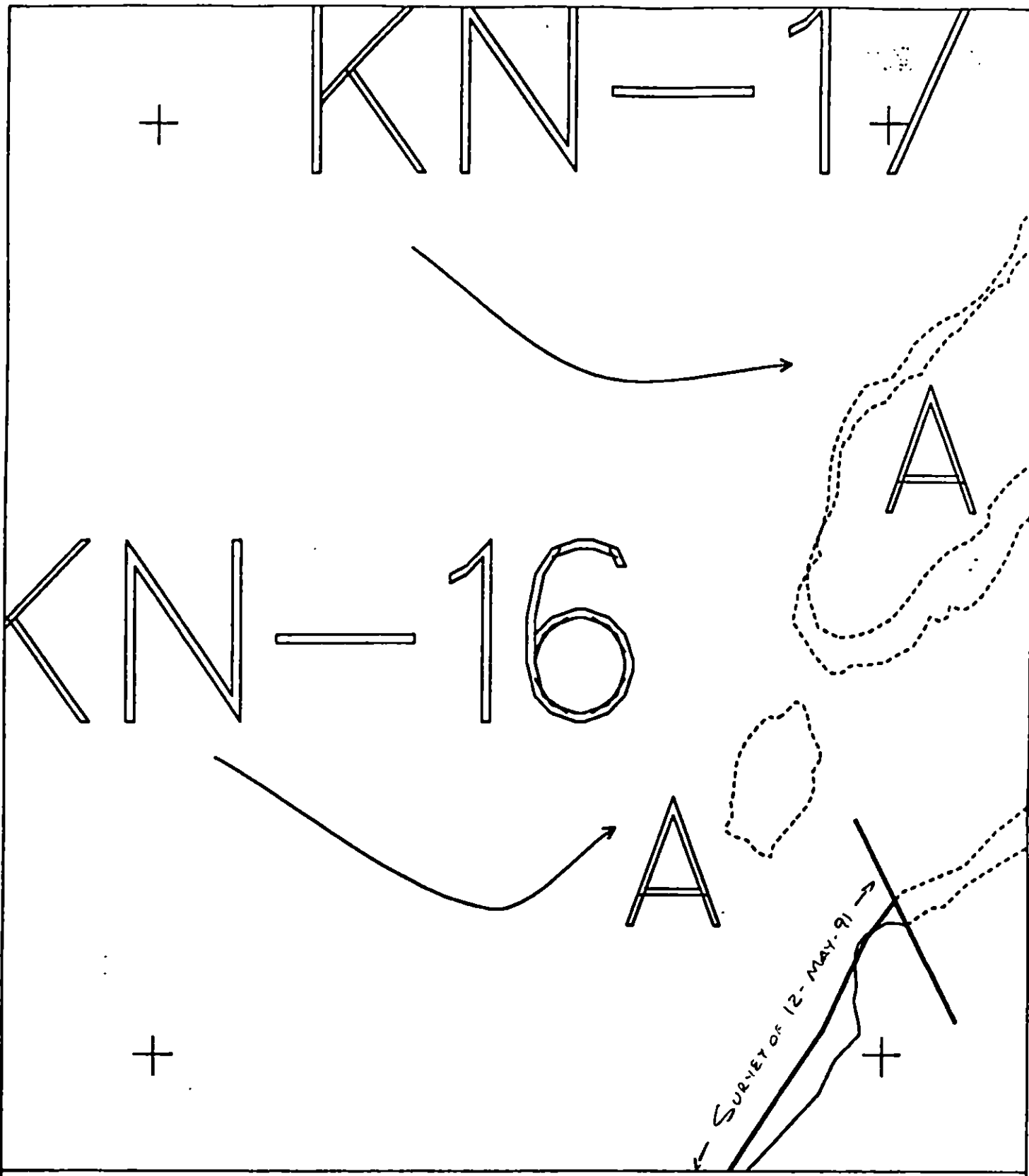
XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

KN0015 A
 ADEC Subsegment Length: 1180m
 METERS
 0 100 200
 AK State Plane Zone 4
 kn0015a



Subdivision Field Map
 Map Key: KNKN0015Aa
 Name: TRIMM
 ADDENDUM TO 12 & 17-MAY-91
 Date: 13-JUN-91
 Date Entered:

SURFACE OIL CATEGORY MAP



XXXX	Wide	KN0015 A ADEC Subsegment Length: 1180m METERS AK State Plane Zone 4 kn0015ab	 	Subdivision Field Map
////	Medium			Map Key: KNKN0015Ab
----	Narrow			Name: <u>TRIMM</u>
TTTT	Very Light			ADDENDUM TO 12 & 17 MAY-91
0000	No Oil			Date: <u>13 JUN-91</u>
				Date Entered:

SURFACE OIL CATEGORY MAP

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: Timothy P. Smith Date: 6/03/91

RECOMMENDATIONS:

	<u>INITIAL</u>	<u>TAG</u>	<u>FOSC</u>
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>N</u>	<u>N</u>
Manual Pickup (Check as Req.)	<u> </u>	<u> </u>	<u> </u>
Spot Washing	<u> </u>	<u> </u>	<u> </u>
Bio-Customblen Only	<u> </u>	<u> </u>	<u> </u>
Bio-Inipol/Customblen	<u> </u>	<u> </u>	<u> </u>
Other <u> </u>	<u> </u>	<u> </u>	<u> </u>
Other <u> </u>	<u> </u>	<u> </u>	<u> </u>

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 31 1991

FOSC APPROVAL DATE: 6/8/91

ADEC

FOSC

EXXON

E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC

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 GINALIASSIGNATURE [Signature]

☒ NTR IT IS WITH RELUCTANCE THAT I RECOMMEND NO TREATMENT FOR THIS SEGMENT, AS SUBSURFACE OIL IS PRESENT THROUGHOUT THIS COVE, ^{WITH} SOME AREAS CONTAINING CONCENTRATED AMOUNTS (NOTABLY ON MAP SITES "E & D"). THE SUBSURFACE LENS ~~IS~~ RUN FROM HOR TO LOR ACROSS THE SUITE TO LITZ, EASILY EXPOSED AT 5-10 CM AND RUNNING 10-15 CM DEEP FOR MOST PART. BEACHES ARE COBBLE/Boulder AND MORPHOLOGY ~~AND~~ OF BEACH AND DIMENSIONS OF LENS MAKES MANUAL TREATMENT ~~UNREALISTIC~~ MECHANICAL NOT FEASIBLE AT SITE D, WHILE SITE E MAY BE POSSIBLE, BUT EXTREMELY DIFFICULT (BEDROCK UPRISES AT LITZ). AS BIO NOTES REFLECT, BEACHES IN EARLY SUCCESSION STAGES, THUS AGGRESSIVE TREATMENT WILL NOT SERIOUSLY IMPAIR BEACH LIFE CYCLE AT A LOSS FOR FURTHER SUGGESTIONS.

EXXON OIL RELATIVELY STABLE, ALTHOUGH STEADY FRESH H₂O WASH. AS TEMPERATURE WARMS, OIL MAY BECOME MOBILE.NAME RANDALL K. BYERSIGNATURE [Signature]

☒ NTR Oiled vegetation was identified in the upper tide zone in the middle of the subdivision. The VECO Survey crew spent sometime collecting the material and completed the pickup. Coatings on bordering vertical rock faces of Pockets 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 subdivision.

LANDMANAGER

NAME MARSHA HALL OF DNRSIGNATURE [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 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 TAG. The low energy sites NEED the assistance of agitation for further cleansing.

USCG/NOAA

NAME SCHULTZ / CHILDSSIGNATURE [Signature]

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

STEEP ROCKY EMBAYMENT WITH POCKETS OF Boulders, COBBLE, PEBBLES. MAJOR PART OF OIL SITUATION IN THE INTERIOR MOST PART ("C, D & E") SURFACE ACCUMULATIONS AS 1-50-10-50 CM SUBSURFACE AS MUCH AS 20 CM DEEP FAIRLY CONTAINED IN THE UPLAND FLANKS OF THE EMBAYMENT (A-B & F-H) CONTAINS MAINLY CT & ST OILS ALONG WITH ROCK FACES BUT STILL HAS SUBSURFACE LOR-MOC IN Pocket Beaches. NOTE: Eagle nest in TREE BETWEEN "E" & "F"

MAYSAP SHORELINE OILING SUMMARY

PAGE 1 OF 2

TEAM NO. 1

OG G. MACDONALD

BIO M. FAWCETT

SEGMENT KN-115

ADEC J. GINAWAS

LANDMANAGER M. HALL for DNR

SUBDIVISION A

EXXON R. BOYER

USCG/NOAA SCHULTZ/CHILDS

DATE 5/16/91

TIME 09:00 to 11:30

TIDE LEVEL -3.2 ft. to 0.0 ft.

ENERGY LEVEL: ☐ H ☐ M ☒ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO

WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 680m

NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W 1m M 10m N 1m VL 460m NO 210m US 939m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SO	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A										X	RL			75					
B							S				RBC	H	6	120		X	X		
C						S	S				RB	H	1	260	X				CDE combined CT
D						S	S				RB	H	1	50	X				within location C
E				P		S	S				BL	H	5	10	X	X			hi sol & 7cm thick
F									VG		BL	M	2	5	X				PV; trace seaward.
G							T				RB	H	2	40	X	X			
H						S	S				BL	H	10	20	X	X			under B.
I						S	S				BL	H	5	15	X	X			

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 - 23 24 ~ 27
- 24 1 FRAMES 1 ~ 11

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
A	1 25							X	-		3	N			X		PC-GC	
	2 35							X	-		5	N				X	CP-PB	
B									-									
	3 35				X				15-35	N	10	R,B			X		BC-GC	B globules
	4 20				X				-	N?	10	R,B			X		BC-GC	"
	5 30				X				-	N?	10	R,B			X		BC-GC	"
C									-									
	6 20				X				5-20	N	5	B			X		CP-PGC	
	7 25				X				5-20	N?	10	B			X		CP-PGC	

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

OG COMMENTS: Rocky core of well-flushed, coarse grained breccia. Surface oil as hi sol @ (E), in HIZ-SUTZ; plus CT, ST on R walls of massive boulders, and across beachface @ most beaches - often coated by algae. Oiled vegetation @ (F) was removed.

revised 5/21/91 JY Per Gm

PAGE 2 OF 2

SEGMENT KN - 115

SUBDIVISION A

DATE 5 / 16 / 81

Subsurface oil common ; typically MOR-LOL, across up. H1T2 to lower H1T2 ; well flushed, permeable substrates contain oil within a few centimeters of surface, and instant brown sheens were noted to depths of 36 cm, (with about 20 cm avg. depth ; yet not clean below).

Walking @ MITZ over B m G, often liberates sparse silver & rainbow shiners. Although other coarse-grain beaches in this segment were not surveyed, they likely hold similar subsurface oil.

[illegible]

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

REVIEWED: F.W. 5/21/91
 Reviewed 5.21.91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 16 May 91
 SEGMENT # KN 115 TIDAL HEIGHT (Range) -2.9 to -0.1 ft MLLW
 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 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 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

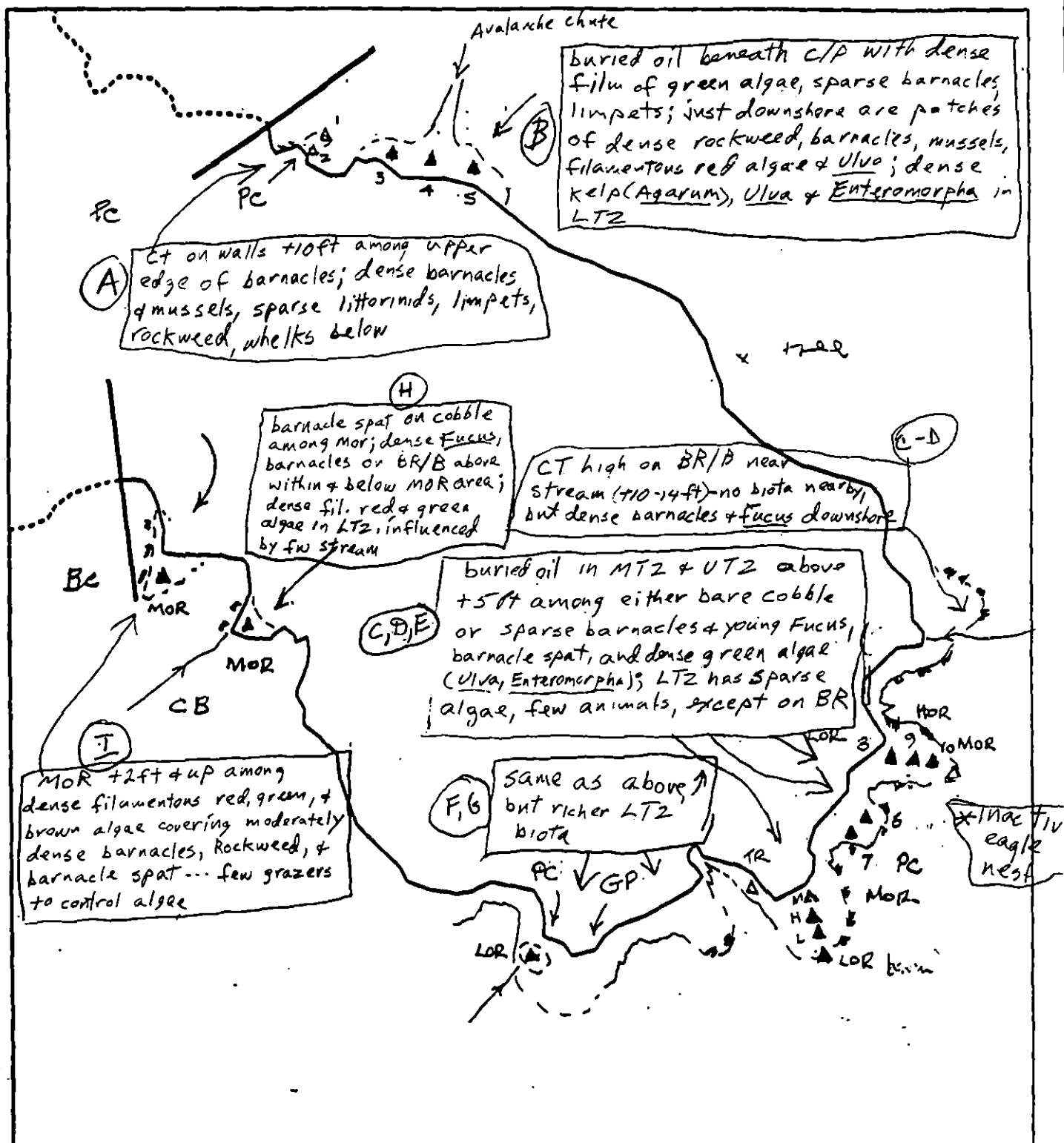
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			black prickleback
Seabirds	2 (Pigeon guillemot Whid. murrelet)	5	
Waterfowl	1 (harlequin duck)	2	
Gulls/kittiwakes	12 bl. leg. kittiwake Arctic tern	17	
Shorebirds			
Corvids	1 (Steller's jay)	2	
Other Birds			

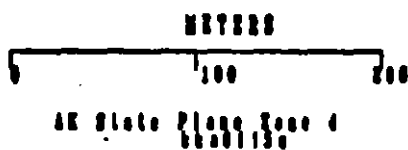
MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)	3 sea lions		
Isles (specify)			

Shoreline subdivision map showing important biological features attached.

5
 Reviewed M.B. 5/21/91



KN0115 A



Bio Sketch Map
KN115A, 16 May 91
M. H. Fawcett

KN 115A 5/16/91 Fayette I

Apr. 0900 North end

- CT on walls at 1st pocket
7-10 ft on barnacles, dense
barn, mussels, sparse limp Litt, Fucus
below - whelks

- beach 2

- 15 of Kittiwakes feeding in bay

3 sea lions

- B/c/p pocket

- dense Ulva, entero below 7

- dense kelp (Agardus) 1-10

L.T.2 - 2 ft

- patchy dense Fucus, barn,
mussels, filer, Ulva,
below buried at 7 ft

- C/P - buried oil can
C/P w/ dense film green algae, sparse
barnacles, limps - CT 17 SURZ -

No biota

- next site in front of

inactive engine

MOR + 8 ft - in bare cobble - no

biota except C/P - barn spat

on nearby 3 related boulders

L.T.2 w/ sparse mixed algae

degenerate fauna (CONT)

KN115 (cont) 16 May 91 Fairweather
 - mod. barn, Fucus, dense spart
 sparse mussels on BR eelies
 side of pocket - dense mats
 of Fil. reds on large boulders. MTZ
 2nd pocket (30 m S of ab. eagle
 nest) has CT & CV on lee side of
 BR way up + 10-14 ft
 - burned or in S/P/P nearly at
 + 5-6 ft among Ulva, Enteromorpha, Cladophora
 spat. sparse barn & patches yellow
 Fucus, sparse litt, limp -
 rel. sparse brya below in LTZ-MTZ
 - 2 gals - generally not sensitive
 - C.T. near stream on BR/B + 10-14 ft
 no brya, but dense barn, Fucus
 etc down for 8-10 m
 - Pocket south of nest - some
 description in B/C/P - RR at
 sides fairly dense. In MTZ-LTZ -
 Breeding Lamellor - Pycnopodia,
 Dermasterias, Evasterias - fil. reds,
 Cladophora, large Laminarian (Agardh)
 puffed up 1/4" broad. Krintly leaves.
 no mussels or ulva, 3' above, several
 st. 1000 per hold / mt 1030 hrs

5 ft between. This pocket & next
 one south has dense mature mussel
 bed + 4 ft - Riccia brya in
 LTZ-LTZ - no algae incl.
 Helosaccus, Constantinea, Callophyllis
 - west pocket C/P/g - some subsp.
 in stream runoff + 5-8 ft
 in sparse barn, breeding Litt,
 1 imp. dense Ulva, Enteromorpha,
 Urospora - C.T. brya on walls
 + 12 ft above 10 ft - barn, Fucus
 etc 2 m down

pocket on south side of bay
 P/C/g beach. Some boulders -
 near through - dense Enteromorpha
 & Ulva LTZ-Fil. reds -
 barn spat on cobbles among RR
 dense Fucus, barn etc on BR
 above & below RR
 1120 - 2 ferns
 - outside - pocket B/BP -
 dense redgreen, brown alga MTZ
 - heavy mats Fil. brown
 - MAR - sheer, MTZ + 20 ft up
 - mod. barn, spat, Fucus,
 but all covered by Fil. brown
 green stuff (cont)

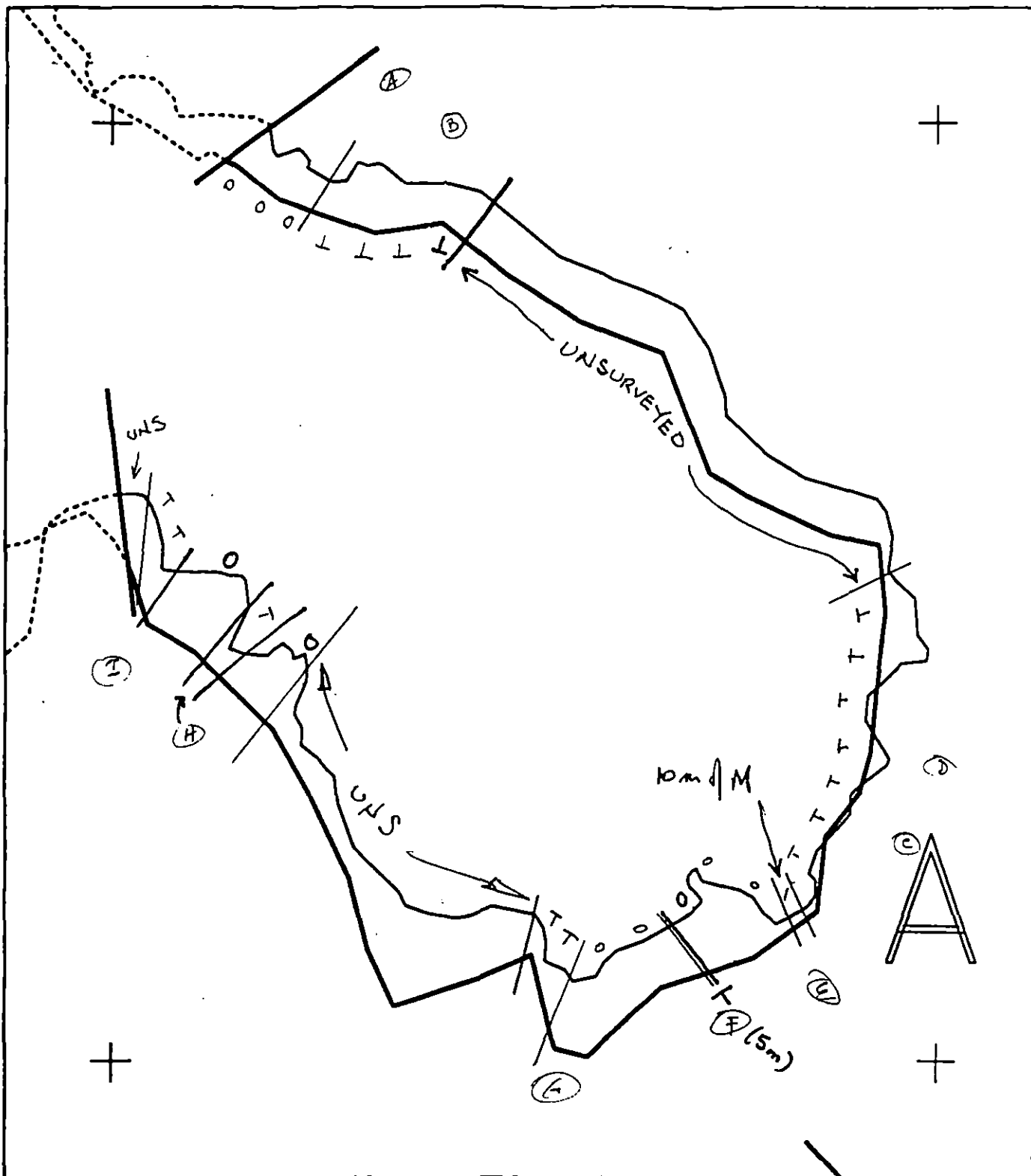
KN 115A (cont) 16 May Farrell

4 und. musklets

1 Pig. gullenot

2 Hg. legum

End 2130



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

KN0115 A
 ADEC Subsegment Length: 1010m
 METERS
 0 100 200
 AK State Plane Zone 4
 kn0115a



Subdivision Field Map
 Map Key: KN1KN0115A
 Name: G.M.
 Date: 5.16.91
 Data Entered:

revised 5.21.94
 REVIEWED: JFW. 5/21/94

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 1037m: 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
☒ 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 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 _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

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 unopened 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 (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 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-115 SUBDIVISION: None DATE 4/4/90

USCG

NAME

W. E. WHITE

SIGNATURE

William E. White☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Manual pick up - Removal of oil logs also
tilling and washing.

ADEC

NAME

Dianne Munson

SIGNATURE

Dianne Munson☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS strongly suggest further treatment. In pit #4, black mobil 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 hita. 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 Ne

LAND MANAGER

NAME

David Mandrella

SIGNATURE

David Mandrella☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Upper and mid tidal zones ^{in cover} have heavily impacted zones with different characters of surface and sub surface oil. Residuals exist in the vicinity of pits 1 and 4. Translucent sheens in tidal pools and pits. Recommended cleanup techniques include: Manual pickup of asphalt pavement patches. Placement of sorbent where sheens are forming, and to collect oil after mechanical and/or manual tilling and sea water flushing.

SHORELINE OILING SUMMARY

REVISION NO. 02/28/90

OG Sawyer USCG White SEGMENT ST/ KN115
 BIO Benson LAND REP Mandrella (PS) SUBDIVISION Area A (1041)
 EXON Natsimpalis ADEC Munson TIME 16:15 to 17:45
 AM NO.: 2 TIDE LEVEL: +1 to +2 DATE Apr. 14 / 1990
 EST. SUBDIVISION LENGTH: 1789 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 60 % B 15 % C 15 % P 10 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 40 % Hang 0 % Vert 60 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 270 m M 520 m N 999 m VL 0 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	B	P	S	SP	OR	OL	OP	NO	TL	UB	LM	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
ILM																
NO OIL																

PAVEMENT: H F (S) 15 sq. m by 8 cmPATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? NO BR (RW) SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☒ YES ☐ NOTYPE pom-pom/rope
#BAGS 1

Photographs:

Roll No. St-8-2Frames 10-13

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-GM)	BELOW	OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO			UO	UC	SP	OR	OL	OP	NO	TL	UB	SU	U	M		
1	20		/		✓		0-15		/	/	/	/	/	/		/	/			N	B, C	
2	20				/		5-10		/	/	/	/	/	/		/	/			N	P, G, wt	
3	30				/		- - -		/	/	/	/	/	/		/	/			N	C, P	
4	20		/		✓		0-15		/	/	✓	✓	/	/		/	/			N	B, C, wt	
							.															
							.															

COMMENTS st/KN115: Translucent sheen in tidal pool. Beaches small of crude oil. Oiled vegetation and logs along north side of cove. Both pits land 4 ^{have} residual oil, and sheens on water in pit.

OG Saw

SEGMENT ST/ KNIS

SUBDIVISION none

DATE Apr 14 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Body
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HML/LWL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pit Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ

Pit - No Subsurface Oil

2 Δ

Pit - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

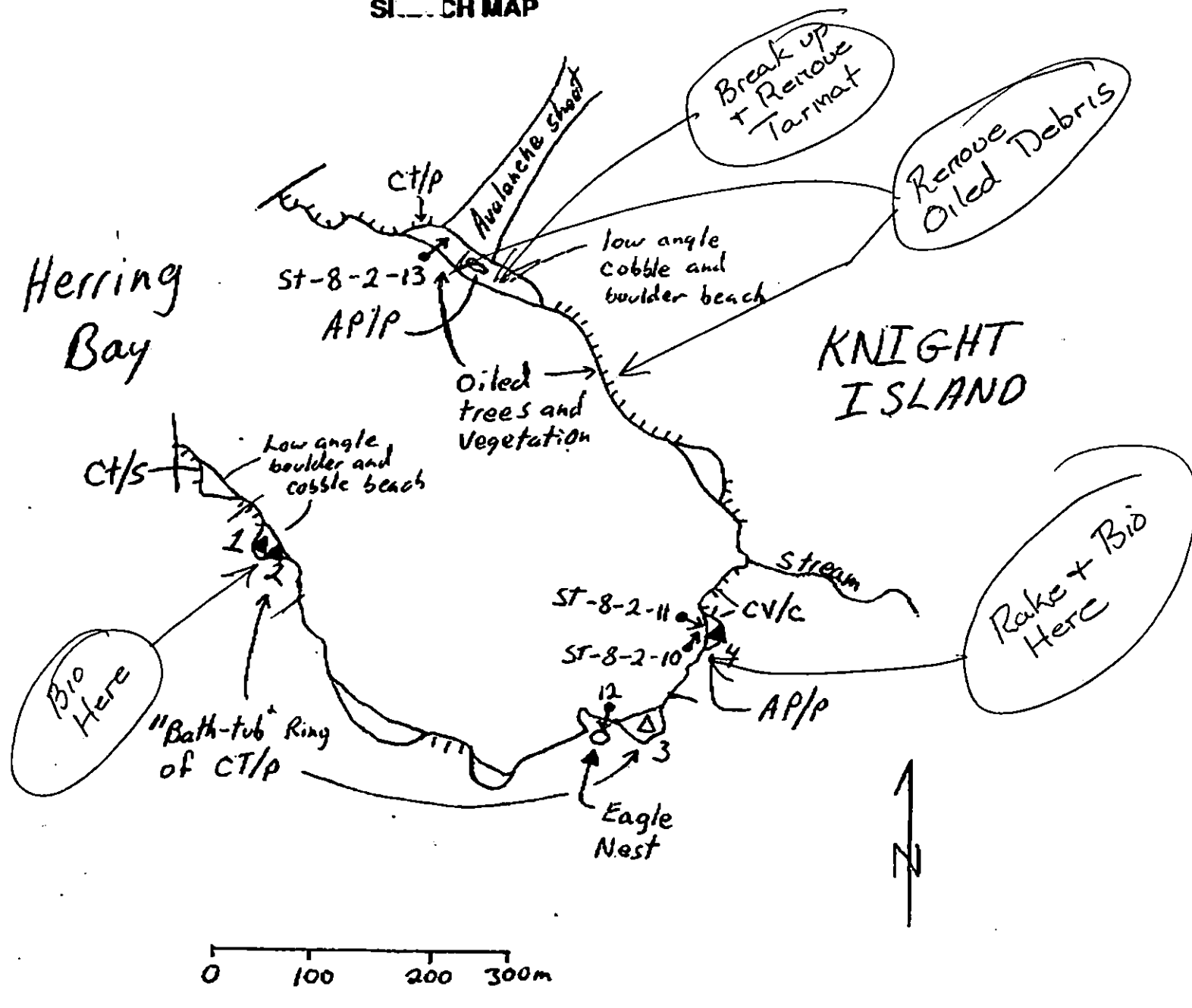
Splashed Distribution

Oiled Vegetation

1 $\Rightarrow$

Photo location, direction,
and number

Sketch Map



Oil Character Length (m): AP 10 PO 0 CV 29 CT 700 ST 0 MS 0 PT 0 TB 0 FL 80 NO 0

REVISIONS: 00-0000

SHORELINE ECOLOGICAL SUMMARY

REVISION: 05/22/90

Segment ST / KN115 Subdivision None Date (mo / day / yr) 4/4/90Time (24 hr) 1625-1745 Biologist John Benson(A) Substrate type and % of segments:
(1) Bedrock 60 (2) Boulder 15 (3) Cobble 15 (4) Pebble 10 (5) Sand (6) Silt (B) Overall % cover of biota (% of segment): Dense 30 Moderate 40 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)

Photographs:

Roll No. ST-8-2Frames 9-13

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	X	X	X	X	X
3	3	3	3	3	3	3	X	X	3	3	X
4	4	4	4	4	4	4	4	4	4	4	X
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

MYTILUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	X	X	X
3	3	3	3	3	3	3	3	3	X	X	2
4	4	4	4	4	4	4	4	4	3	3	3
5	5	5	5	5	5	5	5	5	4	4	4
6	6	6	6	6	6	6	6	6	5	5	5

NOT PRESENT

GASTROPODS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	X	X	X	X	X
3	3	3	3	3	3	3	3	3	3	3	2
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

FUCUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	X	X	2	2	2
3	3	3	3	3	3	3	X	X	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

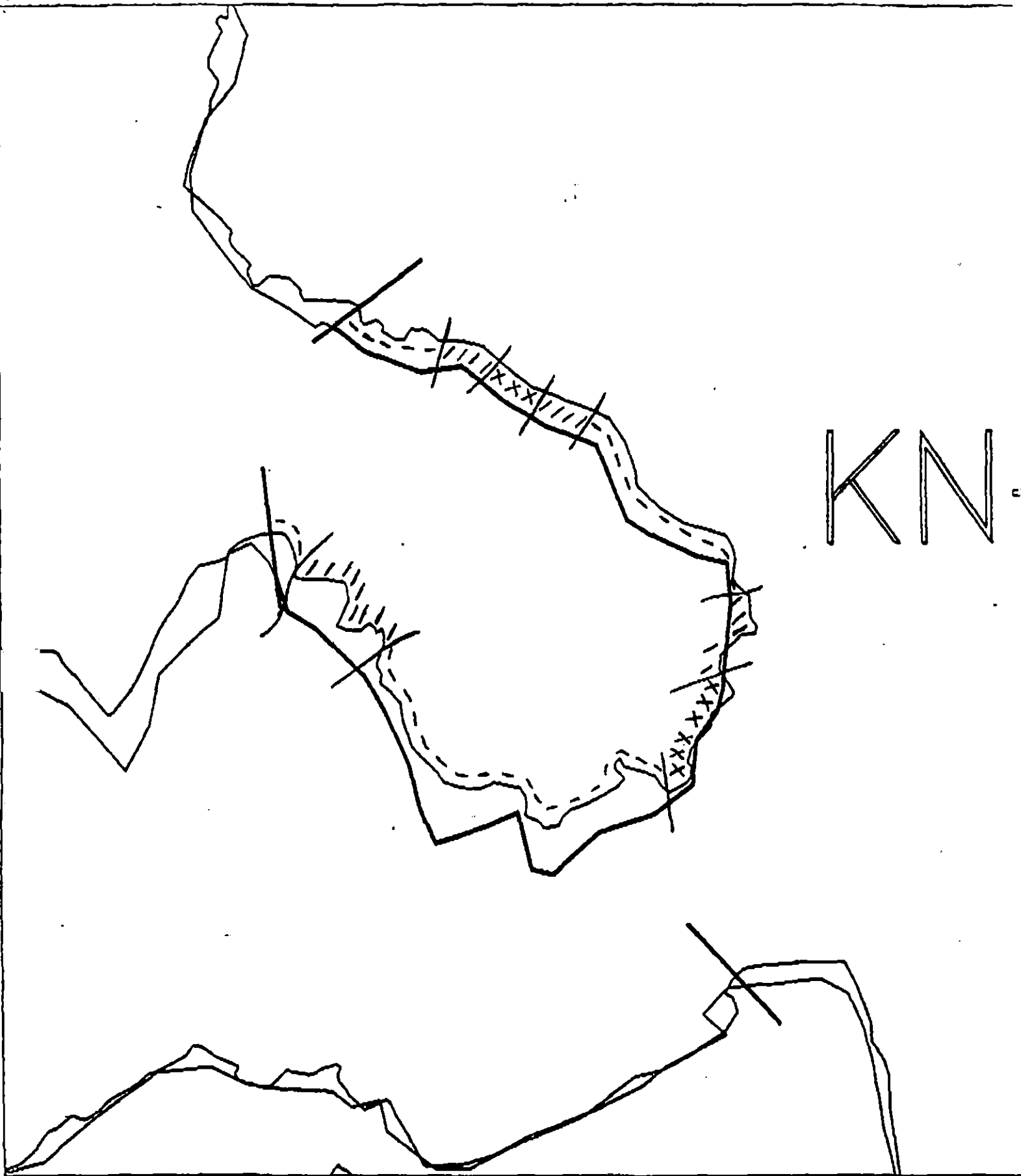
Wildlife Observations/ General Comments:

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 runoff falls into the intertidal). This segment is biologically very 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.

Ecological Considerations:

Sensitivities: 6V (rec. anch.)
5T (eagle nest)



KN

XXX Wide

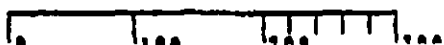
//// Medium

---- Narrow

TTTT Very Light

KN-115

ADEC Segment Length: 1619m



Map Key: PWS-296

Name: Sawyer

Date: Apr. 4, 1990

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT KN-115 SUBDIVISION A (1 of 1)

WORK WINDOW

Manual Pickup & Tarmat Removal Outside USFWS Established Buffer Zone	OPEN
Manual Pickup & Tarmat Removal Inside USFWS Established Buffer Zone	CLOSED
Bioremediation Outside USFWS Established Buffer Zone	OPEN
Bioremediation Inside USFWS Established Buffer Zone	CLOSED

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 uncoiled blots and substrate.

FOSC

Date

6-10-90

Prepared by

Date

6/10/90

KN-113

KN-

KN-114

WORK AREAS

USFWS Survey
5/27/90 (Lockhart)
ACCESS GRANT
Small boat
Passage only
No stopping in
buffer zone

KN-115

KN-116

KN-117

KN-118

KN-

KN 121



Exxon Company, USA
Map Key: PMS-KN-115

ECOLOGY MAP
SEGMENT KN-115
SUBDIVISION A (L of I...)
METERS

- ★ Seabird Colony
- ▲ Active Eagle Nest
- △ Inactive Eagle Nest

1 inch = 1000 feet

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: Charles E. Hume

DATE: 4/20/90

OILING CATEGORIZATION:

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

RECOMMENDATIONS:

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

CONSTRAINTS

SEE ADDENDUM dated 6/10/90 JPP

TAG COMMENTS:

TAG APPROVAL DATE: 4/19/90

ADEC Art Weiner

EXXON Andy T. Galt

NOAA Bruce Wesert

USCG Kenneth Keene

FOSC:

DATE: 4-26-90

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 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: Charles J. H. H. H. DATE: 4/20/90

OILING CATEGORIZATION:

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

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u>X</u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u>X</u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> <u>X</u> Removal	<u> </u> 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 Art Weiner
EXXON Andy T. G. H. FOSC: DATE: 4-26-90
NOAA Burt Wescott
USCG Kenneth Keene

OG Sau

SEGMENT ST/KN115

SUBDIVISION none

DATE Apr 14 90

CHECKLIST

☐ N Arrow
☐ Approx. Scale
☐ Seg/Sub Body
☐ Oil Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HML/LWL
☐ SSL
☐ Profile Location(s)
☐ Profile(s)
☐ Pit Location(s)
☐ Photo Location(s)

LEGEND

1 Δ
 Pit - No Subsurface Oil

2 Δ
 Pit - Subsurface Oil

CT/C
 Continuous Distribution

CT/B
 Broken Distribution

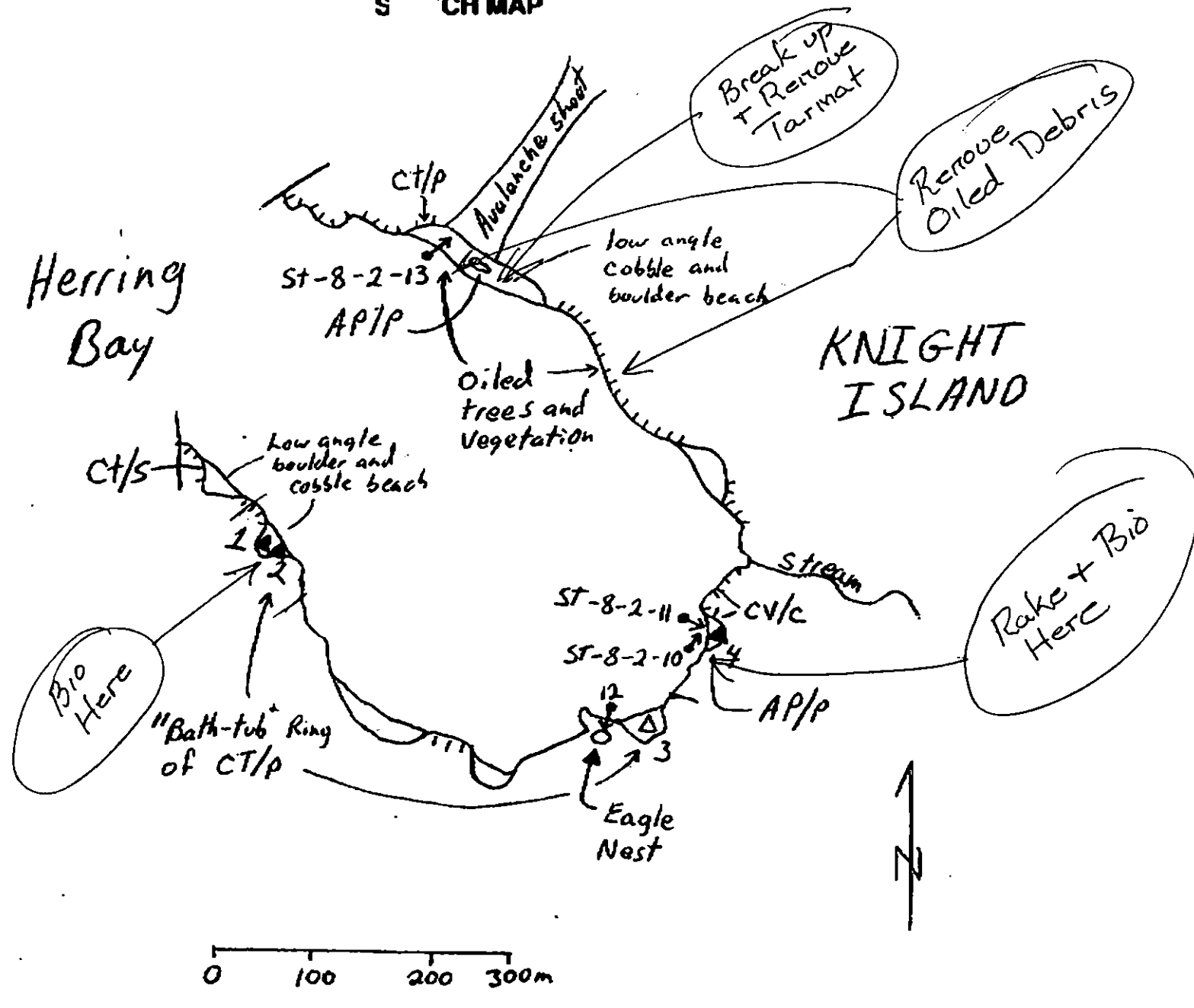
CT/P
 Patchy Distribution

CT/S
 Splashed Distribution

Oiled Vegetation

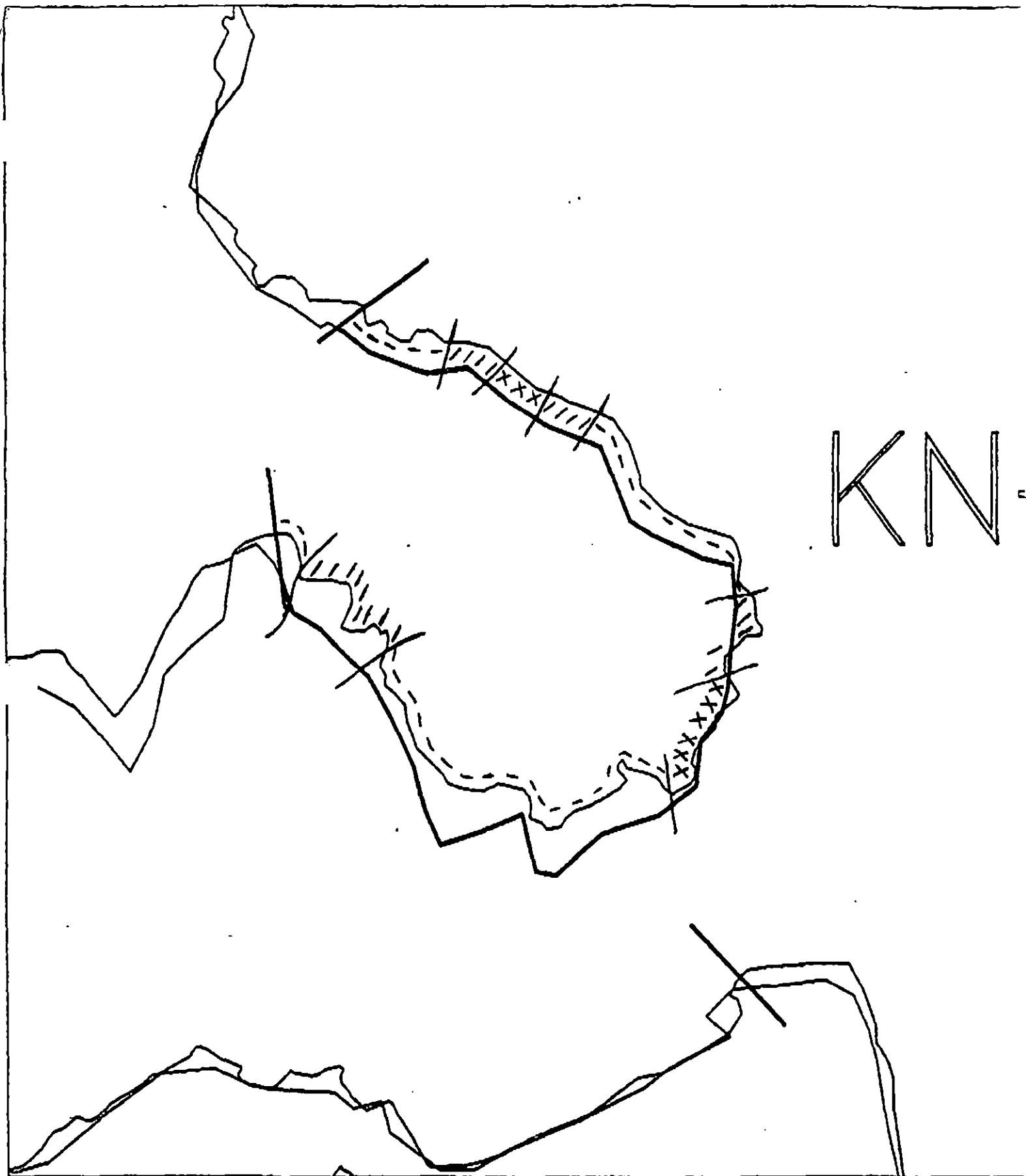
1 $\Rightarrow$
 Photo location, direction,
 and number

S CH MAP



Oil Character Length (m): AP 10 PO ☐ CV 29 CT/P 700 ST ☐ MS ☐ PT ☐ TB ☐ FL 80 NO ☐

REVISION: 000000



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

KN-115

ADEC Segment Length: 1619m

0 100 200 300

Map Key: PWS-296

Name: Sawyer

Date: Apr 4, 1990

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:

INITIAL

TAG

FOSC

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 _____

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.

ADEC

NAME

JEFF GINALIAS

SIGNATURE

☒ NTR

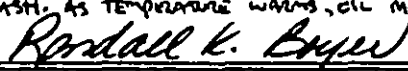
IT IS WITH RELUCTANCE THAT I RECOMMEND NO TREATMENT FOR THIS SEGMENT, AS SUBSURFACE OIL IS PRESENT THROUGHOUT THIS COVE, ^{WITH} SOME AREAS CONTAINING CONCENTRATED AMOUNTS (NOTABLY ON MAP SITES "E & D"). THE SUBSURFACE LENS ~~IS~~ RUN FROM HOR TO LOR ACROSS THE SUITE TO LITZ, EASILY EXPOSED AT 5-10 CM AND RUNNING 10-15 CM DEEP FOR MOST PART. BEACHES ARE COBBLE/BOLDER AND MORPHOLOGY ~~AND~~ OF BEACH AND DIMENSIONS OF LENS MAKES MANUAL TREATMENT ~~UNREASONABLE~~ UNREALISTIC. MECHANICAL NOT FEASIBLE AT SITE D, WHILE SITE E MAY BE POSSIBLE, BUT EXTREMELY DIFFICULT. (BEDROCK UPRISES AT LITZ). AS BIO NOTES REFLECT, BEACHES IN EARLY SUCCESSION STAGES, THUS AGGRESSIVE TREATMENT WILL NOT SERIOUSLY IMPAIR BEACH LIFE CYCLE. AT A LOSS FOR FURTHER SUGGESTION.

EXXON

NAME

RANDALL E. BOVEL

SIGNATURE

☒ NTR

Oiled vegetation was identified in the upper tide zone in the middle of the subdivision. The VECO survey crew spent sometime collecting the material and completed the pickup. Coatings on bouldering verticle rock faces of Pockets 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 SUBDIVISION.

LANDMANAGER

NAME

MARSHA HALL OF DNR

SIGNATURE

☐ NTR☒ TREATMENT

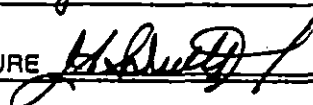
OF ALL the little beach pockets, I sincerely feel that at least AREAS C, D, E should be addressed by a crew. Area E provides upland access. (LOR Berm) oil is close to surface. I feel sites E and D may be accessible to equipment and should be evaluated by T&E. The low energy sites NEED the assistance of agitation for further cleansing.

USCG/NOAA

NAME

SCHULTZ / CHILDS

SIGNATURE

☒ NTR

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

STEEP ROCKY EMBAIMENT WITH POCKETS OF BOLDER, COBBLE, PEBBLE. MAJOR PART OF OIL SITUATE, IN THE INTERIOR MOST PART ("C, D & E") SURFACE ACCUMULATIONS AS M-SON-HI-SOR & SUBSURFACE AS MOR-FOR FROM ~5 TO 20 CM DEEP FAIRLY CONTAINED IN THE UCL-AL. THE FLANKS OF THE EMBAIMENT (A-B & F-H) CONTAINS MAINLY CT & ST OILS ALONG WITH ROCK FACES BUT STILL HAD SUBSURFACE MOR-MOR IN POCKET DEPTHS. NOTE: Eagle nest in crevice BETWEEN "E" & "F".

MAYSAP SHORELINE OILING SUMMARY

PAGE 1 OF 2TEAM NO. 1OG G. MACDONALDBIO M. FAWCETTSEGMENT KN-115ADEC J. GINAWASLANDMANAGER M. HALL for DNIRSUBDIVISION AEXXON R. BAYERUSCG/NOAA SCHULTZ / CHILDSDATE 5 / 16 / 91TIME 09:00 to 11:30TIDE LEVEL -3.2 R. to 0.0 R.ENERGY LEVEL: ☐ H ☐ M ☒ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 680 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W 1 m M 10 m N 1 m VL 460 m NO 210 m US 939 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A										X	REL			~75					
B							S				RBC	H	6	120		X	X		
C						S	S				RB	H	1	260	X				CDE combined CT
D						S	S				RB	H	1	20	X				within location C
E				P		S	S				BR	H	3	10	X	X			hi sol & 7cm thick
F									VG		BR	M	2	5	X				PV; trace seaward.
G							T				RB	H	2	20	X	X			
H						S	S				BCL	H	10	20	X	X			under B.
I						S	S				BCL	H	5	15	X	X			

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

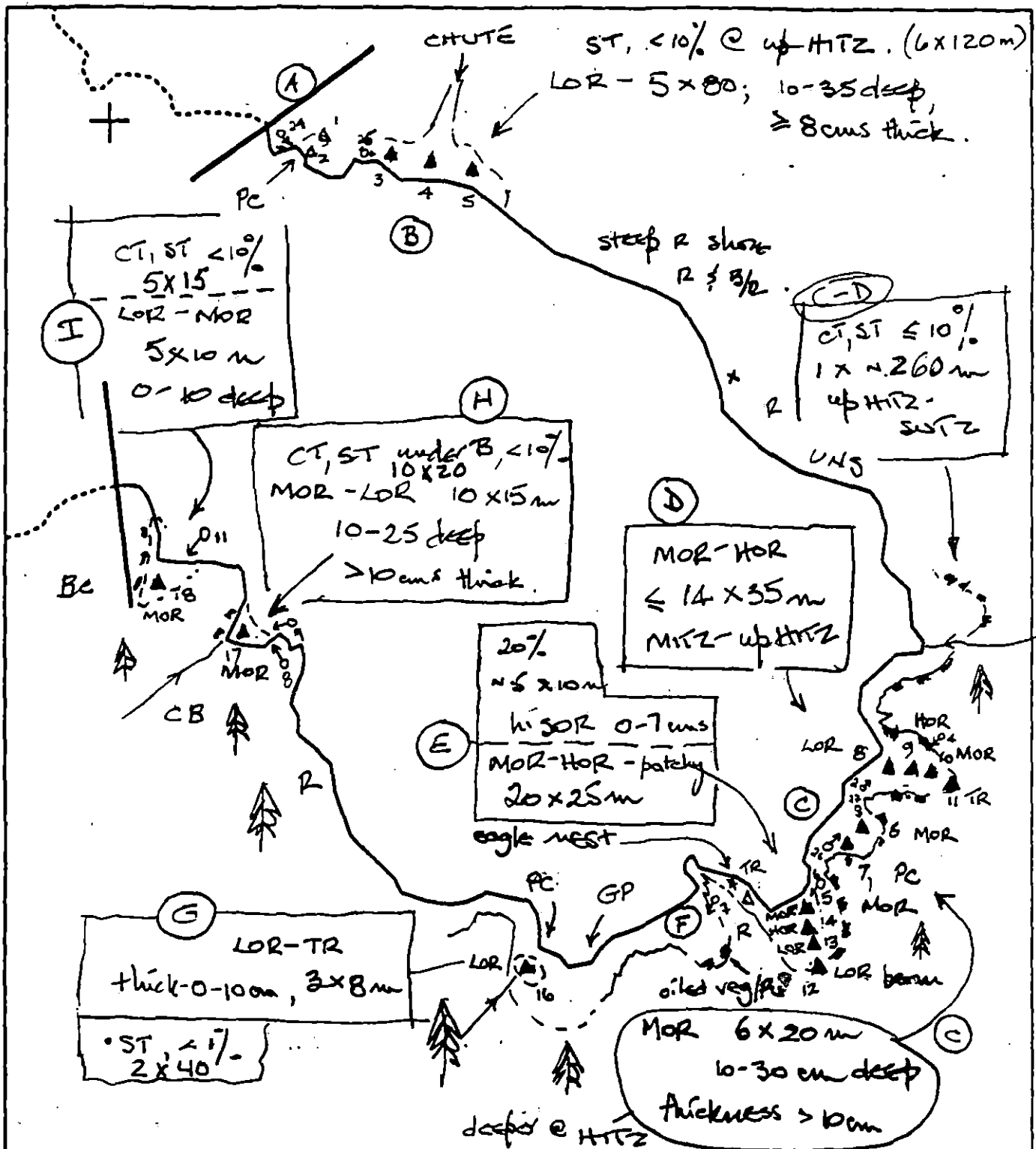
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP- 1 - 23 24-27FRAMES 1 - 24 + 1

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE- SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
A	1	25						X	-		3	N			X		PC-GC	
	2	35						X	-		5	N				X	CP-PB	
	3	35				X			15-35	N	10	R,B			X		BC-GC	B globules
B	4	20				X			-	N?	10	R,B			X		BC-GC	"
	5	30				X			-	N?	10	R,B			X		BC-GC	"
	6	20			X				5-20	N	5	B			X		CP-PGC	
C	7	25			X				5-20	N?	10	B			X		CP-PGC	

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

OG COMMENTS: Rocky cove w/ well-flushed, coarse grained beach. Surface oil as hi sol @ (E), in HITZ-SUTZ; plus CT, ST on R walls of massive boulders, and across beachface @ most beaches - often coated by algae. Oiled vegetation @ (F) was removed.

revised 5/21/94 RRG
REVIEWED: F.W. 5/21/91



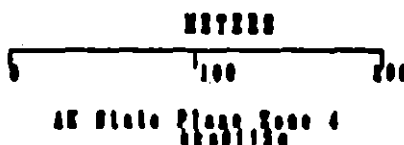
KN0115 A

Subdivision Field Map

Map Key: KN0115A

Name: G. MACDONALD

Date: 5.16.91



AK Plate Plate 5000 4

3

Revised 5.21.94
 REVIEWED: F.W. 5/24/94

TEAM # 1 DATE 16 May 91
 SEGMENT # KN 115 TIDAL HEIGHT(Range) -2.9 to -0.1 ft MLLW
 SUBDIVISION A BIOLOGIST Michael Fawcett
 SEA STATE 2ft 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 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 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

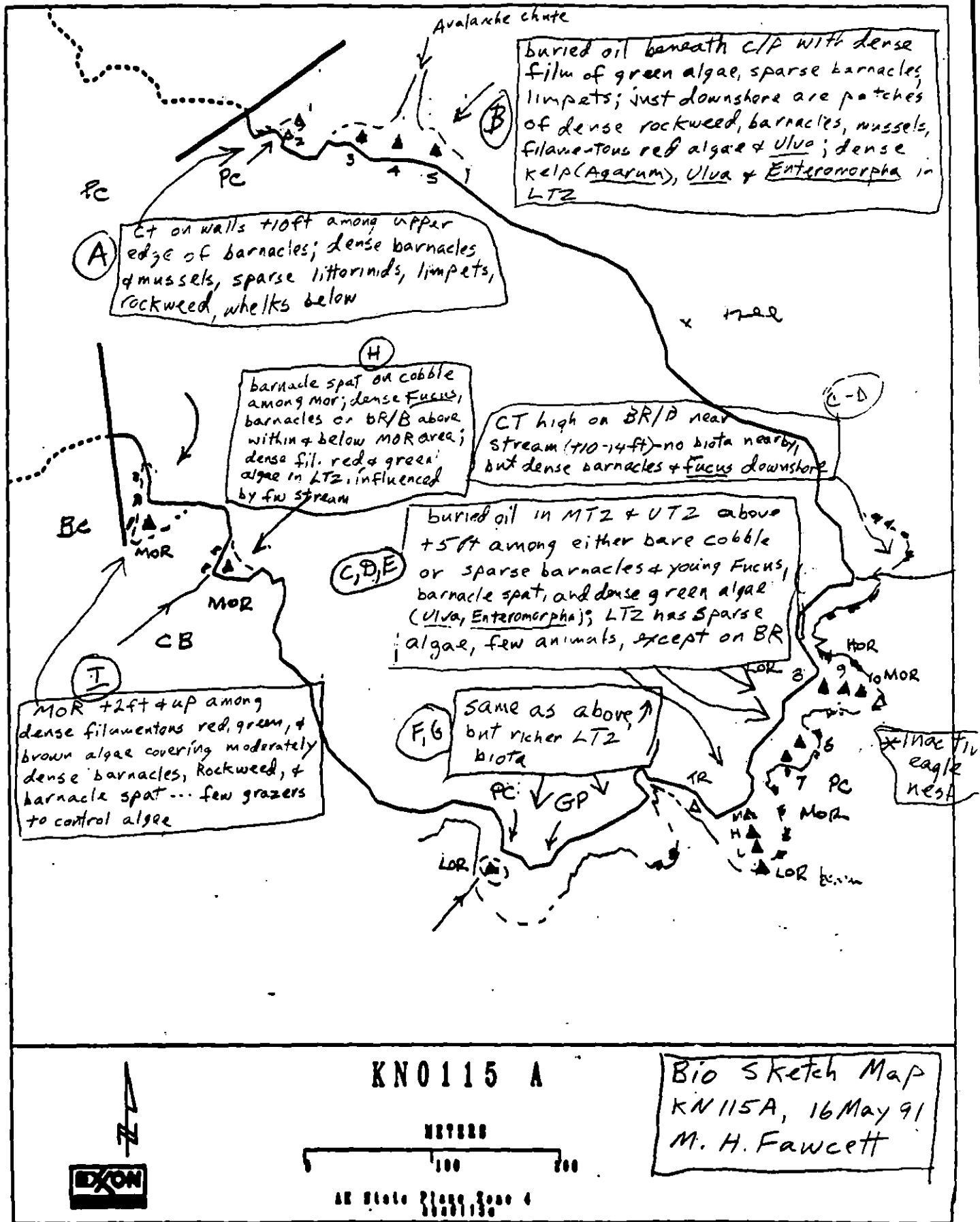
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			black pricklyback
Seabirds	2 (Pigeon guillemot whiskered murrelet)	5	
Waterfowl	1 (harlequin duck)	2	
Gulls/kittiwakes	12 (bl. leg. kittiwake murre tern)	17	
Shorebirds			
Corvids	1 (Steller's jay)	2	
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)	3 sea lions		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

5
 Reviewed M.B. 5/21/91



KN115A 5/16/91 Fayette I

Apr. 0900 North end

- CT on walls at 1st pocket
+ 10 ft on barnacles, dense
barn. mussels, sparse limp litt, Fucus
below. white

- beach 2

- 15 of Kittiwakes feeding in bay
3 sea lions

- B/c/p pocket

- dense Ulva, entero helix + 7

- dense kelp (Agardhim) 1-1.5

L T2 - 2 ft

- patchy dense Fucus, barn,
mussels, filr esp, Ulva,
below barnacle at + 10 ft

- fil sp - mussel oil oyster
clp w/ dense film green algae, sparse
barnacles, limp - OT 14 SUTZ -

No biota

- next tide in front of
inactive eaglehead

MOR + 8 ft - in bare cobble - no

biota except fil sp - barn spat

on nearby isolated boulders

L T2 w/ sparse mixed algae
depauperate fauna (ENT)

KN115 (cont) 16 May 91 Fairport

- mod. barn, Fucus, dense spat
sparse inside on BR eelgrass
side of pocket - dense mat
of Fil. reds on large boulders MTZ
2nd pocket (30 m S of ab. eagle
nest) has CT & CV on lee side of
BR way up + 10-14 ft.

- buried or in s.p./p. nearly at
+5-6 ft among Ulva, Enteromorpha, Cladophora
sp. sparse barn & patches young
Fucus, sparse litt, lim p. -

- rel. sparse barn below in LTZ MTZ

- 2 ga ys

- generally not sensitive

- CT no stream on BR/B + 10-14 ft
no barn, but dense barn, Fucus
etc down to 8-10 m

- Pocket south of nest - some

descriptions in B/C/P - BR at
sides fairly dense in MTZ - LTZ -

breeding gamelios - Pyrenopoda,

dermestegia, E. vasteria - fil. reds,

leafy reds, long Laminarian (Agarum)

pickled 14" broad, wrinkly leaves,

no mudflats or veins, 3' deep, several

st ipes per hold / mt 1030 hrs

gravel pit between. This pocket & next
are south bias dense mature mussel

bed + 4 ft - Richer barn in

LTZ 100 - no algae incl.

Halosaccus, Constantinea, Callophyllis

- west pocket C/P/g - some subsp.

red in stream runoff +5-8 ft

in sparse barns, breaking litt,

1 imp. dense Ulva, Enteromorpha,

Urospora - CT Fucus on walls

+12 ft dense blot - barn, Fucus
etc. 2 m down

pocket on south side of bay

p/c/g back. Some boulders

near. Through - dense Enteromorpha

& Ulva LTZ - Fil. reds

barn spat on cobbles among MR

dense Fucus, barn etc. on BR

above & below MR

1120 - 2 Ferns

- pocket B/B -

dense red algae, brown algae LTZ

- heavy mats Fil. reds

- MR - sheer, MTZ +12 ft up

- mod. barn, spat, Fucus

but all covered by Fil. brown
green stuff end text

KN 115A (cont) 16 May Fairwell

4 unid. murids

1 Pyg. guller

2 Hg. lizards

End 2130

revised 5.21 by
REVIEWED: J.F.W. 5/21/94

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: *Timothy L. Smith* Date: 6/04/91

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

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: <u>JUNE 4 1991</u>	FOSC APPROVAL DATE: <u>6/8/91</u>
ADEC <u><i>[Signature]</i></u>	FOSC <u><i>[Signature]</i></u>
EXXON <u><i>[Signature]</i></u>	E. E. PAGE, ODR, USCG
USCG <u><i>[Signature]</i></u>	CHIEF OF STAFF, FOSC
NOAA <u><i>[Signature]</i></u>	

**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.

up Hitz CT, ST $1\frac{1}{2} \times 280m$
- SUTZ ; $\leq 15\%$

(A)

- 30 ▲¹ TR PC-B-P
- 20 ▲² TR PC-B-P
- 20 ▲³ TR PC-PC

steep R
walls

AP 1x2 - PU
15%

massing B

stream

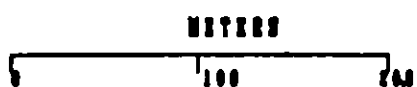
steep
R shore

CT, ST 1x30
 $\leq 10\%$ (B)

CT, ST
2x30m, $\leq 10\%$
TR-LOR 3x7 @
MITZ pit #4 (C)



KN0116 A



AS State Plane Zone 4
NAD83

Subdivision Field Map
Map Key: KN0116A
Name: G. MACDONALD
Date: 5.16.91

Reviewed: MC 5/21/91
revised 5.21 91
2

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 16 May 91
 SEGMENT # KN 116 TIDAL HEIGHT(Range) -0.1 to +1.3 ft MLLW
 SUBDIVISION A BIOLOGIST Michael Fawcett
 SEA STATE 1 ft swell WIND SPEED/DIRECTION NE 5-10 knots
 PHOTOGRAPHS: ROLL # _____ FRAME # _____

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

Site A: moderate to high energy pocket beach--low boulders polished by pebble abrasion, sparse biota except barnacle spat. Bedrock 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 lee 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 starfishes *Pycnopodia*, *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

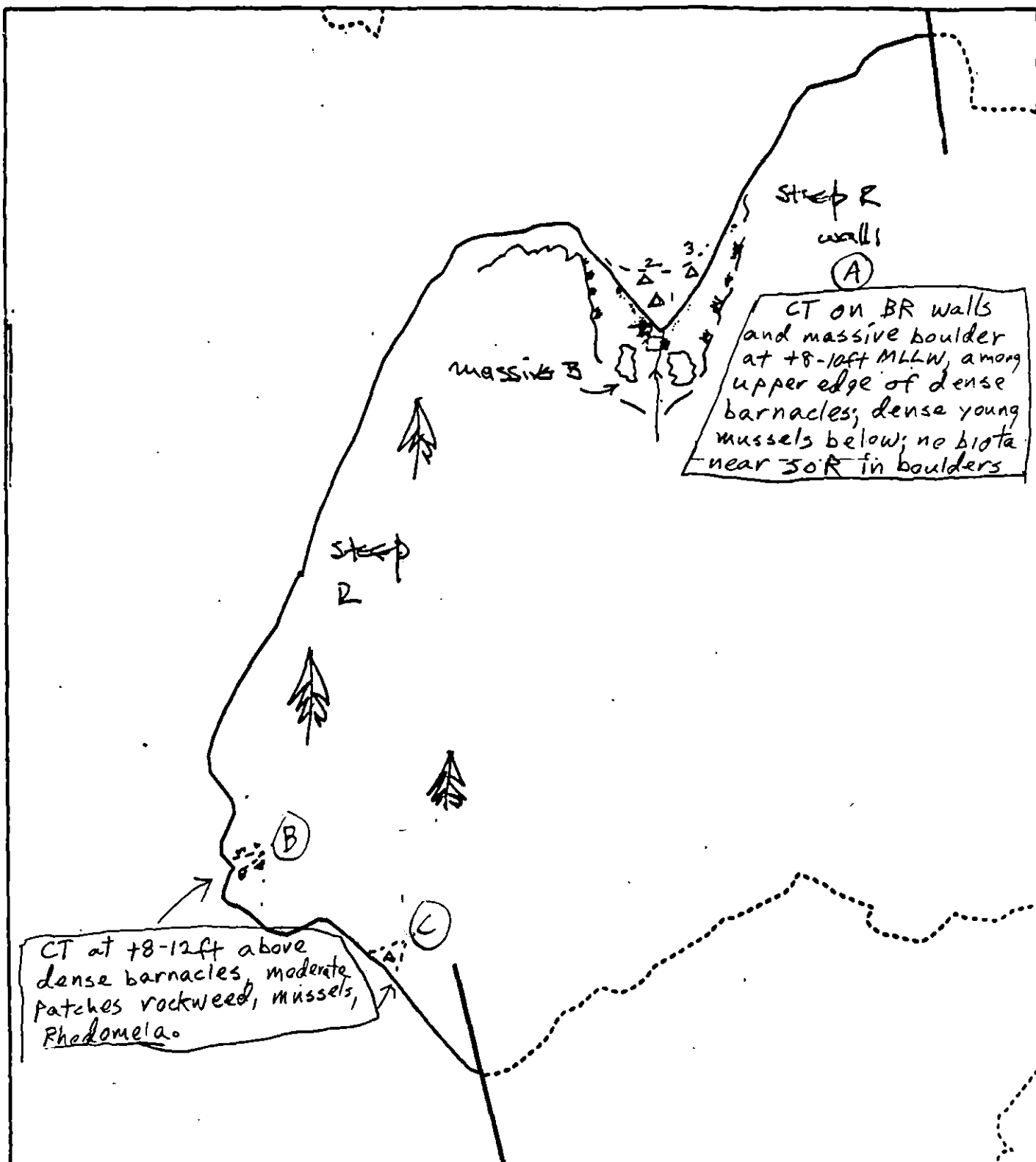
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			black pricklyback
Seabirds			crescent gunnel
Waterfowl			
Gulls/kittiwakes	2 black-leg. kittiwake Glaucous-W Gull	~100	
Shorebirds			
Corvids			
Other Birds			

LAND MAMMALS

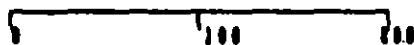
MARINE MAMMALS	# OBSERVED	SPECIES	# OBSERVED
Sea Otters			
Pinnipeds(specify)			
_____les(specify)			

Shoreline subdivision map showing important biological features attached.



KN0116 A

METERS



AK State Plane Zone 4
NAD83

Bio Sketch Map
KN 116A, 5/16/91
M. H. Fawcett

KN 116 16 May 91 Barrett
start 1130

mod. energy pocket - B/P - 1 massive
boulder w/ dense barn/mussels (young
0-2 yrs) - same on BR walls - smaller
boulders polished by abrasion -
sparse barn (occ. spat) denser in
lee of big rock - stream in bank
goes underground

CT & SOR + 10 ft

CT on lee side of big rock
at + 8 ft, upper edge of dense
barnacle, some coated alive & dead
no brook in pebbles

- LIZ pebble beach, crescent gull
(all these sides so far, in KN 115

& 116 tend to have few
grazers, dense ephemeral algae

- dense Leptasterias, breeding -

prickles, 1 Eusasterias -
Pycnogonids

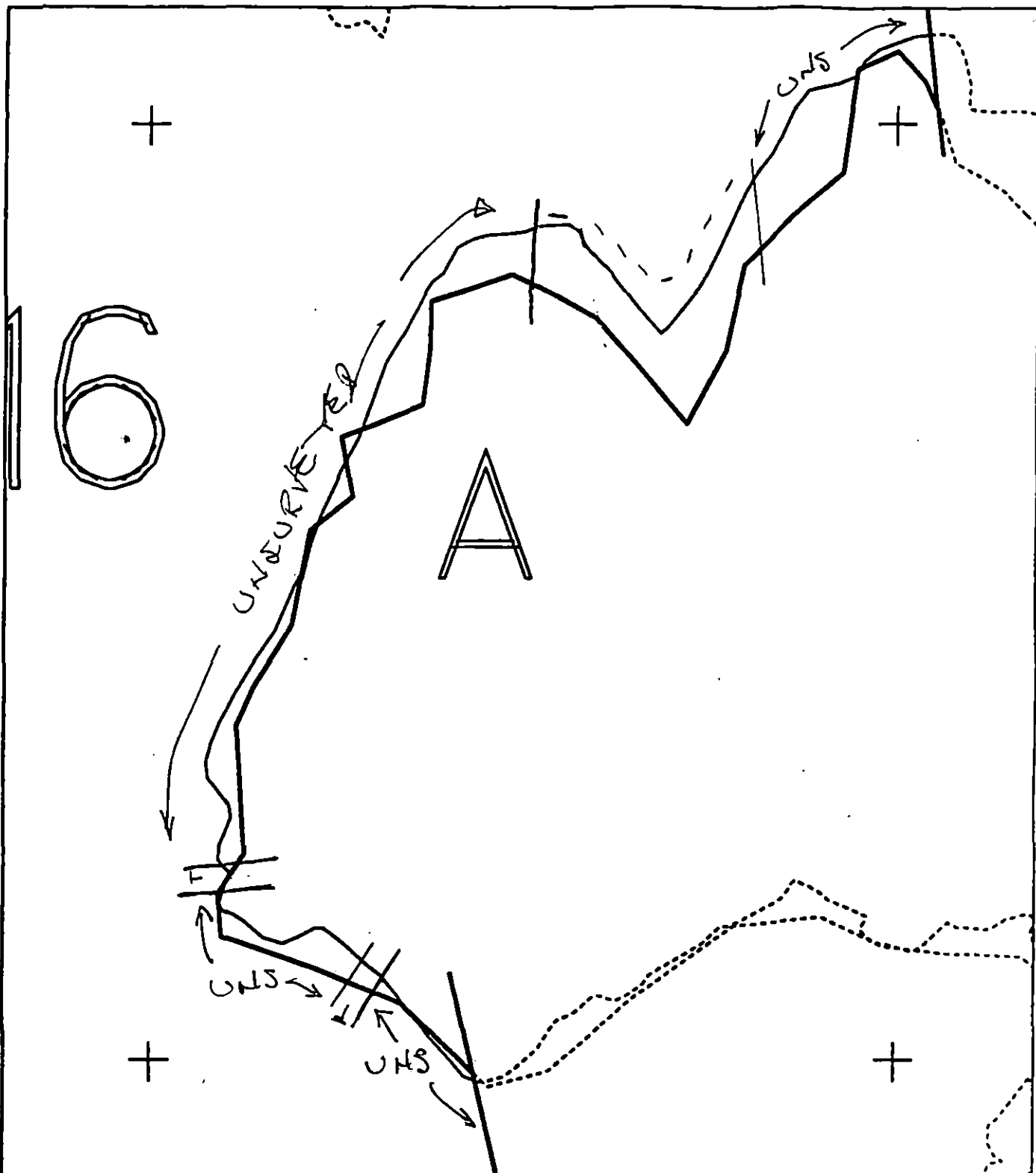
- 100 Kittiwakes & gulls near 13 ft

- Site 2 tiny channel BR &
Boulders - CT + 8-12 ft - dense

myxozoan barnacles or

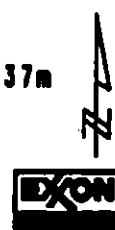
End 1205 - last pocket of similar
topologies

CT at upper edge of dense
barnacle



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

KN0116 A
 ADEC Subsegment Length: 1337m
 METERS
 0 100 200
 AK State Plane Zone 4
 kn0116a



Subdivision Field Map
 Map Key: KN0116Aa
 Name: GM
 Date: 5.16.91
 Data Entered:

Reviewed: MC 5/22/91
 revised 5.21.91
 3

1991 MAYSAP EVALUATION

SEGMENT: KN 016 **SUB:** A **REGION:** PWS **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:

INITIAL

TAG

FOSC

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 _____

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.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. Three SEGMENT KN016 SUBDIVISION A DATE 5/18/91

ADEC

NAME Wesley Ghormley SIGNATURE Wesley Ghormley

☐ NTR ☒ TREATMENT RECOMMENDATION

- 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 once & for all.

EXXON

NAME Jon P. Carnecki SIGNATURE Jon Carnecki

☒ 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 locations and pose little potential problems to marine life in the area. It is recoverable. However the amount to be removed is quite small.

LANDMANAGER

NAME DAVE BLANCHET OF USFS SIGNATURE David Blanchet

☐ NTR MODERATE ENERGY ENVIRONMENT. SMALL ISLAND WITH BEDROCK SHORES, WITH SOME FOXWOOD IN NARRATIVE ZONE. ROCK COVER. PATCHES OF SOR. FOUND IN AREAS OF BROKEN ROCK AND FINEER SEDIMENT. SOR WAS BROKEN UP OR REMOVED WHERE FOUND. THIS REQUIRES MOVING BOULDER & COBBLE TO GET AT THE OIL. PROBABLE REMAINING OIL THAT COULD BE WORKED

MARGINAL CAMPSITE AVAILABLE ON TOP OF THIS ISLAND. ISLAND USED BY OYSTER CATCHERS FOR NESTING

USCG/NOAA

NAME Jensen / Jeffery Ahlin SIGNATURE Jeffery Ahlin

☒ 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 justify disturbing the nest for cleanup

PAGE _____ OF _____

SEGMENT KN-16A

SUBDIVISION A

DATE 18 / MAY / 91

ENERGY LEVEL: ☐ H ☒ M ☒ L

EST. OIL CATEGORY LENGTH: W 0 m M 2 m N 7 m VL 25 m NO 248 m US 0 m

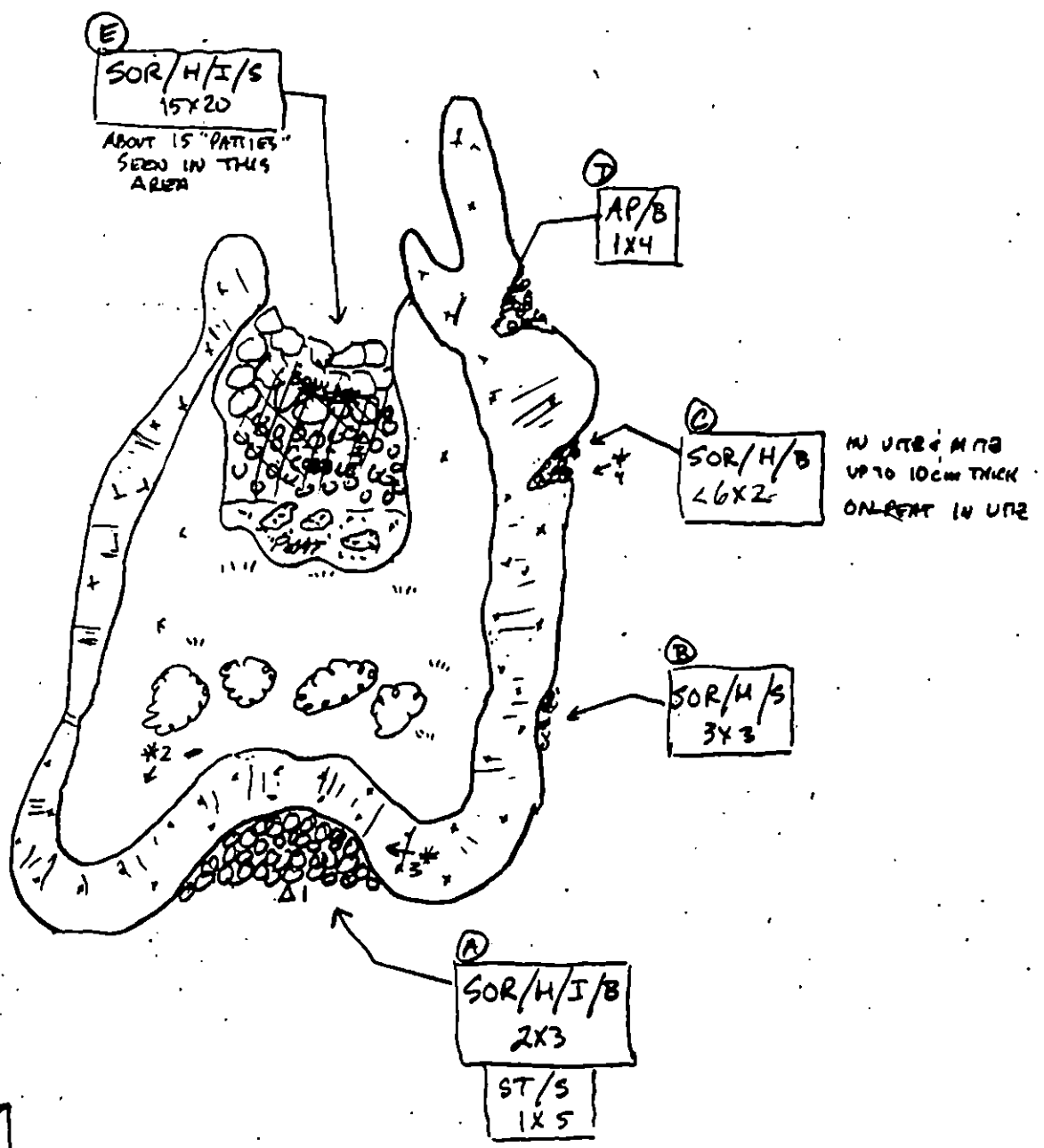
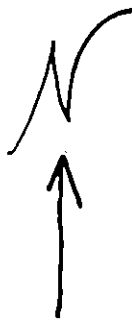
DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP- 3 - 18 FRAMES 4

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

No subsurface silt was identified.

OG 1 of 3
reviewed 5.19 7y
REVIEWED CE 19 MAY



KN-16A
17 MAY 91
0815-0845
HARPER
TEAM #3

MAP BASED ON ASAP(90) SKETCH

REVISED FIELD SKETCH



20m
V. APPROX. SCALE

reviewed 5.19.94

OG 2 of 3
REVIEWED 13 MAY

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 3 DATE 5/18/91
 SEGMENT # KN 16 TIDAL HEIGHT (Range) 2-4'
 SUBDIVISION A BIOLOGIST STANOR
 SEA STATE 1-2' WIND SPEED/DIRECTION E 15-20
 PHOTOGRAPHS: ROLL # _____ FRAME # _____

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

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

Biota on bedrock characterized by generally dense Fucus, dense barnacles and spat, clusters of small limpets and Littorina in sheltered crevices, sparse Mytilus.

Rubble beach biota consists of patchy non-growth Fucus, filamentous green algae, patchily dense barnacles and spat, sparse to moderate density limpets and Littorina (some egg masses), and patchily dense attached and interbedded Mytilus.

Biota within or adjacent to residual surface oil locations. A thru D consists of sparse barnacles and moderately dense limpets.

Biota increases in density to include moderately dense non-growth Fucus, filamentous green algae, patchily dense barnacles and spat, sparse to moderately dense small limpets and Littorina with egg masses, and patches of interbedded and attached Mytilus.

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

Downlog biota includes generally sparse Fucus, moderately dense barnacles and spat, sparse patches of interbedded Mytilus, and generally sparse limpets and Littorina.

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

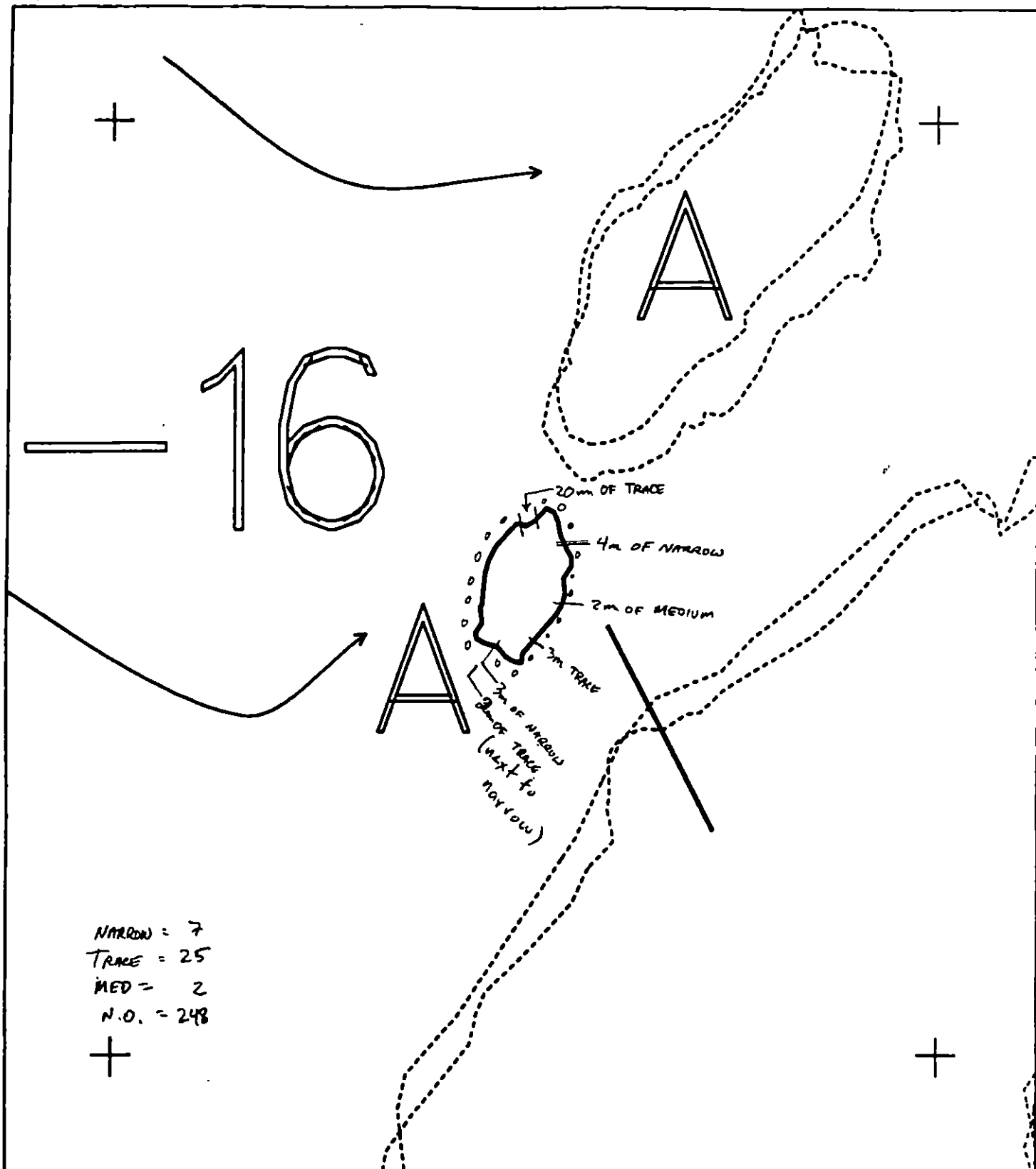
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes			
Shorebirds	Least? Sandpipers	8	
Seabirds	Tern	1	
Other Birds	Oystercatchers + most	2	

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED CP 19 MAY
 Reviewed M.B 5/19/91



REVISED 06 3-13
reviewed 5.19.91 94

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 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	☐ 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 pocket beach as indicated on sketch map and removal of plywood and oiled debris.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

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

USCG

NAME W. E. WHITE SIGNATURE W. E. White☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Treatment SUGGESTED - Water flushing in the pocket beach and washing in the crevice.

ADEC

NAME Dianne Munson SIGNATURE Dianne Munson☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

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 12cm. 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 Mandrella SIGNATURE David Mandrella☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Majority of segment consists of vertical bedrock cliff with narrow band of sporadic coasts 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 from spot washing.

SHORELINE OILING SUMMARY

REVISION NO. 00/22/90

OG Sawyer USCG White SEGMENT ST/ KN116
 BIO Benson LAND REP Mandrella (FS) SUBDIVISION Area A 1 of 1
 XON Natsimpalis ADEC Munson TIME 14:45 to 16:00
 AM NO.: 8 TIDE LEVEL: +2.0 to +1.0 DATE Apr. 14 / 90
 EST. SUBDIVISION LENGTH: 1262 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☐ Forest ☒ Rock Drivings
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 85 % B 5 % C 5 % P 5 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 10 % Hang 0 % Vert 90 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 145 m N 880 m VL 237 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES				
	/C	/B	/P	/R	BR	OR	OL	OP	NO	TL	UR	SU	U	M	U
ASPHALT PAVEMENT															
POOLED															
COVER		/				/						/			
COAT			/	/		/						/		/	
STAIN															
MOUSSE															
PATTIES															
ARBALLS															
FILM				/				/						/	
NO OIL															

 PAVEMENT: H F S 0 sq. m by 0 cm

 PATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

 DEBRIS COLLECTED
☒ YES ☐ NO

 TYPE rope

 #BAGS 1

Photographs:

 Roll No. St-8-2

 Frames 7-8

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW	OIL / FILM COLOR								PIT ZONE	A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO			UO	UC	BR	OR	OL	OP	NO	TL	UR		
1	20						- - -											N	P
2	40						0 - 12											N	C, P, G
							.												
							.												
							.												
							.												

COMMENTS ST/KN116: Translucent sheen in tidal pools. Broken covers and patchy and occasional coats in upper tidal zone - mostly on south facing cliffs. Residual oil discolors upper 12cm of pit 2.

SKETCH MAP

SUBDIVISION None

DATE Apr. 14 90

CHECKLIST

_____ N. Assoc.
 _____ Approx. Scale
 _____ Sep/Sub Body
 _____ Oil Dia.
 _____ Width
 _____ Length
 _____ % Cover
 _____ Substrate Character
 _____ Ext. HML/LWL
 _____ SSI
 _____ Profile Location(s)
 _____ Profile(s)
 _____ P4 Location(s)
 _____ Photo Location(s)

LEGEND

PR - No Subscription OS

2A

FIG - Subsurface Oil

CT/C

Commons Distortion

CT/O

Broken Distribution

CT/P

Patchy Distribution

CTAS

Integrated Classification

Other Vegetation

1.

Photo location, direction,
and number

TTTTT Bedrock Cliffs

KNIGHT
ISLAND

low angle
cobble beach/FHS

54-8-2-748

2 Sheets
of plywood

Take packet B₁₀

~~Remove Plywood Debris~~

ct/s

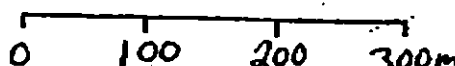
low angle
- boulder
beach

- Ct/p
3m wide
or less

Herring Bay

Cx/5

CV/B



Oil Character Length (m): AP ☐ PO ☐ CV 120 CT 1092 ST ☐ MS ☐ PT ☐ TB ☐ FL 50 NO ☐

THE WINDING ROAD

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / KN 116 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 85 (2) Boulder 5 (3) Cobble 5 (4) Pebble 5 (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)

Photographs:
Roll No. ST-8-2

Frames 7-8

BARNACLES

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

MYTILUS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

GASTROPODS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

one male & one female goldeneye duck

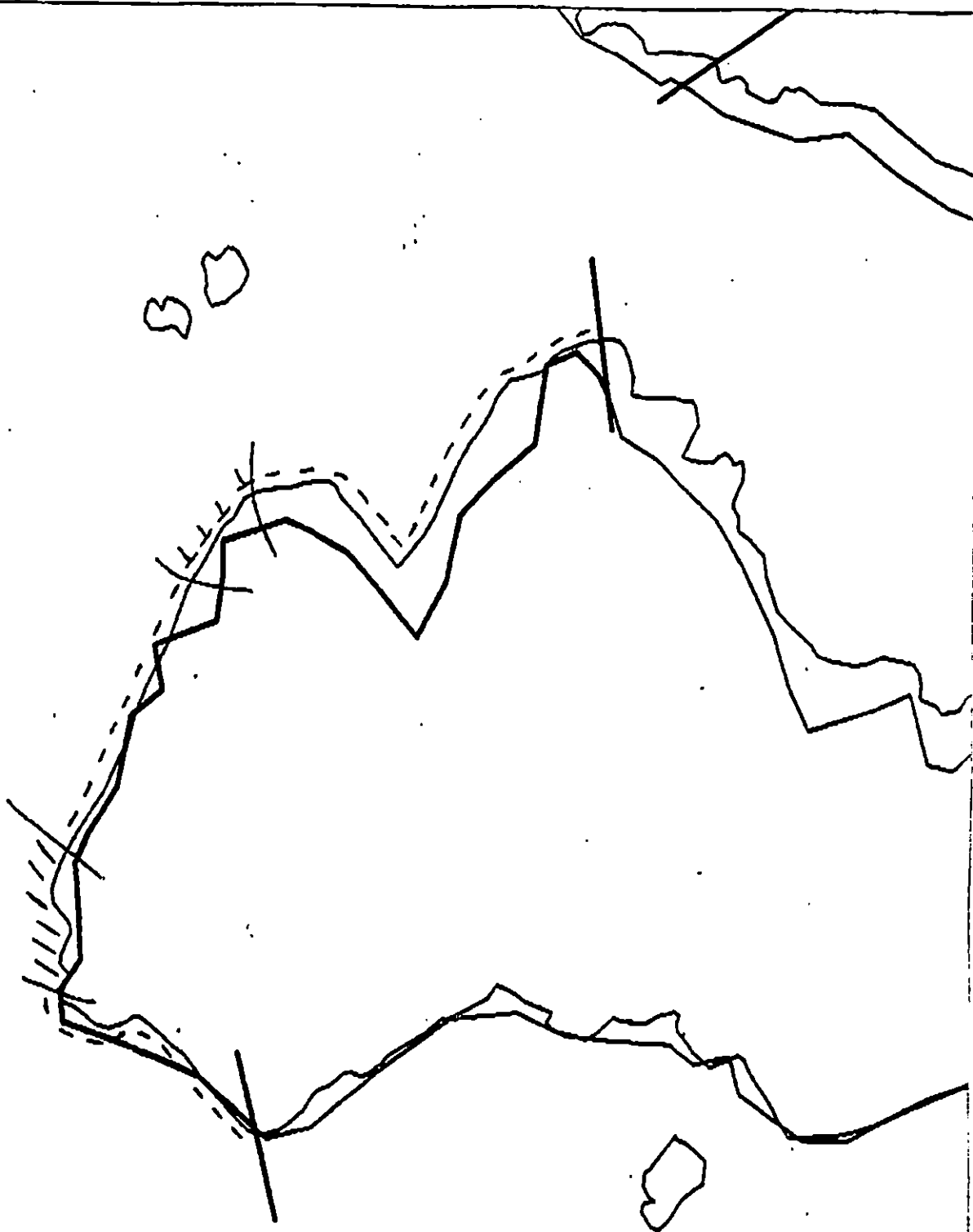
This entire segment is highly productive and moderately diverse (# species), due, probably, to its increased exposure to wave action from the N & NW.

Ecological Considerations:

Sensitivities: 6V (recreational anchorages) and to substrate heterogeneity (crevices & tidepools).

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 uncoiled 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 (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 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.



KN-117

XXX Wide

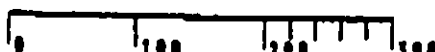
//// Medium

--- Narrow

TTTT Very Light

KN-116

ADEC Segment Length: 1338m



Map Key: PWS-297

Name: Sawyer

Date: Apr. 4, 1990

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT KN-116 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup	OPEN
Bioremediation	OPEN

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 unrolled blots and substrate.

TAG ADDENDUM DATE

ADEC

EXXON

NOAA

USCG

5/21/90
Art Weiner Dut Weiner
Andy Galt Beal
Joseph Talbot Stacy
Mr. J. Hall ADF&G

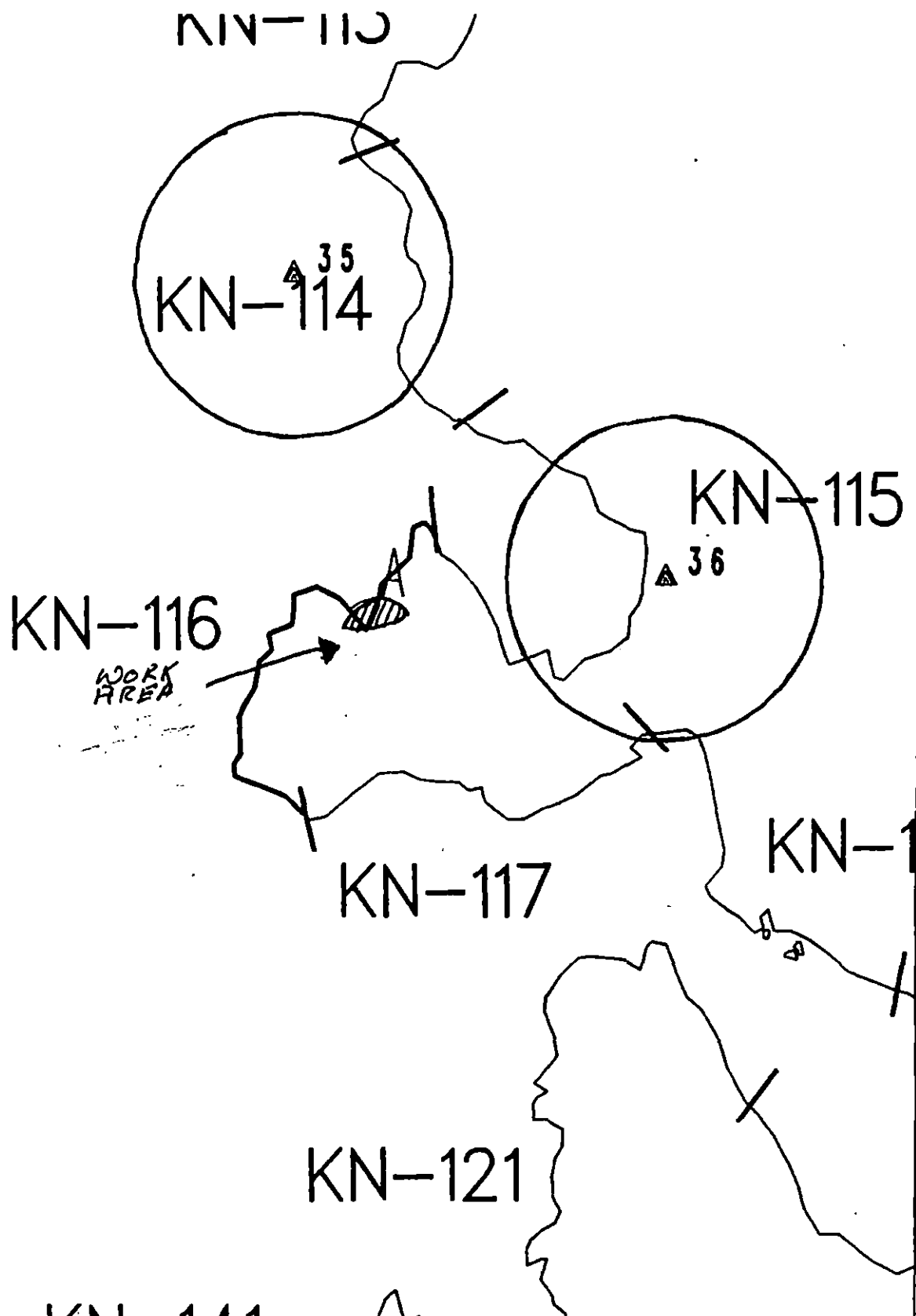
FOSC

DATE 5-21-90

Prepared by:

Anders Meyer

Date: 5/20/90



Exxon Company, USA
Map Key: KN-116
May 11, 1990



ECOLOGY MAP
SEGMENT KN-116
SUBDIVISION A (1 of 1)
METERS
0 300 777

- ★ Seabird Colony
- ▲ Eagle Nest

1 inch = 1274 feet

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: Charles J. [Signature]

DATE: 4/20/90

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:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u>X</u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> </u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> 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
REV C.

TAG COMMENTS:

TAG APPROVAL DATE: 4/19/90

ADEC ART WEINER
EXXON ANDY [Signature]
NOAA Bud Wescott
USCG [Signature]

FOSC: [Signature]

DATE: 4-25-90

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: *Charles J. Smith* DATE: 4/20/90

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:

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

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 *Art Weiner*

EXXON ANDY TEAL *Andy Teal*

NOAA Burt Wescott *Burt Wescott*

USCG KENNETH KERR *Kenneth Kerr*

FOSC: *[Signature]* DATE: 4-25-90

SEGMENT ST/ KN/16

SCH MAP

SUBDIVISION None

DATE Apr. 4 90

CHECKLIST

- ___ M Answer
- ___ Approx. Scale
- ___ Seg/Sub Body
- ___ Oil Dist.
- ___ Width
- ___ Length
- ___ % Cover
- ___ Substrate Character
- ___ Est. HRA/LWL
- ___ SST
- ___ Profile Location(s)
- ___ Profile(s)
- ___ P4 Location(s)
- ___ Photo Location(s)

LEGEND

1 A

PR - No Subsurface Oil

24

Fig - Subsurface Oil

CT/C

Continuous Distribution

CT/8

Broken Distribution

CT/P

Patchy Distribution

CTAS

Synthesized Distribution

Cold Vegetation

1. 2.

**Photo location, direction,
and number**

TTTTT Bedrock Cliffs

KNIGHT ISLAND

low angle
cobble beach / FL/S

Clear horiz. Ct/S
upper boundary

2 Sheets of plywood

~~Packet~~
Packet Bio

~~Remove Plywood Debris~~

low angle
boulder
beach

ct/p
3m wide
or less

Herring Bay

A horizontal number line with tick marks at 0, 100, 200, and 300m.

Oil Character Length (in): AP ☐ PO ☒ CV 120 CT 1092 ST ☒ MS ☒ PT ☐ TB ☐ FL 50 NO ☐

INTRODUCTION



KN-117

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

KN-116

ADEC Segment Length: 1338m



Map Key: PWS-297

Name: Sawyer

Date: Apr. 4, 1990

Data Entered:

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	☐ 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: 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 _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

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 unopened intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.
3N, 3P 3Q, 3Q	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.
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 (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	Anchorage (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	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 / KN117 SUBDIVISION: — DATE 4-6-90

USCG BM3
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 mm thick. They ranged from 1/2 a meter to 1 meter wide and almost continuously.

ADEC NAME M. Cunningham SIGNATURE M. Cunningham

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

Bioremediate low angle boulders and pocket beaches. Manual tilling of beach where pits 1-3 dug in flip over boulders, aerate sediments, bio remediate, rework. "Lambda unit would work at the scale of these beaches. We probably removed all the trash as there was little snow cover. It's too bad Exxon doesn't design a substantial piece of equipment which would remove the tar coat on vertical surfaces... like a cone

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 "wide" bands of oil to depth (10-20cm 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 articulating arm. The pressure would have to be
on the order of 12-1500 PSI but it would remove the tars.
just as I believe the smaller lambda units will do.

SHORELINE OILING SUMMARY

REVISION NO. 03/25/90

OG Greg Chaney USCG Dave Sylvester SEGMENT ST/ KN-117
 BIO Jim Roth LAND REP Steve Phillips (PS) SUBDIVISION 1104E A (10+1)
 EXXON Ray Sotelo ADEC Mike Cunningham TIME 18:15 to 19:35
 TEAM NO.: 7 TIDE LEVEL: 1.0 ft to 3.0 ft DATE April 16 / 90
 LST. SUBDIVISION LENGTH: 1152 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock SNOW
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: West to East
 SURFACE SEDIMENTS: R 60 % B 20 % C 15 % P 5 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 35 % Hang 30 % Vert 35 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 58 m M 161 m N 772 m VL 161 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	15	20	25	30	35	40	45	50	55	60	65	SU	U	M	U
ASPHALT PAVEMENT	X				X											X
POOLED																
COVER		X			X											
COAT	X	✓	0	□	X	10	15	20	25	30	35	40				
STAIN		✓	X			15										
MOUSSE																
PATTIES																
TARBALLS																
FILM		X	✓		✓	X	X						✓	15	X	
NO OIL																

PAVEMENT: H F 8 3 sq. m by 10 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? NO BF RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation	X		
Trash			
Debris	X		

DEBRIS COLLECTED
☒ YES ☐ NOTYPE Yellow Rope#BAGS less than 1

Photographs:

Roll No. ST-7-2Frames 19, 20

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM/GM)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS	
		OP	OR	OL	OF	NO		UO	UC	30 BP	35 FW	40 EL	45 TL	50 LB	SU	U	M	U				
1	10				X		0-10	X		X						X						BP
2	40		X				0-10		X				X				X					BP
						X	10-40		X								X					BP
3	30	X					0-20		X	X							X					BP
						X	20-30		X								X					BP
4	25					X	0-25		X								X					GBP

COMMENTS

Mobile oil was observed along this segment. It seemed to be found primarily in breaks in the bedrock cliffs. In these areas it collected at the base of large boulders.

OGGREG Chaney
 SEGMENT KN 117
 SUBDIVISION NONE
 DATE April 6 90

CHECKLIST

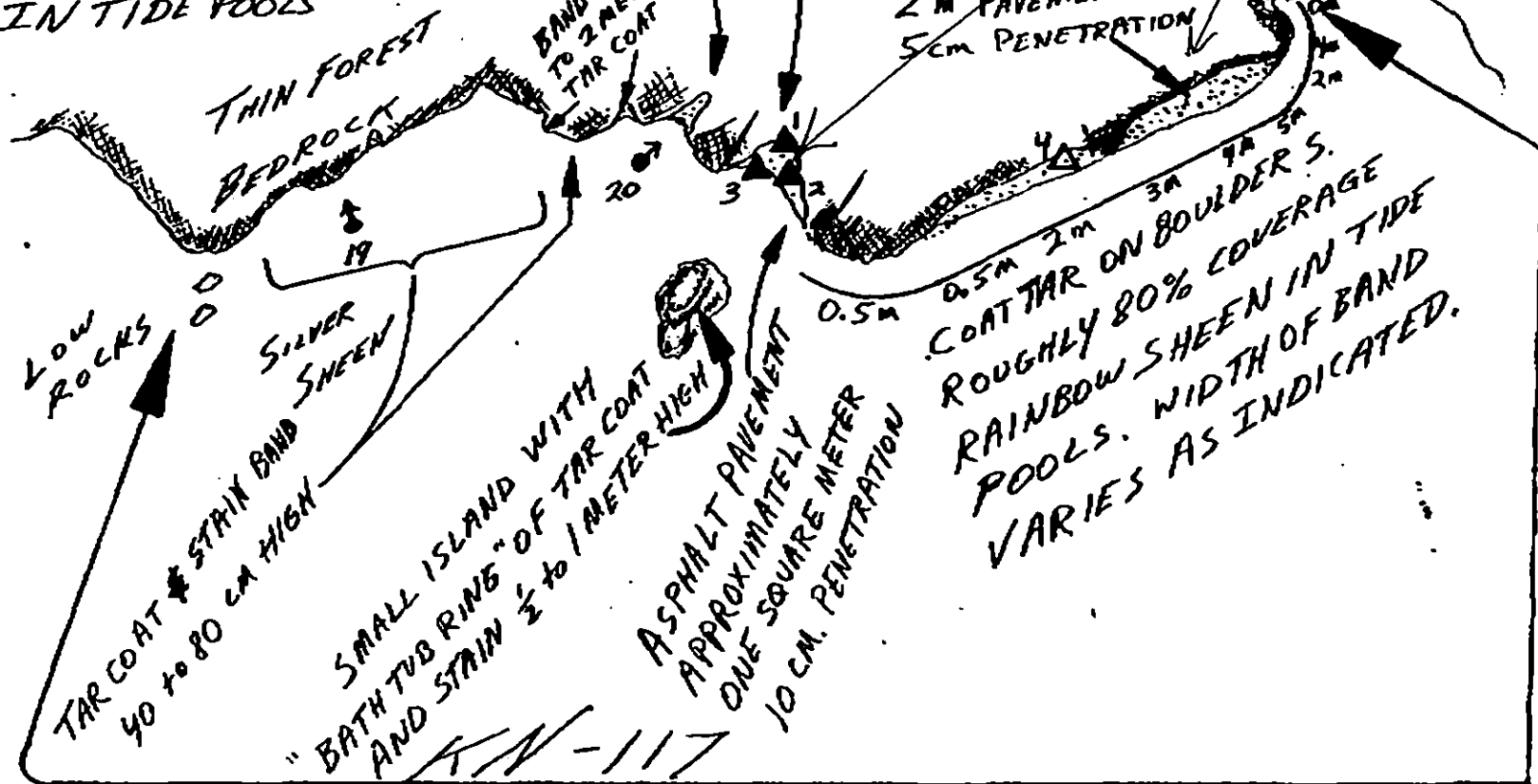
☐ N Answer
☐ Approx. Scale
☐ Seq/Sub Bndry
☐ Oil Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HWA/LWL
☐ SSL
☐ Profile Location(s)
☐ Profile(s)
☐ P/L Location(s)
☐ Photo Location(s)

LEGEND

1 Δ
 P/L - No Subsurface Oil
 2 Δ
 P/L - Subsurface Oil
 CT/C
 Continuous Distribution
 CT/D
 Broken Distribution
 CT/P
 Patchy Distribution
 CT/S
 Splashed Distribution
 Offed Vegetation
 1 $\Rightarrow$
 Photo location, direction,
 and number

METERS
 0 100 200 300

TAR COAT AT BOULDER BASES
 5x10 METER AREA. SOME OIL
 STILL MOBILE. PATCHES OF TAR
 SOAKED GRASS. BROWN SHEEN
 IN TIDE POOLS



Oil Character Length (m): AP 3 PO 0 CV 8 CT 990 ST 200 MS 0 PT 0 TB 0 FL 100 NO 0

REVISION: 02/24/90

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / KN117 Subdivision _____ Date (mo / day / yr) Apr 6, '90

Time (24 hr) Apr 1910 1935 Biologist ROTJ

(A) Substrate type and % of segments:
(1) Bedrock 60 (2) Boulder 20 (3) Cobble 15 (4) Pebble 5 (5) Sand — (6) Silt —

(B) Overall % cover of biota (% of segment): 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 tidal-L); juveniles / adults (X), new settlement (3)

Photographs: Roll No. ST-7.2

Frames 19-20

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	X	X	2	2	2	X
3	3	3	3	X	3	3	3	X	3	3	3
4	4	4	4	X	4	4	4	4	4	4	X
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

MYTILUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	X	2	2	2	2	X	2	X
3	3	3	3	X	3	3	3	3	3	3	3
4	4	4	4	X	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

GASTROPODS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	X	2	X
3	3	3	3	X	3	3	3	3	3	3	3
4	4	4	4	X	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

FUCUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	X	2	X	2	X	2	2
3	3	3	3	3	3	3	X	3	3	3	3
4	4	4	4	4	4	4	X	4	4	4	4
5	5	5	5	5	5	5	X	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

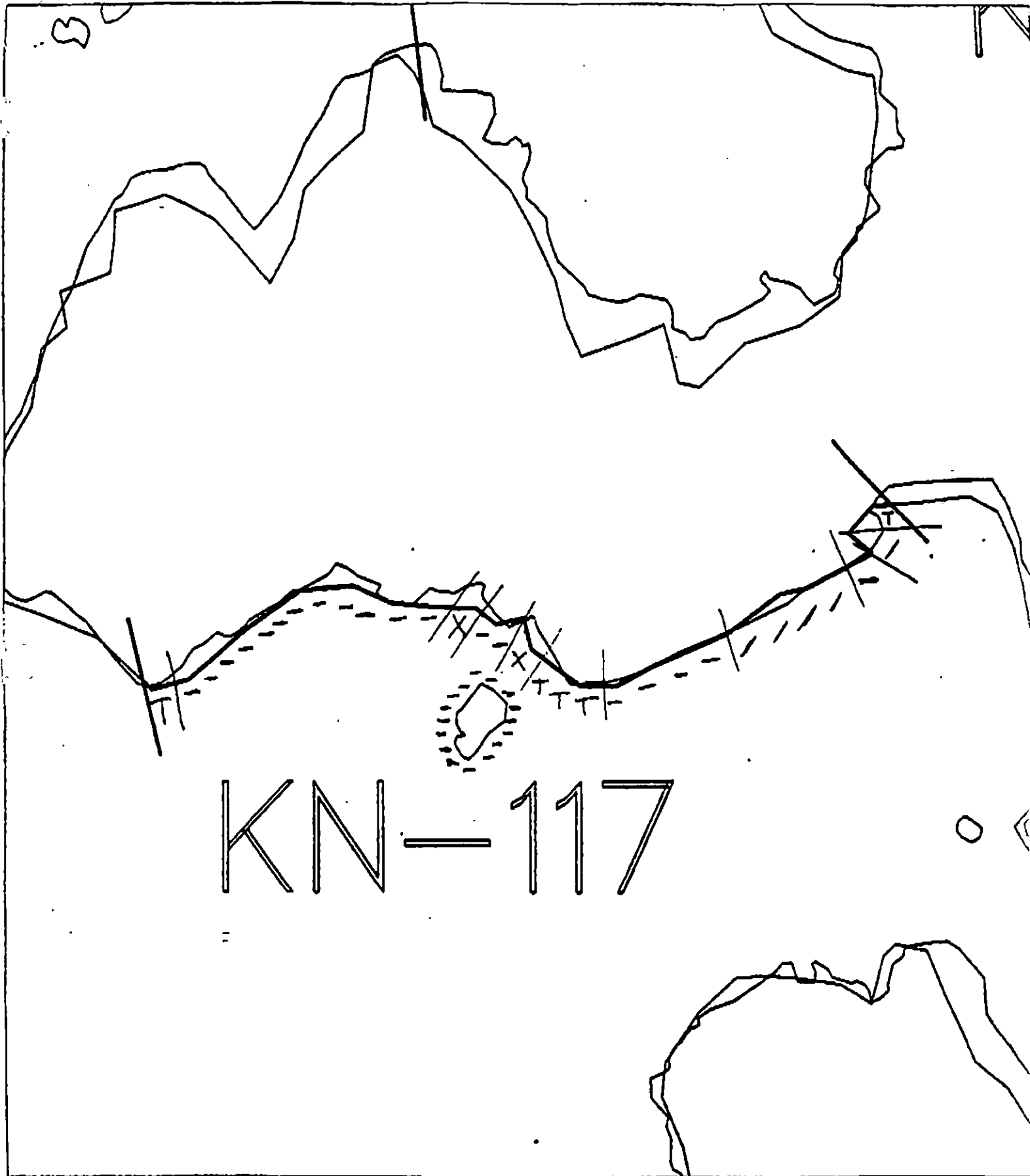
NOT PRESENT

Wildlife Observations/ General Comments:

1 SEA OTTER SEEN IN WATER; 1 ADULT BALD EAGLE FLEW FROM PERCH N SEGMENT.
1 OYSTERCATCHER ON BEDROCK ISLET. OIL SHOWN IN LIVER, MITL (SEE OG REPORT).
STARFISH: PYCNOGONIA, DEEMASTERIAS, HENICIA; SMALL PEANUT WORM; NEMERTAN

Ecological Considerations: (PARANEURTERES); BLUNNY EEL; TEALIA CRASSICORNIS;

GV- RECREATION ANCHORAGES NUCLEA.



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. 6V (6/1-9/15) ✓ *ECOLOGICAL CONSTRAINT*

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid any unnecessary disturbance or damage to uncoiled 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 81 m: Medium 98 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: *Recommend Removal of Tarmat & Asphalt. ALSO RECOMMEND remediation areas*
Work Level Class 1
as indicated on the first sketch.
Sketch Map.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____
ADEC _____
EXXON John Stalup
NOAA _____
USCG _____

FOSC: _____ DATE: _____

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT KN-117 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN
Bioremediation Manual Raking	OPEN

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 unrolled biota and substrate.

TAG ADDENDUM DATE

5/21/90

ADEC

Art Weinger

Art Weinger

EXXON

Andy Earl

Andy Earl

FOSC

W L

DATE

5-21-90

NOAA

Joseph Tallant

Joseph Tallant

USCG

Mr. J. Hall

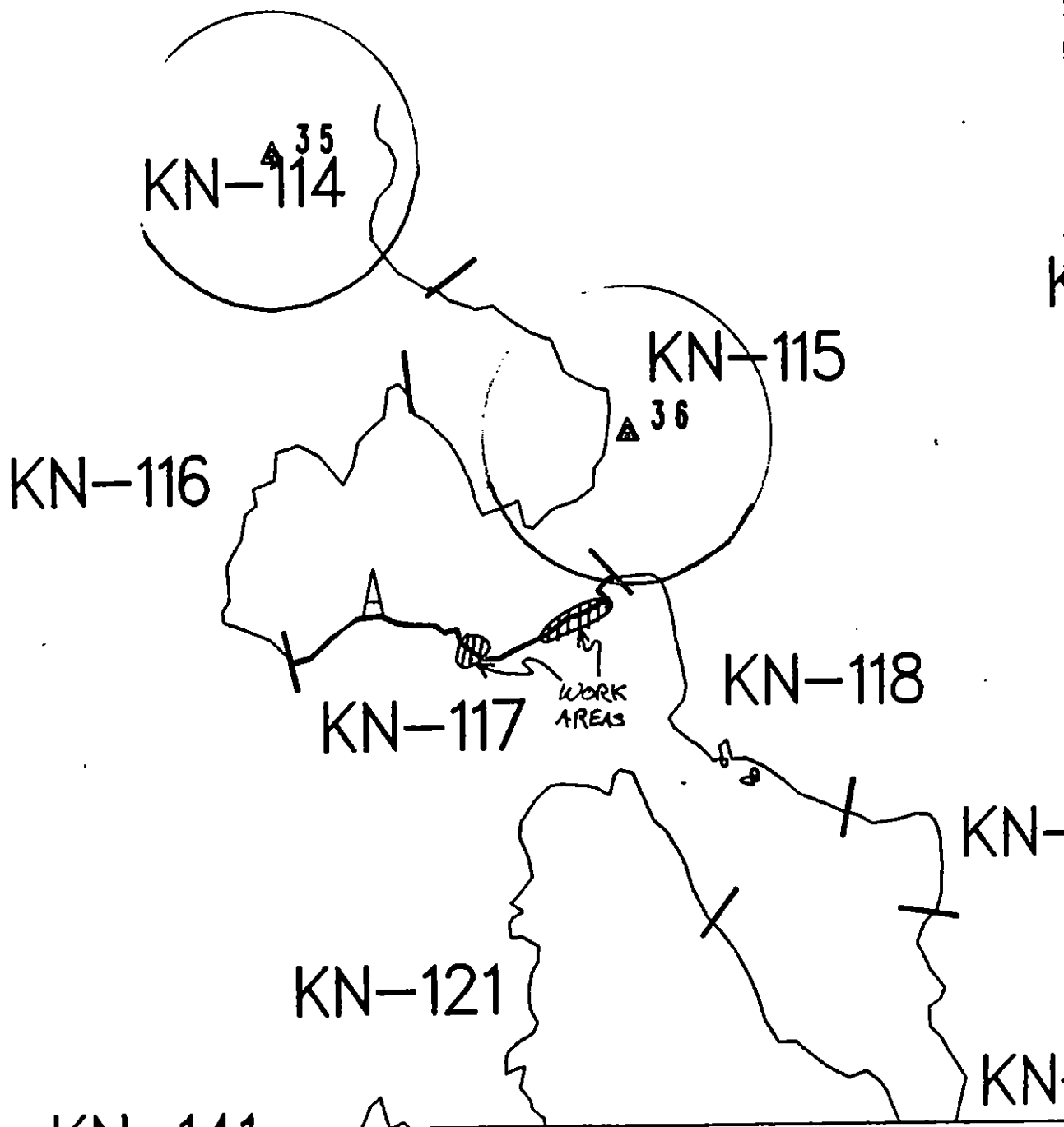
Mr. J. Hall

Prepared by:

Anda Meyer

Date:

5/20/90



Exxon Company, USA

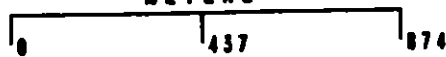
Map Key: KN-117

May 11, 1990

ECOLOGY MAP SEGMENT KN-117

SUBDIVISION A (1 of 1)

METERS



- ★ Seabird Colony
- ▲ Eagle Nest

1 inch = 1434 feet

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: Mark E. Holmes DATE: 4/18/90

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:

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

SEE ADDENDUM DATED 5/20/90
Ray C.

TAG COMMENTS:

TAG APPROVAL DATE: 4/18/90

ADEC JOHN BAUER

EXXON ANDY TETZ

NOAA BILL WARRICK

USCG G.H. BERTER

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: Charles E. H. [Signature] DATE: 4/18/90

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:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u>X</u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u>X</u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> <u>X</u> Removal	<u> </u> 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 BAUER
EXXON ANDY [Signature] FOSC: [Signature] DATE: 4-22-90
NOAA Burt W. [Signature]
USCG G.H. [Signature]

OG Greganey
 SEGMENT ST/KN 117
 SUBDIVISION NONE
 DATE April 6 90

TCH MAP

KNIGHT ISLAND



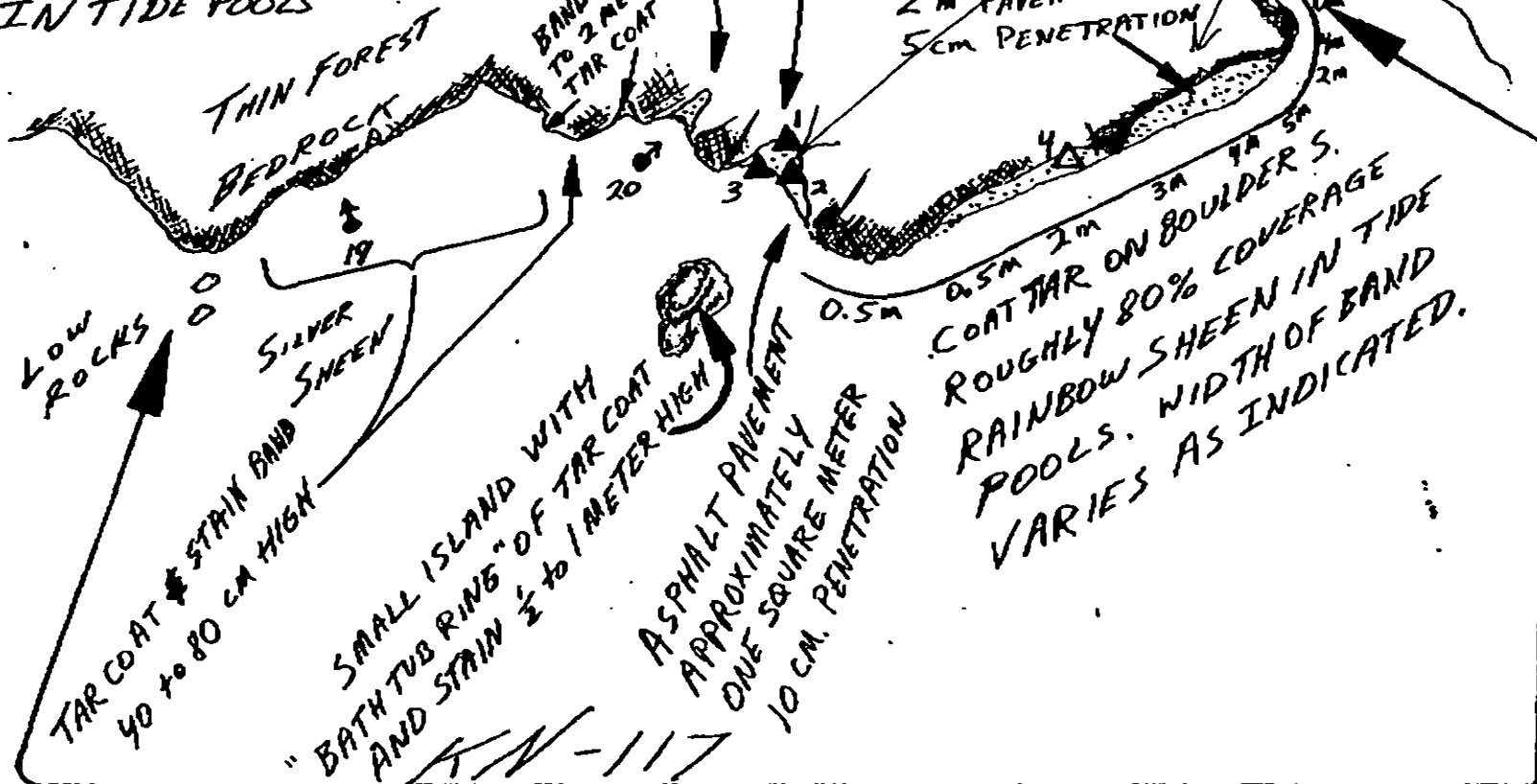
CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Bndry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Ext. HWA/LWL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pli Location(s)
- ☐ Photo Location(s)

LEGEND

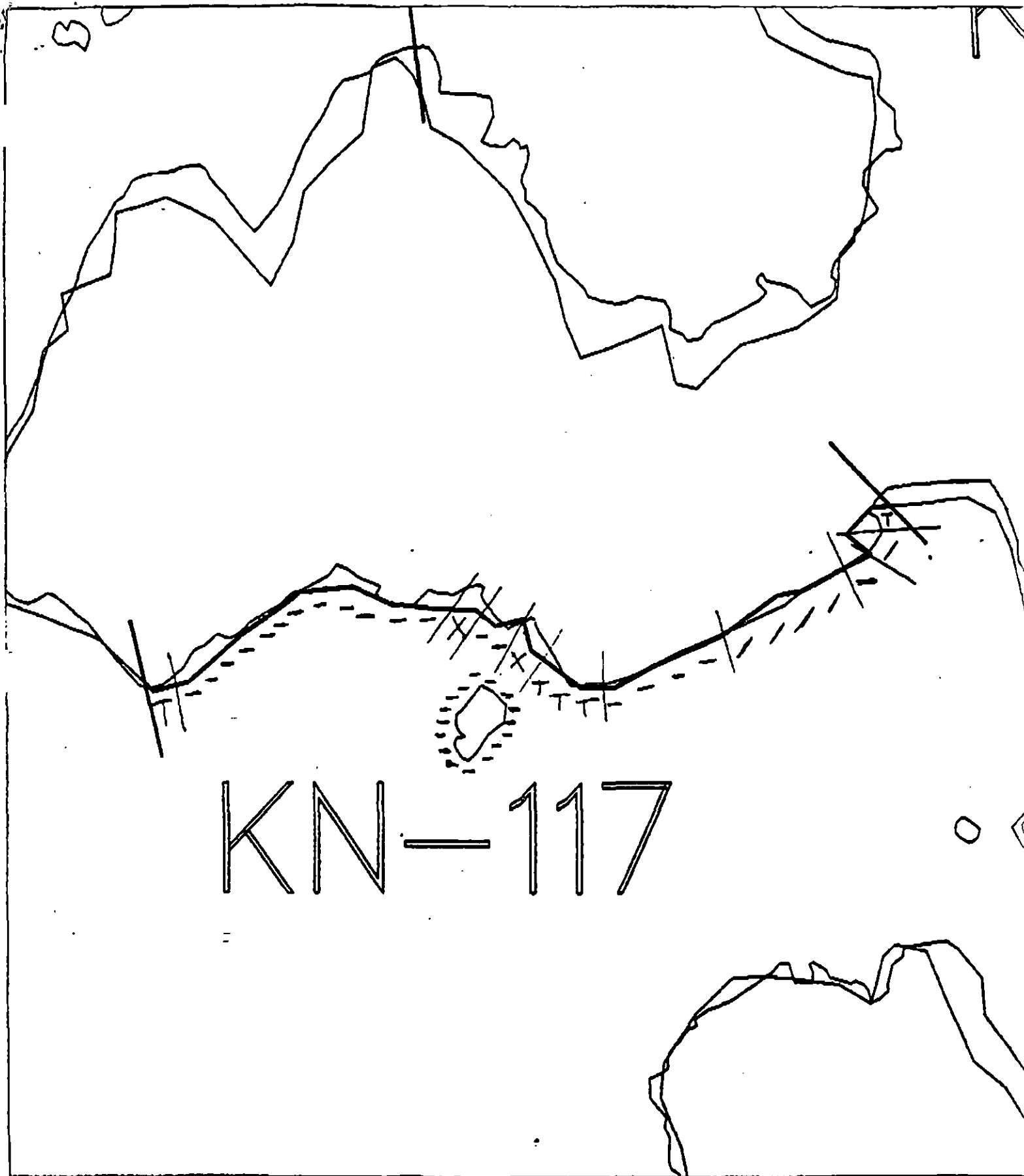
- 1 Δ
Pli - No Subsurface Oil
- 2 Δ
Pli - Subsurface Oil
- CT/C
Continuous Distribution
- CT/D
Broken Distribution
- CT/P
Patchy Distribution
- CT/S
Splashed Distribution
- Oil Vegetation
- 1 $\rightarrow$
Photo location, direction, and number

TAR COAT AT BOULDER BASES
 5x10 METER AREA. SOME OIL
 STILL MOBILE. PATCHES OF TAR
 SOAKED GRASS. BROWN SHEEN
 IN TIDE POOLS



Oil Character Length (m): AP 3 PO 0 CV 8 CT 990 ST 200 MS 0 PT 0 TB 0 FL 100 NO 0

REVISIONS



KN-117

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

KN-117

ADEC Segment Length: 1104m

EXXON Segment Length 1152

0 100 200 300

Map Key: PWS-298

Name: Greg Chaney

Date: April 6 1996

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:

INITIAL

TAG

FOSC

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

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.

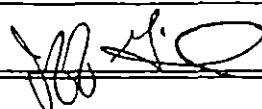
TEAM NO. 1SEGMENT KN0117SUBDIVISION ADATE 5/16/91

ADEC

NAME

JEFF GINARAS

SIGNATURE



NTR

☒ TREATMENT RECOMMENDED

AT OG MAP SITES (A & B) MOUSSE AND SOFT ASPHALT (W/ HIGH SOR) ALONG BAND SUITZ-UITZ. EASILY REMOVABLE BY MANUAL TEAM, ONE DAY. REQUIRES PILING A FEW BOULDERS & TROWEL WORK AROUND ROCKS. AREA SHOULD ALSO BE RAKED/ ~~TROWEL~~ TILLED WHERE POSSIBLE. ~~TROWEL~~ PROPOSED TREATMENT HIGH ON BEACH, THIS NOW INTRUSIVE TO LOWER LYING BLOM. REMAINDER OF SEGMENT; SPORADIC OILING WHICH DOES NOT REQUIRE TREATMENT

EXXON

NAME

RANDALL K. BOYER

SIGNATURE

Randall K. Boyer

NTR

TWO SMALL POCKETS (A & B) HAVE THE POTENTIAL OF REQUIRING SOME PASSIVE CLEANUP EFFORTS. THE UPPELTIDAL ZONE CONTAINS SMALL AREAS OF SOFT AP AND MOUSSE IN ~~SMALL~~ BOULDERS AND COBBLES. INTRUSIVE METHODS OF CLEANUP SHOULD NOT BE CONSIDERED, MUSSEL AND BARNACLES ARE PROLIFIC AND CREATURES CAN BE FOUND ALIVE ABOVE AND BELOW ROCKY ARMOR. SEA LIONS WERE SEEN JUST OFFSHORE.

LANDMANAGER

NAME

MARSHAHALL

OF

DNR

SIGNATURE

Marsha Hall

NTR

☒ TREATMENT

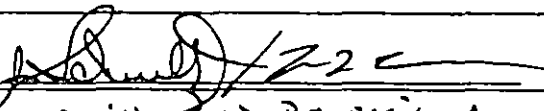
THE MOUSSE AND SOFT ASPHALT SHOULD BE MANUALLY REMOVED. LENS EXTENDS FROM ONE FOOT TO SUPRA. ZONE. AT AREA A.

USCG/NOAA

NAME

SCHULTZLEHLOS

SIGNATURE



NTR

SITES A & B HAVE REMOVABLE OIL WHICH COULD BE EASILY ACCOMPLISHED BY A MANUAL TEAM. THE REST OF THE SEGMENT REQUIRES NO FURTHER INTRODUCTION

Hi Angle BEDROCK OUTCROP SHORLINE W/ BL CHUTES, TYPICAL PATCHY CT & ST W/ ASSOCIATED SPRING NEEDLES IN THE UI & SI - OR NEAR VERTICAL RK FACES - Hi SOR/E IN ROCK CHUTES - SOME SUBSURFACE OIL IN (A) & (B) - (B) HAD M-HI SOR/E UNDER & BETWEEN BC COVER - SEOS BELOW WL SHEEN INSTANTLY WHEN DISTURBED; LOR & MOR IN (C) LOCATED IN LI - DEPTH 0-15CM

MAYSAP SHORELINE OILING SUMMARY

PAGE 1 OF 2TEAM NO. 1OG G. MACDONALDBIO M. FAWCETTSEGMENT KN-117ADEC J. GINARASLANDMANAGER M. HALL for DNRSUBDIVISION AEXXON R. SOYERUSCG/NOAA SCHULTZ / CHILDSDATE 5/16/91TIME 12:25 to 13:20TIDE LEVEL +3.0 ft. to +6.0 ft.ENERGY LEVEL: ☐ H ☐ M ☒ XSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 565 mNEAR SHORE SHEEN: ☐ BR ☒ RB ☒ SL ☐ NONE

EST. OIL CATEGORY LENGTH:

W — m M 70 m N — m VL 195 m NO 300 m US 539 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A1						B	B				RB	V	5	15	X	X			
A2				P					VS		BC	H	4	10	X	X			3 pine needles + organic
B1		P		P		S					BCP	H	7	20	X	X	X	X	hi's soil
B2		S		P		S					RCP	H	6	25	X	X	X	X	M-H's soil
C				S		S	S				CBR	M	62	220	X	X			lo soil

DISTRIBUTION: C = 81-100%; 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 - 24 FRAMES 1341

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE- SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	20		X						5-12	Y	10	B			X		CBG-GC	
2	25			X					5-10	Y	10	B			X		CBG-GC	
3	20							X	—	Y	3	R,B		X			BC-GC	surface oil
4	25							X	0-15	Y?	10	S			X		BC-GC	
5	30							X	—	Y	5	N			X		CB-GCM	
6	30		X						0-15	Y	5	B			X		CG-GC	oatchy in pit
7	10			X					0-10	N	-20	RB				X	CA-G	3 globules
8	20			X					0-12	Y	—				X		B-G	

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

OG COMMENTS:

Low exposure, steep rocky shore w/ CB choked gullies and BC/R substrate.

Surface oil as two distributions: type

(i) CT, ST @ H12-SW12 on steep l. salt p' B in gullies.

(ii) hi's lo soil/I, MS/I @ gullies (A) & (B)

REVIEWED: MC 5/22/91

REVISED: JY 5/21/91

DATE 5, 16, 191

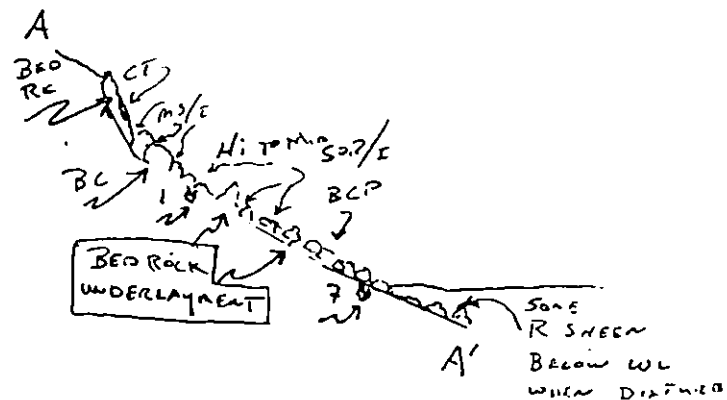
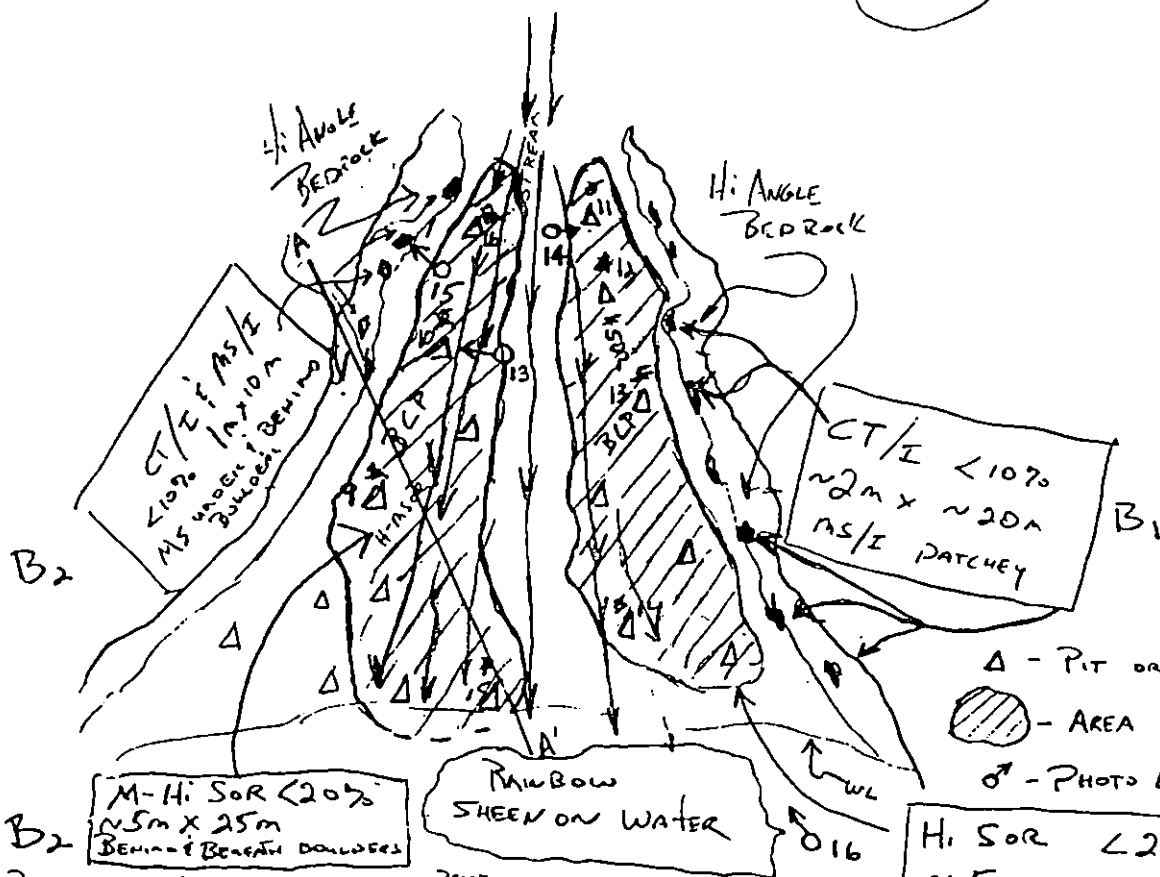
Sub-surface oil associated w/ Sol @ A & C; typically
 Mol-patching Hol; sheens are instant R & B; oil
 extends about 0-15 cmr and is heavier @ MIZ in the
 gullies. The steep rocky shore @ C has Hol-Mol,
 at depths from 0-18 cmr; w/ greatest oil concentrations in
 up. LIT.

3.

Reviews: mc 5/22/71

(B)

4



KN-117A

B. CHILDS

S.K.G.1

PIT #	PROB	TYPE	SED	ZONE	SHEEN
9	1	M SOR	CPB-H	MI	BRU/GLOBULES
10	12	2 - M-Hi SOR _{1/2}	CPB-H	UI	B.R.
11	13	3 - Hi SOR _{1/2}	CPB-H	S	OIL SATURATED GRAIN, NODULES, & ORGANICS
12	4	Hi SOR _{1/2}	CPB-H	UI	" " " "
13	5	Hi SOR _{1/2}	CPB-H	UI	oil w/ NODULES & DETRITUS - PG
14	6	Hi SOR _{1/2}	CPB-H	MI	ROCK OVERTURNED - BRU SHEEN FLOWED - BRU BOTTOM
15	7	Hi SOR _{1/2}	CPB-H	LI	ROCK MOVED & PG disturbed Hi SHEEN (oil flow) (B.R. SHEEN)
16	14	8 - MS/E	CPG-H	S	ROCK OVERTURNED - CT on bottom of RM - MS PATCH BEHIND & BENEATH
	15	RAINBOW SHEEN IN GULF WATER - ~5m x ~15m - DISPURSED BY PROP OF SKIFF			

Continued 521/11

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 16 May 91
 SEGMENT # KN 117 TIDAL HEIGHT(Range) +3.0 to +6.0ft MLLW
 SUBDIVISION A BIOLOGIST Michael Fawcett
 SEA STATE 1 ft swell WIND SPEED/DIRECTION NE 5-10 knots
 PHOTOGRAPHS: ROLL # _____ FRAME # _____

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, scytosiphon, and filamentous red algae.

Site B: Buried oil as low on beach as +6.5 ft (determined by disturbing substrate with stick & watching sheen rise to water surface). The beach is mostly fine gravel and cobble with sparse barnacles, mussels, rockweed & limpets restricted to cobble. Bedrock walls 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 colonized 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 SPECIES PRESENT
Eagles	1	1 flying	
Seabirds			
Waterfowl			
Gulls/kittiwakes	1 black-legged Kittiwake	many out in bay	
Shorebirds			
Corvids	1 raven	1	
Other Birds			

LAND MAMMALS

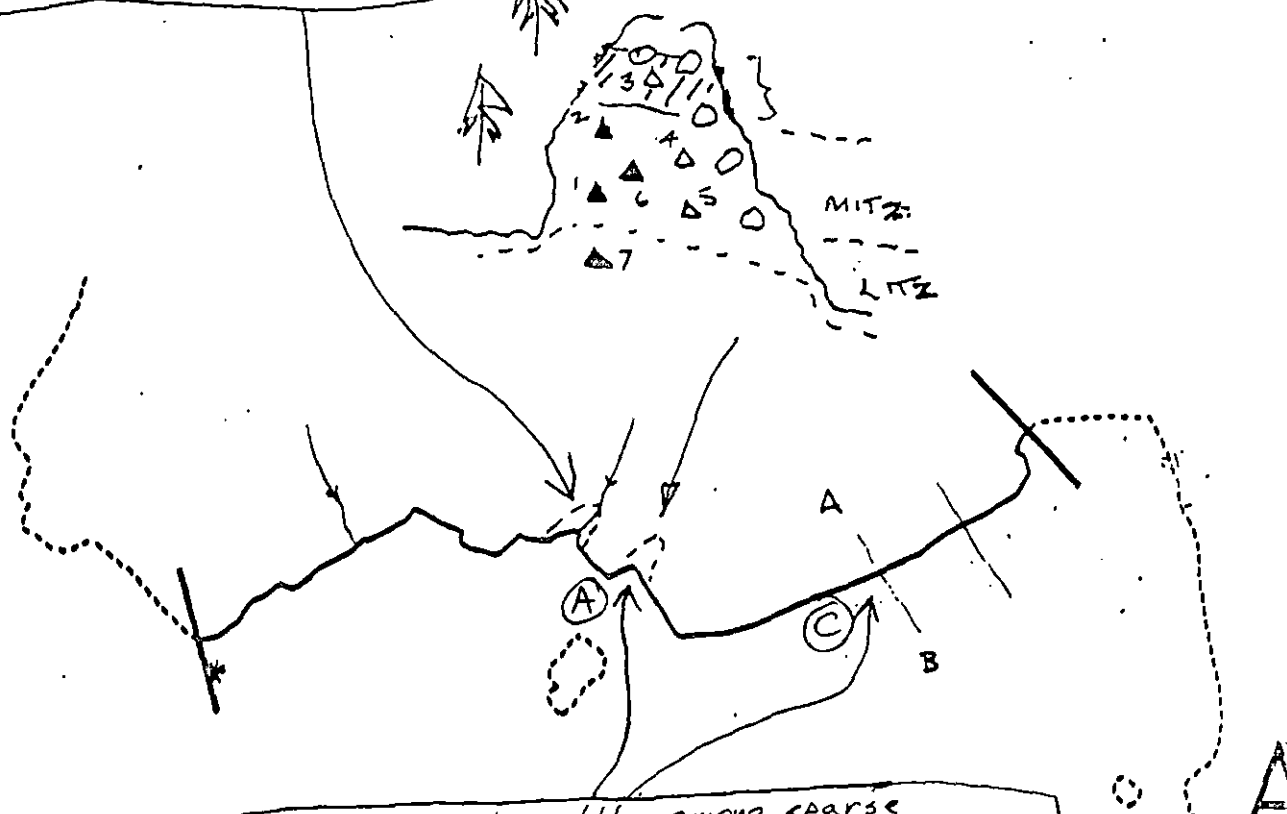
MARINE MAMMALS	# OBSERVED	SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)	1 harbor seal		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 5/22/91

(B)

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



KN0117 A

METERS

0 100 200

AS BUILT 1/1/80

Bio Sketch Map
KN 117A 5/16/91
M. H. Fawcett

69

Reviewed M.B. 5/12

KN 117 16 May 91 Fawcett

start 12³⁵ hrs

pocket beach B/C/P/6 - buried oil
±1.5 ft up to - mostly gravel
& Cobble - in LTZ - patchy sarracenia
sparse mussels & Fucus on cobbles,
sparse limp & spat

- very dense barnacles on B R &
large boulders near wall
- patchy young mussels -

subsurface oil area & below
not very rich, due to unstable
substrate, small seeds (gravel)

easy access

1 eagle flying

- many Kittiwakes out in bay
- Raven

1 harbor seal

- 2nd spat - seal g/p/k/B as
previous, but has mud dove
mussel bed (1-2 yrs) on
boulders & in gravel with
buried oil +3 - +5 ft

- dense barnacles, sparse
limp & limp, sparse young
Fucus

KN 117A (cont) 16 May 91 Fairport
CT on BR + 8 ft, upper edge
of barnacles

- continuing toward head
of bay - continuous CT 1/2 mi
band + 8 ft - a

A-B near end of segment
bryozoa thins out a lot -
dense bunches of mussels
along BP/P narrow shore (CT & stony)
then drops at lot little patch, then
have loose B/C/P w/ sparse
barnacles, mussels, & sparse spat

no Fucus above + 4 ft

1310 - returned to 1st site

(1st boat skipped earlier) -

dense barnacles LTZ - SOR +

barnacles all over the place - most

SOR ~ + 10-12 ft, no bryozoa

- stream w/ green filamentous
algae up to + 10 ft

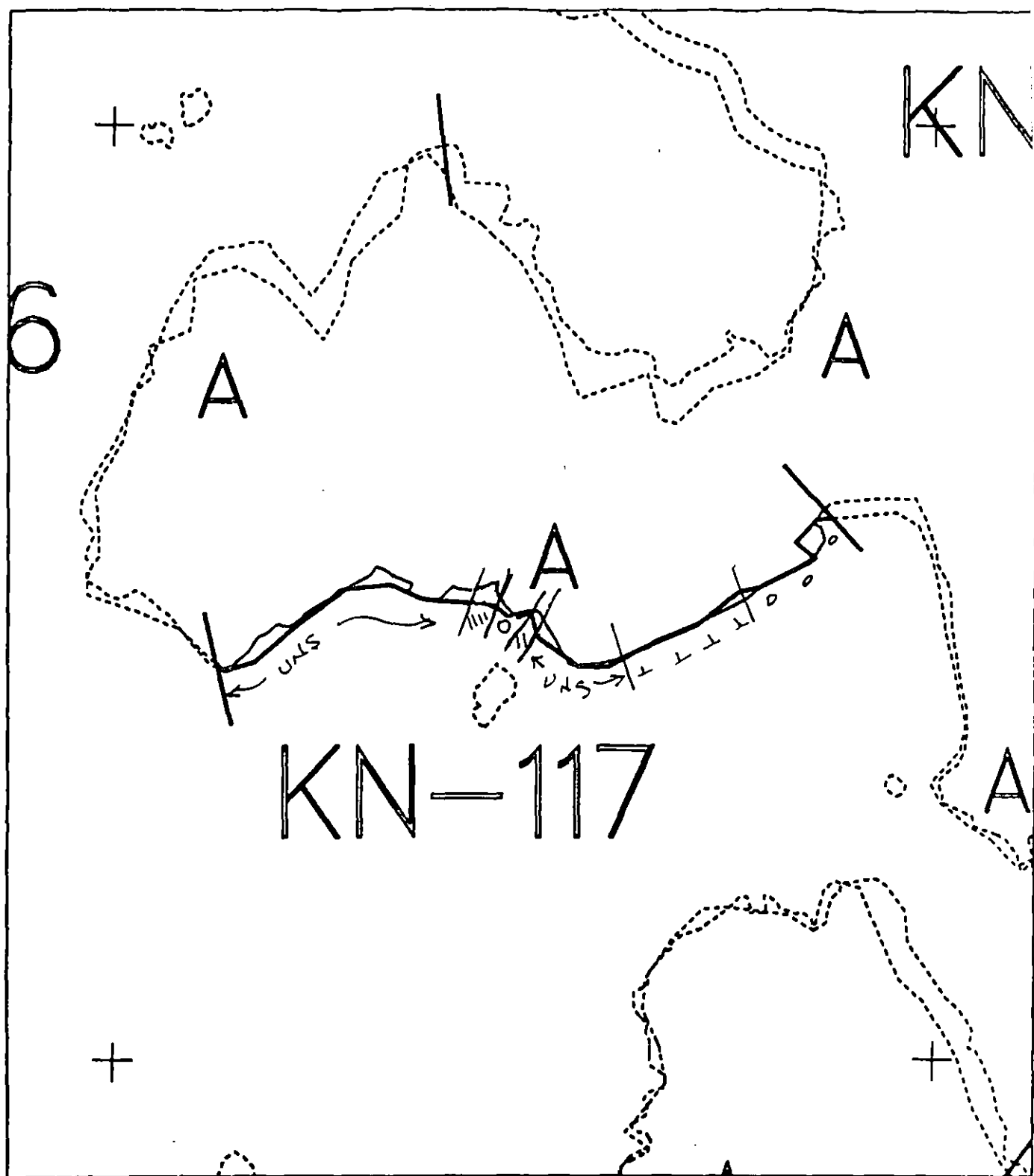
- patchy young Fucus, Scytos,

& Fil. red among dense barnacles

in M+2 + 4-8 ft, can't

see LTZ

Finish ~ 1320



XXXX	Wide	KN0117 A ADEC Subsegment Length: 1104m METERS 0 200 400 AK State Plane Zone 4 kn0117a	Subdivision Field Map Map Key: KNKN0117A Name: <u>GM</u> Date: <u>5.16.91</u> Date Entered:
////	Medium		
----	Narrow		
TTTT	Very Light		
0000	No Oil		

Revised: MC 5/24/91
 Revised 5.21.94
 5

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:

INITIAL

TAG

FOSC

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 _____

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.

ADEC

NAME

JEFF GIMLUS

SIGNATURE

[Signature]

☒ NTR

LOW ENERGY, ROCKY SHORELINE. CONTAINS OCCASIONAL STAIN/COAT ON BOULDERS, SPORADIC LSOR BETWEEN BOULDERS, U/TZ. When looking up & down BEACH REMAINING SOR APPEARS TO BE REMNANT OF A SAND TREATED LAST YEAR (PATH WHERE BOULDERS ROLLED LAST YEAR. NO RECOVERABLE OIL

EXXON

NAME

RANDALL K. BOYER

SIGNATURE

[Signature]

☒ 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 ARE ~~RECOVERING~~ ^{AND} 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

[Signature]

☒ NTR

Ribbons wrapped around rocks at Area C and D. Lo SOR pattys broken up along area E.

USCG/NOAA

NAME

SCHULTZ / CITILDS

SIGNATURE

[Signature]

☒ NTR

NOTHING OF SIGNIFICANCE REMAINS, NO FURTHER TREATMENT WARRANTED

MED SLOPE SHELTERED - LO ENERGY CB SHORELINE, SURFACE OIL DETECTED AS DEGRADED CT; IT IN SE & UI - Lo SOR ON SHELTERED SHORE AT "E"

DATE 5 / 17 / 9.

ENERGY LEVEL: ☐ H ☐ M ☒ L

EST. OIL CATEGORY LENGTH: W m M m N m VL 1,020 m NO 420 m US m

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-

FRAMES 17-19

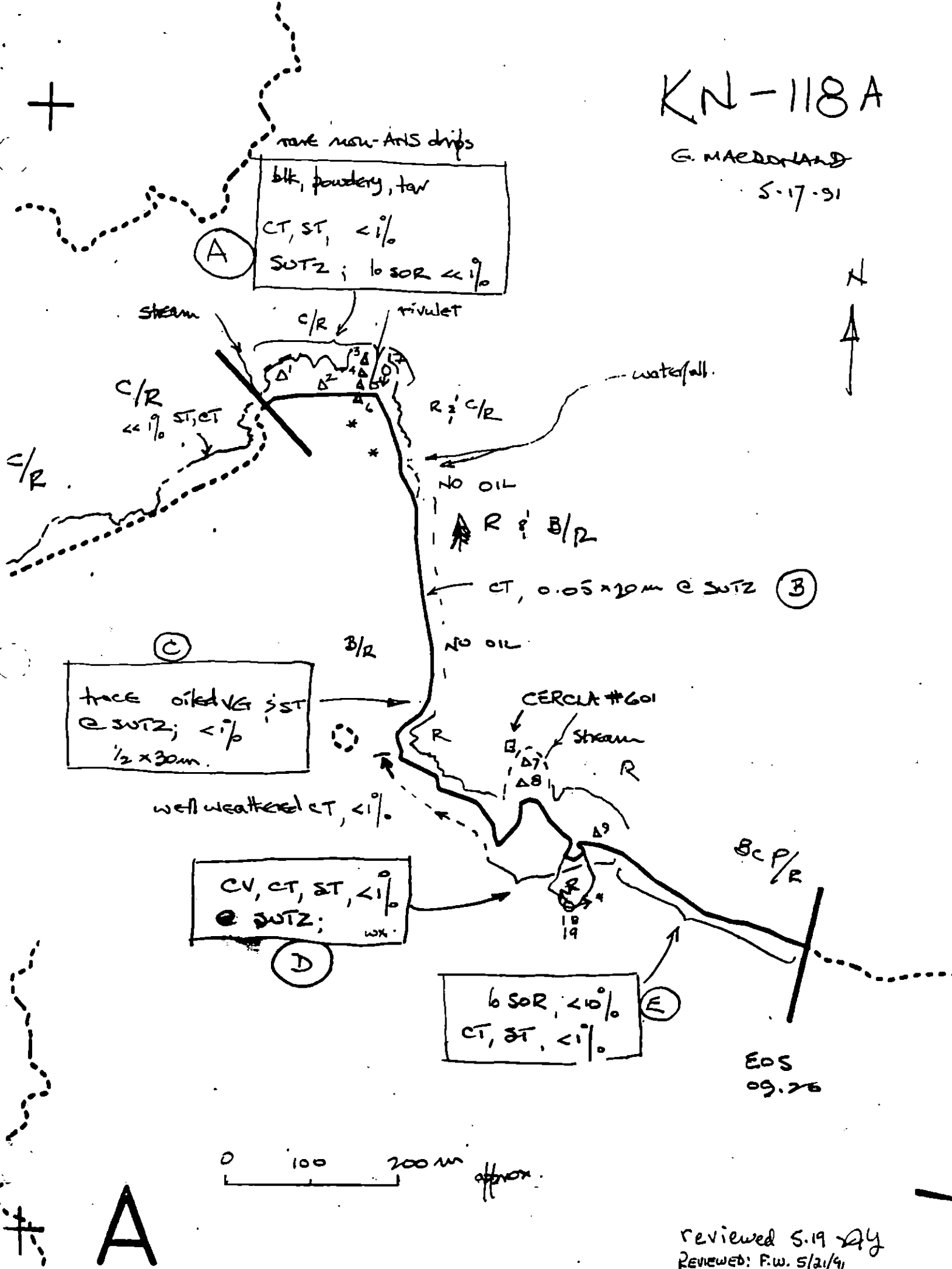
SHEEN COLOR: B = BROWN: R = RAINBOW: S = SILVER: N = NONE

revised 5.19 94
REVIEWED: F.W. 5/19/94

KN-118A

G. MAEDDORAND

5-17-91



reviewed 5.19 24
Reviewed: F.W. 5/21/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 17 May 91
 SEGMENT # KN 118 TIDAL HEIGHT (Range) -1.5 to +2.6 ft
 SUBDIVISION A BIOLOGIST Michael Fawcett
 SEA STATE calm WIND SPEED/DIRECTION E 5 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 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 & 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 & brown species in MTZ-LTZ. Breeding Littorinids, whelks, and nudibranchs (*Lamellidorsis*) were observed at several locations. Large numbers of pelagic euphausiid shrimp were found stranded in the intertidal zone in this segment. Bits of pink chitinous stuff were also stranded throughout this & other segments in Herring Bay --- these appeared to be fecal pellets from some fish that had been eating pink crustaceans, possibly euphausiids. 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 euphausiids that drifted into the area.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

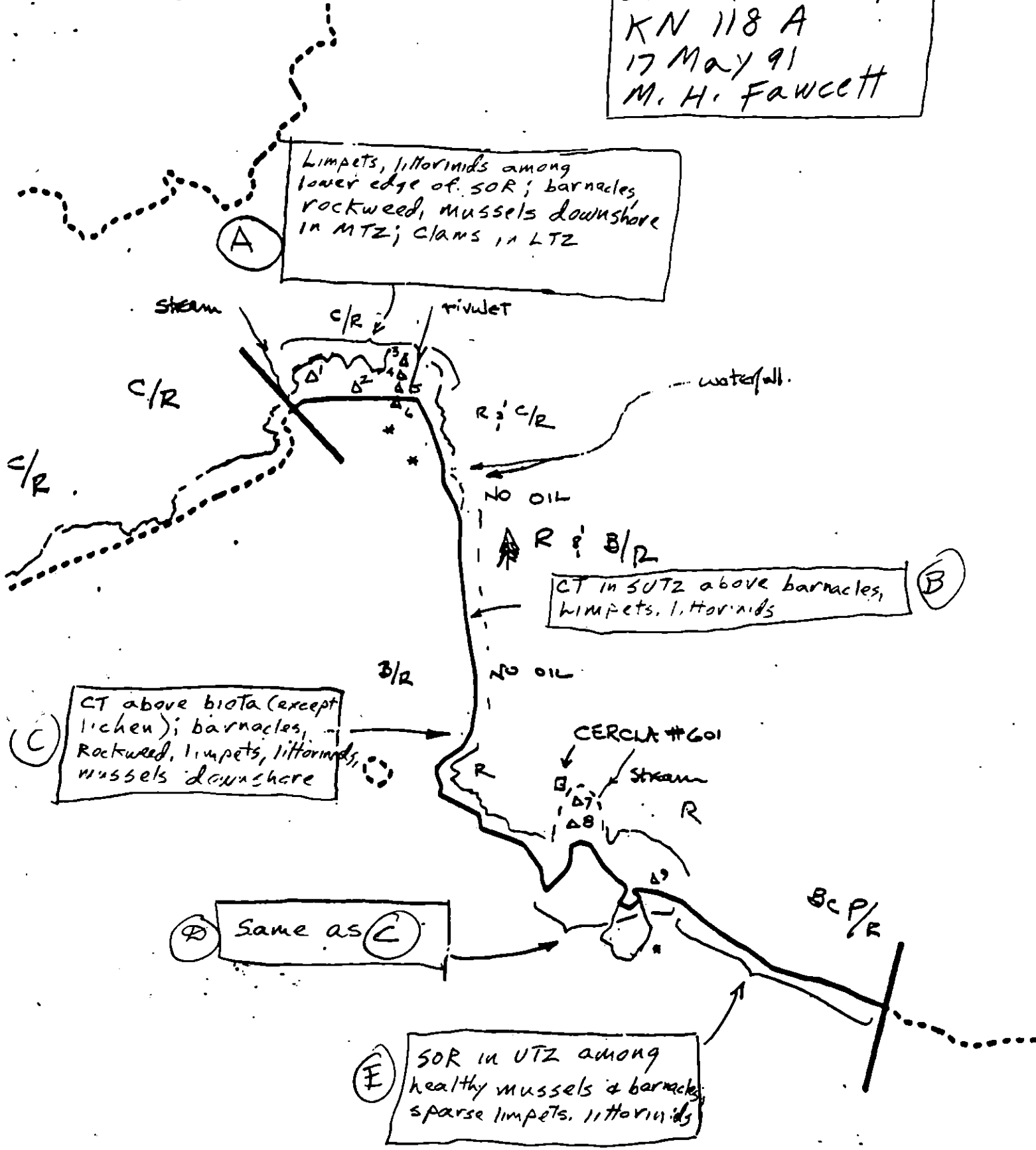
BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles		2	tubenout (stranded)
Seabirds			black prickly back
Waterfowl			
Gulls/Kittiwakes	1 bl. leg. Kittiwake	~ 100	
Shorebirds	6-W Gull	~ 15	
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)	1 harbor seal		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

2
 REVIEWED F.W. 5/21/91
 Kerri Smith CM

DIO SKETCH
 KN 118 A
 17 May 91
 M. H. Fawcett



KN 118 17 May 91 Faucett

Arrive 0800

Mussel bed, dense barnacles in C/P around Head of Bay, scattered

Fucus, dense in patches - typical stalked bay head - Clams LTZ & down

mod. Littorines (all sizes) + lump

CT & ston on BR at just above mod.

barnacles, patchy young mussel + 8 ft (under overhang)

~ 100 bl. Kittiwakes on way in, most sitting in water, some feeding

LTZ at head, Scyto, Euker, etc. in

red, mod. Fucus - (mat of fl. b. & v. green)

green comes very thick, covering thing at

head near waterfall, looks like a sitting

pond - under mat under B are large

(5-6 cm) old mussels, Lamellidors brooding

Litt 2995, Prototheca black & red patches

- Chama in rock crevices pool, also

"Ischnochiton cooperi

- skipped along shore to

other patches - no oil

1 harbor seal

2 eagles

- clammed in gravel behind outcrop

- bits of CT & ST, occasional SOR

17 May 91

Faucett

along rest of segment -

mass stranding of euphausiids along

drift

1 stranded tuckersoot

end 0920

Start KN 119 0920

1 harbor seal - continues after 118

- quit bay head - B/C/P/6 -

clams LTZ - other hds - eelgrass

subtidal - P. xanthus - dense barnacles,

patchy mussel bed + 3-6 ft

CT/ST/SOR bits VTZ - SVTZ among

Lichen - no birds - litt, bay, long 2nd down

→ raven on beach

- 5 Harlequins

- 6W gulls 3

NAAA set aside near shore -

same type mussel bed inland, soft

mud, eelgrass, clams etc. -

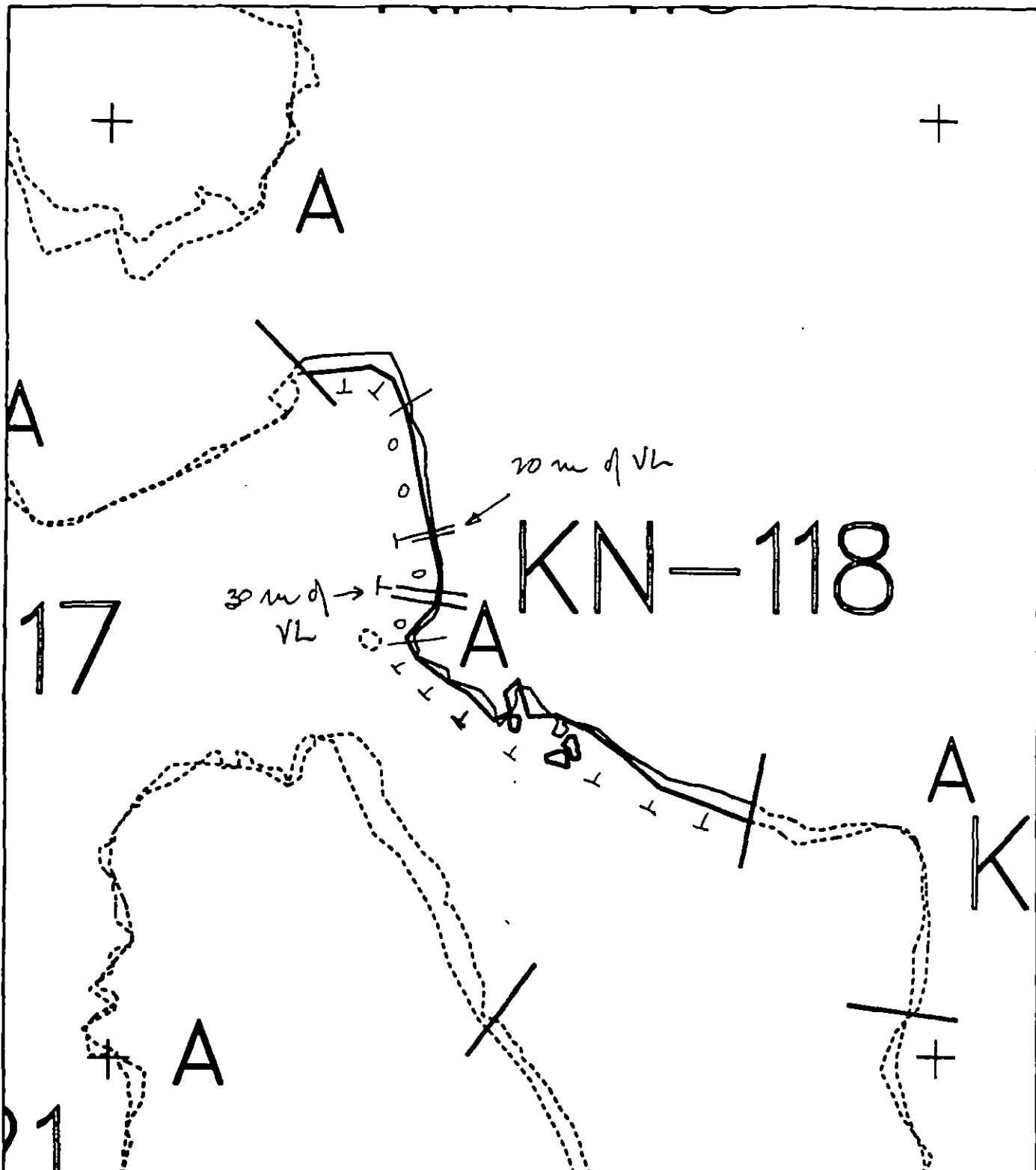
traces CT SOR VTZ among sparse

barn, litt, long - sparse Fucus, more

dense along creek - dense raised bed

of mussels & Fucus on bar in creek

mouth



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

KN0118 A
 ADEC Subsegment Length: 1439m
 METERS
 AK State Plane Zone 4
 kn0118a



Subdivision Field Map
 Map Key: KNKN0118A
 Name: G.M.
 Date: 5.17.91
 Date Entered:

revised 5.19.94
 REVIEWED: F.W. 5/24/91

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: Timothy D. Smith Date: 6/03/91

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: MAY 31 1991

FOSC APPROVAL DATE: 6/3/91

ADEC

FOSC

EXXON

E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC

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.

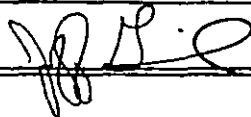
TEAM NO. 1SEGMENT KN0118SUBDIVISION ADATE 5/17/91

ADEC

NAME

JEFF GINALIAS

SIGNATURE



NTR

LOW ENERGY, ROCKY SHORELINE, CONTAINS OCCASIONAL STAIN/COAT ON BOULDERS, SPORADIC L-SOR BETWEEN BOULDERS, UTZ. When looking up & down BEACH REMAINING SOR APPEARS TO BE REMNANT OF A BAND TREATED LAST YEAR (PATH 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 HERRING BAY SHORELINES, THERE IS COATING ON VERTICAL ROCK FACES AND AT THE BASE OF BOULDERS, BUT LOWER INTERTIDAL ZONES ARE ~~RECOVERING~~^{RHO} 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

MARSHAHALL

OF

DNR

SIGNATURE

Marsha Hall

NTR

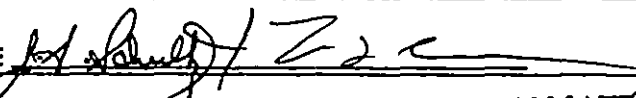
Ribbons wrapped around rocks at Area C and D. Lo SOR pattys broken up along area E.

USCG/NOAA

NAME

SCHULTZ / CHILDS

SIGNATURE



NTR

NOTHING OF SIGNIFICANCE REMAINS, NO FURTHER TREATMENT WARRANTED

MED SLOPE SHELTERED - LO ENERGY CB SHORELINE, SURFACE OIL DETECTED AS DEGRADED CT; IT IN SE & NE - LO SOR ON SHELTERED SHORE AT "E"

PAGE 1 OF 1

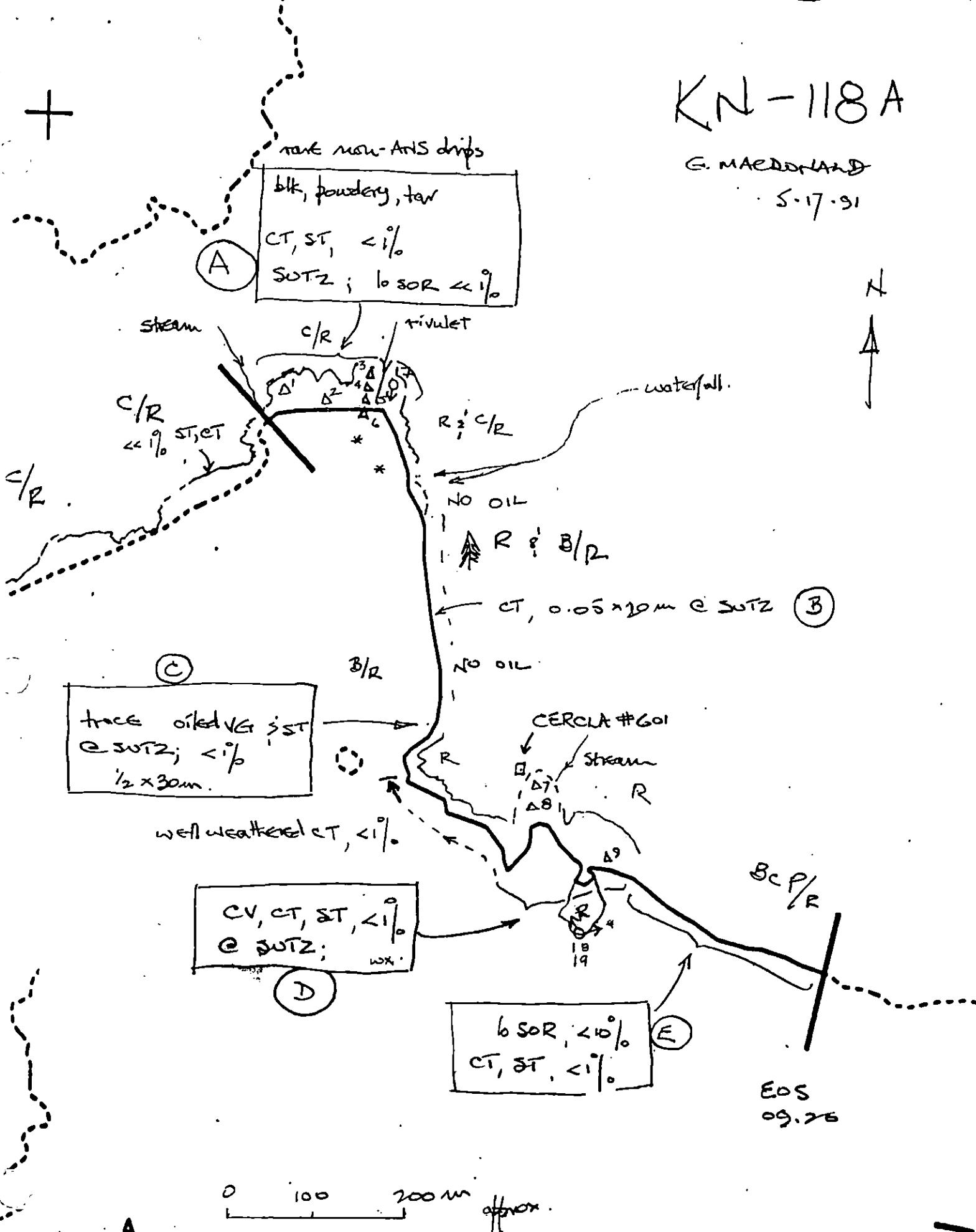
DATE 5 / 17 / 91

revised 5.19 94
REVIEWED: F.W. 5/21/94

KN-118A

G. MACDONALD

5.17.91



reviewed 5.19 ay
Reviewed: F.W. 5/21/91

TEAM #

SEGMENT #

SUBDIVISION

SEA STATE calm

WIND SPEED/DIRECTION E 5 knots

PHOTOGRAPHS: ROLL #

FRAME #

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 in LTZ, and Ulva, Enteromorpha, and mats of filamentous red & brown species in MTZ-LTZ. Breeding Littorinids, whelks, and nudibranchs (Lamellidorsis) were observed at several locations. Large numbers of pelagic euphausiid shrimp were found stranded in the intertidal zone in this segment. Bits of pink chitinous stuff were also stranded throughout this & other segments in Herring Bay --- these appeared to be fecal pellets from some fish that had been eating pink crustaceans, possibly euphausiids. 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 euphausiids that drifted into the area.

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles		2	tubenout (stranded)
Seabirds			black prickle back
Waterfowl			
Gulls/kittiwakes	1 bl. leg. kittiwake	~ 100	
Shorebirds	1 G-W Gull	~ 15	
Corvids			
Other Birds			

MARINE MAMMALS

‡ OBSERVED

SPECIES

‡ OBSERVED

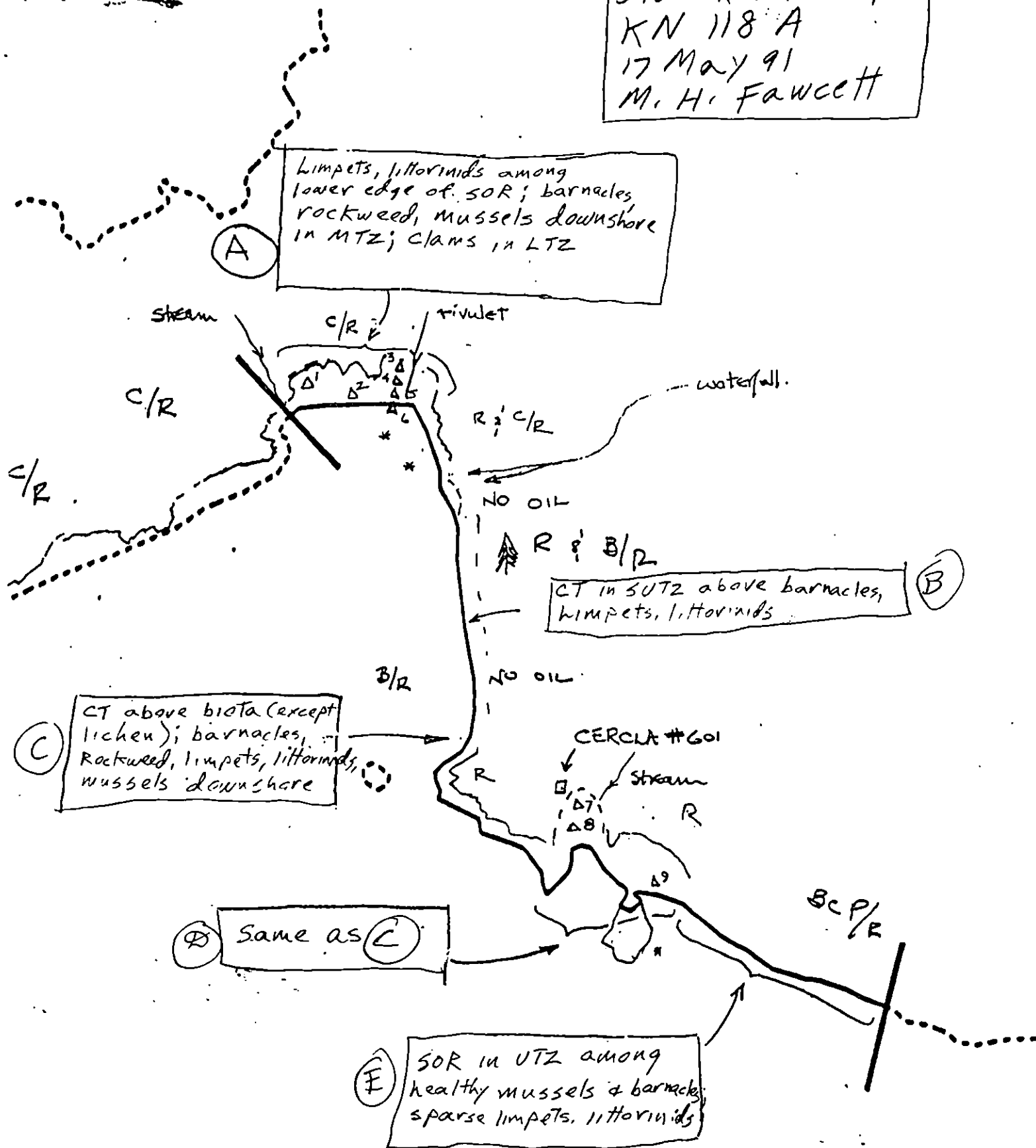
Sea Otters			
Pinnipeds (specify)	1 harbor seal		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED F.W. 5/24/91
 [Signature]

D10 Sketch Map
KN 118 A
17 May 91
M. H. Fawcett

Limpets, littorinids among
lower edge of SOR; barnacles,
rockweed, mussels downshore
in MTZ; clams in LTZ



KN 118 17 May 91 Fawcett

Arrive 0800

Mussel bed, dense barnacles in C/P around Head of Bay, scattered

Fucus, dense in patches - typical shelter bay head - clams LTZ & down

mod. Littorinae (all sizes) + lump

CT & stone on BR at just above mod.

barnacles, patchy, young mussels + 8 ft (under overhang)

~ 100 bl. Kittiwakes on way in, most sitting in water, some feeding

LTZ at head, Scyto, Eulima, etc. - red, mod. Fucus - (mat of fl. b. & v. green seaweed very thick, covering thing at

head near waterfall, looks like a sitting pond - under mat under B are large (5-6 cm) old mussels, Lamellidons breeding

Litt 2995, Prototheca black & red patches

- Chama in rock cave pool, also

"Ischnochiton cooperi

- skipped along shore to other pools - no ab

1 harbor seal

2 eagles

- clammed in gravel behind outcrop

- bits of CT & ST, occasional SOR

17 May 91

Fawcett

along road of segment -

mass stranding of eiphanisids along drift

1 stranded turbot

end 0920

Start KN 119 0920

1 harbor seal - continues after 118

- quit bay head - B/C/P/6 -

clams LTZ - other hds - eelgrass

subtidal - Pycnogonids - dense barnacles

patchy mussel bed + 3-6 ft

CT/ST/SOR bits VTZ - SVTZ among

Lichen - no birds - litt, lump, large 2nd down

1 raven on beach

- 5 Harlequins

- 6 W gulls 3

NOAA set aside near stream -

same type mussel bed inland, soft

muds, eelgrass, clams etc -

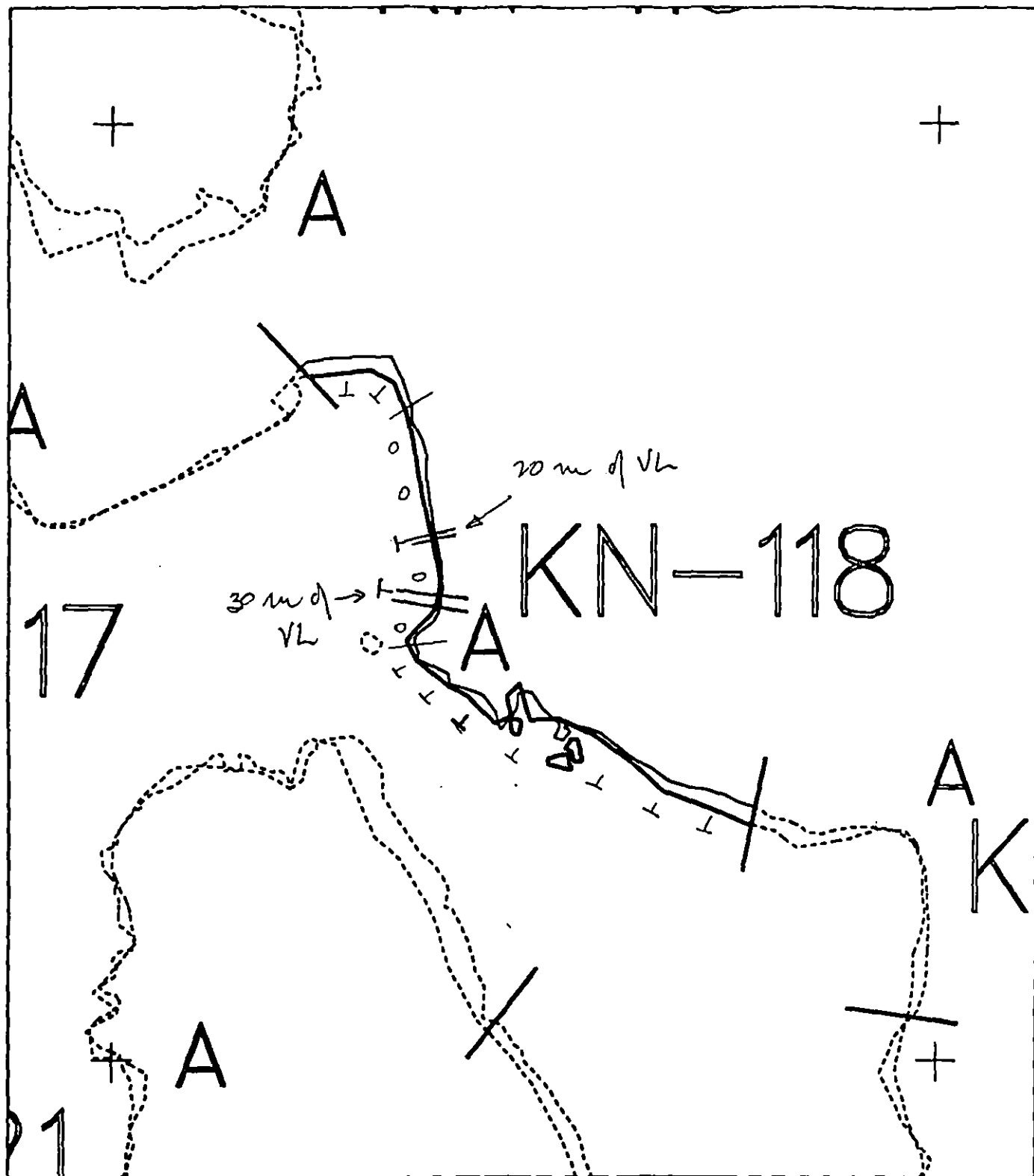
traces CT SOR VTZ among sparse

barn, litt, lump - sparse Fucus, more

dense along creek - dense raised bed

of mussels & Fucus on bar in creek

mouth



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

KN0118 A
 ADEC Subsegment Length: 1430m
 METERS
 0 200 400
 AK State Plane Zone 4
 kn0118a



Subdivision Field Map
 Map Key: KNIK0118A
 Name: G.M.
 Date: 5.17.91
 Date Entered:

revised 5.19 91
 REVIEWED: F.W. 5/21/91

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/KN-118

SUBDIVISIONS: A (1 OF 1)

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 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: _____

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
☒ 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.

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / KN 118 SUBDIVISION: NONE DATE 4/4/90USCG NAME Pat Malay SIGNATURE _____☐ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

→ SICK LEAVE

ADEC NAME M. Cunningham SIGNATURE M. Cunningham☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

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 Steven Phillips☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Scout storm berm for debris.

Bioremediate on segment portions with "narrow" oiling

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Greg Chaney USCG (Pattick Maloy) SEGMENT ST/ 11-118
 BIO Jim Bath LAND REP Steve Phillips SUBDIVISION Area A (of 1)
 EXXON Ray Sotelo ADEC Mike Cunningham TIME 13:00 to 15:00
 TEAM NO.: 7 TIDE LEVEL: 6.0 to 2.0 ft DATE April 1, 4, 1990
 EST. SUBDIVISION LENGTH: 15.5 m ☒ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock SNOW
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: West to East
 SURFACE SEDIMENTS: R 20 % B 30 % C 20 % P 20 % G 10 % S — % M — % V — %
 SLOPE: Long 20 % Hang 60 % Vert 20 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W — m M — m N 600 m VL 700 m NO 215 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	15	10	15	10	15	10	15	10	15	10	15	SU	UI	MI	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT		X	✓	O	X	✓			X	✓			X	✓	X	U
STAIN		X	✓	O	X	✓			X	✓			X	✓	X	U
MOUSSE																
PATTIES																
TARBALLS																
FILM			X			X										X
NO OIL																

PAVEMENT: H F S — sq. m by — cmPATTIES / TARBALLS — BAGSNEAR SHORE SHEEN? NO BR (RW) SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash	X		
Debris	X		

DEBRIS COLLECTED
☒ YES ☐ NOTYPE Paper & Pom-pom
#BAGS less than 1

Photographs:

Roll No. ST-7-2Frames 1

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	UC	10	15	10	15	10	15	10	15	SU	UI	MI	U		
1	15					X	.		X											X			CBGM
2	20					X	.		X										X				CPGS
* 3	20				X		0-1		X				X						X				GP
* 4	25				X		0-1		X				X						X				GP
5	40					X	.		X											X			GM
							.																

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 Pits 3 & 4 does not constitute
 Page 1 of — Subsurface oil. 111 111

REVIEWED UH DATE 4-8-90

OG: Greg Chaney
 SEGMENT ST/KN-118

SUBDIVISION None

DATE April 14 90

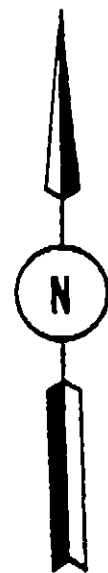
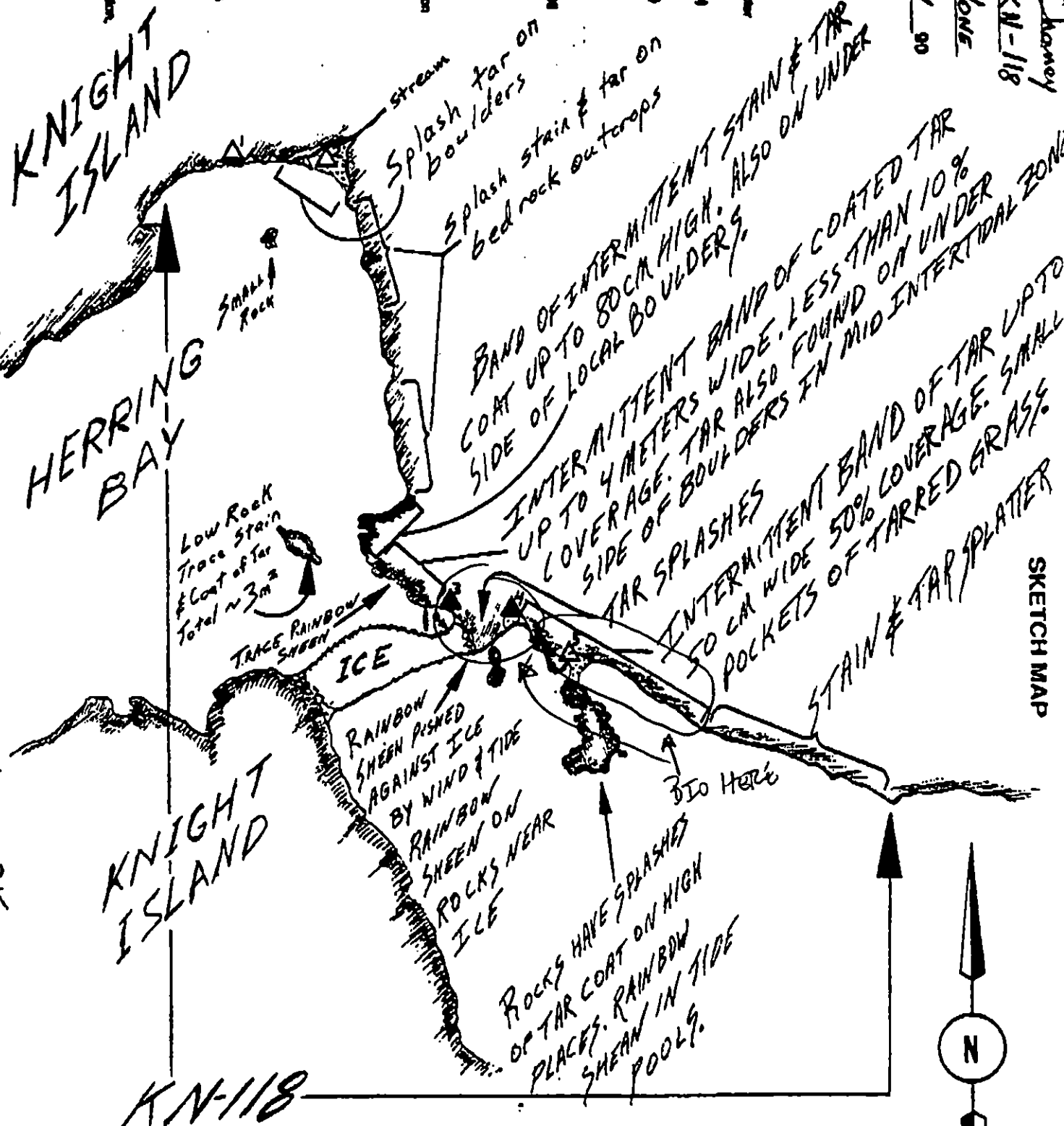
CHECKLIST

- ☐ M Arrow
- ☐ Approx. Scale
- ☐ Sog/Salt Brdy
- ☐ OR Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ E.L. 1M/LALH
- ☐ SST
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ P.L. Location(s)
- ☐ Photo Location(s)

LEGEND

- 1 Δ Pk. No Subsurface CI
- 2 Δ Pk. Subsurface CI
- CT/C Conductivity Distribution
- CT/B Bedrock Distribution
- CT/P Paddy Distribution
- CT/S Sphered Distribution
- Dead Vegetation
- Photo location, direction, and number

SKETCH MAP



On Character Length (m): AP — PO — CV — CT 100 ST 00 MS — PT — TB — FL 400 NO 315

MEMORANDUM

SHORELINE ECOLOGICAL SUMMARY

REVISION: 02/22/90

Segment ST / KN 118 Subdivision — Date (mo / day / yr) Apr 4, '90
 Time (24 hr) ARR 1305 Biologist ROTH
LV 1500

- (A) Substrate type and % of segments:
 (1) Bedrock 40 (2) Boulder 30 (3) Cobble 15 (4) Pebble 15 (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: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (3)
- Photographs: ST-7-2
 Roll No. ST-7-2
 Frames 1

BARNACLES

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

MYTILUS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

GASTROPODS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

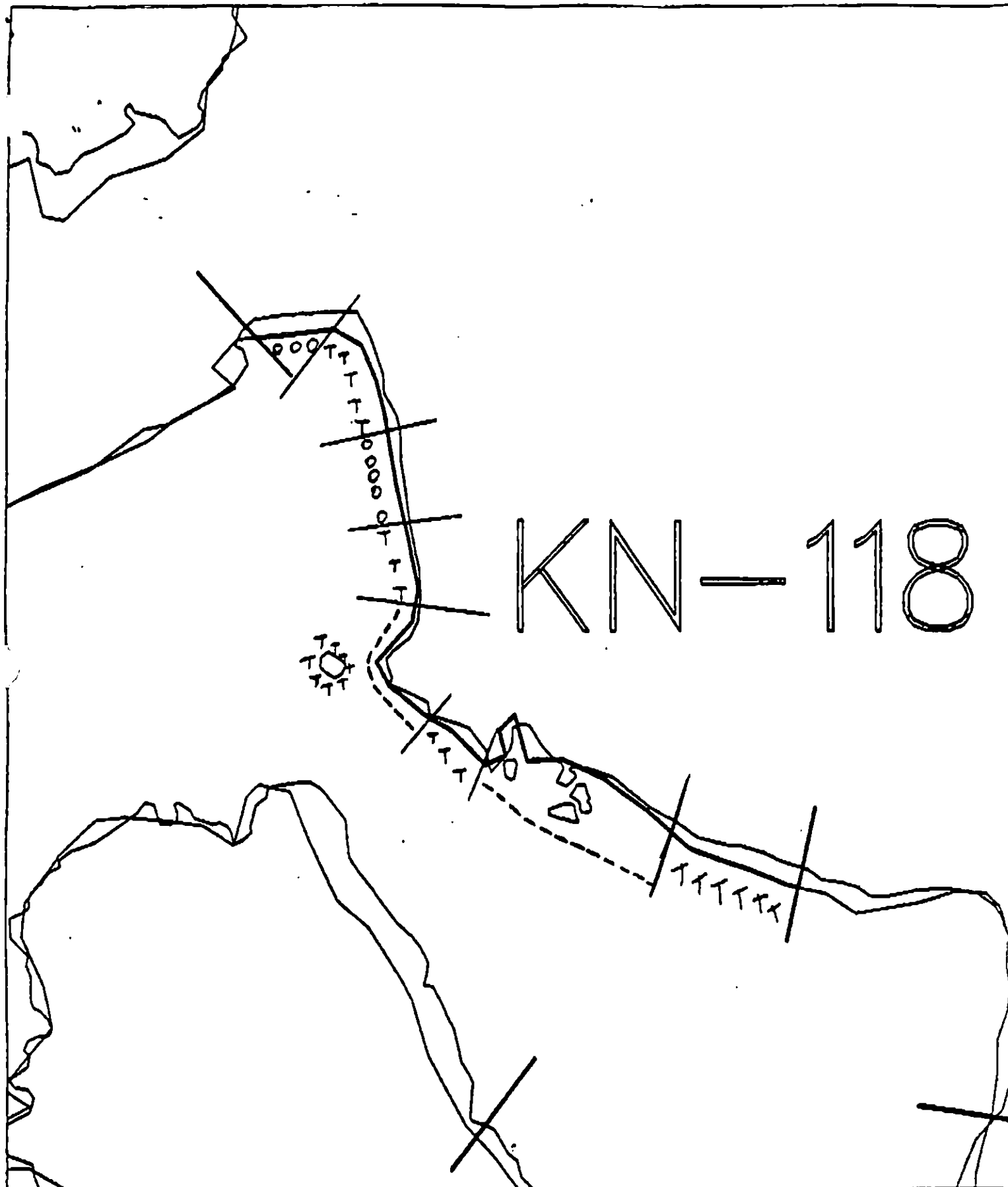
1 SEA OTTER FEEDING NEAR SEGMENT
 CAN'T SEE LOWER ZONE AT THIS TIDE; ONLY FUCUS ESTIMATES POSSIBLE.

Ecological Considerations:

GV- RECREATION ANCHORAGES

PWS, SEWARD AND HOMER 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 (4/15 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, locations and constraints.
- 2M Herring spawning (4/1 to 6/15)
 Restrict boat traffic to essential minimum. Avoid damage to uncultivated 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 (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 ~~Recreation: Boat launches (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 Invertebrate harvesting
 For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

KN-118

ADEC Segment Length: 1193m
Exxon Segment Length: 1515m

0 100 200 300 400

Map Key: PWS-299

Name: Greg Chaney

Date: April 4 1990

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT KN-118 SUBDIVISION A (1 of 1)

WORK WINDOW	
Bioremediation	OPEN

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 uncolled biota and substrate.

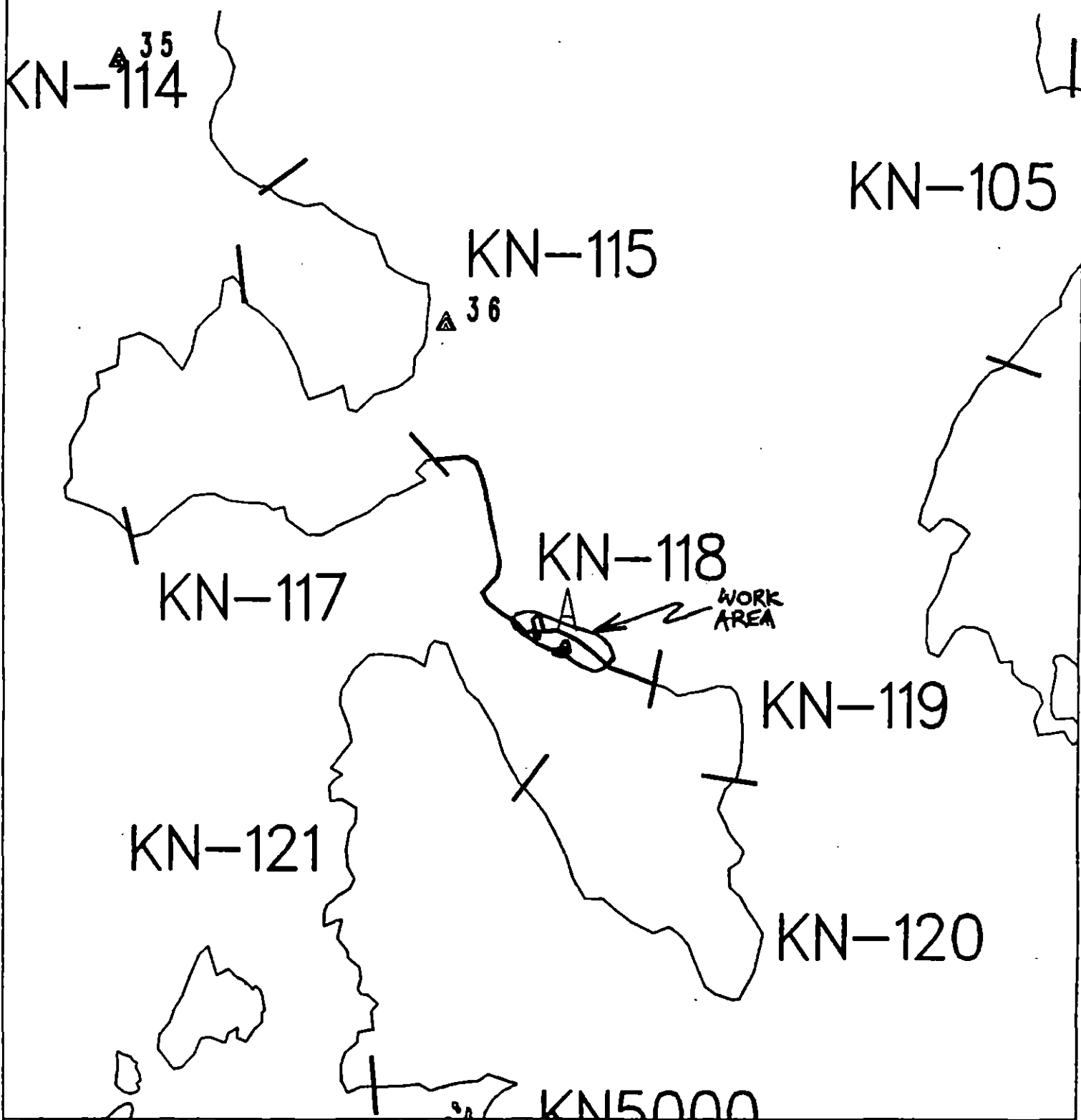
TAG ADDENDUM DATE 5/6/90
ADEC ART WEINER Det Weiner
EXXON ANDY TEAL
NOAA Joseph Talbot
USCG G.A. REITER G.A. Reiter

FOSC

DATE 5-17-90

Prepared by: WJK

Date: 5/14/90



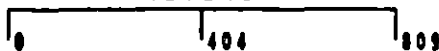
Exxon Company, USA

Map Key: KNI-KN-118

May 11, 1990



ECOLOGY MAP
SEGMENT KN-118
SUBDIVISION A (1 of 1)
METERS



- | | |
|---|----------------|
| ★ | Seabird Colony |
| ▲ | Eagle Nest |

1 inch = 1327 feet

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: Mark Z. Adams

DATE: 4/18/90

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:

 No Treatment Recommended

X Treatment Recommended

 Manual Pickup

X Bioremediation

 Tarmat: Breakup

 Removal

 Snare/Absorbent Booms

 Oil Snares (pom poms)

 Absorbents (pads, rolls, etc)

 Spot Washing: Wands

 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 WEINER Art Weiner

EXXON

ANDY TCH Andy TCH

FOSC:

DATE: 4/18/90

NOAA

Burt Weisberg Burt Weisberg

USCG

G.A. HEITER G.A. Heiter

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: Chuck 3 Hume DATE: 4/18/90

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:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> </u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> 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 WEINER Art Weiner

EXXON ANDY GEA Andy GEA

NOAA Bruce Wescott Bruce Wescott

USCG G.A. HEITER G.A. Heiter

FOSC: My L

DATE: 4-22-90

SKETCH MAP

DATE April 14 1990

M Arrow
 Approx. Scale
 Say Sub Brndy
 On Diet.

Subject's Character
Edu. HAWAIIAN
SSA
Profile Location(s)
Post(s)
PH Location(s)
Photo Location(s)

PM - No Subscribers On

PM - Subsurface Data

Consulting Dietitians

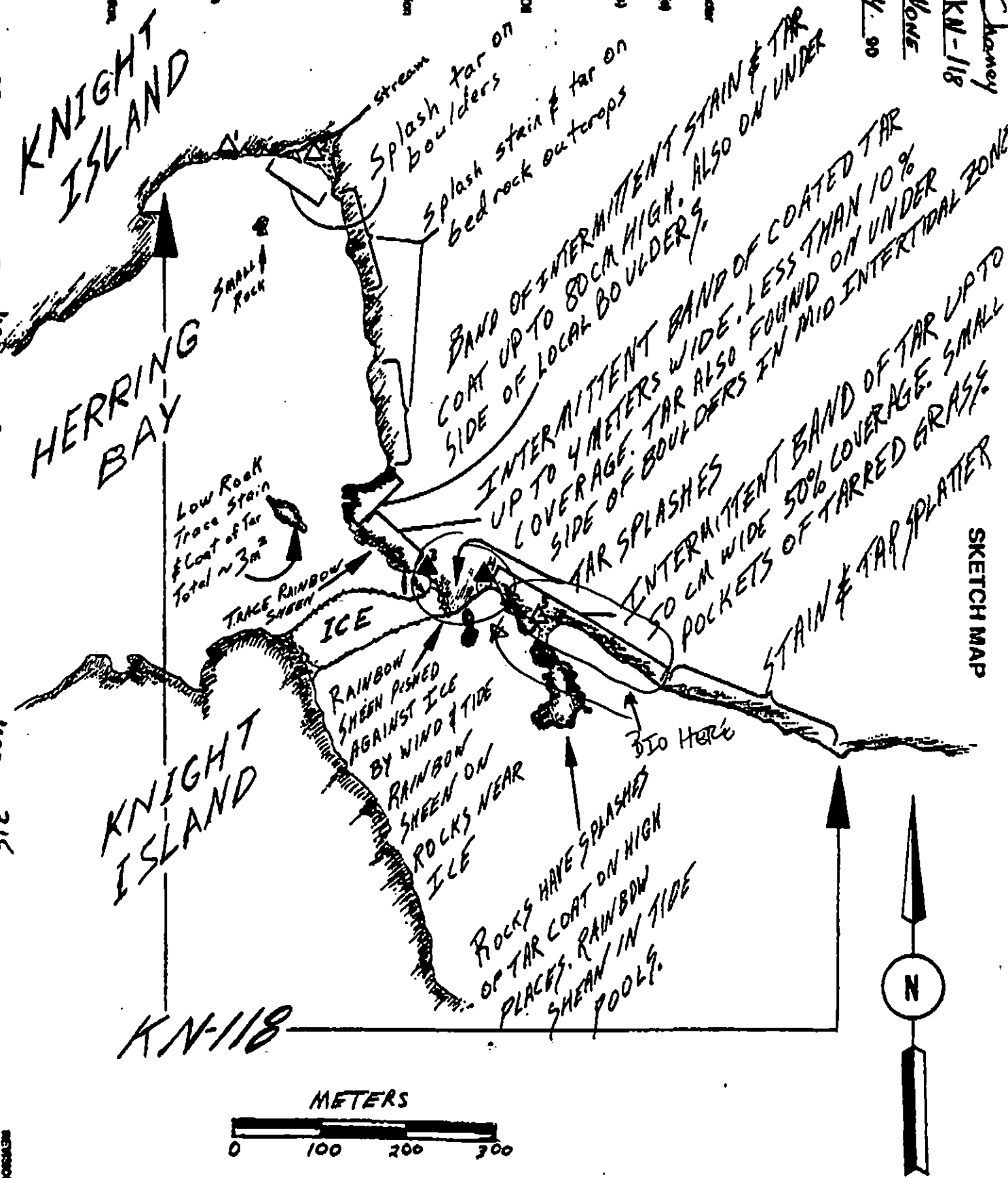
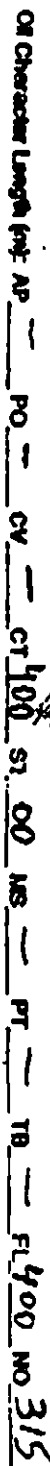
Business Development

CTM

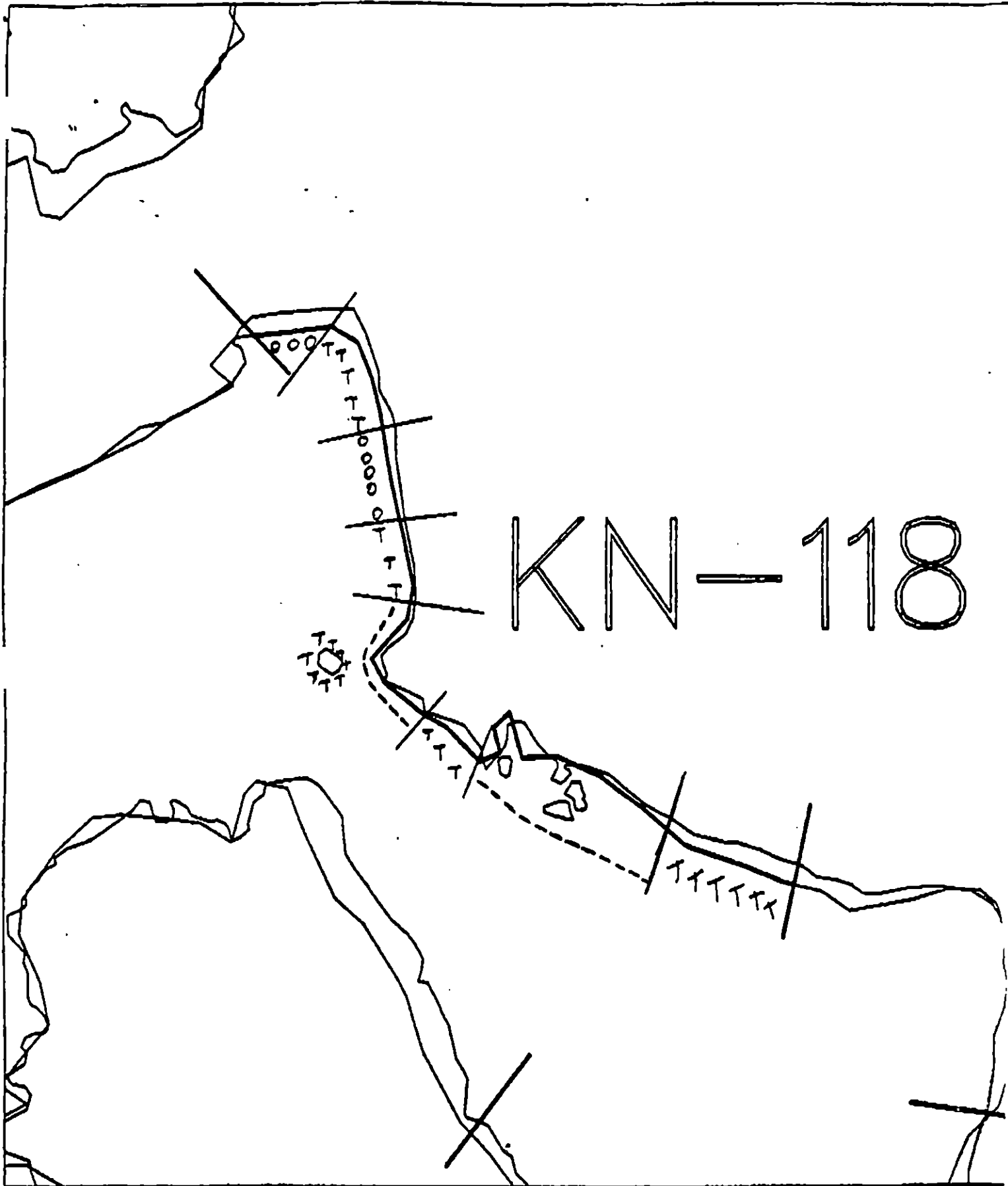
Spliced Distribution

Chief Vegetarian

**Photo location, direction
and number**



THE 1970-71 Season



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

KN-118

ADEC Segment Length: 1193m
Exxon Segment Length: 1515m



Map Key: PWS-299

Name: Greg Chaney

Date: April 4 1990

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:** _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

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 _____

FOSC _____

EXXON _____

USCG _____

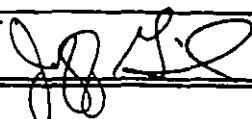
NOAA _____

ADEC

NAME

JEFF GINALINS

SIGNATURE

☒ NTR

NOT ENOUGH OIL ON SEGMENT TO JUSTIFY TREATMENT. HEAVY OILING AT SITE C (OG MAP) WITH HIGH SOR AMONGST Boulders AND COBBLES (3x15m) FROM UITE THROUGH MITE. IMPACT AREA HAS ALGAL GROWTH ABOVE IT MITE, AND BELOW WATER SATURATED PEAT LAYER. SHEENS RENDING UPON AGIGATION. HOWEVER, DUE TO LARGE HEAVY BLOTH GROWTH ON & BELOW IMPACT AREA, PLUS HIGH CONCENTRATION OF PEAT, IT APPEARS AREA WOULD BENEFIT MORE BY NO DISTURBANCE THAN TREATMENT. PLAINS OF FRESH WATER CONSTANTLY FLUSHING AREA SHOULD AID NATURAL RECOVERY. (THIS AREA JUST EAST OF NOAA STUDY SITE). REST OF AREA LIGHT IMPACT (COAT/STAIN); NTR.

EXXON

NAME

RANDALL K. BYER

SIGNATURE

☒ NTR

THIS SUBDIVISION CONTAINS A NOAA Research SITE. JUST EAST OF THIS SITE NEAR THE STREAM, A SUB SURFACE LENSE OF MOIST OILY 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 ^{of oil} WOULD NOT SERVE ANY ENVIRONMENTAL BENEFIT AS ALGAE, MUSSELS, SNAILS AND OTHER LIVING ORGANISMS ARE ABUNDANT HERE.

ANDMANAGER

NAME

MARSHA HALL OF DNR

SIGNATURE

☒ 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

NAME

SCHULTZ / CHILDS

SIGNATURE

☒ NTR NOT ENOUGH OIL TO WARRANT TREATMENT OR FURTHER INTRODUCTION

SHELTERED ROCKY SHORELINE - "B" & "C" CONTAINED PEAT UNDER COBBLES; PEAT CT & ST WERE PRESENT ACROSS SUBDIV L1070 COVER & PATCHY AT UITE SITE. HIGHER SOR/E DETECTED @ "D" concentrated on PEAT. LO SOR @ UITE-SZ L170. DUCK AT B1 & B2

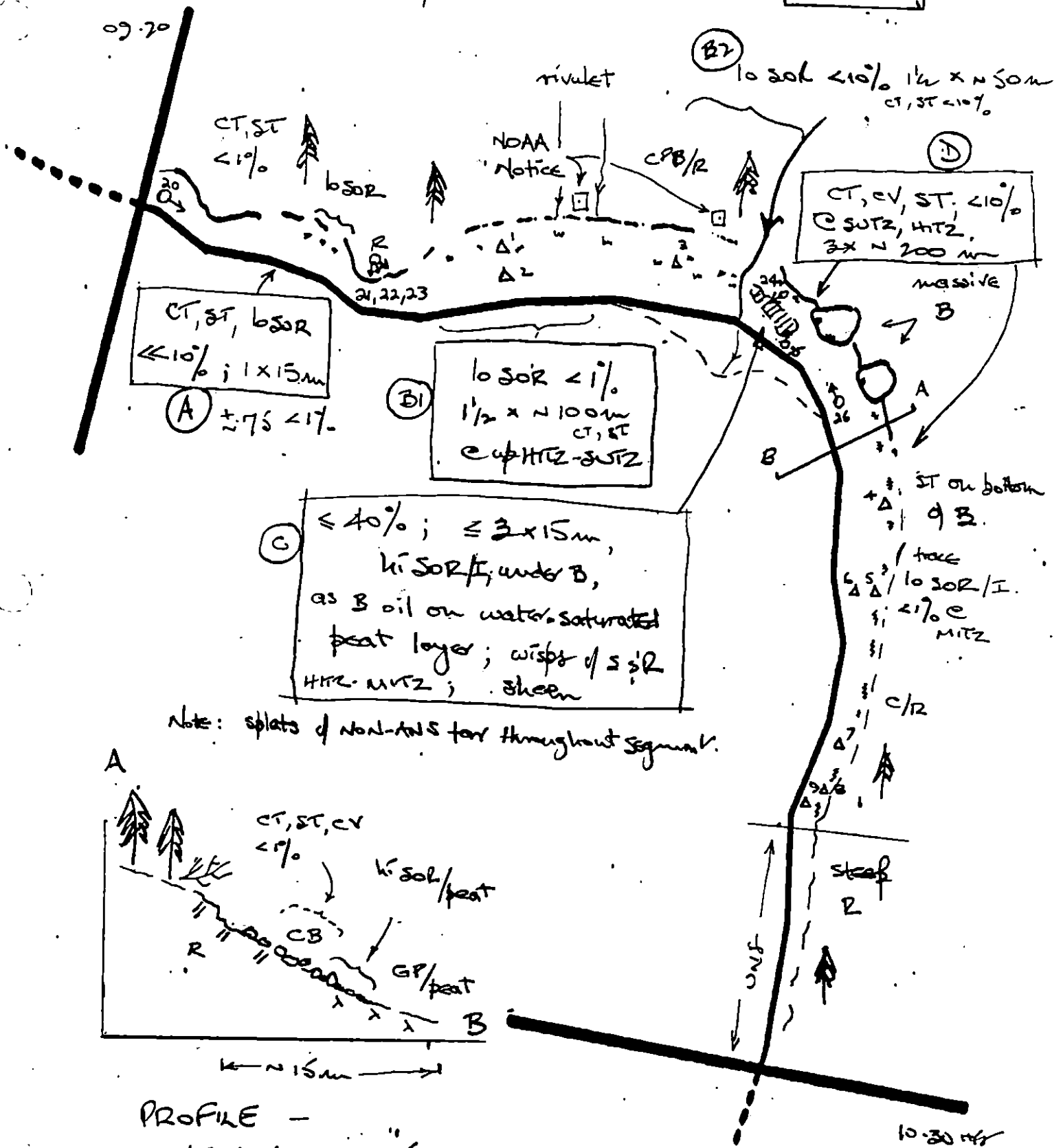
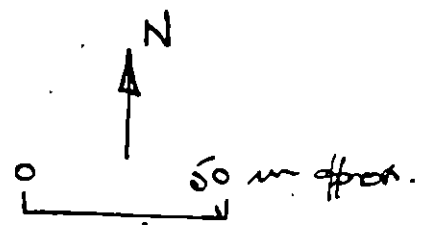
PAGE 1

reviewed 5.19, 9y
5/20/91 F.W.

KN-119 A

G. MACDONALD

5.17.91



reviewed 5.19.94
5/20/91 F.W.

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 17 May 91
 SEGMENT # KN 119 TIDAL HEIGHT(Range) -2.8 to -1.5 ft MLLW
 SUBDIVISION A BIOLOGIST Michael Fawcett
 SEA STATE calm WIND SPEED/DIRECTION E 5 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 LTZ - upper subtidal zone support beds of eelgrass and clams, with associated species such as horse crabs (*Telmessus*), sun stars (*Pycnopodia*), 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 on bedrock is typical. Algal diversity is low compared to more exposed shores; typical species are *Laminaria setchellii* 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

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	1 (harlequin duck)	5	
Gulls/kittiwakes	1 (GW Gull)	3	
Shorebirds			
Corvids	1 (Raven)	1	
Other Birds			

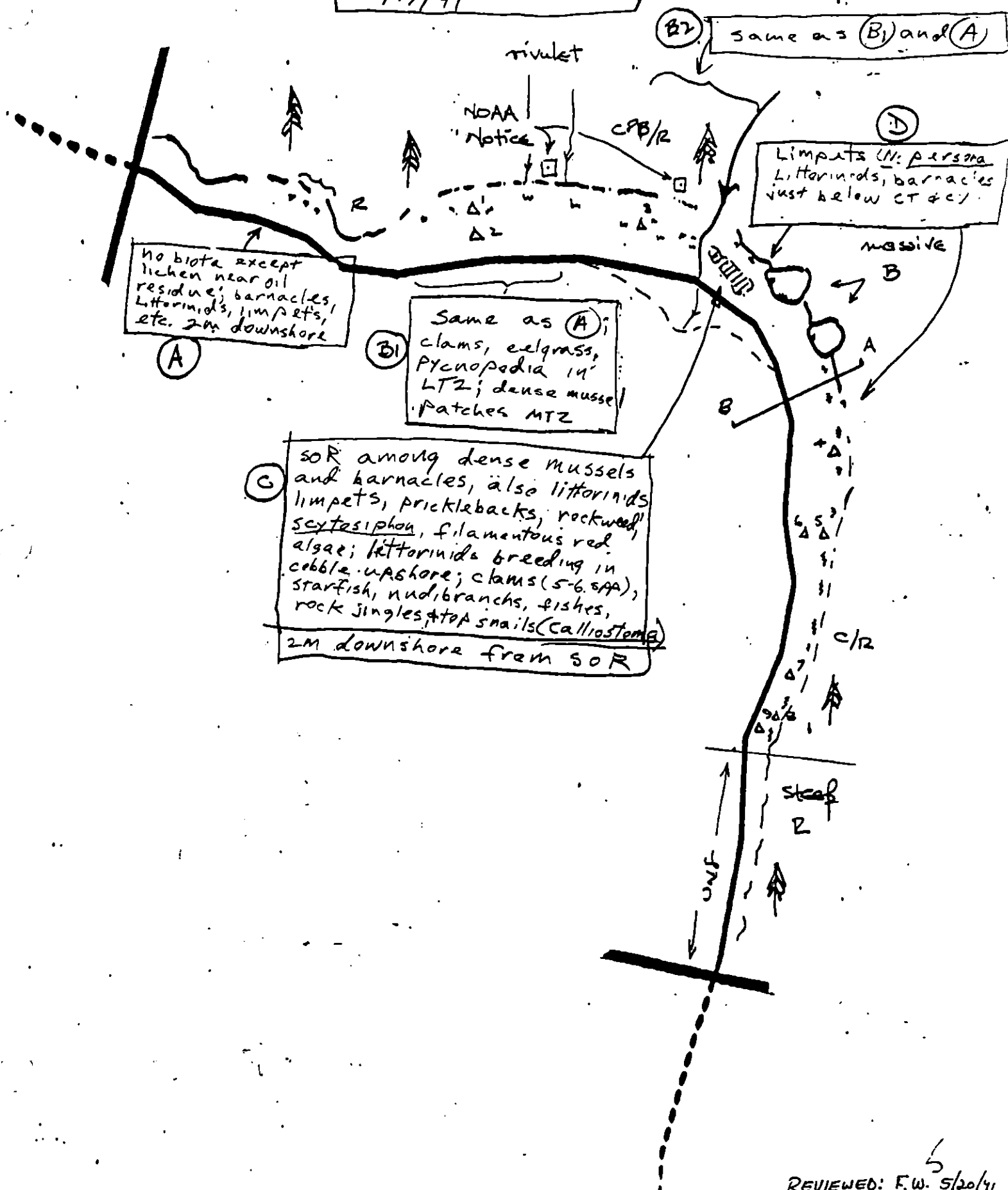
MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)	1 harbor seal		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

P. 5/20/91 F.W.
 5/21/91

KN-119A
Bio Sketch Map
M. Fawcett
5/17/91

Diagram showing a vertical line with an arrow pointing up, labeled 'N'. A horizontal line segment is drawn below the vertical line, labeled '50 m' and 'offshore'.



REVIEWED: F.W. 5/20/41

17 May 1991

Faucett

along road of segment -
mass stranding of euphausiids along
drift
1 stranded tube snail

end 0920

Start KN 119 0920

1 harbor seal - continues after 118
- quit bay head - B/C/P/G -

clams LTZ - otter hds - eelgrass
subtidal - P. xiphioides - dense barnacles

patchy mussel bed + 3-6 ft

CT/ST/SOR bits VTZ - SVTZ among

lichen - no bits - litt, barn, long 2nd burn
+ raven on beach

- 5 Harlequins

- 6 W gulls 3

NOAA set aside near shore -

same type mussel bed inland, soft
muds, eelgrass, clams etc -

traces CT SOR VTZ among sparse
barn, litt, long - sparse Fucus, more
dense along creek - dense raised bed
of mussels & Fucus on bay in creek
M_{en}+^h

KN119 (Cont) 17 May 91 Fawcett

SOR on peat beneath coldwater MTZ
just east of stream - among

dense mussel barnacles - also litt,
limp, periwinkle, Scyt, fil. red

sponge Fucus - soft mud,
eelgrass, clams down shore

- Litt. breeding in cobble above

- SOR only 2-3m upshore from

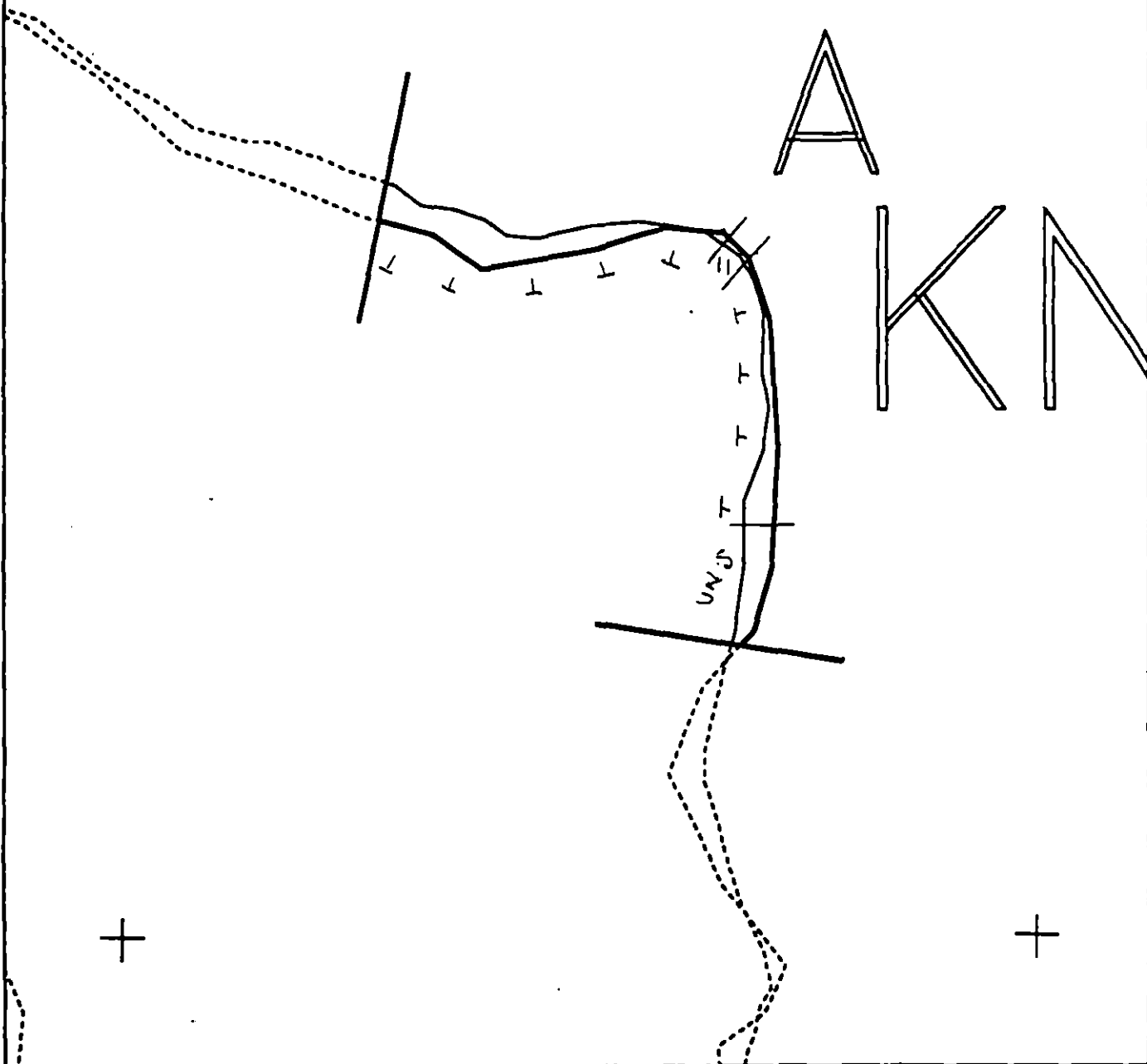
Soft sediment - dense riparian MTZ

- lots of Pycnopodia in LTZ

also jingles, Callinectes ligatum,
periwinkle barnacles, 5-6 species clams,

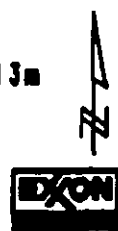
Evasterias, Lamellidors breeding
on BR

end segment 1030



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

KN0119 A
 ADEC Subsegment Length: 513m
 METERS
 0 100 200
 AK State Plane Zone 4
 4400119a



Subdivision Field Map
 Map Key: KN1KN0119A
 Name: G.M.
 Date: 5-17-91
 Date Entered:

reviewed 5.19.91
 5/22/91 R.W.

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: Timothy P. Smith Date: 5/30/91

RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>N</u>	<u>N</u>
Manual Pickup (Check as Req.)	<u> </u>	<u> </u>	<u> </u>
Spot Washing	<u> </u>	<u> </u>	<u> </u>
Bio-Customblen Only	<u> </u>	<u> </u>	<u> </u>
Bio-Inipol/Customblen	<u> </u>	<u> </u>	<u> </u>
Other	<u> </u>	<u> </u>	<u> </u>
Other	<u> </u>	<u> </u>	<u> </u>

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 29 1991

FOSC APPROVAL DATE: 6/5/91

ADEC [Signature]

FOSC

[Signature]
E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC

EXXON [Signature]

USCG [Signature]

NOAA [Signature]

ADEC

NAME

JEFF GINATINS

SIGNATURE

[Signature]

☒ NTR NOT ENOUGH OIL ON SEGMENT TO JUSTIFY TREATMENT. HEAVY OILING AT SITE C (OG MAP) WITH HIGH SOR AMONGST Boulders AND COBBLES (3X15m) FROM U17Z THROUGH M17Z. IMPACT AREA HAS ALGAL GROWTH ABOVE IT M17Z, AND BELOW WATER SATURATED PEAT LAYER. SHEENS RENDLY UPON AGITATION. HOWEVER, DUE TO LARGE HEALTHY BROWN GROWTH ON & BELOW IMPACT AREA, PLUS HIGH CONCENTRATION OF PEAT, IT APPEARS AREA WOULD BENEFIT MORE BY NO DISTURBANCE THAN TREATMENT. PLONG OF FRESH WATER CONSTANTLY FLUSHING AREA SHOULD AID NATURAL RECOVERY. (THIS AREA JUST EAST OF NOAA STUDY SITE). REST OF AREA LIGHT IMPACT (COAT/STAIN); NTR.

EXXON

NAME

RANDALL K. BOYER

SIGNATURE

[Signature]

☒ NTR THIS SUBDIVISION CONTAINS A NOAA Research SITE. JUST EAST OF THIS SITE NEAR THE STREAM, A SUB SURFACE LENSE OF MOIST OILY 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 OR CLEAN UP CREWS. THE RECOVERY ^{of oil} WOULD NOT SERVE ANY ENVIRONMENTAL BENEFIT AS ALGAE, MUSSELS, SNAILS AND OTHER LIVING ORGANISMS ARE ABUNDANT HERE.

NDMANAGER

WE

MARSHA HALL OF DNR

SIGNATURE

[Signature]

☒ NTR ~~treatment~~ STAKES placed in the LITZ 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

NAME

SCHULTZ / CHILAS

SIGNATURE

[Signature]

☒ NTR NOT ENOUGH OIL TO WARRANT TREATMENT OR FURTHER INTRUSION

SHELTERED ROCKY SHORELINE - "B" & "C" CONTAINED PEAT UNDER COBBLES; PERSON CT & ST WERE PRESENT ACROSS SUBDIV 21070 COUL & PATCHY AT U17Z & SE. HI SOR / E DETECTED @ "D" concentrated on PEAT. LO SOR @ U17Z & SE < 1% UCR AT B1 & B2

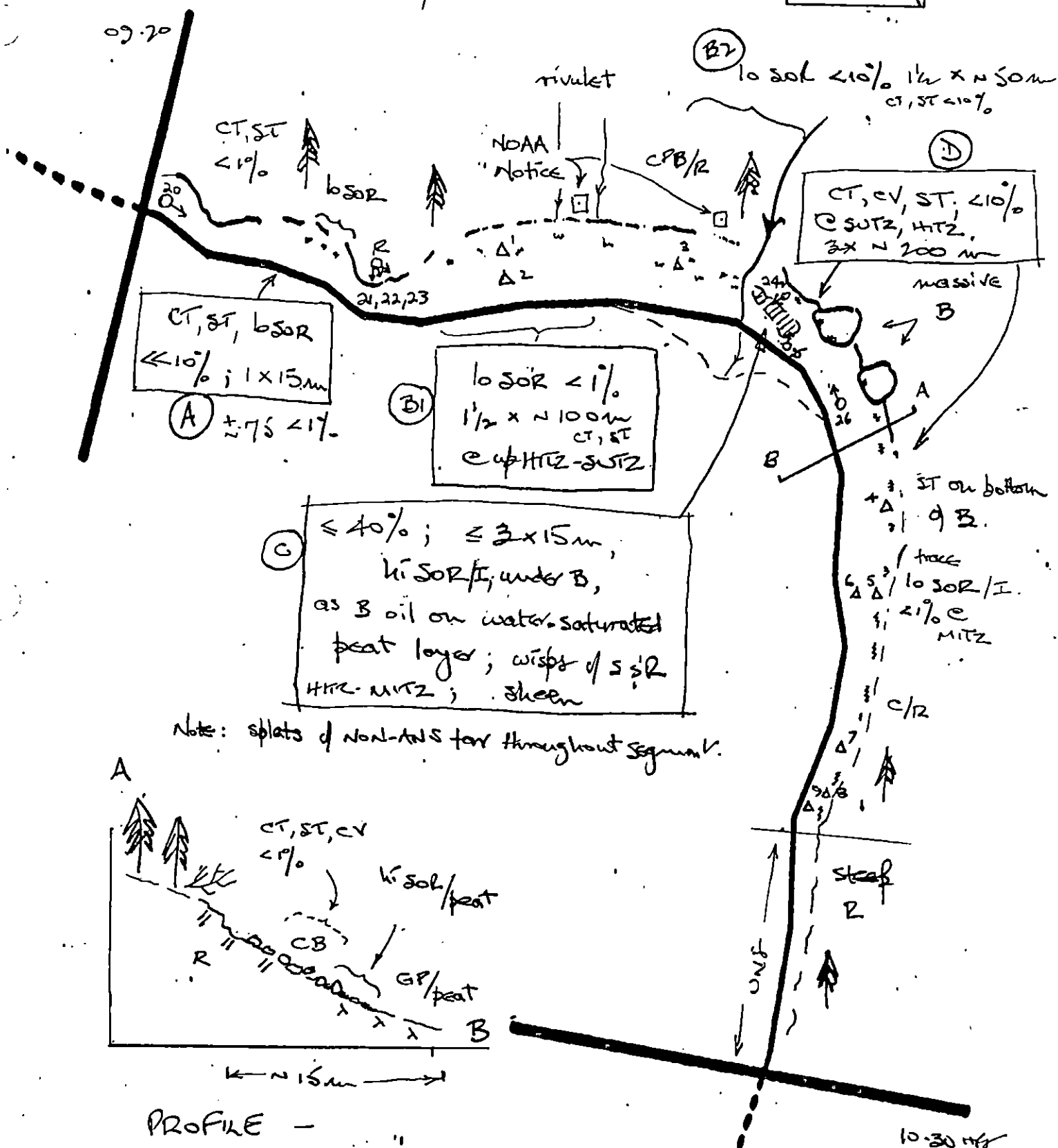
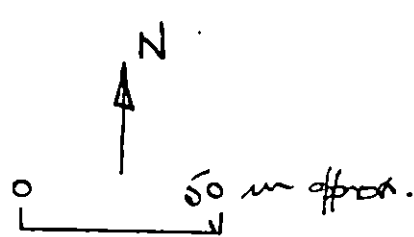
PAGE 7 OF 1

reviewed 5.19.94
5/20/94 F.W.

KN-119A

G. MACDONALD

5.17.91



Note: splats of Non-AHS tar throughout segment.

PROFILE -
typical of segment.

reviewed 5.19 94
5/20/91 F.W.

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 17 May 91
 SEGMENT # KN 119 TIDAL HEIGHT(Range) -2.8 to -1.5 ft MLLW
 SUBDIVISION A BIOLOGIST Michael Fawcett
 SEA STATE calm WIND SPEED/DIRECTION E 5 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 LTZ - upper subtidal zone support beds of eelgrass and clams, with associated species such as horse crabs (*Telmessus*), sun stars (*Pycnopodia*), 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 on bedrock is typical. Algal diversity is low compared to more exposed shores; typical species are *Laminaria setchellii* 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

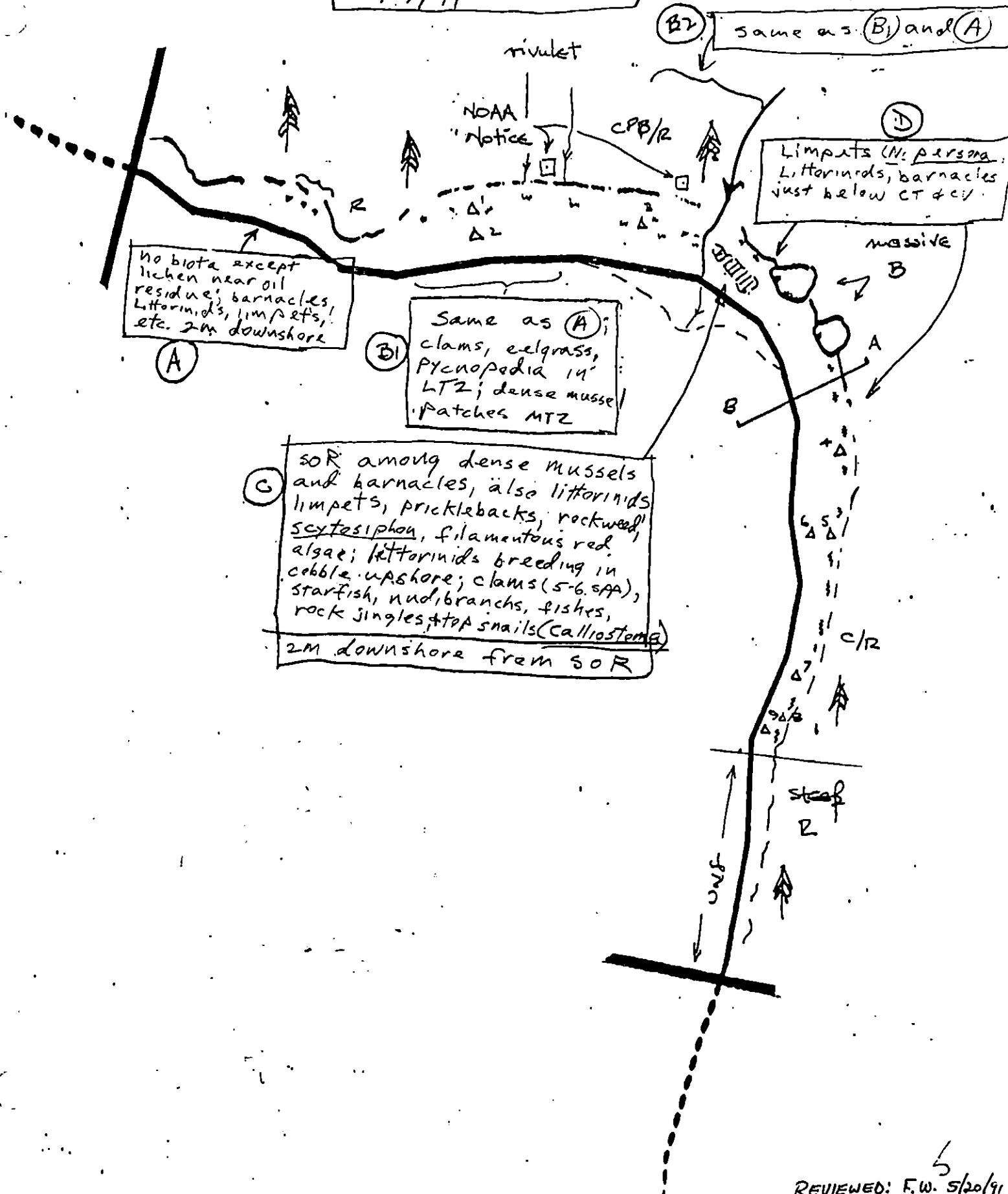
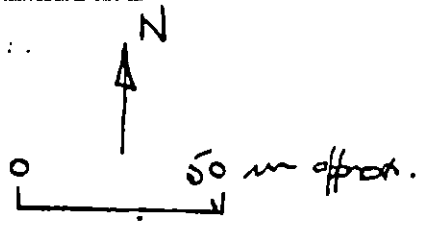
BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	1 (harlequin duck)	5	
Gulls/Kittiwakes	1 (GW Gull)	3	
Shorebirds			
Corvids	1 (Raven)	1	
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds(specify)	1 harbor seal		
Whales(specify)			

Shoreline subdivision map showing important biological features attached.

5/20/91 F.W.
 5/17/91

KN-119 A
Bio Sketch Map
M. Fawcett
5/17/91



17 Mar. 1991

Faucett

along rest of segment -
mass stranding of euphausiids along
drift
1 stranded tube snail

end 0920

Start KN 119 0920

1 harbor seal - continues after 118
- quit bay head - B/C/P/6 -

clams LTZ - otter holes - eelgrass
subtidal - Pycnogonids - dense barnacles,
patchy mussel bed + 3-6 ft

CT/ST/SOR bits VTZ - SVTZ among
lichen - no birds - litt, barn, large 2nd down
- 1 raven on beach

- 5 Harlequins

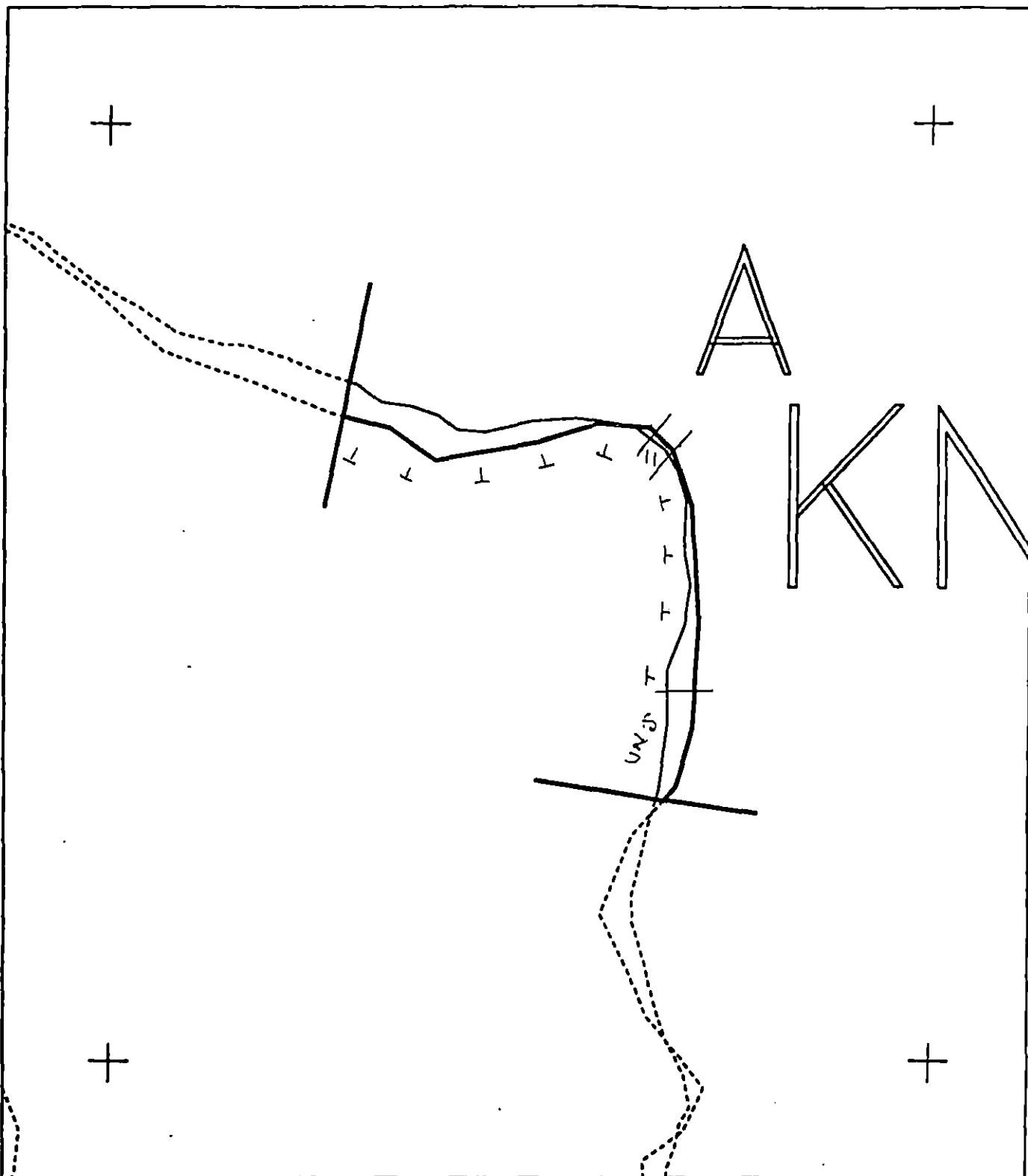
- 6 W gulls 3

NOAA set aside near shore -
same type mussel bed inland, soft
muds, eelgrass, clams here -

traces CT SOR VTZ among sparse
barn, litt, large - sparse Fucus, more
dense along creek - dense raised bed
of mussels & Fucus on bar in creek
m c + h

KN119 (Cont) 17 May 91 Forrester
 SOR on peat beneath cobble MTZ
 just east of stream - among
 dense mussels, barnacles - also litt /
 rump, periwinkle, Scyt, fil. red
 sponge Fucus - soft mud,
 eelgrass, clams down shore
 - Litt. breeding in cobble above
 - SOR only 2-3m upshore from
 Soft sediment - dense N. persona MTZ
 - lots of Pycnopodia in LTZ
 also jingles, Callinectes ligatum,
 periwinkle barks, 5-6 species clams,
 Evasterias, Lamellidors breeding
 on BR

end segment 10 30



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

KN0119 A
 ADEC Subsegment Length: 513m
 METERS
 0 100 200
 AK State Plane Zone 4
 kn0119a



Subdivision Field Map
 Map Key: KNKN0119A
 Name: G.M.
 Date: 5.17.91
 Date Entered:

reviewed 5.19.91
 5/20/91 R.W.

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 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 219 m: Narrow 76 m: V.Light 160 m: No Oil 57 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 10 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: 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 _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ KN 119 SUBDIVISION: NONE DATE 4/4/90

ISCG
NAME Pat Malay SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Sick leave

ADEC
NAME M. CUNNINGHAM SIGNATURE Michael Cunningham

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

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 Steven Phillips

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Storm berm should be rechecked (snowcover), pick up scattered tar balls.

Bioremediate "Narrow" bands of oil.
Leave the rest alone.

SHORELINE OILING SUMMARY

REVISION NO. 02/28/90

OG Greg Chaney USCG Patrick Malay SEGMENT ST/ KN-119
 BIO 3rd Bath LAND REP Steve Phillips SUBDIVISION Area A (1 of 1)
 EXXON Reg Setelo ADEC Mike Cunningham TIME 15:00 10/16/90
 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 ☐ Boat ☐ Helo WORKING DIRECTION: West to East
 SURFACE SEDIMENTS: R 20 % B 40 % C 30 % P 10 % G — % S — % M — % V — %
 SLOPE: Long 60 % Hang 20 % Vert 20 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W — m M 150 m N 80 m VL 300 m NO 69 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	S	P	B	1/2	3/4	1/4	1/8	1/16	1/32	1/64	1/128	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT	X	✓	○	□	1/2	3/4	1/4	1/8	1/16	1/32	1/64	1/128	1/2	1/4	1/8	1/16
STAIN			X	✓	1/2	3/4	1/4	1/8	1/16	1/32	1/64	1/128	1/2	1/4	1/8	1/16
MOUSSE																
PATTIES																
TARBALLS				X	X									X		
FILM		X			X									X	X	
NO OIL																

PAVEMENT: H F S — sq. m by — cmPATTIES / TARBALLS less than 1 BAGSNEAR SHORE SHEEN? NO BR (RW) SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs	X		
Vegetation			
Trash	X		
Debris			

DEBRIS COLLECTED
☐ YES ☒ NO
 Small Green Net
 TYPE Green Net
 #BAGS less than 1

Photographs:

Roll No. —Frames —

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-GM)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SO 1/4	SO 1/2	SO 3/4	SO 1	SO 1 1/2	SO 2	SU	U	M	U				
1	20		X				0.3		X	X							X						BCM
2	20		X				0.3		X				X					X					CPM
					X		0.3		X		X												CPM
3	15		X				0.5		X	X								X					CPM
4	15		X				0.10		X	X								X					CPM
							.																

COMMENTS

Ice dam across bay seems to have trapped sheen. "Bathtub ring" of rainbow sheen was observed around embayment.

SHORELINE ECOLOGICAL SUMMARY

REVISION: 08/22/88

Segment ST/ KN 119 Subdivision _____ Date (mo / day / yr) Apr 4, '90

Time (24 hr) Apr 1500 LV 1530 Biologist ROTH

(A) Substrate type and % of segments:
(1) Bedrock 20 (2) Boulder 40 (3) Cobble 30 (4) Pebble 10 (5) Sand — (6) Silt —

(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)

Photographs: Roll No. NONE

Frames _____

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

MYTILUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

GASTROPODS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

FUCUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

Wildlife Observations/ General Comments:

1 BALD EAGLE ADULT SEEN ON WING.

CAN ONLY SEE TOP OF LOWER INTERTIDAL ZONE.

A LOW ENERGY SITE.

Ecological Considerations:

GV- RECREATION ANCHORAGES

CG: Greg Cheney
 SEGMENT ST/ KN-119

SUBDIVISION None

DATE April 14 90

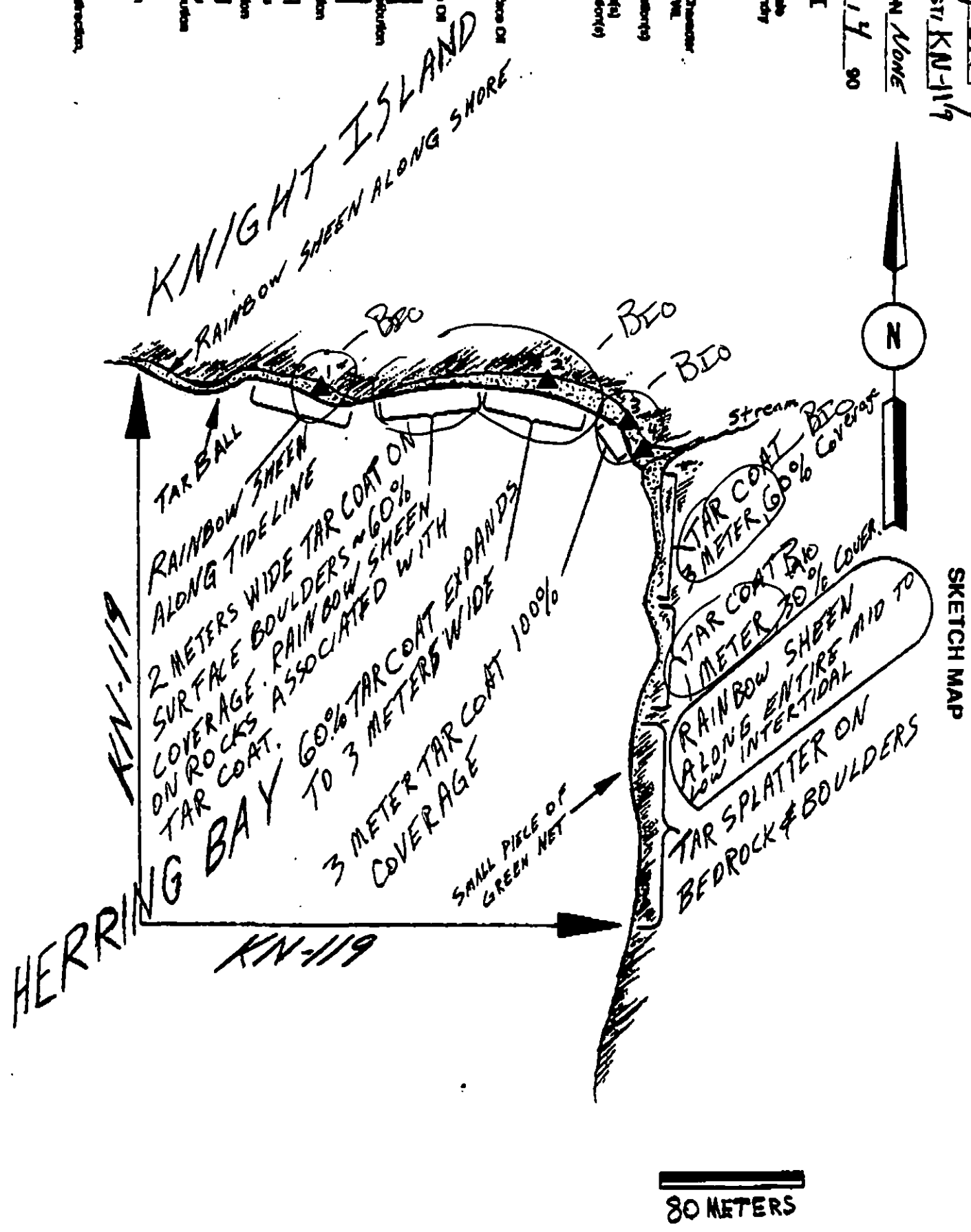
CHECKLIST

- ☐ Macro
- ☐ Approx. Scale
- ☐ Significant Entity
- ☐ Oil Duct
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. 1994/1995
- ☐ SSI
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Photo Location(s)
- ☐ Photo Location(s)

LEGEND

- 1 Δ No Substrates On
- 2 Δ Substrates On
- CT/C Contaminant Distribution
- CT/B Broken Distribution
- CT/P Purity Distribution
- CT/S Species Distribution
- CT/V Dist. Vegetation
- Photo location, direction, and number

Oil Character Length (m): AP — PO — CV — CT 230 ST 280 NS — PT — TB 1 FL 430 NO 69



~~KN-118~~

KN-119

KN-1

KN-

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

KN-119

ADEC Segment Length: 513m
EXON Segment Length: 499m

0 100 200 300
METERS

Map Key: PWS-300

Name: Greg Chang

Date: April 4 1990

Data Entered:

PWS, SEWARD AND HOMER 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 (4/15 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, locations and constraints.
- 2M Herring spawning (4/1 to 6/15)
 Restrict boat traffic to essential minimum. Avoid damage to unholed 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 (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  Tent sites (6/1 to 9/15)
 6V  ~~Exchanges~~ (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)
 7H Finfish harvesting
 7I Deer harvesting (8/15 to 2/28)
 7J 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	
Manual Pickup	OPEN
Bioremediation	OPEN

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 unrolled biota and substrate.

TAG ADDENDUM DATE

ADEC

EXXON

NOAA

USCG

5/16/90
Ant Weiner Ant Weiner
Amy Gal Deal
John Talbot J. Talbot
G.A. Heister G.A. Heister

FOSC

DATE

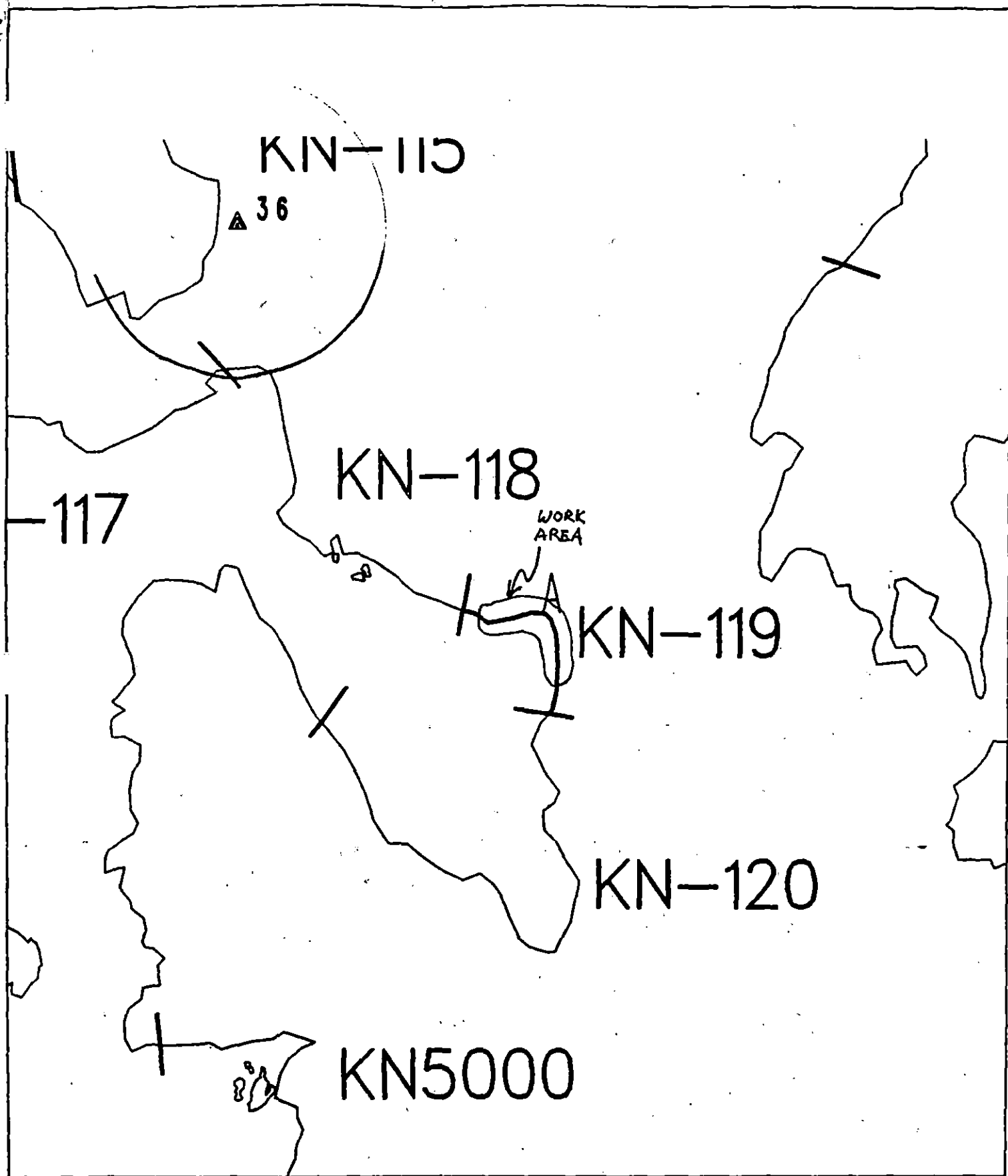
5-17-90

Prepared by:

WIK

Date:

5/14/90



Exxon Company, USA
Map Key: KNI-KN-119
May 11, 1990



ECOLOGY MAP
SEGMENT KN-119
SUBDIVISION A (1 of 1)
METERS
0 348 696

★	Seabird Colony
▲	Eagle Nest

1 inch = 1142 feet

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 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: Mark E. Hoffman DATE: 4/13/90

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:

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

+ TARBALLS

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 WEINER
EXXON ANDY TEAL
NOAA Bruce Wescott
USCG G.A. BEITER

FOSC: 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)

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: *Charles E. Hoffman* 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:

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

+ TARBALLS *B*

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 WEINER *Art Weiner*

EXXON ANDY TEAL *Andy Teal*

NOAA Bruce Westcott *Bruce Westcott*

USCG C.A. BEITER *C.A. Beiter*

FOSC: *[Signature]* DATE: 4-22-90

OG Greg Cheney
 SEGMENT ST/ KN-119

SUBDIVISION None

DATE April 14 80

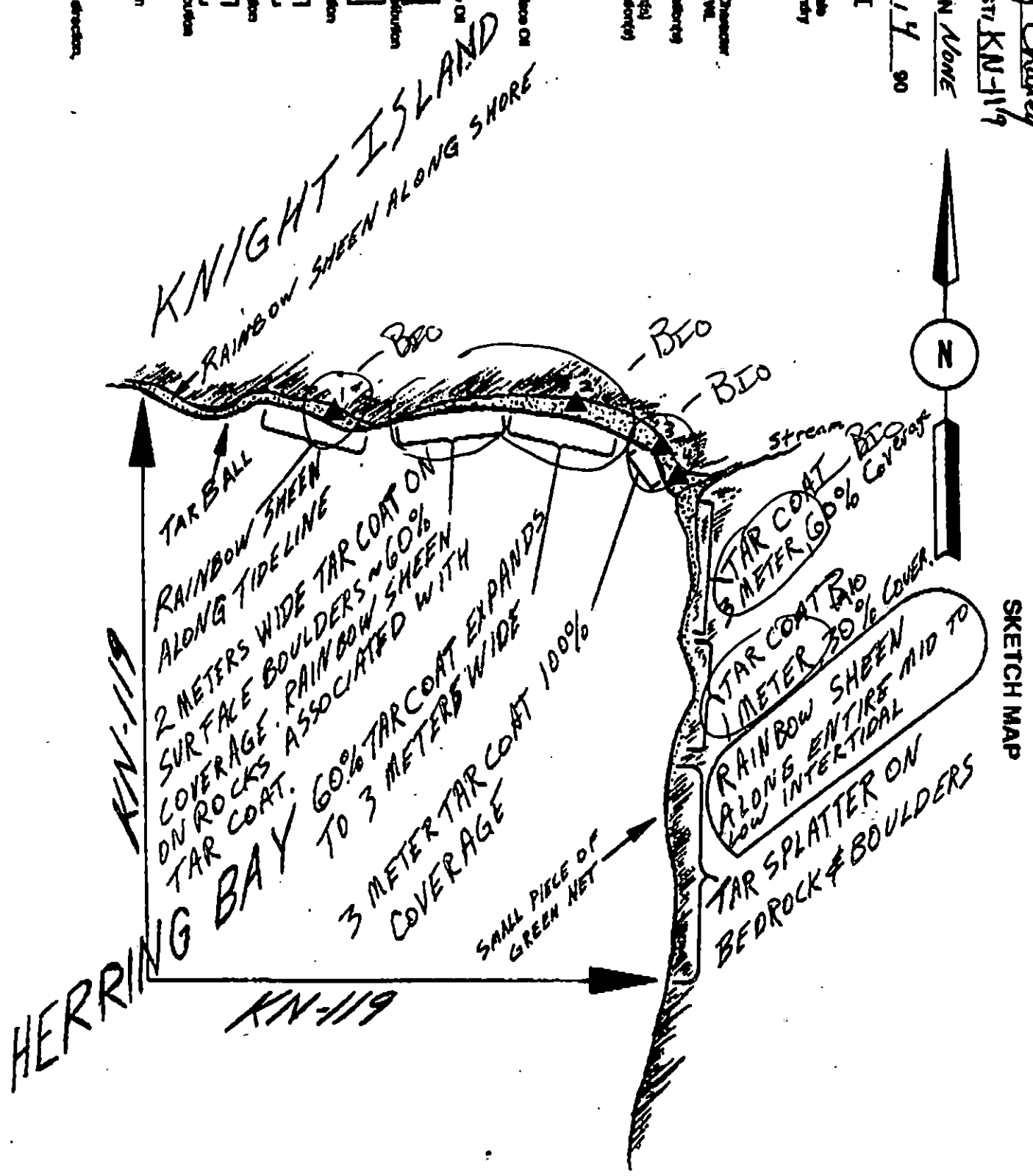
CHECKLIST

- ☐ M Arrow
- ☐ Approx. Scale
- ☐ Sample Entry
- ☐ Or Data
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HMLAW
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Photo Location(s)
- ☐ Photo Location(s)

LEGEND

- 1 Δ R: No Substrate Or
- 2 Δ R: Substrate Or
- CT/C Confusing Distribution
- CT/B Broken Distribution
- CT/P Patchy Distribution
- CT/S Spotted Distribution
- $\square$ Other Vegetation
- $\rightarrow$ Photo location, direction, and number

Off Character Length (m): AP PO CV CT 230 ST 280 MS PT TB FL 430 NO 69



~~KN-118~~

KN-119

KN-1

KN-

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

KN-119

ADEC Segment Length: 513m
EXXON Segment Length: 499m



Map Key: PWS-300

Name: Greg Chang

Date: April 4 1990

Data Entered:

ARLIS
Alaska Resources
Library & Information Services
Anchorage, AK