

OIL SPILL PUBLIC INFO. CENTER



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[Shoreline evaluations, 1991].

Kenai GP-1002 to NK-04

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REGION: KENAI

SEGMENT: ST/GP-1002

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ GP-1002 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

No specific constraints identified.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 1141 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 Removal	_____ Beach Cleaner
	_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

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 without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.
AGENCY CONTACT PERSON: ADF&G John Morison 267-2324
- 1C Salmon fry nursery area (4/31 to 7/31)
No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.
AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214
- 1D Esther Hatchery release (4/15 to 6/15)
1E Main Bay Hatchery release (4/20 to 6/15)
1F Sawmill Bay Hatchery release (4/15 to 6/1)
1G Cannery Creek Hatchery release (4/21 to 6/1)
1H Remote release site
No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- 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 (8/11 to 7/25)
Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M Herring spawning (4/1 to 6/15)
Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to uncoiled intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235
- 3P Harbor seal and sea lion pupping (5/15 to 7/1)
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. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
ADF&G Don Calkins 267-2403
- 5R Seabird colony (5/1 to 9/1)
Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
ADF&G Tom Roth 267-2206
- 5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic and all disturbance 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.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Recreation: Tent sites (8/1 to 9/15)
6V Anchorages (8/1 to 9/15)
6W Forest Service cabins (8/1 to 9/15)
6X Lodge (8/1 to 9/15)
6Y Special use destination
- 7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
7HH Firfish harvesting
7II Deer harvesting (8/15 to 2/28)
7JJ Invertebrate harvesting
Contact ADF&G and appropriate Native Corporation for specific dates, locations, and constraints. Restrict boat and air traffic and beach disturbance to essential minimum. If plans for treatment include methods such as hot water wash or application of Inipol which might affect intertidal or nearshore oil or toxicity levels, contact ADF&G and appropriate Native Corporation for authorization - see Native Corporation Contact List for each Native Corporation's contact person.
AGENCY CONTACT PERSON: ADF&G Jim Fall 267-2359

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / GP-1002 SUBDIVISION: A DATE 4/29/90

NAME STEPHEN STURM SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

SEGMENT IS AN EAST-FACING VERY EXPOSED BEACH, LOCATED IN A CREVILLATE BAY NORTH OF GORE POINT. EXPOSURE TO THE GULF OF ALASKA HAS RESULTED IN A VERY STEEP BEACH PROFILE, WITH MULTIPLE BEACH SCARPS COMPOSED OF WELL-ROUNDED, LENTICULAR PEBBLE TO COBBLE AMPHIBOLITE. THE STORM BERM IS MOST IMPRESSIVE, APPROX 40 FEET WIDE AND APPROX. 15 FEET ABOVE MEAN SEA LEVEL.

FIVE PITS WERE EXCAVATED IN THE INTERTIDAL ZONE ALONG THE BEACH TO LOCATE SUBSURFACE OIL. NONE WAS OBSERVED. SEVERAL OILED LOGS AND SOME OILED DEBRIS WAS PRESENT IN AND ALONG THE STORM BERM AMONGST THE SEVERAL HUNDRED POUNDS OF MAN MADE TRASH DEPOSITED BY STORMS.

ADEC

NAME Wesley Ghormley SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

THIS segment consisted of a large black sand, cobble & pebble beach. No oil was observed surface or subsurface except for a small amount of oiled wood & a tar ball.

- State of Alaska Cerda test site on premises
- There is also a massive amount of logs & Human trash (mostly fisher's relat.
- 5 deep pits were dug in search of subsurface oil, if it is present it is extremely deep.

LAND MANAGER

NAME J. David McMahon (ADNR) SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Segment GP-1002, within Kachemak State Wilderness Park, is a high-energy gravel/cobble beach exposed to the east. A small tan ball and a few pieces of splattered driftwood were noted. No subsurface oil located in several deep tests. Periodic monitoring may be warranted,

SHORELINE OILING SUMMARY

REVISION NO. 04-12-88

OG K. DEBUSSCHKE ^{NOAA} ~~1859~~ STEPHEN Stryker SEGMENT ST/ GP-1002
 BIO D. READ LAND REP J. David McMan ^{NOAA} SUBDIVISION R (1 OF 1)
 EXXON T. D/H2 ADEC Wesley Ghermley TIME 8:15 to 9:15
 TEAM NO. 9 TIDE LEVEL 6 TO 2 FT DATE 4/29/90
 ST. SUBDIVISION LENGTH: 1094 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 0 % B 0 % C 30 % P 30 % G 0 % S 40 % M 0 % V 0 %
 SLOPE: Long 100 % Hang 0 % Vert 0 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 1094 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	N	NE	E	SE	SW	W	WS	WS	WS	SW	U	M	U
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT													
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
LM													
NO OIL										X	X	X	X

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

OILED DEBRIS	AMOUNT			DID YOU COLLECT DEBRIS?
	SM	MD	LG	
Logs	X			YES ☒ NO ☐
Vegetation				TYPE <u>TR & BALL</u>
Trash				#BAGS <u>1</u>
Debris				

Photographs:

Roll No. ST-9-4Frames 11

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SHEEN (Y/N)	↓	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	VE	SW	W	WS	WS	WS	SW	U	M	U				
1	70					X	.								X					N	-	S-S/c/sick
2	100					X	.								X					N	-	S-S/c/s
3	80					X	.								X					N	-	C-C/s/PAS
4	70					X	.								X					N	-	C-C/P
5	70					X	.								X					N	-	C-P-P/SW
							.															

COMMENTS

SEGMENT IS A HIGH ENERGY BEACH GRADING FROM PREDOMINANTLY SAND AT THE SOUTHERN END TO PREDOMINANTLY COBBLED PEBBLES AT THE NORTHERN END. HIGH ACCUMULATION OF LOGS AND DEBRIS.

ONE TARBALL WAS OBSERVED AND PICKED UP
 - SOME LOGS WERE OILED (STAIN/S)
 - IN REST OF SEGMENT: NO OIL OBSERVED

REVIEWED 7WDATE 4/30/90

W = WALK

PIT#5

END
ST-GP-1002

G P

LOGS
WITH STAMP/S

PIT#3

1 THRBALL
PICKED UP

PIT#2

PIT#1

START
ST-GP-1002-H

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

ST-GP-1002-H

1094

ADEC Segment Length: ~~1000~~

3/9 100 200 300

Map Key: KEN-41

Name: K. DEBUSSCHER

Date: 4/29/90

Data Entered:

SHORELINE ECOLOGICAL SUMMARY

REVISION: 002270

Segment ST / GP-1052 Subdivision A Date (mo / day / yr) 04 / 29 / 90Time (24 hr) 0815-0915 Biologist D. REED(A) Substrate type and % of segments:
(1) Bedrock — (2) Boulder — (3) Cobble 30 (4) Pebble 30 (5) Sand 40 (6) Silt —(B) Overall % cover of biota (% of segment): Dense — Moderate — Low 100

(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-9-4
Roll No. —Frames 11

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 mountain goat.

High exposure BEACH. NO INTERTIDAL BIOTA OBSERVED.

Ecological Considerations:

NONE. NO OIL OR BIOTA OBSERVED.

* NO ECOLOGY MAP WAS DONE. AND NO EVIDENCE OF RECRUITMENT GROWTH OR MORTALITY WAS OBSERVED.

OIL MAP

END
ST-GP-1002-H

START
ST-GP-1002-H

GP

ST-GP-1002-H
1094

ADEC Segment Length: 1094

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

6/5 100 200 300
meters

Map Key: KEN-41

Name: K. DE BUSSCHERE

Date: 4/29/90

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ GP-1002 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

No specific constraints identified.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: J. Daniel McMahon DATE: 5/8/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 1141 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: <u> </u> Wands
☐ Tarmat Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 5/8/90

ADEC Art Wouda

EXXON Amy Tan

NOAA Gary Peltier

USCG G.A. Reiter

FOSC:

DATE: 5-15-90

W = WALK

PIT#5

END
ST-GP-1002LOGS
WITH STAIN/S

PIT#3

1 THRBALL
PICKED UP

PIT#2

PIT#1

START
ST-GP-1002-H

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

ST-GP-1002-H

1094

ADEC Segment Length: 100m

3/1 100 200 300
 METERS

Map Key: KEN-41

Name: K. DEBUSSCHERDate: 4/29/90

Data Entered:

OIL MAP

END
ST-GP-1002-H

GP

START
ST-GP-1002-H

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

ST-GP-1002-H
1094
ADEC Segment Length: 1094m
6/9 100 200 300
METERS

Map Key: KEN-01
Name: K. DE BUSSCHERE
Date: 4/29/90
Data Entered:

REGION: KENAI

SEGMENT: ST/GP-1003

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ GP-1003 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4GG Alaska State Parks

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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 878 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 Removal	_____ Beach Cleaner
	_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

- 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 without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.
AGENCY CONTACT PERSON: ADF&G John Morison 267-2324
- 1C Salmon fry nursery area (4/31 to 7/31)
No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.
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- 1D Esther Hatchery release (4/15 to 6/15)
1E Main Bay Hatchery release (4/20 to 6/15)
1F Sawmill Bay Hatchery release (4/15 to 6/1)
1G Cannery Creek Hatchery release (4/21 to 6/1)
1H Remote release site
No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- 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 (8/11 to 7/25)
Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M Herring spawning (4/1 to 6/15)
Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235
- 3I 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. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
ADF&G Don Calkins 267-2403
- 5R Seabird colony (5/1 to 9/1)
Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
ADF&G Tom Roth 267-2205
- 5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic and all disturbance 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.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Recreation: Tent sites (8/1 to 9/15)
6V Anchorages (8/1 to 9/15)
6W Forest Service cabins (8/1 to 9/15)
6X Lodge (8/1 to 9/15)
6Y Special use destination
- 7Z Subistence area: Salmon harvesting (5/1 to 9/30)
7HH Finfish harvesting
Deer harvesting (8/15 to 2/28)
Invertebrate harvesting
Contact ADF&G and appropriate Native Corporation for specific dates, locations, and constraints. Restrict boat and air traffic and beach disturbance to essential minimum. If plans for treatment include methods such as hot water wash or application of Inipol which might affect intertidal or nearshore oil or toxicity levels, contact ADF&G and appropriate Native Corporation for authorization - see Native Corporation Contact List for each Native Corporation's contact person.
AGENCY CONTACT PERSON: ADF&G Jim Fall 267-2359

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ GP-1003 SUBDIVISION: A DATE 4-29-90

NOAA
YES
NAME

STEPHEN STURM

SIGNATURE

[Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Segment is a NORTHWEST FACING, EXPOSED BEACH, LOCATED IN A CRENNULATE BAY NORTH OF GORE POINT FACING PORT DICK. A TOTAL OF 6 PITS WERE EXCAVATED IN THE INTERTIDAL ZONE ALONG THE BEACH FACE. NO SUBSURFACE OIL WAS ENCOUNTERED IN THESE PITS, AND NO SURFACE OILING WAS OBSERVED ALONG THE STORM BEACH.

ADEC

NAME

Wesley Ghermley

SIGNATURE

[Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

This segment primarily consists of a sand beach, with cobbles, pebbles & a few boulders. Six deep pits were dug in search of subsurface oil (None was observed) If subsurface oil is present it is extremely deep. A large amount of logs & non clean-up debris have accumulated on beach.
- No oil observed surface or subsurface.

LAND MANAGER

NAME

J. David McMahon (ADNR)

SIGNATURE

[Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Segment GP-1003, within Kachemak State Wilderness Park is comprised of a sand/gravel/cobble beach located to the north of Gore Point. Despite several deep subsurface tests, no buried surface oil was noted. Periodic monitoring may be warranted.

SHORELINE OILING SUMMARY

REVISION NO. 34.13.90

OG K. DEBUSSCHER VESSEL STEVEN STORM SEGMENT ST/ 6P-1003
 BIO. D. REED LAND REP J. David M. Mahan SUBDIVISION A (1 OF 1)
 EXXON T. RITZ ADEC Wesley Ghorumley TIME 8:30 to 10:20
 TEAM NO. 9 TIDE LEVEL T1 TO -1 DATE 4/29/90
 EST. SUBDIVISION LENGTH: 810 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 PLANDS DESCRIPTION: ☒ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 0 % B 5 % C 15 % P 15 % G 0 % S 65 % M 0 % V 0 %
 SLOPE: Long 100 % Hang 0 % Vert 0 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 810 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	C	R	P	S	OP	OR	OL	OF	NO	SU	U	M	V
ASPHALT													
PAVEMENT													
POOLED													
COVER													
COAT													
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
OIL										X	X	X	X

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			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☐ NO ☒TYPE 0#BAGS 0

Photographs:

Roll No. NONEFrames NONE

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SHEEN (Y/N)	T	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	VC	OP	OR	OL	OF	NO	SU	U	M	V				
1	70					X	.									X				N	-	S-S&C/S
2	60					X	.									X				N	-	C&S-S&P/B
3	70					X	.									X				N	-	P-S&G/S&P
4	60					X	.									X				N	-	S-P&S
5	55					X	.									X				N	-	S-S&P
6	65					X	.									X				N	-	P-P&B/R&G

COMMENTS

- SEGMENT IS A RELATIVELY HIGH ENERGY BEACH. SOUTHERN END IS PREDOMINANTLY SAND. NORTHERN END HAS P/C STORM BEACH. LOGS AND DEBRIS ARE ACCUMULATED IN UE-SU. NO OIL OBSERVED.

REVIEWED YW DATE 4/30/90

2/9

END
ST-GP-1003-H

ONT
ST-GP-1003-H

PIT#6

W=WALK

PIT#5

PIT#4

PIT#3

START
ST-GP-1003-H

PIT#1 & 2

START
ST-GP-1003-H

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

ST-GP-1003-H

ADEC Segment Length: 810

3/9 100 200 300
METERS

Map Key: KEN-42

Name: K. DEBUSSCHE

Date: 4/29/90

Date Entered:

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / GP-1003 Subdivision A Date (mo / day / yr) 04/29/90

Time (24 hr) 0930-1020 Biologist D. REED

(A) Substrate type and % of segments:
(1) Bedrock 0 (2) Boulder 5 (3) Cobble 15 (4) Pebble 15 (5) Sand 65 (6) Silt 0

(B) Overall % cover of biota (% of segment): Dense — Moderate — Low 100

(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 (G)

Photographs: Roll No. —

Frames NONE

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

ASTROPODS

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 common merganser, 4 Glaucous-wing gulls, 1 Pelagic cormorant.

THIS SEGMENT IS A HIGH ENERGY WAVE SWEEP BEACH. THE ONLY INTERTIDAL BIOTA OBSERVED WAS IN A SMALL BOULDER FIELD LOCATED IN THE MID AND LOW ZONE AT THE SOUTHERLY BORDER OF THE SEGMENT. THE BOULDERS WERE COVERED WITH A THIN SLIMY LAYER OF GREEN ALGAE (ENTEROMORPHA) IN THE MID ZONE. OTHER SEA WEEDS (IRRIDADA, ULVA, AND ALGRIA) WERE COMMON (LOW).

→ NONE. NO OIL OBSERVED, BIOTA RARE AND VERY PATCHY.

OIL MAP

END
ST-GP-1003-H

START
ST-GP-1003-H

XXXX Wide

/// Medium

-- Narrow

TTTT Very Light

0000 No Oil

ST-GP-1003-H

ADEC Segment Length: 878m



Map Key: KEN-42

Name: K. DEBUSSCHERE

Date: 4/29/90

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ GP-1003 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4GG Alaska State Parks

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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: Charles E. Adams DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 878 m
Subsurface Oil Observed: Yes No X Maximum Depth

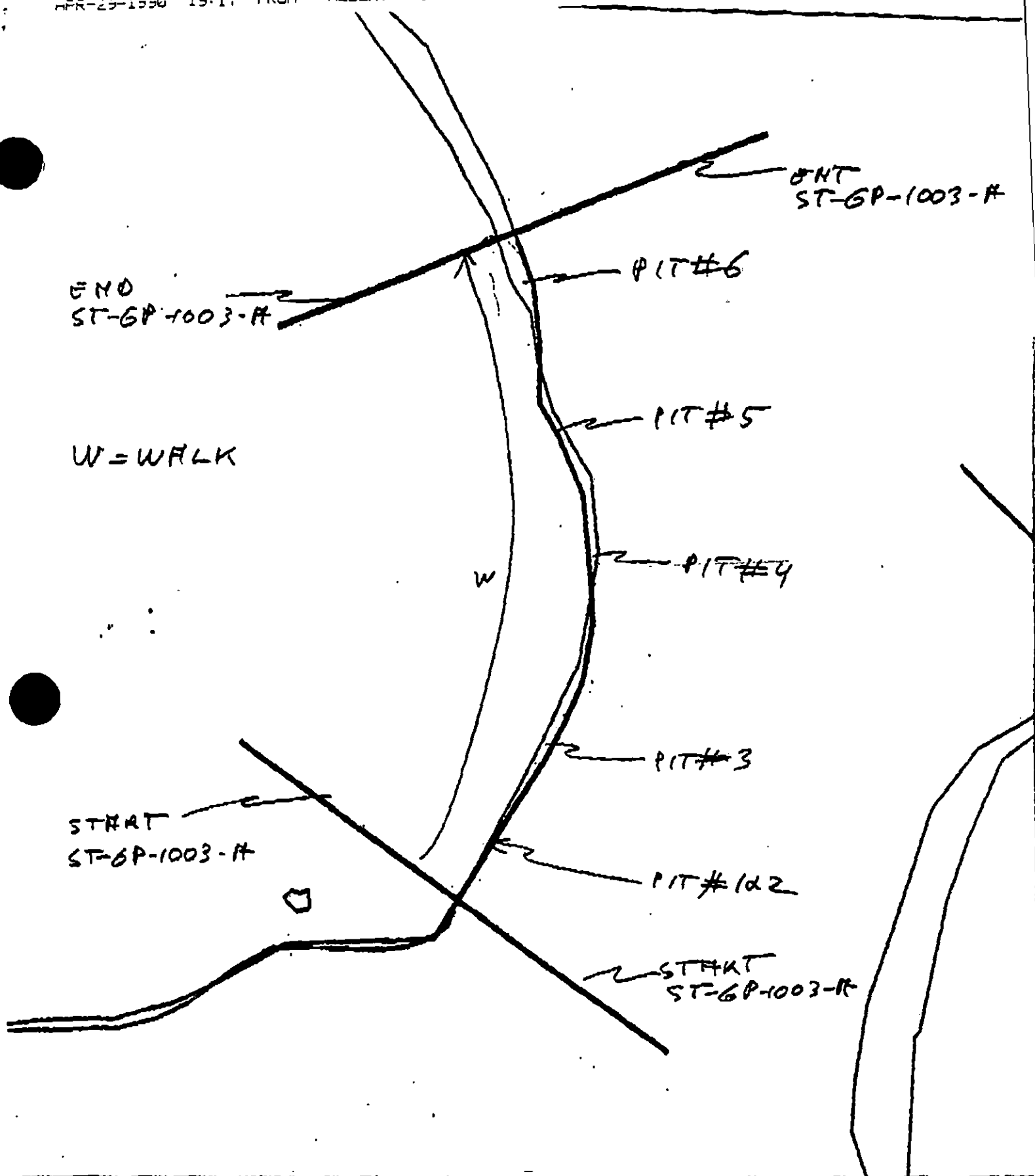
RECOMMENDATIONS:

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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: May 5 1990
ADEC Art Wagner Det. Admin
EXXON Mark N. Gilbert Mark N. Gilbert FOSC: W L DATE: 5-9-90
NOAA Gary Petras Gary Petras
USCG G.A. REITER G.A. Reiter



XXXX Wide

● / Medium

--- Narrow

TTTT Very Light

0000 No Oil

ST-GP-1003-H

ADEC Segment Length: 810

3/9 100 200 300 METERS

Map Key: KEN-42

Name: K. DEBUSSCHE

Date: 4/29/90

Data Entered:

OIL MAP

END
ST-GP-1003-A

START
ST-GP-1003-A

XXXX Wide

● // Medium

--- Narrow

TTTT Very Light

0000 No Oil

ST-GP-1003-A

ADEC Segment Length: 878m

6/9 100 200 300
METERS

Map Key: KEN-42

Name: K. DEBUSSCHERE

Date: 4/29/90

Date Entered:

REGION: KENAI

SEGMENT: ST/HA-01

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ HA-01 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)

Kenai Fjords National Park

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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 3642 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 Removal	_____ Beach Cleaner
	_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

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 without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.
 AGENCY CONTACT PERSON: ADF&G John Morison 267-2324
- 1C** Salmon fry nursery area (4/31 to 7/31)
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.
 AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214
- 1D** Esther Hatchery release (4/15 to 6/15)
1E Main Bay Hatchery release (4/20 to 6/15)
1F Sawmill Bay Hatchery release (4/15 to 6/1)
1G Cannery Creek Hatchery release (4/21 to 6/1)
1H Remote release site
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
 AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
 1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- 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)
 Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M** Herring spawning (4/1 to 6/15)
 Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235
- 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. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
 AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
 ADF&G Don Calkins 267-2403
- ✓SR** Seabird colony (5/1 to 9/1)
 Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- SS** Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
 ADF&G Tom Roth 267-2208
- 5T** All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance 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.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 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)
 Finfish harvesting
 Deer harvesting (8/15 to 2/28)
 Invertebrate harvesting
 Contact ADF&G and appropriate Native Corporation for specific dates, locations, and constraints. Restrict boat and air traffic and beach disturbance to essential minimum. If plans for treatment include methods such as hot water wash or application of Inipol which might affect intertidal or nearshore oil or toxicity levels, contact ADF&G and appropriate Native Corporation for authorization - see Native Corporation Contact List for each Native Corporation's contact person.
 AGENCY CONTACT PERSON: ADF&G Jim Fall 267-2359

FIELD SHORELINE COMMENT SHEET

SEGMENT ST HA-1 SUBDIVISION: A DATE 4/29/96

USCG

NAME JERRY SCHULTZ SIGNATURE Jerry Schultz☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

ADEC

NAME Mike Ebel SIGNATURE Michael Ebel☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTEDHA-1-A8 No oil found.LAND MANAGER NPSNAME Michael Tetreau SIGNATURE Michael Tetreau☒ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTEDGood survey. No oil found.

SHORELINE OILING SUMMARY

REVISION NO. 04-12-90

OG Randy Siegel USCG Jerry Schulte SEGMENT ST/ HA-1
 BIO Lewis Sherman LAND REP Mike Tetlow (NPS) SUBDIVISION A (1 OF 1)
 EXXON Leonard Herbst ADEC Mike Abel TIME 9:10:10:05
 TEAM NO. 12 TIDE LEVEL 2.4' - 0.15' DATE 4/29/90
 * EST. SUBDIVISION LENGTH: 3715 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 15 % B 60 % C 10 % P 7 % G 5 % S 3 % M 0 % V 0 %
 SLOPE: Long 10 % Hang 90 % Vert 0 % WAVE EXPOSURE: ☐ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 3715 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	C	B	P	S	SP	BP	BP	OT	OT	TL	SU	U	M	L
ASPHALT PAVEMENT														
POOLED														
COVER														
COAT														
STAIN														
MOUSSE														
PATTIES														
TARBALLS														
FILM														
NO OIL											X	X	X	X

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE Plastic bottle#BAGS 1Photographs: NoneRoll No None

Frames _____

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SHEEN (Y/N)	▽	SURFACE SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	UC	SP	BP	BP	OT	OT	TL	SU	U	M	L				
1	30					X	0-0	X								X							P, G
2	33					X	0-0	X								X							C
3	35					X	0-0	X								X							S
4	37					X	0-0	X								X							P, G
5	25					X	0-0	X								X							P

COMMENTS

* No Exxon length provided in Table. Value is taken from bottom of computer map.

Segment consisted of knife-edge cliffs with a few sand-pebble-cobble beaches. No oiling at all was observed. All pits were unoiled. Surveyed by boat with spot checks along shoreline. Walked the main beach.

REVIEWED BACDATE MAY 90

Sketch
Map
(2 of 2)

AP ϕ

PO ~~φ~~

$$CV \phi$$

CT ~~Ø~~

ST 0

MS ~~Ø~~

PT $\emptyset$

TB ϕ

$$\in L - \phi$$

NO 3715

Pebble Beach 43

3

21

XXXX Wide

/// Medium

----- Narrow

HA - 1

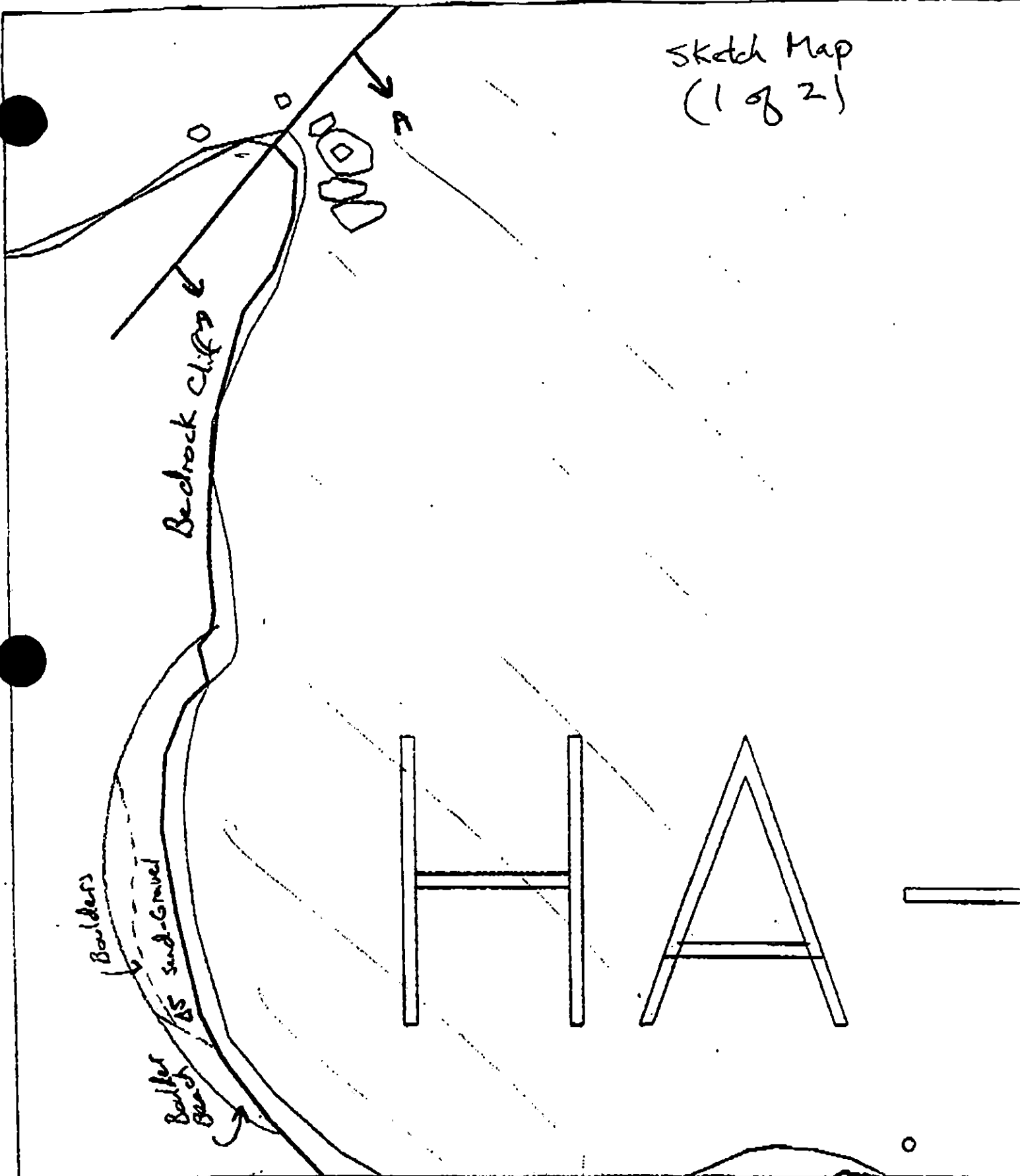
Approx. Segment Length: 3715m

Map Key: KEN-HA-10

Name: Ruby Wright

4/29/90

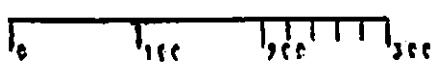
Sketch Map
(1 of 2)



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

HA-1

Approx. Segment Length: 3715m



Map Key: KEM-HA-1c

Name: Andy Siegel

Date: 4/29/90

10/10

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/1

Segment ST / HA-1 Subdivision A Date (mo / day / yr) 4/29/90

Time (24 hr) 0910-1010 Biologist SHARMAN

(A) Substrate type and % of segments: SUBDIV.
(1) Bedrock 15 (2) Boulder 60 (3) Cobble 10 (4) Pebble 7 (5) Sand 8 (6) Silt 0

(B) Overall % cover of biota (% of segment): Dense 0 Moderate X Low 0
SUBDIV.

(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: 0
Roll No. 0
Frames 0

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 PRESEN

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 PRESEN

GASTROPODS (ANCELA, LITTORINA, LIMAEAE)

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 PRESEN

FUCUS

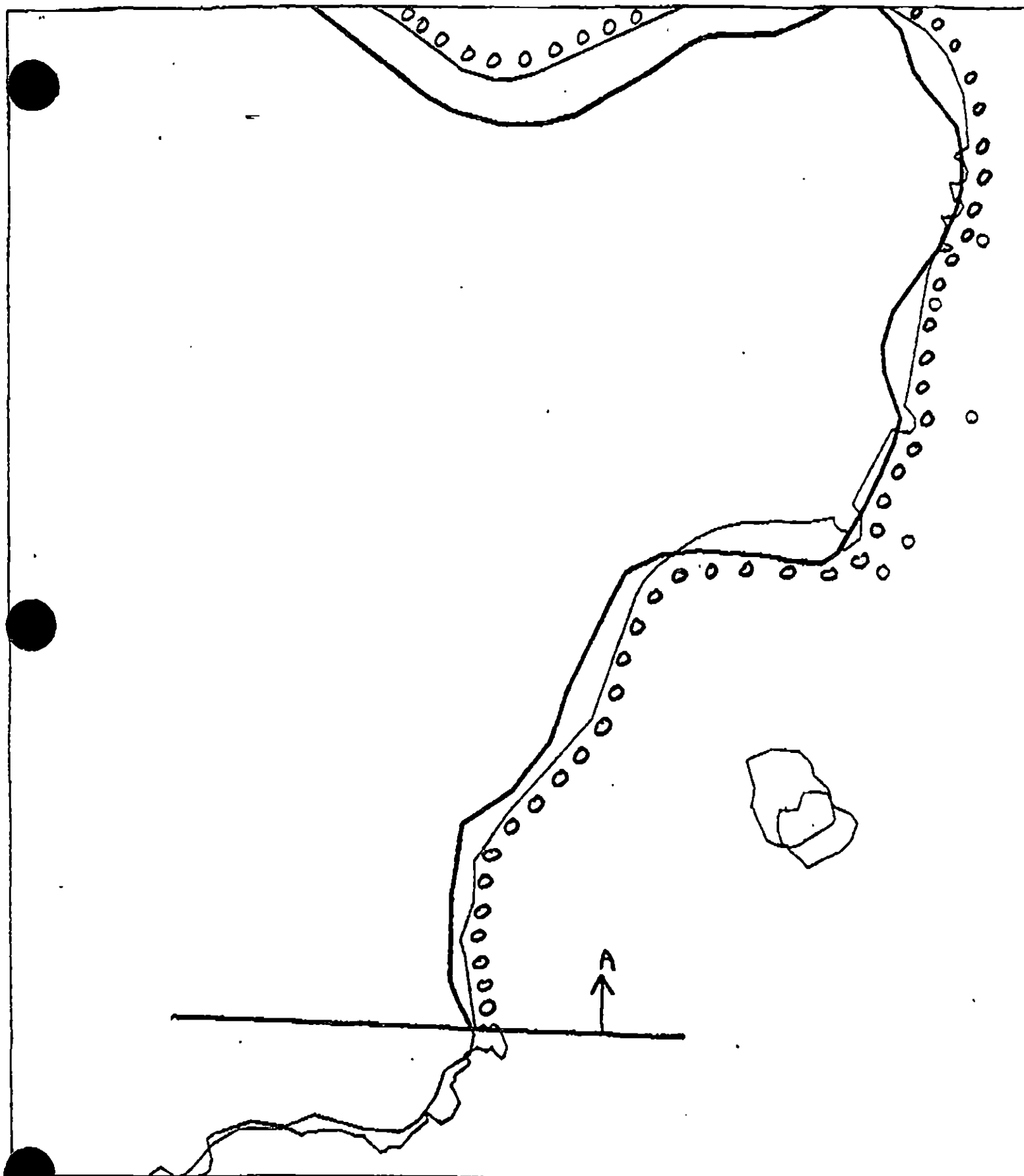
Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESEN

Wildlife Observations/ General Comments: 4 pigeon guillemots, 8 laragim ducks, 5 cormorants, 2 pelagic cormorants, 1 pair *Booby* *gambelii*, 1 pair oystercatchers, 6 unidentified gulls, 12 ravens, 8 surf scoters, various shorebirds singing in forest. 2 on line, 1 on shore, river otter tracks in UTZ sand. Pebble/cobble beaches are very separate. However, given beach dynamics, patchy types of exposure, intertidal community, Ecological Considerations: is normal and healthy.

We received no information regarding resource availability previously identified for this segment. The only particular ecological priority apparent to me is the importance of the exposed bedrock points and narrow rock islands as haulouts for pinnipeds.

19/46



XXXX Wide

//// Medium

--- Narrow

TTTT

HA-1

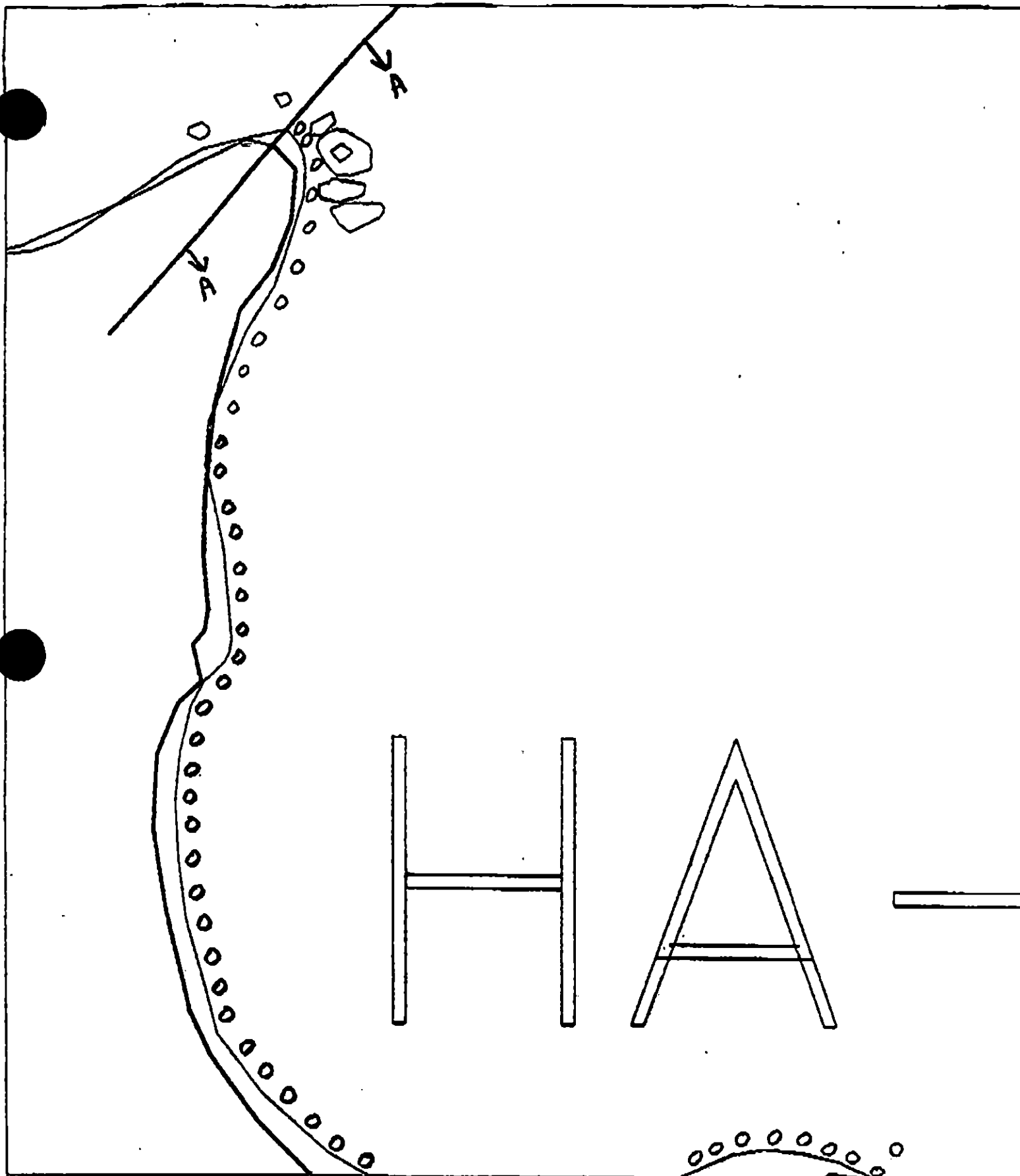
Approx. Segment Length: 3715m



Map Key: KEN-HA-1

Name: Andy Langel

Date: 4/29/90



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

HA-1

Approx. Segment Length: 3715m

0 100 200 300

Map Key: KEN-HA-1c

Name: Ruby Siegel

Date: 4/25/90

111 h/c

SHORELINE EVALUATION

SEGMENT ST/ HA-01 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
Kenai Fjords National Park
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: J. Daniel McMahon DATE: 5/11/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 3642 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 5/11/90
ADEC Art Weiner
EXXON Amy Galt
NOAA Joseph Tinkert
USCG D.D. Rome

FOSC: W L DATE: 5-15-90

Oil Character Length (m): 0.75

Sketch
Map
(2 of 2)

AP ϕ

PO ϕ

CV ϕ

CT ϕ

ST ϕ

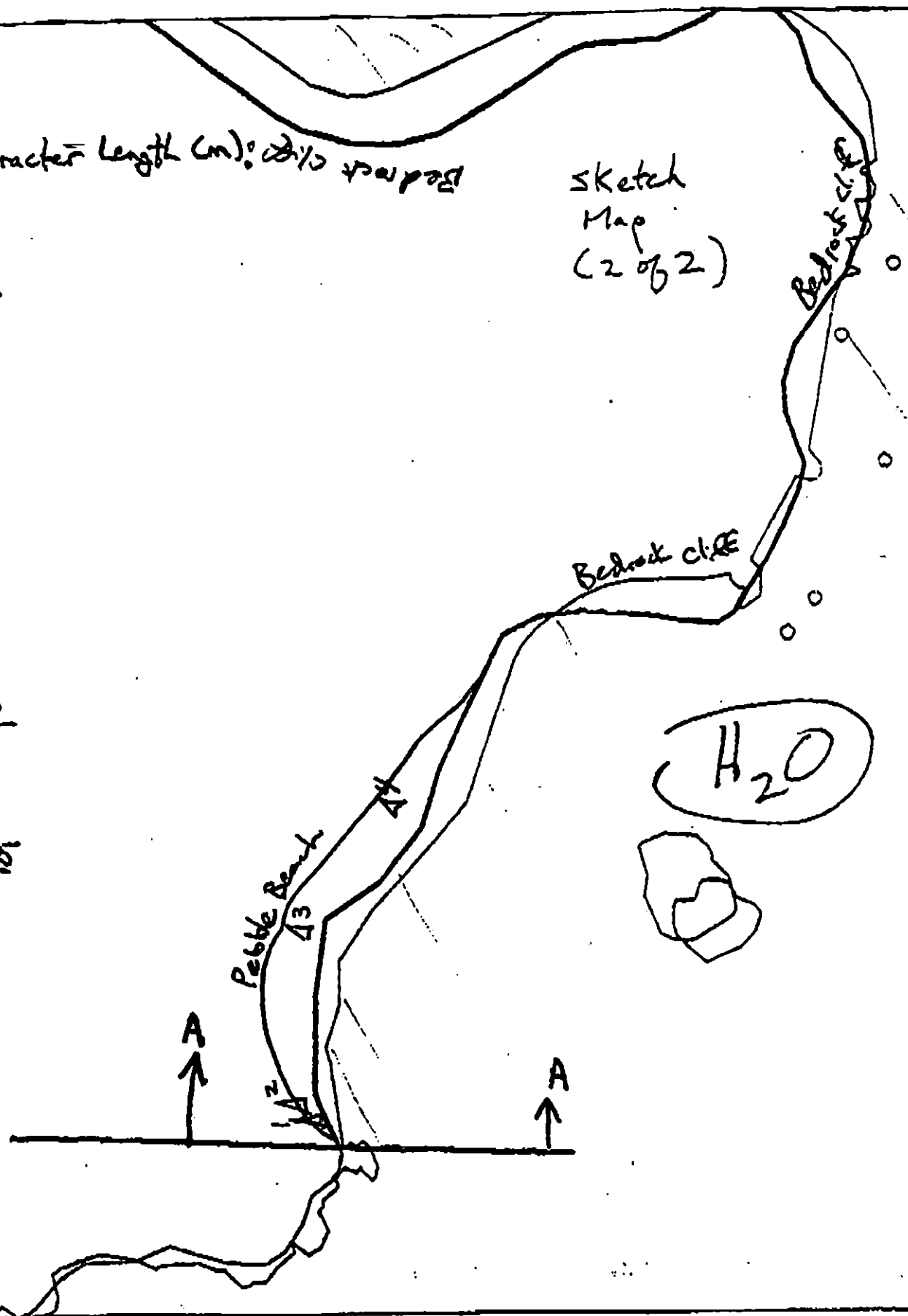
MS ϕ

PT ϕ

TB ϕ

FL ϕ

NO 3715



XXXX Wide

//// Medium

--- Narrow

TTTT

HA-1

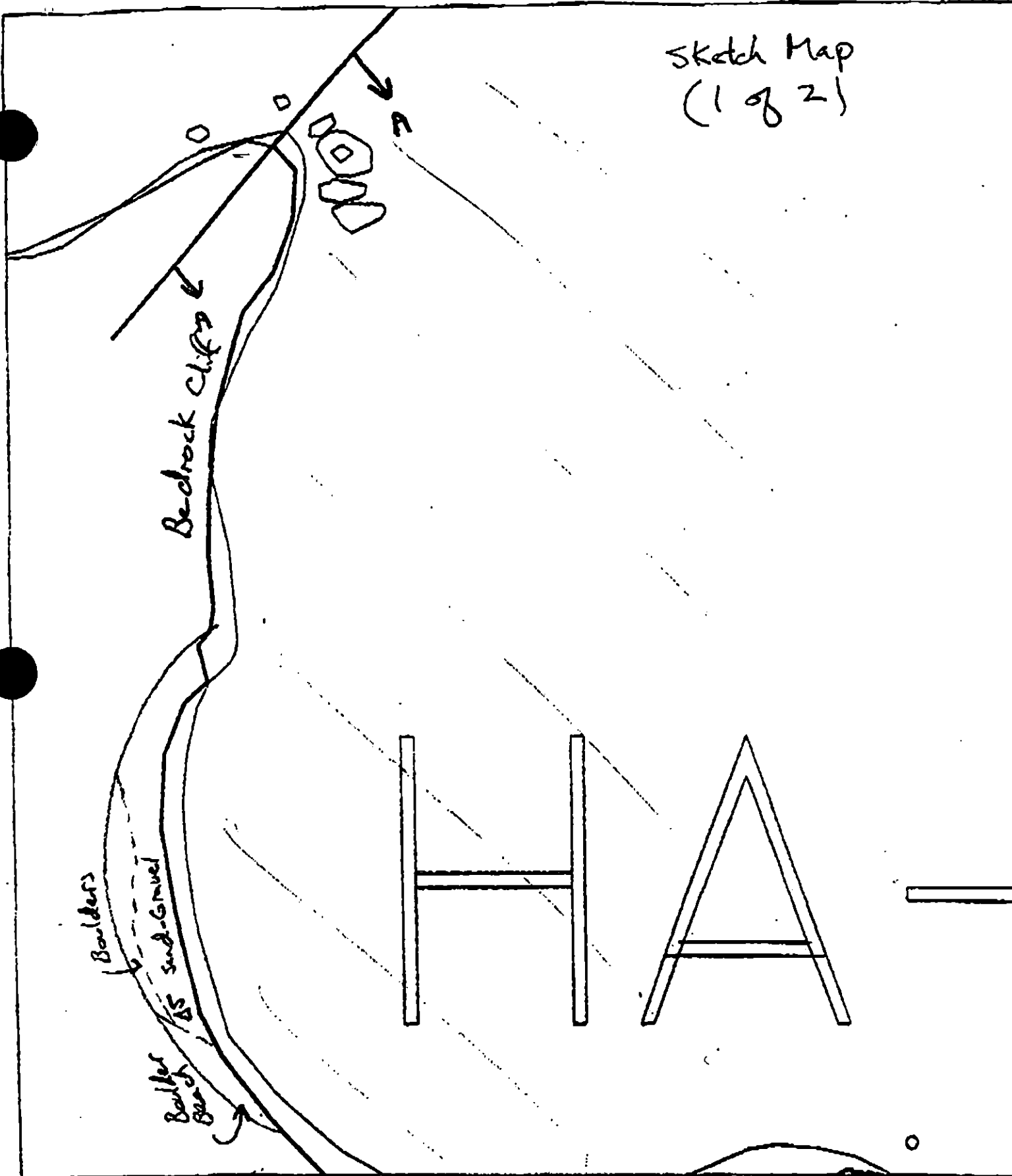
Approx. Segment Length: 3715m

Map Key: KEN-HA-1a

Name: P. J. J. J.

Date: 4/29/90

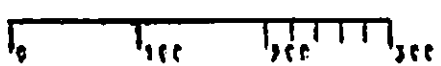
Sketch Map
(1 of 2)



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

HA-1

Approx. Segment Length: 3715m

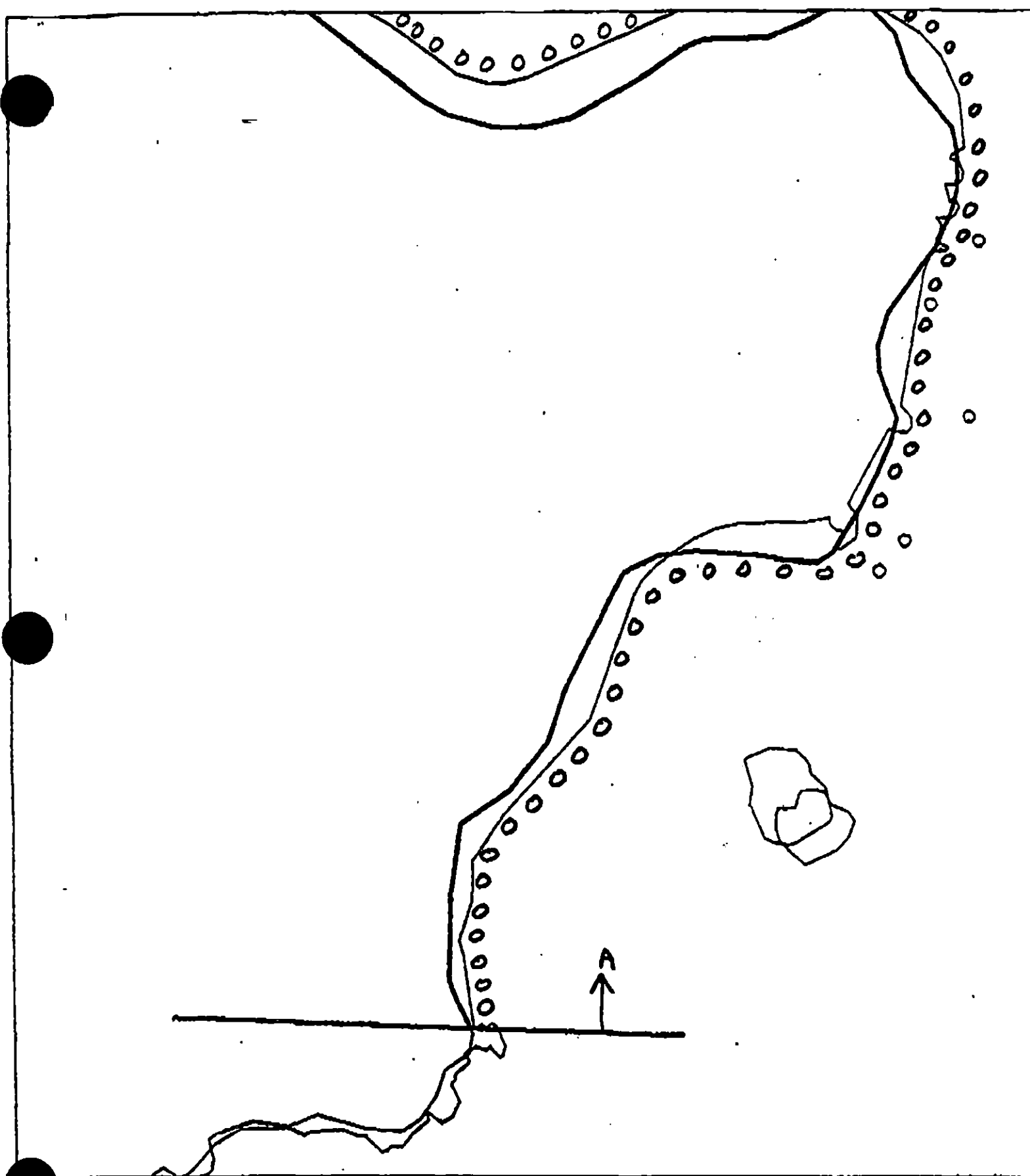


Map Key: KEN-HA-1c

Name: Andy Siegel

Date: 4/29/90

15/46



XXXX Wide
//// Medium
--- Narrow
TTTT

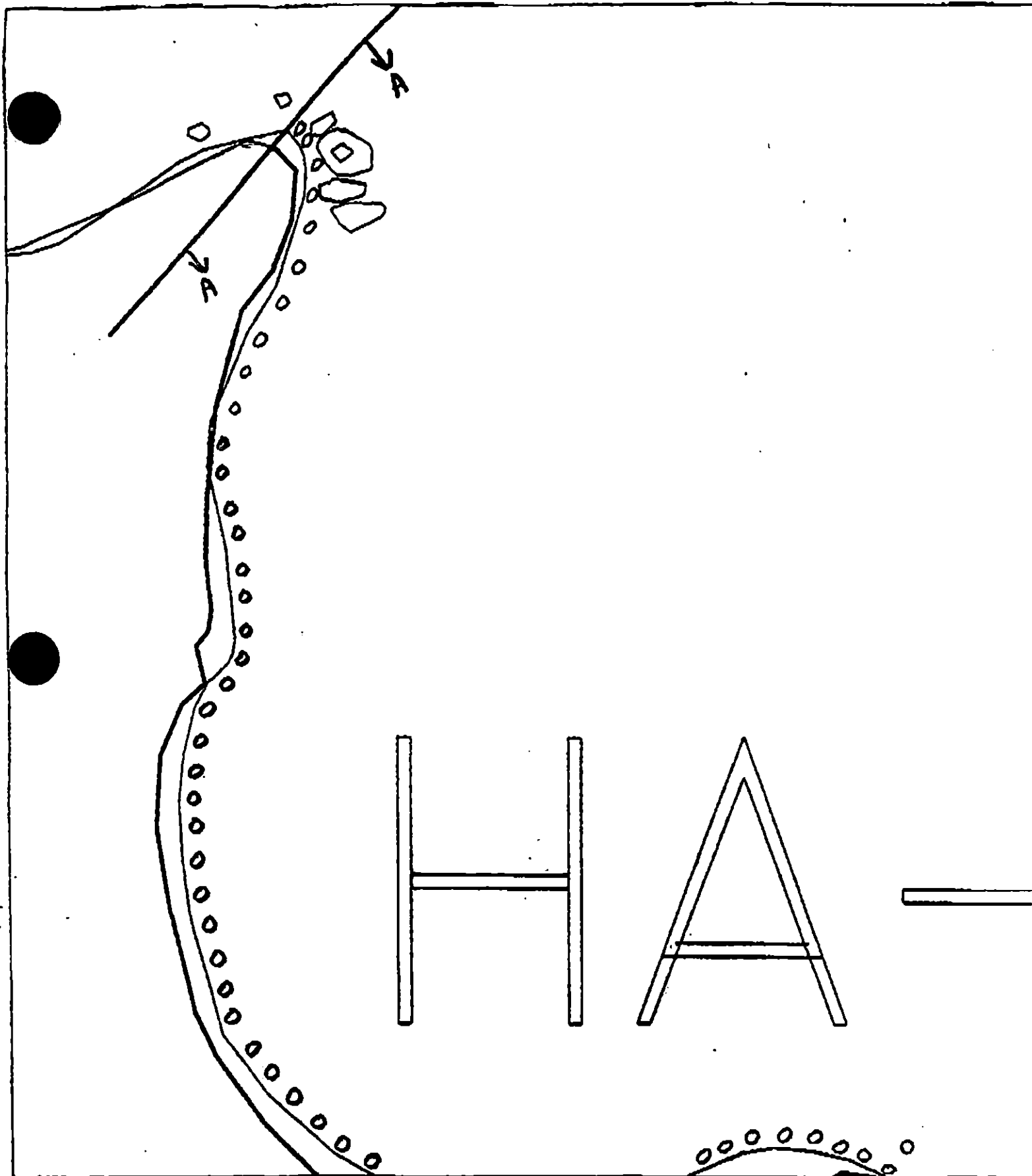
HA-1

Approx. Segment Length: 3715m

Map Key: KEN-HA-1

Name: Andy Ling

Date: 4/29/90 12/11



XXX Wide

/// Medium

--- Narrow

TTTT Very Light

HA-1

Approx. Segment Length: 3715m

0 100 200 300

Map Key: KEN-HA-1c

Name: Ruf Siegel

Date: 4/25/90

111/11

REGION: KENAI

SEGMENT: ST/HA-02

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ HA-02 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4LL Kenai Fjords National Park
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 268 m: No Oil 2898 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: _____

TAG COMMENTS: _____

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

FOSC: _____ DATE: _____

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 without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.
 AGENCY CONTACT PERSON: ADF&G John Morison 267-2324
- 1C Salmon fry nursery area (4/31 to 7/31)**
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.
 AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214
- 1D Esther Hatchery release (4/15 to 6/15)**
1E Main Bay Hatchery release (4/20 to 6/15)
1F Sawmill Bay Hatchery release (4/15 to 6/1)
1G Cannery Creek Hatchery release (4/21 to 6/1)
1H Remote release site
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
 AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
 1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- 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)
 Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M Herring spawning (4/1 to 6/15)**
 Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235
- 3P Harbor seal and sea lion pupping (5/15 to 7/1)**
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. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
 AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
 ADF&G Don Calkins 267-2403
- 5R Seabird colony (5/1 to 9/1)**
 Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)**
 Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
 ADF&G Tom Roth 267-2206
- 5T All Bald Eagle nests (3/1 to 6/1)**
Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance 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.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Recreation:**
6V Tent sites (6/1 to 9/15)
6W Anchorages (6/1 to 9/15)
6X Forest Service cabins (6/1 to 9/15)
6Y Lodge (6/1 to 9/15)
Special use destination
- 7Z Subsistence area: Salmon harvesting (5/1 to 9/30)**
7HH Finfish harvesting
7II Deer harvesting (8/15 to 2/28)
7I Invertebrate harvesting
 Contact ADF&G and appropriate Native Corporation for specific dates, locations, and constraints. Restrict boat and air traffic and beach disturbance to essential minimum. If plans for treatment include methods such as hot water wash or application of Inipol which might affect intertidal or nearshore oil or toxicity levels, contact ADF&G and appropriate Native Corporation for authorization - see Native Corporation Contact List for each Native Corporation's contact person.
 AGENCY CONTACT PERSON: ADF&G Jim Fall 267-2359

FIELD SHORELINE COMMENT SHEET

SEGMENT ST HA-2 SUBDIVISION: A DATE 4/29/91

USCG

NAME JERRY SCHULTZ

SIGNATURE Jerry Schultz

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME Mike Ebel

SIGNATURE Michael J. Ebel

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

HA-2-A: Very little oil found on the southern end of segment, in the boulder/sand pocket beach (western shore). Splashes coats weathering off cliff faces need no attention and the few splashes of interstitial pool and asphalt found in rock crevices are not of enough substance to justify any further impact such as crunching underfoot the intertidal critters.

LAND MANAGER NPS

NAME Michael Tetreaux

SIGNATURE Michael Tetreaux

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Good survey. Sparse oil was found, but treatment does not appear to be necessary.

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

OG Randy Siegel USCG Jerry Schulte (SEGMENT ST/ HA-2)
 BIO Lewis Sherman LAND REP Patricia Zeller (SUBDIVISION A) (1 OF 1)
 EXXON Leonard Harbst ADEC Mike Ebel TIME 08:05 10:08:05
 TEAM NO. 12 TIDE LEVEL 6' to 2.8' DATE 4/29/90
 EST. SUBDIVISION LENGTH: 3510 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow 44° F
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 15 % B 75 % C 5 % P 3 % G 1 % S 1 % M 0 % V 0 %
 SLOPE: Long 5 % Hang 95 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 240 m NO 3270 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR				IMPACTED ZONES			
	R	B	P	S	1	2	3	4	SU	U	M	N
ASPHALT PAVEMENT				X				X	X			
POOLED				X				X	X			
COVER												
COAT				X				X	X			
STAIN				X				X	X			
MOUSSE												
PATTIES												
TARBALLS												
FILM												
NO OIL									X	X	X	

PAVEMENT H F 5 1 sq. m by 2 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE Plastic#BAGS 1Photographs: NONERoll No. NONEFrames

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR				PIT ZONE				A N A	SHEEN (Y/N)	!	SURFACE-SUBSURFACE SEDIMENTS
		OF	OR	OL	OF	NO		SO	UC	1	2	3	4	SU	U	M	N				
1	25					X	0-0	X						X					-	-	CPG
2	37					X	0-0	X						X					-	-	SGCP
3	20					X	0-0	X						X					-	-	S
4	35					X	0-0	X						X					-	-	S
5	35					X	0-0	X						X					-	-	S

COMMENTS

Segment consisted of high angle cliffs with occasional pocket beaches. Light oiling in the southerly beach — contamination on cliff walls, and some asphalt-pools in boulder crevices. All pits were ~~un~~un-oiled. Surveyed by boat with spot checks along shoreline.

REVIEWED BATDATE 1 MAY 90

Oil Character Length (m):

AP 10

PO 10

CV 0

CT 240

ST 240

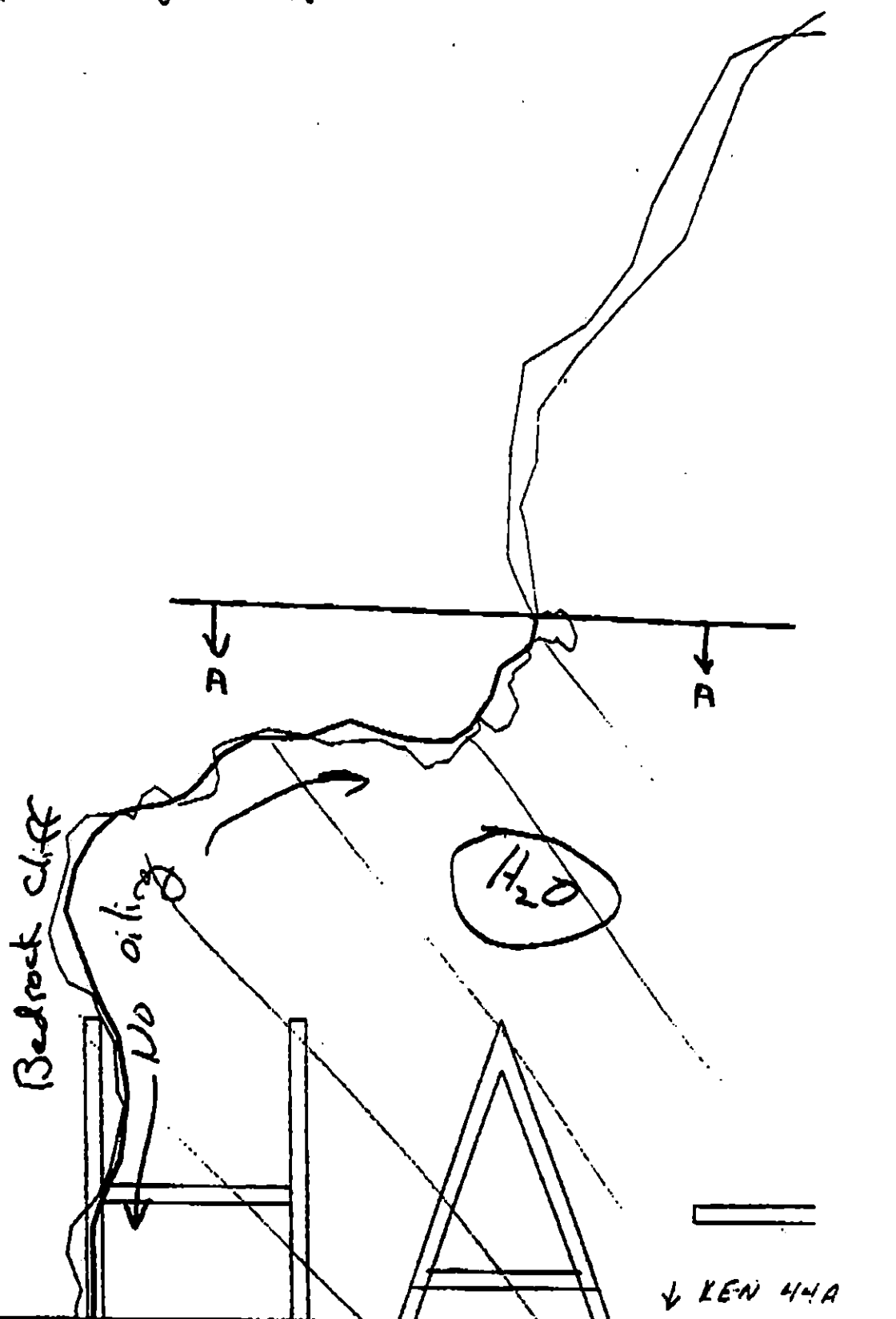
MS 0

PT 0

TB 0

FL 0

NO 3270



XXXX Wide

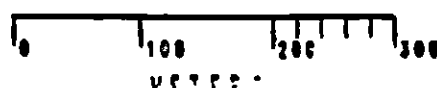
//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

ADEC Segment Length: 3167m

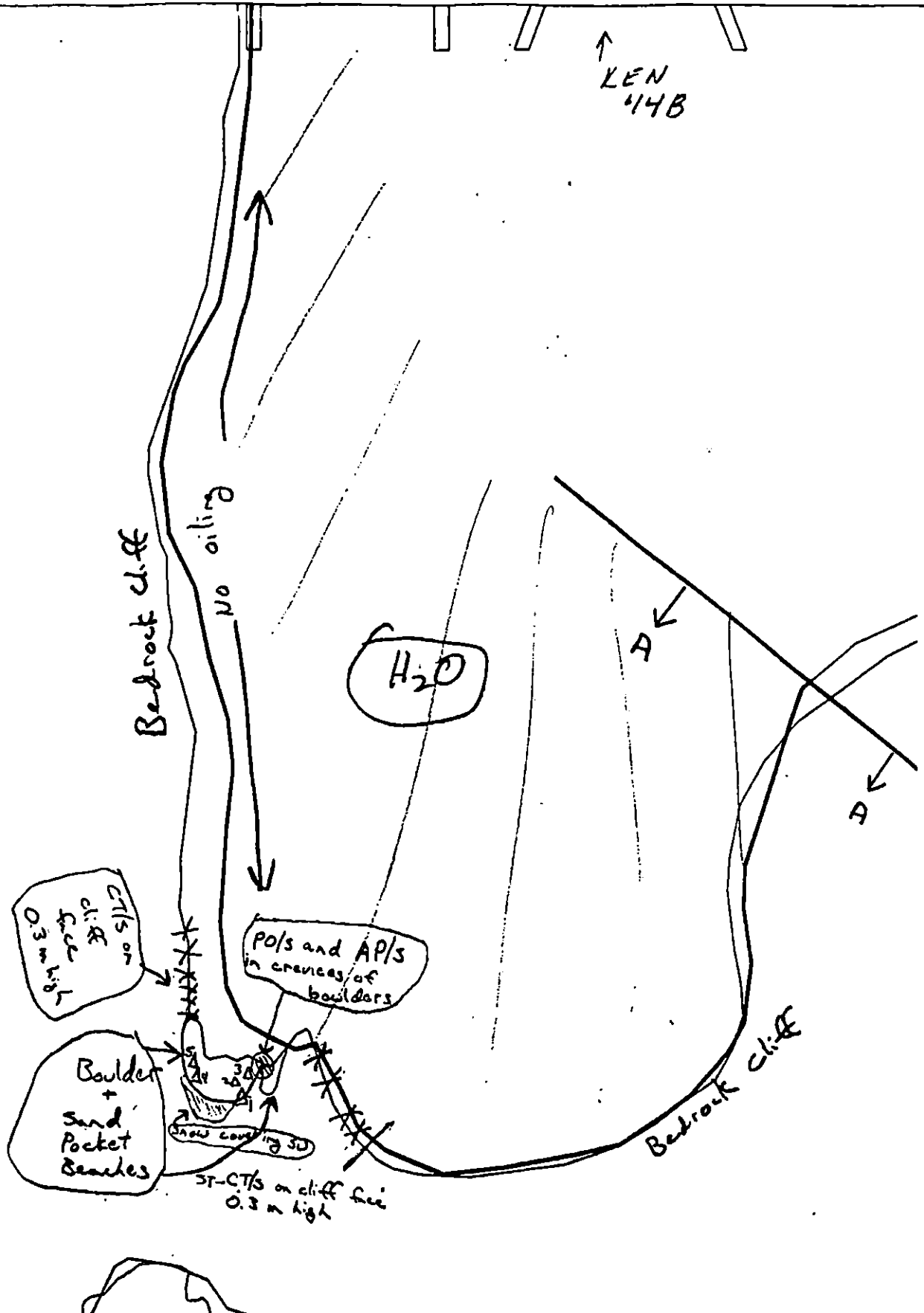


Map Key: KEN-44b

Name: Andy Siegel

Date: 4/29/90

Data Entered:



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

HA-2

ADEC Segment Length: 3167m



Map Key: KEN-440

Name: Ruby Siegel

Date: 4/29/90

Data Entered:

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

Segment ST / HA-2 Subdivision A Date (mo / day / yr) 4/29/90Time (24 hr) 0800-0900 Biologist SHARMAN

- (A) Substrate type and % of segment: SUBDIV. + granules
 (1) Bedrock 15 (2) Boulder 75 (3) Cobble 5 (4) Pebble 3 (5) Sand 2 (6) Silt ---
- (B) Overall % cover of biota (% of segment): Dense --- Moderate X Low ---
SUBDIV.
- (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. ---Frames: ---

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	3	3	3	NOT PRESENT
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	6	6	6	

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	3	3	NOT PRESENT
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	6	6	

GASTROPODS (ANCELLA, LITTORINA, LIMAEAE)

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	3	3	NOT PRESENT
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	6	6	

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	2	2	3	3	NOT PRESENT
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	6	6	

Wildlife Observations/ General Comments: 25 hedgehog tracks, 2 pigeon guillemots, 2 Barnes goldeneyes, 1 western eagle, 1 fox sparrow foraging intertidally, varied thrush singing by forest. A moderately robust intertidal community. HTE has locally abundant large littorines. MTE + LTE support a community typified by Anacardium, ammonia, sponges, some coralline algae, Pycnogonids, Damocornia, (cut

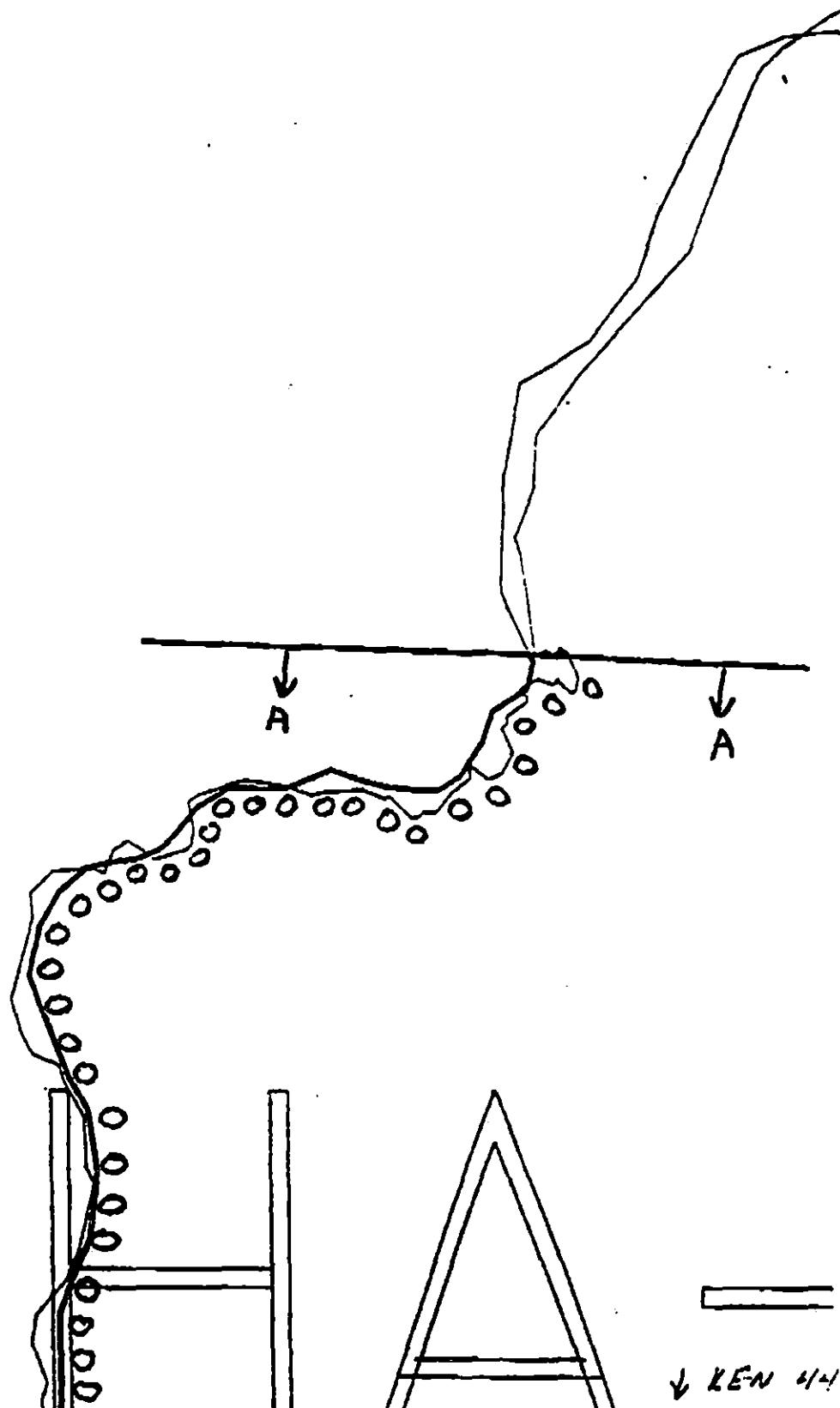
Ecological Considerations:

We received no information regarding resource sensitivities previously identified for this segment. The only particular ecological priority apparent to us is the importance of the bedrock points at the N. end of the segment as haulouts for pinnipeds.

alug

HA-2Gloabine Ecological Summary (cont.)
(Page 2 of 2)Sharman
4/29/90General Comments (cont.):

Pinnaster, etc. Moderate MTZ + LTZ algal diversity. A generally normal + healthy intertidal community with normal ongoing recruitment.



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

HA-2

ADEC Segment Length: 3167m

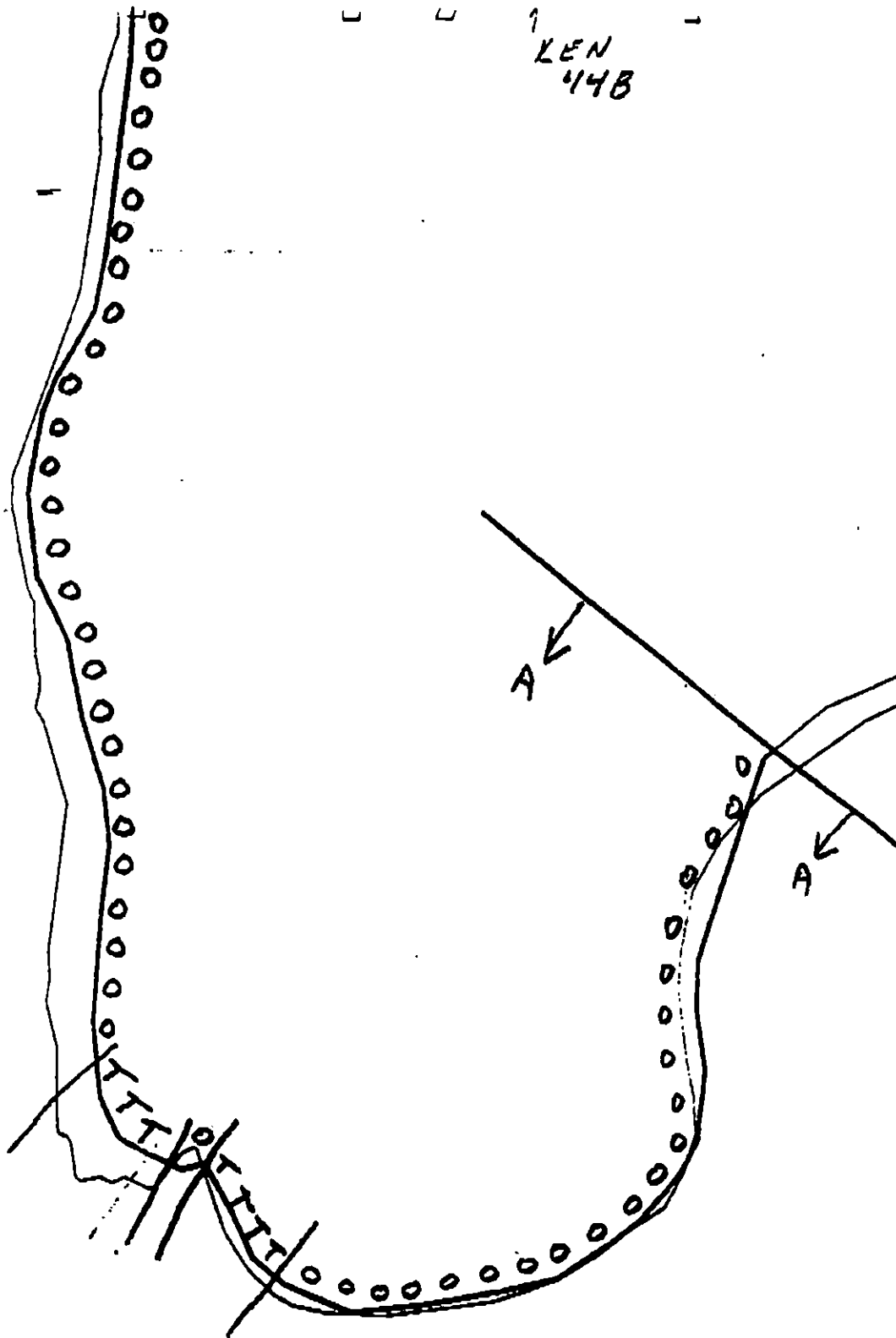
0 100 200 300
 METERS

Map Key: KEN-44b

Name: Poly SieplDate: 4/29/90

Data Entered:

LEN
44B



XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

HA-2

ADEC Segment Length: 3167m



Map Key: KEN-440

Name: Andy Siegel

Date: 4/29/90

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ HA-02 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4LL Kenai Fjords National Park
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: [Signature] DATE: 5/8/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 268 m: No Oil 2898 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: <u> </u> Wands
☐ Tarmat Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS:

TAG COMMENTS:

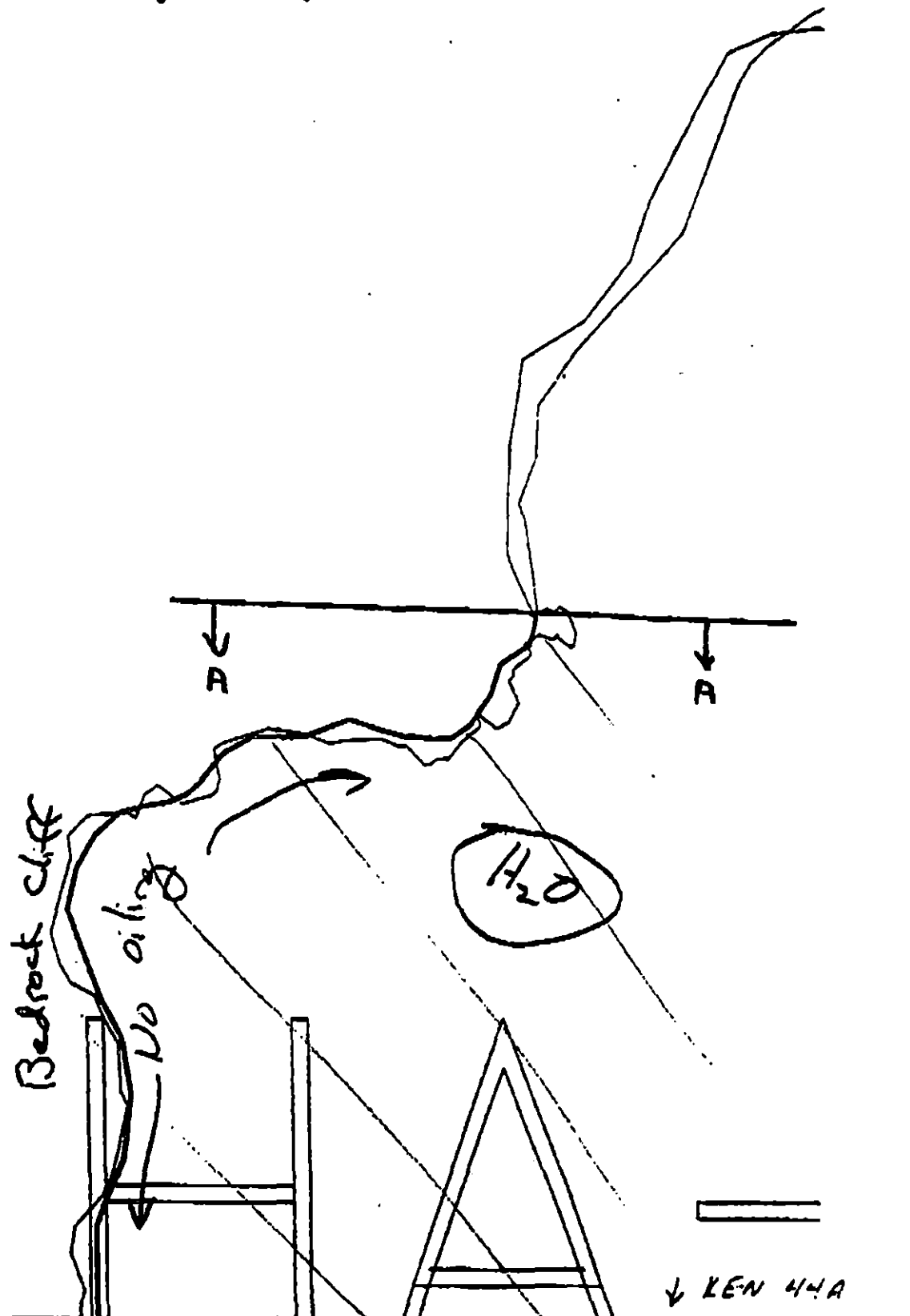
TAG APPROVAL DATE: 5/8/90

ADEC Art Weiner Art Weiner
EXXON ROY TATE Roy Tate
NOAA Gary Petras Gary Petras
USCG G.A. REITER G.A. Reiter

FOSC: [Signature] DATE: 6 June 90

Oil Character Length (m):

AP 10
 PO 10
 CV 0
 CT 240
 ST 240
 MS 0
 PT 0
 TB 0
 FL 0
 NO 3270



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

HA-2

ADEC Segment Length: 3167m

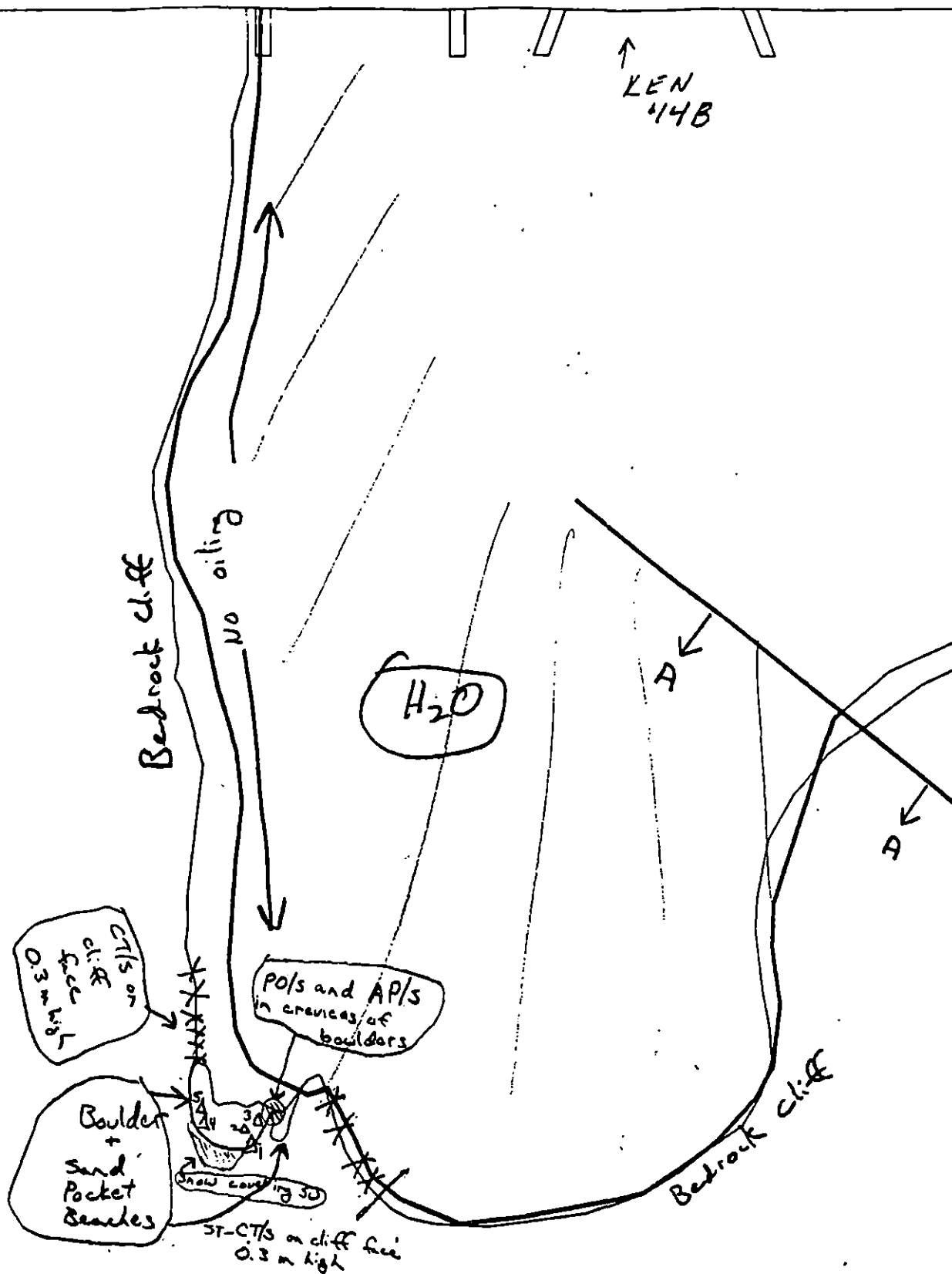


Map Key: KEN-44b

Name: Andy Siegel

Date: 4/29/90

Date Entered:



↑
KEN
14B

Bedrock cliff

No oiling

H₂O

Pols and AP/s
in crannies of
boulders

CT/s on
cliff face
0.3 m high

Boulder
+ sand
Pocket
Beaches

ST-CT/s on cliff face
0.3 m high

Bedrock cliff

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

HA-2

ADEC Segment Length: 3167m



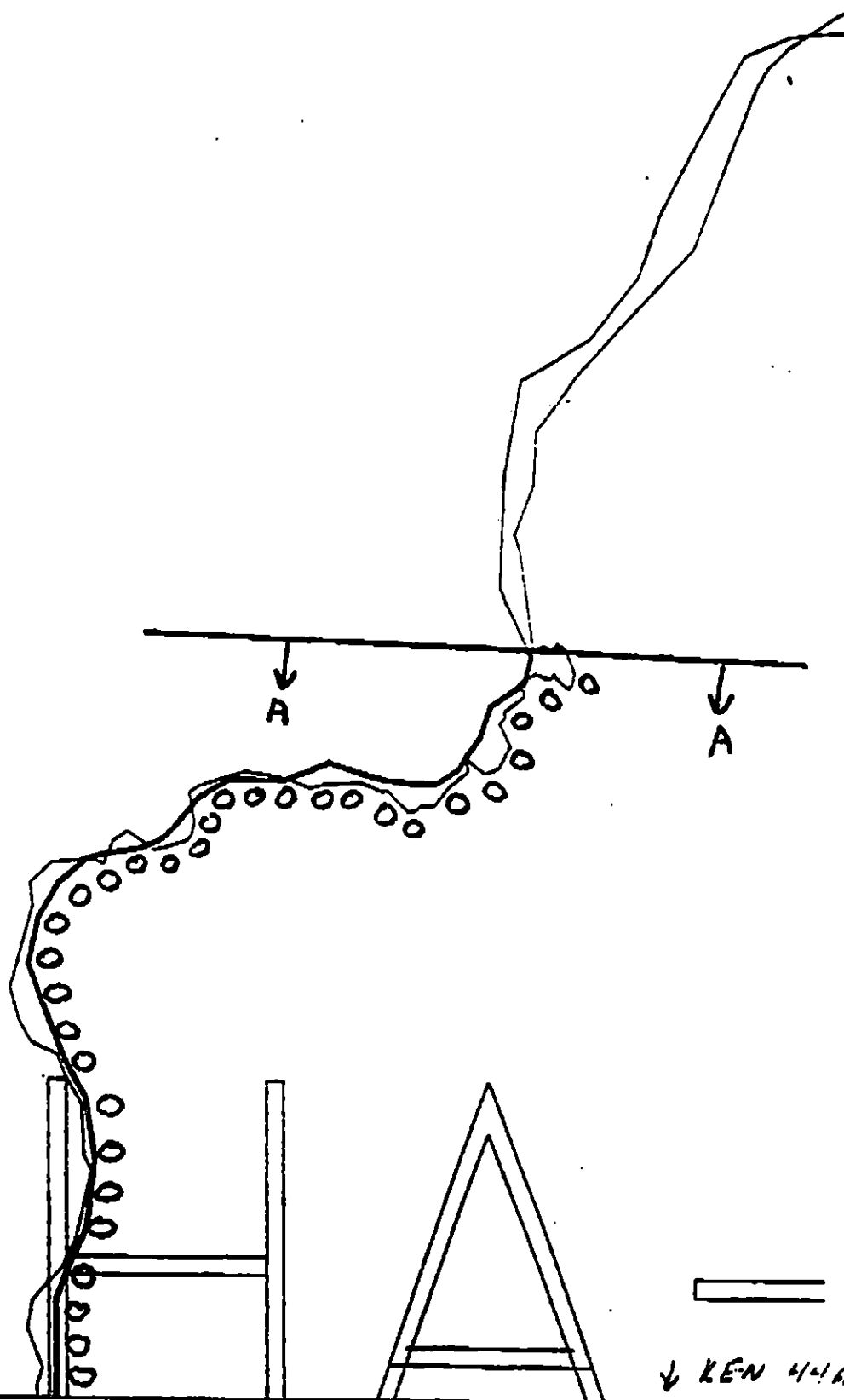
Map Key: KEN-44a

Name: R. J. Siegel

Date: 4/29/90

Data Entered:

rlc



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

HA-2

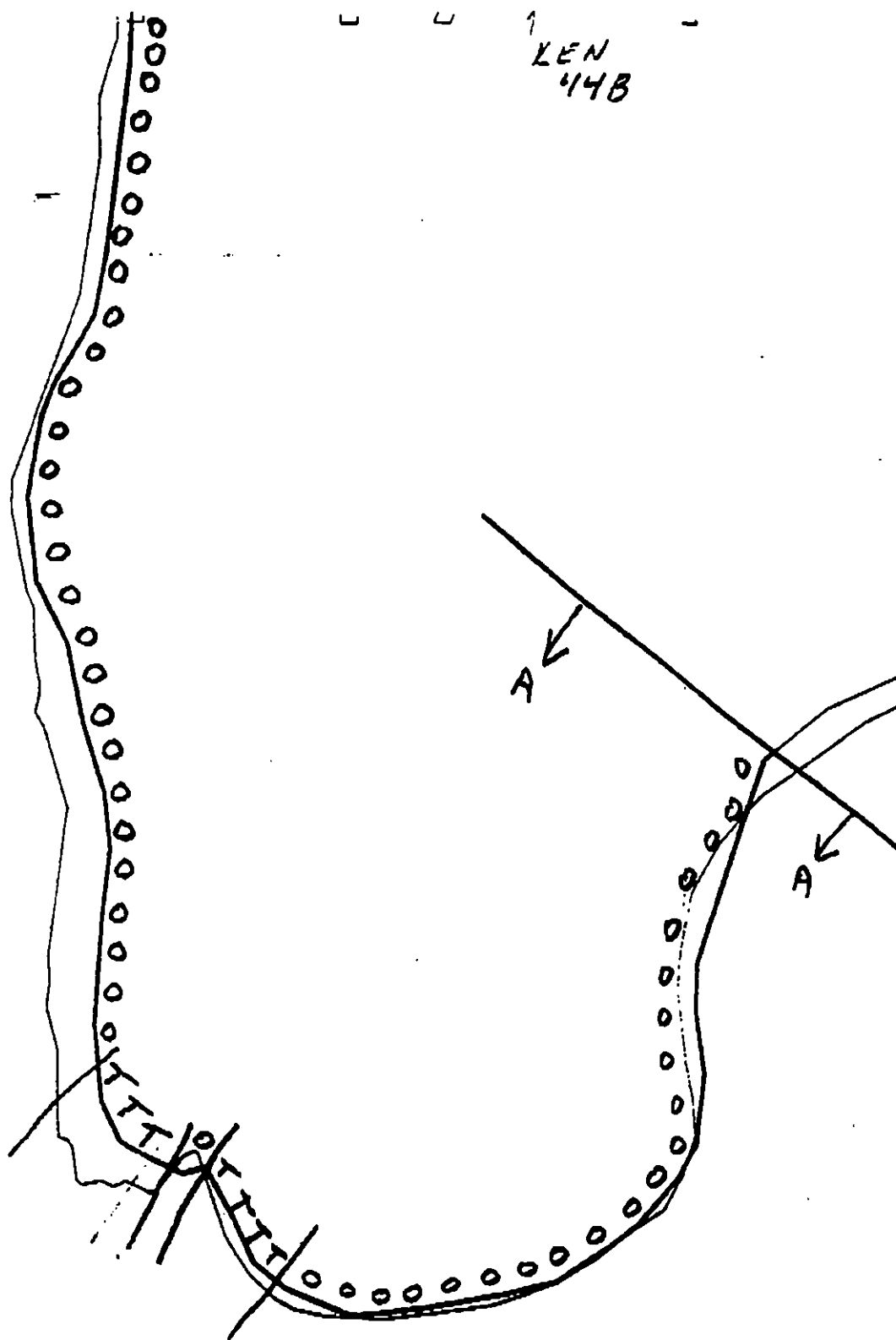
ADEC Segment Length: 3167m



Map Key: KEN-44b

Name: *Ken Siegel*Date: *4/29/90*

Data Entered:

KEN
44B

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

HA-2

ADEC Segment Length: 3167m



METERS



Map Key: KEN-44a

Name: Andy SiegelDate: 4/29/90

Data Entered:

REGION: KENAI

SEGMENT: ST/HR-03

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ HR-003 SUBDIVISION A (1 OF 1) DATE 4/8/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)

4QQ National Wildlife Refuge

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 0 m: Narrow 0 m: V.Light 175 m: No Oil 1501 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 bioremediation of subsurface oil as indicated on sketch map. Treatment should be conducted before 5/1 or with permission of USFWS after 5/1 due to presence of seabird colony.

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 / HR-3 SUBDIVISION: A DATE 4/8/90

USCG / NOAA
NAME JACQUI MICHEL SIGNATURE Michel

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

The only oil remaining was found on the southernmost boulder beach -- only a few drips were observed. No further treatment is warranted.

ADEC
NAME JOHN R. REED SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

Very light oiling consisting of a few splatters. No treatment is required. I have read and agree with all data on S.S.A.T. Forms.

LAND MANAGER / USFWS

NAME Mary Portner SIGNATURE Mary Portner

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS.

Oil remains as coat and stain between and beneath boulders in the boulder beach at the southern end of the segment. The amount and location of the oil remaining make it difficult to remove.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG MANAB USCG/NMA MICHEL SEGMENT ST/ HR 03
 BIO CARE LAND REP POINTER - KWS SUBDIVISION A
 EXXON BOYER ADEC RED TIME 08:15 to 09:12
 TEAM NO.: 18 TIDE LEVEL: +1.0 to +2.2 DATE 4/18/90
 EST. SUBDIVISION LENGTH: 1916 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: NORTH to SOUTH
 SURFACE SEDIMENTS: R 90 % B 10 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 10 % Hang 50 % Vert 40 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 100 m NO 1816 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IB	IF	IR	SB	SBK	FW	GA	SL	TL	LR	LR	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT				☒		☒							☒			
STAIN				☒		☒							☒			
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL													☒		☒	☒

PAVEMENT: H F S N/A sq. m by 0 cmPATTIES / TARBALLS N/A BAGSNEAR SHORE SHEEN? ☒ BR RW SL TL

OILED DEBRIS	NO	AMOUNT		
		SM	MD	LG
Logs				
Vegetation				
Trash				
Debris				

DEBRIS COLLECTED

☐ YES ☒ NOTYPE N/A#BAGS 0

Photographs:

Roll No. ST 18-5Frames (11-12)SUBSURFACE OIL N

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	DL	OF	NO		VO	UC	SB	SBK	FW	GA	SL	TL	LR	LR	SU	U	M	U		
<u>1</u>	<u>50</u>		☒				<u>0-25</u>		☒		☒							☒				<u>NO</u>	<u>BC throughout</u>

COMMENTS

This is a monotonous, steep shoreline backed by a high-angle spruce forest. We landed on a boulder beach (very light oil category on map) where surface oil was scarce and showed signs of wave and boulder-battering erosion. CT and ST persists on boulder surfaces at depth but I doubt this is a significant volume of subsurface oil - i.e. I don't expect to

Page 1 of see sheen or hot days here.REVIEWED 7WDATE 4/8/90

OG Mann

SEGMENT ST/ MR. 3

SUBDIVISION A

DATE 4, 8 90

SKETCH MAP

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Body
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. H/W/L/V/L
- ☐ SSI
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ P/L Location(s)
- ☐ Photo Location(s)

No sketch

LEGEND

1 ▲

P/L - No Subsurface Oil

2 ▲

P/L - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Offed Vegetation

1 ➡

Photo location, direction,
and number

Oil Character Length (m): AP 0 PO 0 CV 0 CT 10 ST 10 MS 0 PT 0 TB 0 FL 0 NO 1906

Star
8/15

HR003

500.0

Team 18

4/8/90

LIGHT IMPACT OF
HOUSE AND TARBALLS
ON THIS MEDIUM COBBLE
BEACH. MAJORITY OF
CONTAMINATION IS ON
THE HIGH TIDE LINE
WITH LIGHTER IMPACT
ON THE MID-TIDE
LINE.

~~SEWARD POST TREATY~~
~~SHORELINE ASSESS:~~
26 SEPTEMBER 1989
CBBV: C. SHERIDAN
M. POTTER
L. PEARSON

30m x 3m
of < 10%

CT/s ST/s
none. o/s/pods.

1 pit dug to ~50cm
(all BC) oil is ST
scattered on boulders
to ~25cm.

OILING

H = Heavy
M = Moderate
L = Light
VL = Very Light
N = None
NS = Not Surveyed

Distance In Meters

HR0003

500.0

Team 18
4/8/90

LIGHT IMPACT OF
MOUSSE AND TARBALLS
ON THIS MEDIUM COARSE
BEACH. MAJORITY OF
CONTAMINATION IS ON
THE HIGH TIDE LINE
WITH LIGHTER IMPACT
ON THE MID-TIDE
LINE.

VL

← 100m →
← 12" →

~~SEWARD POST TREATY
SHORELINE ASSES
26 SEPTEMBER 1989
CEN: C. SHERIDAN
M. POTTER
L. PEARSON~~

OILING	
H	Heavy
M	Moderate
L	Light
VL	Very Light
N	None
NS	Not Surveyed
Distance In Meters	

G/S: I don't have Exxon map
-please fill it out yourself.

SHORELINE ECOLOGICAL SUMMARY

REVISION: 10/22/90

Segment ST / HR-3 Subdivision A (of A) Date (mo / day / yr) 4/8/90Time (24 hr) 0840 Biologist M. CARR(A) Substrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock 90 (2) Boulder 10 (3) Cobble — (4) Pebble — (5) Sand — (6) Silt —(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 80 Moderate 20 Low —

(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. 5Frames 11-12

BARNACLES

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	X	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:

NONE

Ecological Considerations:

Sensitivity codes: 4-09 (National Wildlife Refuge), 5-R (Seabird colony).

p2
Mann

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

HR-3

EXXON Segment Length: 1916m

0 100 200 300
METERS

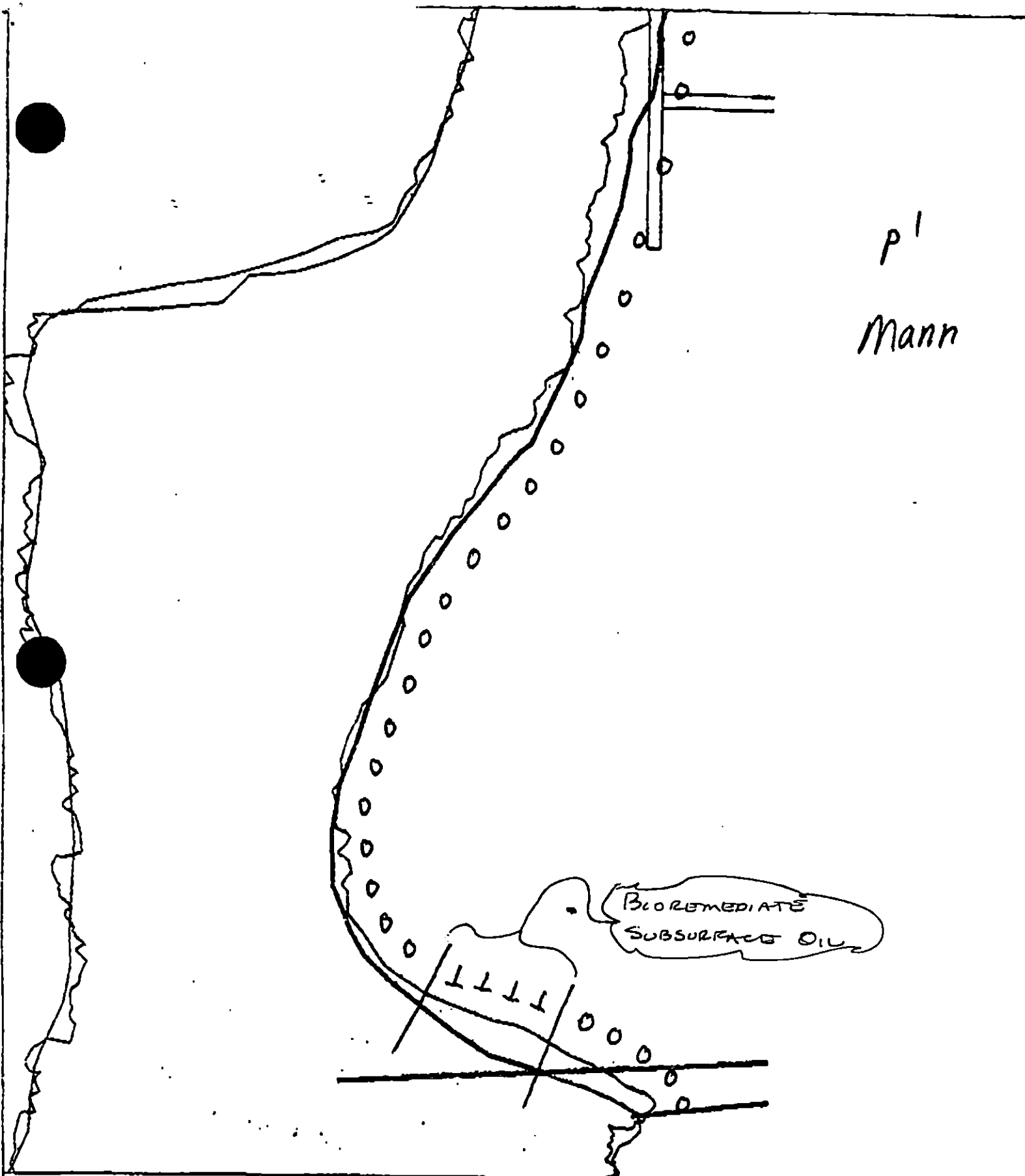
Map Key: PWS-HR-3b

Name: Mann

Date: 4/9/90 for 4/8/90

Date Entered:

TOTAL P.05

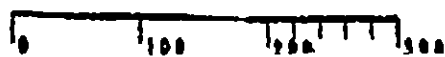


p1
Mann

● XXX Wide
/// Medium
--- Narrow
TTTT Very Light
○○○○

HR-3

EXXON Segment Length: 1915m



Map Key: PWS-HR-30

Name: Mann

Date: 4/9/90 for 4/8/90

SHORELINE EVALUATION

SEGMENT ST/ HR-003 SUBDIVISION A (1 OF 1) DATE 4/8/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)

4QQ National Wildlife Refuge

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 Zeffman DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 175 m: No Oil 1501 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> </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 subsurface oil as indicated on sketch map. Treatment should be conducted before 5/1 or with permission of USFWS after 5/1 due to presence of seabird colony.

TAG COMMENTS:

TAG APPROVAL DATE: 4/20/90

ADEC ART WEINER Det Weener

EXXON ANDY TGAZ

NOAA Bull Wernick Buck Wernick

USCG KENNETH KEANE Kenneth Keane

FOSC: DATE: 4-26-90

Due to the reason for not treating offshore by USFWS, proceed with treatment as per TAG comments - shoreline condition should be enhanced.

OG Mann
SEGMENT STI HR. 3
SUBDIVISION A
DATE 1, 8 90

SKETCH MAP

CHECKLIST

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

No sketch

LEGEND

1 

Pt - No Subsurface Oil

2 

Pt - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oiled Vegetation

1 

Photo location, direction,
and number

Oil Character Length (m): AP 0 PO 0 CV 0 CT 10 ST 10 MS 0 PT 0 TB 0 FL 0 NO 1906

STAW
8/15

HR0003

500.0



Team 18
4/8/90

LIGHT IMPACT OF
MOUSSE AND TARBALLS
ON THIS MEDIUM COBBLE
BEACH. MAJORITY OF
CONTAMINATION IS ON
THE HIGH TIDE LINE
WITH LIGHTER IMPACT
ON THE MID-TIDE
LINE.

~~SEWARD POST TREATY~~
~~SHORELINE ASSESS~~
26 SEPTEMBER 1989
CBW: C. SHERIDAN
M. POTTER
L. PEARSON

OILING	
H	= Heavy
M	= Moderate
L	= Light
VL	= Very Light
N	= None
NS	= Not Surveyed
Distance In Meters	

30m x 3m
of L 10%

CT/s ST/s
none. ST/s
1 pit dug to ~50cm
(all BC) oil is ST
scattered on boulders
to ~25cm.

HR0003

500.0

Team 18
4/8/90

LIGHT IMPACT OF
HOUSE AND TARBALLS
ON THIS MEDIUM COBBLE
BEACH. MAJORITY OF
CONTAMINATION IS ON
THE HIGH TIDE LINE
WITH LIGHTER IMPACT
ON THE MID-TIDE
LINE.

VL

SEWARD POST TREATY
SHORELINE ASSESS
26 SEPTEMBER 1989
CREW: C. SHERIDAN
M. POTTER
L. PEARSON

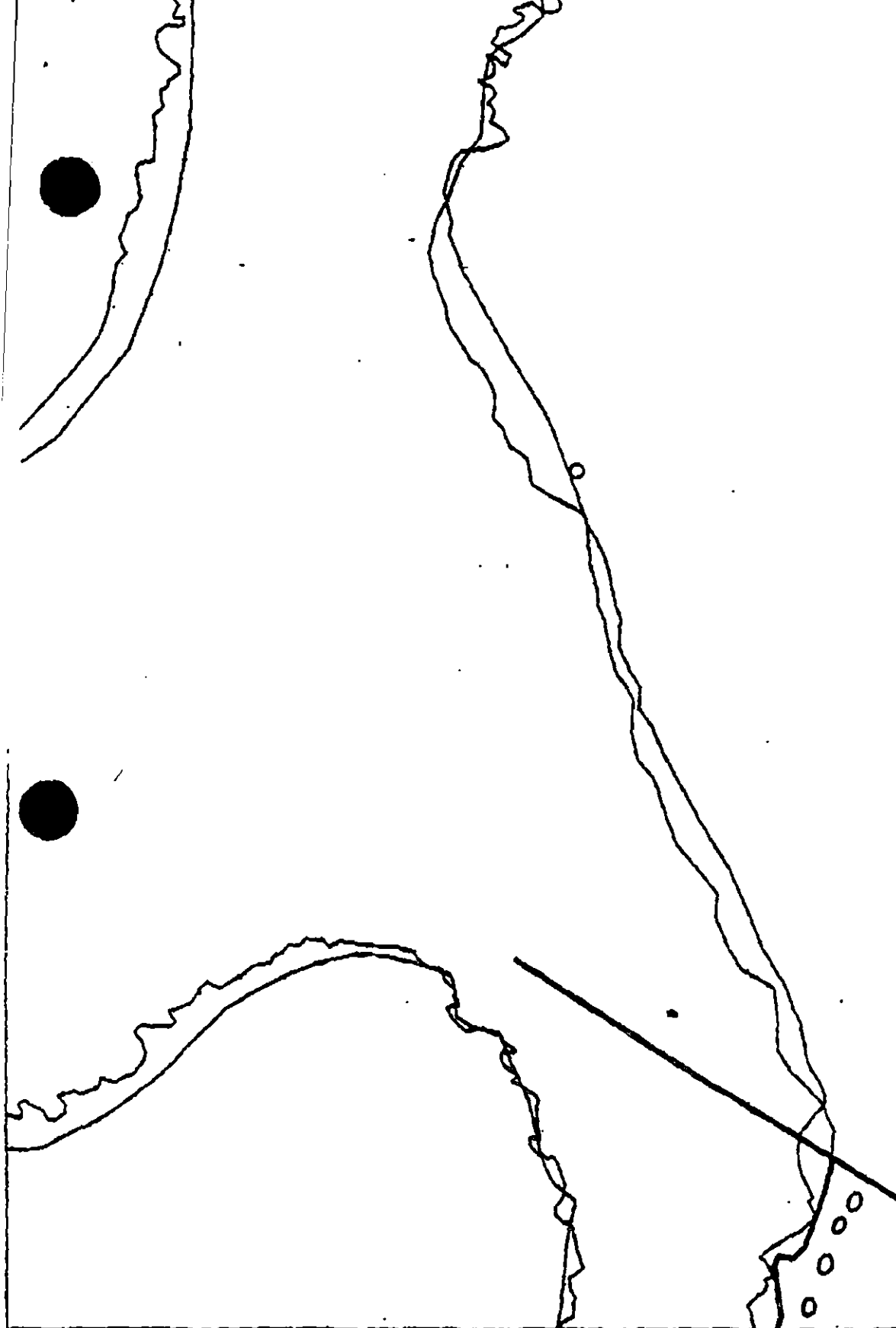
OILING

H = Heavy
M = Moderate
L = Light
VL = Very Light
N = None
NS = Not Surveyed

Distance in Meters

G15: I don't have Exxon map
-please fill it out yourself.

p2
Mann



XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

HR-3

EXXON Segment Length: 1916m

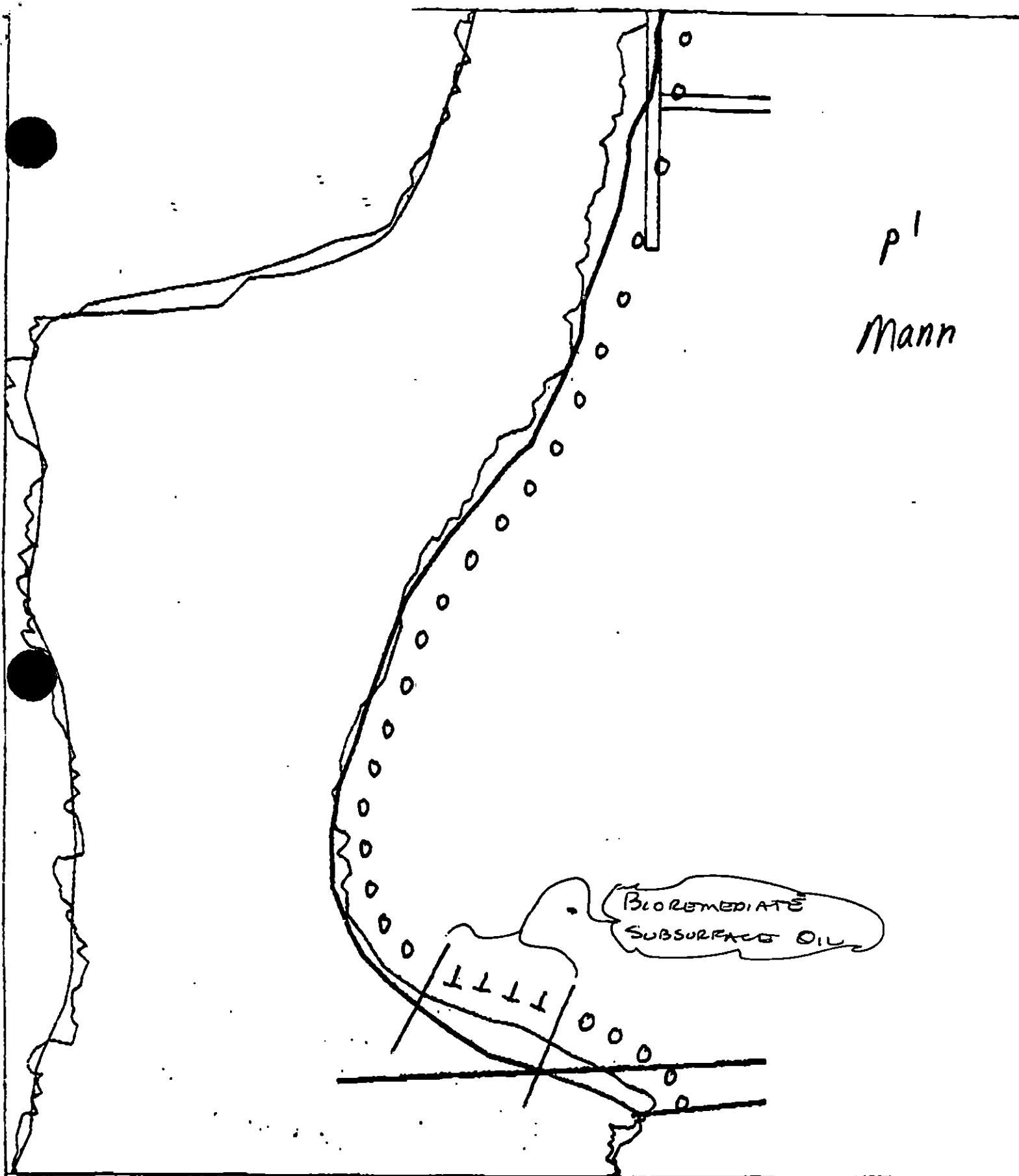


Map Key: PWS-HR-3b

Name: Mann

Date: 4/9/90 for 4/8/90

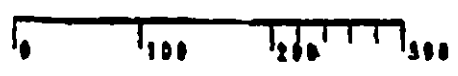
Date Entered:



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

HR-3

EXXON Segment Length: 1916m



Map Key: PWS-HR-30

Name: Mann

Date: 4/9/90 for 4/8/90

WORK PLAN ADDENDUM

Segment HR-003

Subdivision A

Dated 5/16/90

MODIFICATION

1. REASON FOR MODIFICATION

- FOSC requirement.
- Landowner recommendation.

2. ADJUSTMENT TO WORK PLAN

- No treatment recommended, due to sparseness of remaining oil and proximity of seabird colonies.

SHPO APPROVAL NEEDED YES _____
NO X

SHPO SIGNATURE

TAG APPROVAL DATE 5/17/90
ADEC ART WEINER Art Weiner
EXXON ANDY TAT Andy Tat
NOAA GARY PETROE Gary Petroe
SCG G.A. REITER G.A. Reiter

FOSC _____ DATE 5-18-90

SHORELINE EVALUATION

SEGMENT ST/ HR-005 SUBDIVISION A (1 OF 1) DATE 4/8/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird Colony (5/1 to 9/1)

4QQ National Wildlife Refuge (no time constraint given)

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

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

SHPO SIGNATURE: Charles E. H. H. H. DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 415 m: No Oil 1744 m

Subsurface Oil Observed: Yes X No Maximum Depth 40cm

RECOMMENDATIONS:

<u>X</u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u> </u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u> </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:

TAG COMMENTS:

TAG APPROVAL DATE: 4/14/90

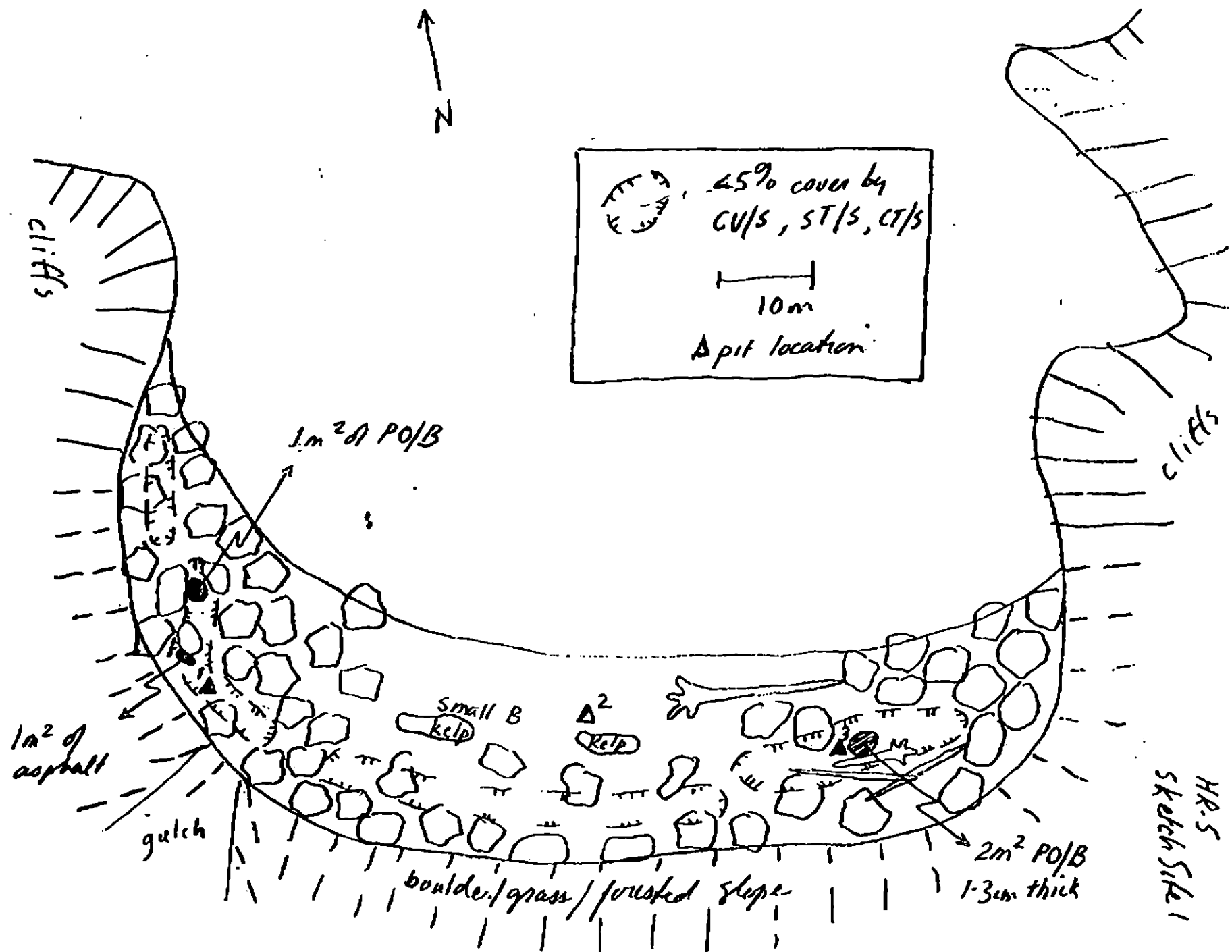
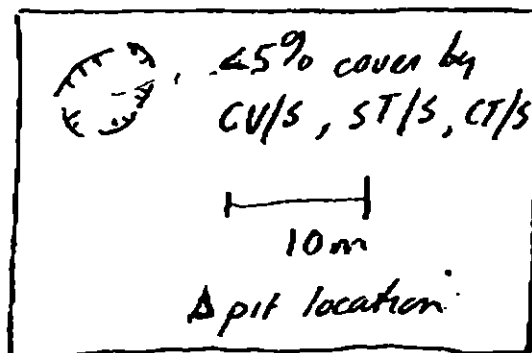
ADEC Art Warner Dit Warner

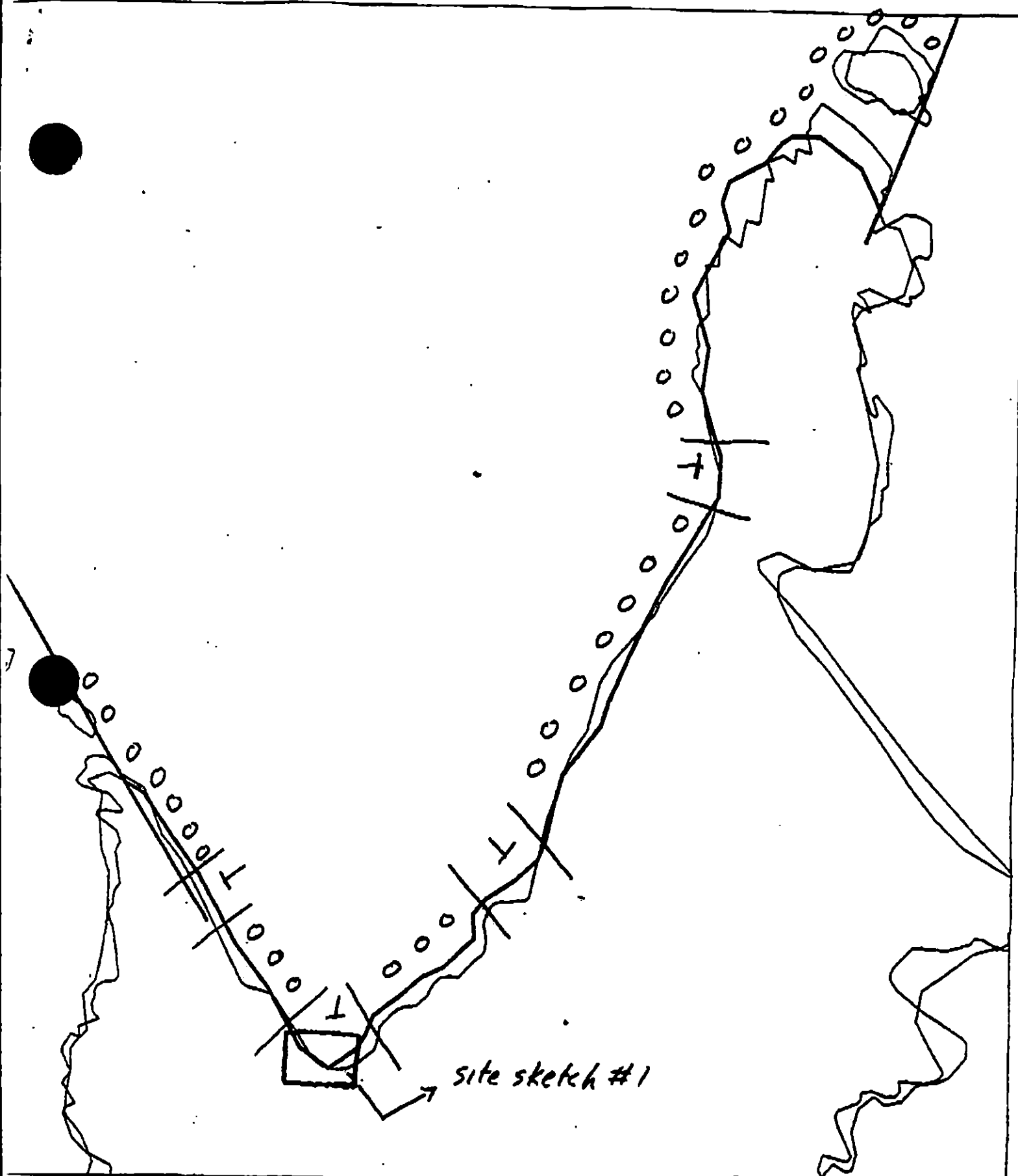
EXXON ANDY TEAL Paul

NOAA Barry Warner Paul Warner

USCG G.A. REITER G.A. Reiter

FOSC: my l DATE: 5-1-90





XXXX Wide
 / / Medium

--- Narrow

TTTT Very Light

OOOO No Oil

HR-5

ADEC Segment Length: 1901m



Map Key: KEN-500

Name: Mann

Date: 4/8/90

Data Entered:

REGION: KENAI

SEGMENT: HR-005

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ HR-005 SUBDIVISION A (1 OF 1) DATE 4/8/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird Colony (5/1 to 9/1)

4QQ National Wildlife Refuge (no time constraint given)

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

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 415 m: No Oil 1744 m

Subsurface Oil Observed: Yes X No _____ Maximum Depth 40cm

RECOMMENDATIONS:

X No Treatment Recommended

_____ Treatment Recommended

_____ Manual Pickup

_____ Bioremediation

_____ Tarmat: _____ Breakup

_____ Removal

_____ Snare/Absorbent Booms

_____ Oil Snares (pom poms)

_____ Absorbents (pads, rolls, etc)

_____ Spot Washing: _____ Wands

_____ Beach Cleaner

_____ Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST1 HR 05 SUBDIVISION: A DATE 4/8/90

NAME JACQUELINE MICHEL SIGNATURE Michel

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS
BASED ON PREVIOUS SCAT DESCRIPTIONS, THIS AREA HAS IMPROVED SIGNIFICANTLY BY NATURAL REMOVAL. THE REMAINING OIL WAS EITHER 1) VERY WIDELY SCATTERED SPOTCHES OR 2) PO/AP/CU/CT IN THE COVE THAT WAS ORIGINALLY HEAVILY OILED. NATURAL REMOVAL IS THE MOST EFFECTIVE APPROACH, EVEN FOR THE COVE.

ADEC NAME JOHN R. REED SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS
I am not recommending treatment due to the drastic change since last year. Natural removal has done a good job on this segment. I have read and agree with all data on S.S.H.T. Forms.

LAND MANAGER - USFWS NAME Mary Portner SIGNATURE Mary Portner

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS
Some natural weathering and removal of oil has taken place in this segment. Oil remaining at Site 1 consists primarily of scattered coat, cover and stain most of which is of beach. Several small areas of pooled oil and asphalt remain. The remainder of the segment consists of widely scattered C/Ps and ST/S.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/80

OG Mann USCG NOAA Michel SEGMENT ST/ HR-5
 BIO Carr LAND REP Partner USFWS SUBDIVISION A
 EXXON Bayer ADEC Reed TIME 9:20 to 10:20
 AM NO.: 18 TIDE LEVEL: +3.6 to +6 DATE 4/18 190
 SUBDIVISION LENGTH: 3023 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 80 % B 20 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 40 % Hang 40 % Vert 20 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 400 m NO 2623 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	TC	TS	TP	TR	SB	DB	CB	GB	GB	GB	GB	GB	SU	U	M	LI
ASPHALT PAVEMENT				✓									✓			
POOLED		✓											✓			
COVER				✓									✓			
COAT				✓									✓			
STAIN				✓									✓			
MOUSSE																
PATTIES																
TARBALLS																
LM																
NO OIL													✓		✓	✓

PAVEMENT: H E S 1 sq. m by 3 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE 0#BAGS 0

Photographs:

Roll No. ST18-5Frames 13

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	UC	SB	DB	CB	GB	GB	GB	GB	GB	SU	U	M	LI		
1	50		✓				0-40		✓		✓							✓				NO	BC Throughout
2	30					✓												✓				"	"
3	75		✓				0-30		✓		✓							✓				"	"

COMMENTS This is one of the more protected of the Cheswell Island shorelines. The coastline is steep but not precipitous. Kelp and drift logs were observed offshore of the southern cove (sketch site 1). Oiling outside this cove consists of widely-scattered CTs + STs. In the cove, surface oiling is sparse and shows signs of being eroded by waves and rolling boulders. Much of the remnant oil is in the subsurface but most of this is CT and ST.

OG WANN

SEGMENT HR-5

SUBDIVISION A

DATE 4/8 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Boundary
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HW/LA/WL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ PL Location(s)
- ☐ Photo Location(s)

No sketch map

LEGEND

1 

PK - No Subsurface Oil

2 

PK - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Cilled Vegetation

1 

Photo location, direction,
and number

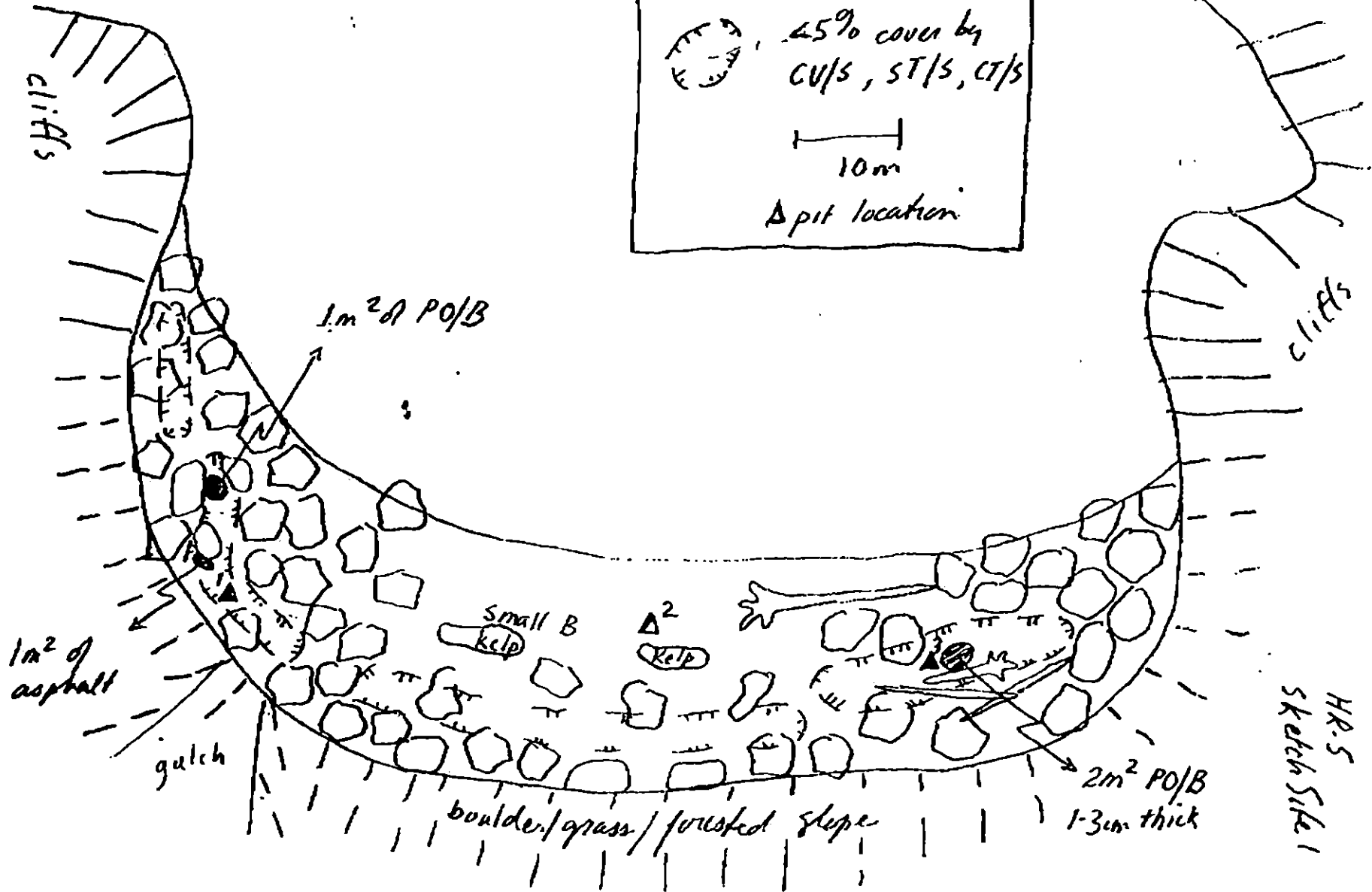
Oil Character Length (m): AP 1 PO 3 CV 50 CT 150 ST 200 MS 0 PT 0 TB 0 FL 0 NO 2623



45% cover by
CV/S, ST/S, CT/S

10m

Δ pit location



HR-5
Sketch Site 1

SHORELINE ECOLOGICAL SUMMARY

REVISION: 08/22/90

Segment ST / HR 5 Subdivision A (of A) Date (mo / day / yr) 4 / 8 / 90

Time (24 hr) 0920 Biologist M. CARR

Substrate type and % of ^{SUBDIVISION} segments:

(1) Bedrock 80 (2) Boulder 20 (3) Cobble — (4) Pebble — (5) Sand — (6) Silt —

(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 70 Moderate 20 Low 10

(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. 5

Frames 13

BARNACLES

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

NOT PRESENT

Wildlife Observations/ General Comments:

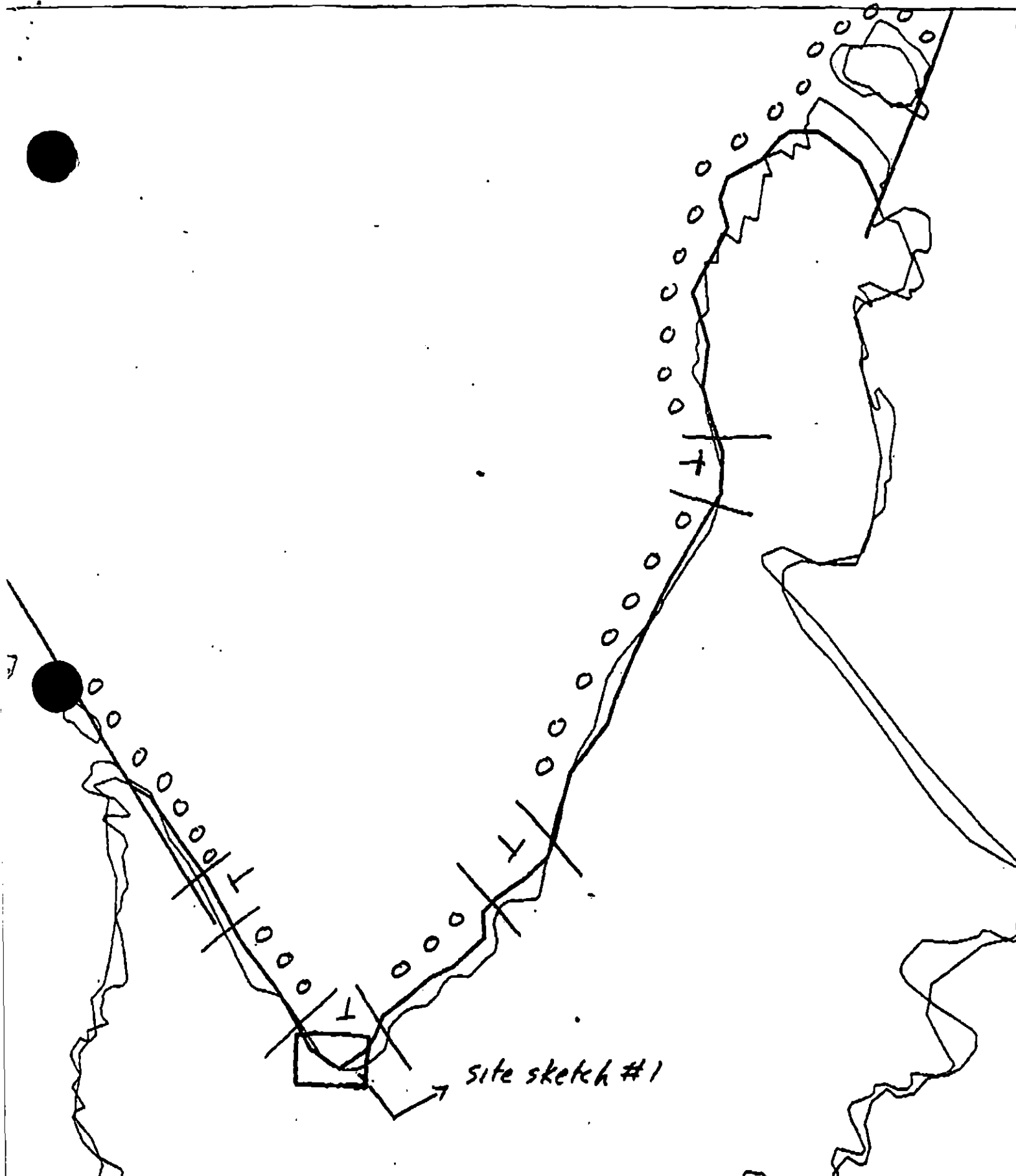
Bald eagles (2) mature
Black-legged Kittiwaker (70) on rocks

Glaucous-winged gulls (~200)
Surf-scooter (4)

Ecological Considerations:

Magpie (1)

Sensitivity codes: 4-QQ (Natural Wildlife Refuge), 5-R (Seabird colony).



XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

HR-5

ADEC Segment Length: 1901m



Map Key: KEN-50a

Name: Mann

Date: 4/8/90

Data Entered:

REGION: KENAI

SEGMENT: ST/HR-007

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ HR-007 SUBDIVISION A (1 OF 1) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
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)
4QQ National Wildlife Refuge
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 58 m: Narrow 0 m: V.Light 0 m: No Oil 4562 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 100+ cm

RECOMMENDATIONS:

<u>X</u> 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: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

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 unopened intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.
- 3N, 3R 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/ HR 07 SUBDIVISION: A DATE 4/7/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE Michel

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

THIS SEGMENT WAS THE MOST RUGGED/EXPOSED SHORELINE SEEN TO DATE, WITH LARGE NUMBERS OF SEABIRDS & MARINE MAMMALS AND A RICH INTERTIDAL ZONE. MOST (95%) OF THE SHORELINE CONSISTED OF VERTICAL CLIFFS THAT WERE FREE OF OIL. ONE AREA, A "NOTCH" BOULDER BEACH, CONTAINED OIL-COATED BOULDERS BELOW A CLEAN SURFACE. I WAS SURPRISED TO SEE OIL PERSIST ON THIS VERY HIGH ENERGY SHORELINE - YET THE LARGE SIZE OF THE BOULDERS HAS SLOWED EROSION OF OIL FROM BELOW THE SURFACE. THE RESIDUAL OIL IS STILL VERY LIGHT AND DOES NOT WARRANT TREATMENT.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

One small pocket beach at large boulders has a very small area of cover, coat, and stain that does not warrant treatment. The majority of the segment is vertical cliffs. I have Read and agree with all data on S.S.A.T. Forms.

LAND MANAGER - USFWS

NAME Mary Partner SIGNATURE Mary Partner

☒ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

Since the 1989 SCAT of this segment some weathering of the oil coating the surface of cobbles and boulders (See site sketch) has occurred. However, beneath the surface layer of cobbles and boulders oil coverage in the band approaches 100%, primarily as coat cover and stain. Oil persists along the rock face and on bedrock in the North corner of the site. This is present on cover, coat and stain. Driftwood currently in the upper and supralittoral is uncoiled. Current treatment technology does not include effective methods for recovery of the subsurface oil at this site. Due to the rich avifauna and presence of pinnipeds, this site should be reevaluated in spring throughout the summer, REVISION NO. 02/21/90

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Mann NOAA USCG Michel SEGMENT ST/ HR 7
 BIO Carr LAND REP Partner - USFWS SUBDIVISION A
 EXXON Boyer ADEC Reed TIME 18:00 to 19:20
 TEAM NO.: 18 TIDE LEVEL: +1 to +0.8 DATE 4/17/90
 EST. SUBDIVISION LENGTH: 6309 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: 3 to 11
 SURFACE SEDIMENTS: R 97 % B 3 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 3 % Hang 10 % Vert 87 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 75 m N 0 m VL 0 m NO 6234 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	C	B	P	S	SP OR	DBL FW	GY	SL	DBL TL	LEAK	SU	U	M	U
ASPHALT PAVEMENT														
POOLED														
COVER			✓			✓								
COAT			✓			✓						✓		
STAIN			✓			✓						✓		
MOUSSE														
PATTIES														
TARBALLS														
FILM														
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			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED

☐ YES ☒ NOTYPE NAO#BAGS NAO

Photographs:

Roll No. 18-4 18-5Frames (32-37) (1-2)

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		UO	UC	SL BR	OR RW	CS BL	OR TL	LR	SU	UR	ME	U			
1	30		✓				0 - 30	✓					✓		✓			NO	CB Throughout		
2	100		✓				50 - 100	✓					✓		✓			NO	BC Throughout		
3	75					✓	.								✓			NO	" "		
							.														
							.														
							.														

This segment consists of a spectacular high cliff. Oil persists in one small pocket.
 COMMENTS beach.

This chasm beach is composed of rounded to subrounded, granitic boulders (small to large). Oil is rare at the surface but persists in the subsurface as abundant CT and ST—apparently at depths below which the boulders have not moved, since the oil arrived. Oil CT and ST on fringing rock walls has been wave abraded.

OG MA

SEGMENT ST/H207

SUBDIVISION A

DATE 04/07/90

CHECKLIST

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

LEGEND

1 

Pit - No Subsurface Oil

2 

Pit - Subsurface Oil

 CT/C

Continuous Distribution

 CT/B

Broken Distribution

 CT/P

Patchy Distribution

 CT/S

Splashed Distribution

Oiled Vegetation

1 

Photo location, direction,
and number

ETCH MAP

No SEGMENT SKETCH

Oil Character Length (m): AP 0 PO 0 CV 75 CT 75 ST 75 MS 0 PT 0 TB 0 FL 0 NO 6234

Site Sketch Map Subdiv. A

Mann 4/7
HR-7P

start 1815-
end 1900

on the vertical walls...

CV/S, CT/S, ST/P
(tot. cov. ~ 20%)
75m x 2m wide

$\swarrow N$

CT/P, CV/S
ST/P
tot. cover ~ 20%

19.B

kelp
debris

19. B

19-B

drift logs (not oiled)

steep bank of unconsolidated
colluvium

splashed
CT/s, ST/s

2/1/83

5/1/95

SHORELINE ECOLOGICAL SUMMARY

REVISION: 10/20/80

Segment ST / HR-7 Subdivision A (of A) Date (mo / day / yr) 4 / 7 / 80
 (24 hr) 1800 Biologist M. CARR

- (A) Substrate type and % of ^{SUBDIVISION} segments:
 (1) Bedrock 97 (2) Boulder 3 (3) Cobble (4) Pebble (5) Sand (6) Silt
- (B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 90 Moderate 10 Low
- (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: 4 / 5
 Roll No.
 Frames 32-37 / 1-2

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	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 IN UPPER & LOW
 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	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

LOWER TIDE INACCESSIBLE
 NOT PRESENT IN UPPER & LOWER
 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	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

INACCESSIBLE
 NOT PRESENT IN UPPER & LOWER
 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

LOWER TIDE INACCESSIBLE
 NOT PRESENT ON BOULDER
 NOT PRESENT

Wildlife Observations/ General Comments:

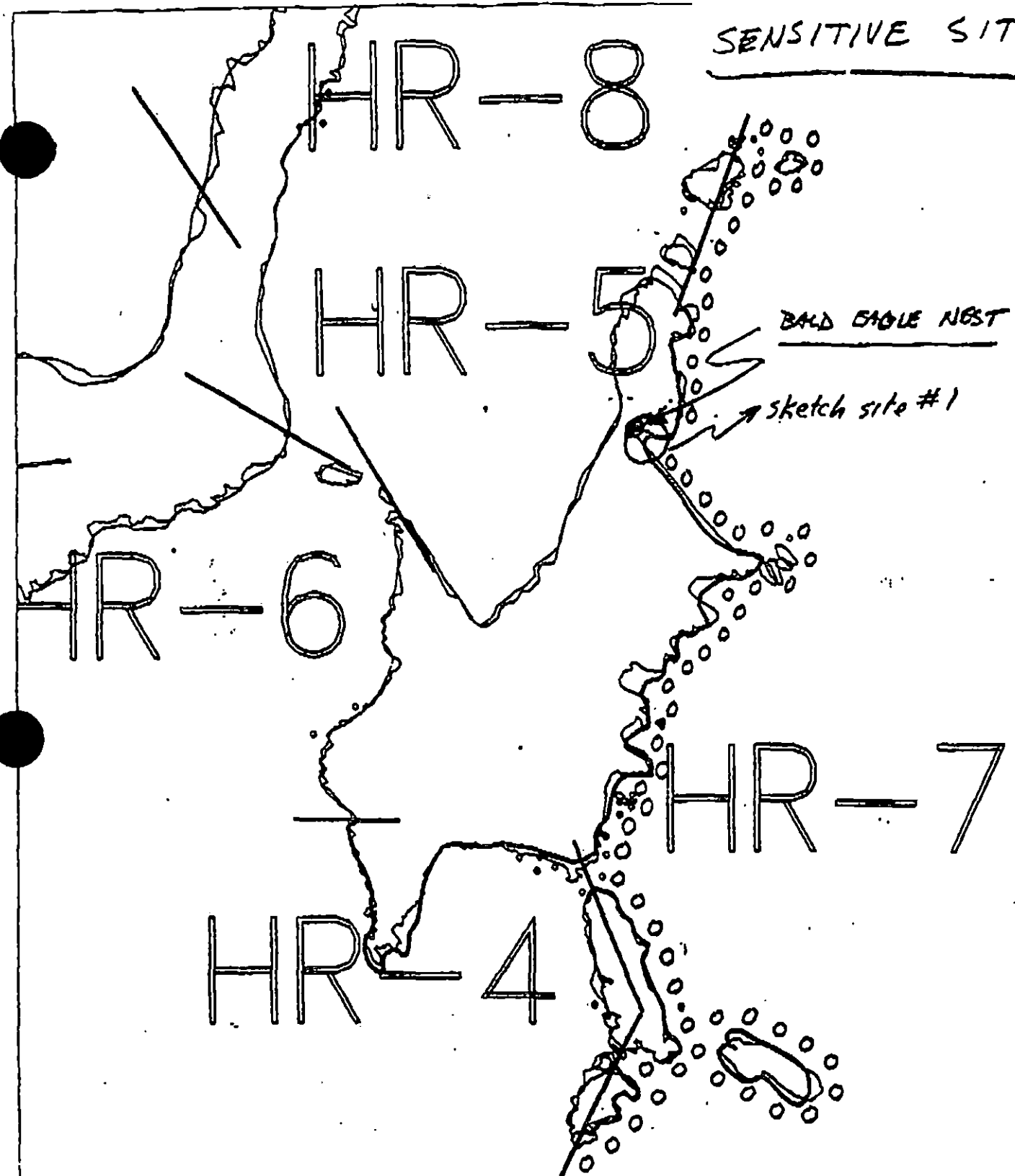
Glaucous-winged gull (2000)
 Bald eagles (7) mature, (1) immature
 Oyster-catchers (5)

Sea otter (1)
 Sea lions (2115), Steller's
 Harlequin ducks (8)
 Red-faced cormorant
 Whales (4), unid.

Ecological Considerations:

Sensitivity codes: 4-00 (National Wildlife Refuge), 5-R (Sea bird colony),
 3-P (Sea Lion pupping), 3-G (Sea lion molting)
 5-T (Bald eagle nest)

SENSITIVE SITES *

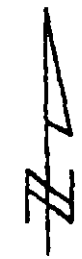


* ENTIRE SHORELINE IS INHABITED BY SEABIRD COLONIES !

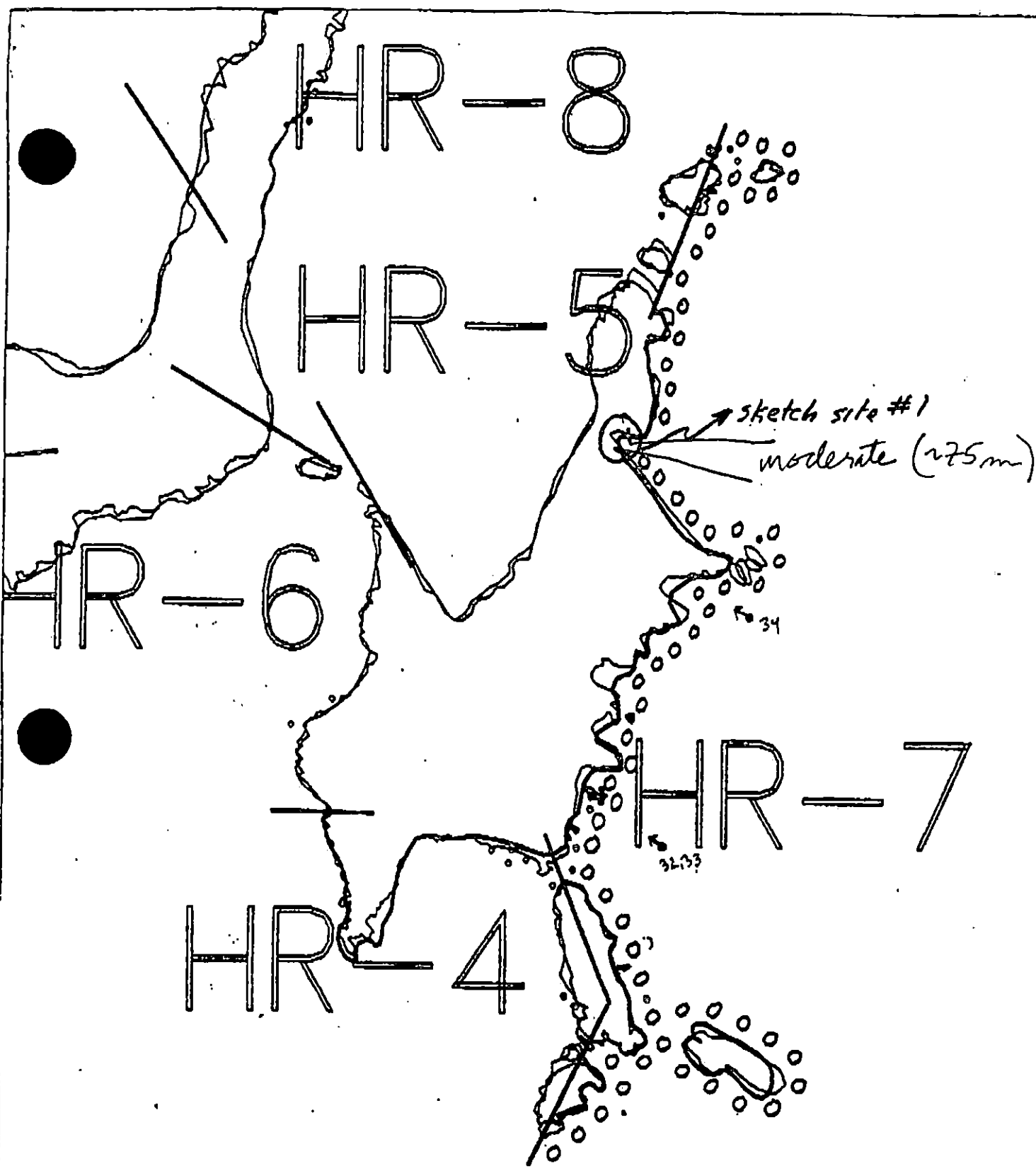
XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
OOOO No Oil

HR-7

ADEC Segment Length: 6148m



Map Key: KEN-52
Name: Mann
Date: 4/7/90
Date Entered:



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

HR-7

ADEC Segment Length: 6148m

0 300 600 900



Map Key: KEM-52
 Name: Mann
 Date: 4/7/90
 Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ HR-007 SUBDIVISION A (1 OF 1) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
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)
4QQ National Wildlife Refuge
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: M. E. Jones DATE: 4/23/90

OILING CATEGORIZATION:

Wide_0_m: Medium_58_m: Narrow_0_m: V.Light_0_m: No Oil_4562_m
Subsurface Oil Observed: Yes X No Maximum Depth 100+ cm

RECOMMENDATIONS:

<u> X </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u> </u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u> </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: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: 4/21/90
ADEC ART WEINER Art Weiner
EXXON ANDY TETZ Andy Tetz
NOAA Burl Wescott Burl Wescott
USCG KENNETH KEANE Kenneth Keane

FOSC: W L DATE: 4-27-90

Pay particular note to DOJ's request concerning screening.

OG M

SEGMENT ST/ H207

SUBDIVISION A

DATE 04/07/90

CHECKLIST

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

LEGEND

1 ▲

Pit - No Subsurface Oil

2 ▲

Pit - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oil on Vegetation

1 ➡

Photo location, direction,
and number

SKETCH MAP

No SEGMENT SKETCH

Oil Character Length (m): AP 0 PO 0 CV 75 CT 75 ST 75 MS 0 PT 0 TB 0 FL 0 NO 6234

Site Sketch Map Subdiv. A

Mann 4/7

HR-7P

10m

Start 1815-
end 1900

on the vertical walls...

CV/S, CT/S, ST/P
(tot. cov. ~20%)

75m x 2m wide

cliffs

N

cliffs

lg. B

CT/P, CV/S
ST/P
tot. cover ~20%

kelp debris

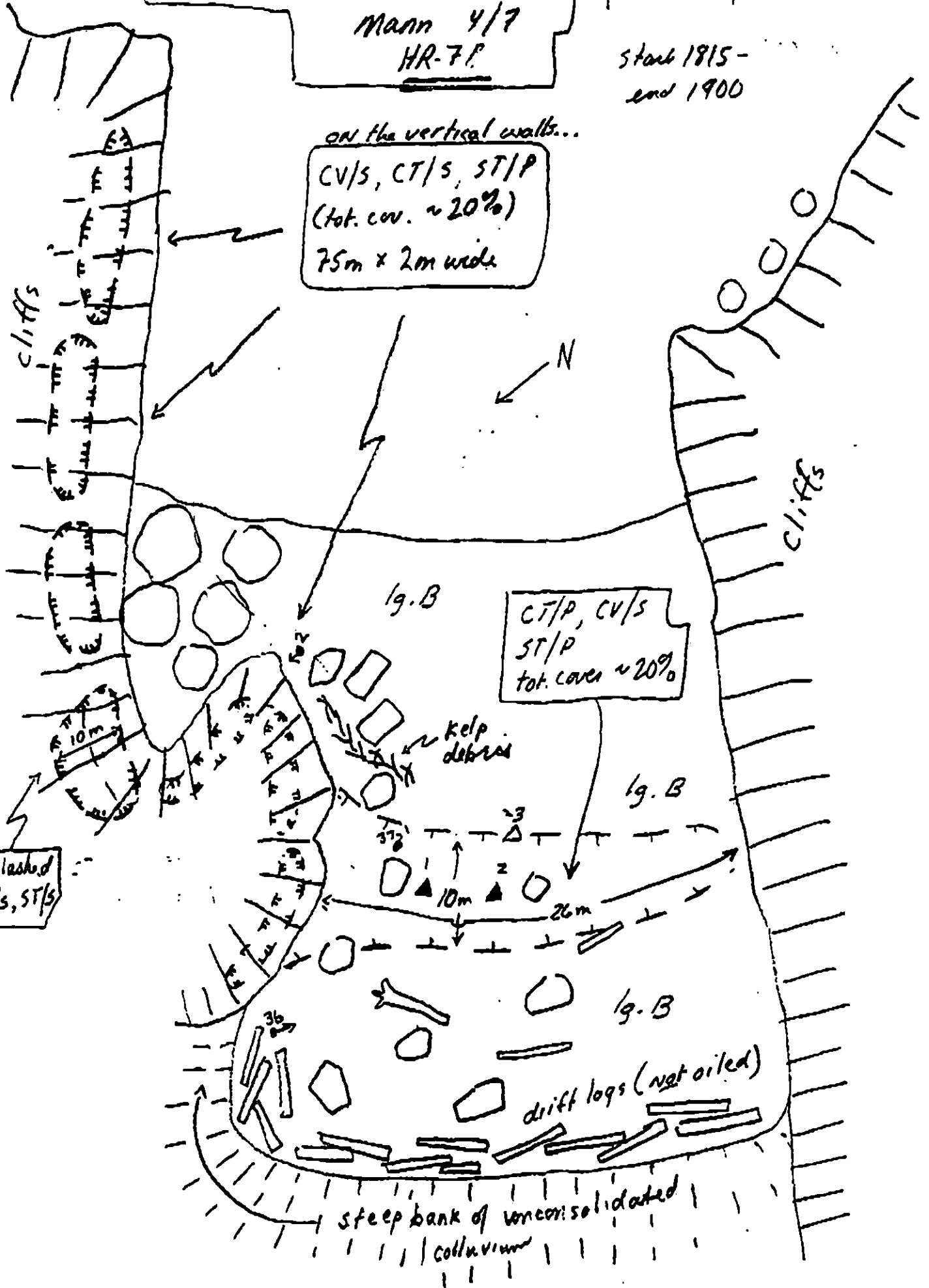
lg. B

lg. B

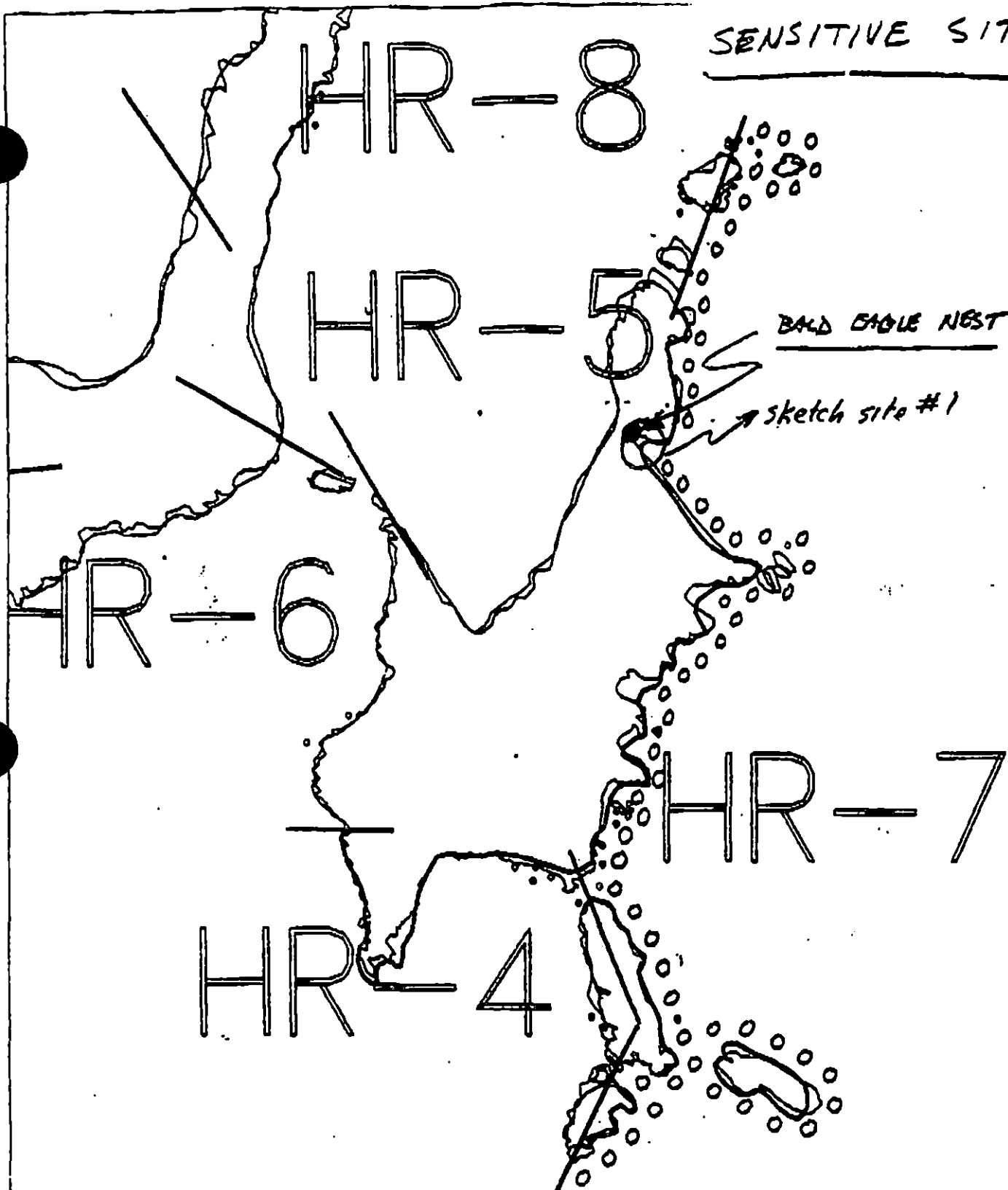
splashed
CT/S, ST/S

drift logs (not oiled)

steep bank of unconsolidated
colluvium



SENSITIVE SITES *



* ENTIRE SHORELINE IS INHABITED BY SEABIRD COLONIES !

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

HR-7

ADEC Segment Length: 6148m



Map Key: KEN-52

Name: Mann

Date: 4/7/90

Data Entered:

HR-8

HR-5

HR-6

HR-4

HR-7

→ sketch site #1

moderate (~75m)

34

32.33

XXXX Wide

HR-7

/// Medium

---- Narrow

ADEC Segment Length: 6148m

TTTT Very Light

0000 No Oil



Map Key: KEN-52

Name: Mann

Date: 4/7/90

Data Entered:

REGION: KENAI

SEGMENT: HR-009

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ HR-009 SUBDIVISION A (1 OF 1) DATE 4/8/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
5T Active eagle nest (3/1 to 9/1)
4QQ National Wildlife Refuge (no time constraint given)

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate. See attached Ecological Constraints Sheet.

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 0 m: V.Light 150 m: No Oil 5606 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 100 cm

RECOMMENDATIONS:

<u>X</u> 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:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST HR-9 SUBDIVISION: A DATE 4/8/90

USCG / NOAA

NAME JACQUI MICHEL

SIGNATURE Michel

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

THIS SEGMENT WAS FREE OF OIL EXCEPT FOR SITE 1 - A BOULDER BEACH THAT WAS ORIGINALLY HEAVILY OILED. ALTHOUGH THE SURFACE SEDIMENTS WERE NEARLY CLEAN, THE SUBSURFACE BOULDERS WERE STILL COATED (20-40%) WITH A THIN OIL LAYER ALONG THE UPPER 1/2 IN A DISCONTINUOUS BAND - EVEN ON THIS VERY EXPOSED SHORELINE. HOWEVER, NO FURTHER CLEANUP IS WARRANTED - NATURAL REMOVAL WILL BE MOST EFFECTIVE.

ADEC

NAME JOHN R. REED

SIGNATURE John R Reed

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

THIS SEGMENT IS MOSTLY VERTICAL CLIFFS THAT SHOW NO SIGNS OF OIL. THERE WAS SOME OIL AT SITE #1 (SEE SKETCH) THAT CONSISTED MAINLY OF COAT IN THE FORM OF SPLATTERS ON THE LARGE BOULDERED BEACH. I HAVE READ AND AGREE WITH ALL DATA ON S.S.A.T. FORMS.

LAND MANAGER / USFWS

NAME Mary Portner

SIGNATURE Mary Portner

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

Oil persists in this segment at site 1 (see sketch). Sunfara cover of boulders and cobbles has shown improvement since September 1989. Oil remains between and beneath boulders and cobbles as cover, coat and stain with occasional pools. Most splatters on the surface boulders have hardened to a tarry consistency. Subsurface oil is soft. With current treatment technology the subsurface oil will be difficult to recover. This area has a rich intertidal and eelgrass colony on site. As the summer progresses and the area

ADEC

NAME JOHN R. REED

SIGNATURE

John R. Reed☒ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

This segment is mostly vertical cliffs that show no signs of oil. There was some oil at site #1 (see sketch) that consisted mainly of coat in the form of splatters on the large bouldered beach. I have read and agree with all data on S.S.A.T. Forms.

LAND MANAGER/USFWS

NAME Mary Portner

SIGNATURE

Mary Portner☒ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

Oil persists in this segment at site 1 (see sketch). Surface cover of boulders and cobbles has shown improvement since September 1989. Oil remains between and beneath boulders and cobbles as cover, coat and stain with occasional pools. Most splatters on the surface boulders have hardened to a tarry consistency. Subsurface oil is soft. With current treatment technology the subsurface oil will be difficult to recover. This area has a rich intertidal and a seabird colony on site. As the summer progresses and the oil warms and becomes movable, the area should be reevaluated for skimming.

REVISION NO. 03/21/90

SHORELINE OILING SUMMARY

REVISION NO. 02/22/90

OG MANU USCG/NAVA MICHEL SEGMENT STI HR-9
 BIO CARR LAND REP PORTER - FUS SUBDIVISION A
 EXXON BIYER ADEC REED TIME 07:12 to 38:15
 TEAM NO.: 12 TIDE LEVEL: +0.2 to +1.0 DATE 4/18/90
 ST. SUBDIVISION LENGTH: 6291 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: NORTH to SOUTH
 SURFACE SEDIMENTS: R 90 % B 10 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 5 % Hang 15 % Vert 80 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 120 m NO 671 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	11	12	13	SP	BP	CP	DP	EP	FP	GP	HP	SU	UI	ML	U
ASPHALT PAVEMENT																
POOLED				✓				✓						✓		
COVER				✓		✓								✓		
COAT				✓		✓								✓		
STAIN				✓		✓								✓		
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL													✓		✓	✓

PAVEMENT: H F S-HA sq. m by 0 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? ☒ BR RW SL TL

OILED DEBRIS <u>NO</u>	AMOUNT			
	SM	MD	LG	
Logs				DEBRIS COLLECTED ☒ YES ☐ NO TYPE <u>0</u> #BAGS <u>0</u>
Vegetation				
Trash				
Debris				

Photographs:

Roll No. ST 18-5Frames (3-10)

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		UO	VO	SA BR	OL FW	OL ST	OR TL	OR LBR	SU	UI	ME	LI			
1	45					✓	-								✓				NO	BC throughout	
2	35		✓				0-35		✓		✓				✓				NO	BC throughout	
3	30		✓				0-30	✓			✓				✓				"	" "	
4	40					✓	-								✓						
5	100		✓				0-100		✓		✓				✓						
							-														

COMMENTS Much of the segment is vertical, granite wall. Oil persists only at site 1.
In pits, oil CT and CV amount to a 10-40% coverage over subsurface boulders. Surface cover by oil is low (~5%) and shows significant annual cleaning since 1988. Oil persists in the subsurface as CT, CV, and SF but is not abundant and probably will not be a source for continued recontamination of this cove.

OG M

SKETCH MAP

SEGMENT ST/ NR-9SUBDIVISION ADATE 4, 8 90

CHECKLIST

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

No sketch map

LEGEND

1 

Pi - No Subsurface Oil

2 

Pi - Subsurface Oil

 CT/C

Continuous Distribution

 CT/B

Broken Distribution

 CT/P

Patchy Distribution

 CT/S

Splashed Distribution

Oiled Vegetation

1 Photo location, direction,
and numberOil Character Length (m): AP 0 PO 3 CV 40 CT 80 ST 120 MS 0 PT 0 TB 0 FL 0 NO 6171

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST HR-9 Subdivision A (of A) Date (mo / day / yr) 4 / 8 / 90

Time (24 hr) 0711 Biologist M. CARR

Substrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock 90 (2) Boulder 10 (3) Cobble — (4) Pebble — (5) Sand — (6) Silt —

(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 90 Moderate 10 Low —

(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. 5

Frames 3-10

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
NOT PRESENT ON COB
AT ANY ZONE.

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
NOT PRESENT ON CO
AT ANY ZONE.

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

UPPER INTER ENACLOS
NOT PRESENT
NOT PRESENT ON COB
AT ANY ZONE

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
NOT PRESENT ON COB
AT ANY ZONE

Wildlife Observations/ General Comments:

Harlequin ducks (6) Pigeon guillemot (1) N.W. crows (10)
Least otter (1) Red-faced cormorant (8)

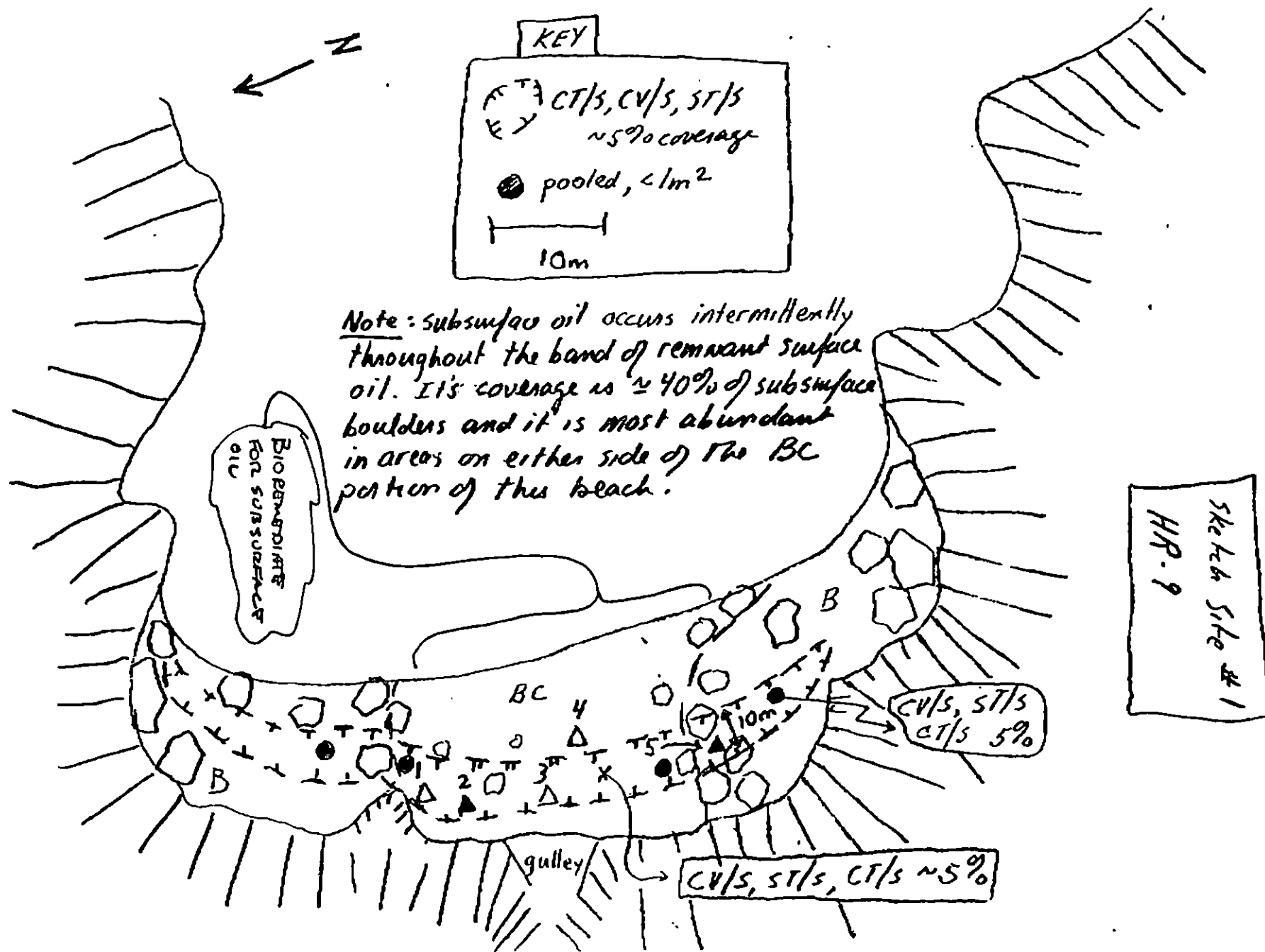
Ecological Considerations:

Sensitivity codes: 4-BQ (National Wildlife Refuge), 5-T (Bald eagle nest),
5-R (Seabird colony)

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

HR-009 A

- 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 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.



Sensitivity sites

HR-9 (HARBOR ISLAND, NORTH)

- BALD EAGLE NEST (1)

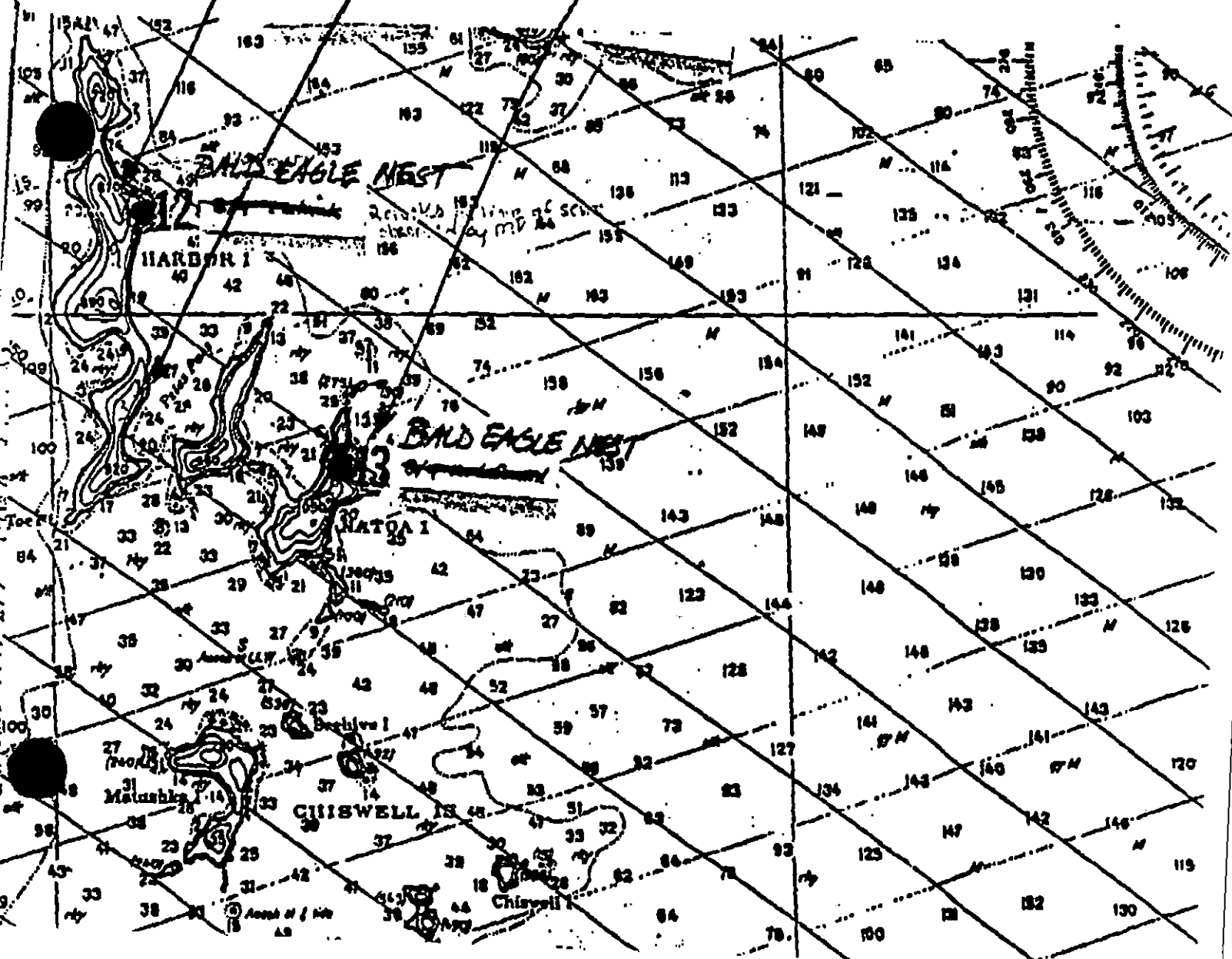
- ENTIRE SHORELINE (INCLUDING IMPACTED BEACH) INHABITED BY SEABIRD COLONIES,

HR-3 (HARBOR ISLAND, SOUTH) ENTIRE SHORELINE INHABITED BY SEABIRD COLONIES

HR-5 (NATOA ISLAND)

- BALD EAGLE NEST (1)

- ENTIRE SHORELINE INHABITED BY SEABIRD COLONIES



↑
KEN 548

HR-1

→ sketch site #1

(see other
map for oiling
categories)

XXXX Wide

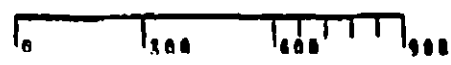
//// Medium

---- Narrow

TTTT Very Light

HR-9

ADEC Segment Length: 5756m



Map Key: KEN-54a

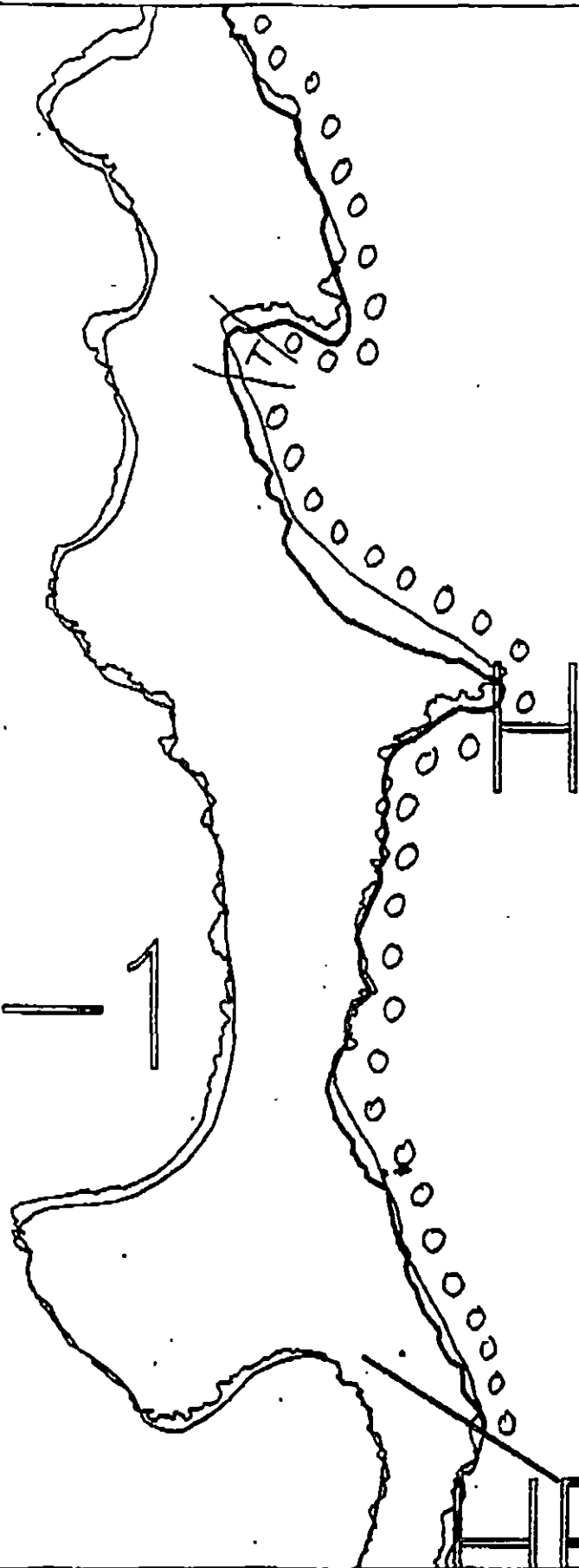
Name: Mann

Date: 4/8/90



↑
KEN 5-1 B

HR-1



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

HR-9

ADEC Segment Length: 5756m



Map Key: KEN-54a

Name: Mann

Date: 4/8/90

Data Entered:



↓ KEN 54A

XXXX Wide

//// Medium

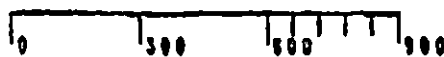
---- Narrow

TTTT Very Light

OOOO " " " "

HR-9

ADEC Segment Length: 5756m



Map Key: KEN-54b

Name: Mann

Date: 4/8/90



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.

SHORELINE EVALUATION

SEGMENT ST/ HR-009 SUBDIVISION A (1 OF 1) DATE 4/8/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
5T Active eagle nest (3/1 to 9/1)
4QQ National Wildlife Refuge (no time constraint given)

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate. See attached Ecological Constraints Sheet.

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

ant stop work
to a member of
1-3658 or 564-

~~327E~~).

SHPO SIGNATURE: Charles J. Jones DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 150 m: No Oil 5606 m
Subsurface Oil Observed: Yes X No Maximum Depth 100 cm

RECOMMENDATIONS:

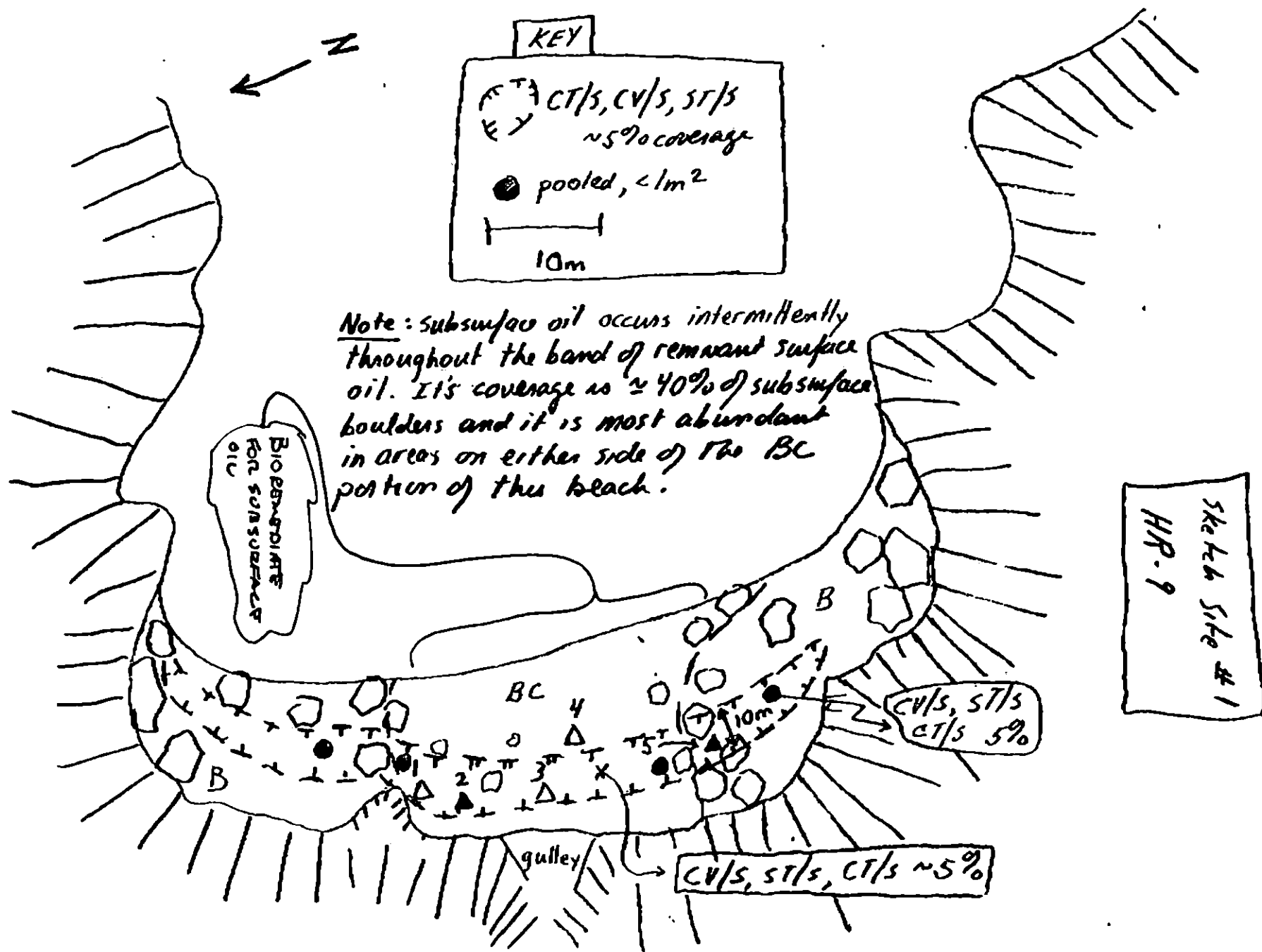
☒ No Treatment Recommended	☐ Snare/Absorbent Booms
☐ Treatment Recommended	☐ Oil Snares (pom poms)
☐ Manual Pickup	☐ Absorbents (pads, rolls, etc)
☐ Bioremediation	☐ Spot Washing: <u> </u> Wands
☐ Tarmat: <u> </u> Breakup	☐ <u> </u> Beach Cleaner
☐ <u> </u> Removal	☐ Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/16/90

ADEC AL REYER
EXXON ANDY TEAR
NOAA Burt Wescott
USCG G.A. REYER
FOSC: D.F. Wyl DATE: 4-20-90



Sensitivity sites

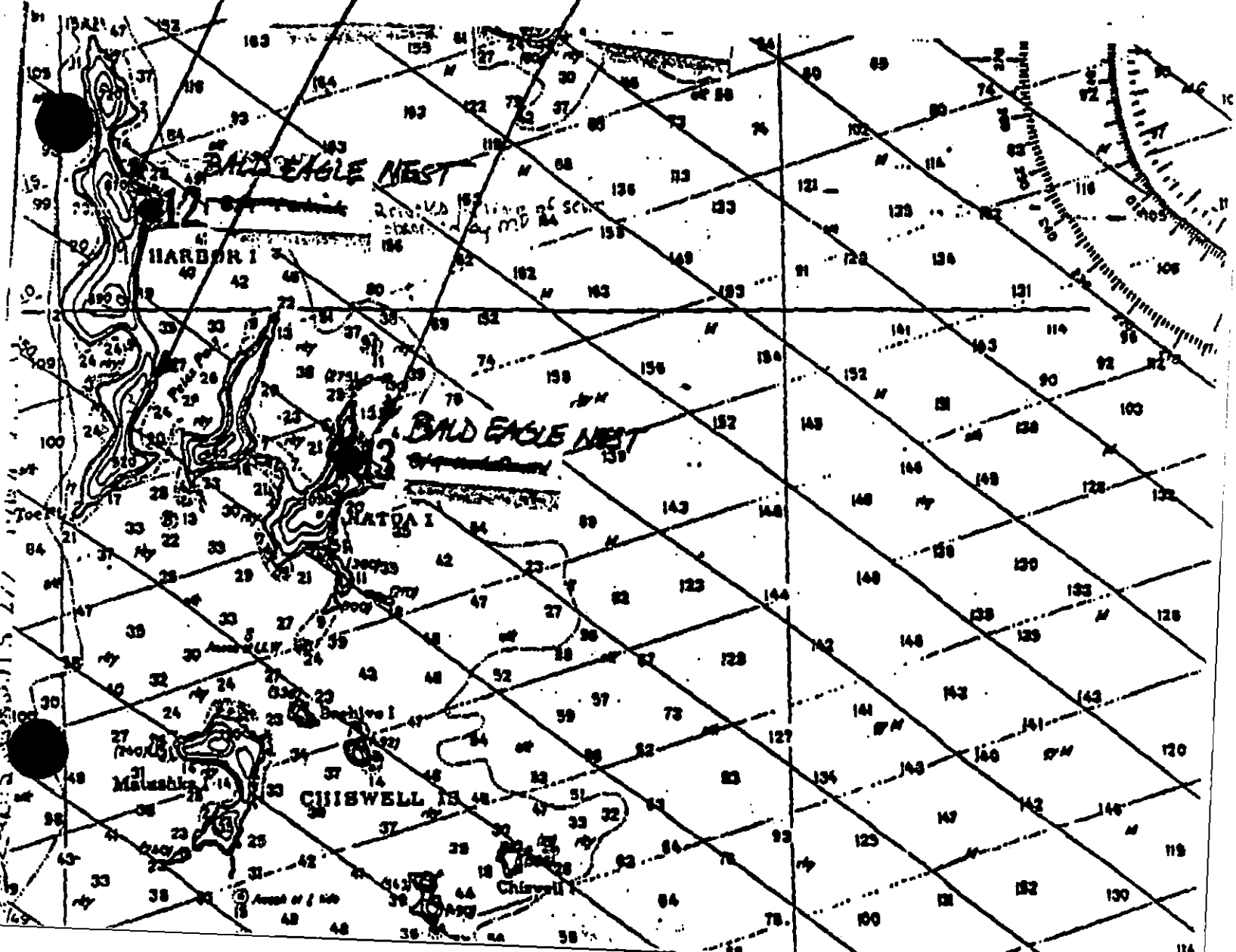
HR-9 (HARBOR ISLAND, NORTH)

- BALD EAGLE NEST (1)
- ENTIRE SHORELINE (INCLUDING IMPACTED BEACH) INHABITED BY SEABIRD COLONIES,

HR-3 (HARBOR ISLAND, SOUTH) ENTIRE SHORELINE INHABITED BY SEABIRD COLONIES

HR-5 (NATDA ISLAND)

- BALD EAGLE NEST (1)
- ENTIRE SHORELINE INHABITED BY SEABIRD COLONIES



↑
KEN 54 B

→ sketch site #1

HR-1

(see other
map for oiling
categories)

XXXX Wide

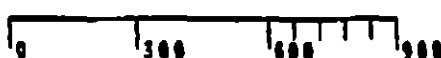
//// Medium

--- Narrow

TTTT Very Light

HR-9

ADEC Segment Length: 5756m



Map Key: KEN-540

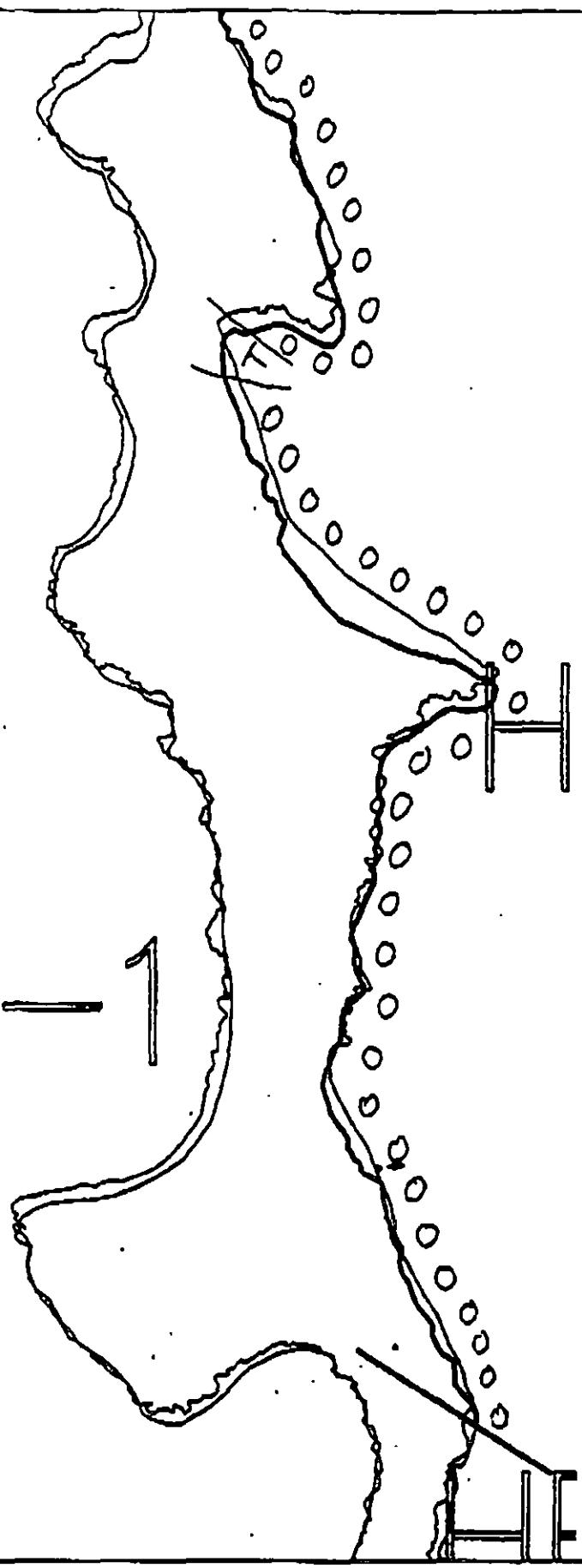
Name: Mann

Date: 4/8/90

Date Entered:

↑
KEN 5-1 B

HR-1



HR-9

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

ADEC Segment Length: 5756m

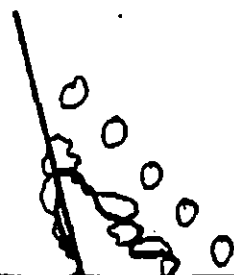


Map Key: KEN-54a

Name: Mann

Date: 4/8/90

Data Entered:



↓ KEN 54 A

XX Wide

//// Medium

--- Narrow

TTTT Very Light

HR-9

ADEC Segment Length: 5738m



Map Key: KEN-54b

Name: Mann

Date: 4/8/90



REGION: KENAI

SEGMENT: MR-001

SUBDIVISIONS: C (3 OF 3)

SHORELINE EVALUATION

SEGMENT ST/ MR-001 SUBDIVISION C (3 OF 3) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Active bald eagle nest (5T) - 3/1 to 6/1. Restrict air traffic to essential minimum. Air approach and takeoff from and to seaward only. Contact USFWS prior to treatment for confirmation of dates and avoidance minimums. Kenai Fjords National Park (4LL).

SUBDIVISION ECOLOGICAL CONSTRAINTS: Treatment should proceed with minimum disturbance to substrate.

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 872 m: No Oil 0 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

<u>X</u> 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: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / MR-1 SUBDIVISION: C DATE 3/31/90USCG
NAME _____ SIGNATURE _____☐ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTEDADEC
NAME _____ SIGNATURE _____☐ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTEDLAND MANAGER NPS
NAME Michael Tetreau SIGNATURE [Signature]☒ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Good survey. Very light splatters of dried cover
and coat. Cleaning would be difficult and
would be primarily cosmetic.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ MR-1 SUBDIVISION: C DATE 3/31/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE Michel☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

The v. light distribution of oil on rocky outcrops does not warrant any treatment.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

Very light bathtub Ring on granite bedrock and boulders. I have read and agree with all information on S.S.A.T. Forms.

LAND MANAGER CAC

NAME Peter Zollars SIGNATURE Peter Zollars☐ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

The intermittent presence of cover/coat type oil in subdivision C doesn't, in my opinion, warrant a treatment effort. This is subject to review by CAC later this year. I presently agree with SSAT's on re-garding this area. If cleanup is implemented MR-01's archaeological integrity would not be threatened.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Mann USCG Michel (201/205 (CAC)) SEGMENT ST/ MR-1
 BIO Call LAND REP Tedreau (USNPS) SUBDIVISION C (3 of 3)
 EXXON Bayer ADEC Reed TIME 9:30 to 10:00
 TEAM NO.: 18 TIDE LEVEL: +1 to -1 DATE 3/31/90
 EST. SUBDIVISION LENGTH: 850 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 75 % B 25 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 50 % Hang 50 % Vert 0 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 850 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	C	B	P	S	SP SP	FW FW	BY BY	SL SL	TL TL	LB LB	SU	U	M	L
ASPHALT PAVEMENT														
POOLED														
COVER				✓		✓						✓		
COAT				✓		✓						✓		
STAIN														
MOUSSE														
PATTIES														
TARBALLS														
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	No	AMOUNT		
		SM	MD	LG
Logs				
Vegetation				
Trash				
Debris				

DEBRIS COLLECTED
☐ YES ☒ NO

TYPE _____

#BAGS _____

Photographs:

Roll No. none

Frames none

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	SP OR	FW OR	BY OR	SL OR	TL OR	LB OR	SU	U	M	L		
							-														
							-														
							-														
							-														
							-														
							-														

COMMENTS

This subdivision lies east of subdivision A. This shoreline is very similar to that of subdivision B - the shoreline is bedrock slabs of granite with angular boulders that have weathered-out locally. The forest presses close to the sea and weathered smags are common.

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / MR-1 Subdivision C (of A-C) Date (mo / day / yr) 3 / 31 / 90

Time (24 hr) 0930 Biologist M. CARR

(A) Substrate type and % of segments: ^{SUBDIVISION}
(1) Bedrock 75 (2) Boulder 25 (3) Cobble — (4) Pebble — (5) Sand — (6) Silt —

(B) Overall % cover of biota (% of segment): ^{SUBDIVISION} Dense 70 Moderate 20 Low 10

(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. —

Frames NONE

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	NOT PRESENT
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	
6	6	6	6	6	6	6	6	6	6	6	6	

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	NOT PRESENT IN LOWER ZONE
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	
6	6	6	6	6	6	6	6	6	6	6	6	

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	NOT PRESENT
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	
6	6	6	6	6	6	6	6	6	6	6	6	

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	NOT PRESENT
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	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

Ecological Considerations:

Sensitivity codes: ST (Bald eagle nest)

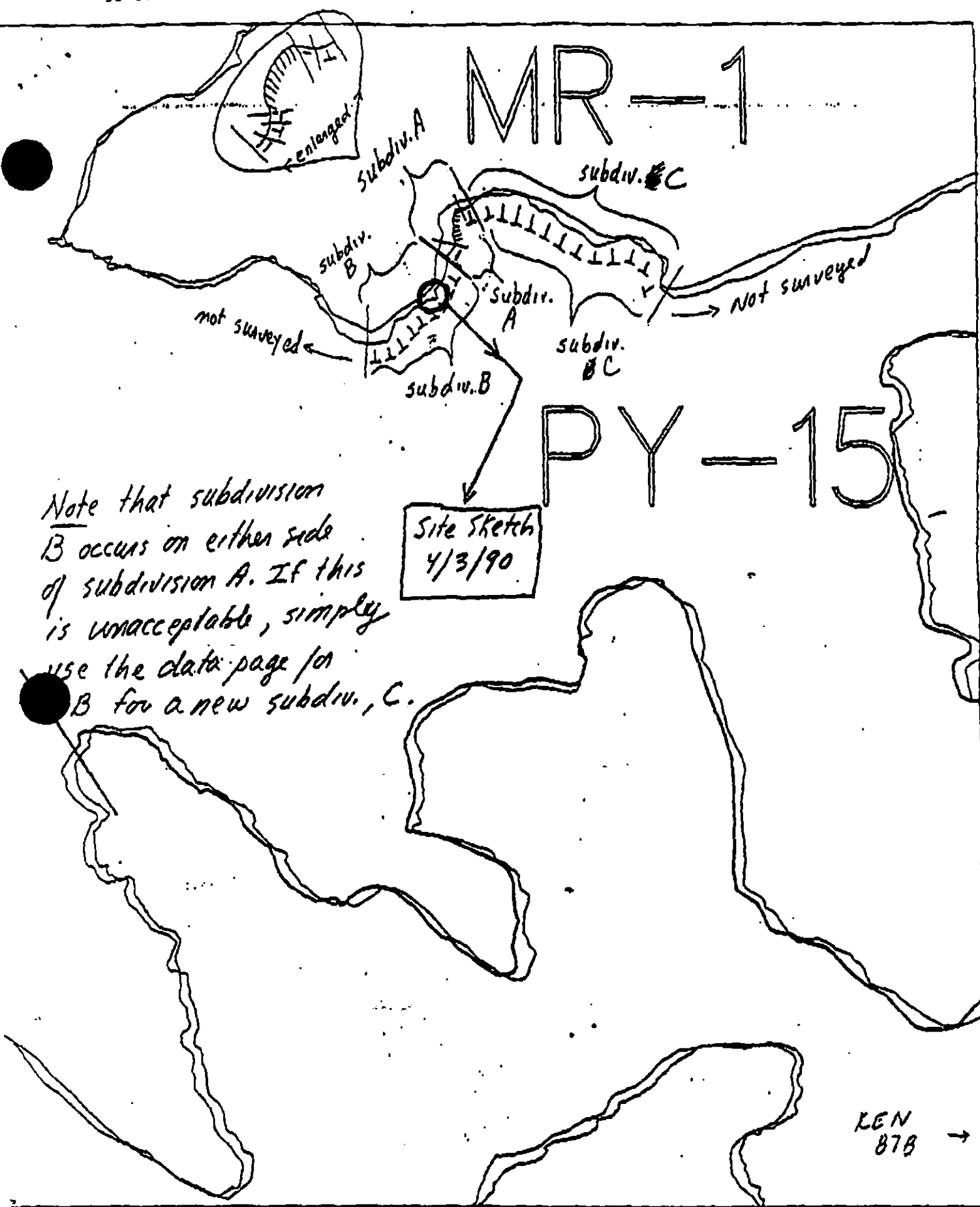
4 LL - ~~not~~ Keri, Fjords National Park

MR-1

PY-15

Site Sketch
4/3/90

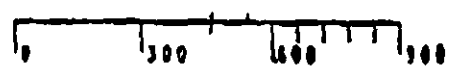
Note that subdivision B occurs on either side of subdivision A. If this is unacceptable, simply use the data page for B for a new subdiv. C.



KEN
87B →

- X Wide
- Medium
- Narrow
- TTT Very Light
- ooo

~~PY-15~~ MR-1
ADEC Segment Length: 11862m



Map Key: KEN-87a
Name: Mann
Date: 3/31/90

SHORELINE EVALUATION

SEGMENT ST/ MR-001 SUBDIVISION B (2 OF 3) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Active bald eagle nest (5T) - 3/1 to 6/1. Restrict air traffic to
essential minimum. Air approach and takeoff from and to seaward
only. Contact USFWS prior to treatment for confirmation of dates
and avoidance minimums. Kenai Fjords National Park (4LL).

SUBDIVISION ECOLOGICAL CONSTRAINTS: Treatment should proceed with
minimum disturbance to 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 Re-
source Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: Charles Zeffman DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 414 m: No Oil 0 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> X </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: Manual removal of pooled oil with absorbents and trowl-
ing and bioremediation in same area. Work is to be conducted after
6/1.

TAG COMMENTS: Treatment is recommended pending resolution of cul-
tural resources issues. If cultural resource issues cannot be re-
solved a no treatment recommendation is the preferred option.

This recommendation was revised by TAG on 4/19/90 and supercedes
the recommendation forwarded to FOSC on 4/12/90.

TAG APPROVAL DATE: 4/19/90

ADEC JOHN BAUER John Bauer

EXXON ANDY TEAL Andy Teal

NOAA Burt Wescott Burt Wescott

USCG G.A. REITER G.A. Reiter

FOSC: My L DATE: 4-26-90

Concur with TAG comments, however
INTEL not authorized.

MR-1, Subdivision B, site sketch, Mann 4/3/90 (see attached map for location)

KEY

 = ct/p, $\frac{1}{2}m \times 8m$ on vertical face

 = ct/p + cv/p + PO/s (total oil coverage = 40%)

 = ct/s, cv/s

(This is not a subdivision map)

2

- ① APPLY TROWLS & ABSORBENT TO PICKUP POOLED OIL
- ③ BIOPREMIATE

granite bedrock point

10m

bedrock slabs and rubble

forest

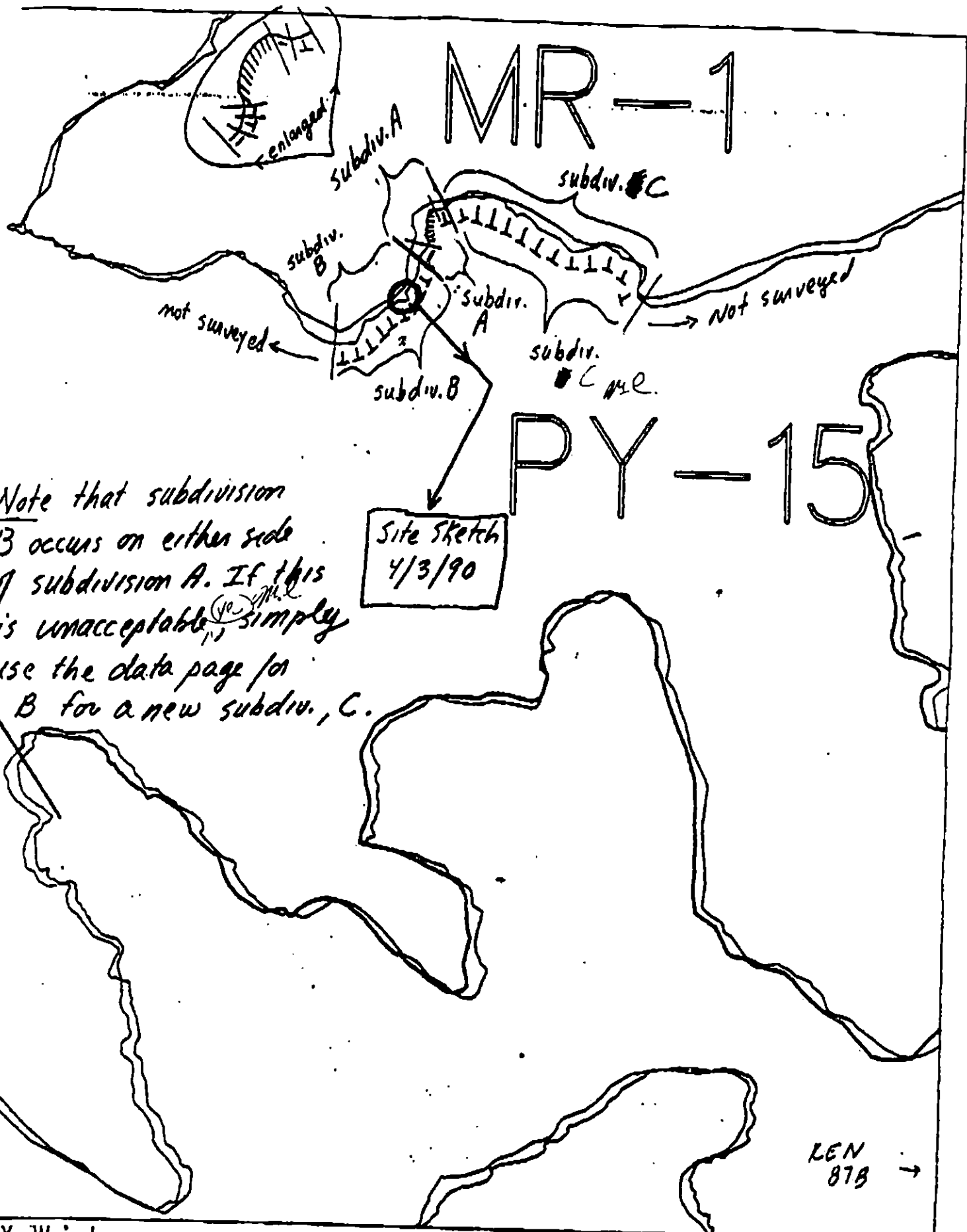
Notes: we visited this site at 1140-1200 on 4/3/90 with tide level $\approx +5'$. Coverage by PO/s is $\approx 5\%$ in the $2m \times 4m$ area.

CLEARED

Forest

forest

MR-1



Note that subdivision B occurs on either side of subdivision A. If this is unacceptable, simply use the data page for B for a new subdiv., C.

PY-15

KEN 87B →

XXXX Wide
 //// Medium
 --- Narrow
 TTTT

~~PY-15~~ MR-1

ADEC Segment Length: 11862m

Map Key: KEN-87a

Name: MOAN

SHORELINE EVALUATION

SEGMENT ST/ MR-001 SUBDIVISION C (3 OF 3) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Active bald eagle nest (5T) - 3/1 to 6/1. Restrict air traffic to
essential minimum. Air approach and takeoff from and to seaward
only. Contact USFWS prior to treatment for confirmation of dates
and avoidance minimums. Kenai Fjords National Park (4LL).

SUBDIVISION ECOLOGICAL CONSTRAINTS: Treatment should proceed with
minimum disturbance to substrate.

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

SHPO SIGNATURE: Charles Hoffman DATE: April 12, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 872 m: No Oil 0 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

<u>X</u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u> </u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u> </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:

TAG COMMENTS:

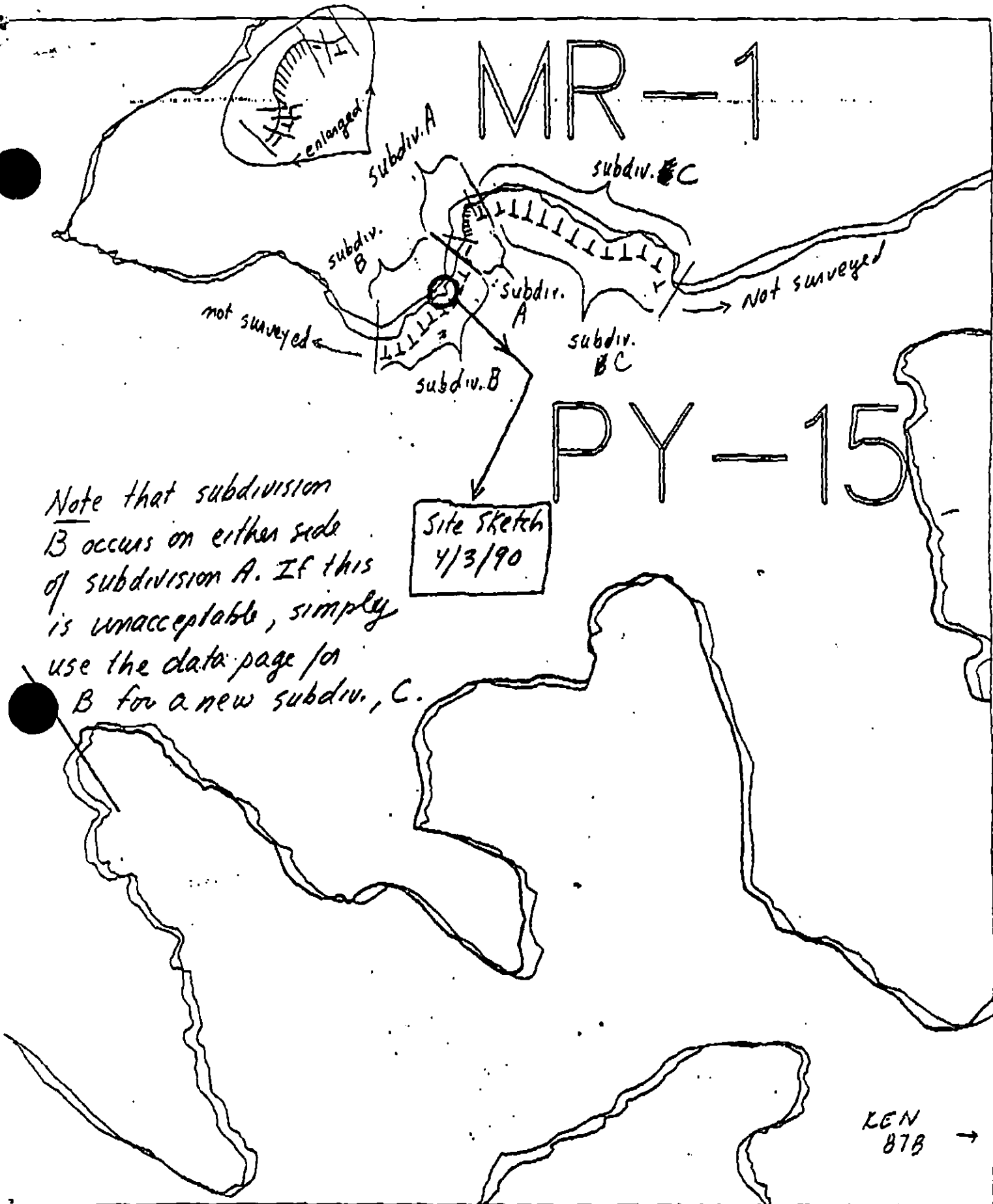
TAG APPROVAL DATE: 4/12/90
ADEC John Baker
EXXON Andy Tate
NOAA Burl Wescott
USCG M. J. Hall

FOSC: DATE: 4-23-90

Do not treat unless Sand Manager
consents with bioremediation.

MR-1

PY-15



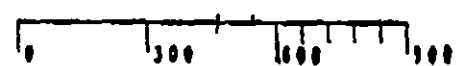
Note that subdivision B occurs on either side of subdivision A. If this is unacceptable, simply use the data page for B for a new subdiv. C.

Site Sketch
4/3/90

KEN
87B →

~~PY-15~~ MR-1

ADEC Segment Length: 11862m



Map Key: KEN-87a

Name: Mann

Date: 3/31/90

XXX Wide
/ Medium

--- Narrow

TTT Very Light

000 No Oil

SHORELINE EVALUATION

SEGMENT ST/ MR-001 SUBDIVISION C (3 OF 3) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Active bald eagle nest (5T) - 3/1 to 6/1. Restrict air traffic to essential minimum. Air approach and takeoff from and to seaward only. Contact USFWS prior to treatment for confirmation of dates and avoidance minimums. Kenai Fjords National Park (4LL).

SUBDIVISION ECOLOGICAL CONSTRAINTS: Treatment should proceed with minimum disturbance to substrate.

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

SHPO SIGNATURE: Charles E. Hines DATE: April 12, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 872 m: No Oil 0 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS: _____

TAG COMMENTS:_____

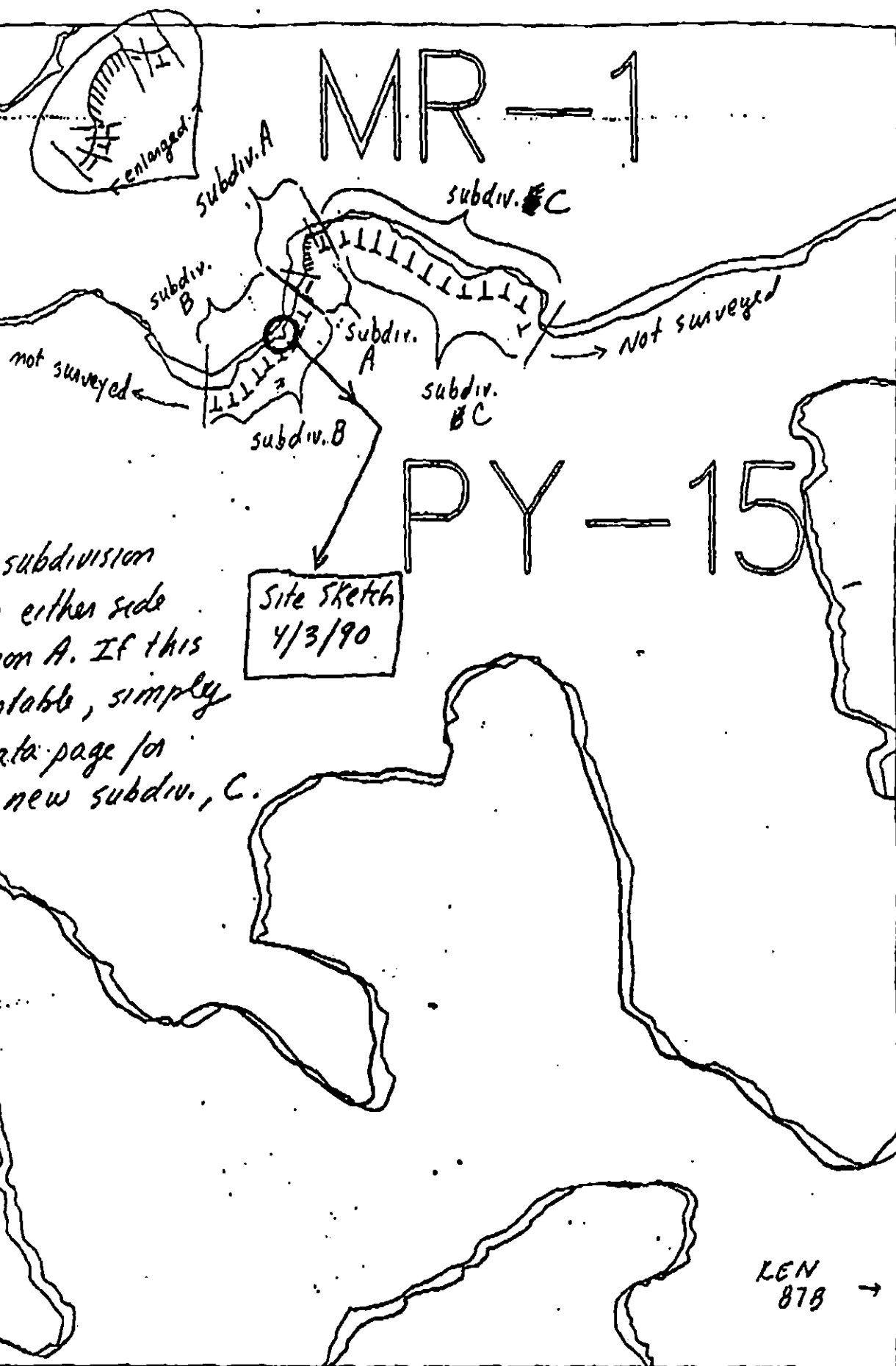
TAG APPROVAL DATE: 4/12/20
ADEC JOHN BAUER John Bauer
EXXON ANDY TETZ Andy Tetz
NOAA Burt Wasscott Burt Wasscott
USCG M. J. HALL M. J. Hall

FOSC: DATE: 4-23-90

Do not start unless Land Manager
agrees with remediation.
Conduct manual clean up as requested
by LM in conjunction with
clean-up of MK001 A+B.

MR-1

PY-15



Note that subdivision B occurs on either side of subdivision A. If this is unacceptable, simply use the data page for B for a new subdiv. C.

X ● Wide
 /// Medium
 --- Narrow
 TTT Very Light

ADEC Segment Length: 11862m

~~PY-15~~ MR-1

Map Key: KEN-87a

Name: MAAN

Date: 3/31/90

1991 MAYSAP EVALUATION

SEGMENT: MR 001 SUB: B REGION: KEN SURVEY DATE: 5/12/91

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 A. Smith Date: 6/03/91

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 31 1991

ADEC John Bane

EXXON Beal

USCG Edmundo

NOAA Long

FOSC APPROVAL DATE: 6/03/91

FOSC EE

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT MR-1 SUBDIVISION B DATE MAY 11 1991

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

Oiling within this subdivision would be very difficult to recover - ~~is~~ (at base of lg. B. E. CV, CT, ST.)

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/14/91☒ NTR

The oil remaining has a patchy to slash distribution. The MS is located around the shattered edges of boulders and in bed rock cracks. Recovery would be very low with trowels (cosmetic).

LANDMANAGER

NAME

Michael D. Tetreau OF NPS

SIGNATURE

Michael D. Tetreau☐ NTR

There is still mousse remaining in the interstitial spaces in the area adjacent to subdivision A, however this oil would be extremely difficult to recover. It is weathering very slowly. On the rocky point where most of the treatment was concentrated, there is very little oil remaining. The treatment in 1990 was very effective in removing the deeply pooled mousse at this site.

USCG/NOAA

NAME

CWO2 J. MC NATION

SIGNATURE

J. Mc Nation☒ NTR

very sparsely distributed in & around lg boulders. Some cleaned up by RECO crew. Not feasible environmentally or economically to consider for type A pick-up.

PAGE 2 OF 9

REVIEWED CB 16 MAY

MR-1

Location Map



MR001 B

Subdivision Field Map

Map Key: KENR00106

Name: Jim Sempels

Date: May 12/91



METERS

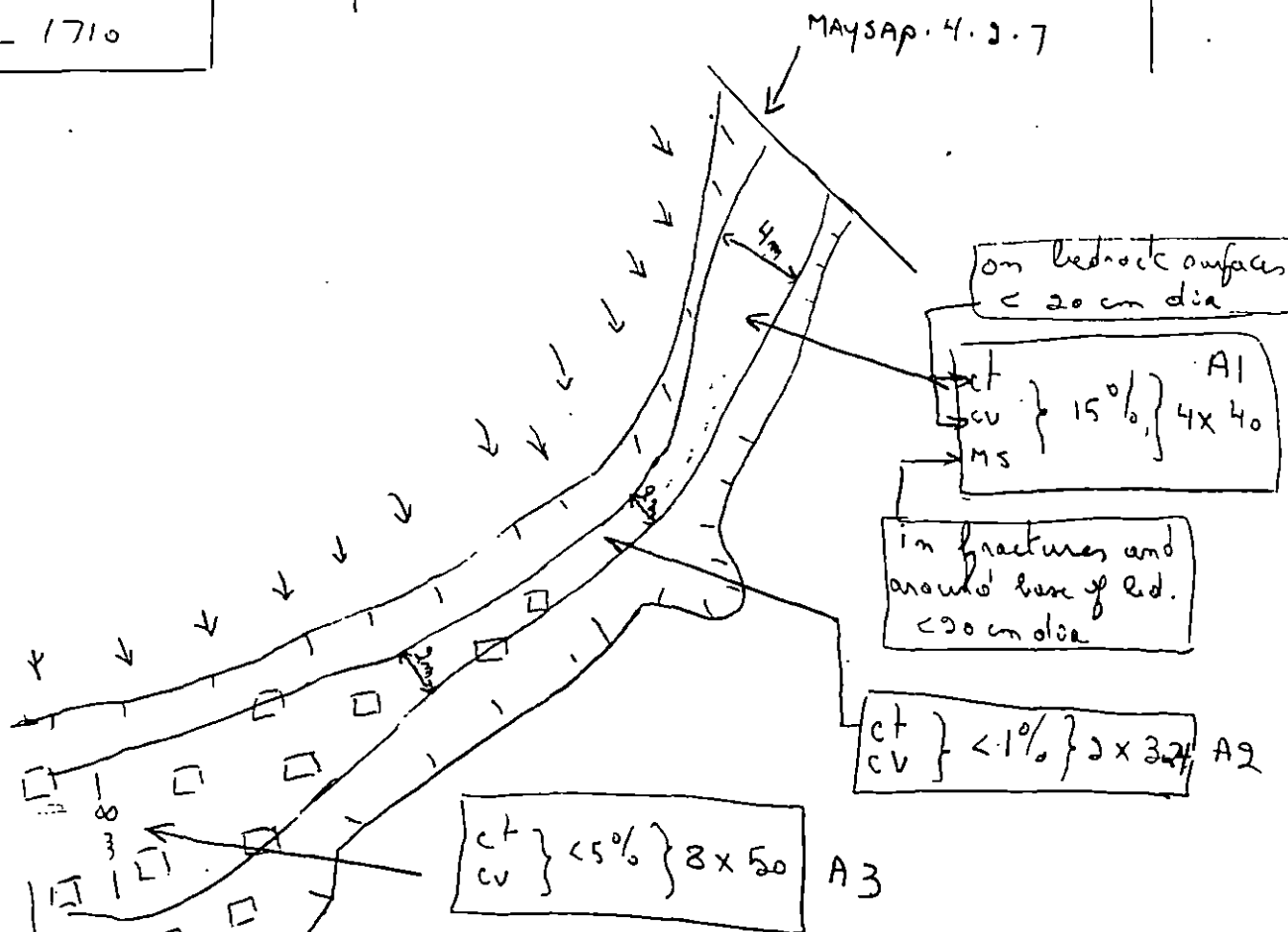
0 200 400

AK State Plane Zone 4
NAD83

Sketch Map.
 MA.001.B
 Lm Sempels
 May 12/91
 1649 - 1710

Legend
 ▽ Bedrock
 □ Boulder talus
 ▣ Vegetated dunes
 (steep)

Meters
 0 40



Steep bedrock intertidal zone grading
 into talus of large angular boulders to the
 S.W. ct, cv, small on bedrock and boulder
 surfaces, MS also small ($< 20 \text{ cm}$) in fractures and sheltered
 depressions.

Note width of bed not to scale. Average width of intertidal $\sim 10 \text{ m}$.

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 12, 1991 1639 - 1712
SEGMENT #	MR001	TIDAL HEIGHT (Range)	+4.8 => +3.7
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This subdivision is composed primarily of high angle bedrock outcrops and cliffs, and boulder beaches. The biota are similar to MR001-A and are not particularly variable along the subdivision. Oiled locations throughout the segment are found in the upper intertidal zone. The biota along this segment appear to be healthy. Most species show evidence of growth or recent recruitment. No evidence of recent oil-related impacts are evident.

Biota are generally scarce at the tidal level of the oiled areas. Black lichen is sparsely distributed in this zone, and scattered limpets and barnacles are present. Littorines are moderately abundant in the vicinity of the oil, and, like limpets, are occasionally found directly on the oil. Fucus also is found near the oiled areas, and in a few cases, juveniles can be found directly in contact with oil.

Below the level of the oiling, the typical zonation continues. Filamentous green algae are abundant in the middle to high zone. Barnacles are moderate to dense, with few to moderate abundances of juveniles. Mussels form dense patches within crevices, and are present as distinct mussel beds on a few of the exposed headlands or boulder outcrops. Juvenile mussels are abundant under the Fucus beds in the middle intertidal zone. Barnacles are dense in scattered patches from the high to low intertidal, and are otherwise moderately abundant. Barnacle spat are not abundant, but are present in the middle to lower intertidal zone. The lowest intertidal was underwater during the survey, but is dominated by red and brown algae. Bull kelp is present in the subtidal at the western end of the subdivision.

Cleanup activities, if performed, will not adversely impact this intertidal zone. Hot water wash should not be used, so as to prevent disturbance to the Fucus beds.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	1	1	
Gulls/Kittiwakes	2	15	
Shorebirds			
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

REVIEWED CA 10 MAY
D. R. 5/16/91

MR001-A Biology Report, continued

Biota Tide Level: Supratidal High Medium Low Subtidal

Black Lichen	*****+--
Green Algae (Urospora)	-+*****+---+*****
Barnacles (sparse)	--+***** + + + + +
Fucus	-+*****+*-*+---+
Littorines/limpets	- - - - + * * + + * -
Mussels	-----+---+---+---+---
Brown Algae	+---+---+---+---+*****
Red Algae	-----+*****-*-*--*
Oiled Areas	--+- +- + - -

Common Species Observed or Expected at MR001-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfeltia plicata, Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Endocladia muricata,, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
5. Higher Plants
Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Ophlitaspongia pennata, Tethys sp.
2. Anemones
Anthopleura artemesia, Epiactis ritteri, Metridium senile, Urticina crassicornis
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete worms
Glyceridae
Nepthyidae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Eudistylia polymorpha
Spriorbidae - Spirobrbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Hemigrapsus oregonensis, Paguridae (hermit crabs),
 - d. Isopods - Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons
Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata,
Tonicella lineata,
 - b. Snails - Gastropods

Littorina sp. Natica clausa, N. lima

- c. Limpets
Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
- e. Mussels and Clams
Chlamys hastata, Modiolus modiolus, Mytilus edulis, Pododesmus cepio, Prototheca staminea
- 12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea stars
Dermasterias imbricata, Leptasterias hexactis, Pisaster ochraceus, Pycnopoda helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.,
 - d. Urchins - Strongylocentrotus droebachiensis
- 13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
- 15. Fishes
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP

MR001-B

JP Barry

12 MAY 91

1649-1710

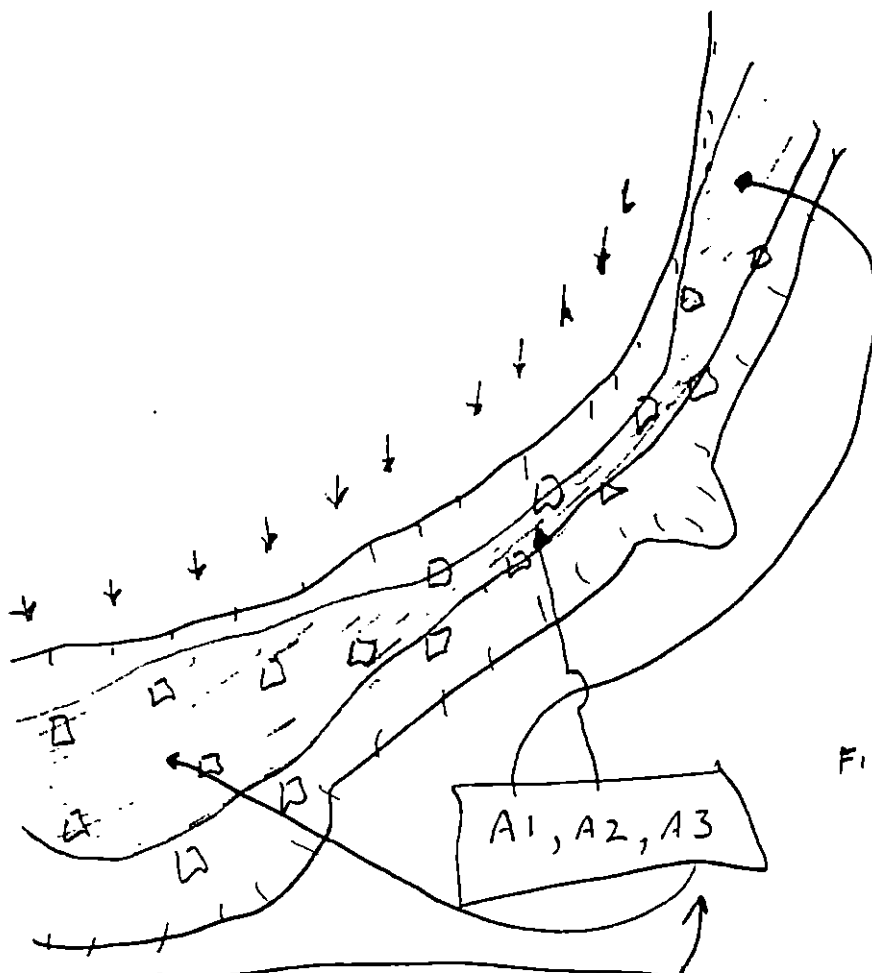
Legend

 Bedrock

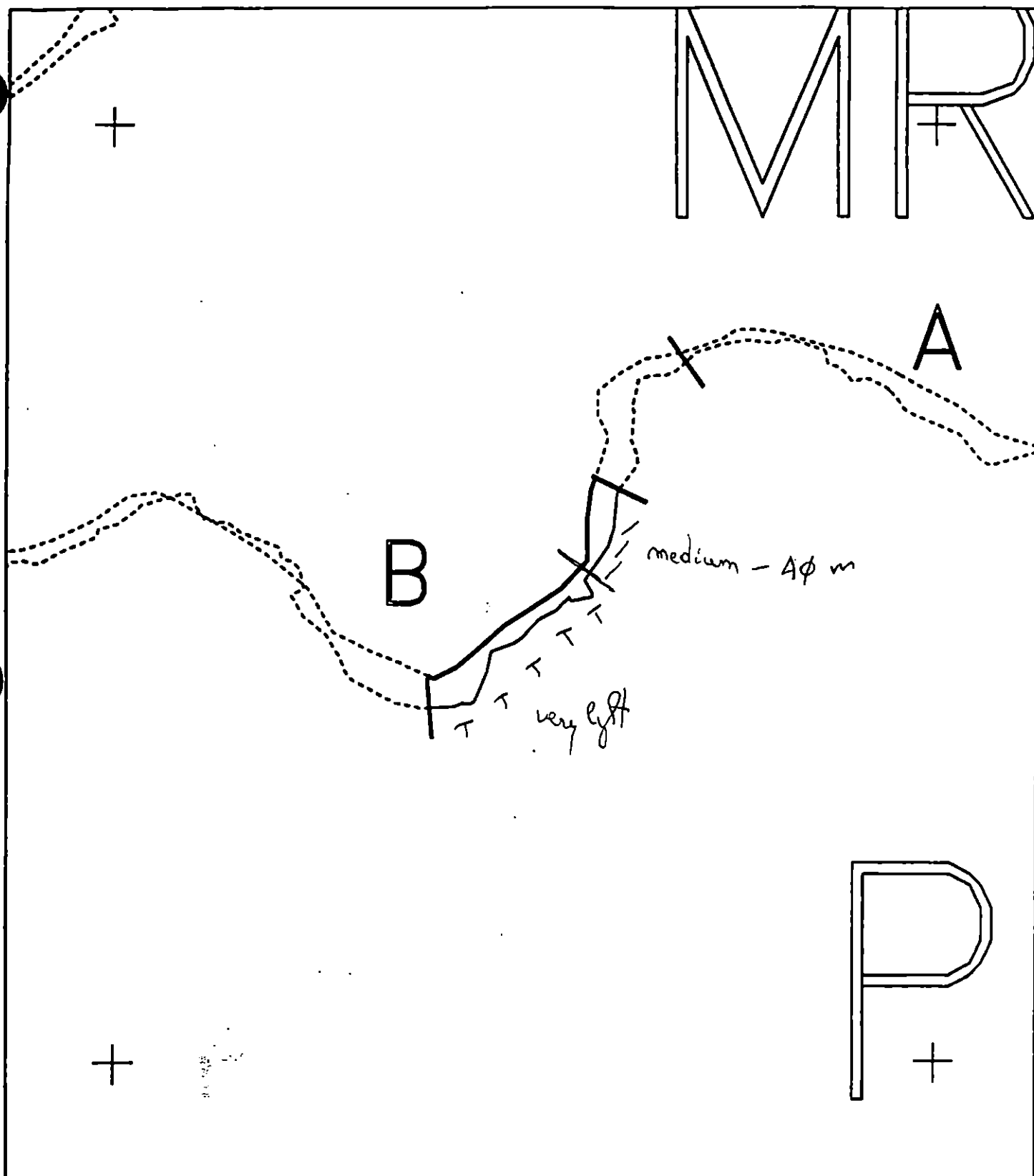
 Boulder

 Vegetated highshore.

MM-B 41



FILAMENTOUS GREEN & BROWN ALGAE SPARSELY
DISTRIBUTED AROUND OIL. SOME BLACK LICHEN.
SCATTERED LITORALINES & LIMBOTS ON OIL. LOWER
ZONES PARTIALLY OVERLAP OILED AREAS, WITH
FUCUS BECOMING ABUNDANT IN THE MID-SHORE.
MYTILUS IS PRESENT & IN CREVICES AND UNDER
THE FUCUS AS JUVENILES & SMALL ADULTS.
LOWEST ZONE DOMINATED BY RED & BROWN
ALGAE. THIS IS A HEALTHY INTERTIDAL
COMMUNITY



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

MR001 B
 ADEC Subsegment Length: 414m
 METERS
 0 200 400
 AK State Plane Zone 4
 mr001b

Subdivision Field Map
 Map Key: KENMR001B
 Name: JM Sample
 Date: May 13/91
 Date Entered:



1991 MAYSAP EVALUATION

SEGMENT: MR 001 SUB: A REGION: KEN SURVEY DATE: 5/12/91

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT MR-1 SUBDIVISION A DATE 1/1/91

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby

☐ NTR

☒ Treatment Recommended.

Manual Removal of Asphalt & MS. The asphalt is fairly well defined & easily removed - There are areas where the asphalt has been covered by a thin layer < 2 cm of clean sediment - & depth of pore is ~ 5 cm. pit #1. These 'beams' should be followed & removed -

The survey was hampered slightly by the sensitivities of the area & there is the possibility of more oiling being on site than was actually documented (in this survey).

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/14/91

☐ NTR

The 10 team members and 2 archeologists I feel adequately recorded the remaining subsurface and surface oiling. The ms, cv & ct has a patchy distribution. The moose is located around edges of boulders and in bed rock cracks. The Asphalt/tar mat is well defined. Any work in this area will be very time consuming due to the constraints

LANDMANAGER

NAME

Michael P. Tetreau OF NPS

SIGNATURE

Michael P. Tetreau

☐ NTR

The distribution of oil is The same as in 1990 however The amount of oil present is much less. The only recoverable oil remaining is in The area of The asphalt/tar mat where some patches were missed in 1990 and some SOR has reformed into asphalt just below The surface sediments. The treatment in 1990 appears to have been very effective in removing The pooled oil from The crevices.

USCG/NOAA

NAME

JOE J. MCMAHON

SIGNATURE

Joe J. McMahon

☒ NTR

very sparse distribution of TP & AP. Much taken off the segments by ECO crew.

NOAA/Donald A. MacDonald

Donald A. MacDonald

PAGE 2 OF 9

DATE MAY / 12 / 91

ENERGY LEVEL: ☒ H ☒ M ☐ L

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

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

EST. OIL CATEGORY LENGTH: W_____m M 260 m N_____m VL_____m NO_____m US_____m

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

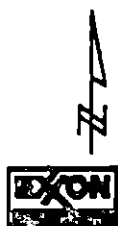
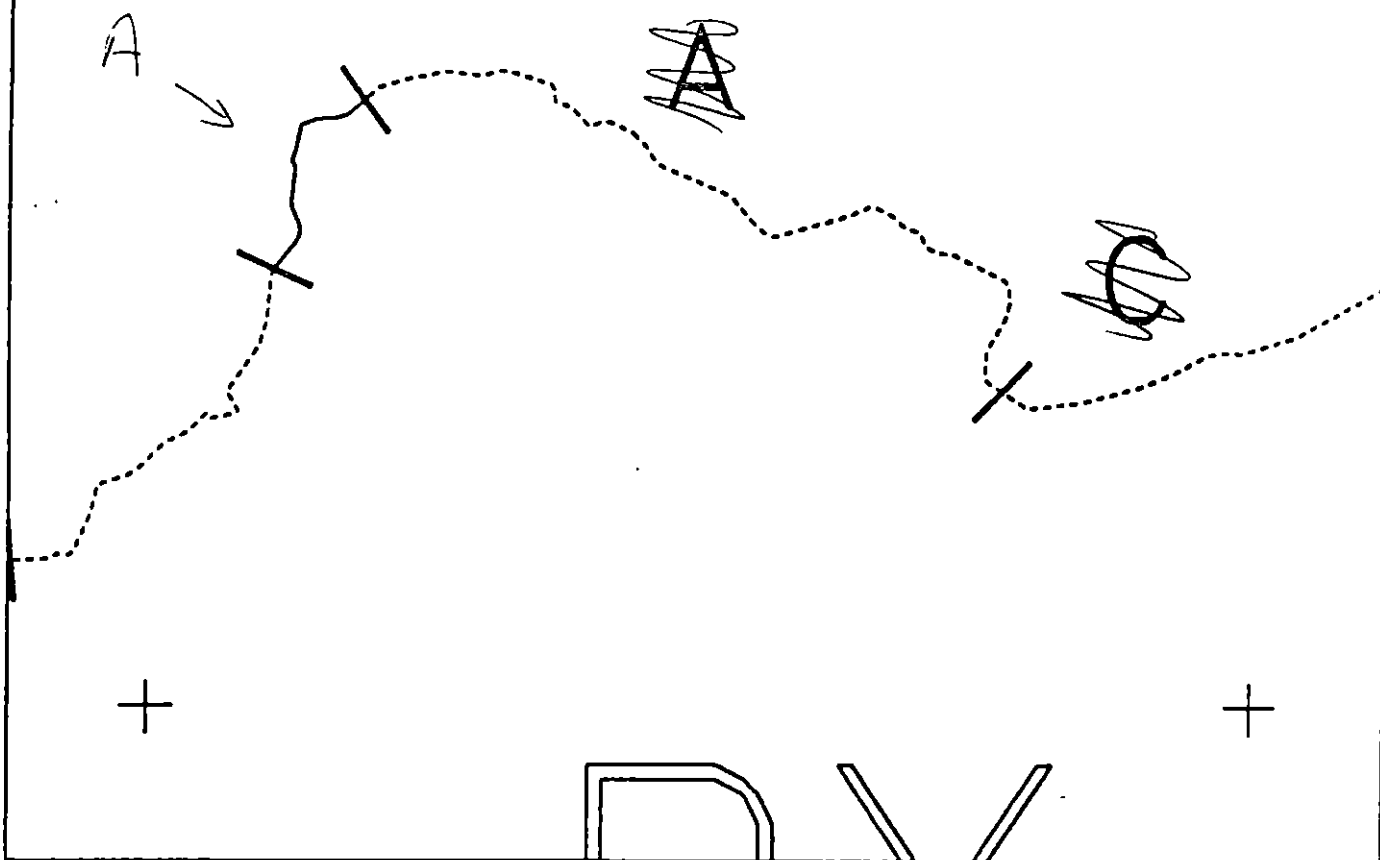
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP-_____-_____-_____- FRAMES

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

OG COMMENTS: Shosline consists of moderately steep fractured bedrock often with locally derived angular boulders/cb. a few small areas of finer sediments. Oil occurs in a wide band 4 to 15 m of ch. cv, or 2 inches and boulders. 1 petal of Ap estimated 1/2 and small areas of MS in rock fractures. also many townships are present

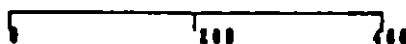
Location Map

MR-1



MR001 A

METERS



AK State Plane Zone 4
unrotated

Subdivision Field Map

Map Key: KENND001A5

Name: J M Sampson

Date: May 12/91

Reviewed 5.16.91

Big Sketch Map

MAR 20, A

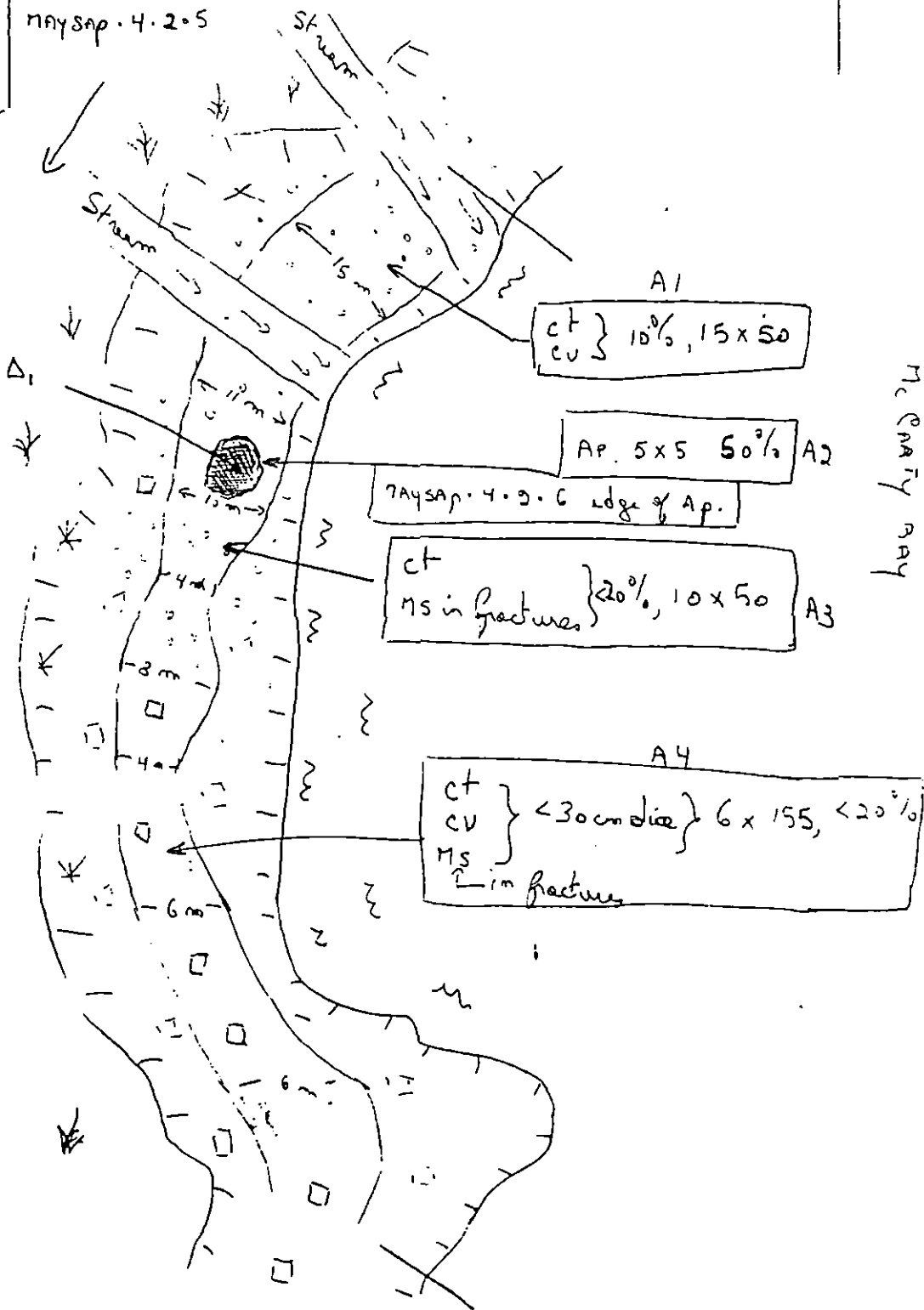
77 Samples.

MAY 19/71

1607 R - 1648 R

Legend!

- [*] dead trees
- [1/2] Bedrock
- [1/2] Vegetated limestone
- [1/2] Angular
ls / cb, Bedrock
shales
- [o] cb / Bl / sd



✓ 1/2. width of intertidal zone not stable. Average width of intertidal 15.3 m.

Reviewed 5.0.1.
REVIEWED 6.1.1.

MR 1-A

KAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 12, 1991 1619 - 1639
SEGMENT #	NR001	TIDAL HEIGHT (Range)	+5.5 => +4.8
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This short subdivision is located on a protected shore

The shore varies from steep sloped bedrock outcrops to medium sloped boulder and cobble shores. Several types of oil categories were present along this shore.

The biota vary from very sparse or absent in the extreme upper zones to a fairly dense cover of Fucus, barnacles, and other species in the middle zone. The tide was not particularly low during the survey and the low intertidal zone was not observed. The distribution of biota was similar along the entire subdivision.

Location I - (A1 - A4

This site area, with patchy asphalt and HSOR. Some biota are present directly upon the oil. These include filamentous green algae (Urospora ?), occasional limpets and littorine snails, as well as a few juvenile barnacles. Even still, there is little biota at the upper extent of the oiled area, due to its position in the high tidal range. Near the lower part of the upper intertidal zone, the oiling is less apparent, but present. At this location the oiled sites also have similar biota as described above, but in somewhat higher densities. Fucus is sparse in this slightly lower zone.

Biota at tidal levels below, but near the oiled area are denser than in the upper intertidal. The middle zone has sparse to moderate cover of Fucus, with young mussels found attached under the Fucus cover, either to bedrock or Fucus. Barnacles (Balanus) are moderately to sparsely abundant within the Fucus zone, and somewhat more abundant on bedrock outcrops where Fucus is not present. Branched red algae (Endocladia or Gigartina

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	2	3	
Gulls/Kittiwakes	2	5	
Shorebirds			
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

REVISED 10 MAY
0.1 1 2 3 4 5 6 7 8 9 10 11 12

MR001-A Biology Report, continued

sp.?) are abundant in a zone slightly above the mussels zone, with moderate to dense abundance of littorine snails and limpets.

Biota Tide Level: Supratidal High Medium Low Subtidal

Black Lichen	*****+--
Green Algae (Urospora)	-+*****+---+*****
Barnacles (sparse)	--+***** + + + + +
Fucus	-+*****+*-*+--+
Littorines/limpets	- - - - + * * + + * -
Mussels	-----+--+--+--+--+
Brown Algae	+--+--+--+--+*****
Red Algae	-----+*****-*-*-*

Oiled Areas -++++ + +-+ - --

Clean up activities on this beach, if performed, will have a nearly negligible impact on the present biota, unless methods more invasive or toxic than manual cleanup are used.

Common Species Observed or Expected at MR001-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfeltia plicata, Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Endocladia muricata,, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
5. Higher Plants
Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Ophlitaspongia pennata, Tethys sp.
2. Anemones
Anthopleura artemesia, Epiactis ritteri, Metridium senile, Urticina crassicornis
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete worms
Glyceridae
Nepthyidae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Hemigrapsus oregonensis, Paguridae (hermit crabs),
 - d. Isopods - Idotea wosnesenskii, Gnorimorsphaeroma oregonensis

11. Mollusca

- a. Chitons
Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata.
- b. Snails - Gastropods
Littorina sp. Natica clausa, N. lima
- c. Limpets
Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
- e. Mussels and Clams
Chlamys hastata, Modiolus modiolus, Mytilus edulis, Pododesmus cepio, Prototheca staminea

12. Echinoderms

- a. Brittle Stars - Ophiolus sp., ?
- b. Sea stars
Dermasterias imbricata, Leptasterias hexactis, Pisaster ochraceus, Pycnopoda helianthoides, Solaster sp.
- c. Sea Cucumbers - Holothurians - Eupentacta sp.,
- d. Urchins - Strongylocentrotus droebachiensis

13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.

15. Fishes

Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP

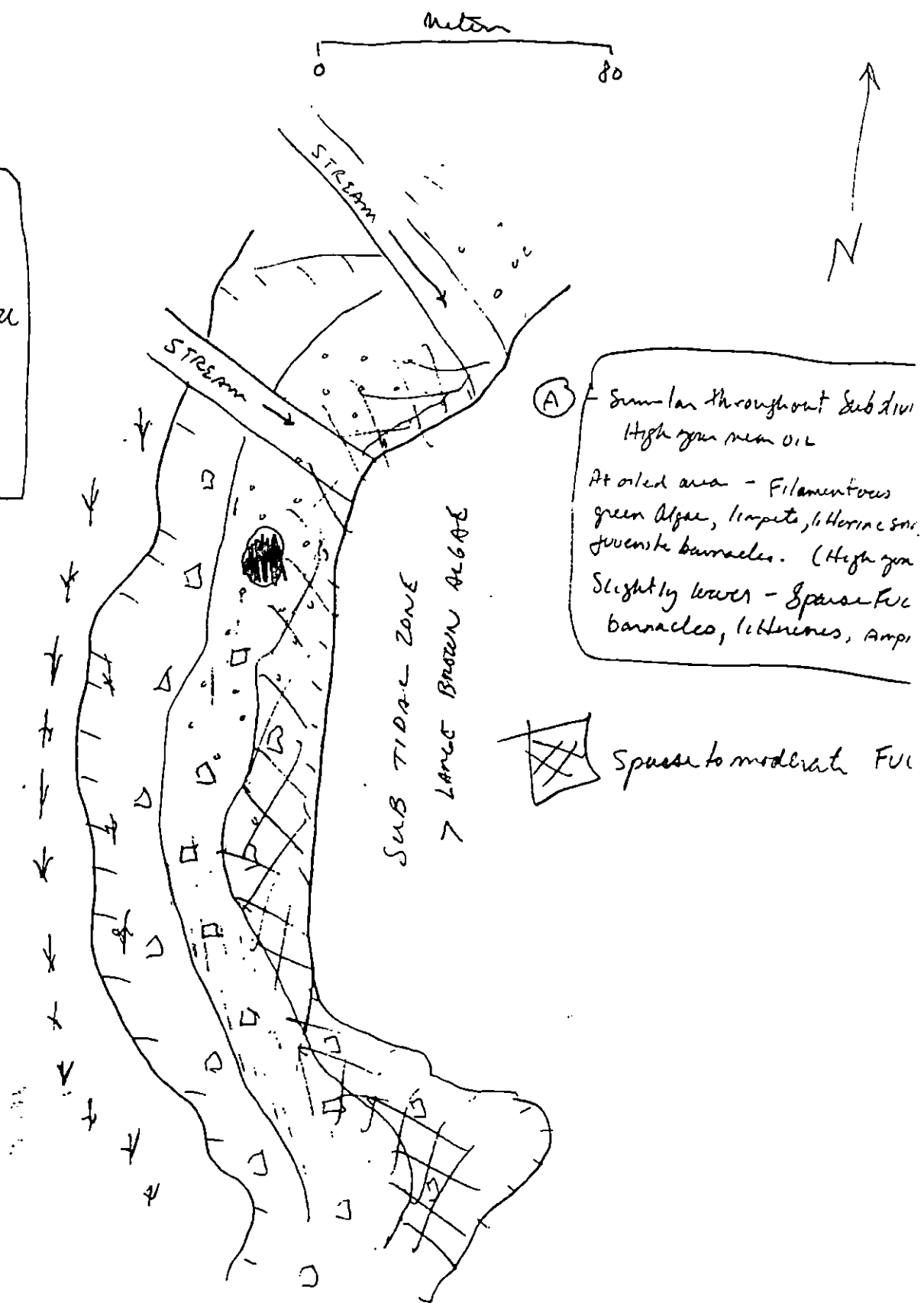
MR001-A

J.P. Barry

12 May 1991

1607 - 1648h

-  Dead trees
-  Bedrock
-  Vegetated Backshore
-  Angular bd/cb bedrock
-  Cb/bd/sd.



Reviewed M.B.S.

MR-1-A 5/9

MR

A

medium

B

D

XXXX
////

TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

MR001 A

ADEC Subsegment Length: 200m

METERS

0 200 400
AK State Plane Zone 4
mr001a



Subdivision Field Map

Map Key: KENMR001A

Name: J.M. Sampaio

Date: 5.12.1991

Date Entered:

reviewed 5.16.91

1991 MAYSAP EVALUATION

SEGMENT: MR 001 SUB: C REGION: KEN SURVEY DATE: 5/12/91

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 _____

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 14 SEGMENT MR-1 SUBDIVISION C DATE 5/12/91

ADEC

NAME Clara E. Crosby SIGNATURE Clara E. Crosby☐ NTR ☒ TREATMENT RECOMMENDED.

MS - Suggest removal - manual - using trowels, pompoms -
The landmanagers comments pertaining to crew size are
applicable.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/14/91

☒ NTR The oil remaining has a patchy distribution. The
ms is located around the edges of the large boulders
and in the bedrock cracks. Trowels will be required
to recover the remaining ms. The actual percent recovery
will be low due to the size of the boulders (Cosmetic).

LANDMANAGER

NAME Michael D. Tetreault OF NPS SIGNATURE Michael D. Tetreault

☐ NTR oil in This subdivision is sparsely distributed. There is
some pooled mousse in crevices that is recoverable with a
trowel, however I do not feel that an entire crew is
warranted for work at This site. The pockets of recoverable
oil are few and far between.

USCG/NOAA

NAME CWO2 J. Mc Mathen SIGNATURE J. Mc Mathen

☒ NTR very little in segment, VECO crew pick'd
up/ available TP/AP.

NOAA / DONALD A. McDONALD - AS

Donald A. McDonald

PAGE 2 OF 9

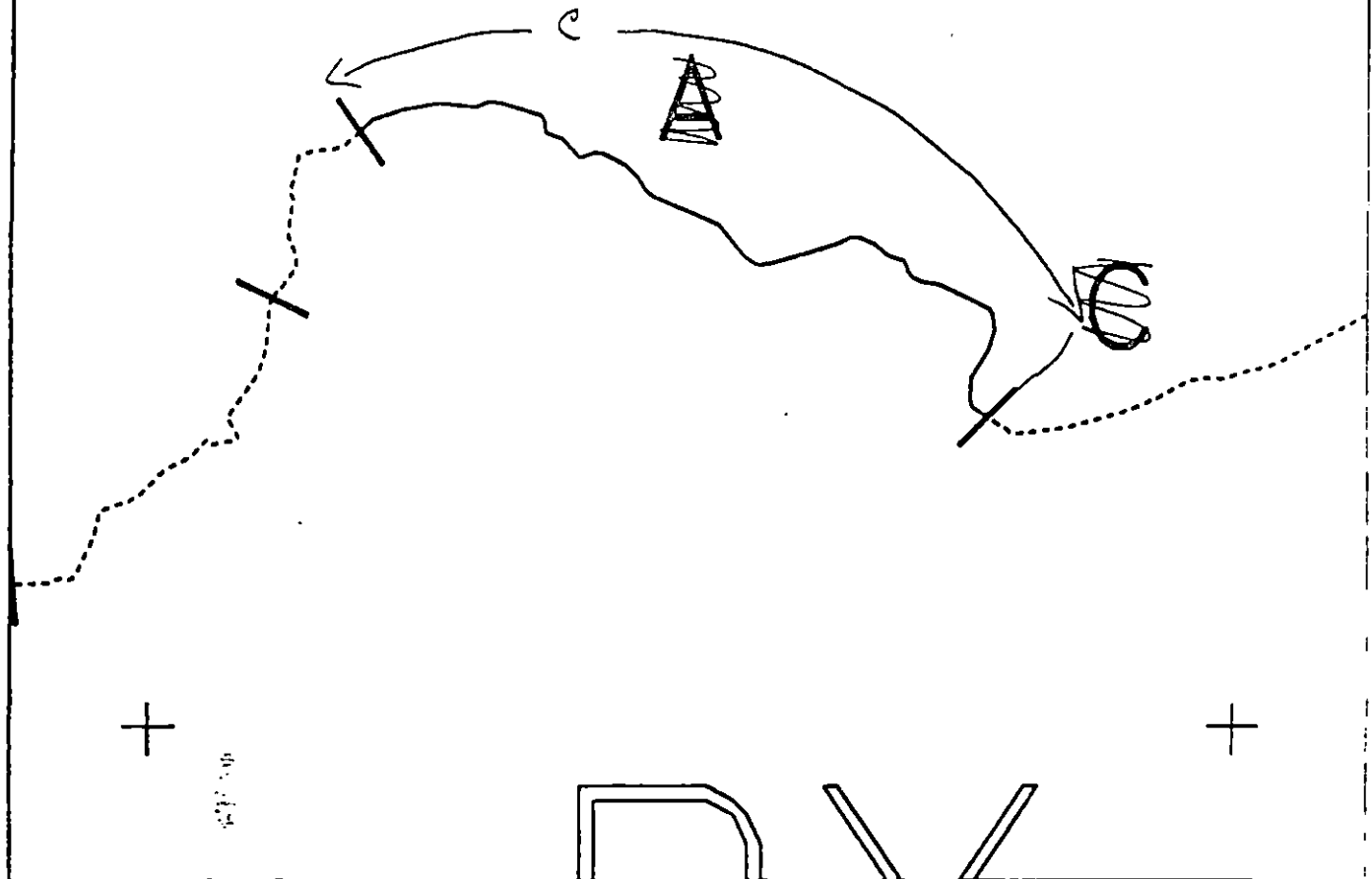
REVISED CE 18 MAY



Location Map

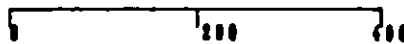


MR-1



MR001 C

METERS



AK State Plane Zone 6
NAD83



Subdivision Field Map

Map Key: KENMR001Cb

Name: Jim Simpson

Date: May 13/01

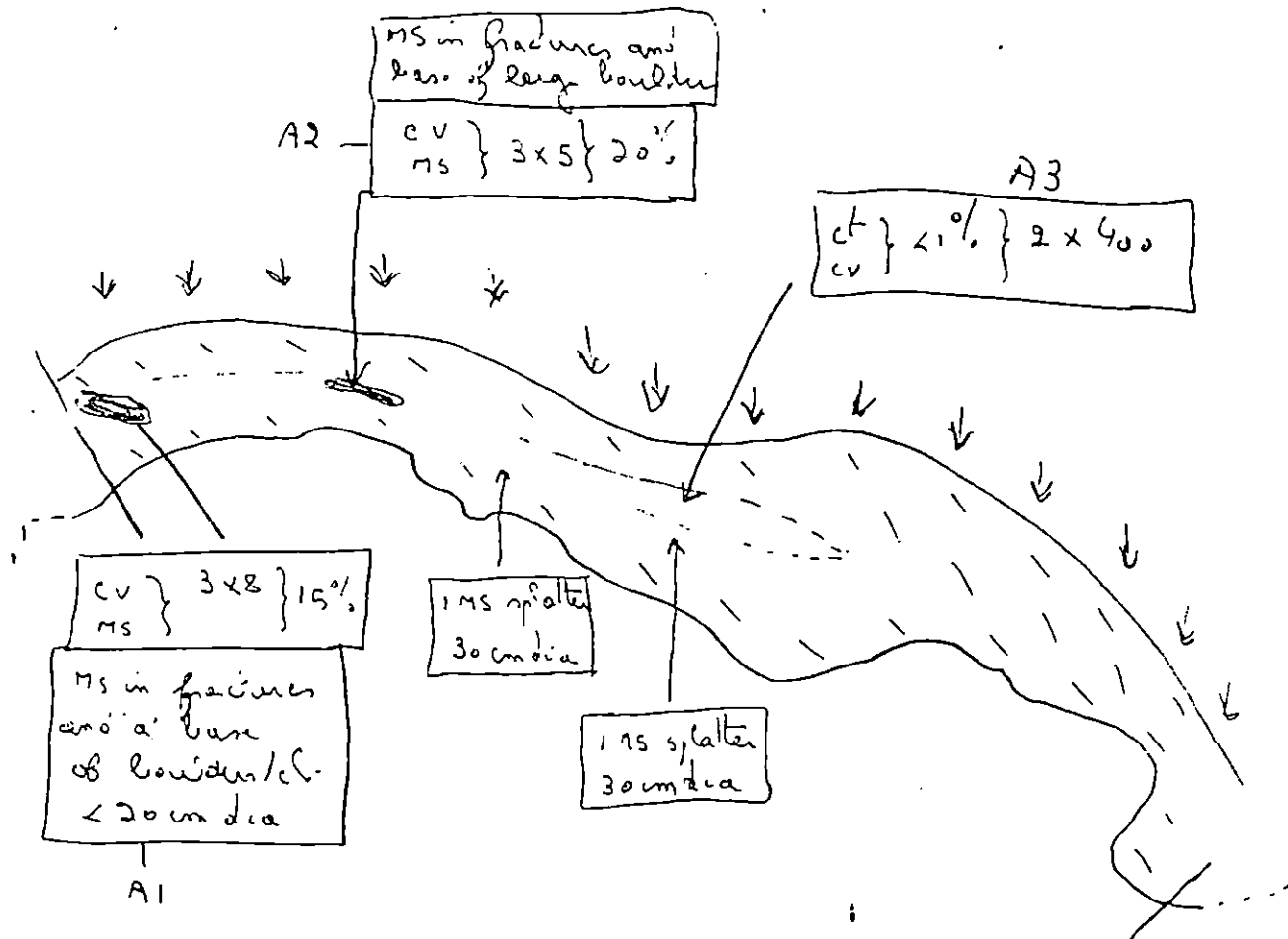
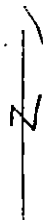
Og Sketch Map

MR 001.C
 of 7 Samples
 MAY 12/91
 1717R - 1756P.

Legend

-  Step bedrock
occasional angular
boulder / clb
-  Step vegetated
hinterland.

Meters
 0 100 200



Step bedrock shoreline, sometimes with angular
 boulder / cobble very slight holes.

Note: Awn shore distance not to scale. Average intertidal width: 20m

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 12, 1991	1721 - 1800
SEGMENT #	MR001	TIDAL HEIGHT (Range)	+3.4 => +2.4	
SUBDIVISION	C	BIOLOGIST	JIM BARRY	
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm	

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This subdivision is composed primarily of high angle bedrock outcrops and cliffs, and boulder beaches. The biota are similar to MR001-A/B and are somewhat similar throughout the subdivision. The biota along this segment appear to be healthy. Most species show evidence of growth or recent recruitment.

Biota are generally scarce at the tidal level of the oiled areas. Black lichen is sparsely distributed in this zone, with scattered limpets and barnacles. Littorines and limpets are moderately abundant in the vicinity of the oil, and occasionally are directly on oil. Fucus also is found near the oiled areas, and in a few cases, juveniles can be found directly in contact with oil.

Below the level of the oiled substrata filamentous green algae are abundant in the middle to high zone. Barnacles are moderate to dense, with few to moderate abundances of juveniles. Mussels form dense patches within crevices, and are present as distinct mussel beds on a few of the exposed headlands or boulder outcrops. Juvenile mussels are abundant under the Fucus beds in the middle intertidal zone. Barnacles are dense in scattered patches from the high to low intertidal, and are otherwise moderately abundant. Barnacle spat are not abundant, but are present in the middle to lower intertidal zone. The lowest intertidal was underwater during the survey, but is dominated by red and brown algae. Bull kelp is present in the subtidal at several locations along the subdivision.

Cleanup activities, if performed, will not adversely impact this intertidal zone. Hot water wash should not be used, so as to prevent disturbance to the Fucus beds.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	1	3	
Gulls/Kittiwakes	1	5	
Shorebirds			
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

REVIEWED CO 16 MAY
Reviewed M.B. 5/16

MR001-A Biology Report, continued

Biota Tide Level: Supratidal High Medium Low Subtidal

Black Lichen	*****+---
Green Algae (Urospora)	-----+-----+*****
Barnacles (sparse)	-----+*** + + + + +
Fucus	-----+*****+*-+-----
Littorines/limpets	- - - - -+*** + + * -
Mussels	-----***-+-----+---
Brown Algae	-----+-----+*****
Red Algae	-----+*****-*-***
Oiled Areas	-+ -+ --

Common Species Observed or Expected at MR001-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfelia plicata, Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Endocladia muricata,, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
5. Higher Plants
Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Ophlitaspongia pennata, Tethys sp.
2. Anemones
Anthopleura artemesia, Epiactis ritteri, Metridium senile, Urticina crassicornis
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete worms
Glyceridae
Nephtyidae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Hemigrapsus oregonensis, Paguridae (hermit crabs),
 - d. Isopods - Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons
Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods

Reviewed M.B. 3/16.

- c. Limpets
Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - e. Mussels and Clams
Chlamys hastata, Modiolus modiolus, Mytilus edulis, Pododesmus cepio, Prototheca staminea
12. Echinoderms
- a. Brittle Stars - Ophiolus sp., ?
 - b. Sea stars
Dermasterias imbricata, Leptasterias hexactis, Pisaster ochraceus, Pycnopoda helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.,
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
15. Fishes
Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP

MR001-C

JR Barry

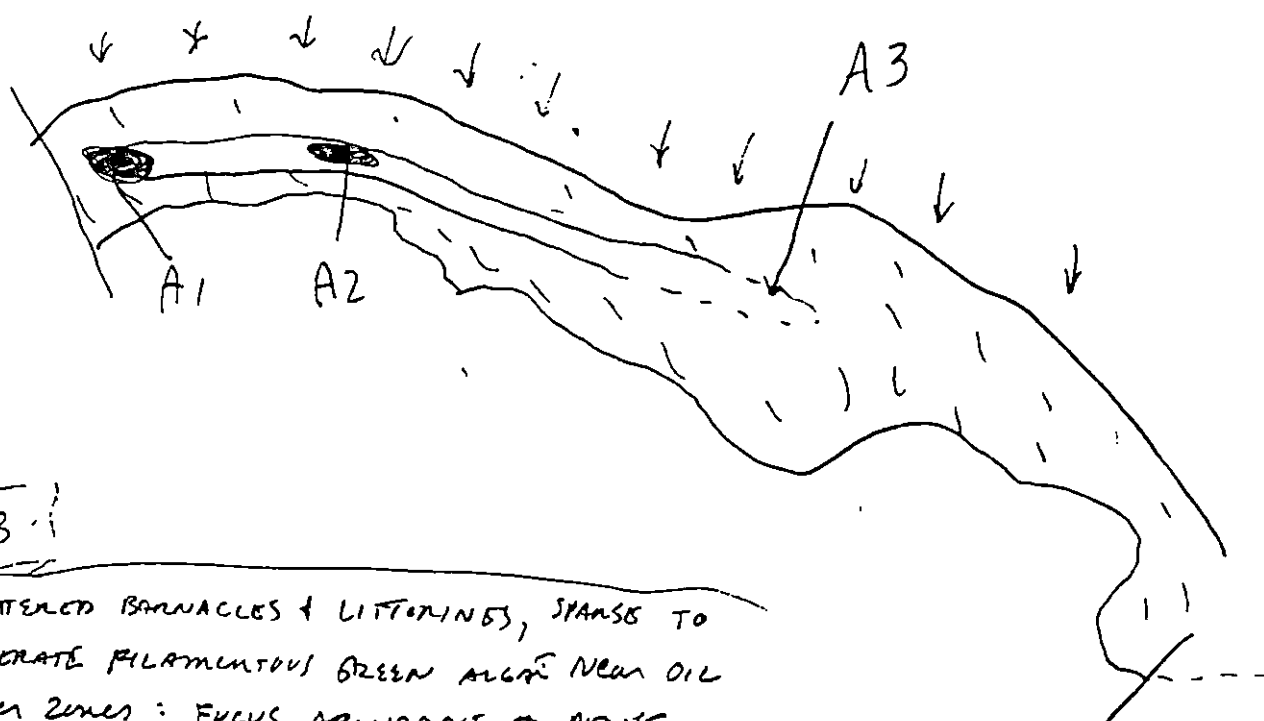
12 MAY 91

1717-1756 p

Legend

- ☒ Steep bedrock / angular boulders
- ☒ Vegetation

MR001-C



A1, A2, A3

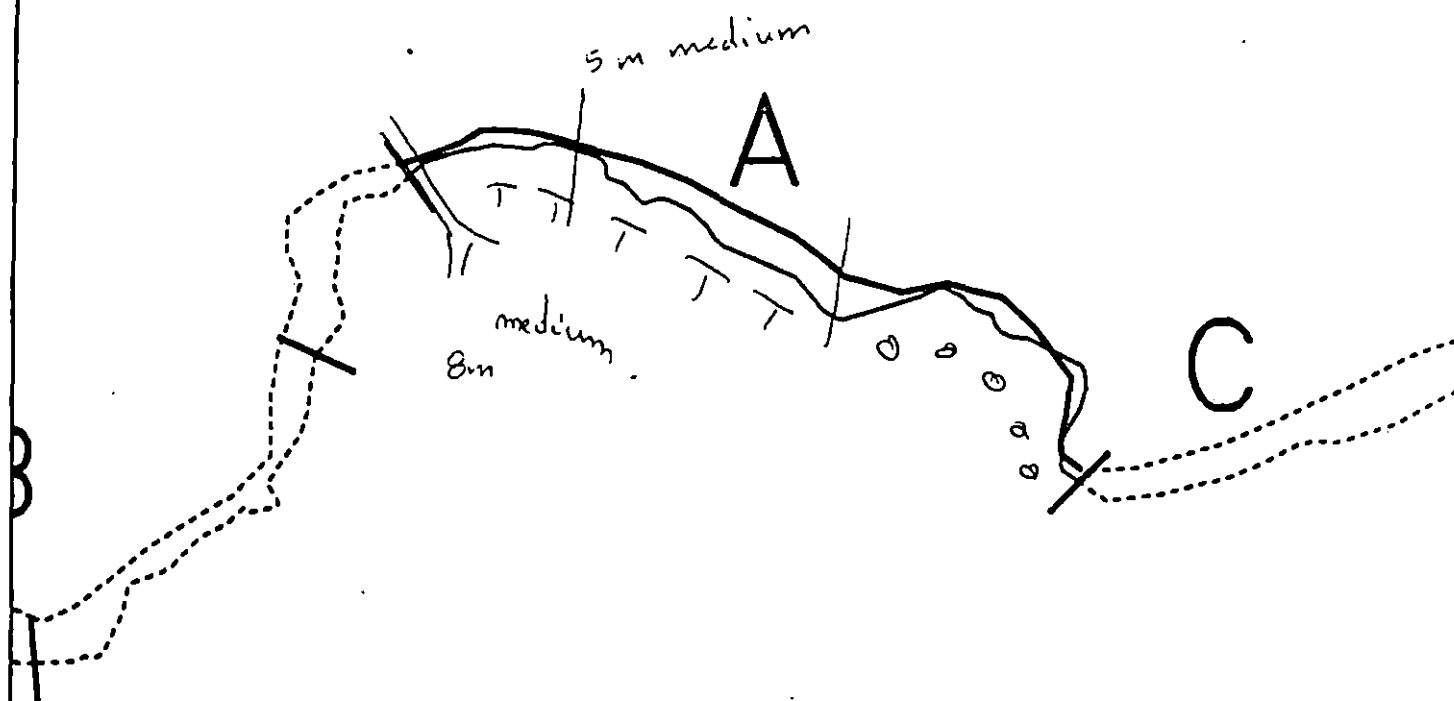
SCATTERED BARNACLES & LITTORINIDS, SPARSE TO MODERATE FILAMENTOUS GREEN ALGAE NEAR OIL LOWER ZONES: FUCUS ABUNDANT TO DENSE IN MID TO LOW SHORE. MYTILUS PATCHY BETWEEN BOULDERS & IN CREVICES, LOW ZONES WITH RED & BROWN ALGAE; THIS IS A HEALTHY INTERTIDAL ZONE. RECRUITMENT IS EVIDENT, IN VARYING DEGREES, FOR MOST SPECIES.

+

MRP

—

1



+

PY

+

—

XXXX
 ////

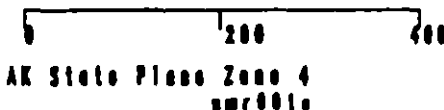
 TTTT
 0000

Wide
 Medium
 Narrow
 Very Light
 No Oil

MR001 C

ADEC Subsegment Length: 872m

METERS



Subdivision Field Map

Map Key: KENMR001C

Name: J. M. KempelDate: Aug 12/51

Date Entered:

1991 MAYSAP EVALUATION

SEGMENT: MR 001 **SUB:** B **REGION:** KEN **SURVEY DATE:** 5/12/91

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 _____

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT MR-1 SUBDIVISION B DATE May 12/91

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

aging within this subdivision would be very difficult to recover - ~~is~~ (at base of lg. B. & cv. ct. st.)

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/14/91☒ NTR

The oil remaining has a patchy to slash distribution. The ms is located around the shattered edges of boulders and in bed rock cracks. Recovery would be very low with trowels (cosmetic).

LANDMANAGER

NAME

Michael D. Tetreau OF NPS

SIGNATURE

Michael D. Tetreau☐ NTR

There is still mousse remaining in the interstitial spaces in the area adjacent to subdivision A, however this oil would be extremely difficult to recover. It is weathering very slowly. On the rocky point where most of the treatment was concentrated, there is very little oil remaining. The treatment in 1990 was very effective in removing the deeply pooled mousse at this site.

USCG/NOAA

NAME

CWO2 J. MC NATION

SIGNATURE

J. Mc Nation☒ NTR

very sparsely distributed in & around lg boulders. Some cleaned up by VECO crew. Not feasible environmentally or economically to consider for type A clean-up.

20744 Downer A. MacDonald

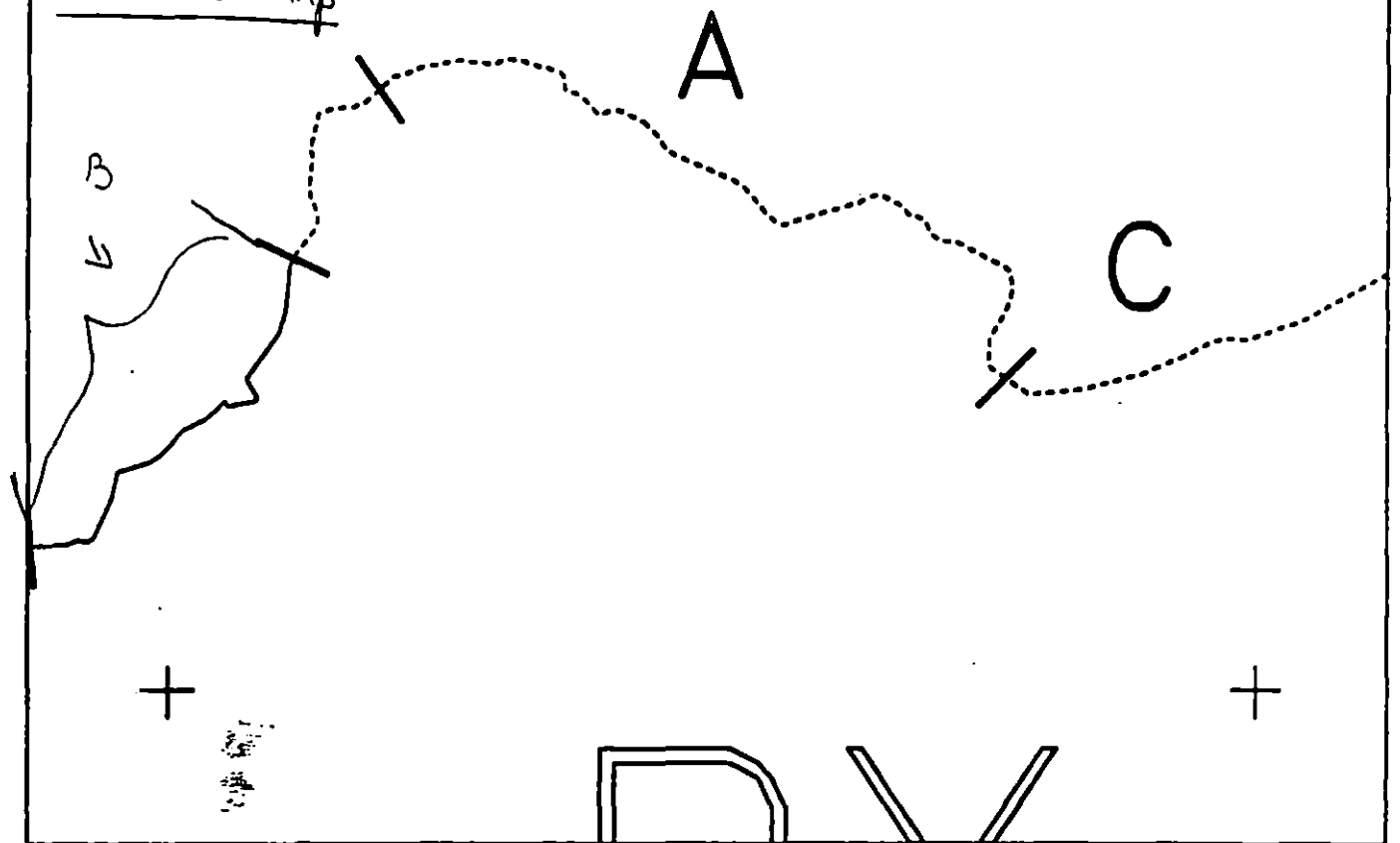
(Downer A. MacDonald)

PAGE 2 OF 9

revised 5.22 94

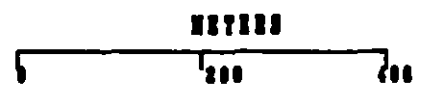
MR-1

Location Map



MR001 B

Subdivision Field Map
Map Key: KENMR001Bb
Name: Jim Sempels
Date: May 12/91

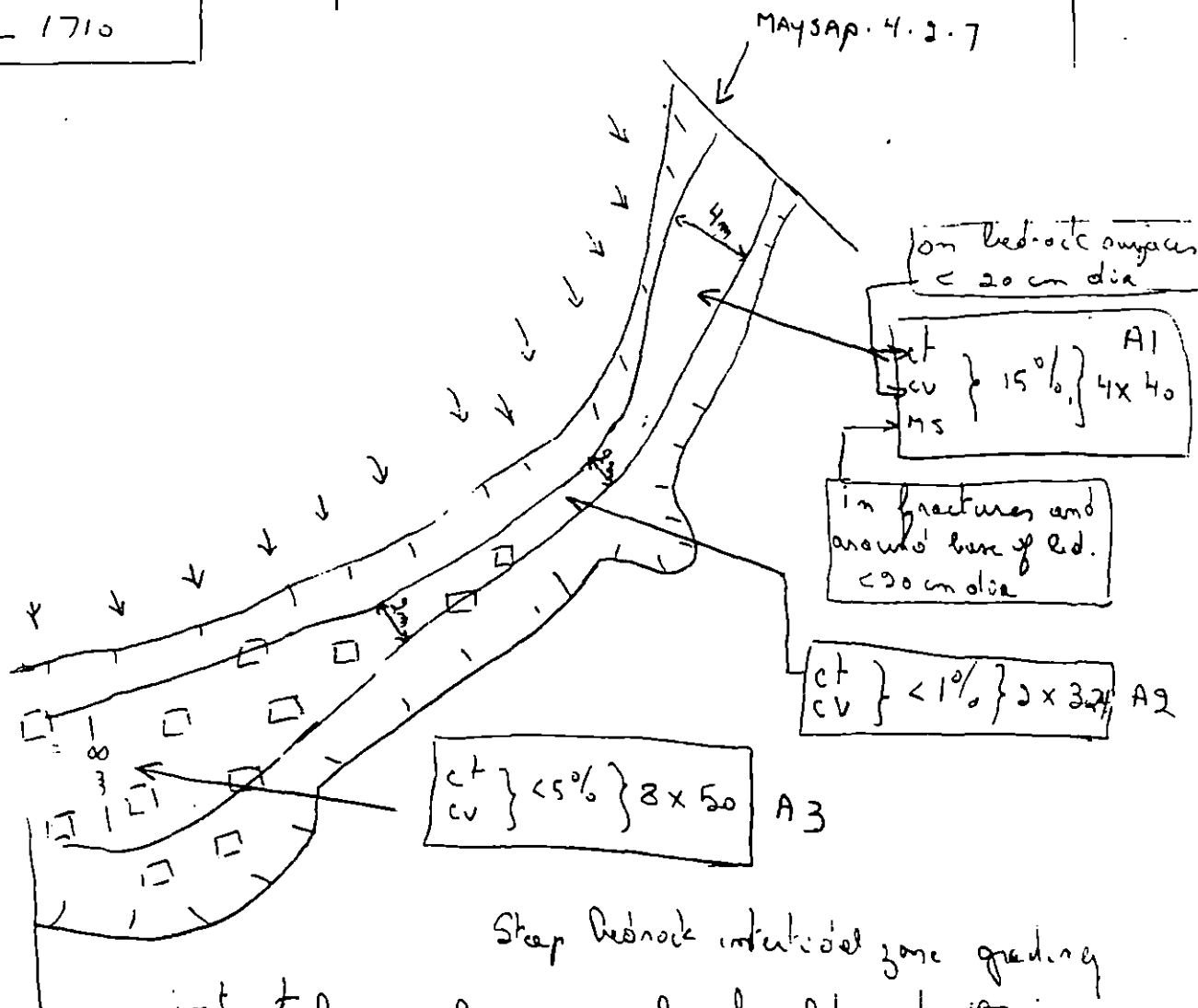


AK State Plane Zone 4
NAD83

Sketch Map
 MA.001.B
 Lm Samples
 MAY 12/91
 1649 - 1710

Legend
 ▽ Bedrock
 □ Boulder talus
 ▮ Vegetative Disturbance
 (Steep)

Meters
 0 40



Steep bedrock intertidal zone grading
 into talus of large angular boulders to the
 S.W. ct, cv, small on bedrock and boulder
 surfaces, also small (< 20 cm) in fractures and sheltered
 depressions.

Note width of beach not to scale. Average width of intertidal ~ 10 m.

reviewed 5/10/91
 REVIEWED 10 MAY
 revised 5.22 91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 12, 1991 1639 - 1712
SEGMENT #	MR001	TIDAL HEIGHT (Range)	+4.8 => +3.7
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This subdivision is composed primarily of high angle bedrock outcrops and cliffs, and boulder beaches. The biota are similar to MR001-A and are not particularly variable along the subdivision. Oiled locations throughout the segment are found in the upper intertidal zone. The biota along this segment appear to be healthy. Most species show evidence of growth or recent recruitment. No evidence of recent oil-related impacts are evident.

Biota are generally scarce at the tidal level of the oiled areas. Black lichen is sparsely distributed in this zone, and scattered limpets and barnacles are present. Littorines are moderately abundant in the vicinity of the oil, and, like limpets, are occasionally found directly on the oil. Fucus also is found near the oiled areas, and in a few cases, juveniles can be found directly in contact with oil.

Below the level of the oiling, the typical zonation continues. Filamentous green algae are abundant in the middle to high zone. Barnacles are moderate to dense, with few to moderate abundances of juveniles. Mussels form dense patches within crevices, and are present as distinct mussel beds on a few of the exposed headlands or boulder outcrops. Juvenile mussels are abundant under the Fucus beds in the middle intertidal zone. Barnacles are dense in scattered patches from the high to low intertidal, and are otherwise moderately abundant. Barnacle spat are not abundant, but are present in the middle to lower intertidal zone. The lowest intertidal was underwater during the survey, but is dominated by red and brown algae. Bull kelp is present in the subtidal at the western end of the subdivision.

Cleanup activities, if performed, will not adversely impact this intertidal zone. Hot water wash should not be used, so as to prevent disturbance to the Fucus beds.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	1	1	
Gulls/Kittiwakes	2	15	
Shorebirds			
Corvids			
Other Birds			
MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		River Otter	1
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED CO 16 MAY
Reviewed M.B. 5/16/91

MR001-A Biology Report, continued

Biota Tide Level: Supratidal High Medium Low Subtidal

Black Lichen	*****+---
Green Algae (Urospora)	-++*****+---+++++***
Barnacles (sparse)	---+***** + + + + +
Fucus	---+*****+*-*-+---+
Littorines/limpets	- - - - + * * + + * -
Mussels	-----+---+---+---+---
Brown Algae	+---+---+---+---+---+---+---
Red Algae	-----+*****-*-*-**
Oiled Areas	---+ - - + - -

Common Species Observed or Expected at MR001-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfeltia plicata, Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Endocladia muricata, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
5. Higher Plants
Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Ophlitaspongia pennata, Tethys sp.
2. Anemones
Anthopleura artemesia, Epiactis ritteri, Metridium senile, Urticina crassicornis
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete worms
Sylleridae
Alpheidae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Hemigrapsus oregonensis, Paguridae (hermit crabs),
 - d. Isopods - Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons
Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata.
Tonicella lineata,
 - b. Snails - Gastropods

Reviewed H.B. 5/10/91

Littorina sp. Natica clausa, N. lima

- c. Limpets
Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum. Siphonaria thersites
 - e. Mussels and Clams
Chlamys hastata, Modiolus modiolus, Mytilus edulis, Pododesmus cepio, Prototheca staminea
12. Echinoderms
- a. Brittle Stars - Ophiolus sp.. ?
 - b. Sea stars
Dermasterias imbricata, Leptasterias hexactis, Pisaster ochraceus, Pycnopoda helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.,
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
15. Fishes
Stichaeidae - Xiphister atropurpureus, X. mucosus

Reviewed M.B. 5/16/4

BIO SKETCH MAP

MR001-B

JP Barry

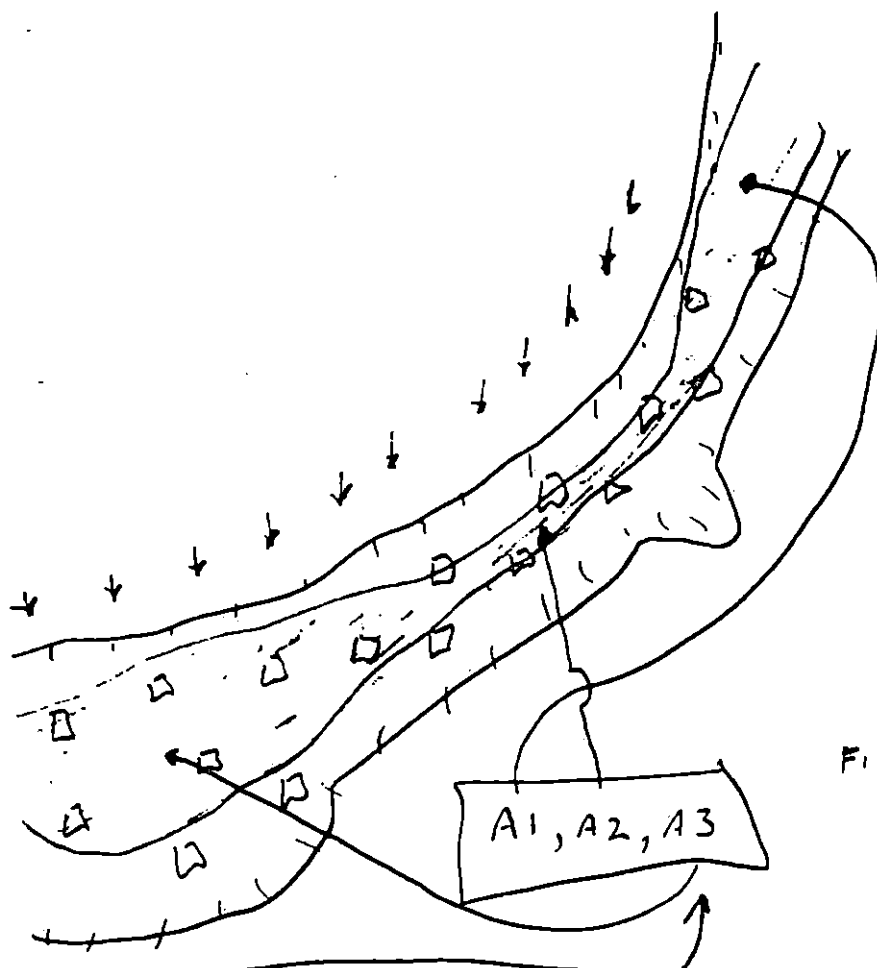
12 MAY 91

1649-1710

Bedrock

Boulders

Vegetated highbush.



FILAMENTOUS GREEN & BROWN ALGAE SPARSELY DISTRIBUTED AROUND OIL. SOME BLACK LICHEN. SCATTERED LITTORINES & LIMPETS IN OIL. LOWER ZONES PARTIALLY OVERLAP OILED AREAS, WITH FUCUS BECOMING ABUNDANT IN THE MID-SHORE. MYTILUS IS PRESENT & IN CREVICES AND UNDER THE FUCUS AS JUVENILES & SMALL ADULTS. LOWEST ZONE DOMINATED BY RED & BROWN ALGAE. THIS IS A HEALTHY INTERTIDAL COMMUNITY

Reviewed 5/16/91

M R

A

B

medium - 4φ m

very light

P

XXXX	Wide	MR001 B ADEC Subsegment Length: 414m METERS 0 200 400 AK State Plane Zone 4 amr001b		Subdivision Field Map
////	Medium			Map Key: KENMR001B
----	Narrow			Name: <u>JM Simpson</u>
TTTT	Very Light			Date: <u>May 13/01</u>
0000	No Oil			Date Entered:

SEGMENT: MR 001 SUB: C REGION: KEN SURVEY DATE: 5/12/91

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

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

SHPO Signature: Rachel Dean Dale Date: 5/24/91

FOSG

2

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 24 1991

FOSC APPROVAL DATE: 5/29/91

ADEC.

FOSC

EXXON

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

USCG

NOAA

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 14 SEGMENT MR-1 SUBDIVISION C DATE 5/12/91

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby☐ NTR ☒ TREATMENT RECOMMENDED -

MS - Suggest removal - manual - using trowels, pompoms -
The landmanagers comments pertaining to crew size are
applicable.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/14/91

☒ NTR The oil remaining has a patchy distribution. The
ms is located around the edges of the large boulders
and in the bedrock cracks. Trowels will be required
to recover the remaining ms. The actual percent recovery
will be low due to the size of the boulders (Cosmetic).

LANDMANAGER

NAME Michael D. Tetreau OF NPSSIGNATURE Michael D. Tetreau

☐ NTR oil in This subdivision is sparsely distributed. There is
some pooled mousse in crevices that is recoverable with a
trowel, however I do not feel that an entire crew is
warranted for work at This site. The pockets of recoverable
oil are few and far between.

USCG/NOAA

NAME CMDR J. Mc MAHONSIGNATURE J. Mc Mahon☐ NTR

very little in segment, VECO crew picked
up available TP/AP.

NOAA / DONALD A. MacDONALD - AS

Donald A. Macdonald
Assistant Manager

PAGE 2 OF 9

DATE MAY 1 12 / 91

ENERGY LEVEL: ☐ H ☒ M ☐ L

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

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

EST. OIL CATEGORY LENGTH: W m M 13 m N m VL 400 m NO 459 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

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

See map.

REVISED CD 18 MAY

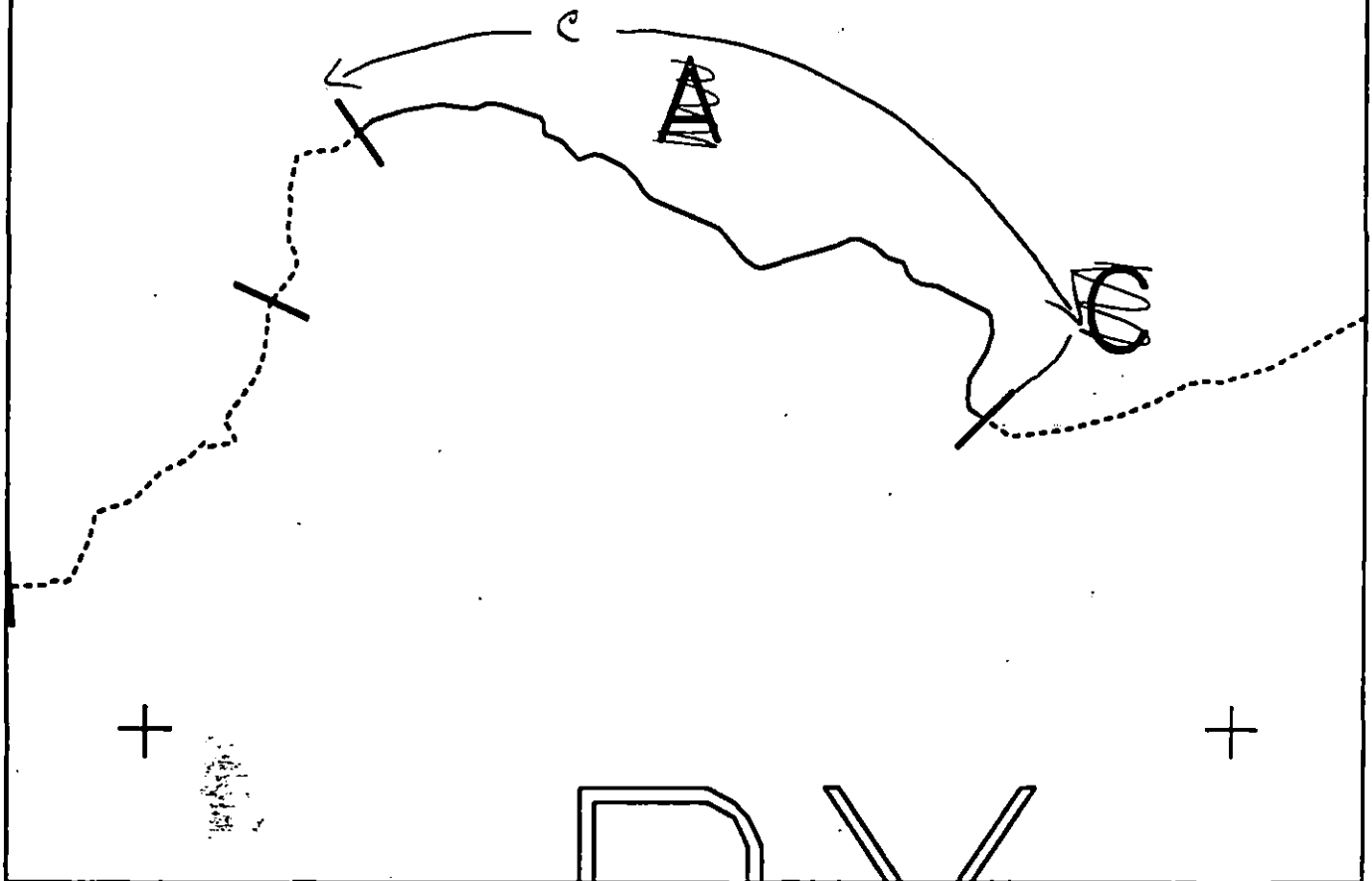
revised 5/16/91 KG



Location Map



MR-1



MR001 C

Subdivision Field Map

Map Key: KENMB001C6

Name: J M Sumpster

Date: MAY 12/01



METERS



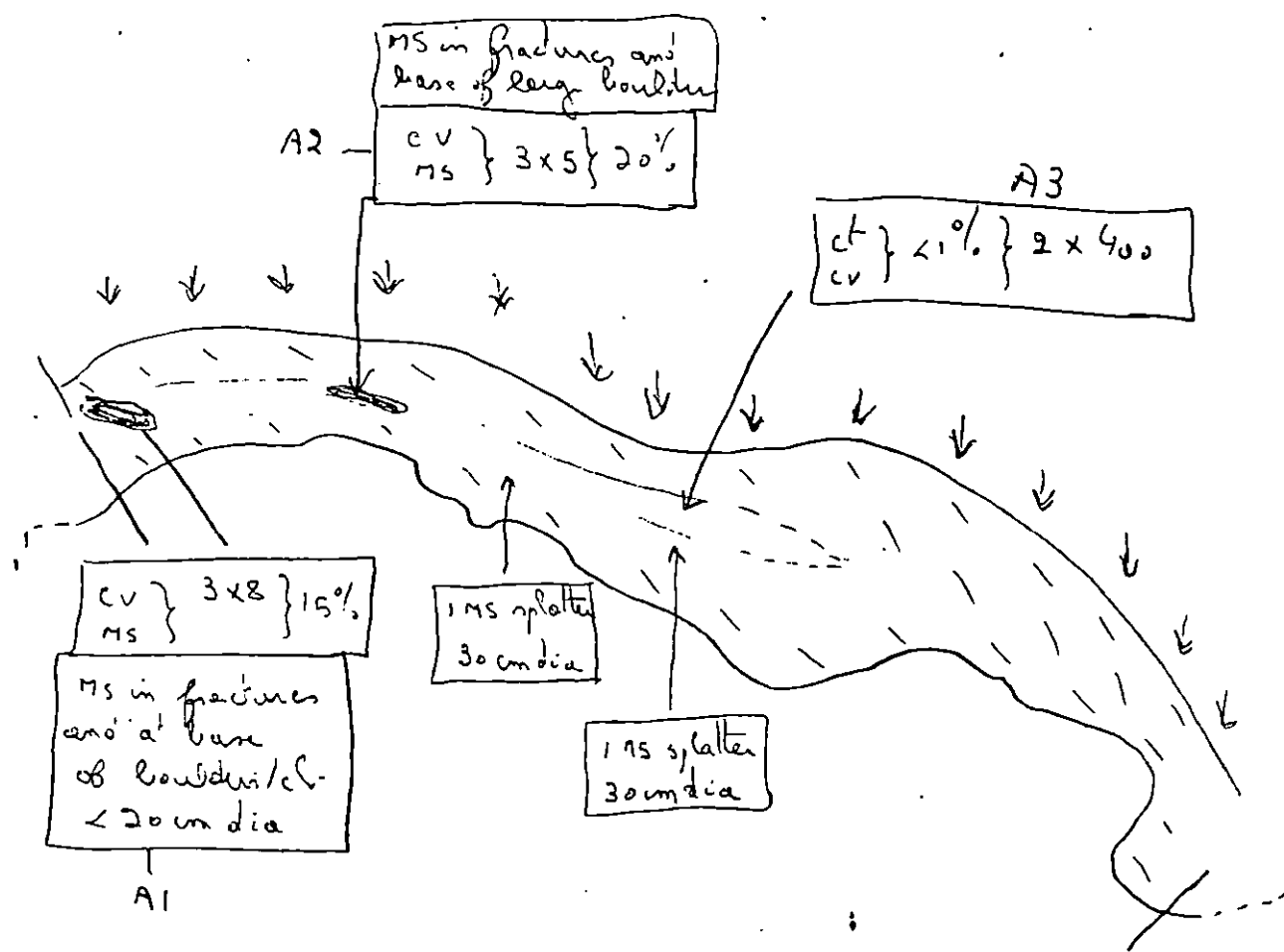
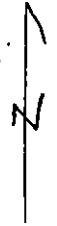
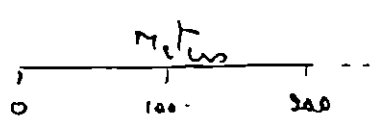
AK State Plane Zone 4
NAD83

Og Sketch Map

MR 001-C
of 7 Samples
MAY 12/91
1717R - 1756R.

Legend

-  Step bedrock
occasional angular
boulder / clb
-  Step vegetated
linterland.



Step bedrock shoreline, sometimes with angular boulder/cobble very short talus.

Note: Awn shore distances not to scale. Average intertidal width: 20m.

Reviewed 5/16/91 LG
REVIEWED CD 16 MAY

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 12, 1991 1721 - 1800
SEGMENT #	MR001	TIDAL HEIGHT (Range)	+3.4 => +2.4
SUBDIVISION	C	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This subdivision is composed primarily of high angle bedrock outcrops and cliffs, and boulder beaches. The biota are similar to MR001-A/B and are somewhat similar throughout the subdivision. The biota along this segment appear to be healthy. Most species show evidence of growth or recent recruitment.

Biota are generally scarce at the tidal level of the oiled areas. Black lichen is sparsely distributed in this zone, with scattered limpets and barnacles. Littorines and limpets are moderately abundant in the vicinity of the oil, and occasionally are directly on oil. Fucus also is found near the oiled areas, and in a few cases, juveniles can be found directly in contact with oil.

Below the level of the oiled substrata filamentous green algae are abundant in the middle to high zone. Barnacles are moderate to dense, with few to moderate abundances of juveniles. Mussels form dense patches within crevices, and are present as distinct mussel beds on a few of the exposed headlands or boulder outcrops. Juvenile mussels are abundant under the Fucus beds in the middle intertidal zone. Barnacles are dense in scattered patches from the high to low intertidal, and are otherwise moderately abundant. Barnacle spat are not abundant, but are present in the middle to lower intertidal zone. The lowest intertidal was underwater during the survey, but is dominated by red and brown algae. Bull kelp is present in the subtidal at several locations along the subdivision.

Cleanup activities, if performed, will not adversely impact this intertidal zone. Hot water wash should not be used, so as to prevent disturbance to the Fucus beds.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	1	3	
Gulls/Kittiwakes	1	5	
Shorebirds			
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

REVIEWED CB 16 MAY
Reviewed M.B. 5/16/91

MR001-A Biology Report, continued

Biota Tide Level: Supratidal High Medium Low Subtidal

Black Lichen	*****+--
Green Algae (Urospora)	--++++-----+++++***
Barnacles (sparse)	-----+*** + + + + +
Fucus	-----+***+*-*+---+
Littorines/limpets	- - - - -+*** + + * -
Mussels	-----***-+---+---+
Brown Algae	-----+---+---+***+***
Red Algae	-----+***+*-*-*
Oiled Areas	-+- -+ --

Common Species Observed or Expected at MR001-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfelia plicata, Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Endocladia muricata, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
5. Higher Plants
Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Ophlitaspongia pennata, Tethys sp.
2. Anemones
Anthopleura artemesia, Epiactis ritteri, Metridium senile, Urticina crassicornis
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete worms
Glyceridae
Nephtyidae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Hemigrapsus oregonensis, Paguridae (hermit crabs),
 - d. Isopods - Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons
Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods

Reviewed M.B. 5/16/41

- c. Limpets
Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
- e. Mussels and Clams
Chlamys hastata, Modiolus modiolus, Mytilus edulis, Pododesmus cepio, Prototheca staminea
- 12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea stars
Dermasterias imbricata, Leptasterias hexactis, Pisaster ochraceus, Pycnopoda helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.,
 - d. Urchins - Strongylocentrotus droebachiensis
- 13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
- 15. Fishes
Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP

MR001-C

JR Barry

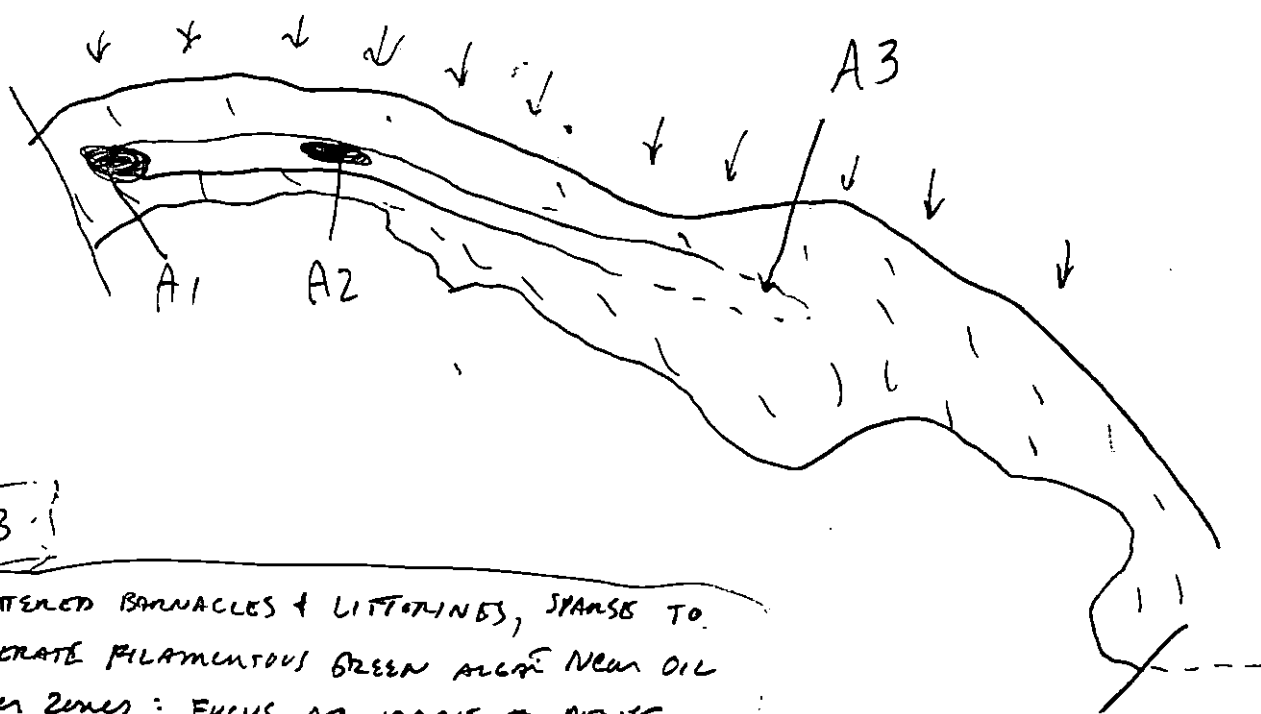
12 MAY 91

1717-1756 P

Legend

- ☒ Steep bedrock / angular boulders
- ☒ Vegetation

MR001-C 1/9



A1, A2, A3

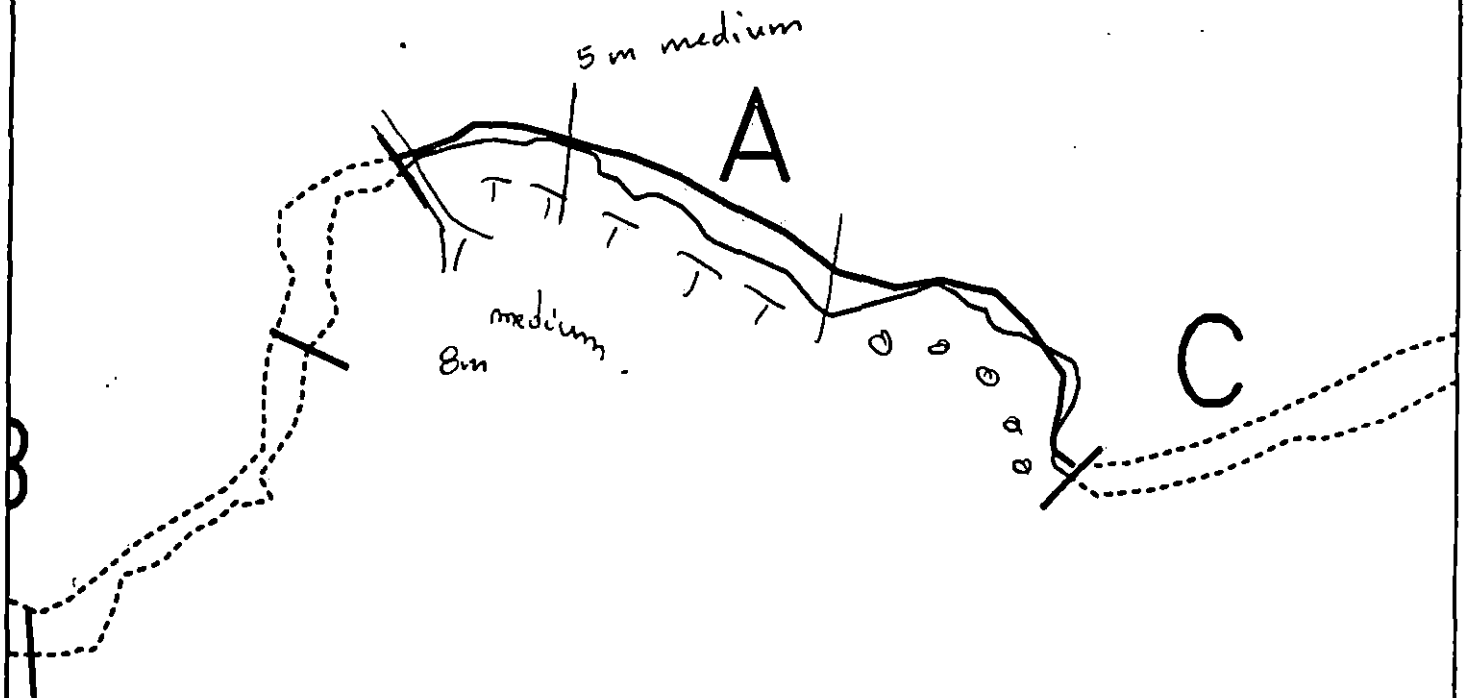
SCATTERED BARNACLES + LITTORINES, SPARSE TO MODERATE FILAMENTOUS GREEN ALGAE NEAR OIL LOWER ZONES: FULUS ABUNDANT TO DENSE IN MID TO LOW SHORE. MYTILUS PATCHY BETWEEN BOULDERS & IN CREVICES, LOW ZONES WITH RED & BROWN ALGAE: THIS IS A HEALTHY INTERTIDAL ZONE. RECRUITMENT IS EVIDENT, IN VARYING DEGREES, FOR MOST SPECIES.

Reviewed M.B. 5/16/91

+

MRP

-1



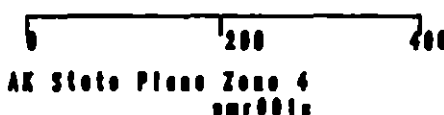
+

PY

+

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

MR001 C
 ADEC Subsegment Length: 872m
 METERS



Subdivision Field Map
 Map Key: KENMR001C
 Name: J. M. Samples
 Date: May 12/91
 Date Entered:

1991 MAYSAP EVALUATION

SEGMENT: MR 001 SUB: A REGION: KEN SURVEY DATE: 5/12/91

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 Doe Date: 5/24/91

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 24 1991

FOSC APPROVAL DATE: 5/29/91

ADEC

FOSC

EXXON

USCG

NOAA

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT MR-1 SUBDIVISION A DATE 1/1/91

ADEC

NAME CLARA S. Crosby SIGNATURE Clara S. Crosby

☐ NTR ☒ Treatment Recommended.

Manual Removal of Asphalt & MS. The asphalt is fairly well defined & easily removed - There are areas where the asphalt has been covered by a thin layer < 2 cm of clean sediment - & depth of penetration = 5 cm. pit #1. These 'beams' should be followed & removed -

The survey was hampered slightly by the sensitivities of the area & there is the possibility of more oiling being on site than was actually documented (in this survey).

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/14/91

☐ NTR The 10 team members and 2 archeologists I feel adequately recorded the remaining subsurface and surface oiling. The MS, CV & CT has a patchy distribution. The moose is located around edges of boulders and in bed rock cracks. The Asphalt/tar mat is well defined. Any work in this area will be very time consuming due to the constraints

LANDMANAGER

NAME Michael P. Tetreau OF NPS SIGNATURE Michael P. Tetreau

☐ NTR The distribution of oil is the same as in 1990 however the amount of oil present is much less. The only recoverable oil remaining is in the area of the asphalt/tar mat where some patches were missed in 1990 and some SOR has reformed into asphalt just below the surface sediments. The treatment in 1990 appears to have been very effective in removing the pooled oil from the crevices.

USCG/NOAA

NAME JOE J. MCMAHON SIGNATURE Joe McMahon

☒ NTR very sporadic distribution of TP & AP. Much taken off the segments by Eco crew.

NOAA/ DONALD A. McMAHON
some asphalt left in place

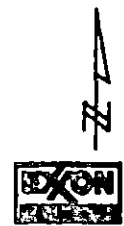
Donald A. McMahon

PAGE 2 OF 1

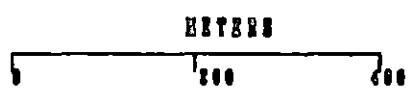
revised 5.16.91 GY
REVISED (E) 16 MAY 91

Location Map

MR-1



MR001 A



AK State Plane Zone 4
NAD83

Subdivision Field Map
Map Key: KENMR001ab
Name: J. M. Sampson
Date: May 12/91

revised 5.16.91 ag

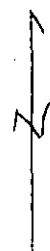
Og Sketch Map

MAR 01. A

47 Samples

MAY 12/91

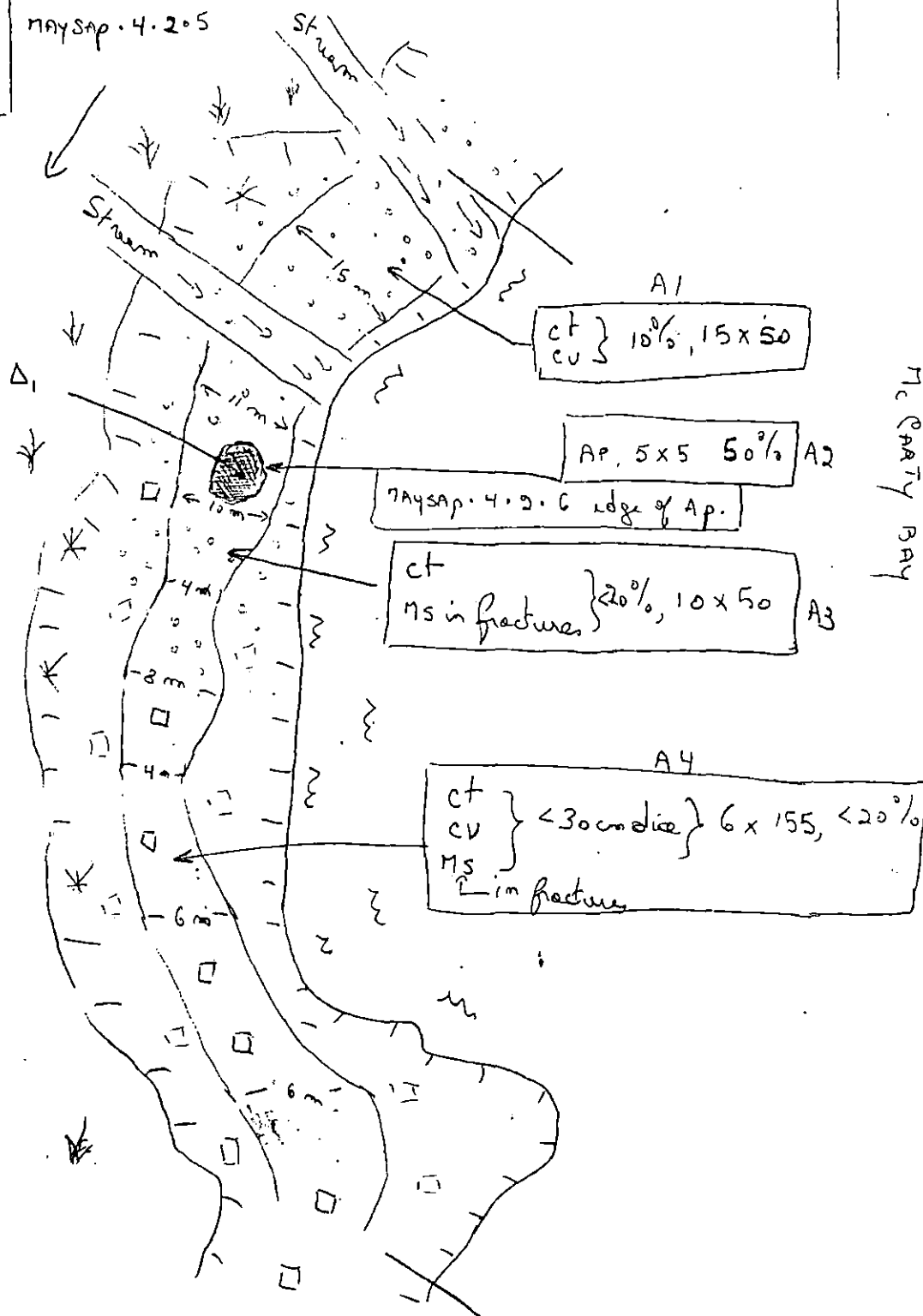
1607 R - 1648 R

Meters
0 40 80

Legend

- [*] dead trees
- [□] Bedrock
- [▽] vegetated bedrock
- [□] Angular ls/ds, Bedrock shales
- [□] cb/bl/sd

MAYSAP. 4.2.5



Mc PATTY Bay

Note: width of intertidal zone not at scale. Average width of intertidal 15.20 m.

Reviewed 5.16.91 4
REVIEWED CD 16 MAY 91

MR 1-A

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 12, 1991 1619 - 1639
SEGMENT #	HR001	TIDAL HEIGHT (Range)	+5.5 => +4.8
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This short subdivision is located on a protected shore

The shore varies from steep sloped bedrock outcrops to medium sloped boulder and cobble shores. Several types of oil categories were present along this shore.

The biota vary from very sparse or absent in the extreme upper zones to a fairly dense cover of Fucus, barnacles, and other species in the middle zone. The tide was not particularly low during the survey and the low intertidal zone was not observed. The distribution of biota was similar along the entire subdivision.

Location I - (A1 - A4)

This site. area, with patchy asphalt and HSOR. Some biota are present directly upon the oil. These include filamentous green algae (Urospora ?), occasional limpets and littorine snails, as well as a few juvenile barnacles. Even still, there is little biota at the upper extent of the oiled area, due to its position in the high tidal range. Near the lower part of the upper intertidal zone, the oiling is less apparent, but present. At this location the oiled sites also have similar biota as described above, but in somewhat higher densities. Fucus is sparse in this slightly lower zone.

Biota at tidal levels below, but near the oiled area are denser than in the upper intertidal. The middle zone has sparse to moderate cover of Fucus, with young mussels found attached under the Fucus cover, either to bedrock or Fucus. Barnacles (Balanus) are moderately to sparsely abundant within the Fucus zone, and somewhat more abundant on bedrock outcrops where Fucus is not present. Branched red algae (Endocladia or Gigartina

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	2	3	
Gulls/Kittiwakes	2	5	
Shorebirds			
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

REVISED 16 MAY
Revised M.B. 5/16/91

MR001-A Biology Report, continued

sp.?) are abundant in a zone slightly above the mussels zone, with moderate to dense abundance of littorine snails and limpets.

Biota Tide Level: Supratidal High Medium Low Subtidal

Black Lichen	*****+---
Green Algae (Urospora)	-++*****+---+++++***
Barnacles (sparse)	---+***** + + + + +
Fucus	-+++*****+*-+---+
Littorines/limpets	- - - - + * * + + * -
Mussels	-----+---+---+---+---
Brown Algae	+---+---+---+---+***
Red Algae	-----+*****-*-***

Oiled Areas -+++- + +-+ - --

Clean up activities on this beach, if performed, will have a nearly negligible impact on the present biota, unless methods more invasive or toxic than manual cleanup are used.

Common Species Observed or Expected at MR001-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfeltia plicata, Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Endocladia muricata,, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
5. Higher Plants
Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Ophlitaspongia pennata, Tethys sp.
2. Anemones
Anthopleura artemesia, Epiactis ritteri, Metridium senile, Urticina crassicornis
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete worms
Glyceridae
Nepthyidae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Hemigrapsus oregonensis, Paguridae (hermit crabs),
 - d. Isopods - Idotea wosnesenskii, Gnorimorsphaeroma oregonensis

Reviewed M.B. 5/16/91

11. Mollusca

- a. Chitons
Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata,
Tonicella lineata.
- b. Snails - Gastropods
Littorina sp. Natica clausa. N. lima
- c. Limpets
Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata, T.
persona, T. scutum, Siphonaria thersites
- e. Mussels and Clams
Chlamys hastata, Modiolus modiolus, Mytilus edulis, Pododesmus cepio,
Prototheca staminea

12. Echinoderms

- a. Brittle Stars - Ophiolus sp., ?
- b. Sea stars
Dermasterias imbricata, Leptasterias hexactis, Pisaster ochraceus,
Pycnopoda helianthoides, Solaster sp.
- c. Sea Cucumbers - Holothurians - Eupentacta sp.,
- d. Urchins - Strongylocentrotus droebachiensis

13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.

15. Fishes

Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP

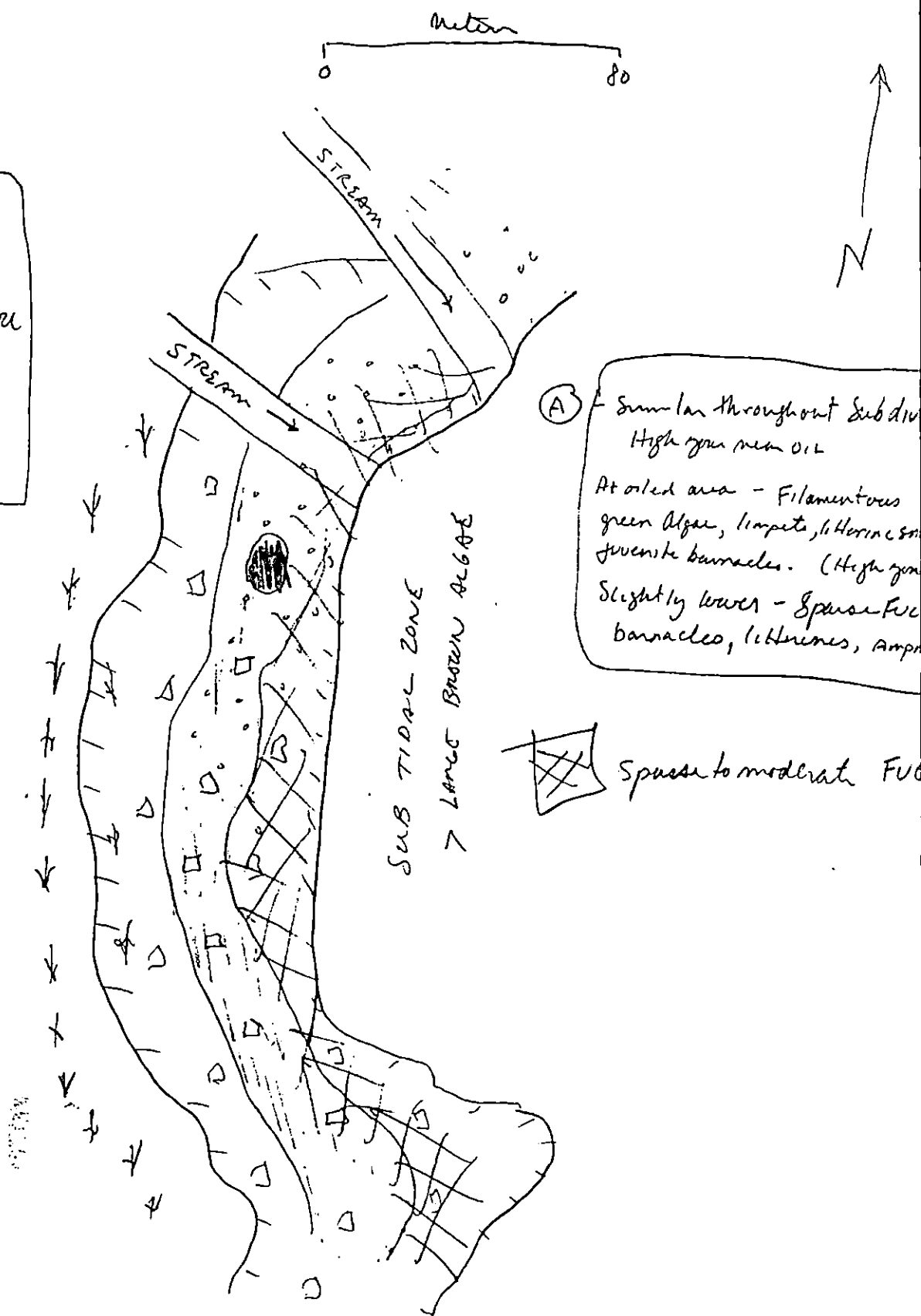
MR001-A

JIP BARRY

12 May 1991

1607 - 1648h

-  Dead trees
-  Bedrock
-  Vegetated Backshore
-  Angular bd/cb
bedrock
-  Cb/bd/ss.



A

B

medium

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

M R O O 1 A

ADEC Subsegment Length: 260m

METERS

AK State Plane Zone 4
amr001a



Subdivision Field Map

Map Key: KENH001A

Nome: A.M. Sempels

Date: 5.12.1991

Data Entered:

reviewed 5.16.91 qu
REVIEWED CA 16 MAY 0

1991 MAYSAP EVALUATION

SEGMENT: MR 001 SUB: C REGION: KEN SURVEY DATE: 5/12/91

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 Dale Date: 5/24/91

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 24 1991

FOSC APPROVAL DATE: 5/29/91

ADEC

FOSC

EXXON

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

USCG

NOAA

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT MR-1 SUBDIVISION C DATE 5/12/91

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby☐ NTR ☒ TREATMENT RECOMMENDED -

MS - Suggest removal - manual - using trowels, pompoms -
The landmanagers comments pertaining to crew size are applicable.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/14/91

☒ NTR The oil remaining has a patchy distribution. The ms is located around the edges of the large boulders and in the bedrock cracks. Trowels will be required to recover the remaining ms. The actual percent recovery will be low due to the size of the boulders (Cosmetic).

LANDMANAGER

NAME Michael D. Tetreau OF NPS SIGNATURE Michael D. Tetreau

☐ NTR Oil in This subdivision is sparsely distributed. There is some pooled mousse in crevices that is recoverable with a trowel, however I do not feel that an entire crew is warranted for work at This site. The pockets of recoverable oil are few and far between.

USCG/NOAA

NAME CWO2 J. Mc Mathen SIGNATURE J. Mc Mathen

☐ NTR very little in segment, VECO crew picked up available TP/AP -

NOAA / DONALD A. MACDONALD - AS

Donald A. MacDonald

PAGE 2 OF 9

DATE MAY 1 12 191

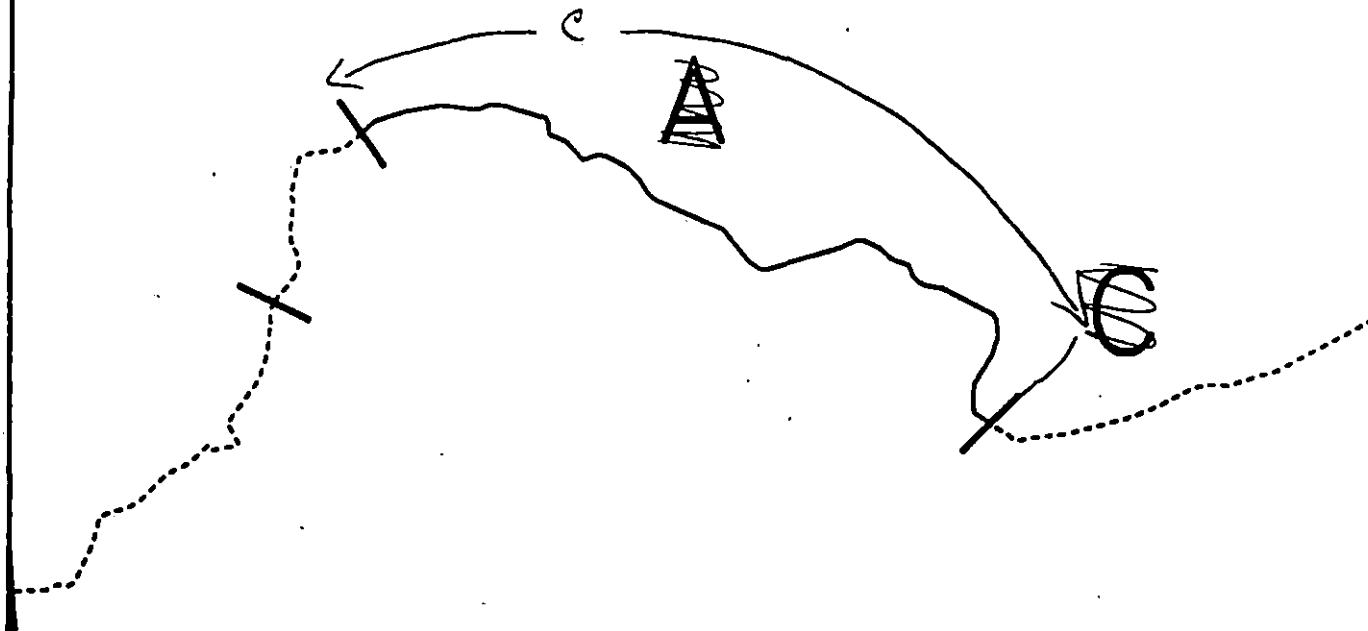
REVISED CD 18 MAY
revised 5/16/91 KG



Location Map



MR-1



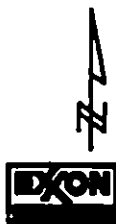
MR001 C

Subdivision Field Map

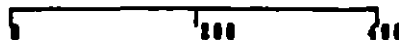
Map Key: KENMR001C6

Name: JM Sample

Date: MAY 12/91

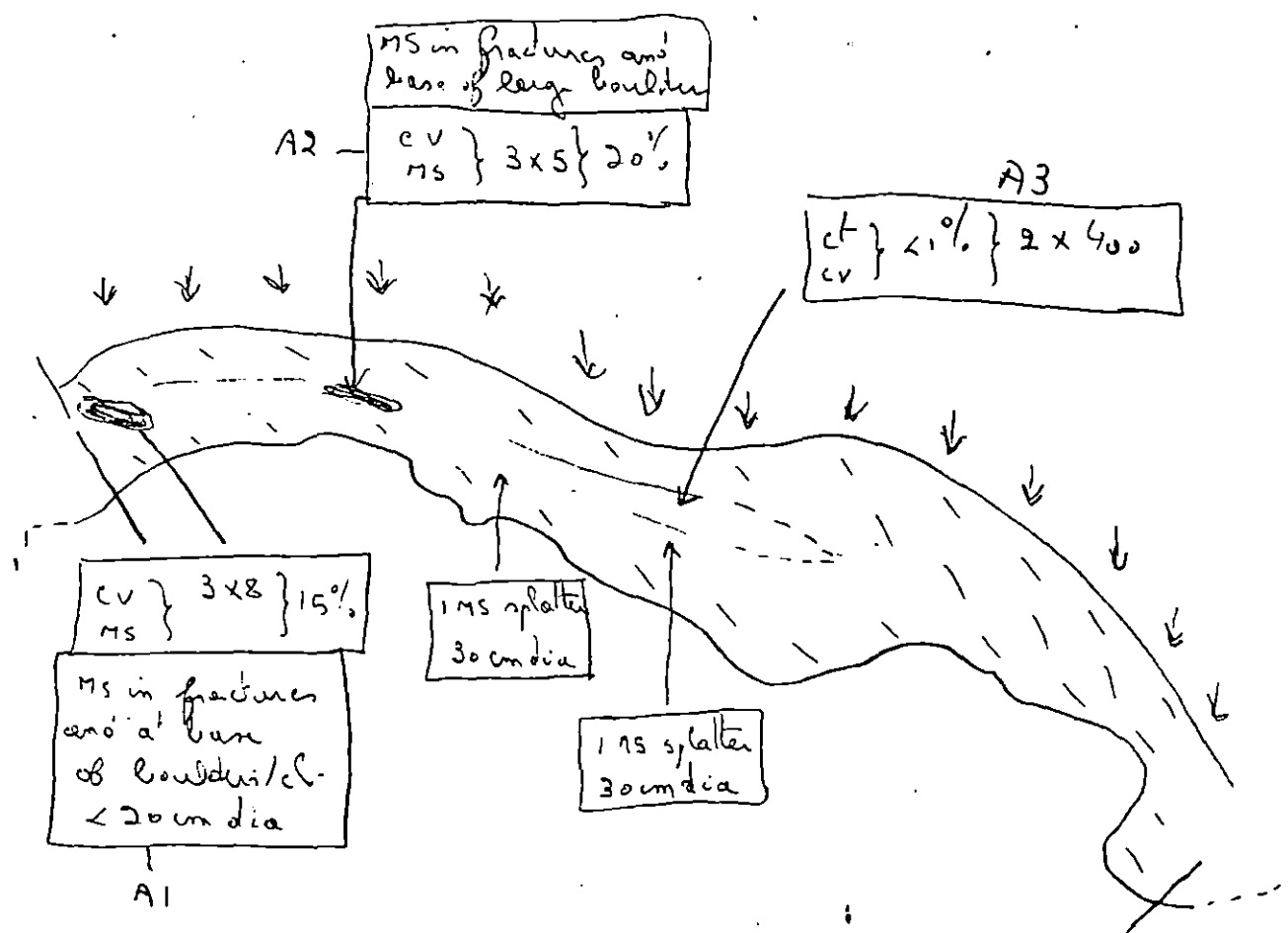


METERS



AK State Plane Zone 4
NAD83

Og Sketch Map	Legend	
MR 001.2	Steep bedrock	
17 Samples MAY 12/91 1717 R - 1756 R.	occasional angular boulder / cl	
	Steep vegetated hinterland.	



Steep bedrock shoreline, sometimes with angular boulder. Cobble very short talus.

Note: Aeronautical distances not to scale. Average intertidal width: 20 m.

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 12, 1991 1721 - 1800
SEGMENT #	MR001	TIDAL HEIGHT (Range)	+3.4 => +2.4
SUBDIVISION	C	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This subdivision is composed primarily of high angle bedrock outcrops and cliffs, and boulder beaches. The biota are similar to MR001-A/B and are somewhat similar throughout the subdivision. The biota along this segment appear to be healthy. Most species show evidence of growth or recent recruitment.

Biota are generally scarce at the tidal level of the oiled areas. Black lichen is sparsely distributed in this zone, with scattered limpets and barnacles. Littorines and limpets are moderately abundant in the vicinity of the oil, and occasionally are directly on oil. Fucus also is found near the oiled areas, and in a few cases, juveniles can be found directly in contact with oil.

Below the level of the oiled substrata filamentous green algae are abundant in the middle to high zone. Barnacles are moderate to dense, with few to moderate abundances of juveniles. Mussels form dense patches within crevices, and are present as distinct mussels beds on a few of the exposed headlands or boulder outcrops. Juvenile mussels are abundant under the Fucus beds in the middle intertidal zone. Barnacles are dense in scattered patches from the high to low intertidal, and are otherwise moderately abundant. Barnacle spat are not abundant, but are present in the middle to lower intertidal zone. The lowest intertidal was underwater during the survey, but is dominated by red and brown algae. Bull kelp is present in the subtidal at several locations along the subdivision.

Cleanup activities, if performed, will not adversely impact this intertidal zone. Hot water wash should not be used, so as to prevent disturbance to the Fucus beds.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	1	3	
Gulls/Kittiwakes	1	5	
Shorebirds			
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

REVIEWED CB 16 MAY
Reviewed M.B. 5/16/91

MR001-A Biology Report, continued

Biota Tide Level: Supratidal High Medium Low Subtidal

Black Lichen	*****+--	
Green Algae (Urospora)		--++++-----+++++***
Barnacles (sparse)		---++++** + + + + +
Fucus		-+*****+*-+---+
Littorines/limpets		- - - - -+*** + + * -
Mussels		-----***-+---+---+
Brown Algae		---+---+---+---+***
Red Algae		-----+*****-*-**
Oiled Areas	-+ -+ --	

Common Species Observed or Expected at MR001-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfelia plicata, Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Endocladia muricata, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
5. Higher Plants
Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Ophlitaspongia pennata, Tethys sp.
2. Anemones
Anthopleura artemesia, Epiactis ritteri, Metridium senile, Urticina crassicornis
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemeritean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete worms
Glyceridae
Nepthyidae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Hemigrapsus oregonensis, Paguridae (hermit crabs),
 - d. Isopods - Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons
Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods

Reviewed M.B. 5/16/74

- c. Limpets
Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
- e. Mussels and Clams
Chlamys hastata, Modiolus modiolus, Mytilus edulis, Pododesmus cepio, Prototheca staminea
- 12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea stars
Dermasterias imbricata, Leptasterias hexactis, Pisaster ochraceus, Pycnopoda helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.,
 - d. Urchins - Strongylocentrotus droebachiensis
- 13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
- 15. Fishes
Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP

MR001-C

JR BARRY

12 MAY 91

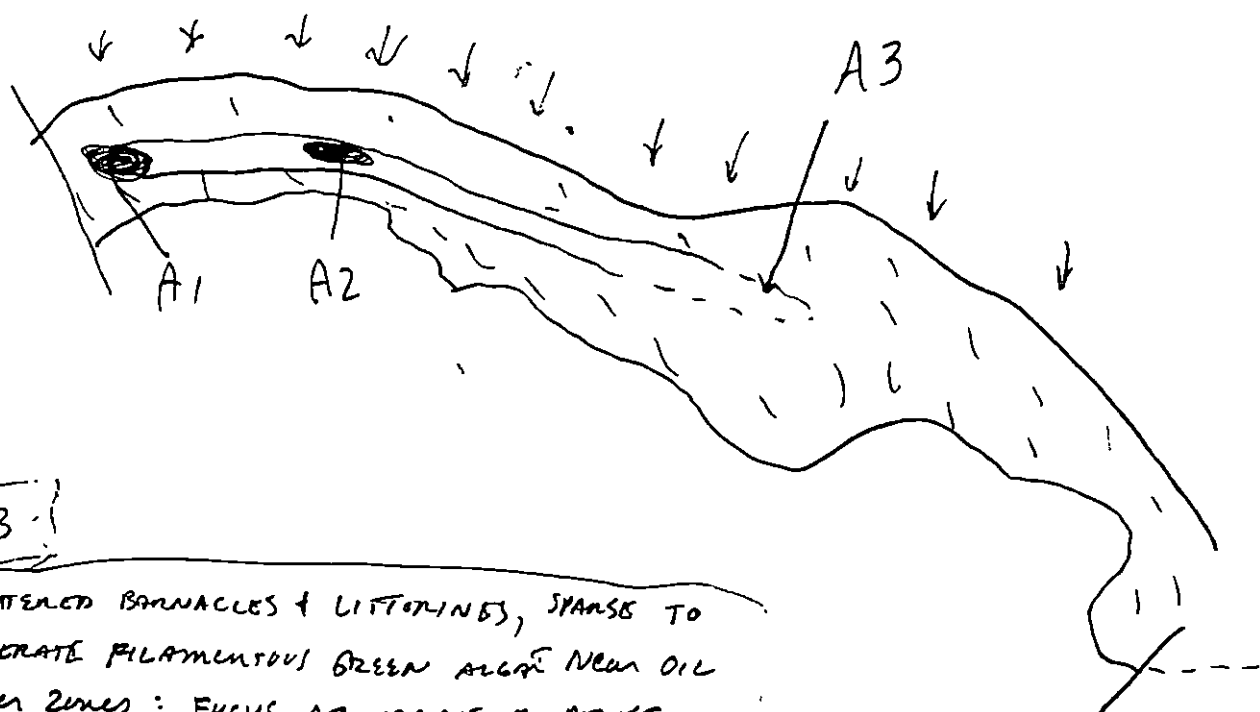
1717-1756 p

Legend

▨ Steep bedrock / angular boulders

▨ Vegetation

MR001-C 7/9



A1, A2, A3

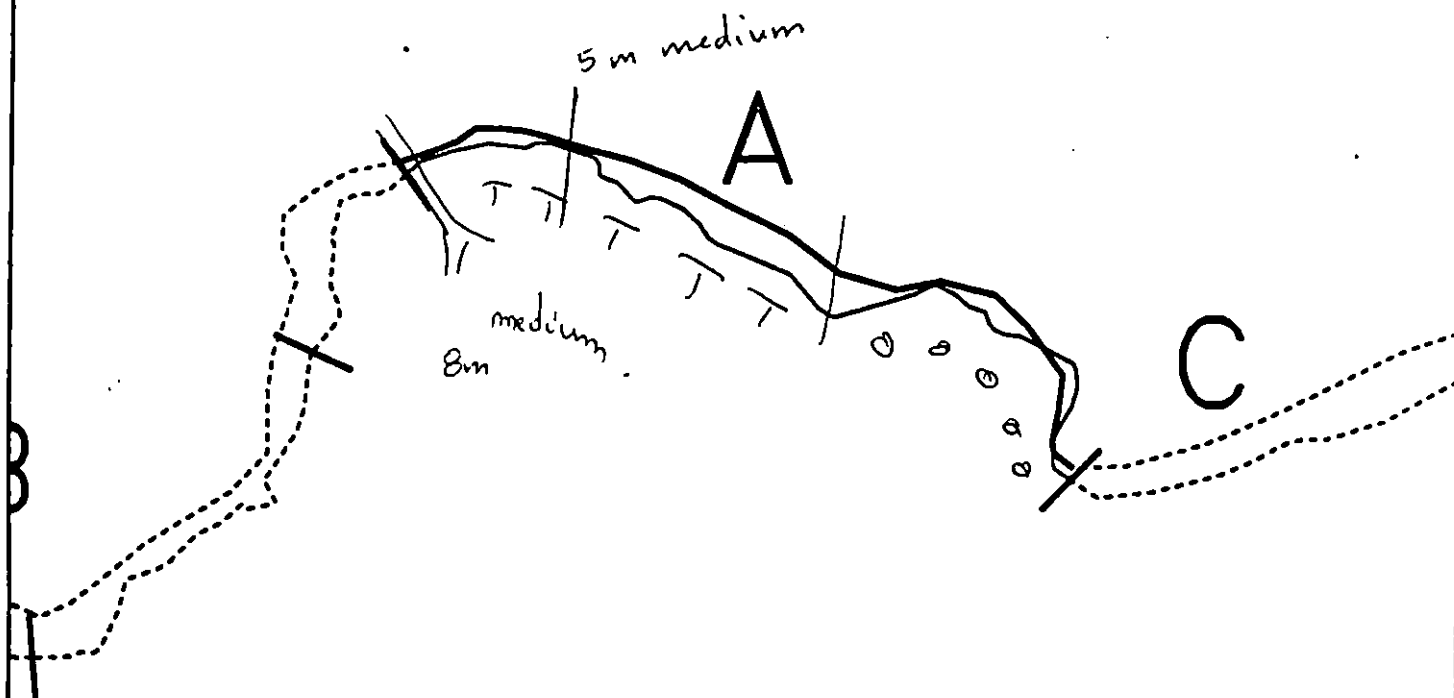
SCATTERED BARNACLES + LITTORINIDS, SPARSE TO MODERATE FILAMENTOUS GREEN ALGAE NEAR OIL LOWER ZONES: FUCUS ABUNDANT TO DENSE IN MID TO LOW SHORE. MYTILUS PATCHY BETWEEN BOULDERS & IN CREVICES, LOW ZONES WITH RED + BROWN ALGAE: THIS IS A HEALTHY INTERTIDAL ZONE. RECRUITMENT IS EVIDENT, IN VARYING DEGREES, FOR MOST SPECIES.

Reviewed M.B. 5/16/91

+

MR

-1



+

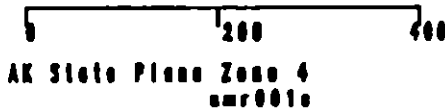
P

Y

+

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

MR001 C
ADEC Subsegment Length: 872m
METERS



Subdivision Field Map
Map Key: KENMR001C
Name: J M Samples
Date: May 12/91
Data Entered:

ASAP TAG REVIEW SHEET

Segment: MR0014 Subd: A Site: 1

Date
PRE-Review 17 Aug 90

Priority For Addressing In 1990

☒ HIGH ☐ MEDIUM ☐ LOW ☐ NTR

Treatment
Recommended:

SPUT WASH, M/P
- Pool oil - mouse - SOR
Low Wake expost

Priority Site For Reassessment In 1991

YES/ NO YES/ NO YES/ NO YES/ NO
☒ CG ☐ ☒ ADEC ☐ ☒ EXXON ☐ ☒ LAND MGR ☐

TAG 22 AUG

Pickup pooled oil & custombar
w/ARCH o/s (MED)

ASAP FOLLOWUP RECOMMENDATIONS

Segment: ASI MR 1 Subd.: 17 Site: 1 Date: Aug 18 1990

Conditions Observed: Partial incinerator chimney mouse up & 2 more
thick along 80% of the segment.

Followup Recommendations: Rebuild the area manually for 1990
the spot washing they did worked because it took what large
amount of oil there initially which needs to be picked up

Completed by Pickup Crew: ☐ YES ☒ NO

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

ADEC

JOHN R. REED
(name)

John R. Reed
(signature)

Comments: This area needs 3 or 4 days more work. Manual
and spot washing should be most effective. Also reapplying
customblon.

Exxon

Jon Cannocki
(name)

Jon Cannocki
(signature)

Comments: There is still lots of oil here. I know we were not allowed
to work this type because it needs additional clean up about
2 to 2 1/2 days to clean up about 4 to 5 more sacks.

USCG

AEC Vandepels
(name)

AEC Vandepels
(signature)

Comments: I recommend wash + manual for
this area.

Land Rep.

Dave Wolfe
(name)

Dave Wolfe
(signature)

Comments: Concur w/ Exxon + summary

SEGMENT AS / MR-1 SUBDIVISION: A SITE: 01 DATE 12 Aug 1990

NSCG

NAME AEC Vandepels SIGNATURE AEC Vandepels

☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Entire segment AS/MS/coat/Cover in on + around cobble + boulders. Recommend hot wash + manual. Reassess in 91.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

The entire segment is still covered with Asphalt, mousse, coat, and cover could use more manual pickup and hot water wash and Reapplication of Customblen. This site needs worked in 1990 and Reassessed 1991.

LAND MANAGER

NAME Dave Wolfe SIGNATURE Dave Wolfe

☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Further hotwash with Flush & Pom-pom, preceded & followed by manual (by experienced manual crew), recommended. See comments on MR-01-B. Reassess in Spring '91.

EXXON

NAME Jon Zarnecki SIGNATURE Jon Zarnecki

☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

The pooled mousse on top and underlying the rock surface needs to be checked in 91.

ASAP SHORELINE OILING SUMMARY

TEAM NO 04 EXXON J. Carnechi SEGMENT AS MR-1
 OG R. Marty USCG AEC Vandepels SUBDIVISION A
 ADEC Randy Reed LAND REP Dave Wolfe USPS TOTAL NO. SITES 1
 DATE 12 / Aug. / 90 TIME 08:45 to 09:05 TIDE LEVEL +5.5' to +5'
 TOTAL EST LENGTH OF SHORELINE SURVEYED: 260 m
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WEATHER: ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 OIL CATEGORY LENGTH: W — m M — m N 260 m VL — m NO — m US — m

SURFACE OIL

SITE 1

SITE 2

SITE 3

CHARACTER	DISTRIBUTION				OILED ZONES			
	/C	/B	/P	/S	SU	UI	MI	LI
ASPHALT								
S.O.R.			X		X			
POOLED		'U	'U		'U			
COVER		X			X			
COAT								
STAIN								
MOUSSE		'U	'U		'U			
PATTIES/T.B.								
FILM								
NO OIL					X	X	X	
EST. SITE LENGTH					260 m			

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								

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	
	No	PITS					.						
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Photographs:

Roll No. ASAP-04- -1

Frames NONE

REVIEWED
8/14/90 *[Signature]*

COMMENTS Pure viscous mousse remains in cracks & in & under the rubble. The white granodiorite bedrock makes the oil much more visible than it would normally be on a darker substrate

ASAP sketch map
for substation

MRTA
MRTB

SITE 1
CV/B ~2m wide
PO/I, U/P grades
eastward to
CT outside
site.



MR-1

SITE 1
CV/B on clasts
PO, MS/I, U/B, P
in a 2m band
in the UNTZ
above the
Fucus band
SOR/P where
worked

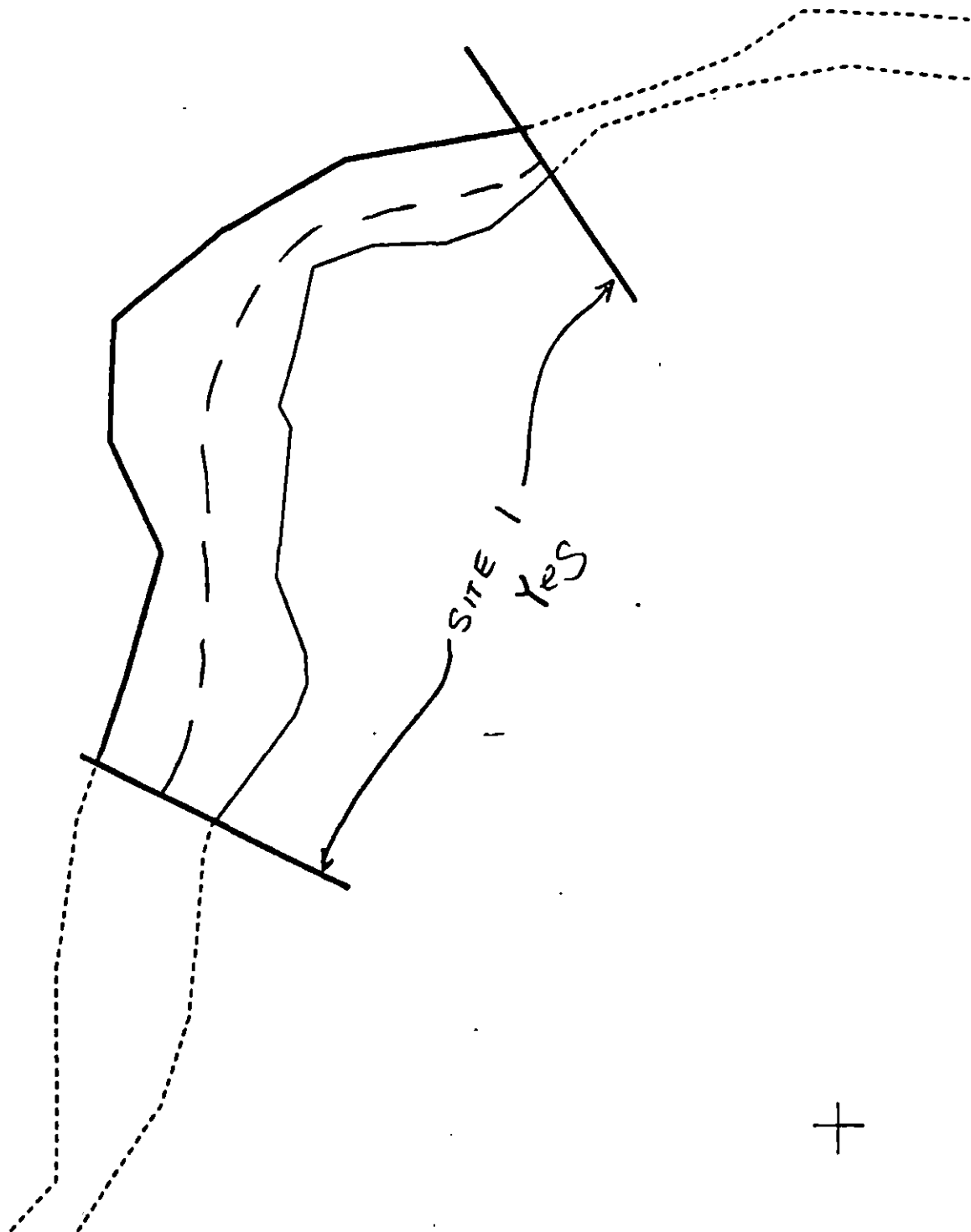
ASAP 4-4-
34-36

Archaeologic
Site

0 500 m

SITE 1 PO/S/E
in cracks in the
granite sidewalk
oil is missing. Cracks
are 2-8cm wide.

SOR 260 PO 260 CV 260 MS 260



XXXX
//

TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

MR-1 A

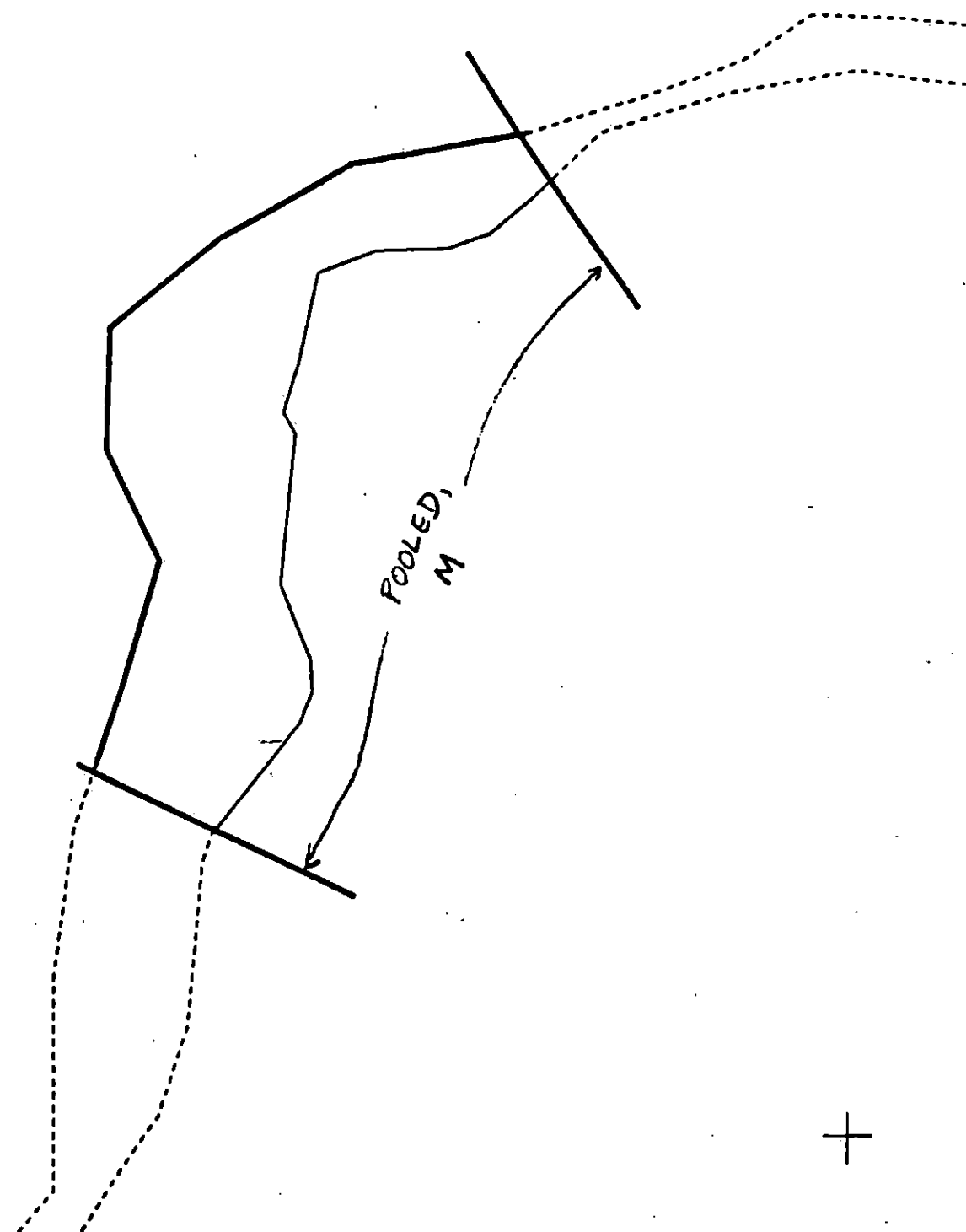
ADEC Subsegment Length: 260m
METERS

0 47 98

AK State Plane Zone 4 1:1807
MR-1a



Subdivision Field Map
Map Key: KENMR-1A
Name: R. Marty
Date: 12 Aug 1990
Data Entered:



XXXX
 ●/

 TTTT
 0000

Wide
 Medium
 Narrow
 Very Light
 No Oil

MR-1 A

ADEC Subsegment Length: 260m
 METERS

0 47 95

AK State Plane Zone 4 1:1867
 nmr-1a



Subdivision Field Map
 Map Key: KENNR-1A
 Name: R. Marty
 Date: 12 Aug 1990
 Data Entered:

FIELD SHORELINE COMMENT SHEET

SEGMENT AS / MR-1 SUBDIVISION: A SITE: 01 DATE 12 Aug 1990

SCG

NAME AEC Vandepels SIGNATURE AEC Vandepels

☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: Entire segment AS / MS / Coat / Cover in on + around cobble + boulders. Recommend hot wash + manual. Reassess in 91.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: The entire segment is still covered with Asphalt; mousse, coat, and cover could use more manual pickup and hot water wash and reapplication of Customblen. This site needs worked in 1990 and Reassessed 1991.

LAND MANAGER

NAME Dave Wolfe SIGNATURE Dave Wolfe

☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: Further hotwash with Flush & Pom-pom, preceded & followed by manual (by experienced manual crew), recommended. See comments on MR-01-B. Reassess in Spring '91.

EXXON

NAME Jon Garnecki SIGNATURE Jon Garnecki

☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: The pooled mousse on top and underlying the rock surface needs to be checked in 91.

ASAP SHORELINE OILING SUMMARY

TEAM NO. 04 EXXON J. Czarniecki SEGMENT AS. MR-1
 OG R. Marty USCG AEC Vandepels SUBDIVISION A
 ADEC Randy Reed LAND REP Dave Wolfe USPS TOTAL NO. SITES 1
 DATE 12 / Aug. / 90 TIME 08:45 to 09:05 TIDE LEVEL +5.5' to +5'
 TOTAL EST LENGTH OF SHORELINE SURVEYED: 260 m
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WEATHER: ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 OIL CATEGORY LENGTH: W m M m N 260 m VL m NO m US m

SURFACE OIL

SITE 1

SITE 2

SITE 3

CHARACTER	DISTRIBUTION				OILED ZONES			
	/C	/B	/P	/S	SU	UI	MI	LI
ASPHALT								
S.O.R.			X			X		
POOLED		U	U			U		
COVER		X				X		
COAT								
STAIN								
MOUSSE		U	U			U		
PATTIES/T.B.								
FILM								
NO OIL					X		X	X
EST. SITE LENGTH					260 m			

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								

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	
	NO	PITS					.						
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Photographs:

Roll No. ASAP-04-

Frames NONE

REVIEWED

8/14/90 *[Signature]*

COMMENTS Pure viscous mousse remains in cracks & in & under the rubble. The white granodiorite bedrock makes the oil much more visible than it would normally be on a darker substrate

ASAP Sketch map
for subscriptions

MR1A

MR1E

SITE 1
CV/B ~2m wide
PO/I, U/P grades
eastward to
CT outside
site.



MR-1

SITE 1
CV/B on clasts
PO, MS/I, U/B, P
in a 2m band
in the UNZ
above the
Fucus band
SOR/P where
worked

STRAIT

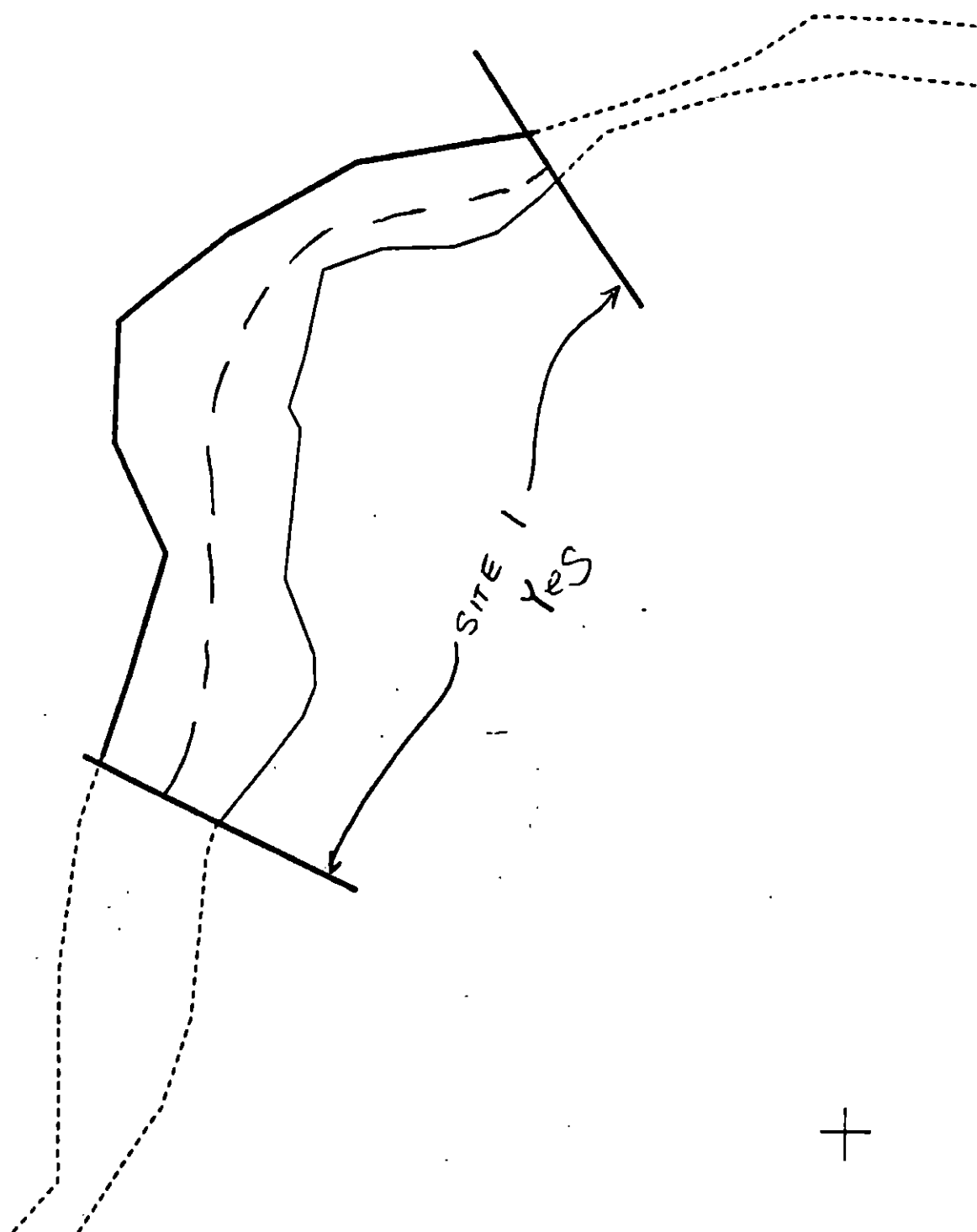
ASAP 4-4-
34-36

Archaeologic
Site

0 500 m

SITE 1 PO/S/I
in cracks in the
granite in ditch
oil is mossy. Cracks
are 2-8cm wide.

SOR 260 PO 260 CV 260 MS 260



YXXX
 //

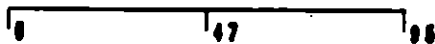
 TTTT
 0000

Wide
 Medium
 Narrow
 Very Light
 No Oil

MR-1 A

ADEC Subsegment Length: 260m

METERS



AK State Plane Zone 4
NMR-1a

1:1007



Subdivision Field Map

Map Key: KENMR-1A

Name: R. Marty

Date: 12 Aug 1990

Data Entered:



XXXX
//

TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

MR-1 A

ADEC Subsegment Length: 260m

METERS

0 47 95

AK State Plane Zone 4 1:1887
MR-1a



Subdivision Field Map

Map Key: KENMR-1A

Name: R. Marty

Date: 12 Aug 1990

Data Entered:

POOLED,
M

ASAP TAG REVIEW SHEET

Segment: MR001 Subd: B Site: 1 Date
PRE-Review 17 Aug

Priority For Addressing In 1990

 HIGH X MEDIUM LOW NTR

Treatment
Recommended:

① m/p of oil ② spot wash?
- pool oil - mousse

Priority Site For Reassessment In 1991

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

TAG-22 AUG
Put up pool/oil
CUSTOMER (MED)

ASAP FOLLOWUP RECOMMENDATIONS

Segment: ASI MR 1 Subd.: B Site: 1 Date: Aug 12 1990

Conditions Observed: Poiled mouse and underlying mouse
approx 2 1/2" thick

Followup Recommendations: Repack the head manually in 90

Completed by Pickup Crew: ☐ YES ☒ NO

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

ADEC

JOHN R. REED
(name)

John R. Reed
(signature)

Comments: Manual removal of mouse and spot washing
of cover and coat.

Exxon

Jon Cravetto
(name)

Jon Cravetto
(signature)

Comments: this would amount to 1/2 to 1 day work for a
1 man to clean this up about 1.5 per sq ft.

USCG

AEC Vandepels
(name)

AEC Vandepels
(signature)

Comments: I recommend washing + manual
work in this area

Land Rep.

Dave Wolfe
(name)

Dave Wolfe
(signature)

Comments: Some spot/hot washing of MR-1 B advised as well
as manual pickup

SEGMENT AS/ MR-1B SUBDIVISION: 8 SITE: 001 DATE 12 Aug 1990

USCG

NAME AEC Vandepels SIGNATURE AEC Vandepels☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Found MS in around cobble + boulders.
Work this area along with MR1A this year
Reassess in '91.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Removable mousse still remains at this site.
Recommend manual pickup and possible hot water wash
in 1990. Reassess in 1991.

LAND MANAGER

NAME Dave Wolfe SIGNATURE Dave Wolfe☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Removable mousse / asphalt / tar mainly in ^{Section} ~~Segment~~ center and
at SW end of section. Hot wash with flush & pom-pom, followed
(and preceded) by manual pick up. Recommend scheduling at
least 3 days with an experienced manual team for MR-0YAB.
Reassess in Spring '91.

EXXON

NAME Jon Czarniecki SIGNATURE Jon Czarniecki☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

There is still quite a bit of pooled mousse on the
rocks and underneath them. This area needs to be
reassessed in '91.

ASAP SHORELINE OILING SUMMARY

TEAM NO 04 EXXON J. Casarechi SEGMENT AS NK -
 OG R. Marty USCG 4EC Vandepels SUBDIVISION 3
 ADEC Randy Reed LAND REP Dave Wolfe USPS TOTAL NO. SITES 1
 DATE 12 / Aug. / 90 TIME 08:30 1008:45 TIDE LEVEL +6' 10 + 5.5'
 TOTAL EST LENGTH OF SHORELINE SURVEYED: 414 m
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WEATHER: ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 CATEGORY LENGTH: W — m M — m N — m VL 414 m NO — m US — m

SURFACE OIL

SITE 1

CHARACTER	DISTRIBUTION				OILED ZONES			
	/C	/B	/P	/S	SU	UI	MI	LI
ASPHALT								
S.O.R.								
POOLED				I		I		
COVER				X		X		
COAT								
STAIN								
MOUSSE								
PATTIES/T.B.								
FILM								
NO OIL					X	X	X	
EST. SITE LENGTH					414			

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	
	NO	PITS					.						
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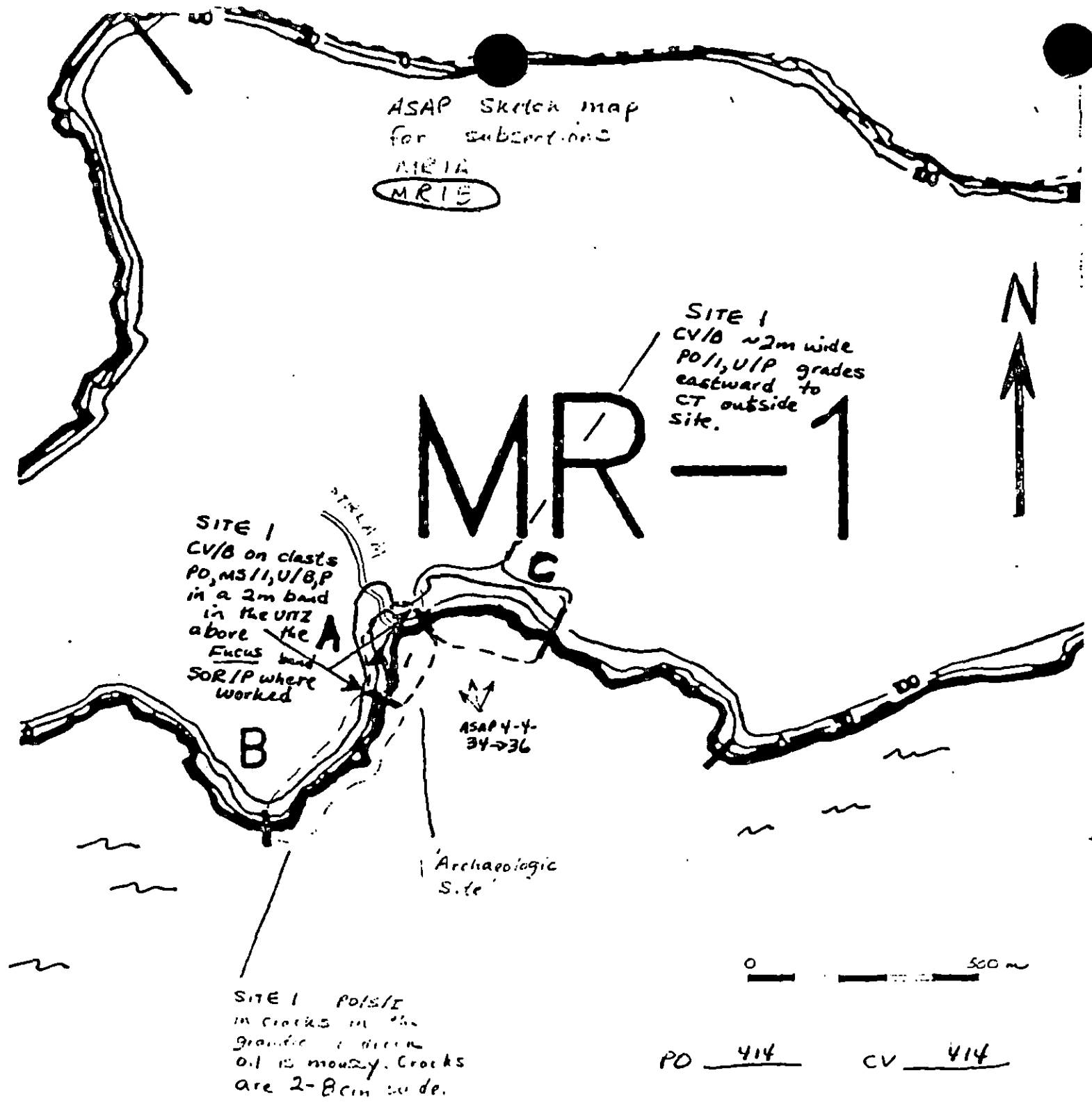
Photographs:

Roll No. ASAP-04- --

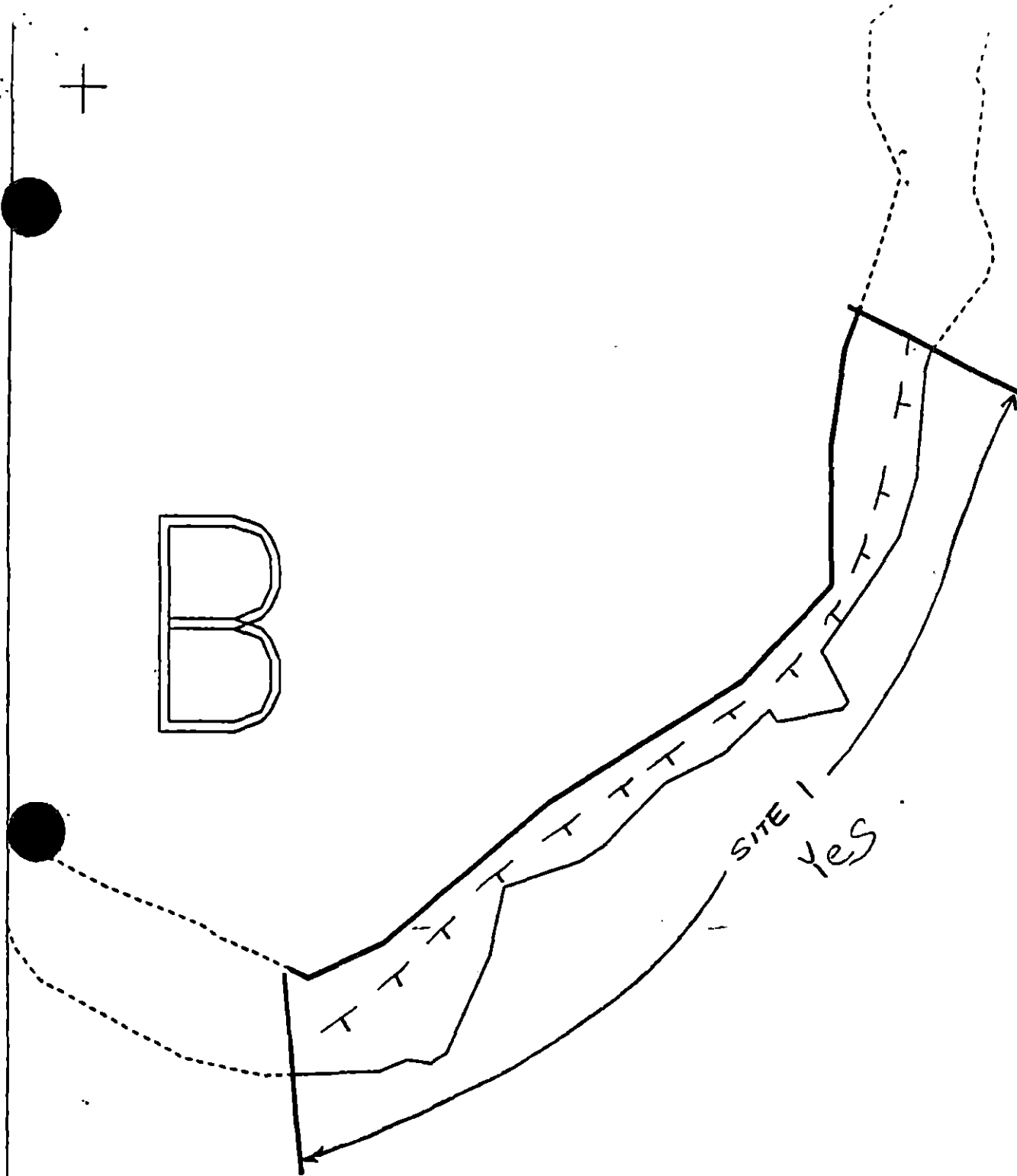
Frames

REVIEWED
 8/14/90 *[Signature]*

COMMENTS The substrate consists of a jointed ~~3~~ white granodiorite. Remaining oil shows up quite well. Pooled mousse remains in cracks in the bedrock. This oil is about the consistency of treacle and is free of in-mixed sediment.



B



XXXX
//

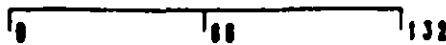
TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

MR-1 B

ADEC Subsegment Length: 414m

METERS



AK State Plane Zone 4
nmr-1b

1:2502



Subdivision Field Map

Map Key: KENMR-1B

Name: R. Marty

Date: 12 Aug 1990

Data Entered:

B

POOLED

"SIGNIFICANT OILING"

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

MR-1 B

ADEC Subsegment Length: 414m
METERS

0 88 132

AK State Plane Zone 4 1:2502
nmr-1b



Subdivision Field Map
Map Key: KENMR-1B
Name: R. Marty
Date: 12 Aug 1990
Data Entered:

FIELD SHORELINE COMMENT SHEET

SEGMENT AS/ MR-18 SUBDIVISION: 8 SITE: 001 DATE 12 Aug 1990

USCG

NAME AEC Vandepels SIGNATURE AEC Vandepels☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Found MS in around cobble + boulders.
Work this area along with MR1A this year
Reassess in 91.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Removable mousse still remains at this site.
Recommend manual pickup and possible hot water wash
in 1990. Reassess in 1991.

LAND MANAGER

NAME Dave Wolfe SIGNATURE Dave Wolfe☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Removable mousse / asphalt / tar mainly in ^{Section} ~~Segment~~ center and
at SW end of section. Hot wash with flush & pom-pom, followed
(and preceded) by manual pick up. Recommend scheduling at
least 3 days with an experienced manual team for MR-0YAB.
Reassess in Spring '91.

EXXON

NAME Jon Czarniecki SIGNATURE Jon Czarniecki☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

There is still quite a bit of pooled mousse on the
rocks and underneath them. This area needs to be
reassessed in 91.

ASAP SHORELINE OILING SUMMARY

TEAM NO. 04 EXXON J. Czarniecki SEGMENT AS NA -
OG R. Marty USCG 4EC Vandepels SUBDIVISION B
ADEC Randy Reed LAND REP Dave Wolfe USPS TOTAL NO. SITES 1
DATE 12 / Aug. / 90 TIME 08:30 1008:45 TIDE LEVEL +6' to +5.5'
TOTAL EST LENGTH OF SHORELINE SURVEYED: 414 m
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WEATHER: ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
MIL CATEGORY LENGTH: W — m M — m N — m VL 414 m NO — m US — m

SURFACE OIL

SITE 1

SITE 2

SITE 3

CHARACTER	DISTRIBUTION				OILED ZONES			
	/C	/B	/P	/S	SU	UI	MI	LI
ASPHALT								
S.O.R.								
POOLED	—	—	—	I	—	I	—	—
COVER				X		X		
COAT								
STAIN								
MOUSSE								
PATTIES/T.B.								
FILM								
NO OIL					X	—	X	X
EST. SITE LENGTH					414			

[illegible][illegible]

UNSUBSURFACE OIL

[illegible]**Photographs:**

Roll No. **ASAP-04-** -

Frames

REVIEWED
8/14/90 *Y/W*

REMARKS The substrate consists of a jointed ~~gr~~ white granodiorite. Remaining oil shows up quite well. Pooled mousse remains in cracks in the bedrock. This oil is about the consistency of treacle and is free of in-mixed sediment.

ASAP sketch map
for subscriptions

MR12
MR15

SITE 1
CV/B ~2m wide
PO/I, U/P grades
eastward to
CT outside
site.

MR-1



SITE 1
CV/B on clasts
PO, MS/I, U/B, P
in a 2m band
in the U/PZ
above the
Fucus band
SOR/P where
worked

ASAP 4-4-
34-36

Archaeologic
Site

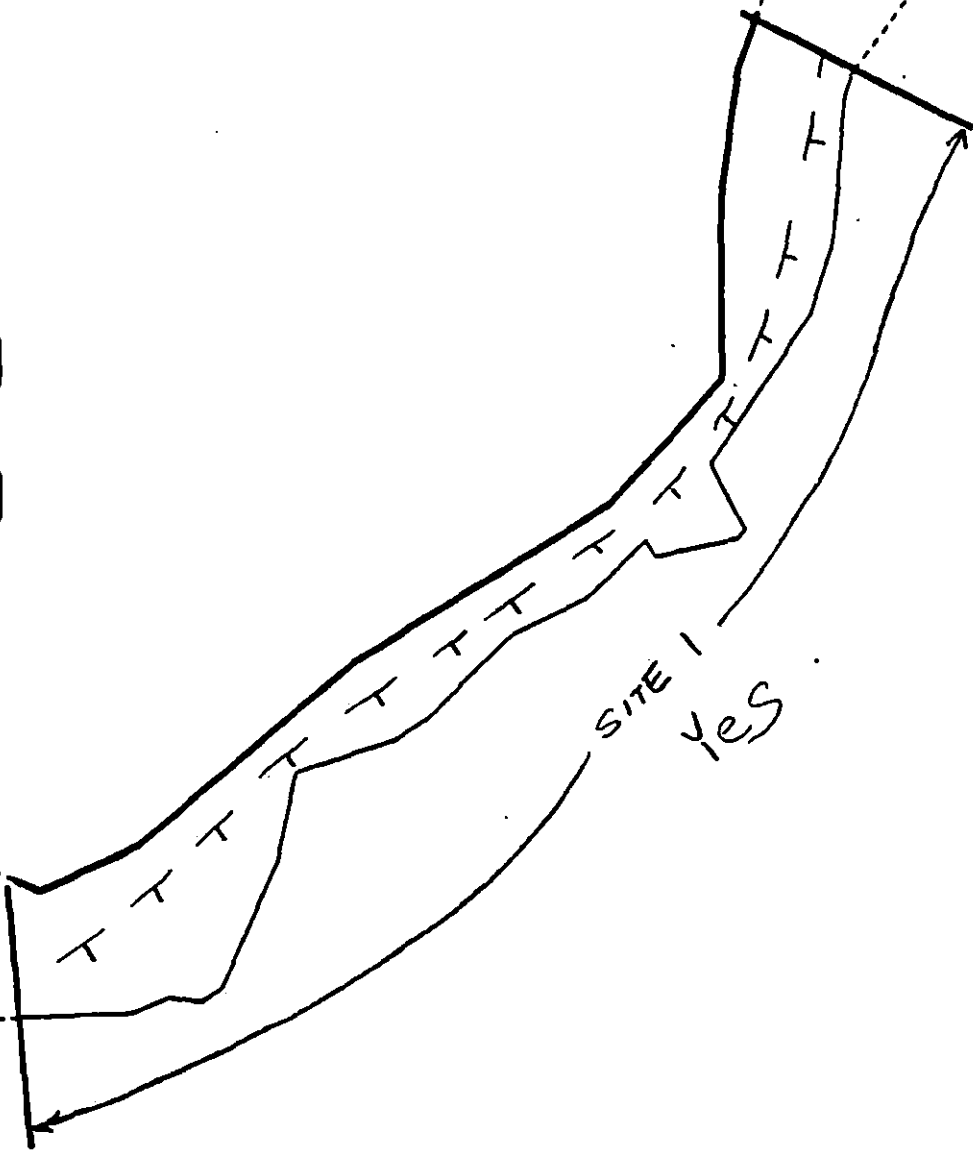
SITE 1 PO/S/I
in cracks in the
granite. The
oil is muddy. Cracks
are 2-8cm wide.

0 500 m

PO 414

CV 414

B



XXXX

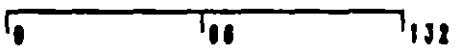
TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

MR-1 B

ADEC Subsegment Length: 414m

METERS



AK State Plane Zone 4 1:2500
amr-1b



Subdivision Field Map
Map Key: KENMR-1B
Name: R. Marty
Date: 12 Aug 1990
Data Entered:

B

POOLED

"SIGNIFICANT OILING"

XXXX
/ 

TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

MR-1 B

ADEC Subsegment Length: 414m

METERS

0 60 132

AK State Plane Zone 4 1:2500



Subdivision Field Map

Map Key: KENMR-1B

Name: R Marty

Date: 12 Aug 1990

WORK PLAN ADDENDUM

Segment

MRI

Subdivision

A/C

Dated

Aug 2 1990

MODIFICATION

1. REASON FOR MODIFICATION

REQUEST FROM THE FIELD (BY PHONE) TO ADD SPOT WASHING
TO AID IN THE REMOVAL OF OIL FROM BOULDER AREAS.

2. ADJUSTMENT TO WORK PLAN

• FOLLOWING MANUAL REMOVAL OF ACCESSIBLE OIL
(MOUSSE + POOLED OIL) SPOT WASH AS REQUIRED.

SHPO APPROVAL NEEDED YES

X

NO

SHPO SIGNATURE

Rachel den Ouden 2 Aug/90

MONITOR CONSTRAINT APPLIES.

TAG APPROVAL DATE

8/2/90

ADEC

JOAN BAUER

EXXON

AMY TEAL

NOAA

Burt Wescott

USCG

D.D. ROME

FOSC

[Signature]

DATE

8/2/90

SHORELINE EVALUATION

SEGMENT ST/ MR-001 SUBDIVISION A (1 OF 3) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Active bald eagle nest (5T) - 3/1 to 6/1. Restrict air traffic to essential minimum. Air approach and takeoff from and to seaward only. Contact USFWS prior to treatment for confirmation of dates and avoidance minimums. Kenai Fjords National Park (4LL).

SUBDIVISION ECOLOGICAL CONSTRAINTS: Treatment should proceed with minimum disturbance to substrate.

ARCHAEOLOGICAL CONSTRAINT: An Exxon archaeological monitor is required on-site during shoreline treatment.

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

SHPO SIGNATURE: *[Signature]* DATE: 7/27/90

OILING CATEGORIZATION:

Wide 0 m: Medium 34 m: Narrow 180 m: V.Light 46 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 20

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: Tarmat removal in asphalt pavement area. Manual pickup (trowling) in pooled oil area. Bioremediate pooled oil, cover and coat areas. Follow Cultural Resource Program "Work Plan Outline" dated July 27, 1990.

TAG COMMENTS: Treatment is recommended pending resolution of cultural resources issues. If cultural resource issues cannot be resolved a no treatment recommendation is the preferred option.

This recommendation was revised by TAG on 4/19/90 and supercedes the recommendation forwarded to FOSC on 4/12/90.

TAG APPROVAL DATE: 4/19/90

ADEC JOAN BAUER *[Signature]*

EXXON ANDY TEN *[Signature]*

NOAA Bruce Wescott *[Signature]*

USCG G.A. REITER *[Signature]*

FOSC: *[Signature]* DATE: 7-30-90

Customblen only can be applied to the MITZ + LITZ INPOL IS NOT

EXXON VALDEZ CULTURAL RESOURCE PROGRAM

WORK PLAN OUTLINE
FOR OIL SPILL CLEANUP AT MR-1A/C
July 27, 1990

The proposed steps of the treatment program are as follows:

- 1) Archaeological monitors to brief cleanup personnel prior to the cleanup crew's arrival to MR-1. Cleanup personnel will be briefed regarding the significance of the site, and on artifact types which may be encountered.
- 2) Archaeological monitors to orient cleanup personnel on site at MR-1 prior to the commencement of work.
- 3) Cleanup personnel manually recover pooled oil in MR 1A/C with trowels, spoons and other manual devices under the close supervision of archaeological monitors. Archaeological monitors to map, record and either replace or collect artifacts encountered during manual removal depending upon the artifact type and its susceptibility to illicit collection.
- 4) Cleanup personnel manually remove tarmat with shovels and spades. The broken-up asphalt and attached rocks and sediments will be inspected for artifacts by archaeological monitors prior to the removal of asphalt, rocks and sediments. Any artifacts observed in the tarmat debris will be collected and curated in accordance with the MOA.
- 5) Bioremediation crew will spray the beach under the close supervision of the archeological monitors.
- 6) Concurrent with, or immediately after Exxon's work in the intertidal zone, Chugach Alaska Corporation and the NPS will be responsible for attempting a limited amount of surface and subsurface work in the site uplands. The key element of this work will be the re-excavation of the 1989 test pit and the recording of its stratigraphy. The purpose of this work is to aid interpretation of the data obtained in the intertidal zone in order to contextualize that data. As a result of this work, NPS will provide Exxon with pertinent information on the number of components present and comment on the nature of these components. Logistics will be coordinated through Exxon.
- 7) The principal archaeological monitor will describe the cleanup and monitoring processes and analyze the pertinent intertidal and uplands cultural resource findings in a comprehensive report.

Recommended Scope of Work for Monitoring Activity at MR-1A/C

Planned treatment activity recommended by TAG at MR-1A/C is limited to manual recovery (trowling) of pooled mousse located in bedrock and boulder crevices, bioremediation of pooled oil, cover and coat areas, and removal of the asphalt tarmat. Due to the sensitive nature of lithic artifacts in the intertidal zone, the recommended monitoring activity will differ according to the different treatment activities planned.

Prior to initiating treatment at MR-1A/C, an informal briefing session will be held for all personnel involved in treatment activity at MR-1A/C. Information will be presented regarding the sensitive nature of the work area, the level of care that must be exercised throughout treatment, the sequence and method of treatment, and the need for constant direction by an on-site archaeological monitor. Our intention is to prepare all treatment personnel for the sensitive nature of the undertaking prior to arriving on the beach. Once on the beach, treatment will proceed in the following manner:

TASK 1) The first task will be to manually recover the pooled oil trapped in bedrock crevices and between boulders in both A and C subdivisions. Trowels and large spoons will be used to scoop the pooled oil into containers. Archaeological monitors will map, record and either collect or replace any artifacts encountered during this task depending upon the artifact type and its susceptibility to illicit collection. Only pooled oil will be removed. Both the movement of treatment personnel in the intertidal zone and the manual removal process will be closely monitored.

TASK 2) The second task will be tarmat removal. The area intended for tarmat removal encompasses 32 square meters, 4 of which have been removed as part of the archaeological investigation conducted in April. The remaining 28 square meters will be removed with spades and shovels. Asphalt and attached rocks and sediments to be removed will be inspected for artifacts by monitors. Any artifacts present will be collected and curated in accordance with the MOA.

TASK 3) The third task is bioremediation. Direction will be given to treatment workers as they move in the intertidal zone applying the fertilizer where appropriate. All treatment personnel working in the intertidal zone will confine their movement wherever feasible to large boulders and bedrock outcroppings.

TASK 4) The final task will be analysis of the archaeological data collected during the cleanup. The principal archaeological monitor will produce a report describing the monitoring process, as well as the location, nature and significance of archaeological material observed in and/or collected from the intertidal zone at MR 1A/C.

SUMMARY

Effective on-site monitoring at MR-1A by professional archaeologists will ensure that the treatment recommended by TAG will take place and that the cultural remains present in the intertidal zone will receive the maximum degree of protection given the planned treatment. The scope of work recommended for on-site monitoring activity at MR-1A/C is consistent with the treatment planned at this location. We recommend that the scope of work outlined above be considered the appropriate archaeological constraint for this subdivision.

EXXON-VALDEZ CULTURAL RESOURCE SUMMARY SHEET

SEGMENT MR-001 A Landowner: NPS Region: SEWARD

AHRS: Number Type ITZ Upland Features:
 1: SEL-188 FCR, PAG, HTD [X] [X] MCARTHUR PASS
 2: [] []
 3: [] []
 4: [] []

SCAT: YARBOROUGH Metres: 9000 Minutes: 272 Methods: B,G
 SSAT: Metres: 0 Minutes: 0 Methods:

1990 WORK PLAN No Treatment []

Bioremediation [X]
 Manual/Mechanical: MP,TR Treatment Intensity [2]

1989	1989	1990	1990
CONSTRAINTS	ACTION	CONSTRAINTS	ACTION
Standard []	Monitored []	Deferred []	--
Evaluation []	Incidents []	Standard []	--
Pre-Evaluation & Monitoring []	Post-cleanup Assessment []	Inspection []	Inspected []
Monitoring [X]	Bioremediation []	Monitoring [X]	Monitored []
Other NO CLEAN		Segment	Segment
		Evaluation [X]	Evaluated []
		Subdivision	Subdivision
		Evaluation []	Evaluated []

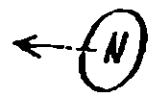
COMMENTS

TRACKING

RECEIVED 04/08/90 FIELD SURVEY OUT 04/24/90 CTAG OUT 04/09/90
 BACK 04/30/90 BACK / /
 SHPO / / FOSC / / COMPLETED / /
 DATE MONITORING
 REQUESTED / / Monitor:
 PLANNED TREATMENT:
 MONITORED

NR-1
9
1990

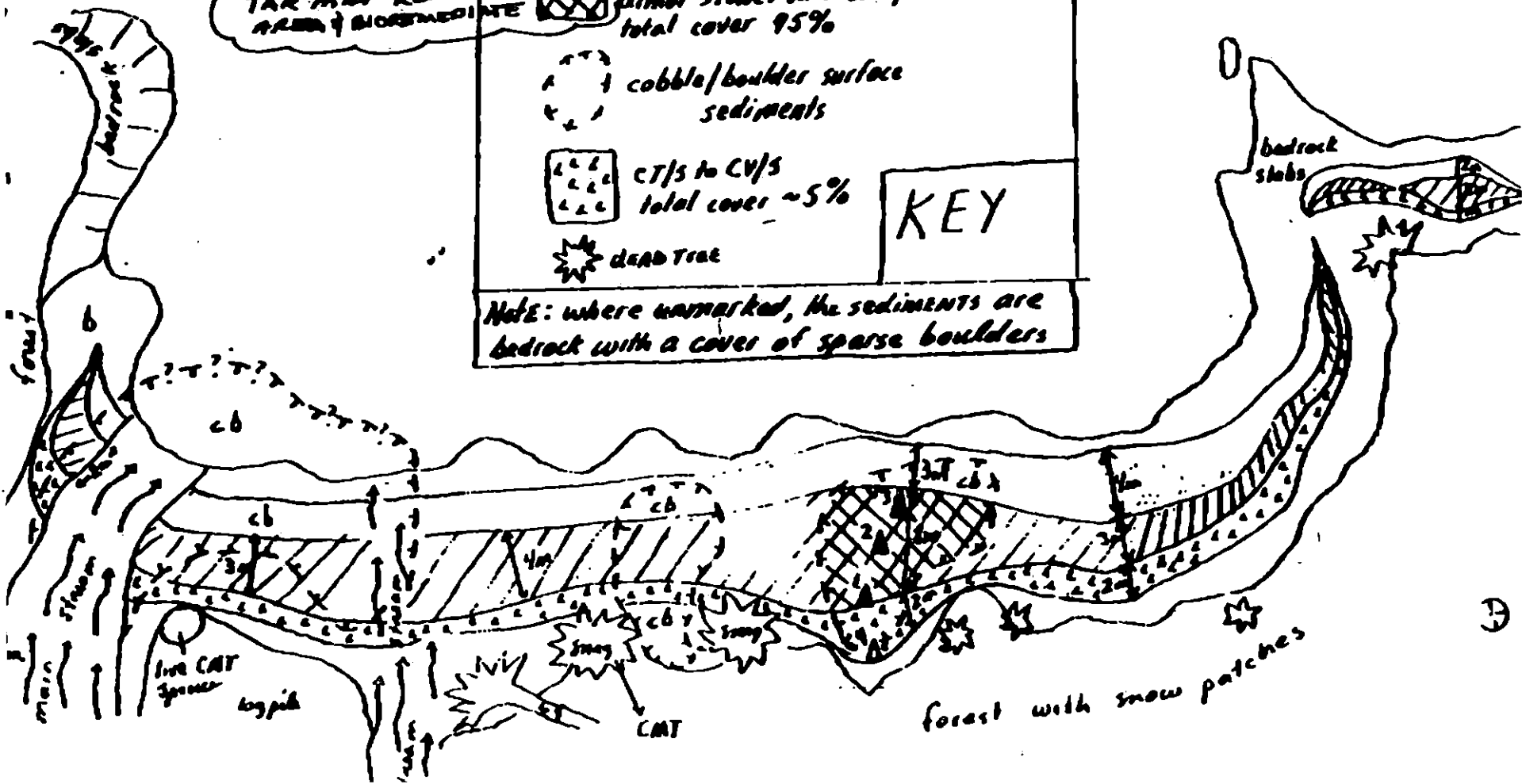
SKETCH MAP



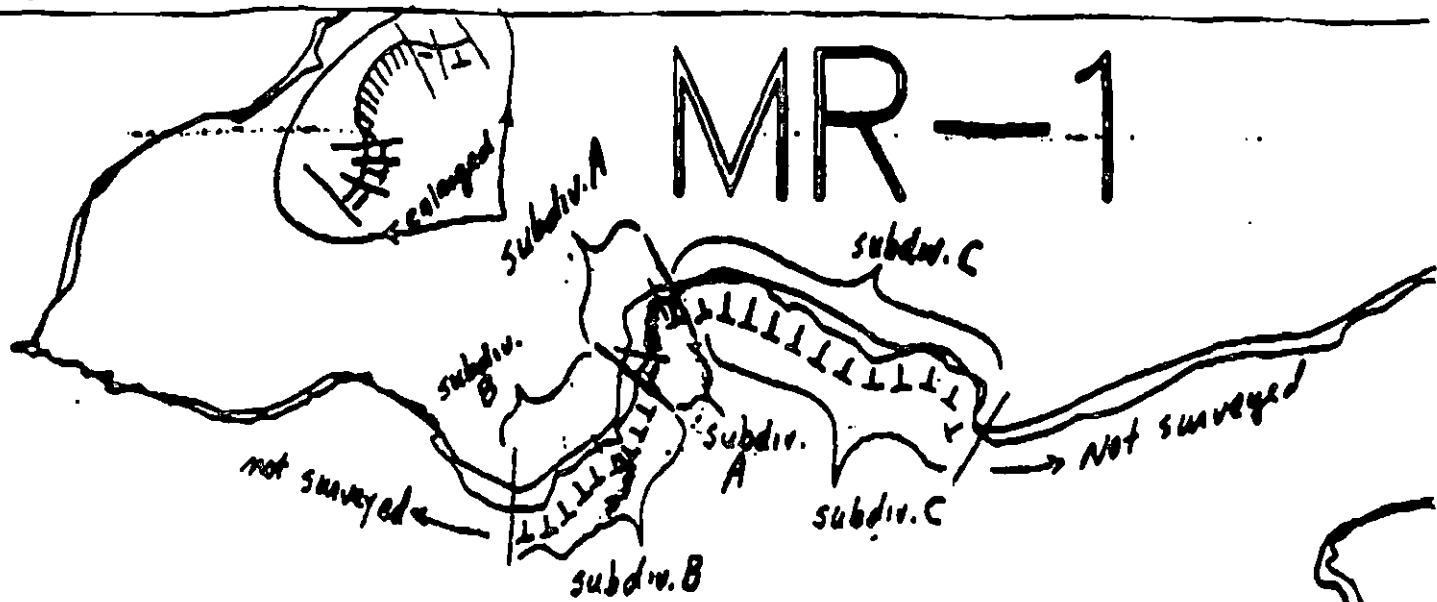
MacArthur Pass

10m length scale

BIOREMEDIATE AREA ONLY		CT/B to CV/B with paved/P and /S; total cover ~30%
MANUAL PICK UP		MS/S to CV/S; total cover ~5%
TAR MAY REMOVE AREA & BIOREMEDIATE		asphalt pavement /C; armor slates with coat/B to /S total cover 95%
		cobble/boulder surface sediments
		CT/S to CV/S total cover ~5%
		DEAD TREE
KEY		
Note: where unmarked, the sediments are bedrock with a cover of sparse boulders		

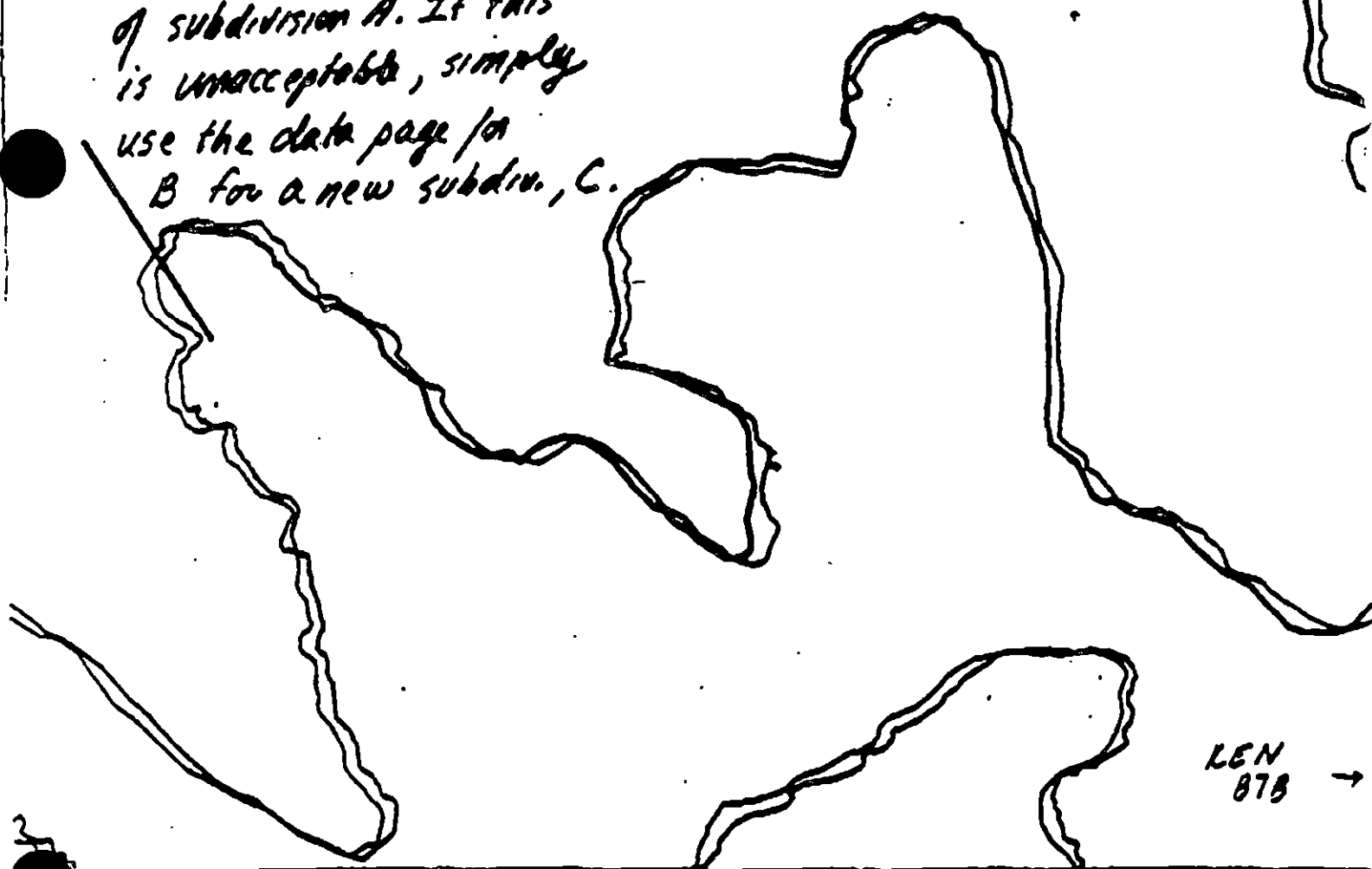


MR-1



PY-15

Note that subdivision B occurs on either side of subdivision A. If this is unacceptable, simply use the data page for B for a new subdiv. C.



LEN 878 →

XXX Wide

//// Medium

--- Narrow

TTTT Very Light

ADEC Segment Length: 11802m

~~PY-15~~ MR-1

Map Key: KEN-878

Name: MOAN

Date: 3/31/90

ADDEI UM: SUBDIVISION CONSTRAINTS

SEGMENT MR-1 SUBDIVISION A (1 of 3)

WORK WINDOW

MANUAL PICKUP & TREATMENT REMOVAL

OPEN

BIOREMEDIATION

OPEN

ARCHAEOLOGICAL CONSTRAINT: An Exxon archaeological monitor is required on-site during shoreline treatment.

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

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

NO APPLICABLE ECOLOGICAL CONSTRAINTS

OTHER ECOLOGICAL CONSTRAINTS

AVOID ANY UNNECESSARY DISTURBANCE OR DAMAGE TO UNOILED BIOTA AND SUBSTRATE

FOBC

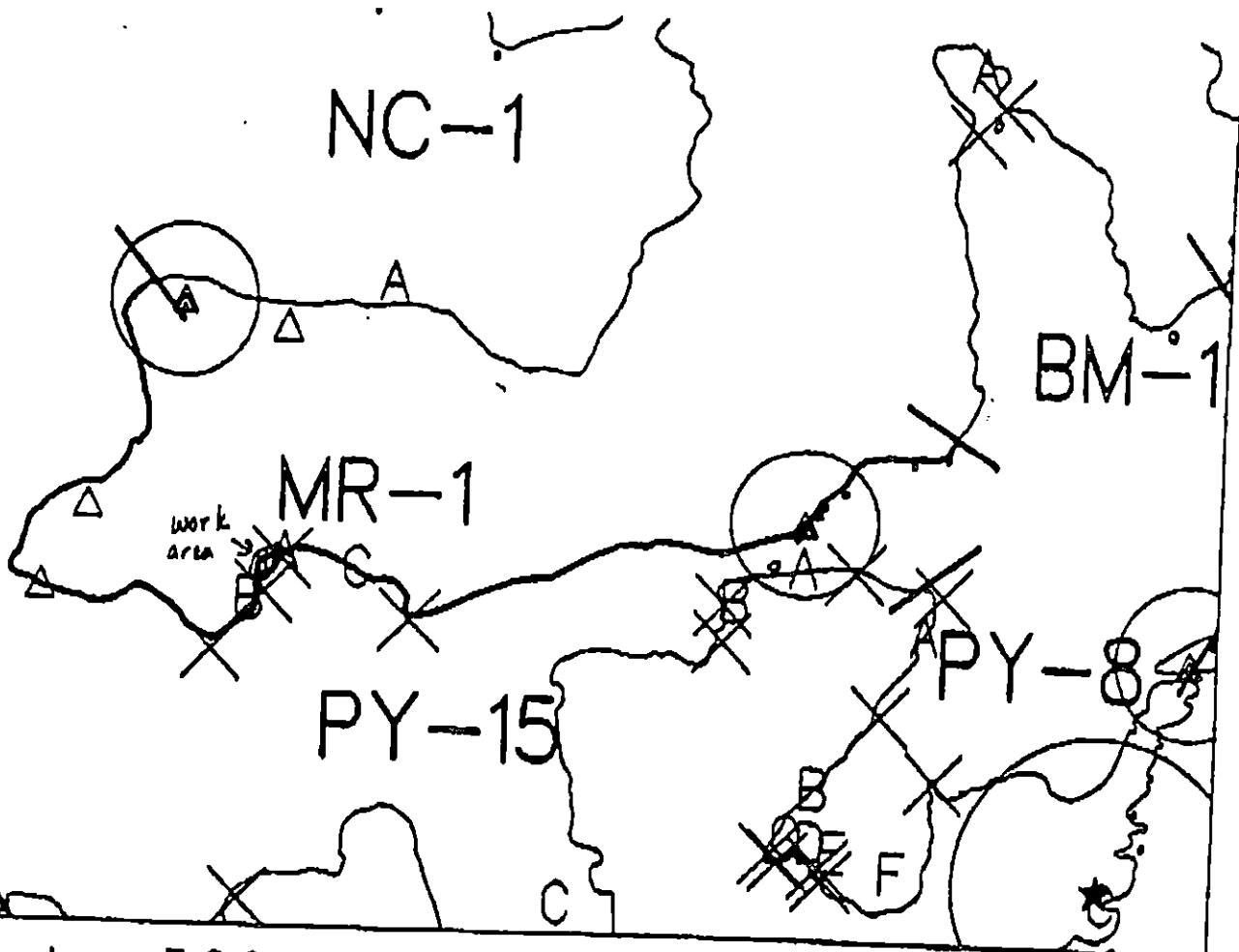
DATE 7-31-90

Prepared By:

J. P. Phillips

Date

7/27/90



Exxon Company, USA

Map Key: KEN-MR-1

ECOLOGY MAP
SEGMENT MR-1
SUBDIVISION A (1 of 3)
METERS

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

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT MR-001 SUBDIVISION B (2 of 3)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN
Bioremediation* Other Approved Treatment	OPEN

*No Inipol - Only Customblen as per FOSC

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

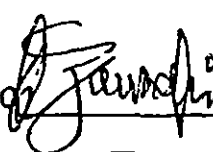
5T Bald Eagle Nest

NO CONSTRAINT. USFWS 6/10/90 map indicates no active nest within 400m of Subdivision B work site. No constraint to manual pickup, bioremediation and other approved treatments.

OTHER ECOLOGICAL CONSIDERATIONS

Avoid any unnecessary disturbance or damage to unrolled biota and substrate.

FOSC



Date

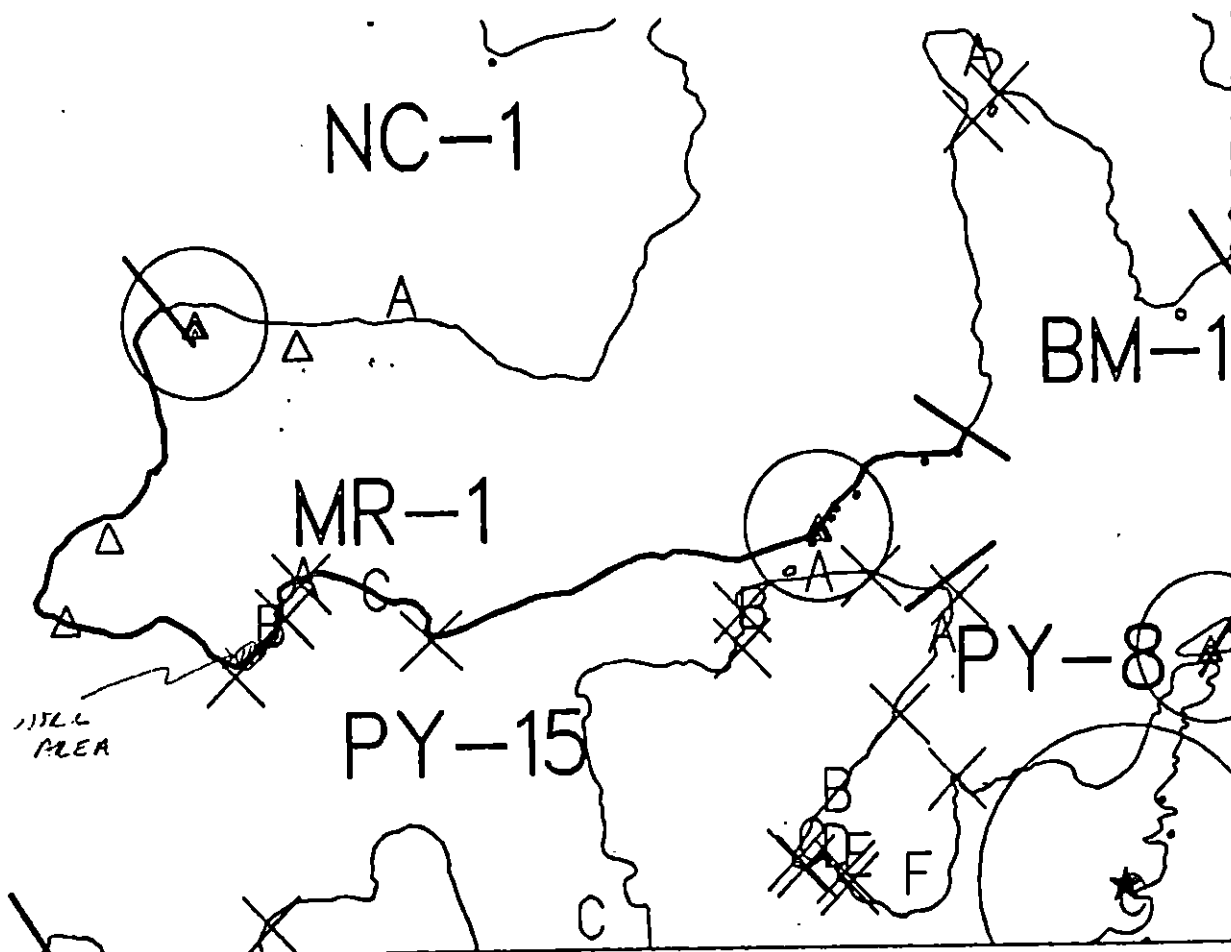
6/29/90

Prepared by

Ray D. Coulter

Date

06/27/90



Exxon Company, USA

Map Key: KEN-MR-1

June 10, 1990

ECOLOGY MAP SEGMENT MR-1 SUBDIVISION B (2 of 3)

METERS

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

1 inch = 3426 feet

SHORELINE EVALUATION

SEGMENT ST/ MR-001 SUBDIVISION B (2 OF 3) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Active bald eagle nest (5T) - 3/1 to 6/1. Restrict air traffic to essential minimum. Air approach and takeoff from and to seaward only. Contact USFWS prior to treatment for confirmation of dates and avoidance minimums. Kenai Fjords National Park (4LL).

SUBDIVISION ECOLOGICAL CONSTRAINTS: Treatment should proceed with minimum disturbance to 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 Z. Hume DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 414 m: No Oil 0 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS: Manual removal of pooled oil with absorbents and trowling and bioremediation in same area. Work is to be conducted after 6/1.

TAG COMMENTS: Treatment is recommended pending resolution of cultural resources issues. If cultural resource issues cannot be resolved a no treatment recommendation is the preferred option.

This recommendation was revised by TAG on 4/19/90 and supercedes the recommendation forwarded to FOSC on 4/12/90.

TAG APPROVAL DATE: 4/19/90

ADEC JOHN BAUER
EXXON ANDY TGA
NOAA BILL WESCOTT
USCG G.A. REITER

FOSC: My L DATE: 4-26-90

Concur with TAG comments, however INTEL not authorized.

REGION: KENAI

SEGMENT: MT-001

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ MT-001 SUBDIVISION A (1 OF 1) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
4QQ National Wildlife Refuge (no time constraints given)

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled substrate and biota. See attached Ecological Constraints Sheet.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 38 m: V.Light 404 m: No Oil 747 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 30 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:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST 1 MT 01 SUBDIVISION: A DATE 4/7/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE *Michel*☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

OIL WAS FOUND @ 2 sites WITHIN THE SEGMENT: 1) ST/CT IN SUBSURFACE IN THE BOULDER BEACH, AND 2) SCATTERED BANDS/DROPS ON THE MORE SHELTERED ROCK FACES AND BEHIND OFFSHORE ROCKS. I WAS QUITE SURPRISED TO FIND ANY OIL - THIS AREA IS VERY HIGH ENERGY. YET NATURAL REMOVAL HAS BEEN EFFECTIVE AND THE SMALL AMOUNT OF REMAINING OIL DOES NOT WARRANT FURTHER TREATMENT.

ADEC

NAME JOHN R. REED SIGNATURE *John R. Reed*☐ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

Most of this segment is vertical granite bedrock with a few large granite boulder beaches. Very light oil of mostly stain found in granite boulders on site #1 (see site). Some coat and stain found in band on vertical wall. Does not require cleanup in this segment. I have read and agree with all data on S.S.A.T. Forms.

LAND MANAGER/USFWS

NAME Mary Fortner SIGNATURE *Mary Fortner*☒ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Oil was present in 2 locations within this segment. At site 1, oil persisted as 3, 3-5 m. long x 2m wide patches of coat and stain. Subsurface oil was present as coat and stain to a depth of 25 cm. This beach is only accessible in very calm water. Oil was also present in this segment as a sporadic band of drips on the rock face.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Mann USCG Michel SEGMENT STI MT-1
 BIO Carr LAND REP Partner USFWS SUBDIVISION A
 EXXON Boyer ADEC Reed TIME 15:45 to 16:36
 TEAM NO.: 18 TIDE LEVEL: +5 to +4 DATE 4 17 190
 EST. SUBDIVISION LENGTH: 1357 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 80 % B 20 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 20 % Hang 0 % Vert 20 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 30 m VL 480 m NO 847 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IS	IP	IR	BR	BL	FW	GY	SL	ORR	TL	LR	SU	U	M	L
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT			✓	✓		✓							✓			
STAIN			✓	✓		✓							✓			
MOUSSE																
PATTIES																
TARBALLS																
FILM																
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	MO	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE NA 0#BAGS NA 0

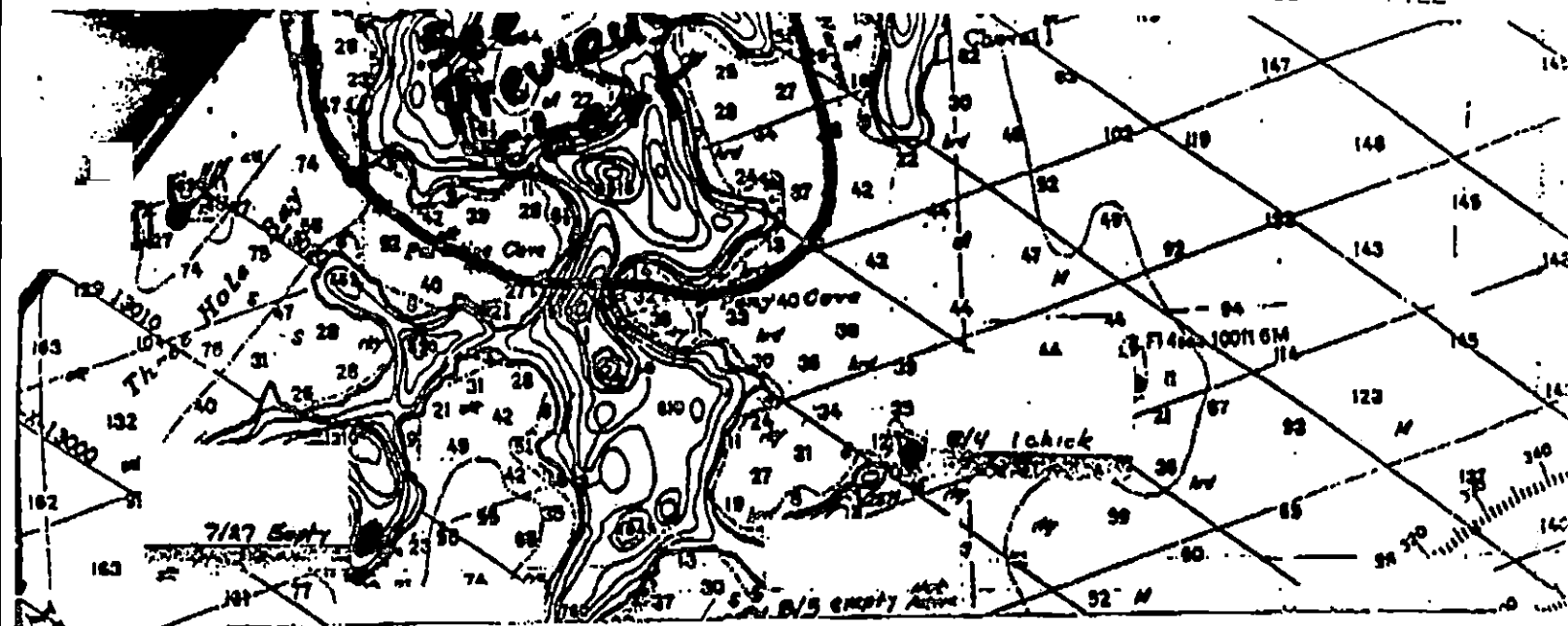
Photographs:

Roll No. ST 18-4Frames 27-30

SUBSURFACE OIL

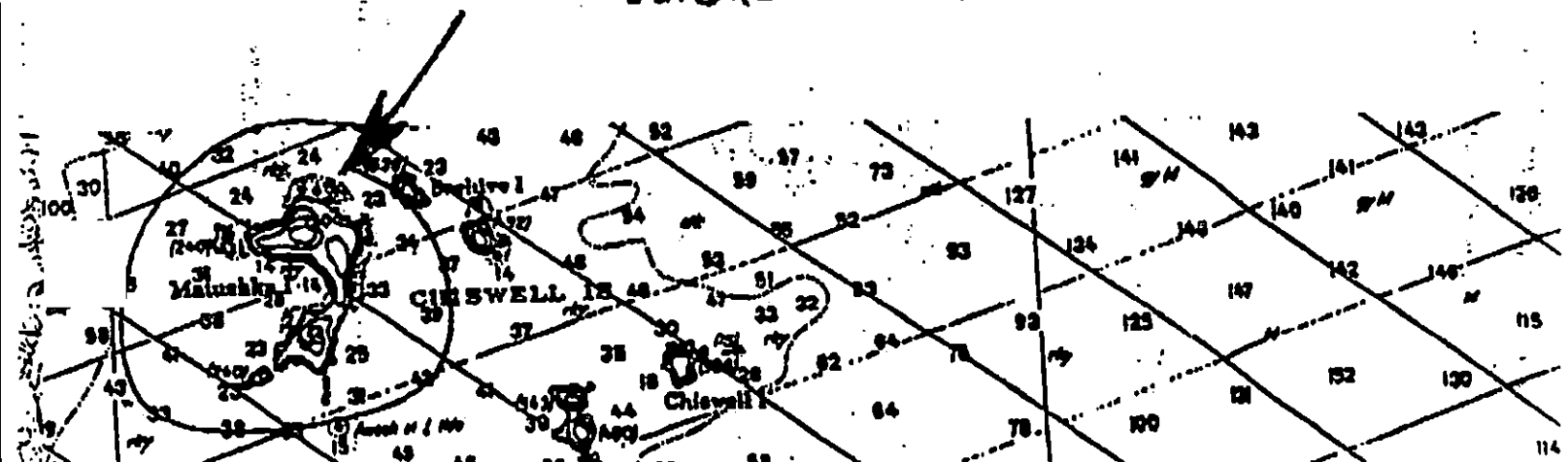
PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-GO)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS	
		OP	OR	OL	OF	NO		UG	UC	BR	BL	FW	GY	SL	ORR	TL	LR	SU	UI			ME
1	50		✓	-			0-30		✓					✓			✓				NO	BC throughout
							.															
							.															
							.															
							.															
							.															
							.															

COMMENTS Patches of coat and cover exist on high angle, lee faces on some cliffs.
This segment encompasses the inner, eastern shoreline of the cove on eastern Matinika Island. Its walls are near-vertical except where broken by steep, boulder beaches. Bedrock is granite. At the south end of the cove, we landed and observed remnants of oil. Most of this oil is a sparse ST and CT on boulders below the surface horizon of



Sensitivity sites for segments MT-1, MT-3, & MT-4.

ENTIRE SHORELINE OF ISLAND IS INHABITED BY
SEA BIRD COLONIES



OG MT-1SEGMENT ST/ MT-1SUBDIVISION ADATE 4, 7 90CHECKLIST

☐ M Arrow
☐ Approx. Scale
☐ Seg/Sub Entry
☐ Oil Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HMTLWL
☐ SSL
☐ Profile Location(s)
☐ Profile(s)
☐ PII Location(s)
☐ Photo Location(s)

LEGEND1 

PII - No Subsurface Oil

2 

PII - Subsurface Oil

 CT/C

Continuous Distribution

 CT/B

Broken Distribution

 CT/P

Patchy Distribution

 CT/S

Splashed Distribution

Oiled Vegetation

1 Photo location, direction,
and number

SKETCH MAP

NO sketch

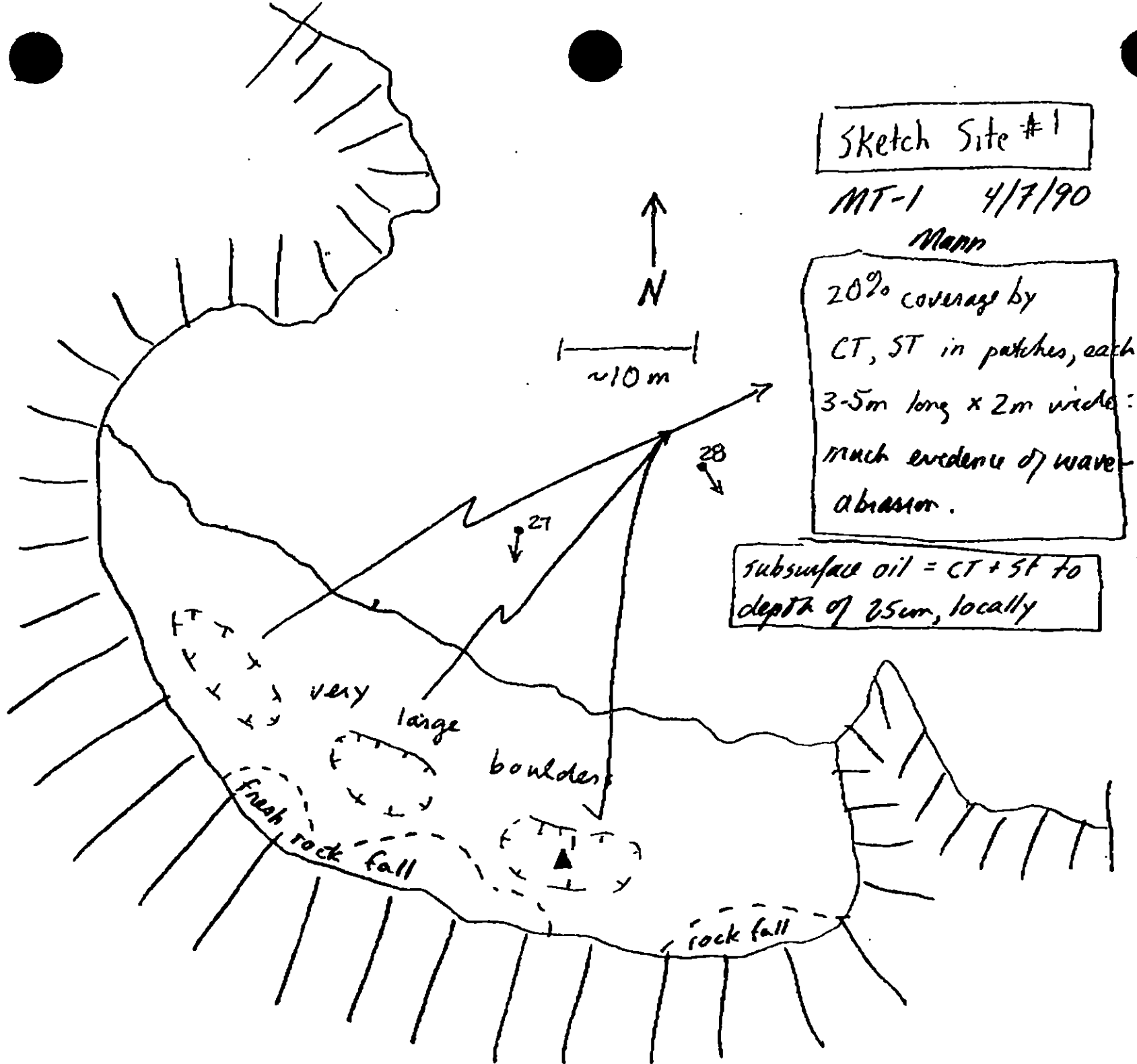
Oil Character Length (m): AP 0 PO 0 CV 0 CT 100 ST 100 MS 0 PT 0 TB 0 FL 0 NO 1257

REVISION: 02/2/00

HCR-06-1350 06:16 FRU1 Enscotias

Enscot TU

SSHT P.02



SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/23/90

Segment ST / MT-1 Subdivision A Date (mo / day / yr) 4 / 7 / 90
 Time (24 hr) 1605 Biologist M. CARR

- (A) Substrate type and % of ^{SUBDIVISION} segments:
 (1) Bedrock 80 (2) Boulder 20 (3) Cobble _____ (4) Pebble _____ (5) Sand _____ (6) Silt _____
- (B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 70 Moderate 20 Low 10
- (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: 4
 Roll No. _____
 Frames 27 - 30

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	Inaccessible
3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
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			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT IN LOW
3	3	3	3	3	3	3	3	3	3	3	3	Inaccessible
4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT
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			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	Inaccessible
3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
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			
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	NOT PRESENT
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:

Bald eagle (1)
 Common nighthawk (29) double-crested
 Glaucous-winged gull (1)
 Surf-scooter (1)

Ecological Considerations:

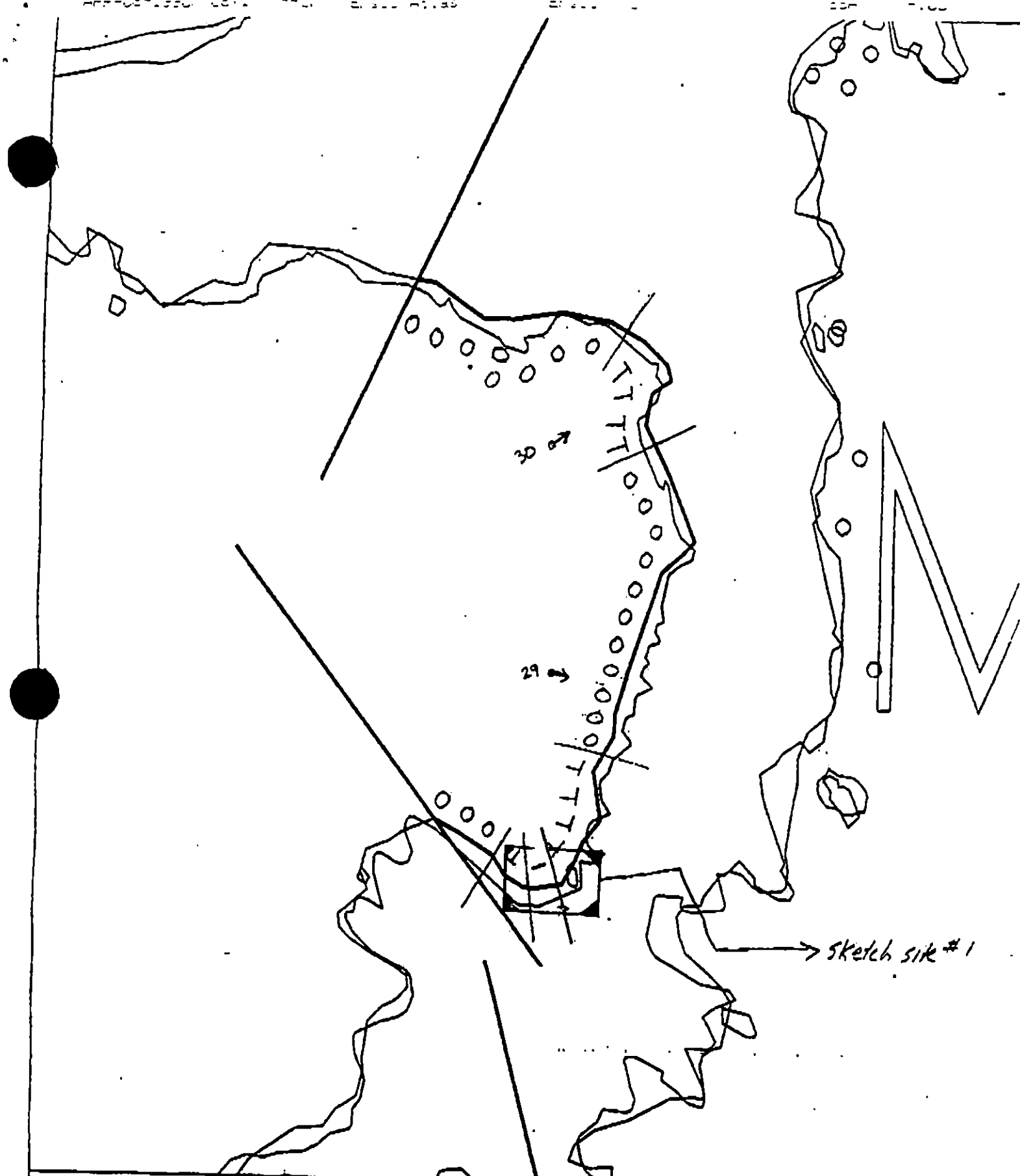
Sensitivity codes: 4-00 (National Wildlife Refuge), 5-R (Seabird colonies)

Shore was inaccessible, therefore all observations were made from skiffs

PWS ECOLOGICAL CONSTRAINTS

MT-001

- 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.



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

MT-1A

ADEC Segment Length: 1189m



Map Key: KEN-60
Name: Mann
Date: 4/7/90
Data Entered:

REGION: KENAI

SEGMENT: MT-003

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ MT-003 SUBDIVISION A (1 OF 1) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
4QQ National Wildlife Refuge (no time constraints given)

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate. See attached Ecological Constraints Sheet.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 1202 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

<u>X</u> 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:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ MT 03 SUBDIVISION: A DATE 4/7/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE Michel

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

WE WERE NOT ABLE TO INSPECT ANY OF THIS SEGMENT BY FOOT. HOWEVER, MOST OF THE SHORELINE WAS COMPOSED OF VERTICAL ROCKY CLIFFS WHICH WERE FREE OF OIL. THE ONE BEACH IS LIKELY TO HAVE HAD SOME SMALL AMOUNT OF OIL, BASED ON SURVEYS OF SIMILAR BEACHES. NO FURTHER TREATMENT IS WARRANTED ALONG THIS HIGH ENERGY SEGMENT. IT IS QUITE A PLACE!

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

The majority of this segment is vertical granite cliffs with a large bird colony. No oil was observed in this segment. No treatment is needed. I have read and agree with all data on S.S.A.T. Forms.

LAND MANAGER/USFWS

NAME Mary Portner SIGNATURE Mary Portner

☒ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

we were unable to inspect the small pocket beach in this segment which was oiled in 1989. (See 1989 stat notes). The remainder of the segment is primarily vertical rock face with high wave energy. No oil was observed in this portion of the segment.

SHORELINE OILING SUMMARY

REVISION NO. 02/22/90

OG MANN USCG/NOAA MICHEL SEGMENT ST/ MT 03
 BIO CARE LAND REP PARTNER - FWS SUBDIVISION A
 EXXON BOVER ADEC PLEED TIME 16:36 to 17:00
 TEAM NO.: 18 TIDE LEVEL: +4.0 to +2.7 DATE 4 1 7 190
 EST. SUBDIVISION LENGTH: 1869 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☐ Forest ☒ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: SOUTH to NORTH
 SURFACE SEDIMENTS: R 95 % B 5 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 5 % Hang 20 % Vert 75 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 1839 m

SURFACE OIL NONE OBSERVEDNOT OBSERVED 30

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	TC	TR	TP	TS	BR	OR	OL	OP	NO	SU	U	M	U
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT													
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										✓	✓	✓	✓

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE N/A#BAGS N/A

Photographs:

Roll No. none

Frames _____

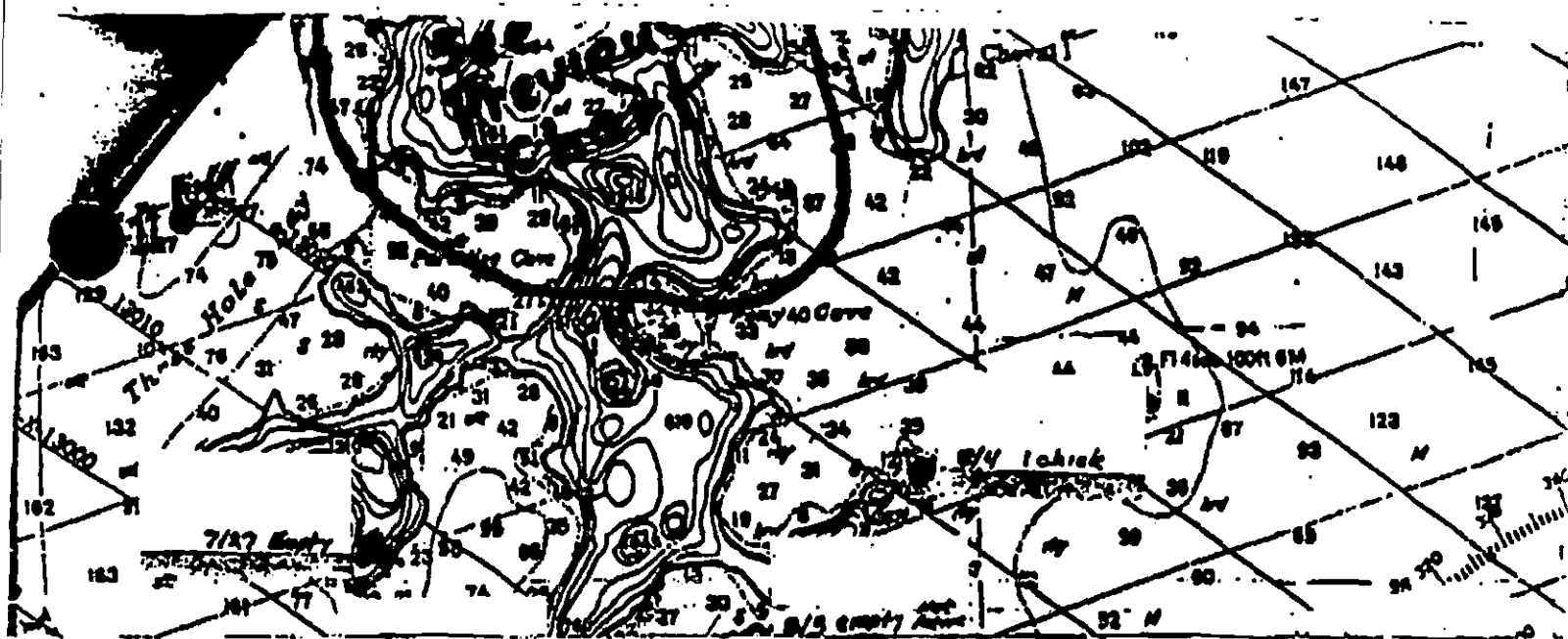
SUBSURFACE OIL NO PITS DUG BECAUSE OF INACCESSIBILITY OF THE SHORE AND UPRIGHT ROCKY SHORES.

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		UO	UC	BR	OR	OL	OP	NO	SU	U	M	U		

COMMENTS

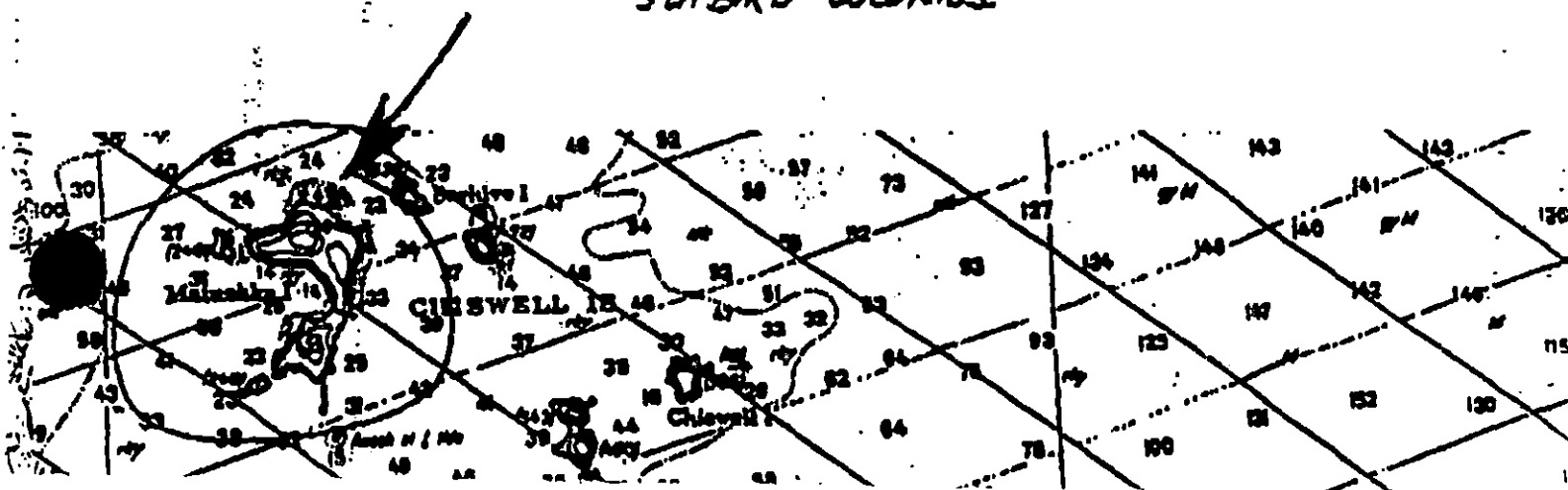
marked as "unobserved" on the GIS map.

MT-3 is the roughest and most inaccessible of the Matushka Island segments. We had ocean swells of about 10 feet which made approach to the cliffs impossible at distances < 30-50 yards. Shorelines are steep and much wave energy is reflected. Judging from the fate and persistence of oil in a similar cove in MT#1, I think it unlikely.



Sensitivity sites for segments MT-1, MT-3, & MT-4.

ENTIRE SHORELINE OF ISLAND IS INHABITED BY
SEA BIRD COLONIES



OG Mona

SEGMENT ST/ MT/3

SUBDIVISION A

DATE 4, 7 90

CHECKLIST

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

LEGEND

1 

Pt - No Subsurface Oil

2 

PR - Subsurface Oil

 CT/C

Continuous Distribution

 CT/B

Broken Distribution

 CT/P

Patchy Distribution

 CT/S

Splashed Distribution

Oiled Vegetation

1 

Photo location, direction,
and number

SKETCH MAP

NO sketch

Oil Character Length (m): AP  PO  CV  CT  ST  MS  PT  TB  FL  NO 1839

SHORELINE ECOLOGICAL SUMMARY

REVISION: 08/23/90

Segment ST / MT-3 Subdivision A (of A) Date (mo / day / yr) 4 / 7 / 90

(24 hr) 1639 Biologist M. CARR

(A) Substrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock 95 (2) Boulder 5 (3) Cobble (4) Pebble (5) Sand (6) SR

(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 90 Moderate 10 Low

(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.

Frames

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	

LOWER BONE INACCESSIBLE.
LOWER BONE INACCESSIBLE

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	

INACCESSIBLE

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	

LOWER BONE INACCESSIBLE

Wildlife Observations/ General Comments:

Bald eagle (2), both immature

Glaucopteryx gull (200), on rocks.

Black-legged Kittiwake (30), on rocks

Ecological Considerations:

Sensitivity codes: 4-00 (National Wildlife Refuge), 5-R (seabird colonies)

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.

not observed
(probably = "O")

← G15 mapper: I don't have
the adjoining map — please put
"O" around this entire islet.

DHM

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

MT-3

ADEC Segment Length: 1534m

0 100 200 300

Map Key: KEN-62

Name: Mann

Date: 4/7/90

SHORELINE EVALUATION

SEGMENT ST/ MT-001 SUBDIVISION A (1 OF 1) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
4QQ National Wildlife Refuge (no time constraints given)

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled substrate and biota. See attached Ecological Constraints Sheet.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles E. Adams DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 38 m: V.Light 404 m: No Oil 747 m
Subsurface Oil Observed: Yes X No Maximum Depth 30 cm

RECOMMENDATIONS:

<u>X</u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u> </u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u> </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)

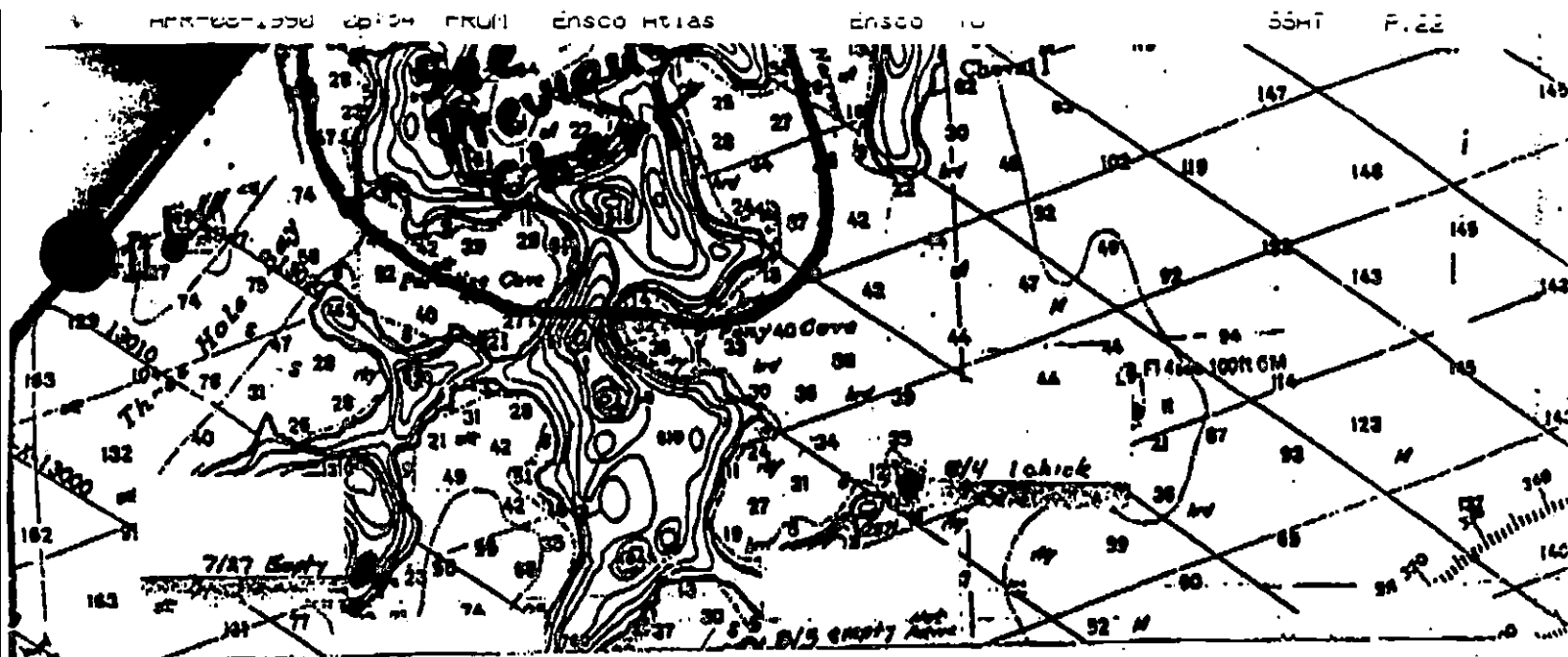
COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/14/90

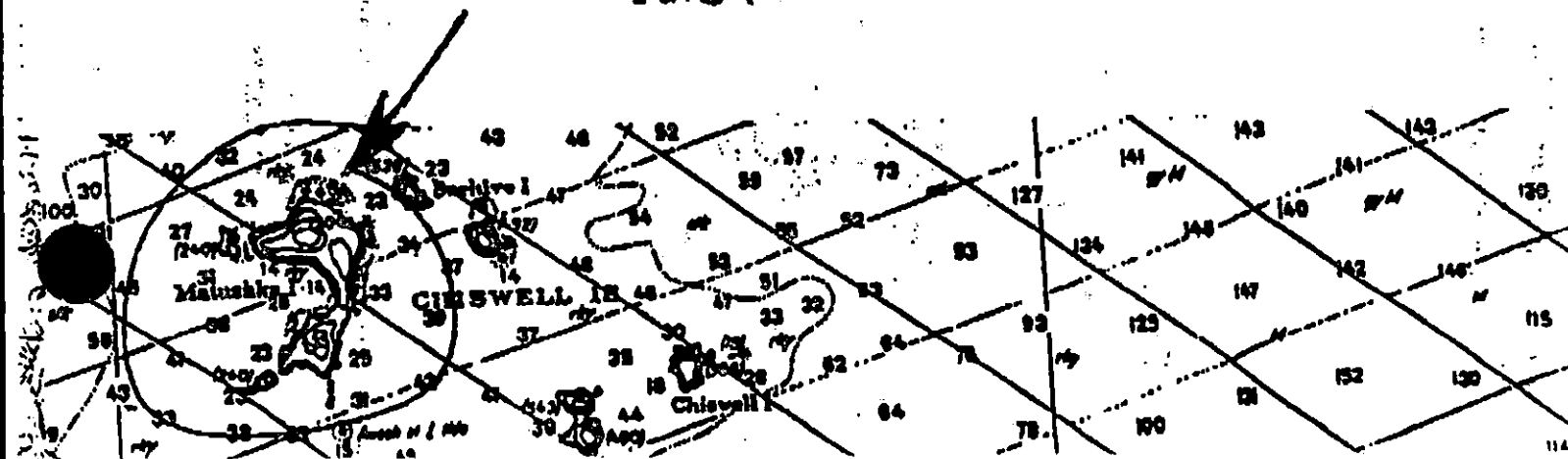
ADEC JOHN BAUER
EXXON ANDY TERN
NOAA Bryl Wescott
USCG G.A. REITER

FOSC: W L DATE: 5-1-90



Sensitivity sites for segments MT-1, MT-3, & MT-4.

ENTIRE SHORELINE OF ISLAND IS INHABITED BY
SEA BIRD COLONIES



OG MT-1

SEGMENT ST/ MT-1

SUBDIVISION A

DATE 4, 7 90

CHECKLIST

☐ M Arrow
☐ Approx. Scale
☐ Seg/Sub Bdry
☐ Oil Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HW/LVL
☐ SSI
☐ Profile Location(s)
☐ Profile(s)
☐ Pit Location(s)
☐ Photo Location(s)

LEGEND

1 

PH - No Subsurface Oil

2 

PH - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oiled Vegetation

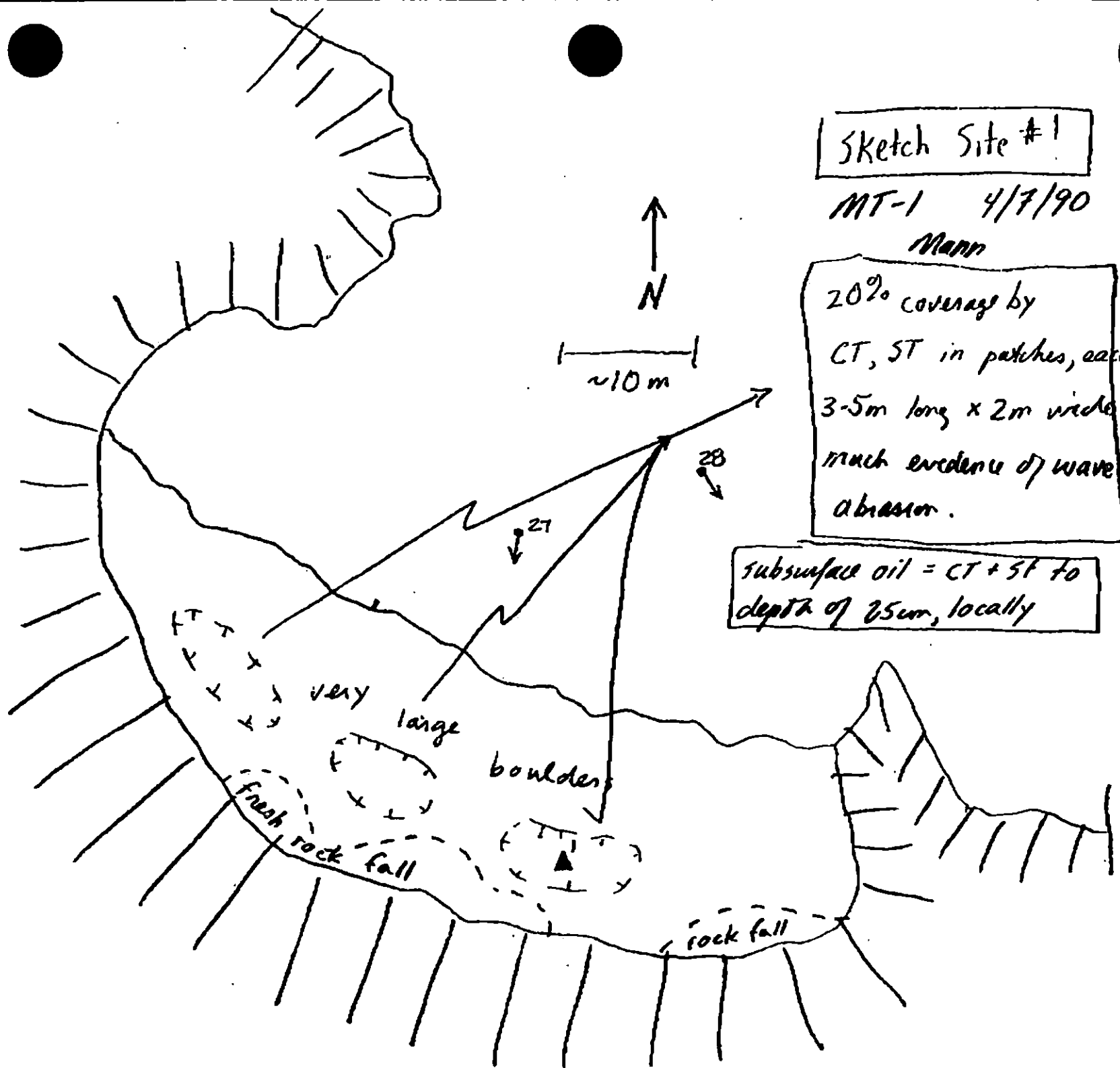
1 

Photo location, direction,
and number

SKETCH MAP

NO sketch

Oil Character Length (m): AP 0 PO 0 CV 0 CT 100 ST 100 MS 0 PT 0 TB 0 FL 0 NO 1257



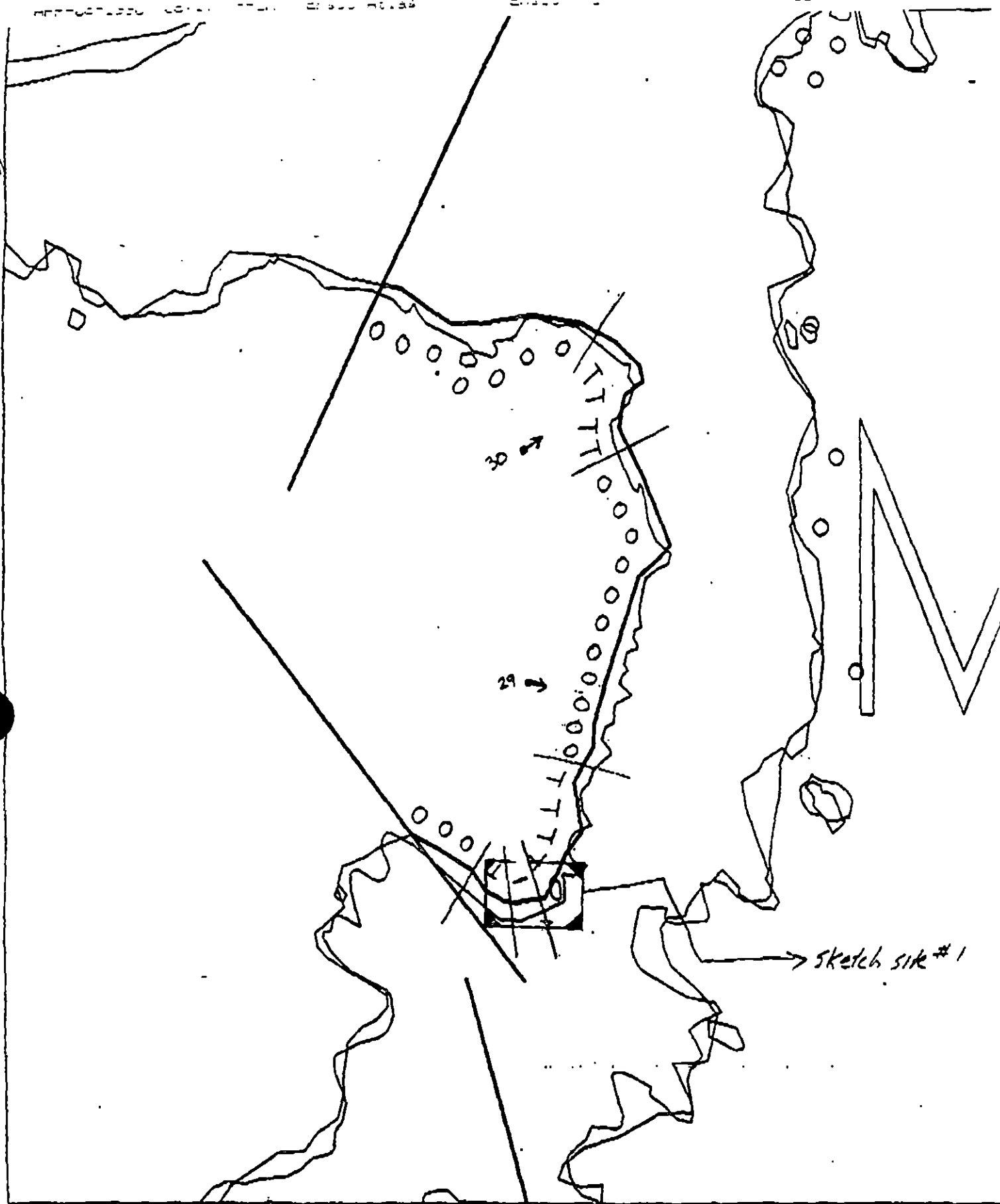
Sketch Site #1

MT-1 4/7/90

Mann

20% coverage by
CT, ST in patches, each
3-5m long x 2m wide:
much evidence of wave-
abrasion.

subsurface oil = CT + ST to
depth of 25cm, locally



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

MT-1A

ADEC Segment Length: 1189m



Map Key: KEN-60

Name: Mann

Date: 4/7/90

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ MT-003 SUBDIVISION A (1 OF 1) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
4QQ National Wildlife Refuge (no time constraints given)

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate. See attached Ecological Constraints Sheet.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles E. Holmes DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 1202 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

<u>X</u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u> </u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u> </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:

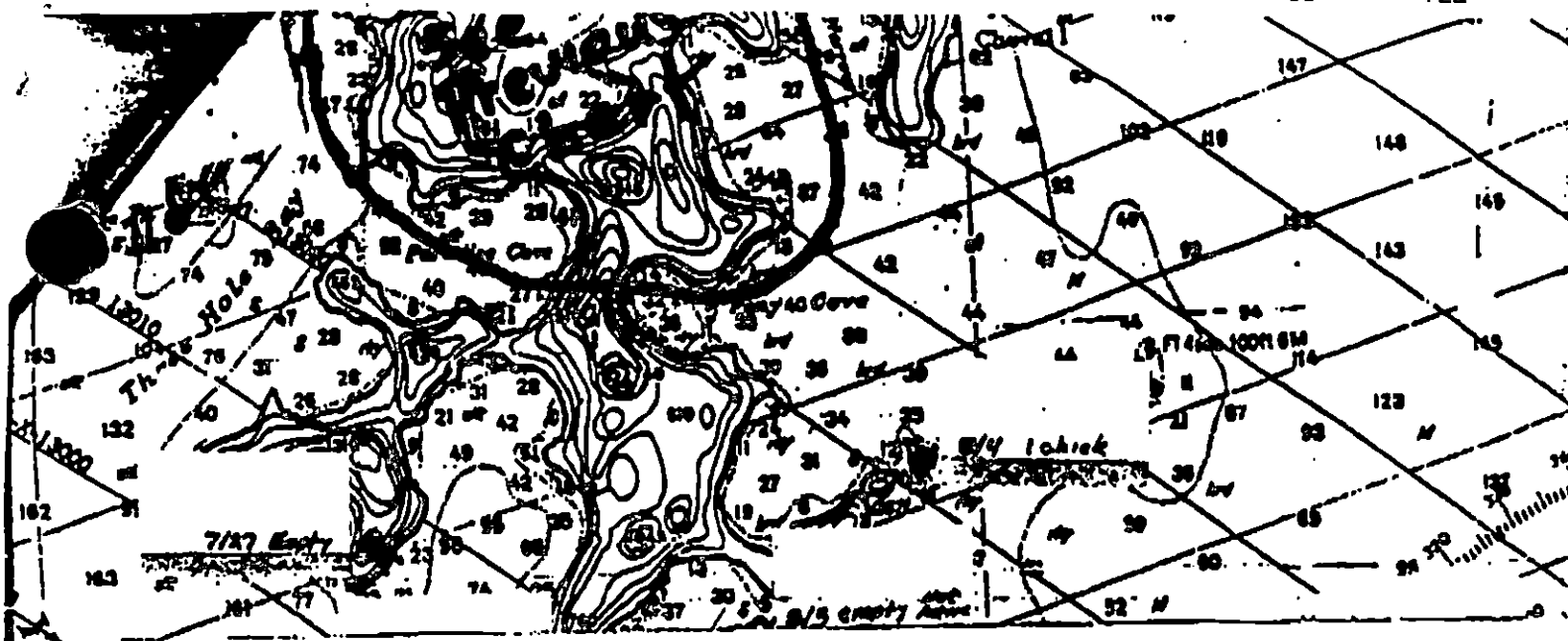
TAG COMMENTS:

TAG APPROVAL DATE: 4/14/90

ADEC JOHN BAUER
EXXON AMY TATE
NOAA Burt Wesscott
USCG G.A. REITER

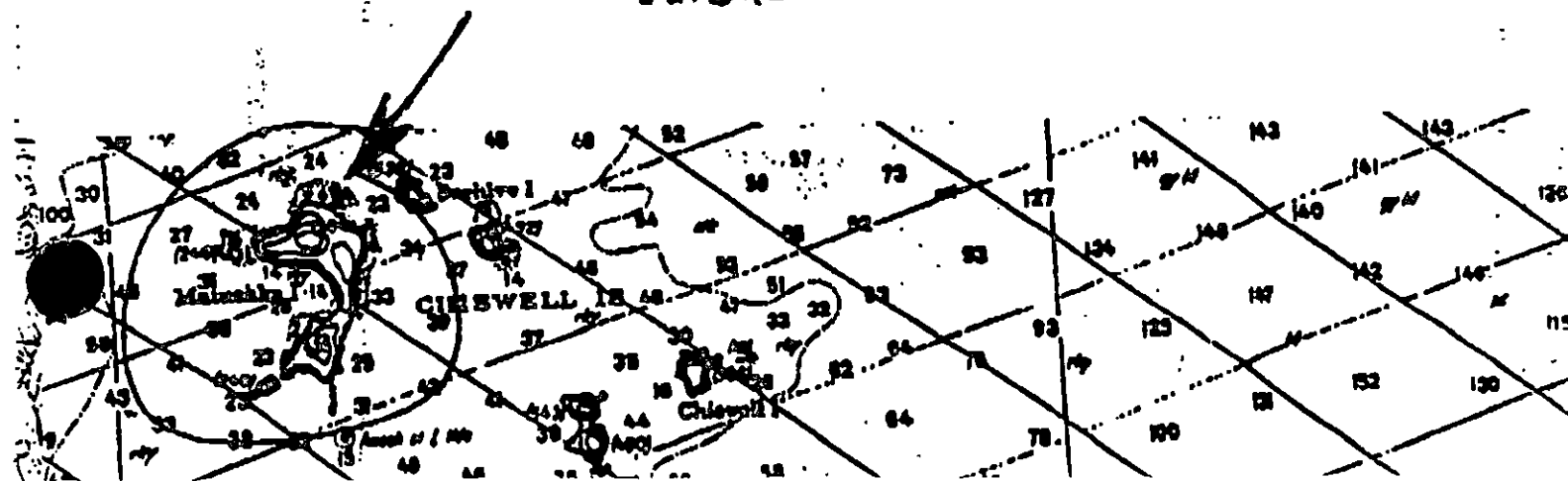
FOSC:

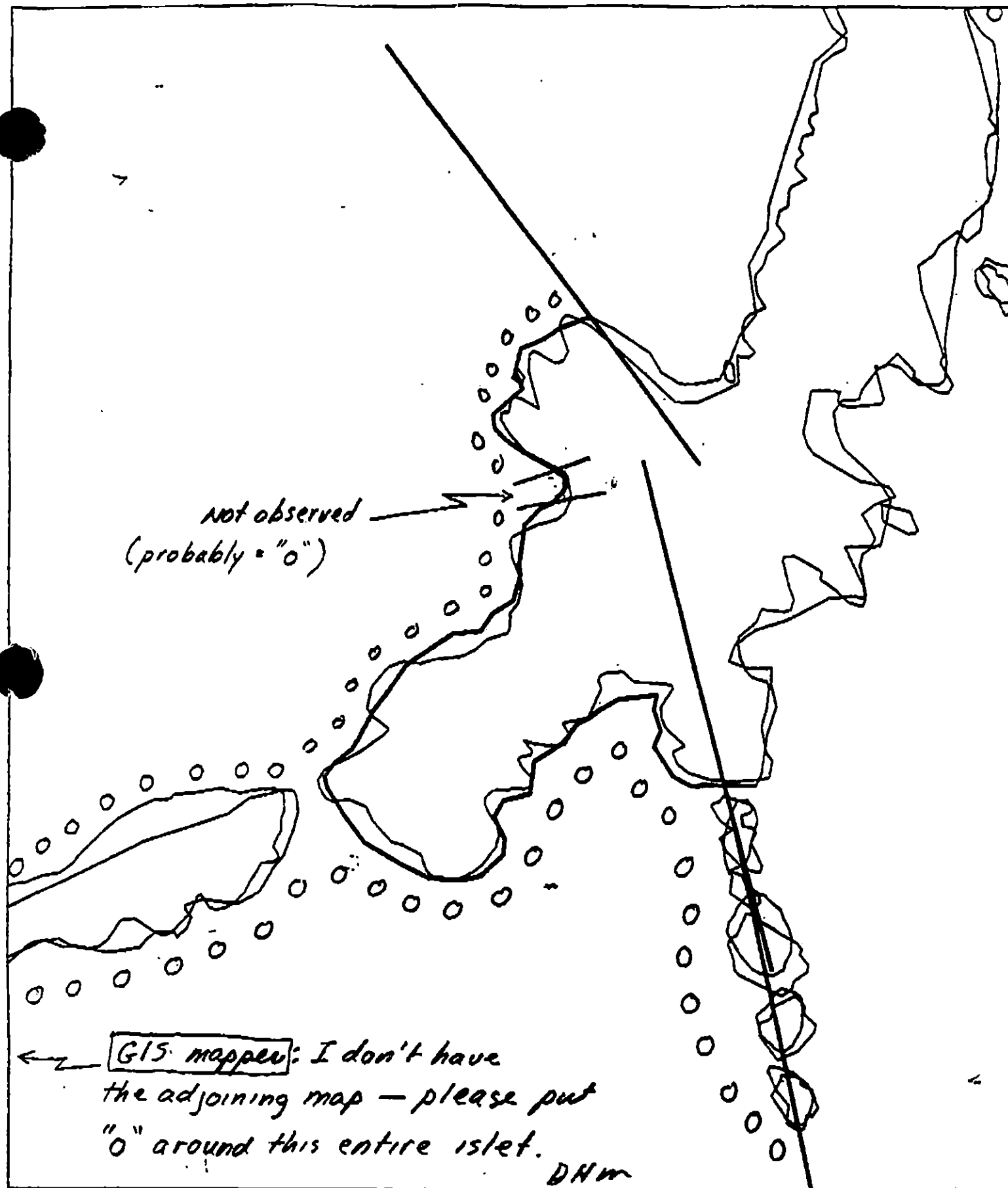
DATE: 5-1-90



Sensitivity sites for segments MT-1, MT-3, & MT-4.

ENTIRE SHORELINE OF ISLAND IS INHABITED BY
SEA BIRD COLONIES.





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

MT-3

ADEC Segment Length: 1534m

0 100 200 300

Map Key: KEN-62

Name: Mann

Date: 4/7/90

REGION: KENAI

SEGMENT: MT-004

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ MT-004 SUBDIVISION A (1 OF 1) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
4QQ National Wildlife Refuge (no time constraints given)

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to uncoiled biota and substrate. See attached Ecological Constraint Sheet.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 36 m: No Oil 2728 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 50 cm

RECOMMENDATIONS:

<u>X</u> 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:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

MENT ST/ MT 04

SUBDIVISION: A

DATE 4/7/90

USCG/NOAA

NAME JACQUI MICHEL

SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

NO OIL WAS OBSERVED ALONG THE VERTICAL ROCKY SHORELINE. SMALL AMOUNTS OF POOLED OIL (COAT/STAIN) WERE FOUND AT A PREVIOUSLY OILED BOULDER BEACH, MOSTLY WITHIN/BELOW THE BOULDER SUBSTRATE. HOWEVER, NATURAL REMOVAL ALONG THIS HIGH ENERGY SHORELINE IS THE MOST EFFECTIVE MEANS OF OIL REMOVAL.

ADEC

NAME JOHN R. REED

SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

NO OIL PRESENT ON VERTICAL GRANITE SHORELINE. ONE SMALL AREA OF COAT, STAIN, AND VERY ~~THICK~~ LITTLE MOUSSE WAS PRESENT IN A LARGE BOULDER BEACH. NO CLEANUP NEEDED IN THIS SEGMENT. LARGE BIRD COLONY PROVIDES IN THIS SEGMENT I HAVE READ AND AGREE WITH ALL DATA ON S.S.A.T. FORMS.

LAND MANAGER/USFWS

NAME Mary Portner

SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

OIL REMAINS AS POOLED, COAT AND STAIN AT THE SMALL POCKET BEACH DESCRIBED AS SITE 2 IN THE 1989 SCAT. THE OIL IS CONCENTRATED IN THE NE CORNER OF THE BEACH WHERE BOULDERS SHIELD THE BEDROCK. THIS SITE IS ACCESSIBLE ONLY DURING CALM WEATHER. A RICH AVIFAUNA IS PRESENT IN THIS SEGMENT.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG MANN USCG NORA MICHEL SEGMENT ST/ MT. 04
 BIO CARR LAND REP PARTNER - RWS SUBDIVISION A
 EXXON BOYER ADEC REED TIME 17:00 to 17:50
 TEAM NO.: 18 TIDE LEVEL: +2.8 to +0.9 DATE 4/7/90
 EST. SUBDIVISION LENGTH: 3040 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☐ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Halo WORKING DIRECTION: South to North
 SURFACE SEDIMENTS: R 95 % B 5 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 5 % Hang 12 % Vert 85 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 30 m NO 3010 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	TC	TS	TP	TR	BR	RW	SL	TL	LR		SU	U	M	U
ASPHALT PAVEMENT														
POOLED				✓				✓			✓			
COVER														
COAT		✓	✓	✓		✓					✓			
STAIN		✓	✓	✓		✓					✓			
MOUSSE														
PATTIES														
TARBALLS														
FILM														
NO OIL														

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE N/A#BAGS N/A

Photographs:

Roll No. ST 18-4Frames 31

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	UC	BR	RW	SL	TL	LR		SU	U	M	U		
1	50		✓				25-50		✓		✓					✓				No	BC throughout

COMMENTS

This side of Matushka Island is mainly a high cliff infested with seabirds. Wave energy is very high and mainly reflected from the shore. Oil does occur at the north end of the segment in a small pocket beach where we were able to land. Here it and it persists on bedrock and boulder surfaces but shows wave/boulder abrasion. A few areas of pooled mousse exist on bedrock where sheltered by stable boulders.

OG MAN

SKETCH MAP

SEGMENT ST/ MT 04

SUBDIVISION A

DATE 4/7 90

CHECKLIST

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

LEGEND

1 

Pt - No Subsurface Oil

2 

Pt - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oiled Vegetation

1 

Photo location, direction,
and number

NO SKETCH PROVIDED

Oil Character Length (ra): AP 0 PO 3 CV 0 CT 30 ST 30 MS 0 PT 0 TB 0 FL 0 NO 3010

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / MT-4 Subdivision A (of 1) Date (mo / day / yr) 4 / 7 / 90
 (24 hr) 1700 Biologist M. CARR

- (A) Substrate type and % of ^{SUBDIVISION} segments:
 (1) Bedrock 95 (2) Boulder 5 (3) Cobble 0 (4) Pebble 0 (5) Sand 0 (6) Silt 0
 (B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 90 Moderate 10 Low 0
 (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: 4
 Roll No. 4
 Frames 31

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	NOT PRESENT
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	
6	6	6	6	6	6	6	6	6	6	6	6	

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	NOT PRESENT
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	
6	6	6	6	6	6	6	6	6	6	6	6	

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	NOT PRESENT
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	
6	6	6	6	6	6	6	6	6	6	6	6	

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	NOT PRESENT
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	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

Glaucous-winged gulls (≈ 100)
 Red-faced cormorant (20)
 Common murre (11)

Black-legged Kittiwake (50)
 Oyster catcher (1)
 crow (1)

Harlequin duck (1)
 whale (1), unidentified

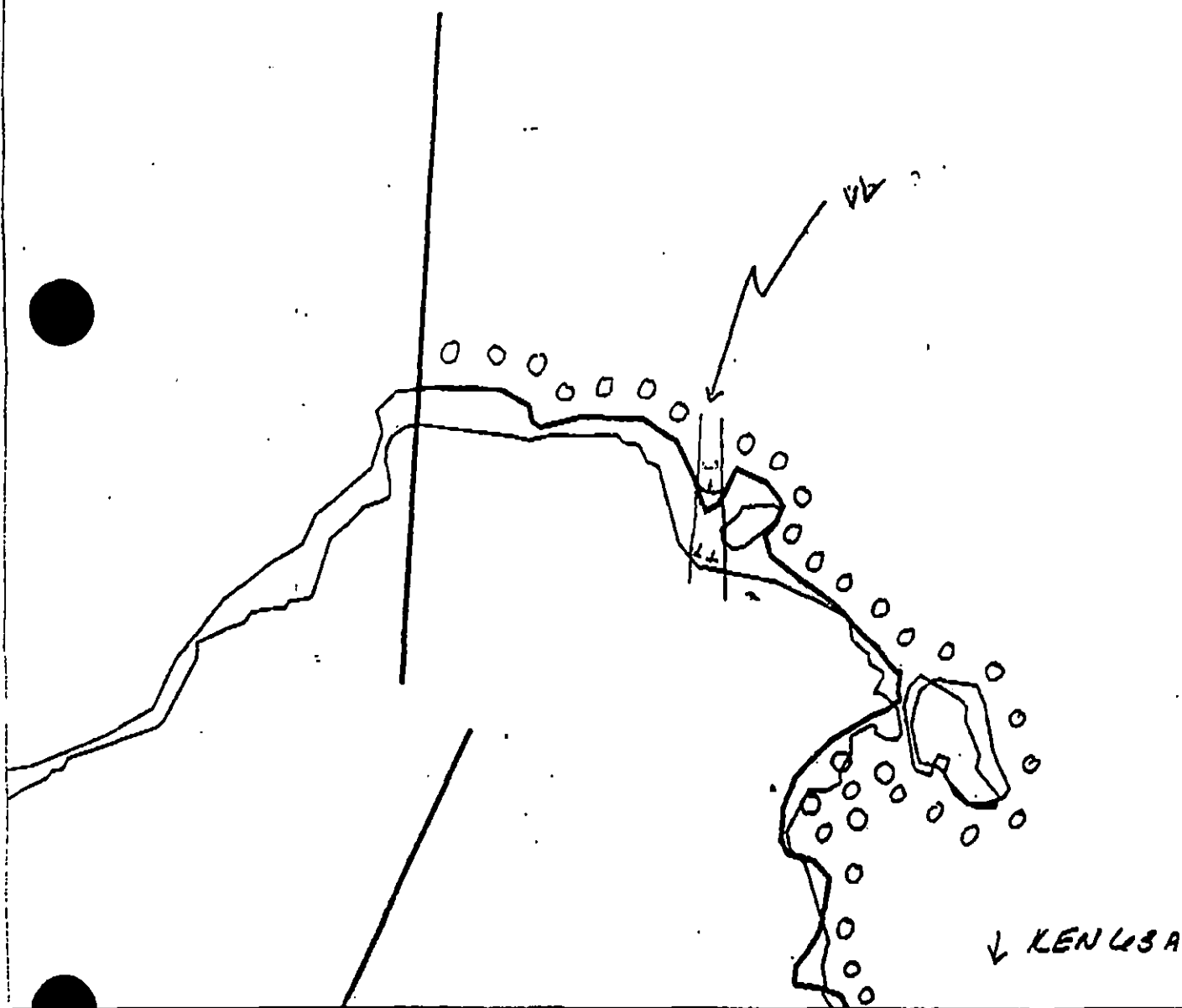
Ecological Considerations:

Sensitivity codes:

4-00 (Natural Wildlife Refuge), 5-R (seabird colonies)

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 (8/1 to 9/15)
- 6V Anchorages (6/1 to 9/15)
- 6W Forest Service cabins (6/1 to 9/15)
- 6X Lodge (8/1 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

MT-4

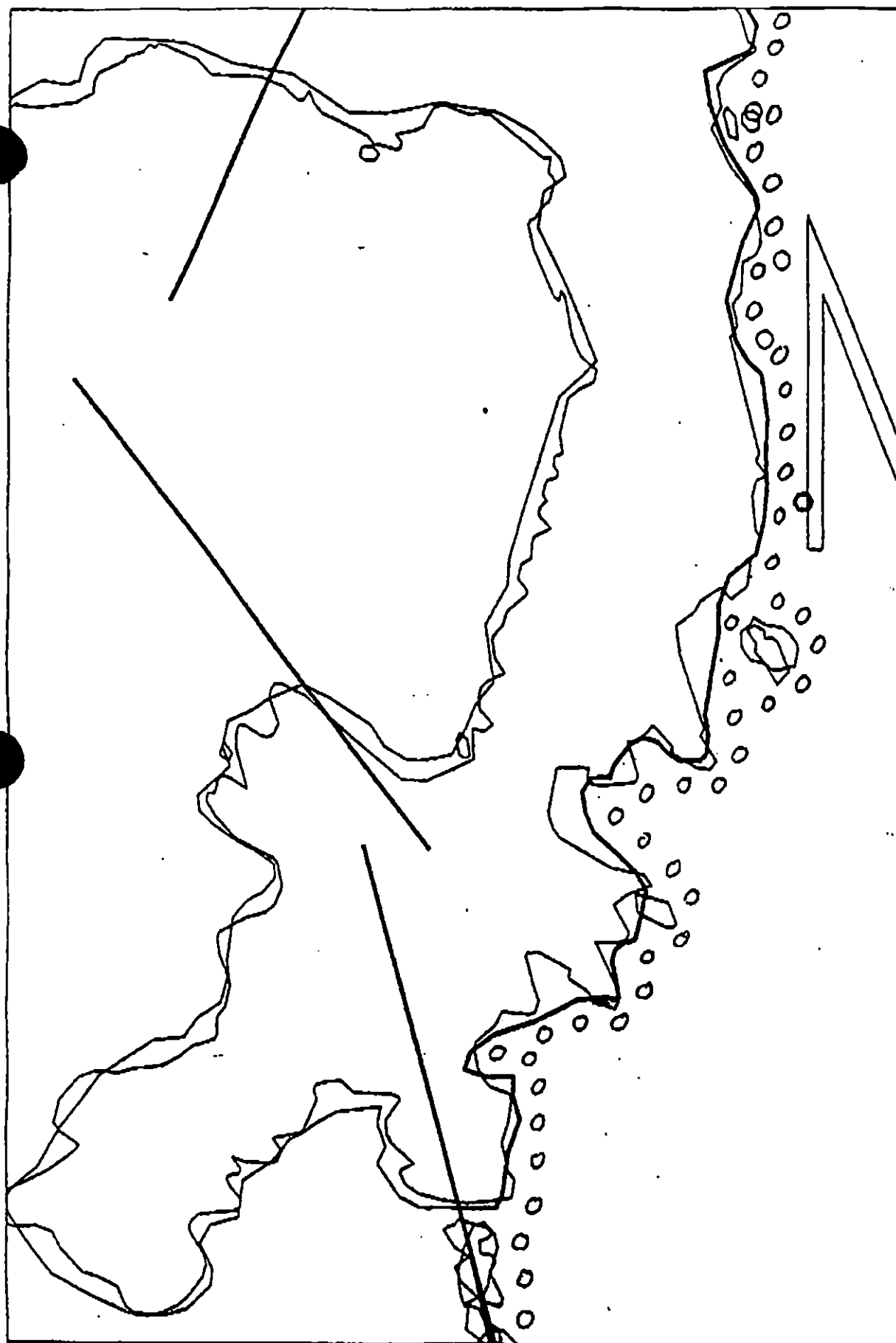
ADEC Segment Length: 2820m

Map Key: KEN-63b

Name: Mann

Date: 4/7/90

↑
KEN 038



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

MT-4

ADEC Segment Length: 2820m

0 100 200 300

Map Key: KEN-63a

Name: Mann

Date: 4/7/90

SHORELINE EVALUATION

SEGMENT ST/ MT-004 SUBDIVISION A (1 OF 1) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
4QQ National Wildlife Refuge (no time constraints given)

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to uncoiled biota and substrate. See attached Ecological Constraint Sheet.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles E. Johnson DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 36 m: No Oil 2728 m
Subsurface Oil Observed: Yes X No Maximum Depth 50 cm

RECOMMENDATIONS:

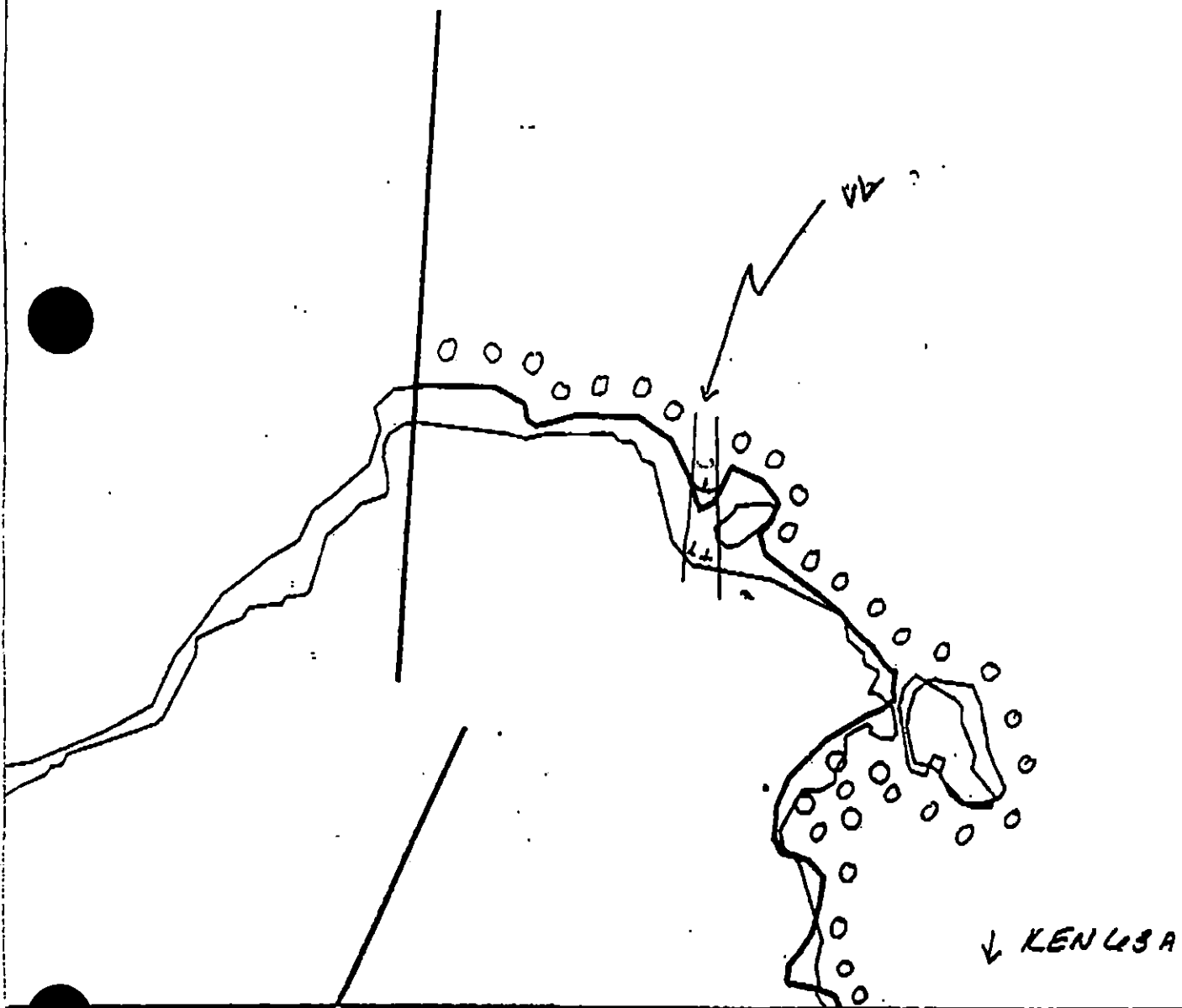
☒ No Treatment Recommended	☐ Snare/Absorbent Booms
☐ Treatment Recommended	☐ Oil Snares (pom poms)
☐ Manual Pickup	☐ Absorbents (pads, rolls, etc)
☐ Bioremediation	☐ Spot Washing: <u> </u> Wands
☐ Tarmat: ☐ Breakup	☐ Beach Cleaner
☐ Removal	☐ Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/14/90
ADEC Art Weaver Det Weaver
EXXON Andy Tate
NOAA Burt Wesoff Burt Wesoff
USCG G.A. Reiter G.A. Reiter

FOSC: W L DATE: 5-1-90



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

MT-4

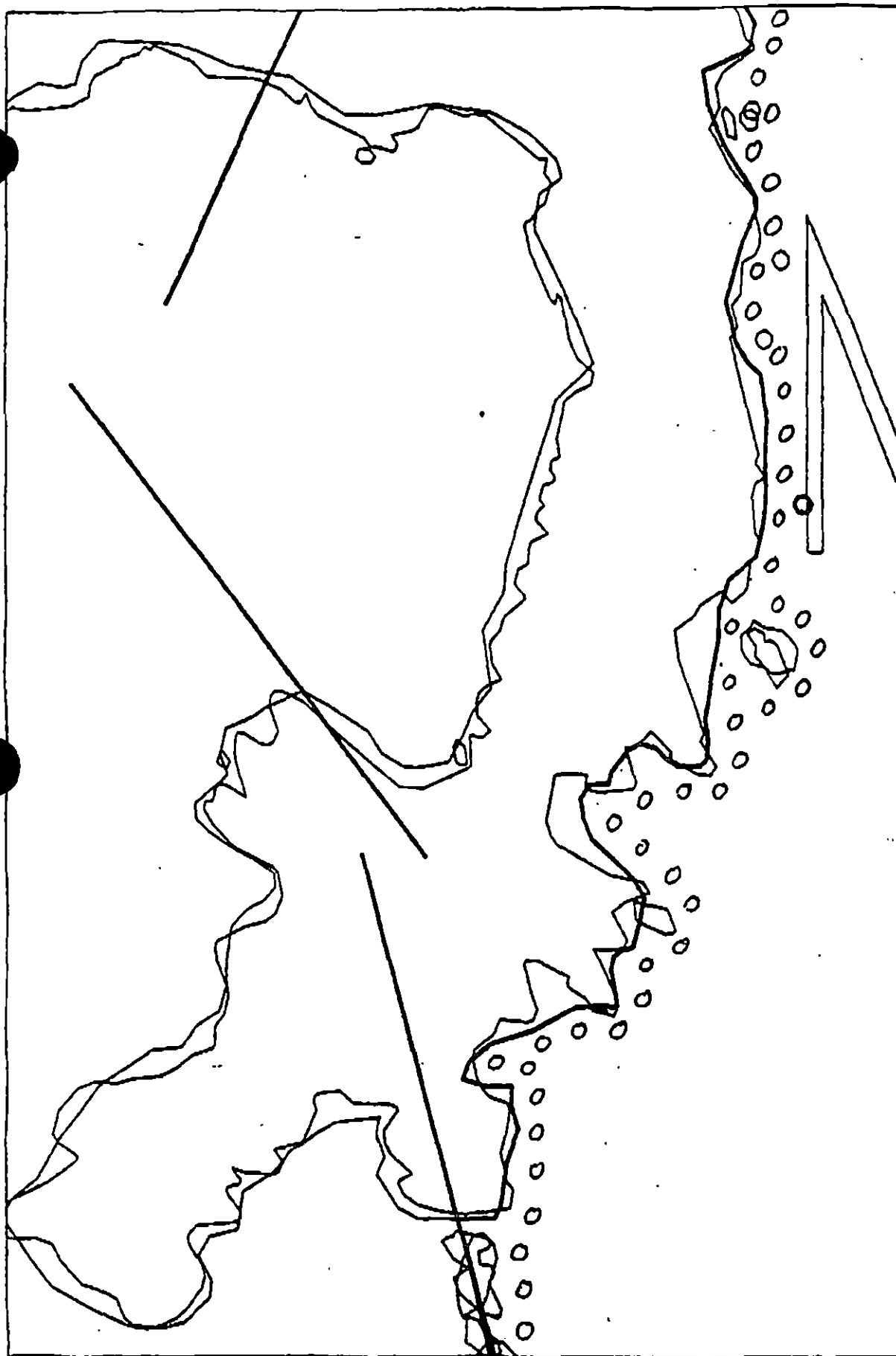
ADEC Segment Length: 2820m

Map Key: KEN-63b

Name: Mann

Date: 4/7/90

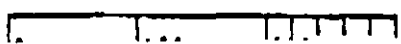
↑
KEN 63B



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

MT-4

ADEC Segment Length: 2820m



Map Key: KEN-63a

Name: Mann

Date: 4/7/90

REGION: KENAI

SEGMENT: ST/NC-01

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ NC-01 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 3067 m: No Oil 5688 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 Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / NC 001 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/26/90

USCG

NAME

Jerry Schultz

SIGNATURE

☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

ADEC

NAME

Mike Ebel

SIGNATURE

☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

NC-01-A: This segment is comprised of a 9429m perimeter of an unnamed bay having mostly steep bedrock cliffs with high angle debris slopes. The southern shore extending around in an arcuate manner to the eastern shore was found to be clean. The remainder of the eastern shore (forming the bay's head) and extending around into the northern shoreline were found to contain tarballs, patties and mouse in a splash distribution (all were picked up) along with covers and coat splashes (very infrequent; refer to sketch). No further impact recommended.

LAND MANAGER

NAME

Mike Tetrauer NPS

SIGNATURE

☐ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

Good survey. Very sparse contamination in the form of tarballs, patties and splashes of coat/cover. We picked up all retrievable oil during the survey. The staining left behind is ~~very~~ very sparse. It appears that no further treatment of this site is needed. Very difficult to survey due to large boulders - requires a lot

4/27/90

SHORELINE OILING SUMMARY

REVISION NO. 04

OG RANDY SIEGEL USCG Jerry Schultz SEGMENT ST/ NC-001
 BIO Lewis Sherman LAND REP Mike Tetreau (WPS) SUBDIVISION A 1 OF 1
 EXXON Leonard Herbert ADEC Mike Ebel TIME 08:00 to 12:30
 TEAM NO. 12 TIDE LEVEL -3.5' to 8.2' DATE 4/25/90
 EST. SUBDIVISION LENGTH: 9429 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 60 % B 35 % C 5 % P 0 % G 0 % S 0 % M 0 % V 0
 SLOPE: Long 15 % Hang 75 % Vert 10 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH W 0 m M 0 m N 0 m VL 3060 m NO 6369

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	C	B	P	S	1	2	3	4	5	SU	U	M	U
ASPHALT PAVEMENT													
POOLED													
COVER				X				X			X		
COAT				X		X					X		
STAIN				X		X					X		
MOUSSE				X					X		X		
PATTIES													
TARBALLS													
FILM													
NO OIL										X		X	X

PAVEMENT H F S 0 sq. m by 0

PATTIES / TARBALLS 0 BAC

NEAR SHORE SHEEN? NO BR RW SL T.

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs	X		
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐

TYPE TB + P

#BAGS 1

Photographs. None

Roll No

Frames

SUBSURFACE OIL

PIT NO	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SHEEN (Y/N)	▼	SURFACE SUBSURFACE SEDIMENT
		OP	OR	OL	OC	NO		VO	UC	1 SP	2 FW	3 W	4 B	5 BR	6 LK	SU	U	M	U				
1	20					X	0-0		X								X				-	-	S
2	20					X	0-0		X							X					-	-	P
3	35					X	0-0		X							X					-	-	C
							.																
							.																
							.																

COMMENTS

Large unnamed bay surrounded by hi-angle granite cliffs and granite boulders along beach. Southern beach had no observable oiling. Eastern and northern beaches had occasional (< 1%) tarballs, patties, cover, coat or stain on/under boulders. We picked up all of them that we observed.

REVIEWED W

DATE 4/27/90

11-7

3. Handy
 SEGMENT ST/ 1
 DIVISION A
 DATE 4/25/90

HECKLIST

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

EGEND

1 Δ
 1 - No Subsurface Oil

2 Δ
 2 - Subsurface Oil

CT/C
 Continuous Distribution

CT/B
 Patchy Distribution

CT/P
 Patchy Distribution

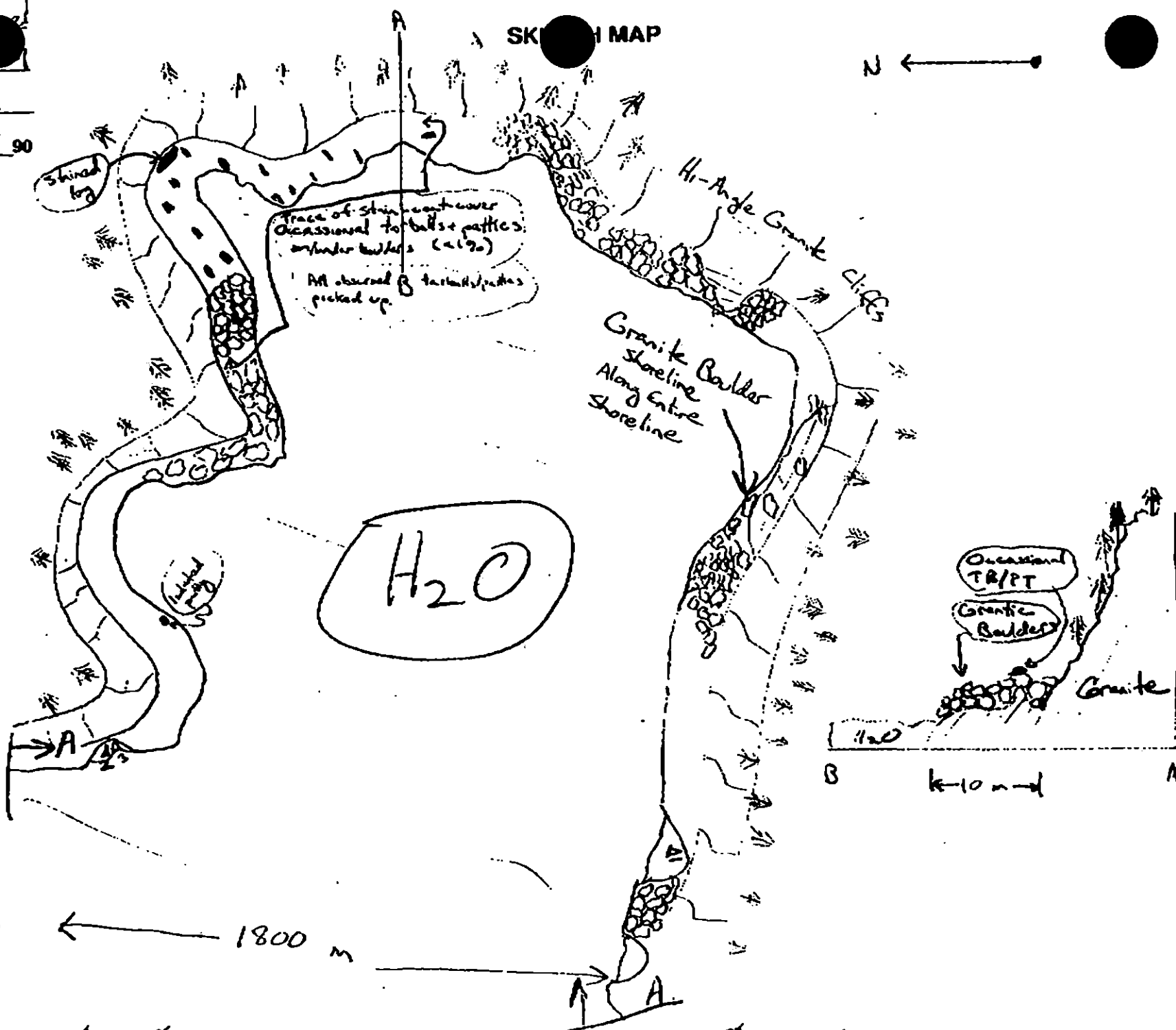
CT/S
 Patchy Distribution

lll
 Lush Vegetation

1 $\bullet$
 1 - No location, direction, or number

111
 111 - No location, direction, or number

Character Length (m): AP ϕ PO ϕ CV 1000 CT 3000 ST 3000 MS 2000 PT 3000 TB 3000 FL ϕ NO 6369



SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

Revised: 03/7

Segment ST / NC-1 Subdivision A Date (mo / day / yr) 4/25/90Time (24 hr) 0610-1245 Biologist SHARMAN

- (A) Substrate type and % of segment: SUBDIV.
 (1) Bedrock 60 (2) Boulder 35 (3) Cobble 5 (4) Pebble (5) Sand (6) Silt
- (B) Overall % cover of biota (% of segment): Dense X Moderate Low
SUBDIV.
- (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. Frames

BARNACLES

Dense			Moderate			Sparse			Rare			NOT PRESEN
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 PRESEN
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 (ANCELA, LITTORINA, LYMAETE)

Dense			Moderate			Sparse			Rare			NOT PRESEN
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 PRESEN
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: 6 sea lions, 4 adult eagles, 2 crows, 2 Steller's jays, 6 pairs harbor seal pups. Winter wrens, hermit thrushes, varied thrushes, chickadees singing in forest. 1 pair river otters swimming + in intertidal zone. River otter seen in low intertidal zone. The general area apparently subsided 122 m in the 1964 earthquake - dead trees along upper margin of intertidal zone. (cont.)

Ecological Considerations:

We received no information regarding previously identified resource sensitivities for this segment. We observed no eagle nests, anadromous streams, important pinfish haulouts, seabird colonies, etc. As with all highly productive and diverse intertidal communities, this one is probably sensitive to human-induced physical disturbance. No ecological map attached - no specific sensitivities. This segment

NC-1

Shoreline Ecological Summary (cont.)
(Page 2 of 2)Sharman
4/25/90General Comments (cont.):

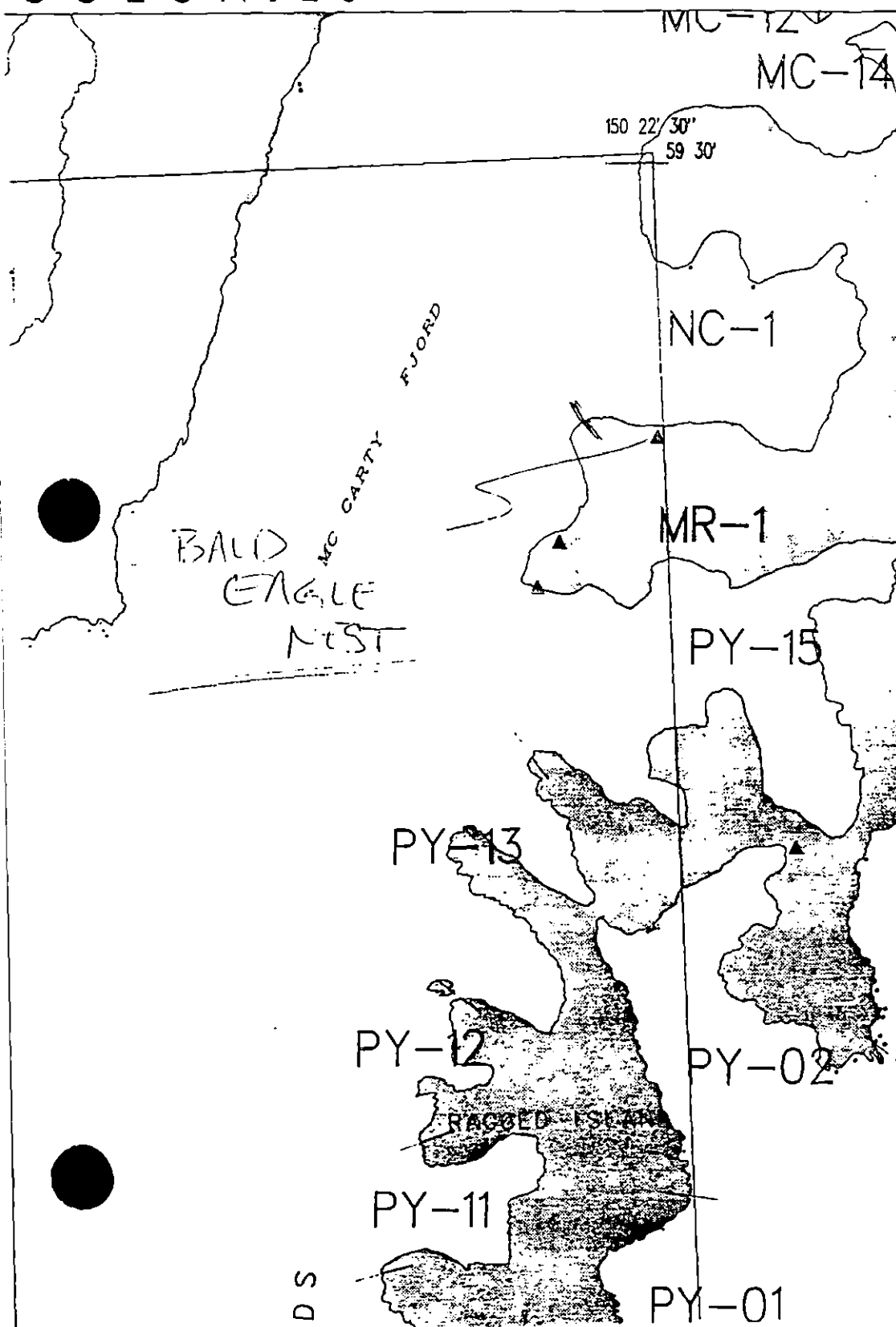
The Shoreline Ecological Summary form data is probably not reflective of the very great diversity and abundance of intertidal life in this segment. This area is no less rich than any area in the oil-impacted portion of PWS I have observed since the spill. There are good stands of last year's Perceponotis off the rocky points, supporting a diverse bryozoan community including an abundance of Melibe leonina. Nearshore waters also have a great abundance of ctenophores at this time, + occasional Aurelia. Fucus is largely confined to MTE and UTE bedrock because of competition with the profusion of other algae. There are discontinuous rather than bands of MTE mussels. Fucus and mussels seem to be recruiting well (especially mussels) locally where populations are established. Littorines and limpets also are recruiting well. Barnacle settlement is relatively sparse compared to PWS, and is confined mainly to the MTE and UTE. Spat set seems to be lagging behind PWS, since there are sparse cyprids but very few actual metamorphosed spat. Judging from the appearance of the water and profusion of ctenophores, however, the bloom is + has been well underway. The dominant bedrock/large boulder beaches are extremely diverse. Beneath boulders are numerous pricklybacks, Spirorbis, Bryozoa, limpets, Halichondria, Amphisa, scaleworms, nemertean, Idotea, brooding Leptasterias, etc. The entire LTE is covered 100% by a diversity of algae: Costaria, various laminarians, Ulva, Enteromorpha, Porosiphonia/Polysiphonia, filamentous greens (Acrosiphonia), Sargassum, coralline algae (Phylloporum + erect articulated forms), Gracilaria, petrocilia forms, several foliose reds. Animals include Panopaea, Pinnata, Dermasteria, Mediaster, Harporia, Orthasteria, Tuella lamellana, N. loria, Starosia, Acantha, Katharina, Tonicella, Mopelia, Talia, Anthopleura (3 spp.), Podocarpus, Prototrocha, Serpulids, Bryozoa, Cucumaria miniata, Modiola, etc. etc. Exceedingly healthy and productive intertidal zone.

45/63

ECCOLOGICAL
MAP

ST (1)

COLONIES



SHORELINE EVALUATION

SEGMENT ST/ NC-01 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ST-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: J. David McMahon DATE: 5/8/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 3067 m: No Oil 5688 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 5/7/90

ADEC Art Weiden Art Weiden

EXXON Amy BA Amy BA

NOAA Gary Petros Gary Petros

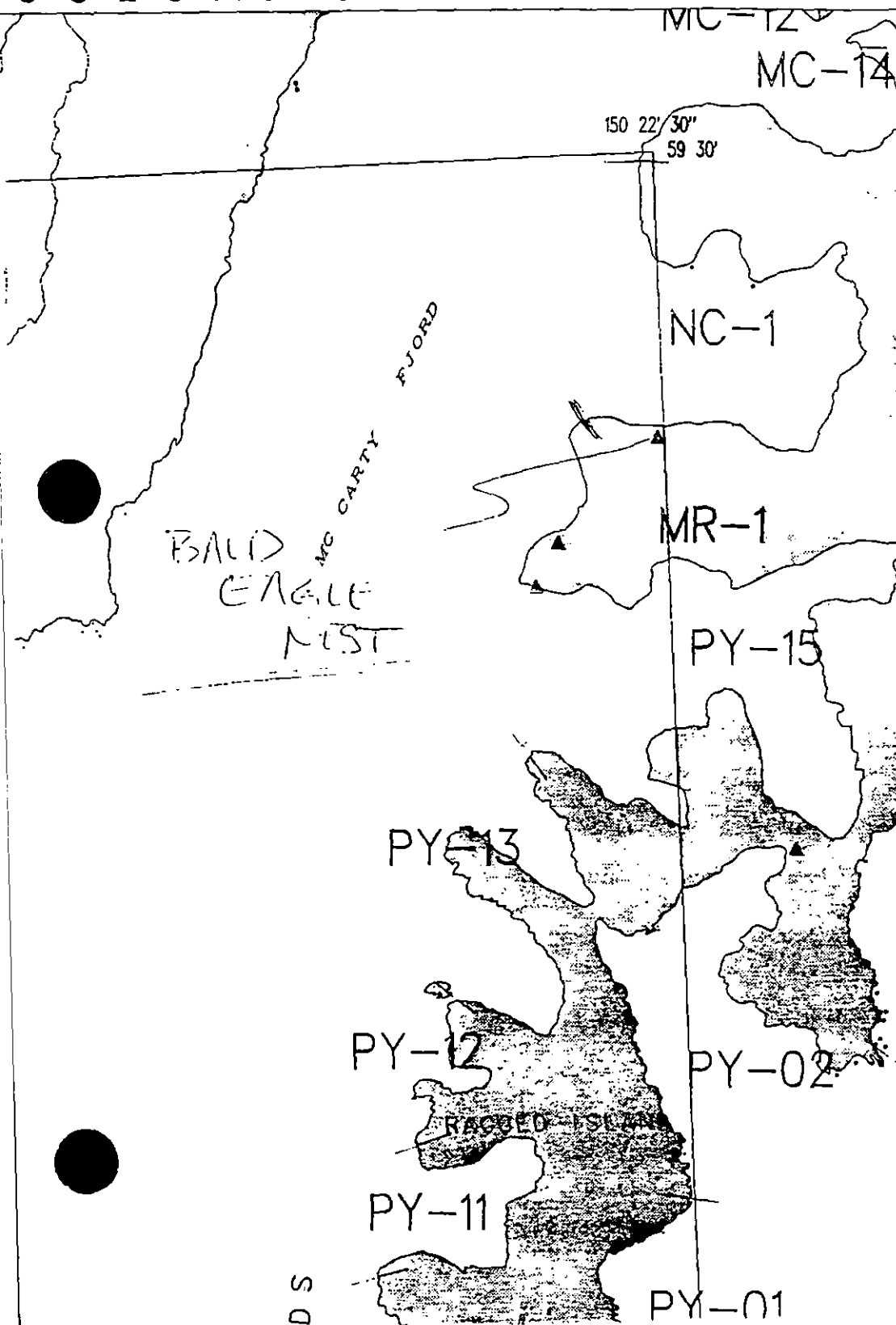
USCG G.A. REITER G.A. Reiter

FOSC: W L DATE: 5-12-90

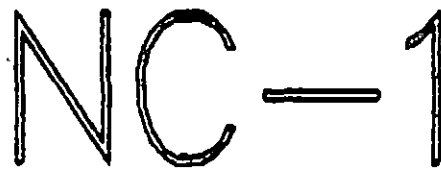
155 1000-0001-200404000000

COLONIES

ECCOLOGICAL
MAP



ST(1)



NC - 1

Approx. Segment Length: 9092m

Map Key: KEN-NC-1

Date: 04/25/90

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

REGION: KENAI

SEGMENT: NK-001

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ NK-001 SUBDIVISION A (1 OF 1) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird Colony (5/1 to 9/1)
5T Active Bald Eagle Nest (3/1 to 6/1)
4GG Alaska State Park

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid disturbance/damage to unoiled 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 0 m: Medium 56 m: Narrow 0 m: V.Light 360 m: No Oil 0 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 tarmat removal by shovel and hand trowels in asphalt area indicated on attached sketch map. Treatment activities should be conducted prior to May 1 and/or only after obtaining clearances from ADF&G and DNR.

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____ FOSC: _____ DATE: _____

NOAA _____

USCG _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST 1, NK 01

SUBDIVISION: A

DATE 4/7/90

USCG / NOAA

NAME JACQUE MICHEL

SIGNATURE

☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

This area has two main zones of oil contamination: 1) very discrete patches of widely spaced pavements along the U ITC of the main beach; 2) a smaller beach on NE side w/ larger pavements. The NE pocket beach had some sheens, even though the ground was frozen in places. These pavements should be removed manually. There is little/no concern for erosion. Care should be taken to not disturb the lower intertidal zone on the NE shore.

ADEC

NAME JOAN R. REED

SIGNATURE

☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

I recommend using shovels and hand trowels to pickup the spread asphalt pavements. The main beach is very low angle and has an anadromous stream on the N/E end. The U ITC was mostly covered with snow and I feel like we were missing some of the contamination. ~~Recommend using shovels and hand trowels to pickup the spread asphalt pavements. The main beach is very low angle and has an anadromous stream on the N/E end. The U ITC was mostly covered with snow and I feel like we were missing some of the contamination.~~ I have read and agree with all data on S.S.A.T. Report.

LAND MANAGER-DNR/DPOR

NAME J. Mary S. Johnson

SIGNATURE

☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

Concur with above comments; concerned about snow covered U ITC + recommend another look there later. No problem with intrusive methods this segment, but manual pickup of mnts probably best. Inted no wood debris or driftwood, except for 1 surfact pad. Note segment is a DNR priority due to STATE PARK designation, though access is limited by good weather, because of SE exposure.

SHORELINE OILING SUMMARY

REVISION NO. 03/23/90

OG Manna USCG Michel SEGMENT STI NK-1
 BIO Carr LAND REP Johanson - DNR SUBDIVISION A
 XON Boyer ADEC Reed TIME 6:45 to 7:55
 TEAM NO.: 18 TIDE LEVEL: +1 to +3 DATE 4/12/90
 EST. SUBDIVISION LENGTH: 800 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: all to over
 SURFACE SEDIMENTS: R 5 % B 5 % C 40 % P 40 % G 10 % S 0 % M 0 % V 0 %
 SLOPE: Long 100 % Hang 0 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 50 m N 0 m VL 350 m NO 400 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IB	IP	IR	SB	DB	GB	GB	GB	GB	GB	GB	SU	UI	MI	U
ASPHALT PAVEMENT		✓		✓										✓		
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES				✓										✓	✓	
TARBALLS																
FILM *																
NO OIL													SN	SN	✓	

PAVEMENT: H F (S) 200 sq. m by 6 cmPATTIES / TARBALLS 10 bags of asphalt BAGSNEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☒ YES ☐ NOTYPE asphalt#BAGS 1

Photographs:

Roll No. ST 18-4Frames (9-18)

* probably present but can not see under these conditions
 SUBSURFACE OIL condition

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm-0.1)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	UC	SB	DB	GB	GB	GB	GB	GB	GB	SU	UI	MI	U		
1	20					✓													✓			NO	PG throughout
2	25					✓													✓			"	"
3*	30					✓													✓			"	"
4*	25					✓													✓			"	"
5	25					✓													✓			"	PG throughout
6	30					✓														✓		"	PG throughout

COMMENTS * pit has oil on surface (an asphalt)

An temperature in upper 20's ° F. Beach face is frozen tight. We are unable to
 preserve about 1/2 of the UITE and supra-tidal ^{ZONE} due to snow cover.
 Oiling is mostly in the form of remnant mouse accumulations that now
 exist as patches of asphalt. Widely-scattered, remnant mouse patches
 exist throughout the Middle and UITE. This shoreline is very low -
 Page 1 of 2

SHORELINE OILING SUMMARY (PAGE 2 of 2)

REVISION 03/22/98

SEGMENT ST/ NK-1 SUBDIVISION A

SUBSURFACE OIL (CONTINUED)

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		UO	UC	1	2	3	4	5	6	7	8	SU	U			M
7	25					✓	.										✓				NO	CP over PGC
8	30					✓	.										✓				"	CBP over PGC
9	25					✓	.										✓				"	
10	25					✓	.											✓			"	
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COMMENTS

No burial of oil was evident

angled. The size of the storm berm suggests that waves, at least occasionally, move sediment on and across this beach. Most of NK-1 consists of the intertidal portion of a pebble-cobble-small boulder delta formed by 2 streams at the head of a long, narrow cove. Our survey was not at an ideal time because of the snow cover in the upper portion of the UITE.

REVIEWED _____ DATE _____

DATE 4 / 7 90

CHECKLIST

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

LEGEND

1 Δ

PK - No Subsurface Oil

24

Fig - Subsurface CMI

CT/C

Continuous Distribution

CT/8

Broken Distribution

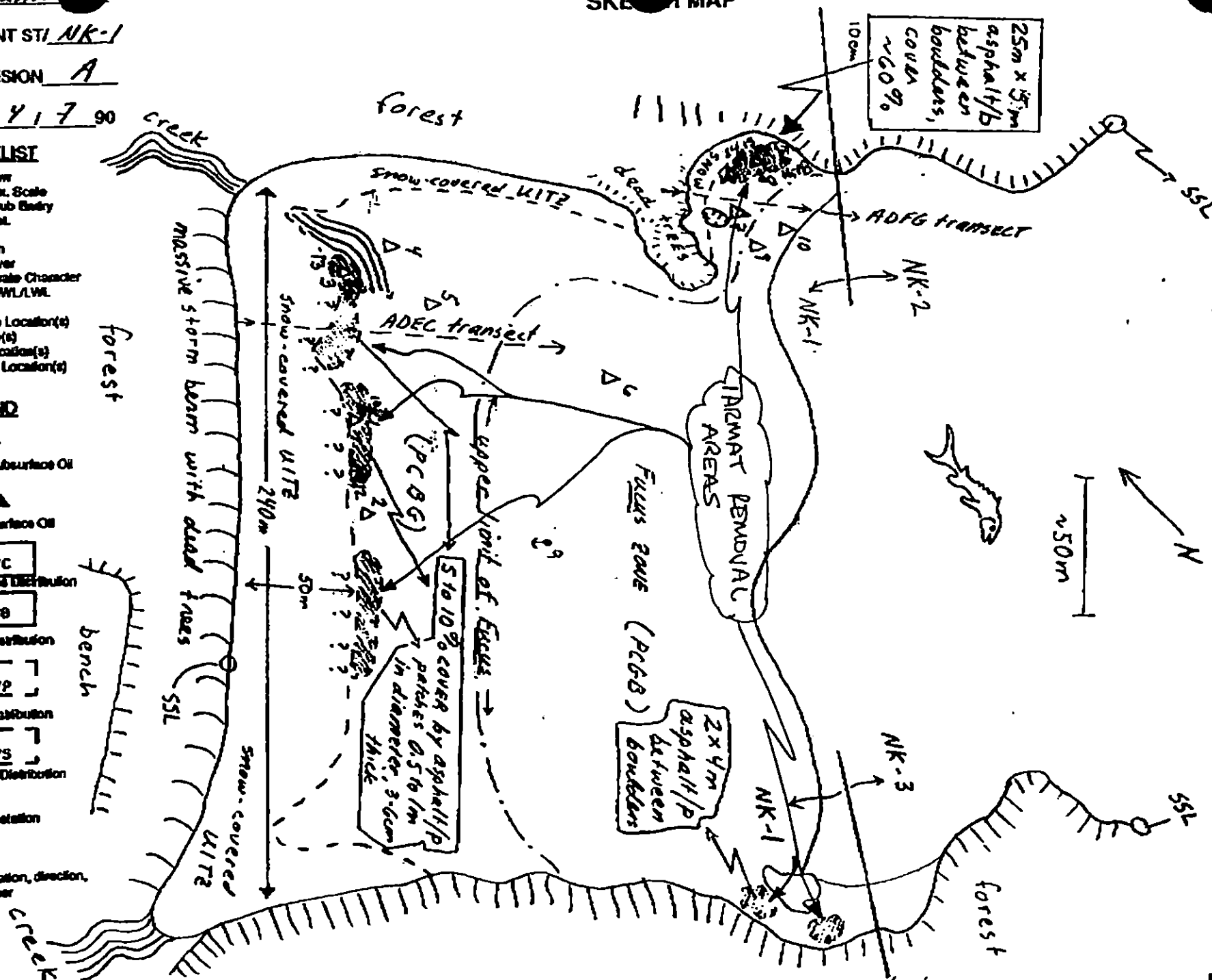
CT/P

Patch Distribution

CT/S

Selected Distribution

Cited Vegetation

Photo location, direction,
and number

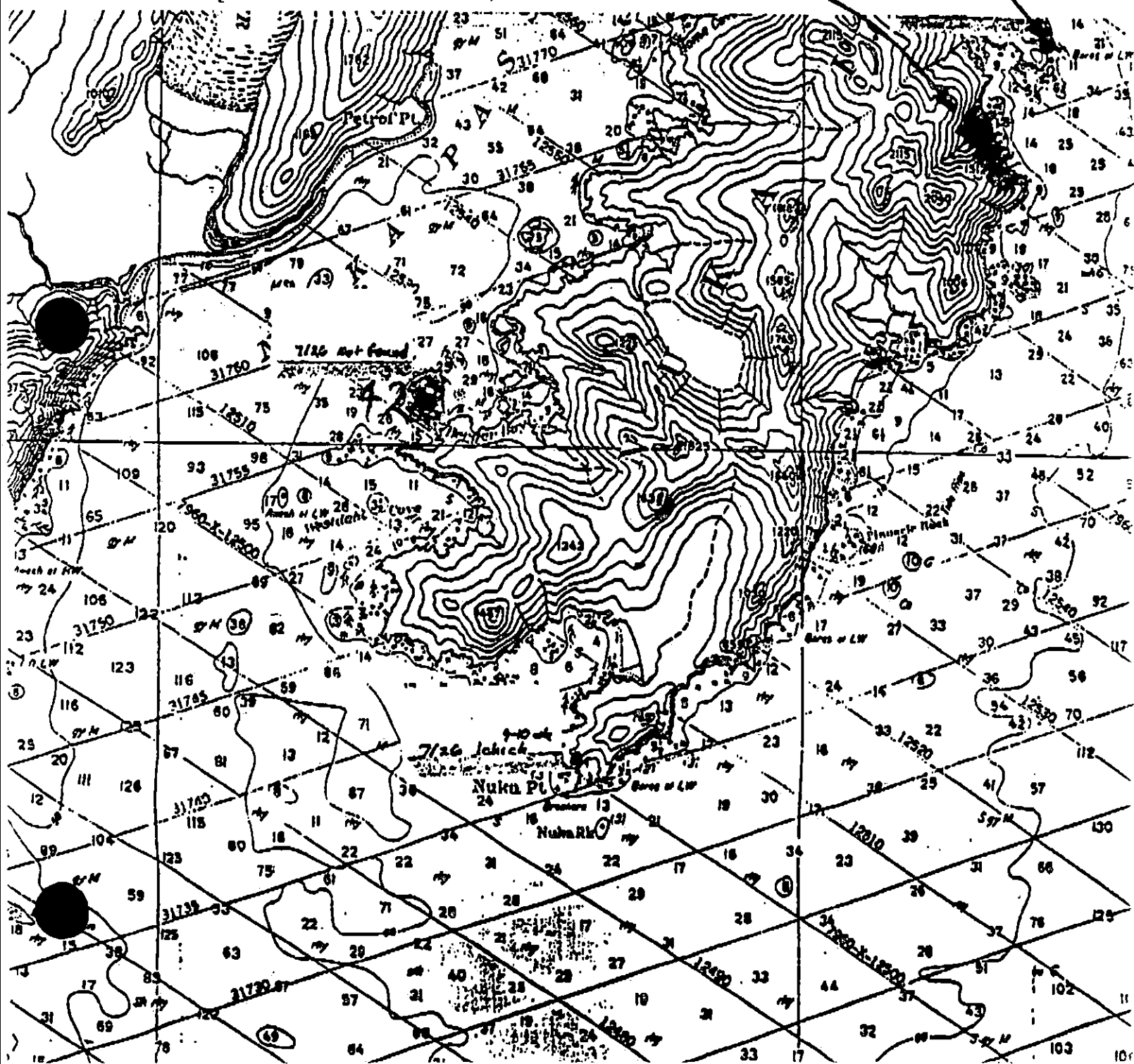
Character Length (in): AP 100 PO 0 CV 0 CT 0 ST 0 MS 0 PT 100 TB 0 FL 0 NO 600

REVISION-032470

Sensitive sites for segments NK-1 and NK-2

SGA BIRD COLONY

BALD EAGLE NEST



SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/29/90

 Segment ST / NK 1 Subdivision A (of A) Date (mo / day / yr) 4 / 7 / 90

 Time (24 hr) 0645 Biologist M. CARR

- (A) Substrate type and % of segments:
 (1) Bedrock 5 (2) Boulder 5 (3) Cobble 40 (4) Pebble 50 (5) Sand (6) Silt
- (B) Overall % cover of biota (% of segment): Dense 50 Moderate Low 50
- (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: 4
 Roll No.

 Frames 9-18

BARNACLES

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

1L } BED ROCK & BOULDER DID NOT EXTEND INTO LOWER ZONE
 NOT PRESENT

MYTILUS

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

1L } BED ROCK & BOULDER DID NOT EXTEND INTO LOWER ZONE
 NOT PRESENT
 NOT PRESENT IN UPPER ZONE OF ANY SUBSTRATE

GASTROPODS

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

1L } BED ROCK & BOULDER DID NOT EXTEND INTO LOWER ZONE
 NOT PRESENT
 NOT PRESENT IN UPPER ZONE
 NOT PRESENT IN ANY ?

FUCUS

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

1L } BED ROCK & BOULDER DID NOT EXTEND INTO LOWER ZONE
 NOT PRESENT

Wildlife Observations/ General Comments:

LAND OTTER (1)

 HARBOR SEAL, *Phoca vitulina* (1)

Ecological Considerations:

 Sensitivity codes: 4-GG (Alaska State Parks), 5-T (Bald eagle nest),
 5-R (Seabird colonies).

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.

good luck!

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

NK-1

ADEC Segment Length: 1947m



Map Key: KEN-64a
 Name: Mann/NK-1
 Date: 4/7/90
 Data Collected:

SHORELINE EVALUATION

SEGMENT ST/ NK-001 SUBDIVISION A (1 OF 1) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird Colony (5/1 to 9/1)
5T Active Bald Eagle Nest (3/1 to 6/1)
4GG Alaska State Park

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid disturbance/damage to unoiled 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: Charles E. Holmes DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 56 m: Narrow 0 m: V.Light 360 m: No Oil 0 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>X</u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> <u>X</u> Removal	<u> </u> Other (see comments)

COMMENTS: Recommend tarmat removal by shovel and hand trowels in asphalt area indicated on attached sketch map. Treatment activities should be conducted prior to May 1 and/or only after obtaining clearances from ADF&G and DNR.

TAG COMMENTS:

REVIEW AND EXAMINE VITZ/SUITZ FOR OILED DEBRIS BY MONITORS.

TAG APPROVAL DATE: 4/14/90.

ADEC Art Weiner Art Weiner

EXXON Andy Galt FOSC: DATE: 5-1-90

NOAA Burt Wescott Burt Wescott

USCG G.A. Reiter G.A. Reiter

OG Mani

SEGMENT ST/ NK-1

SUBDIVISION A

DATE 4-17-90

CHECKLIST

- ✓ N Arrow
- ✓ Approx. Scale
- ✓ SegSub Entry
- ✓ Oil DIAL
- ✓ Width
- ✓ Length
- ✓ % Cover
- ✓ Substrate Character
- ✓ Est. HMT/LWL
- ✓ PSI
- ✓ Profile Location(s)
- ✓ Angle(s)
- ✓ Fit Location(s)
- ✓ Photo Location(s)

Legend

Δ

Fig. - No Subsurface Oil

2

Fig. 5. Subsurface Oil

CT/C

Conclusions Discussion

CR

Copyright Clearance Center, Inc.

RELU

CT/8

Einige Diskussionen

ILL

15
6/13

STEFAN W. DREIER

Understanding the Problem

1

Photo location, direction,
and number

Character Length (in): AP 100 PO 0 CV 0 CT 0 ST 0 MS 0 PT 100 TB 0 FL 0 NO 600

good luck!

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

NK-1

ADEC Segment Length: 1947m



Map Key: KEN-64a
Name: Mann/NK-1
Date: 4/7/90
Data Entered:



1991 MAYSAP EVALUATION

SEGMENT: NK 001 SUB: A REGION: KEN SURVEY DATE: 5/13/91ENVIRONMENTAL SENSITIVITIES:Work Window(s) OPEN 5/1 - 7/10; RESTRICTED 7/10 - 9/15Ecological/Constraints (see page two for details) Fish harvest area, Anadromous streamARCHAEOLOGICAL CONSTRAINTS:If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.SHPO Signature: Rachel Jean Dorn Date: 5/24/91RECOMMENDATIONS:

	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 24 1991FOSC APPROVAL DATE: 5/29/91ADEC [Signature]FOSC [Signature]EXXON [Signature]E. E. FOSG, CDR, USCG
CHIEF OF STAFF FOSCUSCG [Signature]NOAA [Signature]

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

Anadromous Stream: Unlimited treatment up to stream bank between May 15 and July 10. ADF&G approval required for work after July 10. Fish Habitat Permit required for instream work. ADF&G approval required for bioremediation within 100 meters of anadromous stream after July 10.

ADEC

NAME D. Hill of ADFG SIGNATURE Douglas D Hill

☒ TR {Two anadromous streams exist in this segment as well as river otters and NTR/sea otters (sea otter pits were observed in the LITZ). The most heavily oiled portion of this segment is found at the north end (pocket beach). During today's survey as in 1990 the more the surface of the pocket beach was stirred/disrupted the more apparent the oil present became. I feel this beach holds more oil than is readily apparent. I'm not suggesting that a large quantity of oil is present. I feel that because of the past experience mentioned above, today's observations, the fact that the beach exists within Kachemak Bay Wilderness park and because of the habitat the area provides for fish, otters and eagles etc. further manual removal is warranted.

A few patches of light brown mousse (6" x 6") were observed after a bit of excavation at the pocket beach - perhaps more will turn up with further manual removal.

EXXON

NAME R. Coulter SIGNATURE Rex R. Coulter

☒ NTR VERY LIGHT AND SPORADIC SOR WHICH WAS ONLY EVIDENT BY SEARCHING THE AREA. THE BIOTA WAS HEALTHY AND DENSE IN MOST AREAS OF THE BEACH. THERE IS NOTHING TO DO HERE OTHER THAN SCRATCH OR BREAK THE SURFACE IN ISOLATED AREAS OF SOR. THERE ARE NO OTHER AREAS THAT WOULD BENEFIT FROM THIS TYPE OF BREAKUP AND IT WOULD ONLY DISRUPT ONGOING RECOVERY. VECO CREW BROKE UP AND REMOVED EVERYTHING WE FOUND IN ONE HOUR WITH 10 PEOPLE LOCATING OILED SEDIMENTS.

LANDMANAGER

NAME J. JOHNSON OF ADNR SIGNATURE J. Johnson☐ NTR ☒ TR

This beach is within Kachemak Bay State Park, established for its high scenic value. This segment has high recreation value. I recommend manual cleanup of mousse patties. Manual cleanup with shovels would do little if any harm to the miz, and could be accomplished easily + quickly. It is likely that some cleanup will be necessary in NK-2, and this segment could be done simultaneously.

USCG/NOAA

NAME Chief JENSEN / G. SHIGENAKA SIGNATURE Robert Jensen Gary Shigenaka

☒ NTR 1/4 bag SOR picked up. Further removal operations would cause more environmental harm than the oil to be removed.

SURVEYED PORTION OF THE SEGMENT IS THE HEAD OF A SMALL EMBAYMENT INTO WHICH TWO STREAMS FLOW. THE HEAD OF THE BAY IS CHARACTERIZED BY A BROAD, LOW-SLOPING COBBLE BEACH. BIOLOGIST SCHROEDER NOTED THAT PINK SALMON WHICH SPAWN IN THESE STREAMS DO NOT USE THE INTERTIDAL BUT MOVE INTO THE STREAMS THEMSELVES. SOME PORTIONS OF THE COBBLE BEACH SHOWED EXTENSIVE COVER OF RED AND BROWN ALGAE. OIL RESIDUES IN THE FORM OF AP AND SOR WERE OBSERVED IN COBBLE SUBSTRATE IN THE NORTHEAST CORNER OF THE EMBAYMENT AND IN AN APPROXIMATELY 2X15 M BAND IN THE CENTRAL PART OF THE MIDDLE INTERTIDAL. IN THE NORTHEAST CORNER OF THE BEACH, SILVER TO RAINBOW SHEEN FORMED IN RUNOFF WATER WHEN COBBLES WERE OVERTURNED. SECTIONS OF HEAVIEST SOR APPEARED TO PENETRATE TO 2 CM MAX. COAT WITH SPRUCE NEEDLES WAS OBSERVED ON THE ROCK FACE APPROXIMATELY 1-2 M ABOVE THE BEACH. OILING WAS MORE OR LESS LIMITED TO THESE TWO GENERAL AREAS, AND VECO CREW REMOVED PATTIES AND PAVEMENT AS WELL AS SOME SOR. REMAINDER OF BEACH SURVEYED DID NOT SHOW EVIDENCE OF OILING.

OG D. Fitzgerald

BIO T. Schroeder

SEGMENT NK-1

ADEC D.H.II of ADF6

LANDMANAGER J. Johnson for ADNR

SUBDIVISION 17

EXXON R. Coulter

USCG/NOAA Chief Jensen / G. SHIGENAKA

DATE 13 MAY 191

TIME 6 : 47 to 7 : 46

TIDE LEVEL .2 ft. to -1.3 ft.

ENERGY LEVEL: ☐ H ☐ M ☒ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO

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

TOTAL LENGTH SHORELINE SURVEYED: 415 m

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

EST. OIL CATEGORY LENGTH: W — m M 30 m N — m VL 100 m NO 285 m US — m

[illegible]

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- 6 - 13 FRAMES 1-6

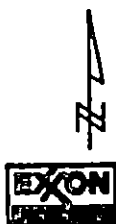
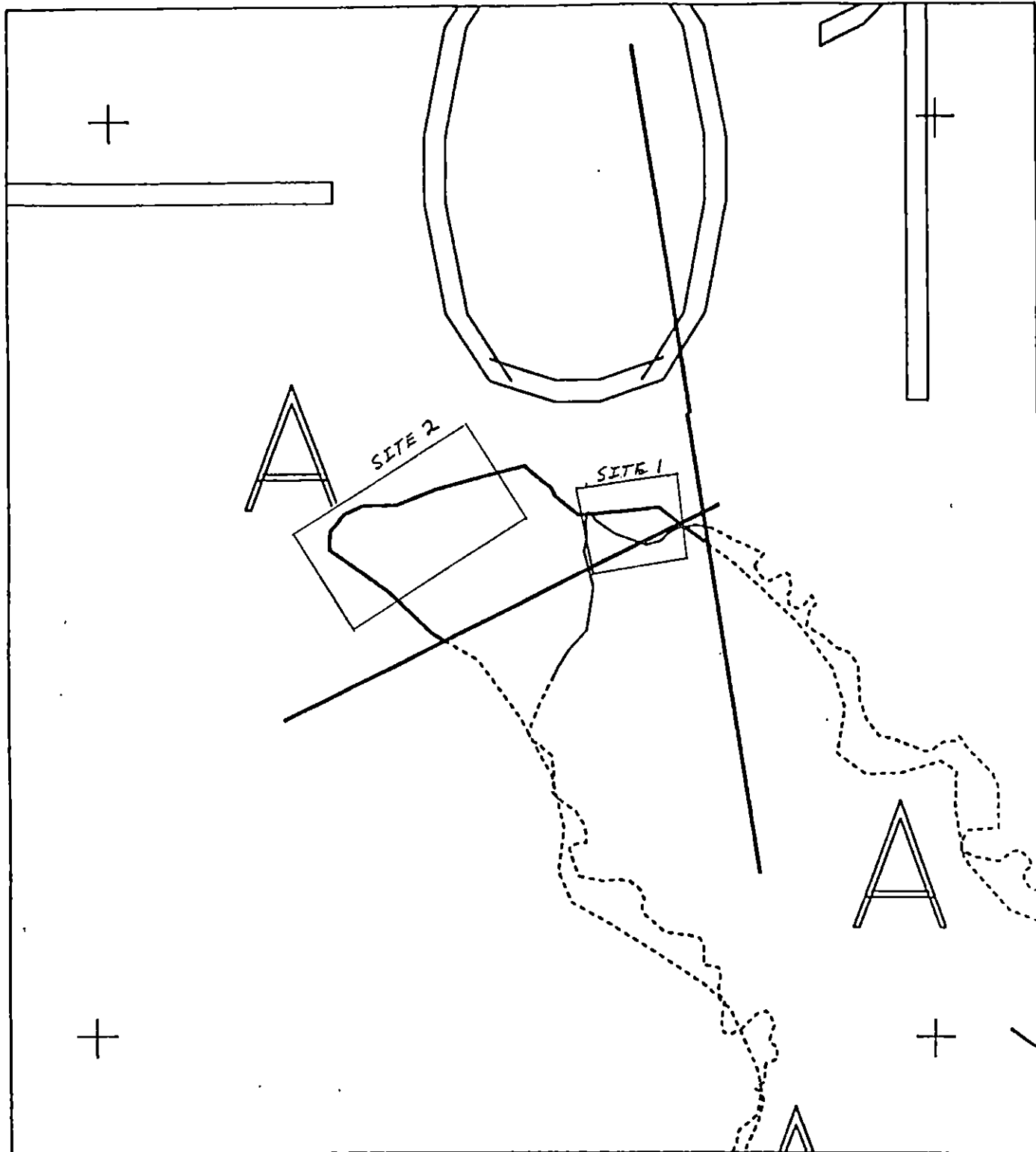
[illegible]

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

OG COMMENTS: This site is located at the head of a deeply indented embayment with the Anad. Streams entering the region. The oil occurs in a broad area in the landward portion of the intertidal zone and on the bayward side of a small headland beach on the eastern side of the embayment. The broad oiled site consisted of very trace amounts of SOR with occasional rainbow/silver sheens. The smaller beach site has an area of patchy SOR (thin) and an adjacent area of CT on a vertical bedrock face. Veco workers retrieved a 1/4 bag of oiled sediments from the two regions. Due to the thin, high friable and high percentage of sediment/oil ratio, much of the SOR was broken up and dispersed.

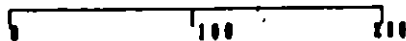
revised 5/16/91 KC.

Σ revised 5/18



NK001 A

METERS



AK State Planning Zone 4
0400010

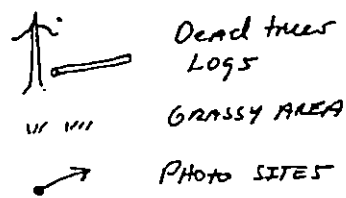
Subdivision Field Map

Map Key: KENNE001A

Name: D. Fitzgerald

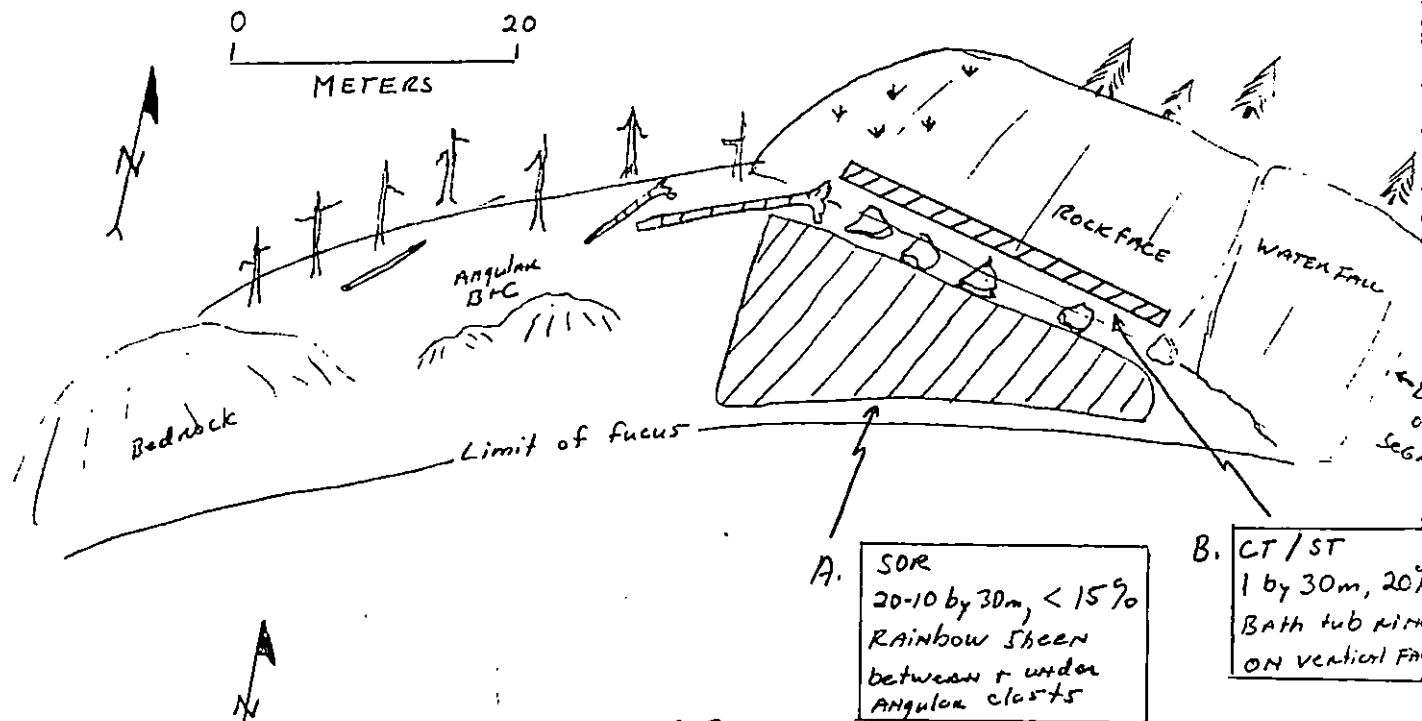
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Reviewed 5/18

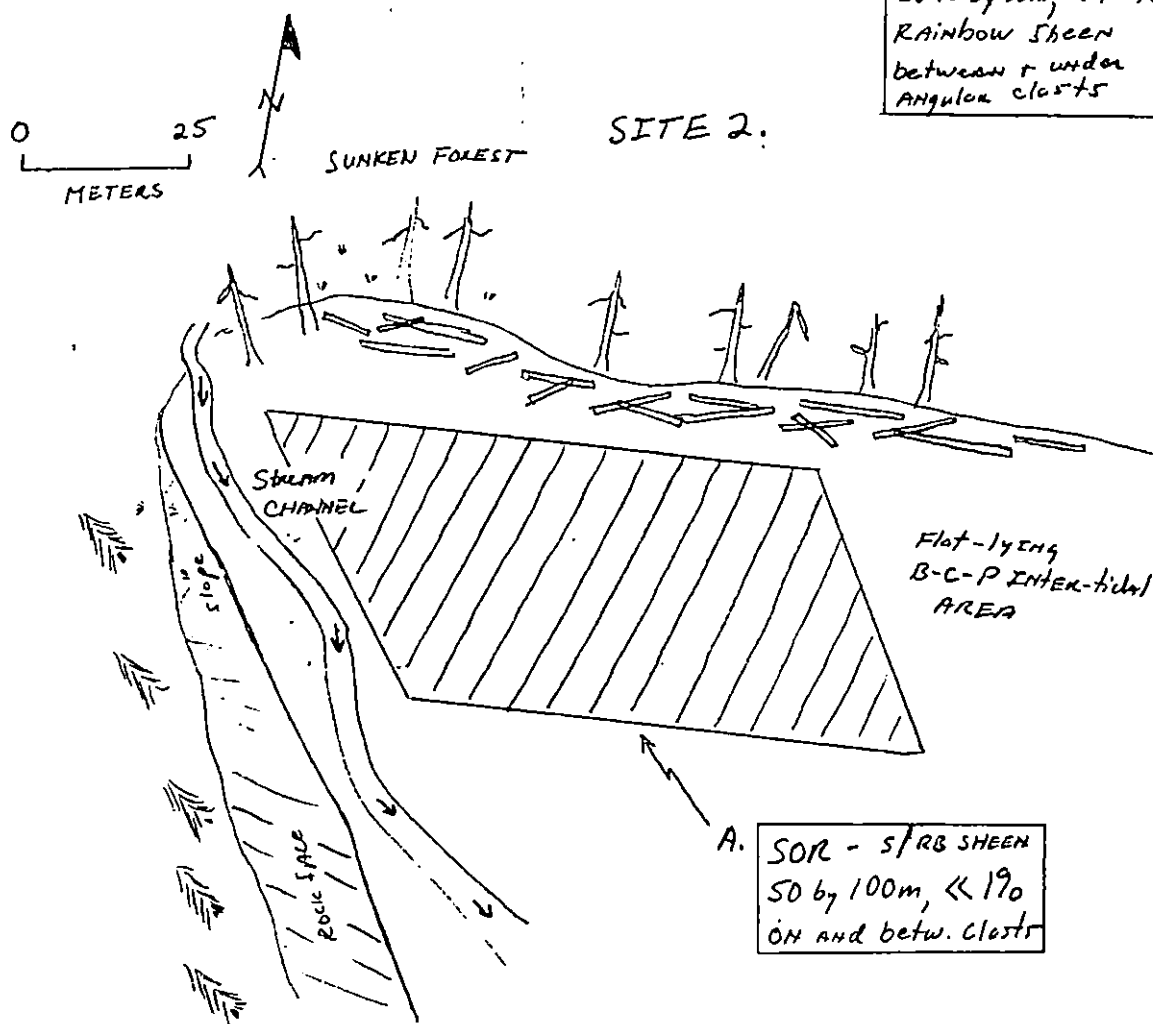


Sketch Maps (O)
NK-1-A
O. Fitzgerald
13 May 1991
6:47 - 7:46

SITE 1.



SITE 2.



* 1/4 Bag of oil
was picked up
VECO WORKER

STREAM

reviewed 5/16/91 K6
revised 5/18

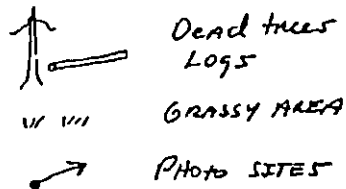
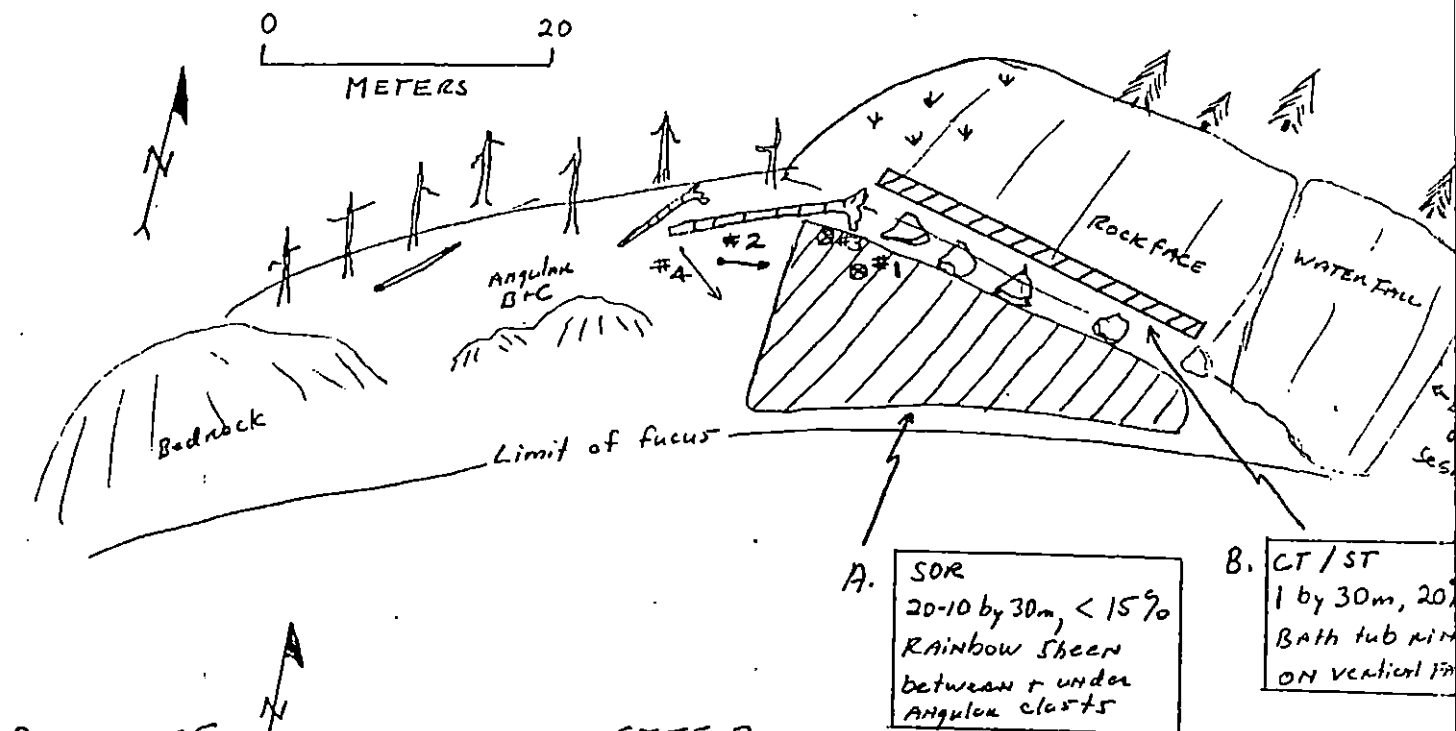


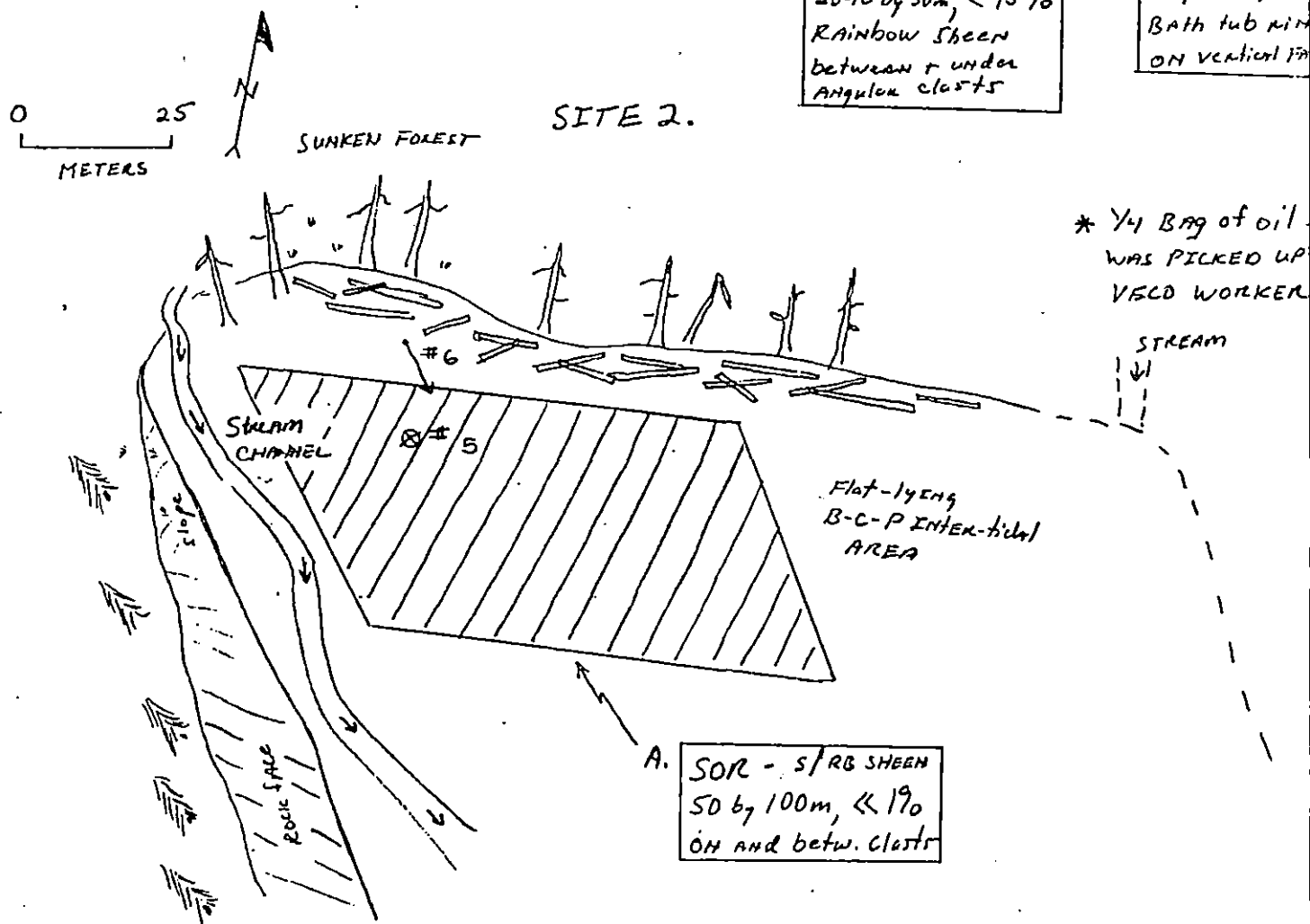
PHOTO SITES NK-1A
ROLL 6-13, FRAMES 1 THRU 6

Sketch Maps (C)
NK-1-A
D. FITZGERALD
13 MAY 1991
6:47 - 7:46

SITE 1.



SITE 2.



Reviewed 5/16/91 KG
5/18

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6
SEGMENT # NK-001
SUBDIVISION
SEA STATE calm
PHOTOGRAPHS: ROLL #

DATE 5/13/91
TIDAL HEIGHT (Range) -2.4 to -2.6
BIOLOGIST T.A. Schroeder
WIND SPEED/DIRECTION calm
FRAME #

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

(A₁ & B₁) = nested in a protected cove. The 50k CT does not appear to be affecting local communities but are thinning within 5-10 m. Little if any nesting in cove and beach abundant and sand surface adjacent to cove.

(42) = 50k adjacent to road, stream but no air observed in stream. Due to lack of nesting spawning in the stream and remaining poised as threat to salmon production. The cloudy spawning site in both streams is still very active with little or no nesting spawning. T. lachrymans spawning also was probably never impacted by the 50k.

These streams are very inconsistent exhibiting a very high degree of variability in their behavior. Little if any nesting in the cove and beach abundant and sand surface adjacent to cove.

Spawning in cove. The entire 90.7% and 41.7% cove with a high growth of kelp and other algae. The entire stream is covered with a dense growth of kelp and other algae. Mussels were present throughout the stream and were also abundant along the shore and on the water table. Littorine snails, barnacles and limpets were also very abundant. But because of the concentration in the water table large numbers.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

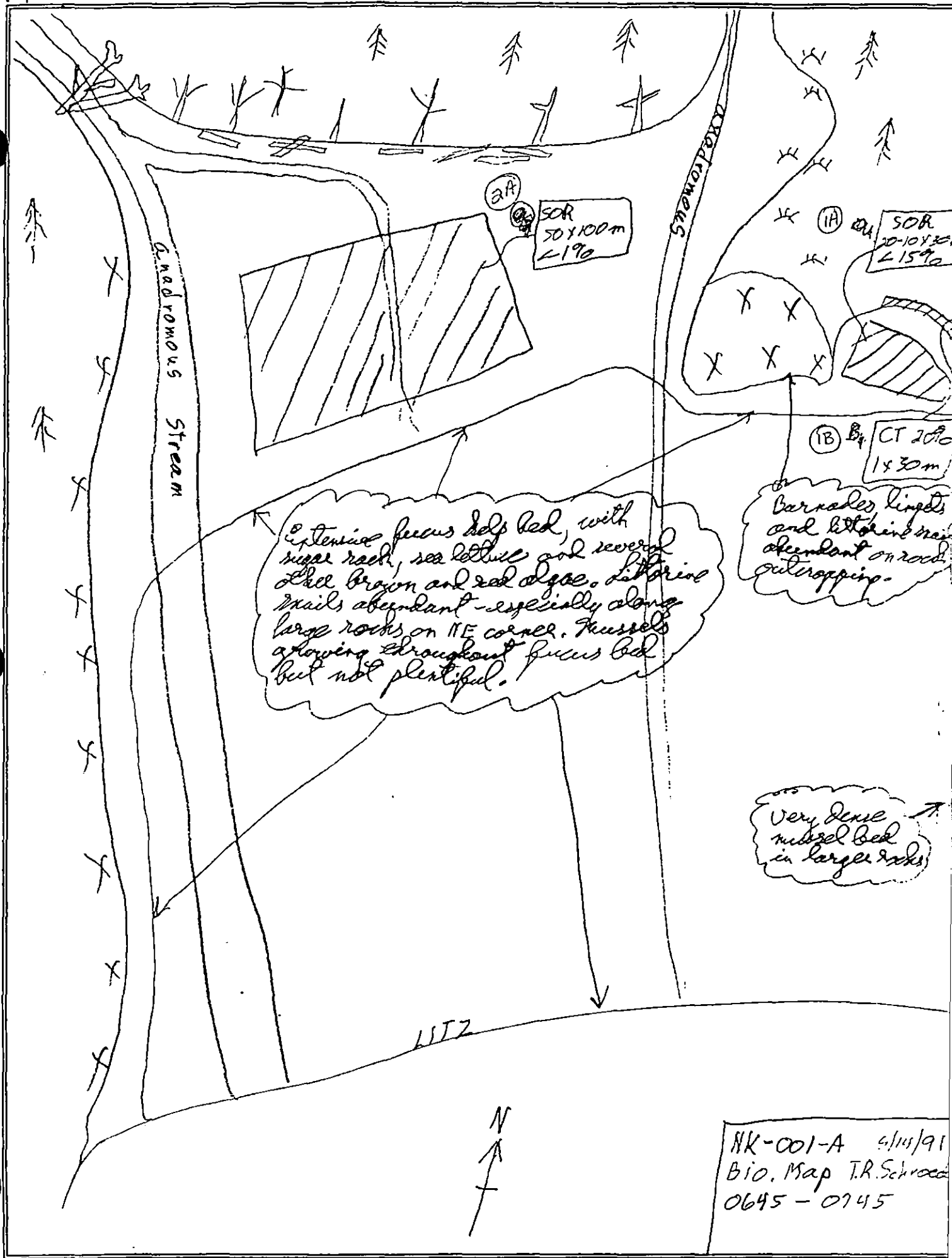
FISH OBSERVED
SPECIES PRESENT

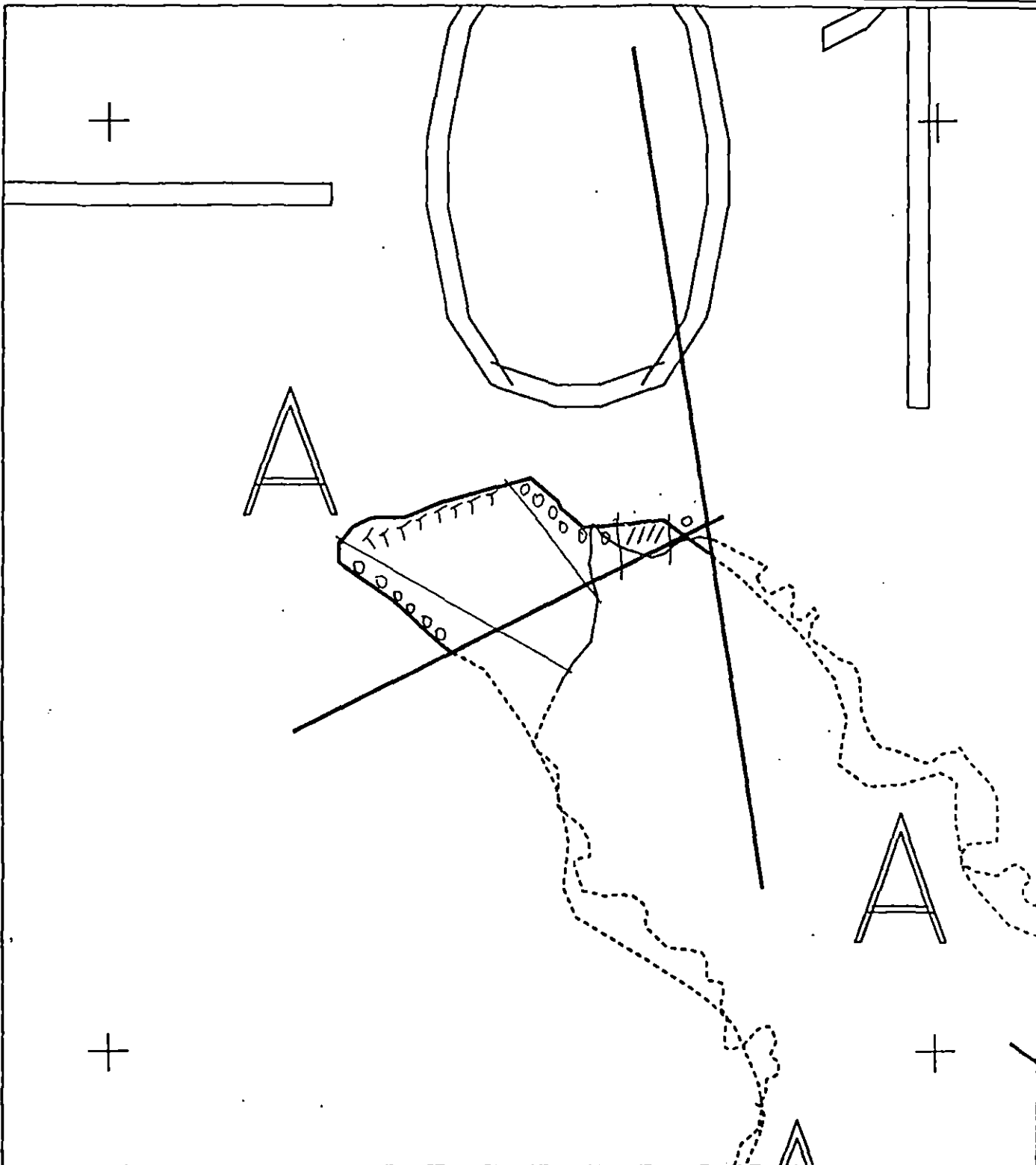
BIRDS	# OF SPECIES	TOTAL BIRDS	SPECIES PRESENT
Eagles	1 <i>hawk</i>	1	
Seabirds			
Waterfowl	1	1	
Gulls/Kittiwakes	1 <i>gull</i>	2	
Shorebirds			
Corvids	1 <i>crow</i>	1	
Other Birds	1 <i>dead bird carcass</i>		

LAND MAMMALS

MARINE MAMMALS	# OBSERVED	SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)	2 Harbor Seals		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.





XXXX	Wide	NK001 A ADEC Subsegment Length: 415m METERS AK State Plane Zone 4 NAD83	Subdivision Field Map Map Key: KENNK001A Name: <u>D.F. Fitzgerald</u> Date: <u>13 May 1991</u> Date Entered:
////	Medium		
----	Narrow		
TTTT	Very Light		
0000	No Oil		

revised 5/16/91 EG
 reviewed 5/18

1991 MAYSAP EVALUATION

SEGMENT: NK 001 SUB: A REGION: KEN SURVEY DATE: 5/13/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN 5/1 - 7/10; RESTRICTED 7/10 - 9/15

Ecological/Constraints (see page two for details) Fish harvest area, Anadromous stream

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**

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

Anadromous Stream: Unlimited treatment up to stream bank between May 15 and July 10. ADF&G approval required for work after July 10. Fish Habitat Permit required for instream work. ADF&G approval required for bioremediation within 100 meters of anadromous stream after July 10.

ADEC

NAME D. Hill of ADFG SIGNATURE Douglas D Hill

☒ TR Two anadromous streams exist in this segment as well as river orders and
☐ NTR sea otters. Other pits are observed in the LITZ. The most heavily oiled portion of
 this segment is found at the north end (pocket beach). During today's survey as in 1990 the more
 the surface of the pocket beach was stirred/disrupted the more apparent the oil present became.
 I feel this beach holds more oil than is readily apparent. I'm not suggesting that a
 large quantity of oil is present. I feel that because of the past experience mentioned
 above, today's observations, the fact that the beach exists within Kachemak Bay Wilderness
 park and because of the habitat the area provides for fish, otters and eagles etc. further
 manual removal is warranted.
 A few patches of light brown mousse (6"x6") were observed after a bit of excavat.
 at the pocket beach - perhaps more will turn up with further manual removal.

EXXON

NAME R. Coulter SIGNATURE Ray R. Coulter

☒ NTR WAS FOUND
 VERY LIGHT AND SPORADIC SOR WHICH WAS ONLY EVIDENT
 BY SEARCHING THE AREA. THE BIOTA WAS HEALTHY AND DENSE IN MOST
 AREAS OF THE BEACH. THERE IS NOTHING TO DO HERE OTHER THAN
 SCRATCH OR BREAK THE SURFACE IN ISOLATED AREAS OF SOR. THERE
 ARE NO OTHER AREAS THAT WOULD BENEFIT FROM THIS TYPE OF
 BREAKUP AND IT WOULD ONLY DISRUPT ONGOING RECOVERY. VECO
 CREW BROKE UP AND REMOVED EVERYTHING WE FOUND IN ONE HOUR WITH
 10 PEOPLE LOCATING OILED SEDIMENTS.

LANDMANAGER

NAME J. Johnson OF ADNR SIGNATURE J. Johnson

☐ NTR ☒ TR

This beach is within Kachemak Bay State Park, established for its high
 scenic value. This segment has high recreation value. I recommend manual
 cleanup of mousse patties. Manual cleanup with shovels would do little if any
 harm to the miz, and could be accomplished easily + quickly. It is
 likely that some cleanup will be necessary in NK-2, and this segment
 could be done simultaneously.

USCG/NOAA

NAME Chief J. Shigenaka SIGNATURE Chief J. Shigenaka

☒ NTR 1/4 bag SOR picked up. Further removal operations would cause
 more environmental harm than the oil to be removed.

SURVEYED PORTION OF THE SEGMENT IS THE HEAD OF A SHALLOW EMBAYMENT INTO WHICH TWO STREAMS FLOW.
 THE HEAD OF THE BAY IS CHARACTERIZED BY A BROAD, LOW-SLOPING COBBLE BEACH. BIOLOGIST SCHROEDER
 NOTED THAT PINK SALMON WHICH SPAWN IN THESE STREAMS DO NOT USE THE INTERTIDAL BUT MOVE INTO THE
 STREAMS THEMSELVES. SOME PORTIONS OF THE COBBLE BEACH SHOWED EXTENSIVE COVER OF RED AND BROWN
 ALGAE. OIL RESIDUES IN THE FORM OF AP AND SOR WERE OBSERVED IN COBBLE SUBSTRATE IN THE NORTHEAST
 CORNER OF THE EMBAYMENT AND IN AN APPROXIMATELY 2'X15' BAND IN THE CENTRAL PART OF THE MIDDLE
 INTERTIDAL. IN THE NORTHEAST CORNER OF THE BEACH, SILVER TO RAINBOW SHEEN FORMED IN RUNOFF WATER
 WHEN COBBLES WERE OVERTURNED. SECTIONS OF HEAVIEST SOR APPEARED TO PENETRATE TO 2 CM MAX. COAT
 WITH SPRUCE NEEDLES WAS OBSERVED ON THE ROCK FACE APPROXIMATELY 1-2 M ABOVE THE BEACH. OILING
 WAS MORE OR LESS LIMITED TO THESE TWO GENERAL AREAS, AND VECO CREW REMOVED PATTIES AND PAVEMENT
 AS WELL AS SOME SOR. REMAINDER OF BEACH SURVEYED DID NOT SHOW EVIDENCE OF OILING.

SEGMENT NK-1

SUBDIVISION A

DATE 13 MAY 191

ENERGY LEVEL: ☐ H ☐ M ☒ L

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

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

EST. OIL CATEGORY LENGTH: W — m M 30 m N — m VL 100 m NO 285 m US — m

[illegible]

DISTRIBUTION: C = 91-100%; B = 81-90%; P = 11-80%; S = 1-10%; T = <1%

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

PHOTO ROLL # MAY8AP- 6 - 13 FRAMES 1-6

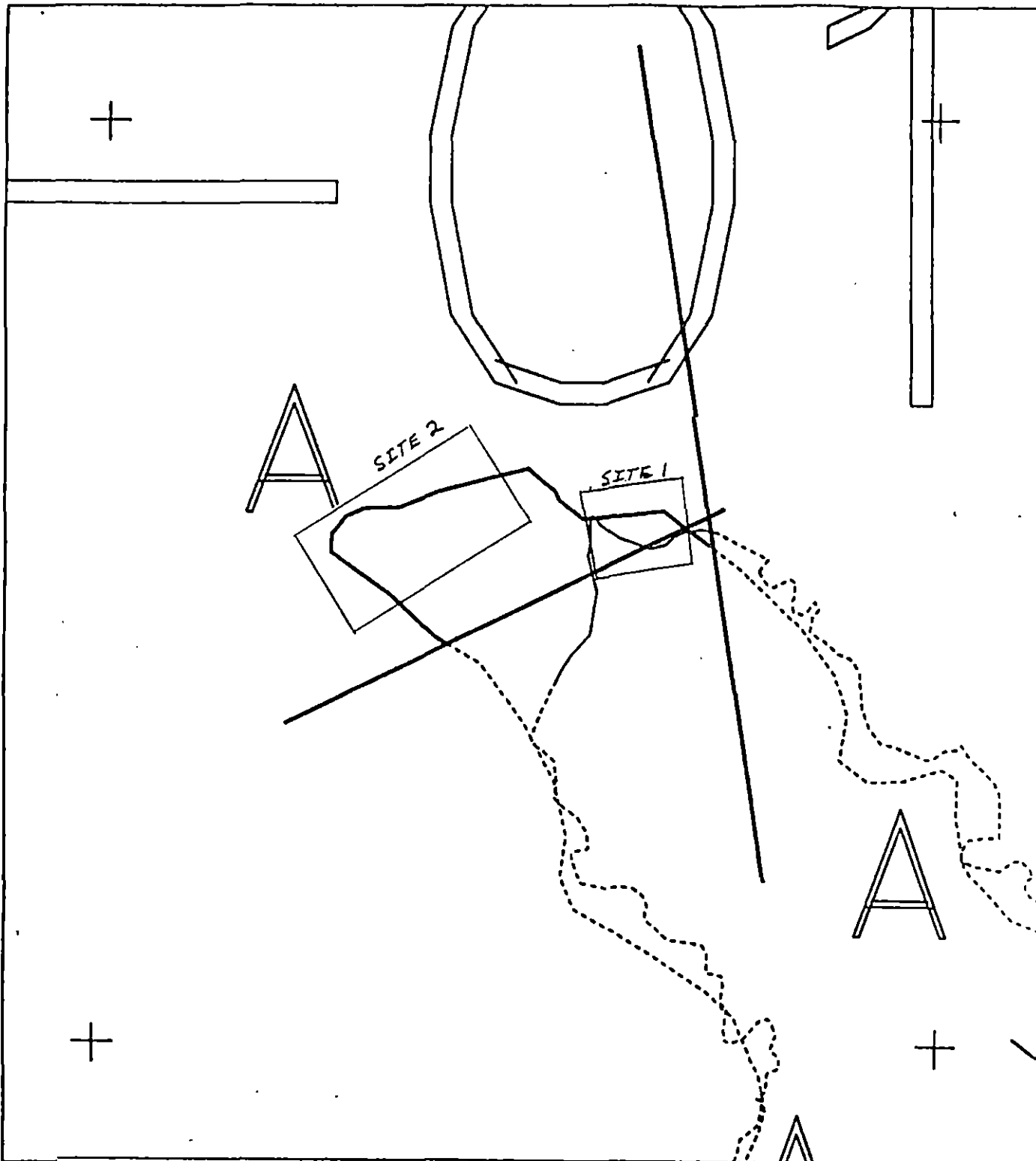
[illegible]

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

OG COMMENTS: This site is located at the head of a deeply indented embayment with two Anad. Streams entering the region. The oil occurs in a broad area in the landward portion of the intertidal zone and on the bayward side of a small headland beach on the eastern side of the embayment. The broad oiled site consisted of very trace amounts of SOR with occasional rainbow/silver sheens. The smaller beach site has an area of patchy SOR (thin) and an adjacent area of CT on a vertical bedrock face. Veco workers retrieved a 1/4 bag of oiled sediments from the two regions. Due to the thin, high friable and high percentage of sediment/oil ratio, much of the SOR was broken up and dispersed.

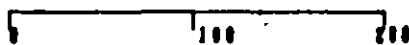
revised 5/16/91 K.C.

SS revised 5/18



NK001 A

METERS



AK State Planning Zone 4
subdivided

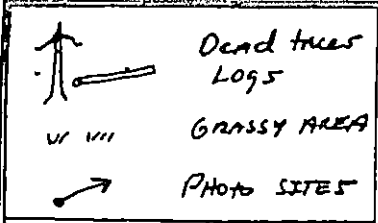
Subdivision Field Map

Map Key: KENNK001A

Name: D. Fitzgerald

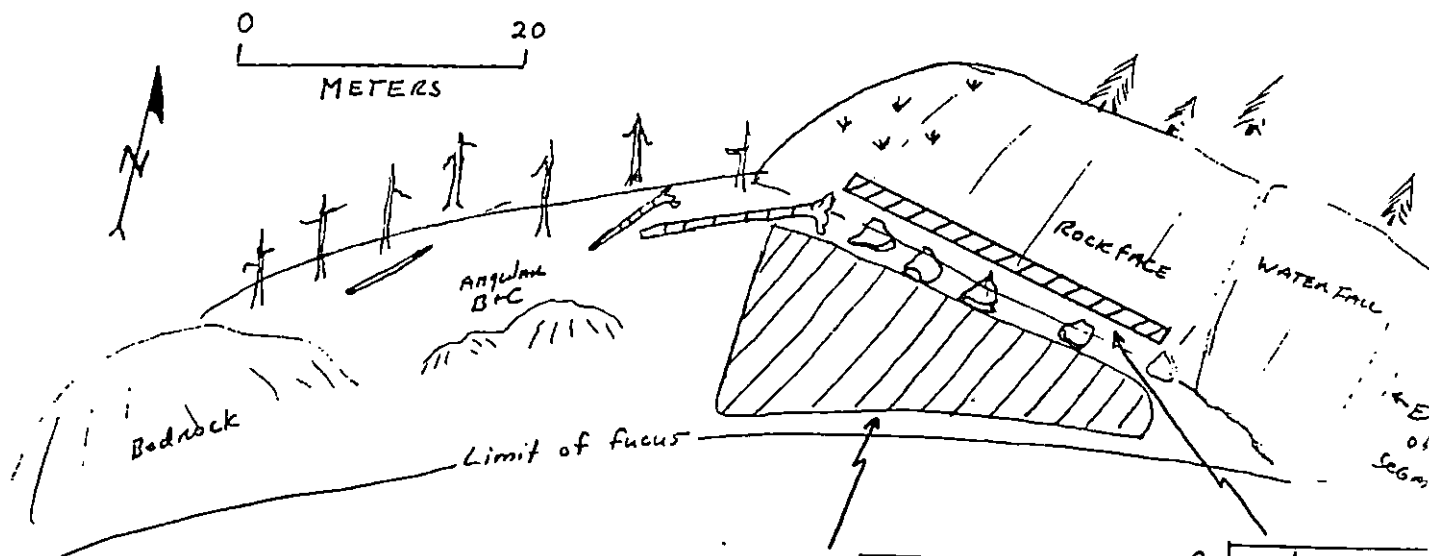
Date: 13 May 1991

Reviewed 5/18



Sketch Maps (OK)
NK-1-1A
D. Fitzgerald
13 May 1991
6:47 - 7:46

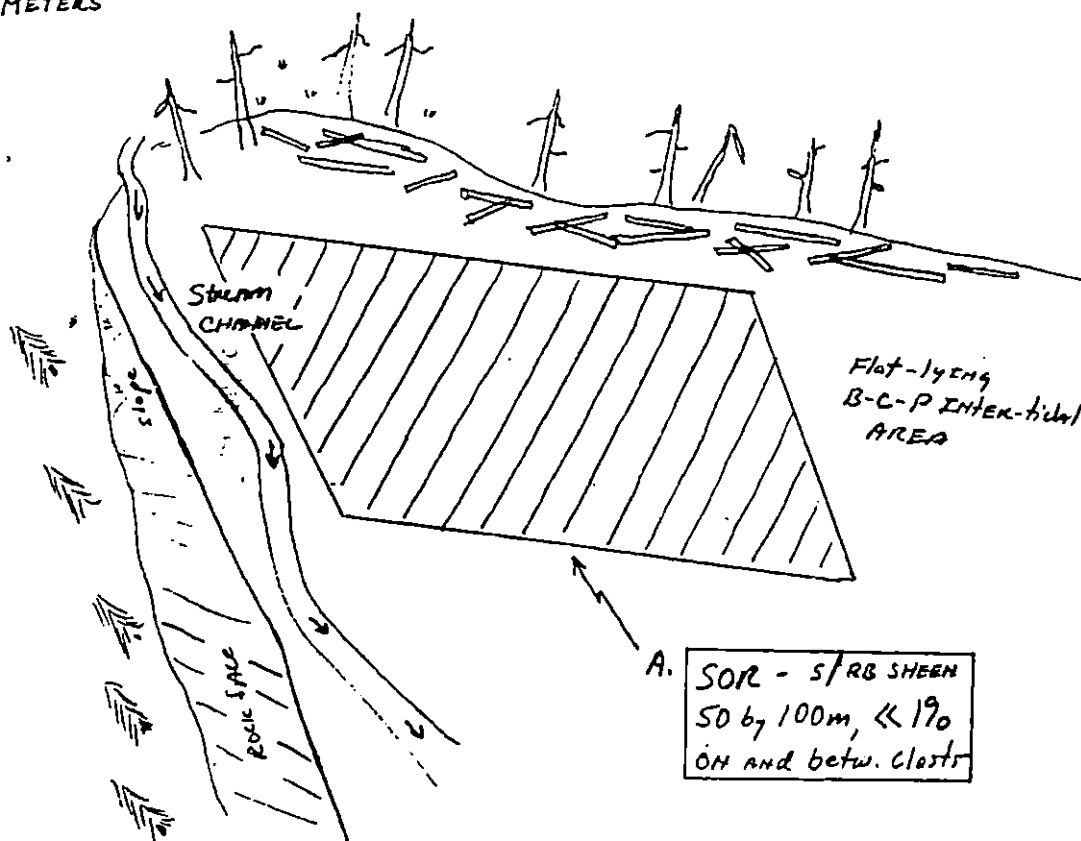
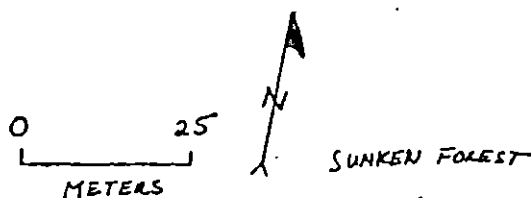
SITE 1.



A. SOR
20-10 by 30m, < 15%
Rainbow sheen
between & under
angular clasts

B. CT/ST
1 by 30m, 20%
Bath tub ring
on vertical face

SITE 2.



A. SOR - S/RB SHEEN
50 by 100m, < 1%
ON and betw. clasts

* 1/4 BAG of o/s
WAS PICKED UP
VSCD WORKER

reviewed sketches in
ES reviewed 5/18

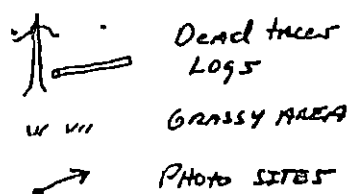
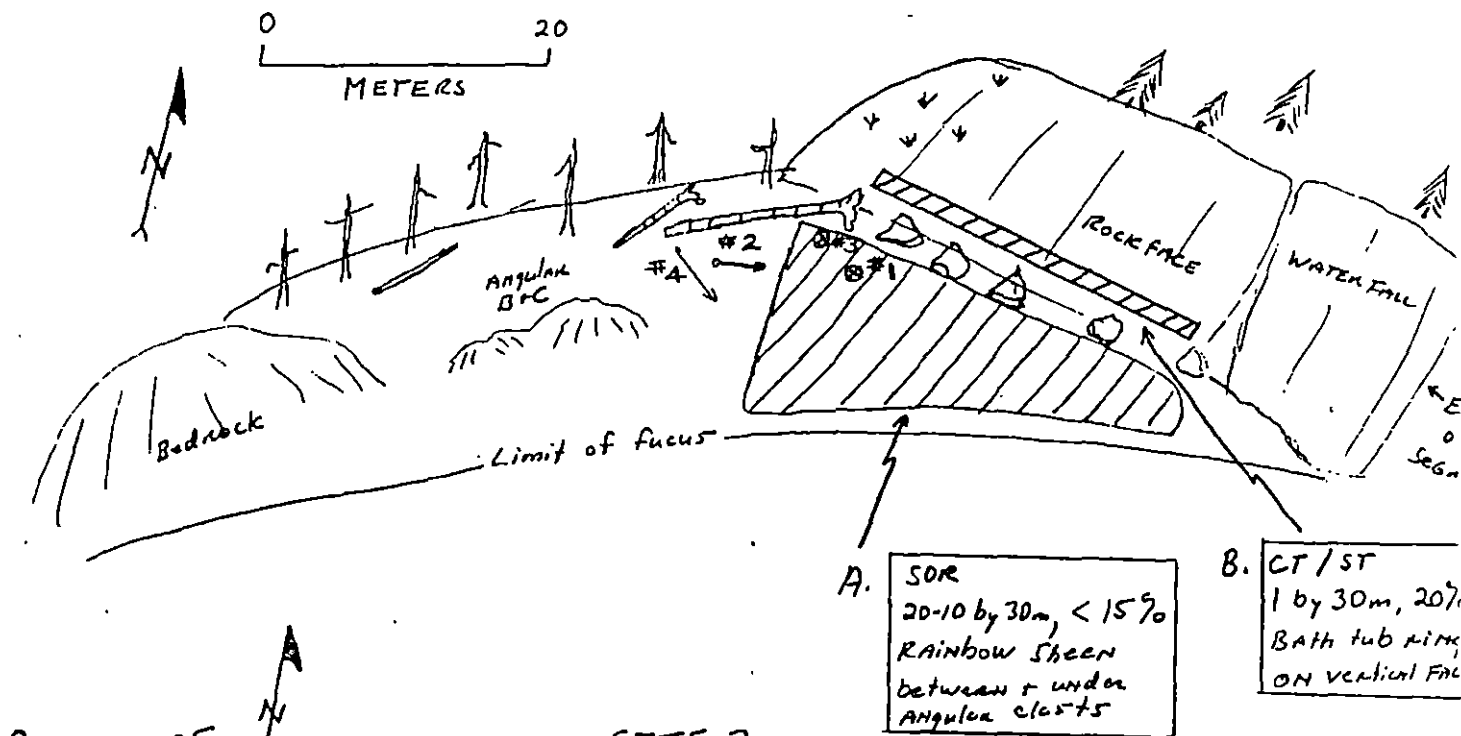


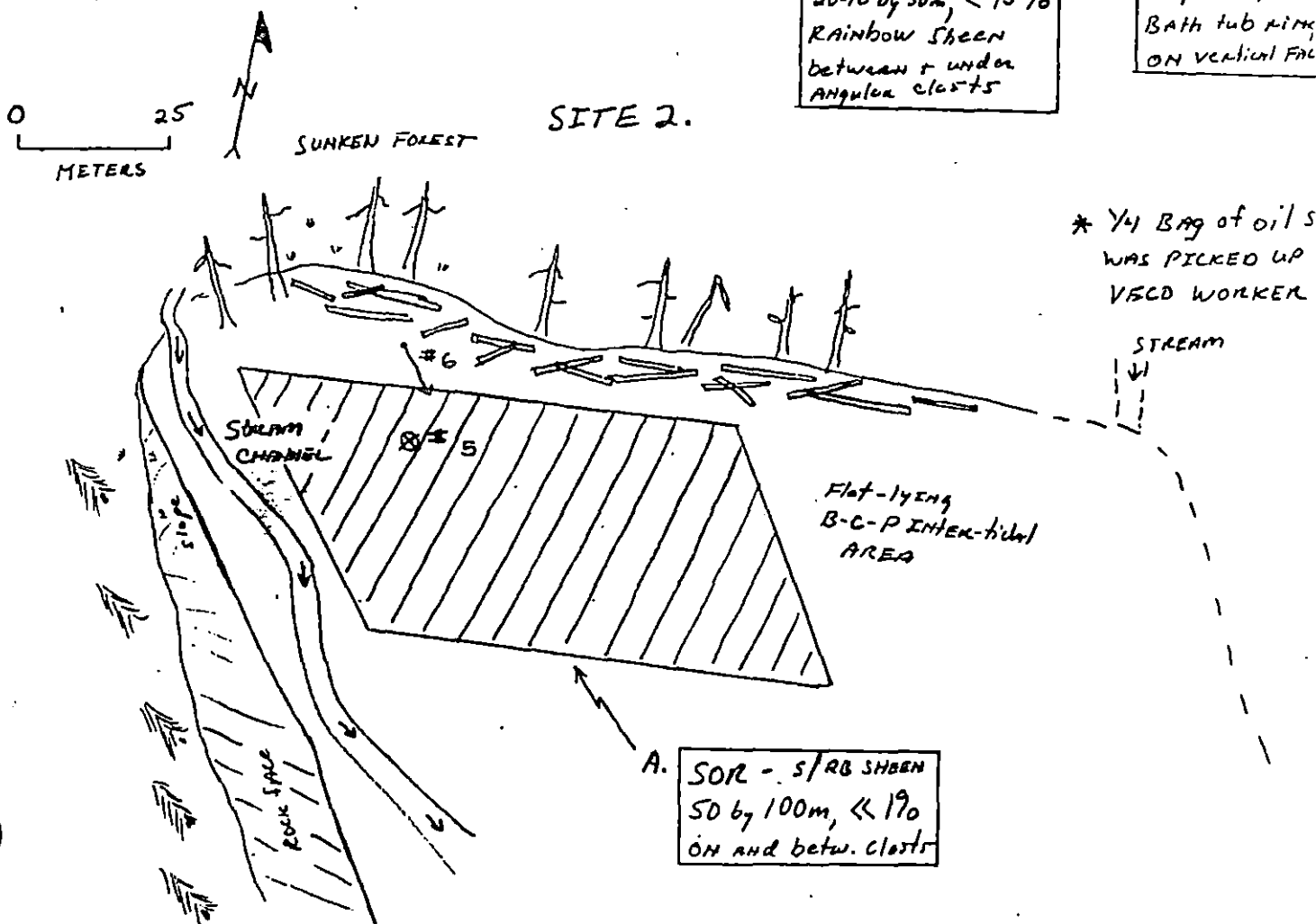
PHOTO SITES NK-1A
ROLL 6-13, FRAMES 1 THRU 6

Sketch Maps (0
NK-1-A
D. FITZGERALD
13 May 1991
6:47 - 7:46

SITE 1.



SITE 2.



Reviewed 5/16/91
S. C. ...

WAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6 DATE 5/13/91
 SEGMENT # NK-001 TIDAL HEIGHT (Range) -2.4 to -2.6
 SUBDIVISION BIOLOGIST T.R. Schroeder
 SEA STATE calm WIND SPEED/DIRECTION calm
 PHOTOGRAPHS: ROLL # FRAME #

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

(A, & B) = Located in a protected area. The Sph. CT does not appear to be affecting the communities that are thriving within 5-15 meters. Little or no oil was visible and no obvious mortality or sublethal effects related to oil.

(+2) = Sph. adjacent to grass stream but no oil observed in stream. Due to lack of significant seeping in this stream, oil remaining poses no threat to salmon production. A strong spawning run in both *Oncorhynchus tshawytscha* and *Oncorhynchus kisutch* is in progress. Spawning activity was probably well impacted but the fish are very resilient and producing many healthy offspring. The entire FRTZ and LITZ are covered with a thin growth of leaves but no major bank slope disturbance with sea urchins, green algal brown and red algae. Mussels were present throughout the FRTZ and LITZ and were abundant along the shore and on the northwesterly. Littorine snails, barnacles and limpets were also very abundant. But Periwinkle to be concentrated in the more protected large areas.

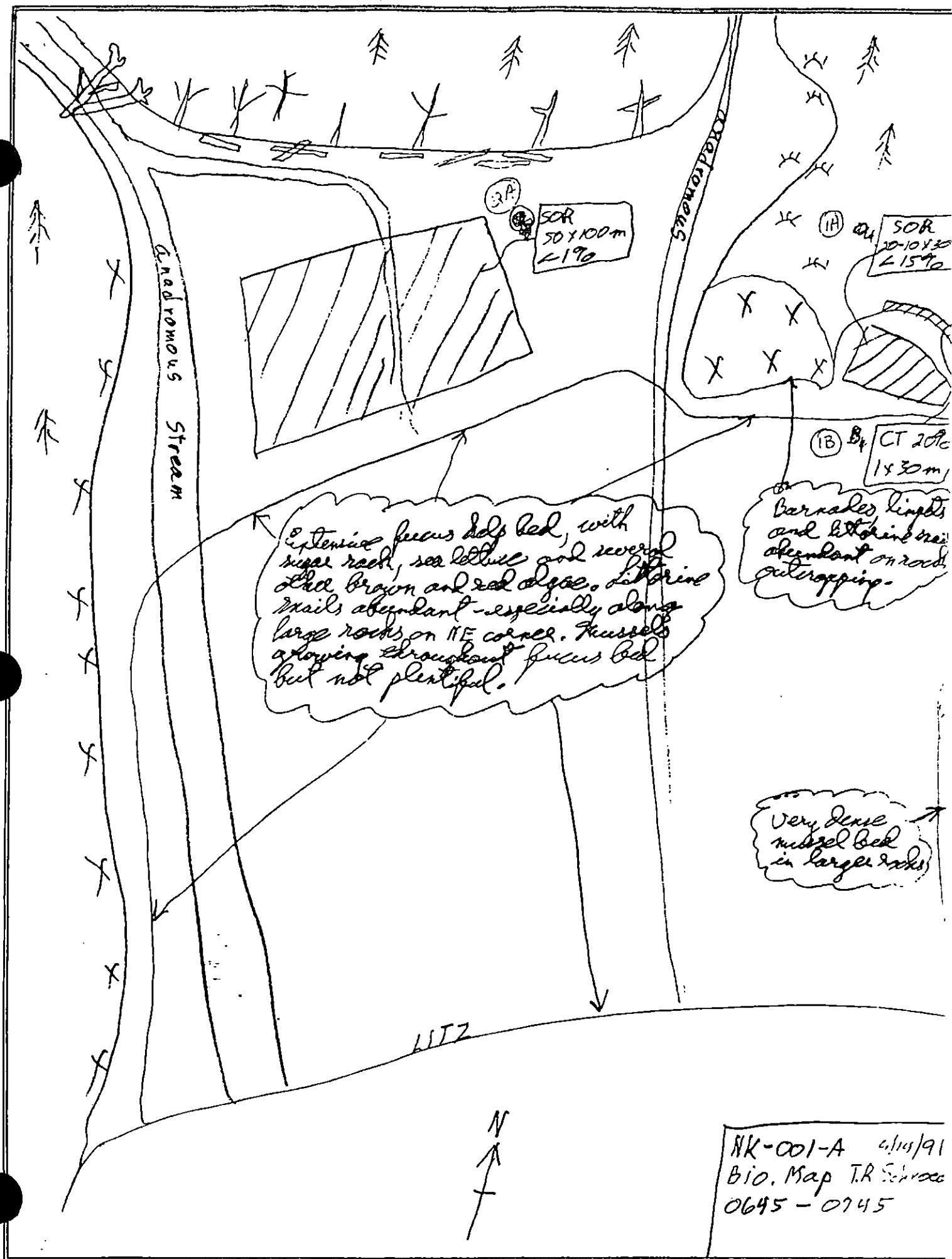
WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

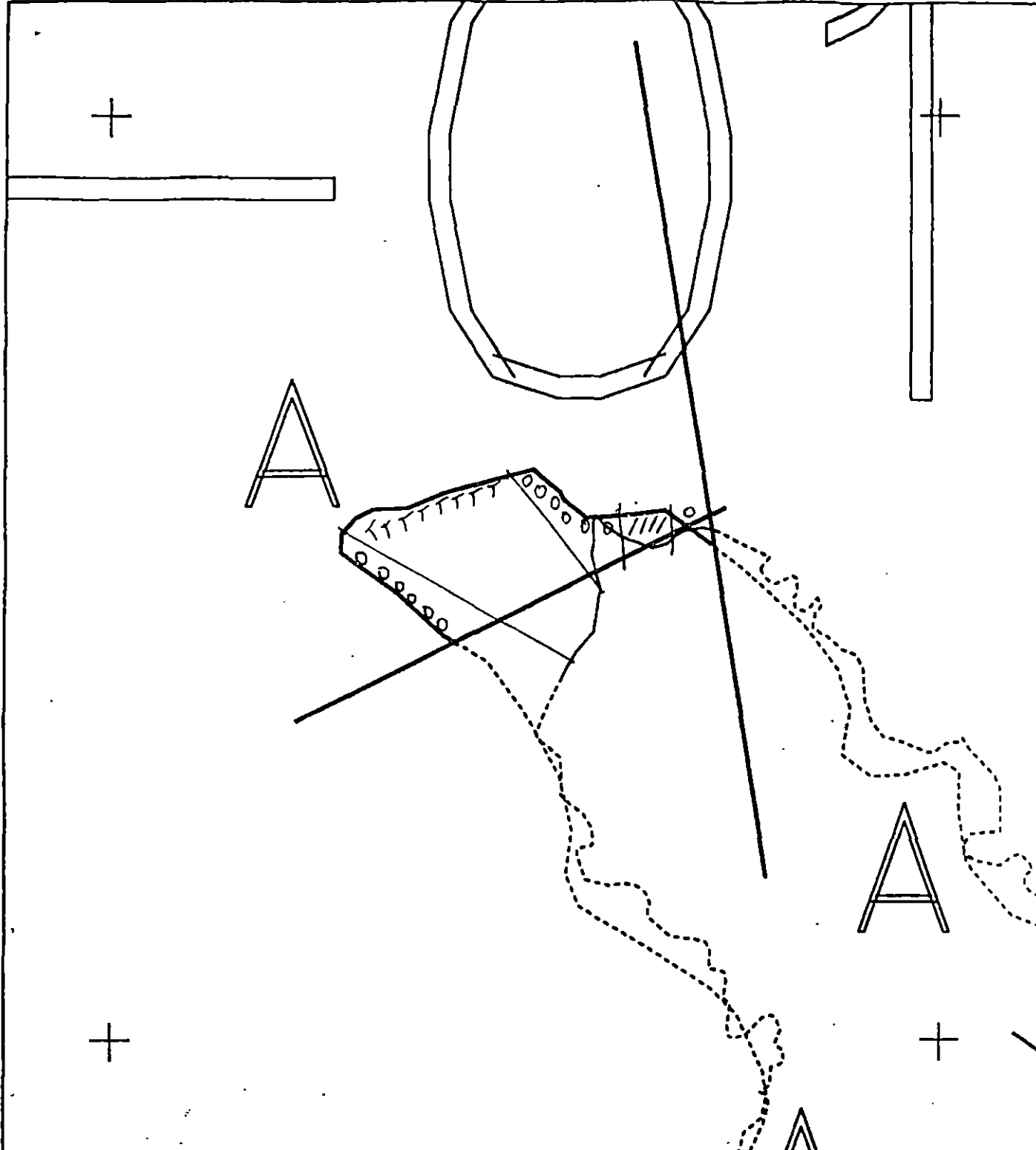
BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1 bald	1	
Seabirds			
Waterfowl	1	1	
Gulls/Kittiwakes	1 gull	2	
Shorebirds			
Corvids	1 Raven	1	
Other Birds	1 dead bird carcass		

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)	2 Harbor Seals		
Cetaceans (specify)			

Shoreline subdivision map showing important biological features attached.



NK-001-A 4/15/91
 Bio. Map T.R. Schreier
 0645 - 0745



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

NK001 A
 ADEC Subsegment Length: 415m
 METERS
 0 100 200
 AK State Plane Zone 4
 502001a

Subdivision Field Map
 Map Key: KENNK001A
 Name: D. F. Fitzgerald
 Date: 13 May 1991
 Date Entered:

revised 5/18/91 CL
 reviewed 5/18

ANADROMOUS FISH STREAM EVALUATION

232-21-10230
SEGMENT ST/ NK-001 STREAM NO: 232-21-10240 A DATE 4/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/1 to 8/30)
4GA State Marine Park Alaska State Wilderness Park

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Subject streams are located within subdivision A (1 of 1). No additional ecological constraints.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3276 (Anchorage) or 229-1508 (24 hrs.)).

SHPO SIGNATURE: Rachel Jean Doe DATE: 5/22/90

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>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 Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommend manual removal of tarmat in the UITZ as indicated on the attached sketch map. Contact ADNR for Wilderness Permit. Work form 5/16 to 7/1.

TAG COMMENTS: BIOREMEDIATE (CUSTOMER) IF REQUIRED FOLLOWING TARMAT REMOVAL

TAG APPROVAL DATE: 5/18/90.

ADEC Art Weiner Art Weiner

EXXON Andy Teal Andy Teal

NOAA Gary Petree Gary Petree

USCG S.A. Dieter S.A. Dieter

FOSC: [Signature]

DATE: MAY 25 1990

ALPHACONCEPT

FRAME(S)

DESCRIPTION

1. 2.
3.
6, 7.

Aerials at Tide Flats & AFS mouth/outlets/Head of NR Cove &
Overhanged Boulder - mouse, shrew & Todd Linpets (w/ common on
beaches)

NK-1

NE NUKA
ISLAND COVE

AUTONOMOUS STREAM
CATALOG NUMBER

232-21-10230

232-21-10240

TAR Patties
24" x 4" to
12" x 12"
1/2" thick

LITZ

TARMINTS
TAR PADRES

-oil cooled Rec.
FACE

"oiled Pom Po

Pressure
washed in
1989

TAP Patties, M.
Found beneath
Cobble and Rock
and visible in
Interstices

ANADSCAT - Recommended

Sample taken

* Photo frame # and

good luck!

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

NK-1

ADEC Segment Length: 1847m

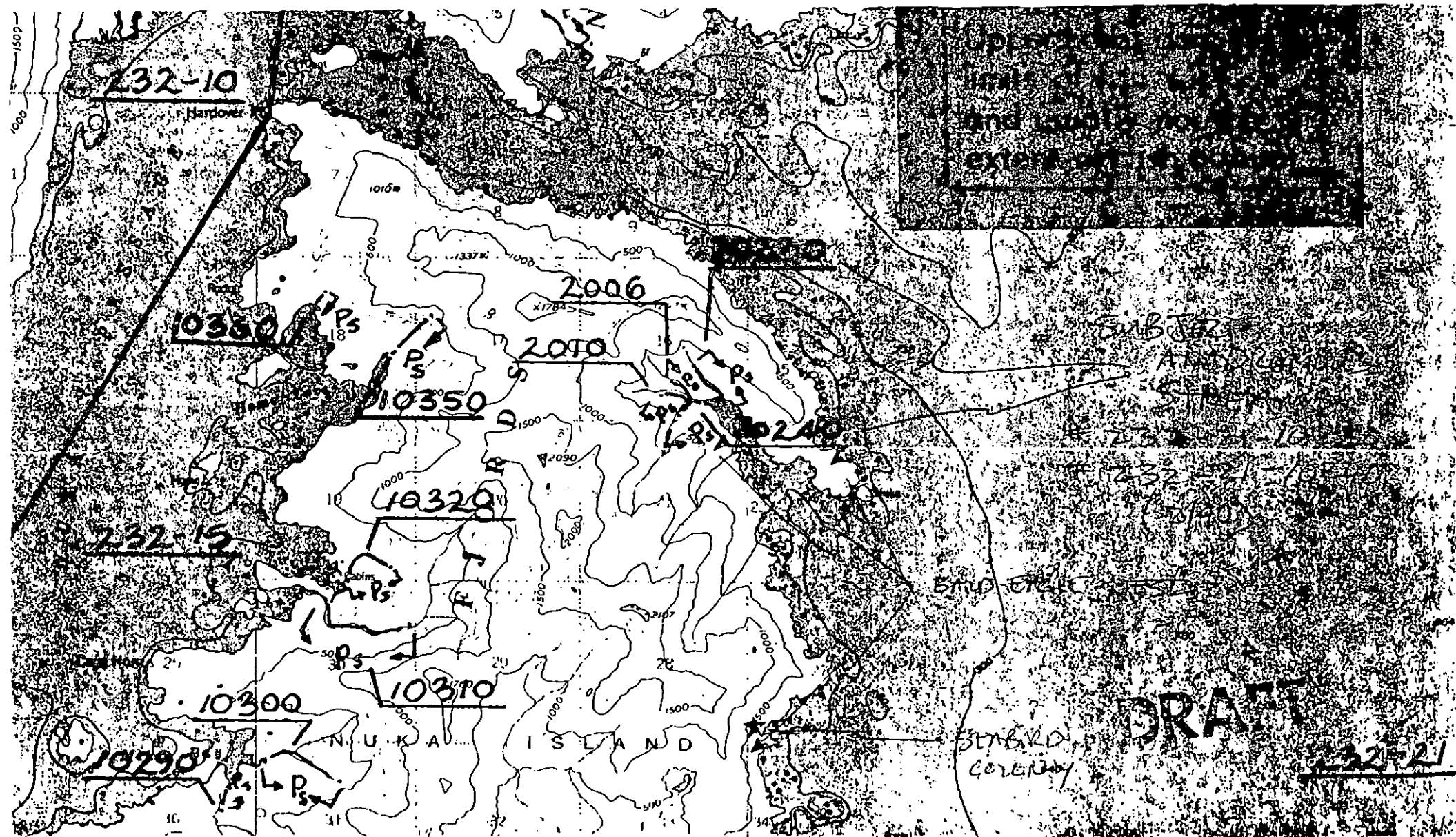


Map Key: XEN-640
Name: Mann/NK-
Date: 4/7/90
Date Entered:

ECOLOGICAL MAP

1A, 1B 15:

46A



ANADROMOUS FISH STREAM EVALUATION ADDENDUM

CONSTRAINTS FOR STREAM NOS. 232-21-10230 & 232-21-10240

SEGMENT NK-001 SUBDIVISION A

WORK WINDOW

Manual Pickup
Tarmat Removal

OPEN

Bioremediation Less Than 100m From Stream **WORK PRIOR TO 7/10**
(ADF&G MONITOR REQ.)

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

ADF&G catalogued anadromous streams (232-21-10230 and 232-21-10240) are in Subdivision A. This subdivision is closed to bioremediation less than 100m from stream 7/10 to 8/31. Before 7/10, bioremediation is permitted less than 100m from stream with on-site ADF&G monitor or ADEC alternate present. No constraint to bioremediation more than 100m from stream. No constraint to manual pickup and tarmat removal.

1J Purse Seine Area

Closed to bioremediation after 7/20. No constraint to manual pickup and tarmat removal.

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or banks. No flushing of pollutants or sediments into stream drainage; do not allow Inlpol to enter stream flow. On-site examination and consultation by ADF&G monitor is required prior to bioremediation in order to authorize a setback distance from the stream during chemical application; if ADF&G monitor's presence is impossible, authorization may be given by the ADEC monitor. Restrict boat and air traffic to essential minimum 7/20.

SEE SUBDIVISION CONSTRAINT ADDENDUM NK-001A
FOR ADDITIONAL CONSTRAINT INFORMATION.

FOSC

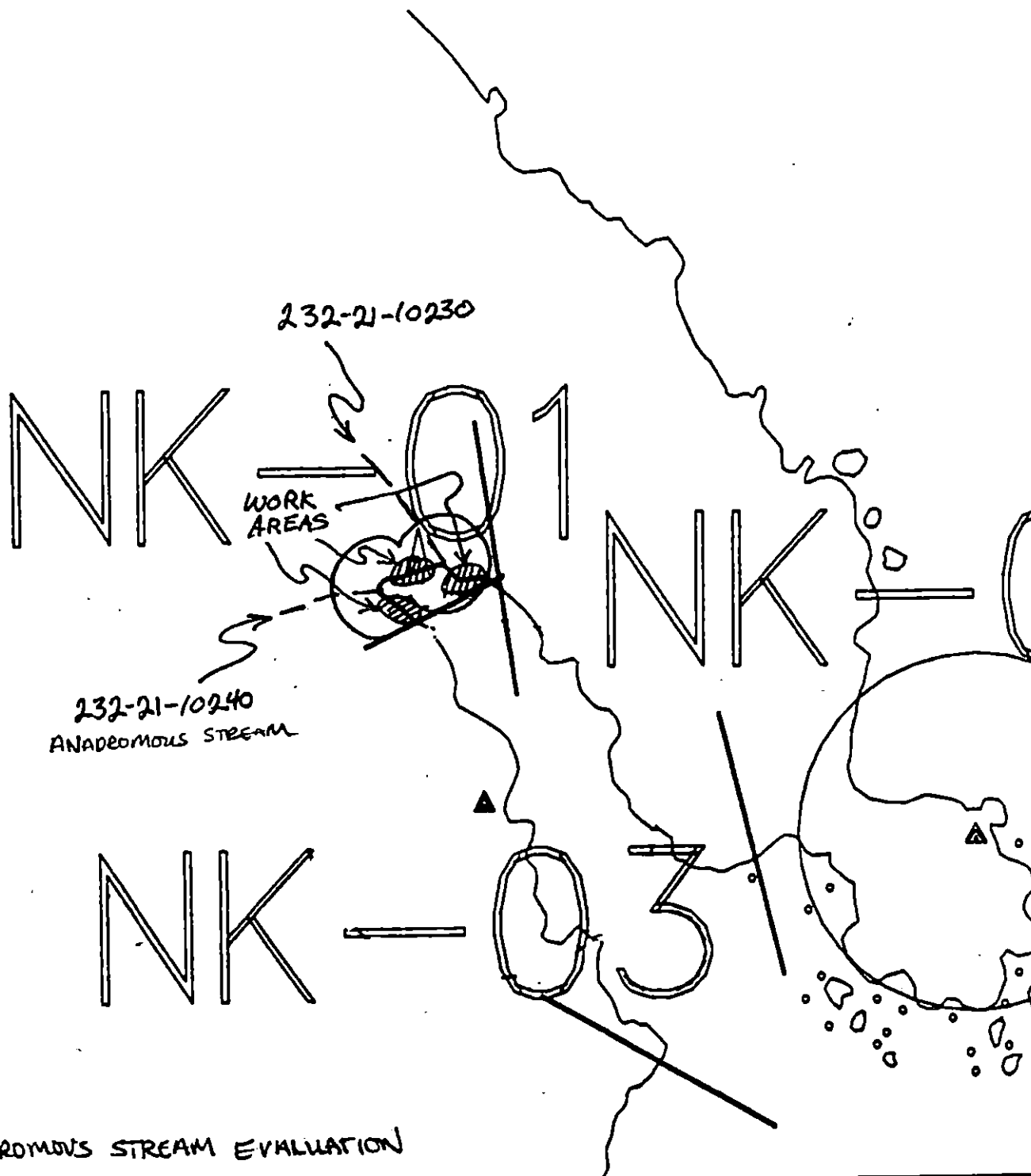
Prepared by

Date

Date

6/13/90

6/12/90



Exxon Company, USA
Map Key: KEN-NK-1



ECOLOGY MAP
SEGMENT NK-1
SUBDIVISION A (J-01-1-1)
METERS

- ★ Seabird Colony
- ▲ Eagle Nest

ANADROMOUS FISH STREAM EVALUATION

232-21-10230

SEGMENT ST/ NK-001 STREAM NO: 232-21-10240 A DATE 4/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/1 to 8/30)
4GA State Marine Park Alaska State Wilderness Park

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Subject streams are located within subdivision A (1 of 1). No additional ecological constraints.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3276 (Anchorage) or 229-1508 (24 hrs.)).

SHPO SIGNATURE: Rebel de Doe DATE: 5/22/90

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>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 Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommend manual removal of tarmat in the UITZ as indicated on the attached sketch map. Contact ADNR for Wilderness Permit. Work from 5/16 to 7/1.

SIDS CONSTRAINTS ADDENDUM dated 6/12/90/PP

TAG COMMENTS: Bioremediate (CUSTOMER) IF REQUIRED FOLLOWING
TARMAT REMOVAL

TAG APPROVAL DATE: 5/18/90.

ADEC Art Weimer Art Weimer

EXXON Andy Earl Andy Earl

NOAA Gary Petras Gary Petras

USCG G.A. Reiter G.A. Reiter

FOSC: [Signature]

DATE: MAY 25 1990

ANADROMOUS FISH STREAM ASSESSMENT

REGION: KENAI

SEGMENT: NK001

SUBDIVISION: A

STREAM NO: 232-21-10230
232-21-10240

ANADROMOUS FISH STREAM EVALUATION

232-21-10230
SEGMENT ST/ NK-001 STREAM NO: 232-21-10240 A DATE 4/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/1 to 8/30)
4GA State Marine Park Alaska State Wilderness Park

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Subject streams are located within subdivision A (1 of 1). No additional ecological constraints.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3276 (Anchorage) or 229-1508 (24 hrs.)).

SHPO SIGNATURE: _____ DATE: _____

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 Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: Recommend manual removal of tarmat in the UITZ as indicated on the attached sketch map. Contact ADNR for Wilderness Permit. Work form 5/16 to 7/1.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

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 without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.
 AGENCY CONTACT PERSON: ADF&G John Morison 267-2324
- 1C Salmon fry nursery area (4/31 to 7/31)
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.
 AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214
- 1D Esther Hatchery release (4/15 to 6/15)
 1E Main Bay Hatchery release (4/20 to 6/15)
 1F Sawmill Bay Hatchery release (4/15 to 6/1)
 1G Cannery Creek Hatchery release (4/21 to 6/1)
 1H Remote release site
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
 AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
 1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- ✓ 1I Gill net area (8/7 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 (8/11 to 7/25)
 Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M Herring spawning (4/1 to 6/15)
 Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235
- 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. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31).
 Contact ADF&G and USFWS prior to treatment for confirmation.
 AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
 ADF&G Don Calkins 267-2403
- ✓ 46-4 Seabird colony (5/1 to 9/1)
 Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
 ADF&G Tom Roth 267-2206
- 5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance 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.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Recreation: Tent sites (8/1 to 9/15)
 6V Anchorages (8/1 to 9/15)
 6W Forest Service cabins (8/1 to 9/15)
 6X Lodge (8/1 to 8/15)
 6Y Special use destination
- 7Z Subistence area: Salmon harvesting (5/1 to 9/30)
 Finfish harvesting
 Deer harvesting (8/15 to 2/28)
 Invertebrate harvesting
 Contact ADF&G and appropriate Native Corporation for specific dates, locations, and constraints. Restrict boat and air traffic and beach disturbance to essential minimum. If plans for treatment include methods such as hot water wash or application of Inipol which might affect intertidal or nearshore oil or toxicity levels, contact ADF&G and appropriate Native Corporation for authorization - see Native Corporation Contact List for each Native Corporation's contact person.
 AGENCY CONTACT PERSON: ADF&G Jim Fall 267-2359

7/1
SEGMENT ST / NK-1 SUBDIVISION: _____ DATE 4/30/90

USCG
NAME _____

SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADP for
~~ADP for~~

NAME

Doug Hill

SIGNATURE

Douglas D Hill

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

*Recommend Manual pickup and removal of tarballs
and tar patties/tar mat from North shore and from West shore
(tar patties near South salmon stream mouth).
(SEE Attached maps).*

*Two salmon streams exist at the head of NE Cove
Nuka.*

*- A substantial amount of oil still exist at the eastern
end of NK-1 (Penck was pressure washed in 1985).*

LAND MANAGER

NAME _____

SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

NK-1

EXXON COMMAND CENTER (HOMER)

P.O. Box 4848

4014 Lake St.

Homer, AK 99603

Tel: 235-6444

Fax: 235-5963

DEC 10, 1990

The attached is a copy of SSAT NK-001 plus comments from ANAD.
stream #232-21-10230 and 232-21-10240. This should be used
NKA Es-001. Refer to SSAT NK-001 file for operations notes.

[Signature]
DES 4/10/91

*This was typed by Darryl Goes but very difficult to
read after being faxed. gsr.*

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / NK 01 SUBDIVISION: A DATE 4/7/00

USCG / USCG
NAME Michael SIGNATURE Michael

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

This area has two main zones of oil contamination: 1) very discrete patches of widely spaced pavements along the UITZ of the main beach; 2) a smaller beach on NE side w/ larger pavements. The NE point beach had some sheets, even though the ground is frozen in places. These pavements should be removed manually. There is little/no concern for erosion. Care should be taken to not disturb the lower intertidal zone on the NE shore.

ADEC
NAME JOAN R. REED SIGNATURE John R. Reed

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

I recommend using shovels and hand travels to pickup the asphalt pavements. The main beach is very low angle and has an anadromous stream on the N/E end. The UITZ was mostly covered with snow and I feel like we were missing some of the contamination. ~~Recommend using shovels and hand travels to pickup the asphalt pavements. The main beach is very low angle and has an anadromous stream on the N/E end. The UITZ was mostly covered with snow and I feel like we were missing some of the contamination.~~ I have read and agree with all data on S.S.A.T. Report.

LAND MANAGER - DNR/DNR
NAME J. Amy Johnson SIGNATURE J. Amy Johnson

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

Concur with above comments; concerned about saw covered UITZ + recommend another look later. No problem with intuitive methods in this segment, but manual pickup of mats probably best. Noted no piled debris or driftwood, except for 1 sortant pack. Note segment is a DNR priority due to STATE PARK designation, though access is limited by good weather, because of SE exposure.

OG Nona USCG Michel SEGMENT ST/ NK-1
 BIO Coff LAND REP Johnson - DNR SUBDIVISION 11
 EXXON Bayer ADEC Reed TIME 2:45 to 3:15
 TEAM NO.: 18 TIDE LEVEL: 1 to 13 DATE 4/1 190
 EST. SUBDIVISION LENGTH: 200 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: all to aver
 SURFACE SEDIMENTS: R 5 % B 5 % O 40 % P 40 % G 10 % S 0 % M 0 % V 0
 SLOPE: Long 100 % Hang 0 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 50 m N 0 m VI 350 m NO 400

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	R	M	P	N	SK	OR	OT	OT	OT	OT	SU	U	M	U
ASPHALT PAVEMENT		✓		✓						✓		✓		
POOLED														
COVER														
COAT														
STAIN														
MOUSSE														
PATTIES				✓						✓		✓	✓	
TARBALLS														
FILM														
NO OIL											SN	SN	✓	✓

PAVEMENT: H F (S) 200 sq. m by 6
 PATTIES / TARBALLS 10 bags of asphalt BAC
 NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MO	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☒ YES ☐ NO
 TYPE asphalt
 #BAGS 1

Photographs:

Roll No. ST 18-4

Frames (9-18)

* probably present but can not see under these conditions

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	VG	SK	OR	OT	OT	OT	OT	SU	U	M	U		
1	20					✓	.									✓				NO	PGC through out
2	25					✓	.									✓				"	"
3*	30					✓	.									✓				"	"
4*	25					✓	.									✓				"	"
5	25					✓	.									✓				"	PGC through out
6	30					✓	.									✓				"	PGC through out

COMMENTS * pit has oil on surface (asphalt)

An observation in upper 20's ° F. Back fall is 1/2 in. light. We are unable to observe above 1/2 of the U172 and supra-tidal ^{ZONE} plus to shore ...
 Oiling is mostly in the form of remnant mousse accumulations that exist as patches of asphalt. Widely - scattered, remnant mousse patches exist throughout the Middle and U172. This shoreline is very low -
 Page 1 of 2 REVIEWED _____ DATE _____

SEGMENT ST/ NK-1 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
		OF	ON	OL	OF	NO		UG	UC	1	2	3	4	5	6	7	8	SU	U	W	U		
7	25					✓	.											✓				NH	C.P. over P.G.C.
8	30					✓	.											✓				"	CBP over PGC
9	25					✓	.											✓					"
10	25					✓	.																"
							.																
							.																
							.																
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COMMENTS

No burial of oil was evident

angled. The size of the stones being suggests that waves, at least occasionally, move sediment on and across the beach. Most of NK-1 consists of the intertidal portion of a pebble-cobble-small boulder delta formed by 2 streams at the head of a long, narrow cove. Our survey was not at an ideal time because of the snow cover in the upper portion of the UITE.

JH MAP

25m x 5m
asphalt/b
between
boulders,
cover
~60%

REMOVE
PAVEMENT

N
~50m

NK-3

2x4m
asphalt/p
between
boulders

Remove
PAVEMENT

Fuchs zone (PCGB)

upper limit of Fuchs

(PCGB)

5 to 10% cover by asphalt/p
patches 0.5 to 1m
in diameter, 3-6cm
thick

snow-covered UITE
240m

50m

snow-covered
UITE

massive storm berm with dead trees

SSL

forest

bench

creek

OG: Miano

SEGMENT STI NK-1

SUBDIVISION A

DATE 7 17 90

CHECKLIST

- ☐ Airway
- ☐ Access Route
- ☐ Topographic Survey
- ☐ CULVIL
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Soil Moisture
- ☐ SSL
- ☐ Photo Location(s)
- ☐ Photo(s)
- ☐ Photo Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ
PT - No Substrate CI

2 Δ
PT - Substrate CI

CTAC
Continuous Distribution

CTPD
Discrete Distribution

CTPD
Patchy Distribution

CTPS
Sporadic Distribution

Dead Vegetation

Photo location, direction
and number

GROUP A

ADFG MULTI-ASSESSMENT DATA FORM

Prescreening

1 SURVEY TYPE: BS SS DS TS AVS SCVA MMS PTA 2 REGION: PIB XP, CI KAP

METHOD: Aerial Ground Boat

3 DATE: 4-14-90 18 HIGH TIDE TIMES: 1706 31 TEAM RECORDER: Doug Hill

4 START TIME: 0933 19 HIGH TIDE HTS: 9.6 22 OBSERVERS: S. Melane, J. Rogers

5 STOP TIME: 1046 17 LOW TIDE TIMES: 1053 23 AGENCY: ADFi6

6 SEGMENT #: NK-1 16 LOW TIDE HTS: 0.2 24 PHOTOS TAKEN: Y N
900DH004-H
Roll #: _____ Frame: 1, 2, 3, 4, 5, 6

7 STATION #: _____ 15 TIDE HT AT SURVEY: 1200 25 VIDEO TAKEN: Y (N) TAPE: _____

8 K-UNIT: _____ Ebb Slack Flood Slack 26 VIDEOS TAKEN: Y (N) TAPE: _____

9 STAT AREA: 232-21 29 USCG QUAD: _____ Starts: _____ Ends: _____

10 LAT: 59° 23.6 N 11 LONG: W 150° 38.4 28 SAMPLES TAKEN: Y N Number

12 SOURCE: Map Loran 011 NK-1-10H/SM-4/14/90

13 LOCATION: AFS-232-21-10230, Nuka Island, NW portion of NE Cove Sediment

14 DESCRIPTION: North Corner of Bay / NE Port 49

EXTENT OF OIL

SHORELINE L W H L W H

27 SURFACE COVERAGE

28 SURFACE THICKNESS

29 PENETRATION

30 OVERALL OIL IMPACT: N VL L M H

31 OIL TYPE: Pooled Mousse Tar Asphalt Sticky Stain Coating on rock walls

32 OILED DEBRIS: Y N

33 SHORELINE TYPE: Headland Low-lying Rocks Beach Cove Lagoon Marsh

34 WAVE EXPOSURE: High Moderate Low

35 SUBSTRATE TYPE: Bedrock 30 Boulder 10 Cobble 30
Gravel 30 Sand _____ Mud/silt _____

36 CATALOGED ANAD. FISH STREAM? Y N

37 CATALOG: 232-21-10230
NE COVE - NUKA ISLAND

38 STREAM NAME: NE Cove

39 OIL IN STREAM BED? Y N

40 OIL ON STREAM BANKS? Y N

41 OIL ON BEACH ADJACENT TO MOUTH? Y N
(within 50 meters)

42 OIL WITHIN 1 MILE OF STREAM? Y N
Where: Mouth and NE Shore

43 ANADROMOUS FISH PRESENT? Y (N)

44 ANADROMOUS FISH OBSERVATION

Species	Aerial	Ground

COMMENTS: N.E Nuka seems little changed since last Fall.
There were fewer observed tar mats in the stream channel
but the side pocket beaches contain significant amount
of mousse between rocks and on rock walls. No difference
was observed between before & after amounts of oil on beach & rock faces spr

FRAME(S)

DESCRIPTION

1. 2.
3.
6, 7

Aerials of Tide Flats & AFS mouth/outlets/head of NE Cove at
Overlapped Boulder - mouse, sheep & Dead L. in pots (common on
beaches)
Dead Mc Lane (AFS) holding oiled pom-pom "almost" kept on Pressure
washed beach.

NK-1

NE NUKA
ISLAND COVEAUROROUS STREAM
CATALOG NUMBER

232-21-10230

232-21-10240

TAR Patches
2'4" x 4" to
12" x 12"
1/2" thick

LITZ

TAR Patches
TAR Patches

oil at
center
cover
Rock
5' - 6' in
heavily
with sp.
needles
30' to 40'

oil coated. Rock
FACE

oiled Pom Po

TAR Patches, Mo
Found beneath
Cobble and Bow
and visible in
interstices

Pressure
washed in
1989

AWADSCAT - Recommended

Sample taken

Photo frame band

SHORELINE ECOLOGICAL SUMMARY

REVISION: 7-8

Segment ST / NK 1 Subdivision A (if A) Date (mo / day / yr) 4 / 7 / 90

Time (24 hr) 0645 Biologist M. CARR

(A) Substrate type and % of segments: ^{SUBDIVISION:}
(1) Bedrock 5 (2) Boulder 5 (3) Cobble 40 (4) Pebble 50 (5) Sand (6) Silt

(B) Overall % cover of biota (% of segment): ^{SUBDIVISION} Dense 50 Moderate Low 50

(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: 4
Roll No.

Frames 9-18

EARNACLES

	Dense	Moderate	Sparse	Rare	
1U	2	2	2	2	1L } Bedrock & Boulder did EXTEND INTO LOWER
2	3	3	3	3	2
3	4	4	4	4	3
4	5	5	5	5	4
5	6	6	6	6	5
6	6	6	6	6	6

NOT PRESEN

MYTILUS

	Dense	Moderate	Sparse	Rare	
1U	1M	1L	1U	1M	1L } Bedrock & Boulder did EXTEND INTO LOWER
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6

NOT PRESEN

NOT PRESENT IN U
BANKS OF RIFT 1

GASTROPODS

	Dense	Moderate	Sparse	Rare	
1U	1M	1L	1U	1M	1L } Bedrock & Boulder did EXTEND INTO LOWER
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6

NOT PRESEN

NOT PRESENT IN U
BANKS OF RIFT 1

FUCUS

	Dense	Moderate	Sparse	Rare	
1U	1M	1L	1U	1M	1L } Bedrock & Boulder did EXTEND INTO LOWER
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6

NOT PRESEN

Wildlife Observations/ General Comments:

LAND OTTER (1)

HARBOR SEAL, *Phoca vitulina* (1)

Ecological Considerations:

Sensitivity codes: 4-OS (Alaska State Parks), 5-T (Bald eagle nest),
5-R (Seabird colonies).

STATIONLINE ECOLOGICAL SUMMARY

REVISION 2.2.78

Segment ST UK 1 Subdivision A (of A) Date (mo / day / yr) 4 / 7 / 90

Time (24 hr) 0645 Biologist M. LARR

(A) Substrate type and % of segments:
(1) Bedrock 5 (2) Boulder 5 (3) Cobble 40 (4) Pebble 40 (5) Sand 10 (6) Silt 0

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

(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. 4

Frames 9-17

BARNACLES

Dense			Moderate			Sparse			Rare			NOT IN LOWER ZONE
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
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 IN LOWER ZONE
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
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 IN LOWER ZONE
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
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 IN LOWER ZONE
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
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:

LAND OTTER (1)

HARBOR SEAL (1)

Ecological Considerations:

Sensitivity codes: 4-GG (Alaska State Park), 5-T (Bald Eagle Nest)
5-R (Seabird colony)

good luck!

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

NK-1

ADEC Segment Length: 1847m

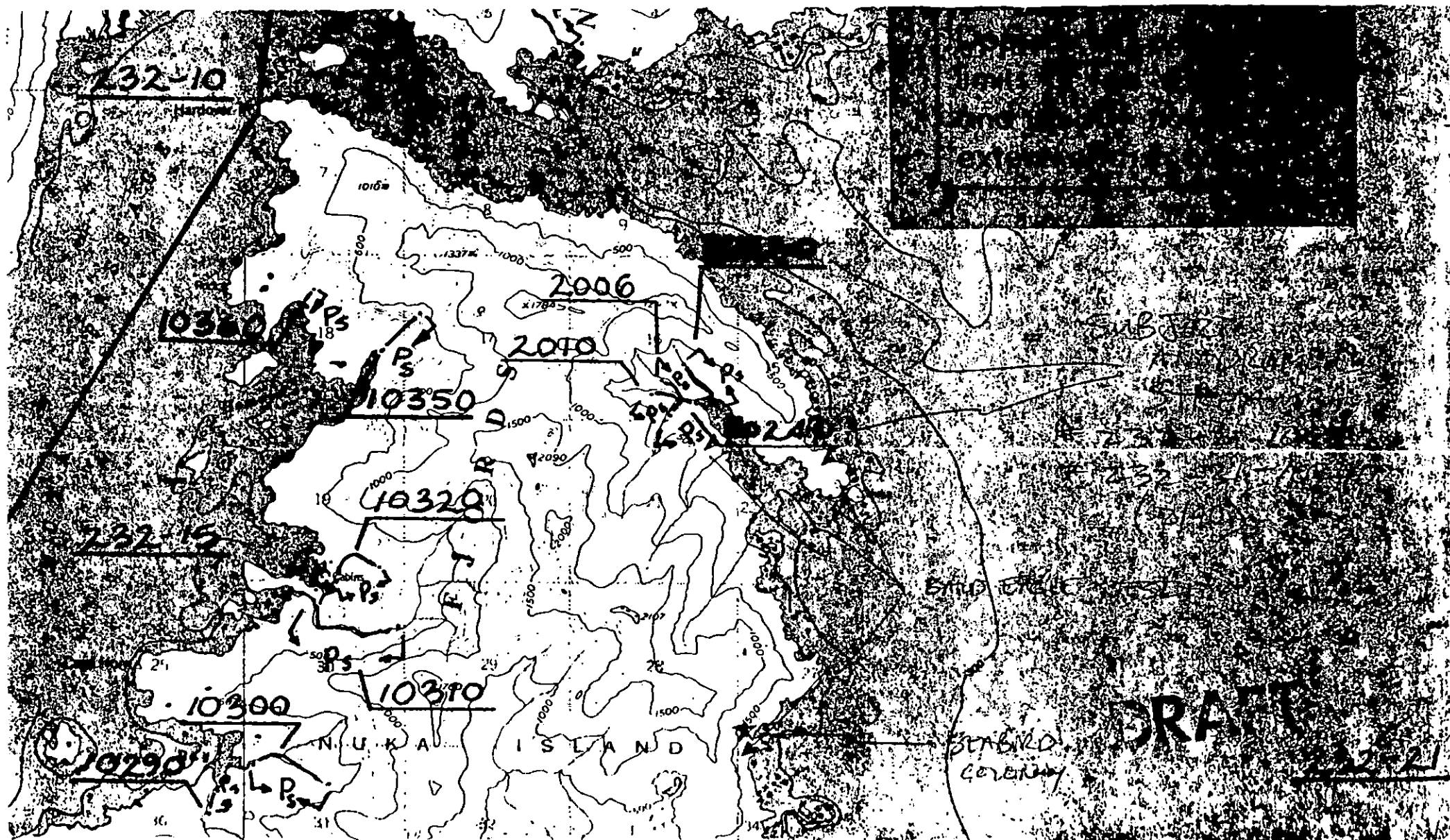


Map Key: XEN-640
Name: Mann/NK-
Date: 4/7/90
Date Entered:

ECOLOGICAL MAP

1A, 1B 15+

46A



ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT NK-1 SUBDIVISION A (1 of 1)

WORK WINDOW

Tarmat Removal

OPEN

Bioremediation More Than 100m From Stream **WORK PRIOR TO 7/20**

Bioremediation Less Than 100m From Stream **WORK PRIOR TO 7/10**
(ADF&G MONITOR REQ.)

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

- | | |
|--------------------------------|---|
| 1A,1B Salmon Streams | Four ADF&G catalogued anadromous streams (232-21-2010, 232-21-2006, 232-21-10240 and 232-21-10230) are present in Subdivision A. This subdivision is closed to bioremediation less than 100m from stream 7/10 to 8/31. Before 7/10, bioremediation is permitted less than 100m from stream with on-site ADF&G monitor or ADEC alternate present. No constraint to bioremediation more than 100m from stream. No constraint to tarmat removal. |
| 1J Purse Seine Hook-off | No constraint to tarmat removal. Closed to bioremediation after 7/20. |
| 5R Seabird Colony | No constraint; colony is outside of Segment NK-01A and more than 800m from recommended treatment area. |
| 5T Bald Eagle Nest | NO CONSTRAINT. Eagle nest more than 400m from recommended treatment area. |

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or bank. No flushing of pollutants or sediments into stream drainage; do not allow Inpol to enter stream flow. On-site examination and consultation by ADF&G monitor is required prior to bioremediation in order to authorize a setback distance from the stream during chemical application; if ADF&G monitor's presence is impossible, authorization may be given by the ADEC monitor. Restrict boat and air traffic to essential minimum after 7/20. Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

FOSC

[Signature]

Date

6/16/90

Prepared by

[Signature]

Date

6/14/90

NK-01

ANADROMOUS STREAMS
(232-21-10240, 2010; 2006, 10230)
100 M ZONE

TREATMENT AREAS

NK-03

NK-03



Exxon Company, USA



ECOLOGY MAP
SEGMENT NK-1

SUBDIVISION A (1 of 1)
METERS



Seabird Colony



Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ NK-001 SUBDIVISION A (1 OF 1) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird Colony (5/1 to 9/1)
5T Active Bald Eagle Nest (3/1 to 6/1)
4GG Alaska State Park

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid disturbance/damage to unoiled 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: Charles E. Holmes DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 56 m: Narrow 0 m: V.Light 360 m: No Oil 0 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>X</u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> <u>X</u> Removal	<u> </u> Other (see comments)

COMMENTS: Recommend tarmat removal by shovel and hand trowels in asphalt area indicated on attached sketch map. Treatment activities should be conducted prior to May 1 and/or only after obtaining clearances from ADF&G and DNR.

SEE CONSTRAINTS ADDENDUM dated 6/14/90

TAG COMMENTS:

REVIEW AND EXAMINE UITZ/SUITZ FOR OILED DEBRIS BY MONITORS.

TAG APPROVAL DATE: 4/14/90.

ADEC Art Weimer Dittmann

EXXON Andy Galt

FOSC:

DATE: 5-1-90

NOAA Burt Warrick

USCG G.A. Reiter

REGION: KENAI

SEGMENT: ST/NK-002

SUBDIVISIONS: A (1 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ NK-002 SUBDIVISION A (1 OF 2) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
5T Bald eagle nest (3/1 to 6/1)
4GG Alaska State Park

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 182 m: Narrow 204 m: V.Light 0 m: No Oil 163 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 tarmat removal in areas shown on attached sketch map and bioremediation in areas of broken cover and coat, also shown on map. Work to be conducted after 6/1 based on above eagle constraint and with approval of ADF&G and USFWS concerning seabird colony.

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ UK 02 SUBDIVISION: A DATE 4/7/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE Michel

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

The oil bands on the rocky headlands do not warrant further treatment. However, the pavements should be removed manually. There were abundant sheens (w/ 20°F air temps) on the individual sediments. On some beaches, the pavements were 10-12cm thick and very soft. These areas will be difficult to clean because of the scattered veneer of cobbles. It is as if the upper half of the oil was removed (during "B" cleanup last year?), leaving behind a thin, lower zone. Penetration is limited to 1-2cm in well-packed sediments.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

Asphalt pavements should be removed manually with a shovel or hand trowel. This area was warm water washed last summer. There is an unoiled layer of cobbles sitting on top of the 8-10 cm thick pavements that would need to be moved in order to get to the asphalt. Some sheening was noticed. LITZ was covered with snow. I have read and agree with all data on SSAT forms.

LAND MANAGER/DNR

NAME Jeff S. Johnson SIGNATURE Jeff S. Johnson

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

Agree with SSAT data, and concur with the above comments. Manual removal recommended, but will be difficult. May want to use pompons on the oil warms up + liquefies more. No opposition to intrusive treatment, but should be careful not to disturb healthy mytilus + balanus in the LITZ. No oiled driftwood or debris. Oil band high in the bedrock indicates a strong possibility of oil in the snow covered LITZ as well.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Mann USCG NOAA Michel SEGMENT ST/ NK-2
 BIO Carl LAND REP Johnson DNR SUBDIVISION A
 XON BOYER ADEC DEED TIME 7:55 to 8:45
 TEAM NO.: 18 TIDE LEVEL: +3 to +4 DATE 4/7/90
 EST. SUBDIVISION LENGTH: 545 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 50 % B 10 % C 30 % P 10 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long % Hang % Vert % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 240 m N 240 m VL 0 m NO 65 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	IC	IB	IF	IR	SL	OR	GT	SL	DR	TL	SU	UI	ME	U
ASPHALT PAVEMENT		✓	✓	✓					✓		✓			
POOLED														
COVER		✓	✓	✓		✓		✓			✓			
COAT		✓	✓	✓		✓		✓			✓			
STAIN				✓		✓					✓			
MOUSSE														
PATTIES														
TARBALLS														
FILM		✓	✓	✓			✓				✓			
NO OIL											SN	SN	✓	✓

PAVEMENT: H F (S) 200 sq. m by 6 cmPATTIES / TARBALLS NONE 0 0 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE NA#BAGS 0

Photographs:

Roll No. 18-4Frames #19-26SUBSURFACE OIL *See separate map of segment for oil locations*

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	UC	SL	OR	GT	SL	DR	TL	SU	UI	ME	U		
1	30					✓	-		✓							✓				NO	CPG throughout
2	30					✓	-		✓							✓				"	" "
3	25					✓	-		✓							✓				"	" "
4	30					✓	-		✓							✓				"	" "
5	25					✓	-		✓							✓				"	" "
6	30					✓	-		✓							✓				"	CBPG Throughout
7	25					✓	-		✓							✓				"	" "

COMMENTS

The coastline here consists of small (20-50m wide) coves separated by steep bedrock headlands. The coves have oil, the headlands do not - except on some leeward faces. The oil in the coves is partly hidden under a ^{scattered} armoring of cobbles and small boulders. This situation makes the oil hard to see without a shovel and will complicate clean-up efforts. (continued)

Mann 4/7/90

NK-2

A

(continued)

Note that the UITZ was partly ($\sim 1/3$ of width) covered by snow during this survey. Air temperatures were in the upper 20° F so that ice covered much of the beach face.

Pits were usually placed in areas of surface oiling.

In regard to subsurface oiling, remember that where an asphalt exists, the subsurface begins below the pavement. It is possible that buried oil could exist in recent berms now covered by snow in the UITZ.

OG Man

SKETCH MAP

SEGMENT STI NK-2

SUBDIVISION A

DATE Y, F 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Sog/Sub Endry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. H/W/L/WL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pit Location(s)
- ☐ Photo Location(s)

LEGEND

1 ▲

Pit - No Subsurface Oil

2 ▲

Pit - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Spaced Distribution

Oiled Vegetation

1 ➡

Photo location, direction,
and number

No sketch map

Oil Character Length (m): AP 180 PO 0 CV 240 CT 240 ST 50 MS 0 PT 0 TB 0 FL 180 NO 125

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/23/90

Segment ST / NK-2 Subdivision A (of A-B) Date (mo / day / yr) 4 / 7 / 90
 Time (24 hr) 0800 Biologist M. LARR

- (A) Substrate type and % of segments:
 (1) Bedrock 50 (2) Boulder 10 (3) Cobble 30 (4) Pebble 10 (5) Sand — (6) Silt —
- (B) Overall % cover of biota (% of segment): Dense 50 Moderate — Low 50
- (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: 4
 Roll No. —
 Frames 19-26

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	NOT PRESENT
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			
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	NOT PRESENT
4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT IN UPPER ZONE
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			
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	NOT PRESENT
4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT IN UPPER ZONE
5	5	5	5	5	5	5	5	5	5	5	5	NOT PRESENT IN ANY Z
6	6	6	6	6	6	6	6	6	6	6	6	

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	NOT PRESENT IN UPPER ZONE
3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
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:

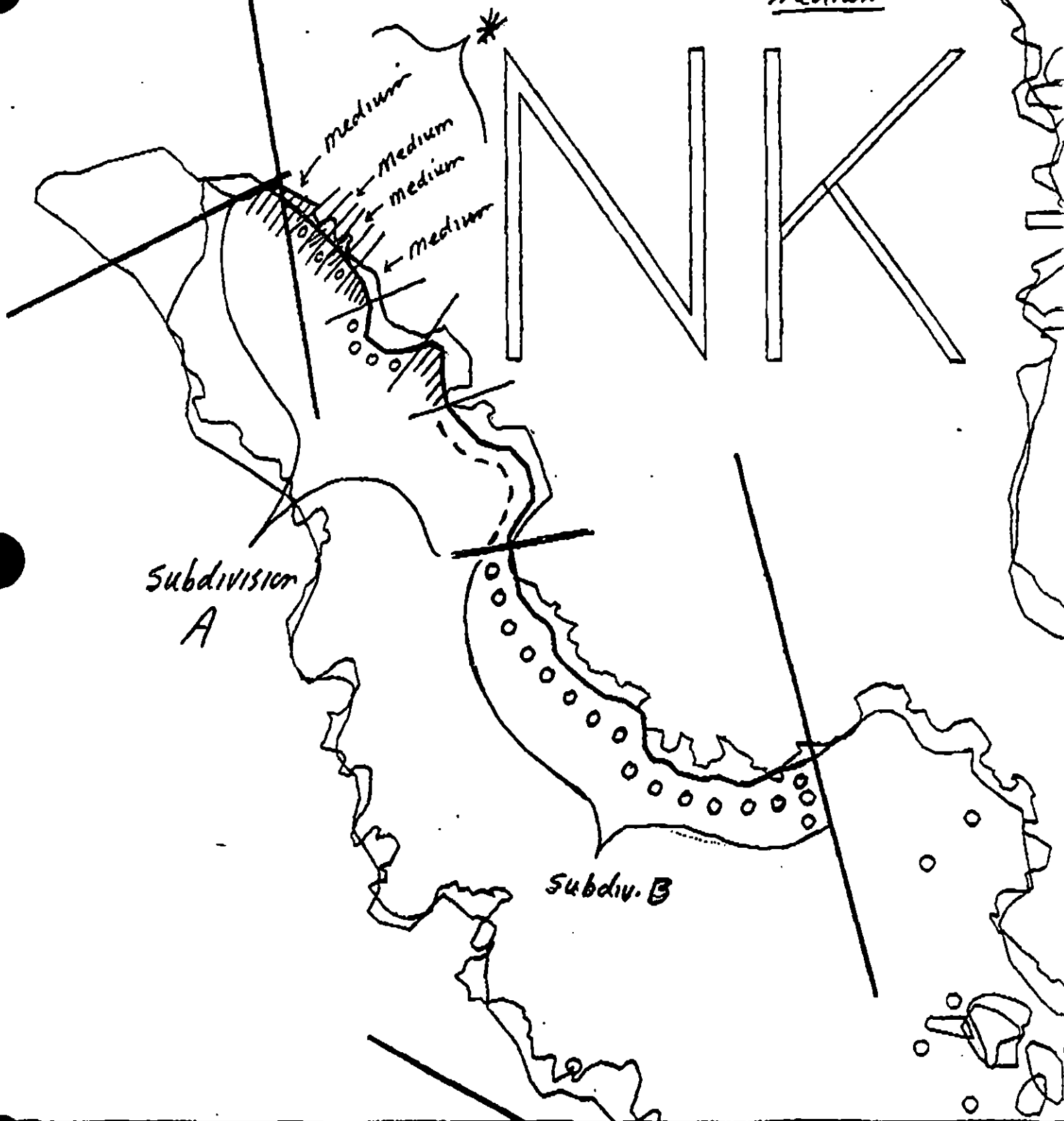
Steller's jay (1)
 Bald eagle (1)
 Cormorant (1)

Ecological Considerations:

Sensitivity codes: 4-GG (Alaska State Parks), 5-T (Bald eagle nest),
 5-R (Seabird colonies)

BALD EAGLE NEST

* GIS operator: if you have to simplify this area, make it all medium.



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

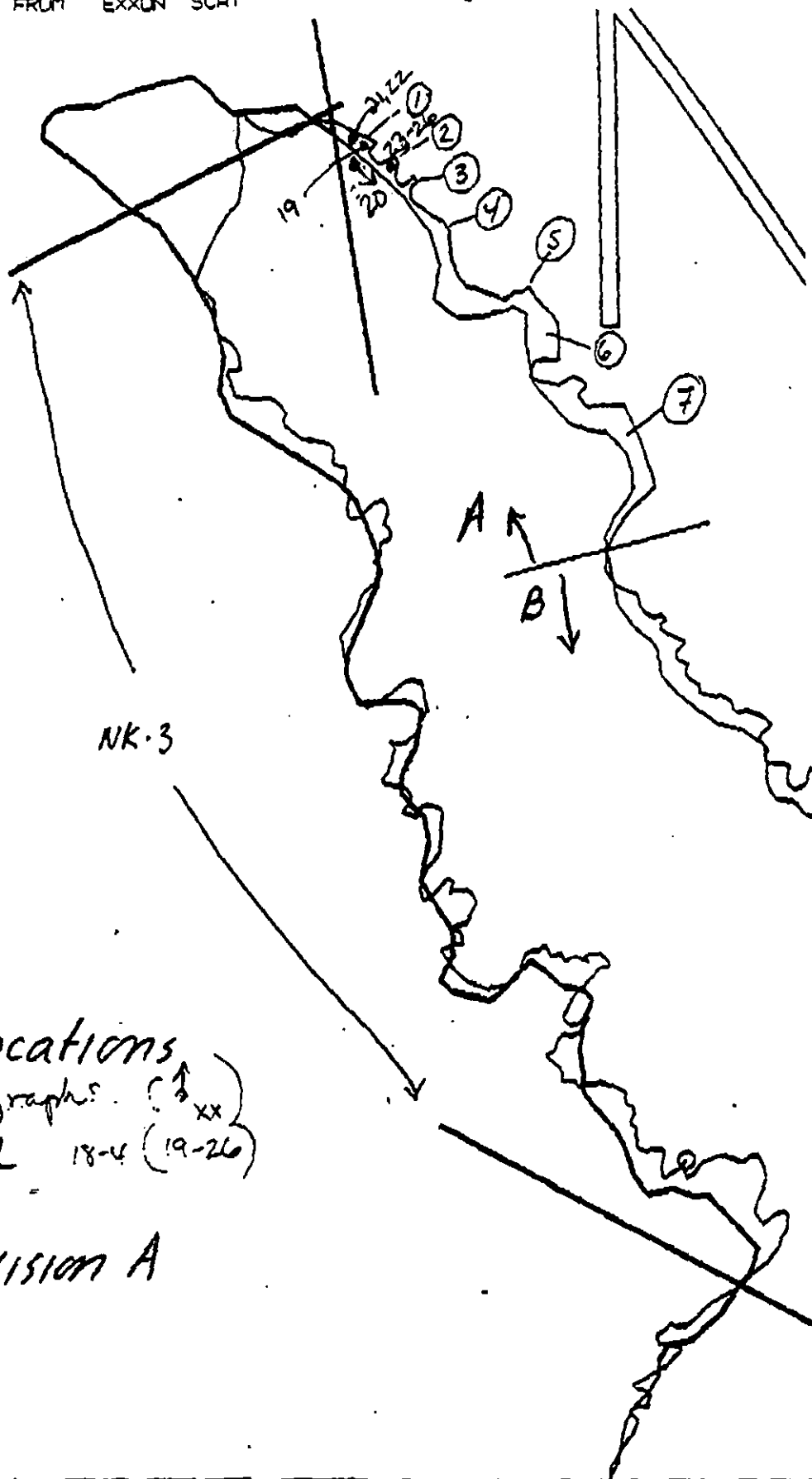
NK-2

ADEC Segment Length: 1058m

0 100 200 300

Map Key: PWS-NK-2

Name: MaamDate: 4/7/90



Pit Locations
+ photographs (1/2 xx)
NK-2 18-4 (19-26)

Subdivision A

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

NK-1

ADEC Segment Length: 1967m



Map Key: KEN-640

Name: Marr

Date: 4/7/90

Area: 1967m

REGION: KENAI

SEGMENT: ST/NK-002

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ NK-002 SUBDIVISION B (2 OF 2) DATE 4/10/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
5T Bald eagle nest (3/1 to 6/1)
4GG Alaska State Park

See attached Ecological Constraint Sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 486 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

<u>X</u> 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:

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 1 NK 02 SUBDIVISION: B DATE 4/7/90

USCG/NORA

NAME JACOBI Michael SIGNATURE Michael

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

No oil was observed, even in the very few/small pocket boulder beaches. The rocky shores are exposed to moderate wave energy, with numerous caves and eroded slots in the bedrock.

ADEC

NAME JOHN R. REED SIGNATURE John R Reed

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

No oil was observed. I have read and agree with all data on S.S.A.T. Forms.

LAND MANAGER/DNR

NAME Jeffrey S Johnson SIGNATURE Jeff S Johnson

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Bedrock faces, no obvious oiling. State Park segment.
Agree with SSAT observations, moderate to high energy rock faces.

SHORELINE OILING SUMMARY

REVISION NO. 02/22/90

OG Mann USCG NORA Michel SEGMENT ST/ NK-2
 IO Carr LAND REP Johanson DNR SUBDIVISION B
 XXON BOYER ADEC Reed TIME 8:45 to 9:00
 TEAM NO.: 18 TIDE LEVEL: +4 to +5 DATE 4 / 1 / 90
 EST. SUBDIVISION LENGTH: 515 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 90 % B 8 % C 2 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 5 % Hang 15 % Vert 80 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 515 m
513

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	CC	CS	PS	SS	BR	BL	FW	GY	SL	DR	TL	LR	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL													SN	SN	✓	✓

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

PATTIES / TARBALLS NA BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS <u>NO</u>	AMOUNT			
	SM	MD	LG	
Logs				DEBRIS COLLECTED ☐ YES ☒ NO TYPE <u>NA</u> #BAGS <u>NA</u>
Vegetation				
Trash				
Debris				

Photographs:

Roll No. none

Frames none

SUBSURFACE OIL No pits dug because of inaccessibility and bedrock substrate

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	VC	BR	BL	FW	GY	SL	DR	TL	LR	SU	U	M	U		
0																							

COMMENTS

This is a cliff-lined shore with a few small, pocket beaches. Kelp beds border much of the shoreline. No oil was observed during out inspection by boat.

OG nr

SEGMENT ST/ NK-2

SUBDIVISION B

DATE 4, 7 90

CHECKLIST

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

LEGEND

1 ▲

Pit - No Subsurface Oil

2 ▲

Pit - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oiled Vegetation

1 ➡

Photo location, direction,
and number

ETCH MAP

No sketch map.

Oil Character Length (m): AP 0 PO 0 CV 0 CT 0 ST 0 MS 0 PT 0 TB 0 FL 0 NO 515

SHORELINE ECOLOGICAL SUMMARY

REVISION: 08/22/90

Segment ST / NK-2 Subdivision B (of A-B) Date (mo / day / yr) 4 / 7 / 90
 (24 hr) _____ Biologist M. CARR

- (A) Substrate type and % of segments: ^{SUBDIVISION}
 (1) Bedrock 100 (2) Boulder _____ (3) Cobble _____ (4) Pebble _____ (5) Sand _____ (6) Silt _____
- (B) Overall % cover of biota (% of segment): ^{SUBDIVISION} Dense 70 Moderate 20 Low 10
- (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. _____

Frames NONE

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:

NONE

Ecological Considerations:

Sensitivity codes: See NK-2 A sheet.

*GIS operator: if you have to simplify
 this area, make it all medium.



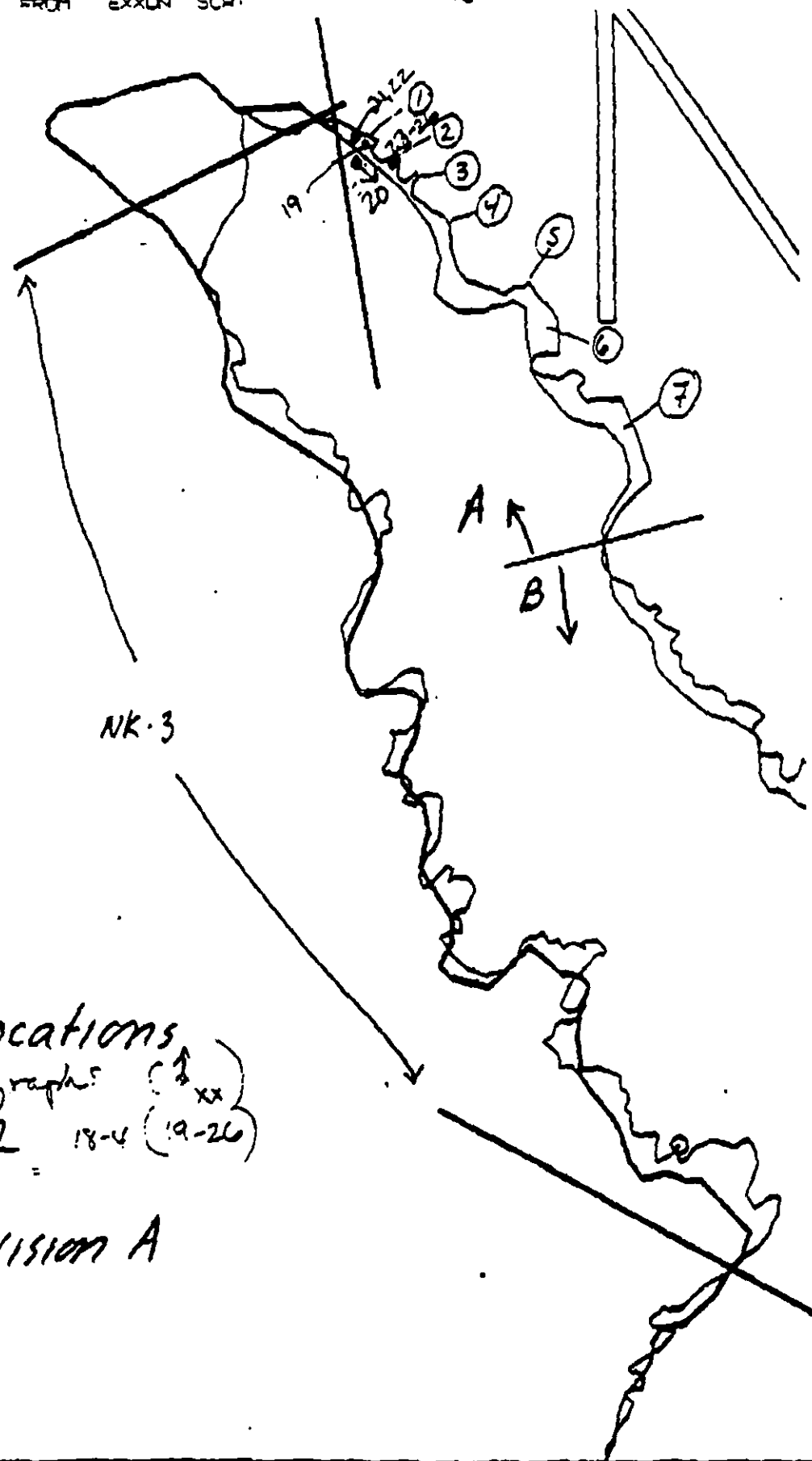
XXXX Wide
 //// Medium
 --- Narrow

NK-2

ADEC Segment Length: 1058m

Map Key: PWS-NK-2

Name: Naam



Pit Locations
+ photographs (1 xx)
NK-2 18-4 (19-26)

Subdivision A

~~XXXXXXXX~~

XXX Wide
/// Medium
--- Narrow

NK-1

ADEC Segment Length: 1947m

TTTT Very Light

Map Key: KEN-640
Name: Marr
Date: 4/7/90

SHORELINE EVALUATION

SEGMENT ST/ NK-002 SUBDIVISION A (1 OF 2) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
5T Bald eagle nest (3/1 to 6/1)
4GG Alaska State Park

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 Z. H. [Signature]

DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 182 m: Narrow 204 m: V. Light 0 m: No Oil 163 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>X</u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> <u>X</u> Removal	<u> </u> Other (see comments)

COMMENTS: Recommend tarmat removal in areas shown on attached sketch map and bioremediation in areas of broken cover and coat, also shown on map. Work to be conducted after 6/1 based on above eagle constraint and with approval of ADF&G and USFWS concerning seabird colony.

TAG COMMENTS:

MONITORS TO ASSESS SUITZ FOR OILING (SNOW COVERED AT TIME OF SURVEY).

TAG APPROVAL DATE: 4/17/90.

ADEC ART WILSON Det Weimer
EXXON ANDY TEAL [Signature]
NOAA Paul Wascott [Signature]
USCG KENNETH BEAKE [Signature]

FOSC: [Signature]

DATE: 4-26-90

OG MA

SEGMENT ST/ NK-2

SUBDIVISION A

DATE 4, 7 90

CHECKLIST

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

LEGEND

1 

PK - No Subsurface Oil

2 

Pit - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Spotted Distribution

Oil Vegetation

1 

Photo location, direction,
and number

SKETCH MAP

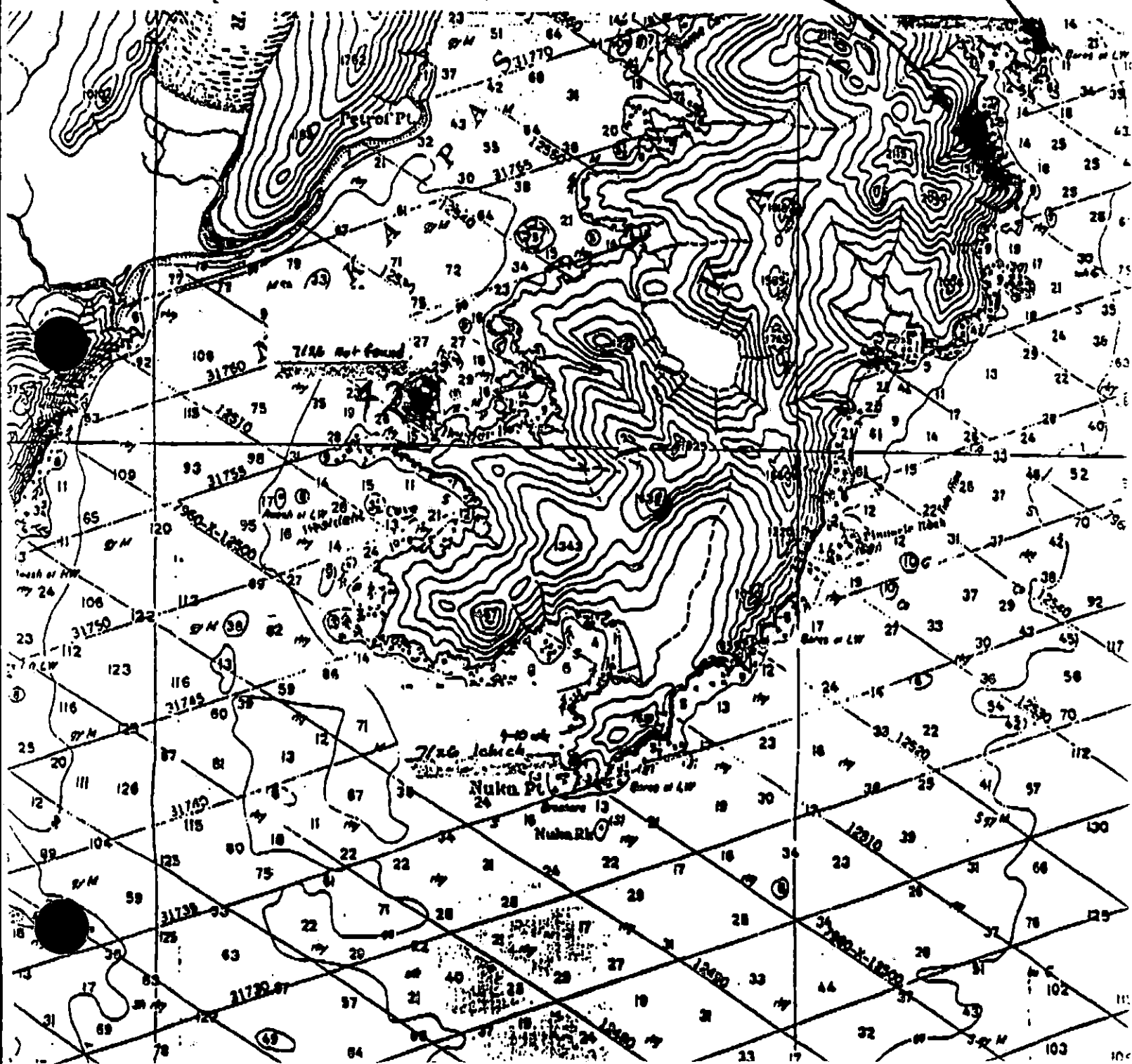
No sketch map

Oil Character Length (m): AP 180 PO 0 CV 240 CT 240 ST 50 MS 0 PT 0 TB 0 FL 180 NO 125

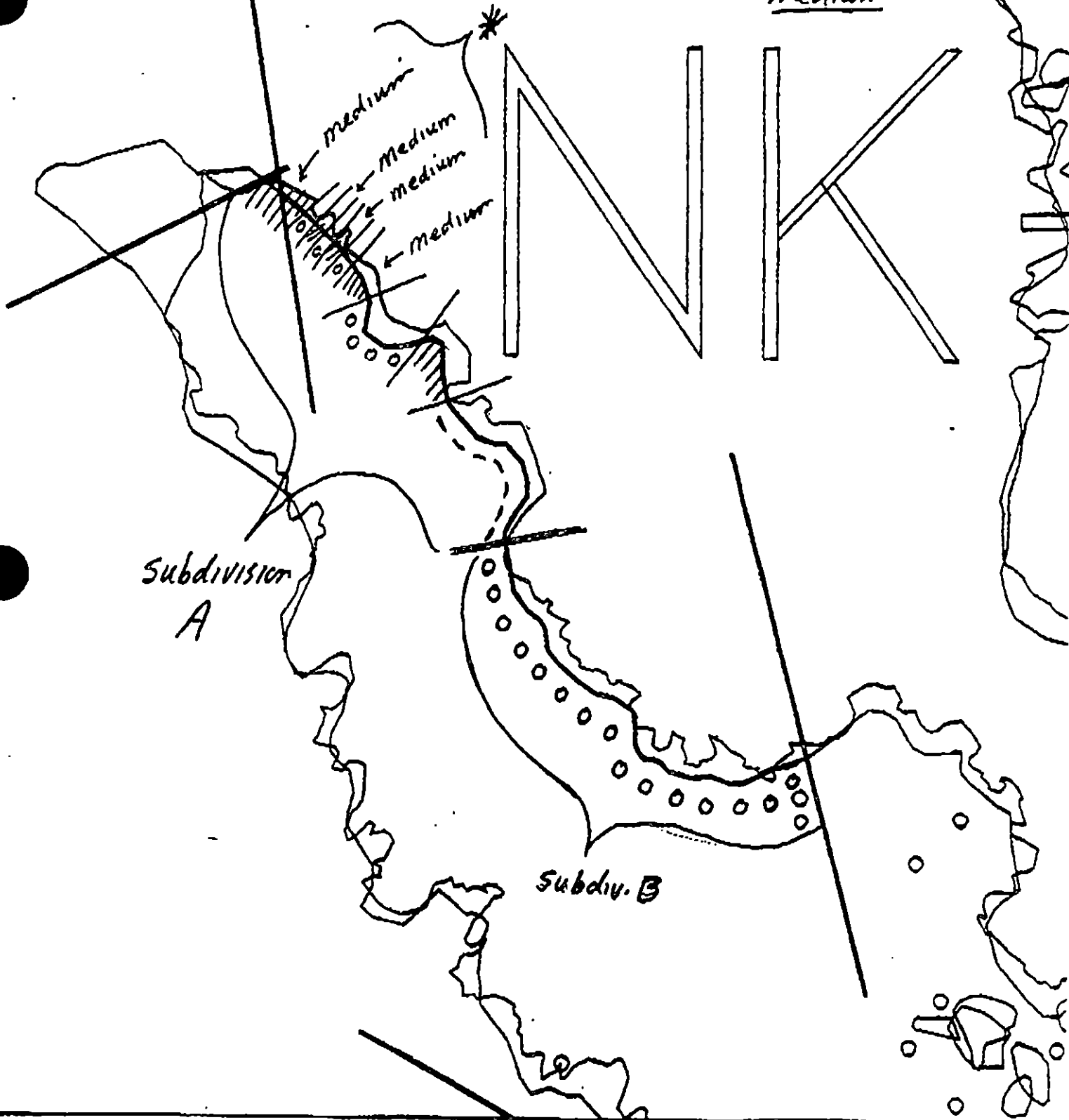
Sensitive sites for Segments NK-1 and NK-2

SEA BIRD COLONY

BALD EAGLE NEST



*GIS operator: if you have to simplify this area, make it all medium.



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO "

NK-2

ADEC Segment Length: 1058m

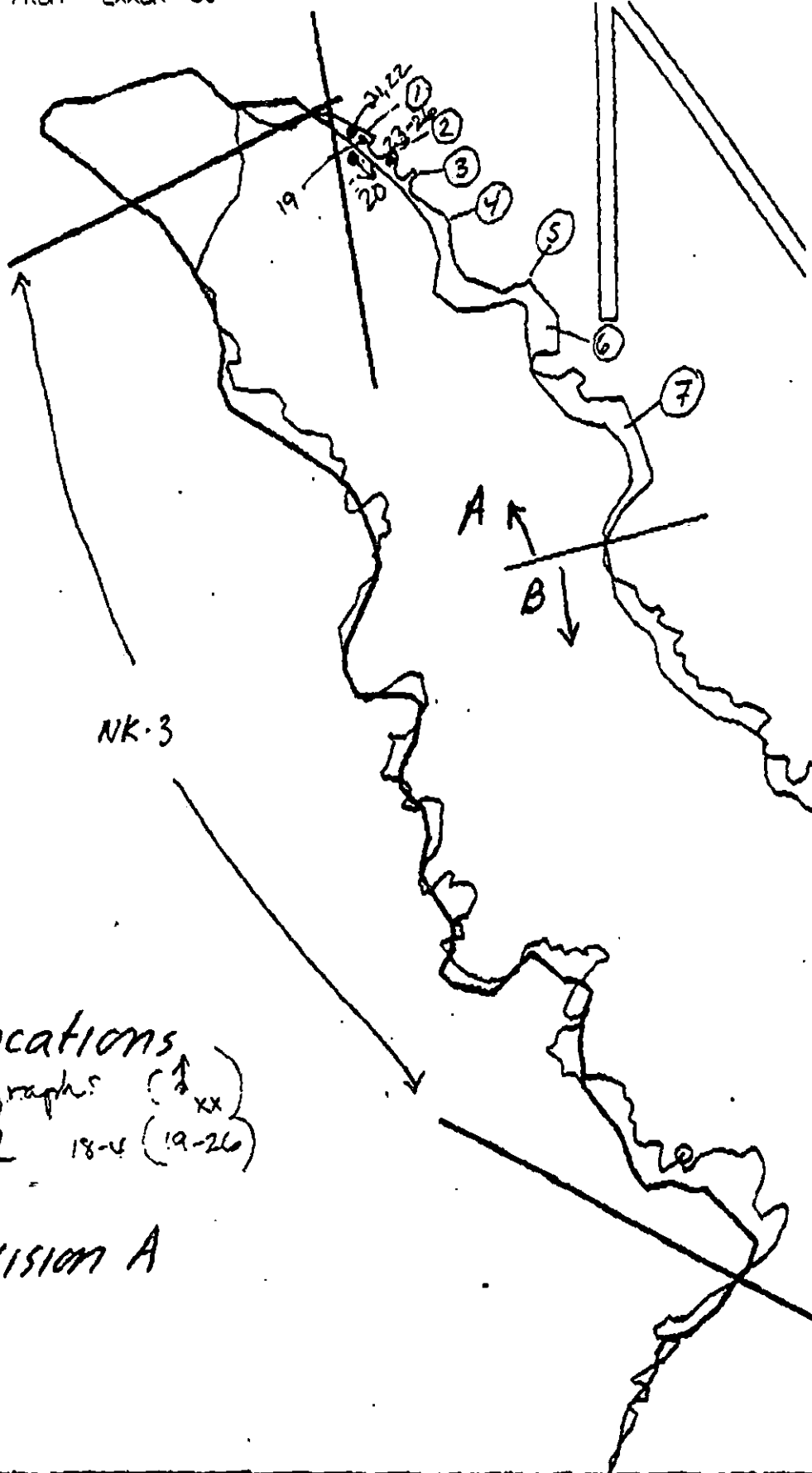
0 100 200 300

Map Key: PWS-NK-2

Name: Maan

Date: 4/7/90





Pit Locations
+ photographs (↑ xx)
NK-2 18-4 (19-26)

Subdivision A

XXXX Wide

NK-1

Map Key: KEN-64a

/// Medium

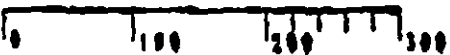
Name: Mann

--- Narrow

ADEC Segment Length: 1947m

Date: 4/7/90

TTTT Very Light



Drawn by: ...

0000 No Oil

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT NK-2 SUBDIVISION A (1 of 2)

WORK WINDOW	
Taromat Removal	OPEN
Bioremediation	WORK BEFORE 7/20

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1J	Purse Seine Area	Closed to bioremediation after 7/20. No constraint to taromat removal.
5R	Seabird Colony	NO CONSTRAINT. Work site is more than 800m from seabird colony.
5T	Bald Eagle Nest	NO CONSTRAINT. USFWS 6/1/90 map indicates no active nest within 400m of Subdivision A work site.

OTHER ECOLOGICAL CONSIDERATIONS

Restrict boat and air traffic to essential minimum after 7/20. Avoid any unnecessary disturbance or damage to unrolled blots and substrate.

FOSC [Signature] Date 6-10-90

Prepared by [Signature] ⁶⁻¹⁰⁻⁹⁰ Date 6/10/90

NK-01

WORK
AREAS

NK-02

NK-03

ACTIVE
NEST

BALD EAGLE
Buffer Zone



Exxon Company, USA
Map Key: KEN-NK-2

ECOLOGY MAP
SEGMENT NK-2
SUBDIVISION A (1 of 2)
METERS

- ★ Seabird Colony
- ▲ Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ NK-002 SUBDIVISION A (1 OF 2) DATE 4/7/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
5T Bald eagle nest (3/1 to 6/1)
4GG Alaska State Park

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 Z. H. [Signature] DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 182 m: Narrow 204 m: V. Light 0 m: No Oil 163 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>X</u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> <u>X</u> Removal	<u> </u> Other (see comments)

COMMENTS: Recommend tarmat removal in areas shown on attached sketch map and bioremediation in areas of broken cover and coat, also shown on map. Work to be conducted after 6/1 based on above eagle constraint and with approval of ADF&G and USFWS concerning seabird colony.

^{CONSTRAINTS}
SEE ADDENDUM dated 6/10/90 [Signature]

TAG COMMENTS:

MONITORS TO ASSESS SUITZ FOR OILING (SNOW COVERED AT TIME OF SURVEY).

TAG APPROVAL DATE: 4/17/90

ADEC [Signature]
EXXON ANDY TEAL
NOAA Burt Wascott
USCG KENNETH REBARK

FOSC: [Signature]

DATE: 4-26-90

SHORELINE EVALUATION

SEGMENT ST/ NK-002 SUBDIVISION B (2 OF 2) DATE 4/10/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5R Seabird colony (5/1 to 9/1)
5T Bald eagle nest (3/1 to 6/1)
4GG Alaska State Park

See attached Ecological Constraint Sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles E. Adams DATE: 4/12/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 486 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

<u>X</u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u> </u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u> </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:

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90
ADEC Art Wesen D. J. G. Lewis
EXXON ANDY TGH Beck
NOAA Burt Wescott Burt Wescott
USCG KENNETH KEANE Ken Keane

FOSC: DATE: 4-20-90

APR-06-1990 10:52

FROM

EXXON SCAT

Enslavement

Enslavement

Enslavement

Enslavement

*GIS operator: if you have to simplify this area, make it all medium.



XXXX Wide

//// Medium

--- Narrow

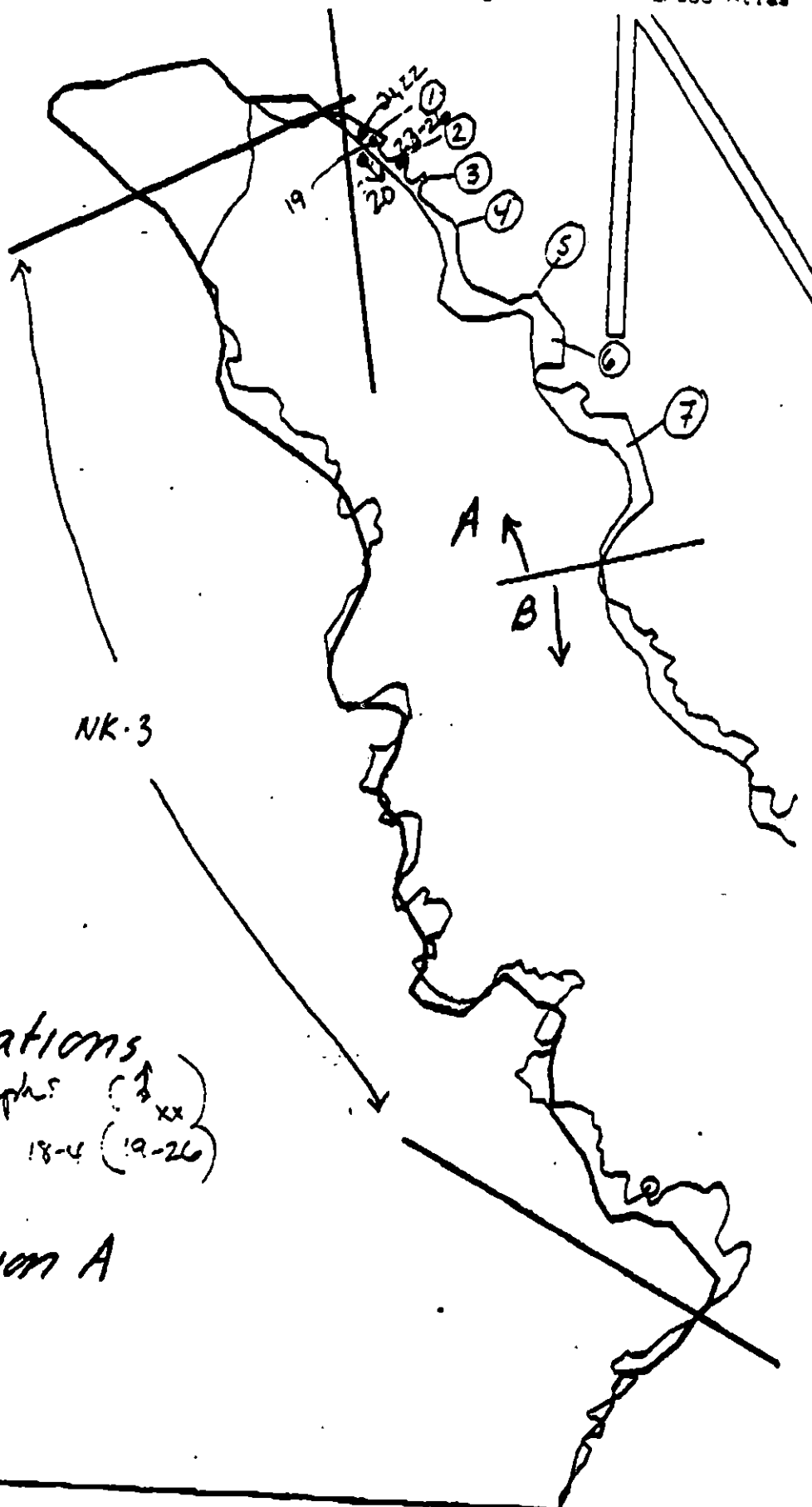
NK-2

ADEC Segment Length: 1988m

Map Key: PWS-NK-2

Name: Manner

11/19/90



Pit Locations
+ photographs (1^{xx})
NK-2 18-4 (19-26)

Subdivision A

NK-1

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000

ADEC Segment Length: 1967m



Map Key: KEX-640

Name: Marr

Date: 4/7/90

1991 MAYSAP EVALUATION

SEGMENT: NK 002 SUB: A REGION: KEN SURVEY DATE: 5/20/91ENVIRONMENTAL SENSITIVITIES:Work Window(s) RESTRICTED 3/1 - 9/1Ecological/Constraints (see page two for details) Eagle nest,
Fish harvest areaARCHAEOLOGICAL CONSTRAINTS:If treatment is planned, a cultural resource evaluation is
required prior to shoreline treatment.SHPO Signature: Timothy SmithDate: 6/8/91RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

NNN

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: June 4 1991FOSC APPROVAL DATE: 6/8/91

ADEC

FOSC

EXXON

E. E. PAGE, CDR, USCG

USCG

CHIEF OF STAFF, FOSC

NOAA

The State will evaluate the
need to perform treatment
on this subdivision JB

**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.

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☐ NTR ☒ Treatment Recommended
Suggest manual removal of HSOR-MSOR - Crews will have to roll B/C to access oiling - Pompons should be utilized as needed.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles

☐ NTR Several areas exist on the west side of the boulder out crops of HSOR. (weathered)

NDMANAGER

NAME Jeff Johnson OF ADNR SIGNATURE Jeff Johnson

☐ NTR ☒ TR
There are several small pocket beaches in this segment that contain recoverable MSOR. Crew members that were picking up SOR during the survey were able to do fairly well utilizing manual pickup. The segment is within Kachemak Bay State Park, in an area of high recreational value. Treatment utilizing manual methods is recommended.

USCG/NOAA

NAME John McMahon/McDonald SIGNATURE John McMahon

☒ NTR This was a long segment. Half of which had little or no oil, the remaining area did contain weathered material. Much of which remained in shale and bedrock. The area, generally, does not make it an ideal candidate for any kind of successful manual treatment. Activities required would cause more environmental harm than the oil to be removed.
Donald McDonald

TEAM NO. 7
OG J. Sempel
ADEC Crosby
EXXON Stiles

BIO J. Barry
LANDMANAGER Johnson for ADNR
USCG/NOAA McDonald/McMahon

SEGMENT NK-002
SUBDIVISION A
DATE MAY 120 191

E 09:57 to 11:40 TIDE LEVEL 6.0 ft. to 2.3 ft. ENERGY LEVEL: ☐ H ☒ M ☐ L
SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☒ SUN ☐ CLOUDS ☐ FOG ☐ RAIN ☐ SNOW
TOTAL LENGTH SHORELINE SURVEYED: 549 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE
EST. OIL CATEGORY LENGTH: W — m M 20 m N 20 m VL 225 m NO 287 m US — m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	BOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
P1				S							ch/b	M	1	10		*			
P2				S							ch/b	L	12	10			*		
P3				T		S	S				ch/b	L	4	60		*			
P4				P							ch/b	M	5	20			*		
P5						S					ch/b	V	1	50		*			
P6				S							ch/b	L	1	20		*			worked on
P7						S					ch/b	L	1	10		*			
P8						S					ch/b	V	1	50		*			
P9				S		S					ch/b	V	2	30		*			
P10						S					ch/b	V	1	5		*			

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 # MAY8AP- FRAMES

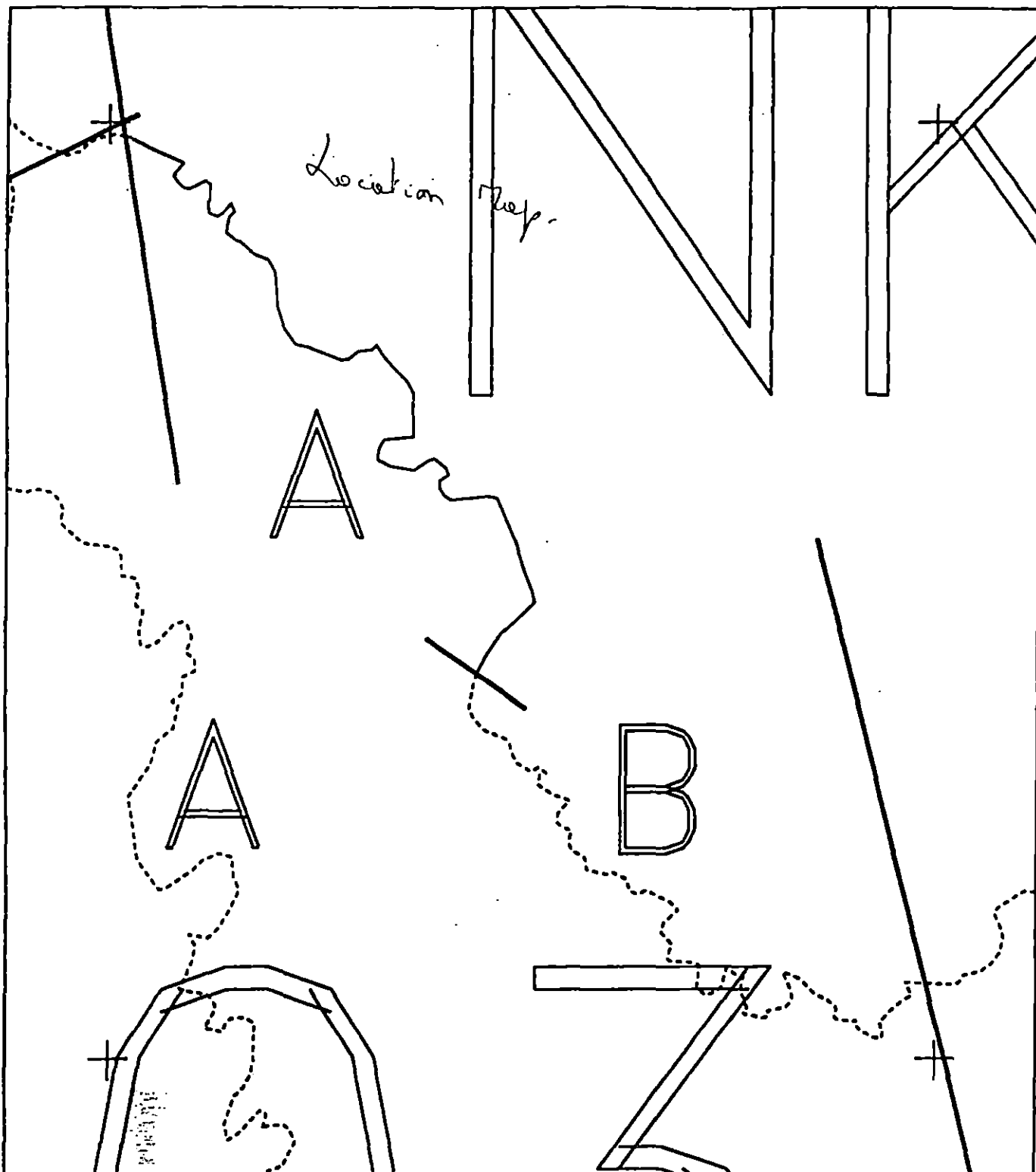
PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE- SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	25								-	7	-	-	*				pb/sw	
									-									
									-									
									-									
									-									
									-									
									-									
									-									
									-									
									-									

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

OG COMMENTS:

See map.

Revised 5.25 9y
Revised F.W. 5/26/91



Location Map

A

A

B

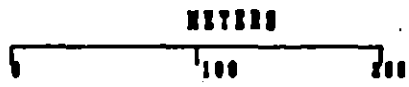
NK002 A

Subdivision Field Map

Map Key: KENNK002A

Name: J. M. Sengels

Date: May 19, 1991



AK State Plane Zone 4
NAD83

REVIEWED: FW-S/26/91

OG SKETCH MAP

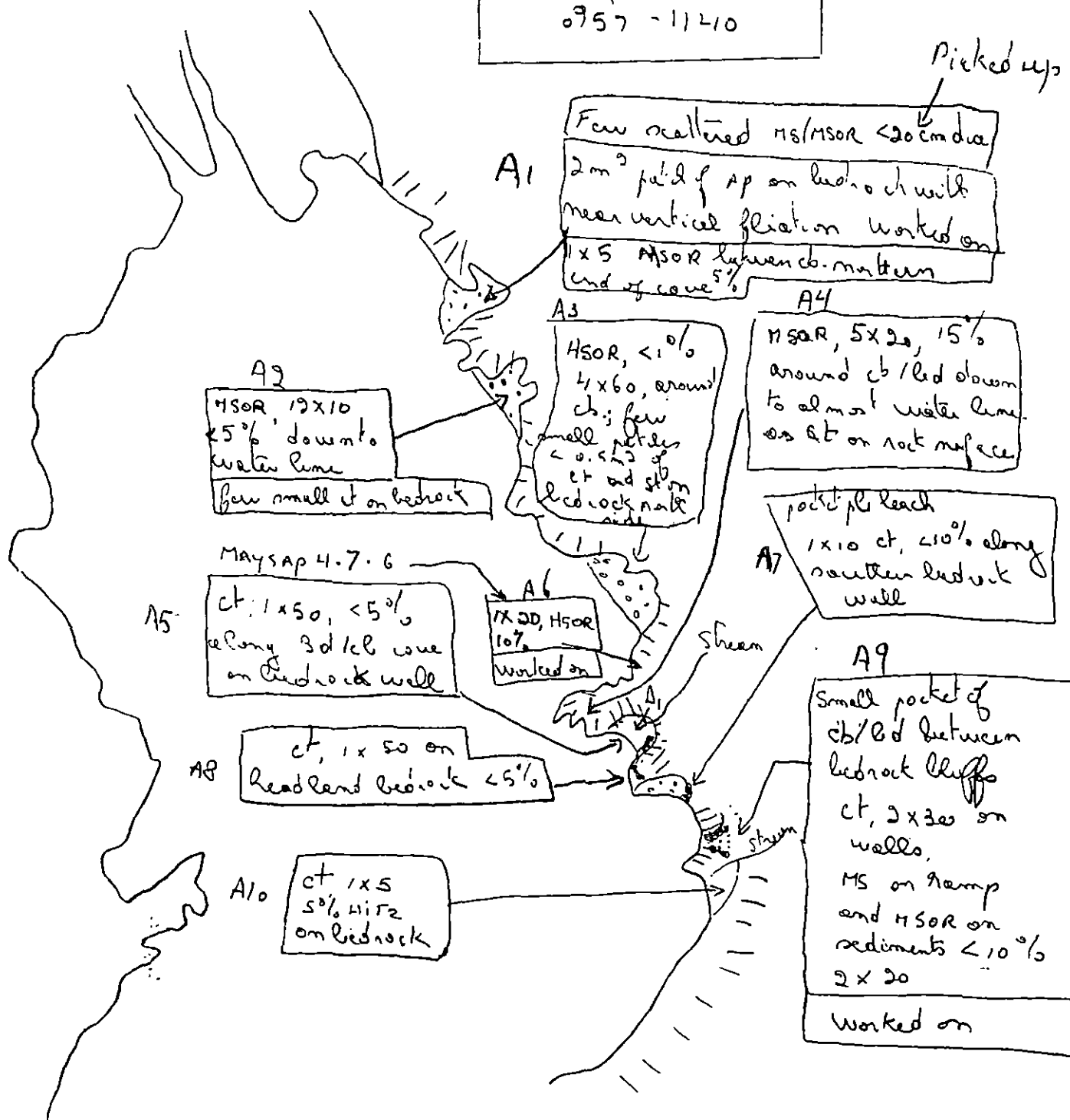
NK-002-A

fm Sempels

May 20 / 91

0957 - 11210

Picked up.



revised 5.25.94

Original: C. H. Ch. 10.

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 20, 1991	1000 - 1132
SEGMENT #	NK002	TIDAL HEIGHT (Range)	6.0 => 2.3	
SUBDIVISION	A	BIOLOGIST	JIM BARRY	
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, Clear	

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil Related Comments

- A1 A few scattered MS/MSOR patties were present in the upper zone of this cobble beach. Littorine snails and barnacles are moderately abundant near the oiled sediments. Dog whelks (*Nucella* sp.) also are common on this beach. Black lichen is patchy, but most abundant above the oiled zone. *Fucus* is dense in the low zone below the oiled sediments and eel grass appears to be abundant in the subtidal.
- A2 MSOR was found on the cobble beach from the middle to the upper zone, and overlaps a zone of barnacles and mussels. Barnacles are moderate to dense in patches, and mussels are fairly dense in the middle zone, in crevices among the cobble. Littorine snails, limpets, and the other associated invertebrates are moderately abundant. *Fucus* is sparse to moderately abundant. Despite the oiled sediments, the biota appear healthy, with juveniles and recruits of most species present.
- A3 A small amount of oil (HSOR) was found along the drift line around cobble and bedrock, where few biota are found. Amphipods and oligochaete worms were uncommon, and were the only invertebrates observed.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1 adult, 3 juvenile	Salmon Fry
Seabirds	1	4	
Waterfowl	3	28	
Gulls/Kittiwakes	2	40	
Shorebirds			
Corvids	1	6	
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

- A4 This site has patches of MSOR in the middle to upper zone on a headland and a part of the adjacent boulder/cobble talus of a pocket beach. Most species are moderately abundant. Mussels are present in dense patches, but do not completely cover the area. Fucus is most abundant towards the lower shore. Littorine snails (adults, juveniles, eggs), barnacles (adults and juveniles), limpets, and mussels are sparsely or moderately abundant. Green filamentous algae are very abundant in some areas and form a slimy film over the bedrock or cobble.
- A5 Oil (CT) at this site occurs along a zone in the upper intertidal on the cobble/boulder beach and the bordering bedrock outcrops and cliffs. Fucus and littorine snails are moderately abundant amongst the cobble. Barnacles appear less abundant, but can be found on the underside of cobbles, where they are moderately abundant in patches. The bedrock outcrops have higher densities and cover of species than found on the cobble beach. Mussels and Fucus are moderately abundant on these headlands. Amphipods, polychaete worms, and barnacles are also moderately abundant.
- A6 Oil (HSOR) is present around cobble in the middle to upper zone of this small cobble beach. Green filamentous algae form a film on the beach cobble along most of the upper zone, below which, Fucus forms a sparse zone in the upper to middle zone. Limpets, littorine snails, and oligochaetes are moderately abundant.
- A7,A8 A10 Oil (CT) is present on the bedrock outcrops and cliff along the upper intertidal zone, from near the barnacle zone to somewhat above it. This broken band continues along the coast into a few small pocket beaches. The abundance of biota near the oiled site varies. Barnacles and a few littorine snails are moderately abundant in some locations, but quite uncommon in others. This CT is also on cobble along the same zone (ca +10 to 12 ft.), where little biota is present.
- Barnacles, littorine snails, limpets, and even mussels, are present on the weathered oil, or in oiled sediments in the cobble, at several locations. Barnacle spat are sparse or uncommon.
- A9 A small pocket of cobble and boulders between bedrock outcrops on this beach have oil on and under them (CT on walls, MS, MSOR on ramp/cobble). Sparse to moderate biota occur on this beach, with scattered patches of mussels. Littorine snails, limpets, barnacles, and Fucus are low in abundance. The lower intertidal was underwater during this portion of the survey, but Fucus appears moderately abundant on the larger cobble of the beach.

Cleanup Considerations

Some manual cleanup activities were performed along this subdivision during the survey. Additional cleanup, if recommended, will probably not harm the existing biota. However, where mussels beds form a dense cover over the bottom (e.g., A4), negative effects of treatment may offset any benefit from removal of the remaining oil.

General Characteristics of NK002-A

NK002-A is located at the protected inner coast of a moderate to highly exposed cove. Most of the subdivision experiences medium to low waves, though some storms may cause somewhat higher waves and wave-related disturbance. Pocket beaches of cobble and boulders, and bedrock outcrops or talus slopes, are the major habitat types.

Biota are sparse to moderately abundant on the cobble beaches. Barnacles, littorines, snails and limpets are the major species of the upper zone on these beaches. Towards the lower zone, mussels become more abundant and are present as dense patches between cobble and boulders on some beaches. Fucus is dense only on bedrock shores, near the middle to low intertidal zone.

The subtidal habitats adjacent to these shores appear to have eel grass and clam beds over a significant portion of the bottom.

Most shores appear healthy, with a diverse assemblage of species on bedrock, under cobble, and within the beach sediments.

General Zonation Pattern

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal

Oil Distribution		- - - - -				
Bare Rock		- - - - -				
Green Filamentous Algae		- - -	+++++++	+ + -	- - - - -	- - - - -
Rockweed (Fucus)			- - -	* + + + + + + + + +	- - - - -	- - - - -
Barnacles (Balanus)		- -	+++	- - -	- - - - -	
Littorine Snails		- - -	+++	+ + + + +	- - - - -	
Limpets		- -	+++	+ + + + +	- - - - -	
Other Red Algae					++ *	---+++*
Green Algae (Ulva/other)			- - -	++	- + + - -	- - - - -
Mussels (Mytilus)			- - -	+++	+++	- - - - -
Crustose Brown Algae (Hildenbrandia)			- - -	- - -	++	
Upright Brown Algae (not Fucus)				- - -	- +	+++*
Eel Grass						+++*
Clams						+++ - -

Legend: (-) Sparse to rare, (+) Moderate, (*) Abundant

Common Species on NK002-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp.,
Sytosiphon lomentaria
4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, Iridaea sp.,
Lithothamnion sp., Mastocarpus sp., Membranoptera dimorpha,
Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp.,
Ptilota filicina, Rhodomela larix
5. Higher Plants - Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - Halichondria bowerbanki?,
2. Anemones - Anthopleura artemesia, Metridium senile, Urticina crassicornis,

3. Hydroids - Sertulariidae, Aglaophenia sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile,
8. Polychaete Worms
 - Nereidae - Nereis spp.
 - Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
 - Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Semibalanus cariosus
 - c. Crabs - Paguridae (hermit crabs),
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons - Mopalia mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
 - Amphissa columbiana, Littorina sitkana, L. keenae, Natica clausa, Nucella lamellosa, N. lima, Searlesia dira
 - c. Limpets - Lottia digitalis, L. persona, L. limatula, Tectura fenestrata, T. scutum,
 - e. Bivalves - Chlamys hastata, Clinocardium sp., C. nuttalli, Macoma nasuta, Modiolus modiolus, Mytilus californianus, M. edulis, Pododesmus cepio, Prototheca staminea, Saxidomus giganteus
12. Echinoderms
 - a. Brittle Stars - Ophiolus aculeatus?, Ophiothrix spiculata?, Amphipholis?
 - b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Pycnopoda helianthoides,
 - c. Sea Cucumbers - Holothurians Eupentacta sp., Leptosynapta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Phidolopora pacifica, Schizoporella sp.
14. Ascidians - Synocium? sp., Aplidium?
15. Fishes
 - Cottidae -
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

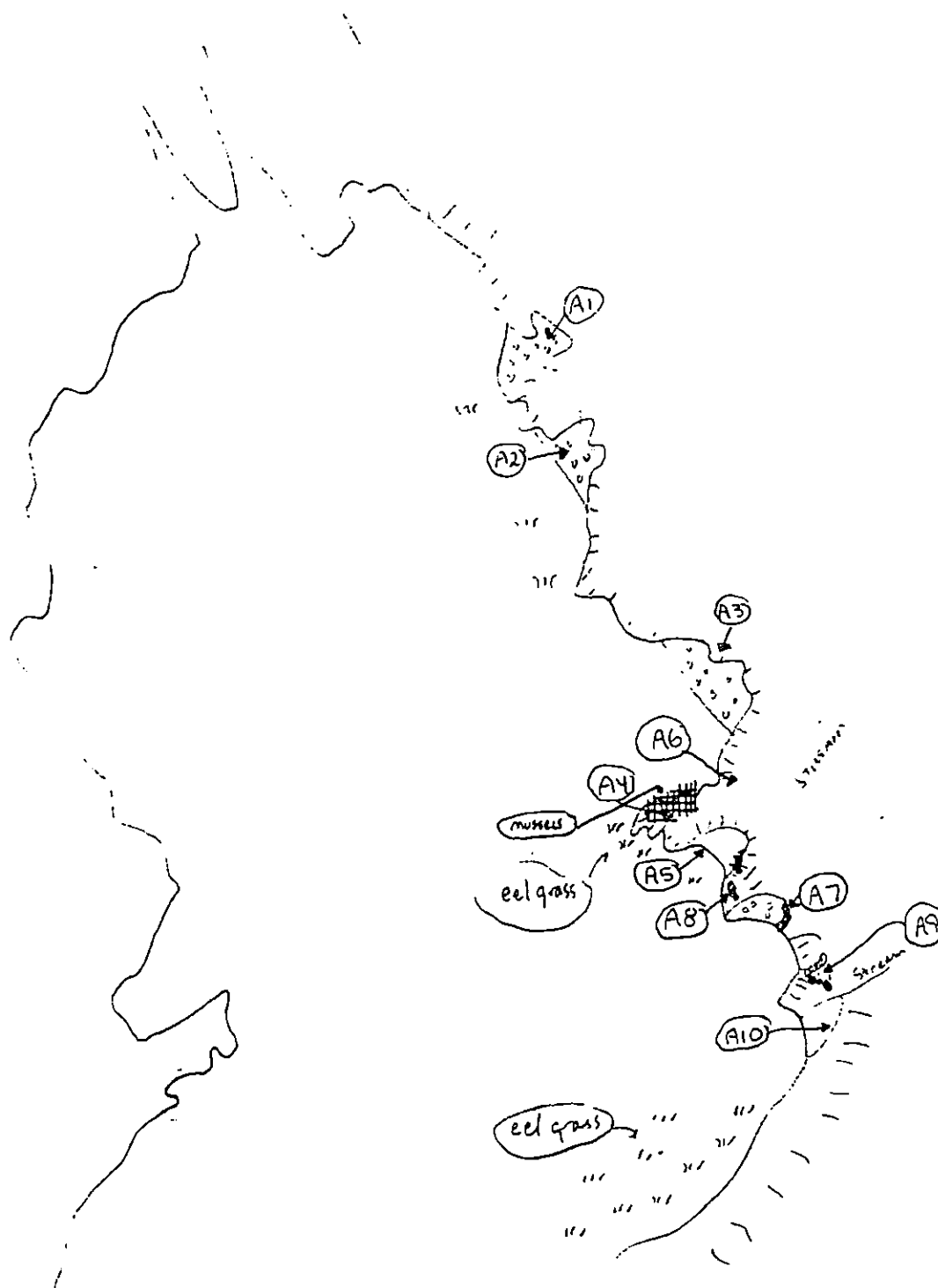
BIO SKETCH MAP

NK 002-A

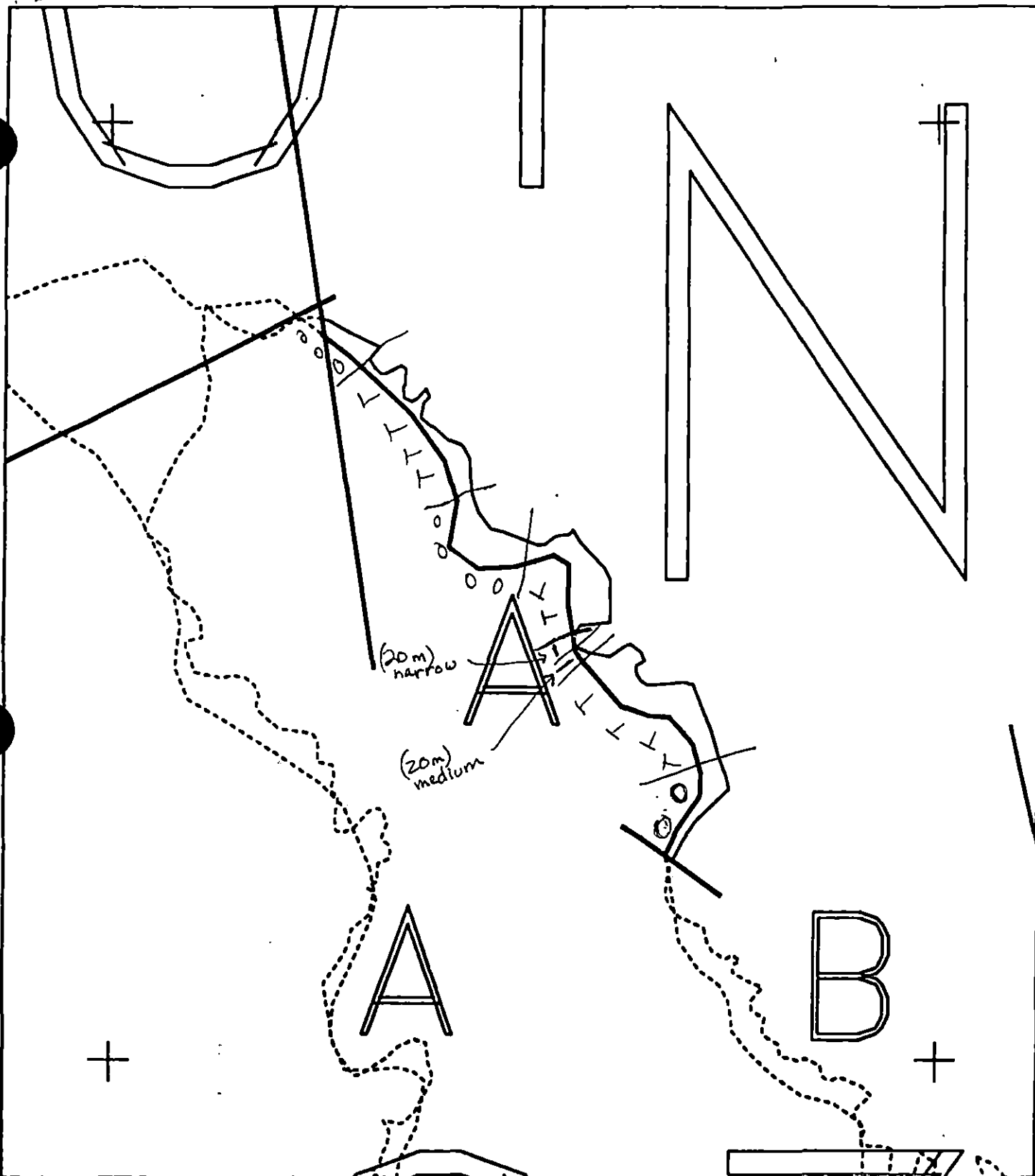
JP Barry

MAY 20, 1991

0957-1120



REVIEWED: F.W. 5/26/91



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

NK002 A

ADEC Subsegment Length: 549m

METERS

0 100 200
 AK State Plane Zone 4
 nsk002a

Subdivision Field Map

Map Key: KENNK002A

Name: *JM Semp*

Date: *MAY 19 1991*
 Date Entered:

REVISED: F.W. 5/26/91
 revised 5.25 9y

1991 MAYSAP EVALUATION

SEGMENT: NK 002 SUB: A REGION: KEN SURVEY DATE: 5/20/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details) Eagle nest,
Fish harvest area

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.

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☐ NTR☒ Treatment Recommended

Suggest manual removal of HSOR-MSOR - Crews will have to roll B/C to access oiling - Pompons should be utilized as needed.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles☐ NTR

Several areas exist on the west side of the boulder out crops of HSOR. (Weathered)

LANDMANAGER

NAME

Jeff JohnsonOF ADNR

SIGNATURE

Jeff Johnson☐ NTR☒ TR

There are several small pocket beaches in this segment that contain recoverable MSOR. Crew members that were picking up SOR during the survey were able to do fairly well utilizing manual pickup. The segment is within Kachemak Bay State Park, in an area of high recreational value. Treatment utilizing manual methods is recommended.

USCG/NOAA

NAME

John McMahon

SIGNATURE

John McMahon☒ NTR

This was a long segment. Half of which had little or no oil, the remaining area did contain weathered mussels. TB much of which remained in shell and bedrock. The area, generally, does not make it an ideal candidate for any kind of successful manual treatment. Activities required would cause more environmental harm than the oil to be removed.

John McMahon

OG 7 Senses
ADEC Crosby
EXXON Stiles

BIO J. Barry
LANDMANAGER Johnson for ADNR
USCG/NOAA McDonald/McMahon

SEGMENT NK-002
SUBDIVISION A
DATE May 120 191

TIME 09:57 to 11:40

TIDE LEVEL 6.0 ft. to 2.3 ft.

ENERGY LEVEL: ☐ H ☒ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO

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

TOTAL LENGTH SHORELINE SURVEYED: 549 m

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

EST. OIL CATEGORY LENGTH: W — m M 20 m N 20 m VI 285 m NO 287 m US — m

LOC	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	
D1											Oil	M	10	10	*				
D2											Oil	L	12	10			*		
D3							S	S			Oil	L	4	60	*				
D4											Oil	M	5	20			*		
D5							S				Oil	V	1	50	*				
D6											Oil	L	1	20	*				worked on
D7							S				Oil	L	1	10	*				
D8							S				Oil	V	1	50	*				
D9							S				Oil	V	2	30	*				
D10							S				Oil	V	1	5	*				

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 _____

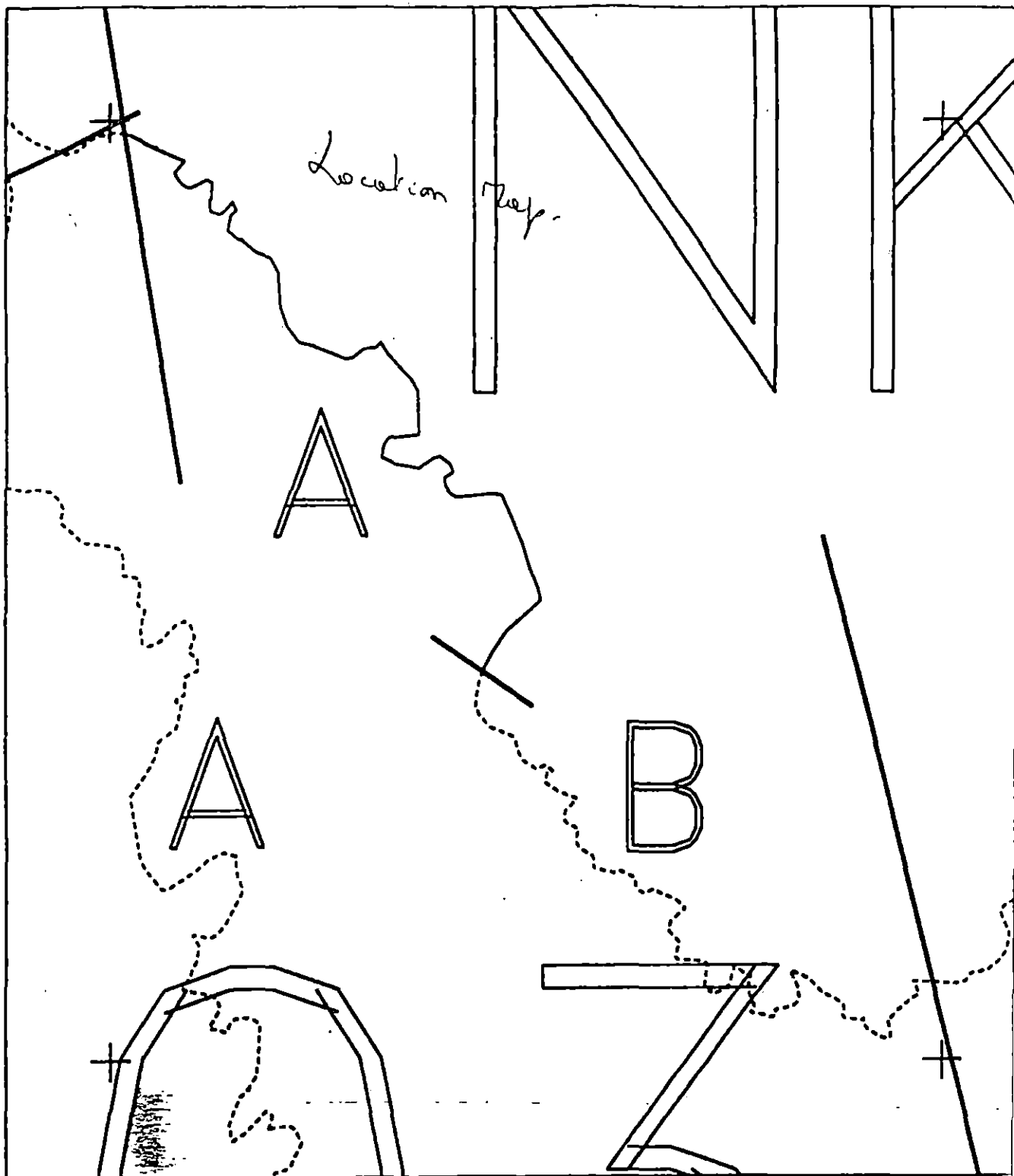
PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	25							-	-	7	-	-	*				Oil/SV	
								-	-									
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								-	-									

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

OG COMMENTS:

See map.

Revised 5.25 9y
Revised FW 5/20/91



Location Map

A

A

B



NK002 A

METERS



AK State Plane Zone 4
NAD83

Subdivision Field No

Map Key: KENNE002A

Name: J. M. Semple

Date: May 19 '91

REVIEWED: FW-5/24/91

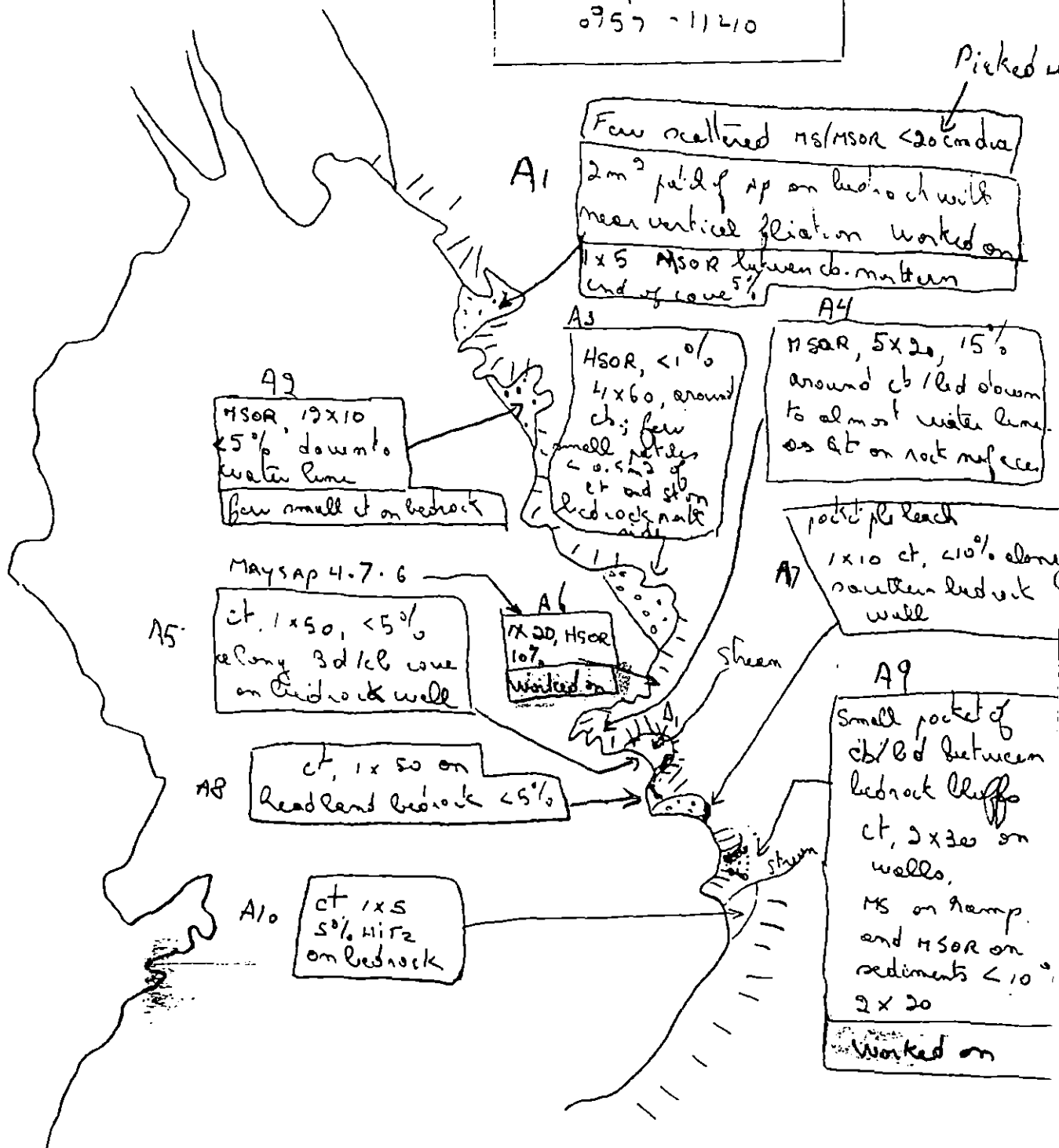
OG SKETCH MAP

NK-002-A

FM Samples

May 20/91

0957-11210



revised 5.25.94
REVIEWED: F.W. 5/26/94

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 20, 1991 1000 - 1132
SEGMENT #	NK002	TIDAL HEIGHT (Range)	6.0 => 2.3
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, Clear

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil Related Comments

- A1 A few scattered MS/MSOR patties were present in the upper zone of this cobble beach. Littorine snails and barnacles are moderately abundant near the oiled sediments. Dog whelks (*Nucella* sp.) also are common on this beach. Black lichen is patchy, but most abundant above the oiled zone. *Fucus* is dense in the low zone below the oiled sediments and eel grass appears to be abundant in the subtidal.
- A2 MSOR was found on the cobble beach from the middle to the upper zone, and overlaps a zone of barnacles and mussels. Barnacles are moderate to dense in patches, and mussels are fairly dense in the middle zone, in crevices among the cobble. Littorine snails, limpets, and the other associated invertebrates are moderately abundant. *Fucus* is sparse to moderately abundant. Despite the oiled sediments, the biota appear healthy, with juveniles and recruits of most species present.
- A3 A small amount of oil (HSOR) was found along the drift line around cobble and bedrock, where few biota are found. Amphipods and oligochaete worms were uncommon, and were the only invertebrates observed.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1 adult, 3 juvenile	Salmon Fry
Seabirds	1	4	
Waterfowl	3	28	
Gulls/Kittiwakes	2	40	
Shorebirds			
Corvids	1	6	
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

Rec'd 5/25/91 L.A.

- A4 This site has patches of MSOR in the middle to upper zone on a headland and a part of the adjacent boulder/cobble talus of a pocket beach. Most species are moderately abundant. Mussels are present in dense patches, but do not completely cover the area. Fucus is most abundant towards the lower shore. Littorine snails (adults, juveniles, eggs), barnacles (adults and juveniles), limpets, and mussels are sparsely or moderately abundant. Green filamentous algae are very abundant in some areas and form a slimy film over the bedrock or cobble.
- A5 Oil (CT) at this site occurs along a zone in the upper intertidal on the cobble/boulder beach and the bordering bedrock outcrops and cliffs. Fucus and littorine snails are moderately abundant amongst the cobble. Barnacles appear less abundant, but can be found on the underside of cobbles, where they are moderately abundant in patches. The bedrock outcrops have higher densities and cover of species than found on the cobble beach. Mussels and Fucus are moderately abundant on these headlands. Amphipods, polychaete worms, and barnacles are also moderately abundant.
- A6 Oil (HSOR) is present around cobble in the middle to upper zone of this small cobble beach. Green filamentous algae form a film on the beach cobble along most of the upper zone, below which, Fucus forms a sparse zone in the upper to middle zone. Limpets, littorine snails, and oligochaetes are moderately abundant.
- A7, A8 A10 Oil (CT) is present on the bedrock outcrops and cliff along the upper intertidal zone, from near the barnacle zone to somewhat above it. This broken band continues along the coast into a few small pocket beaches. The abundance of biota near the oiled site varies. Barnacles and a few littorine snails are moderately abundant in some locations, but quite uncommon in others. This CT is also on cobble along the same zone (ca +10 to 12 ft.), where little biota is present.
- Barnacles, littorine snails, limpets, and even mussels, are present on the weathered oil, or in oiled sediments in the cobble, at several locations. Barnacle spat are sparse or uncommon.
- A9 A small pocket of cobble and boulders between bedrock outcrops on this beach have oil on and under them (CT on walls, MS, MSOR on ramp/cobble). Sparse to moderate biota occur on this beach, with scattered patches of mussels. Littorine snails, limpets, barnacles, and Fucus are low in abundance. The lower intertidal was underwater during this portion of the survey, but Fucus appears moderately abundant on the larger cobble of the beach.

Cleanup Considerations

Some manual cleanup activities were performed along this subdivision during the survey. Additional cleanup, if recommended, will probably not harm the existing biota. However, where mussels beds form a dense cover over the bottom (e.g., A4), negative effects of treatment may offset any benefit from removal of the remaining oil.

General Characteristics of NK002-A

NK002-A is located at the protected inner coast of a moderate to highly exposed cove. Most of the subdivision experiences medium to low waves, though some storms may cause somewhat higher waves and wave-related disturbance. Pocket beaches of cobble and boulders, and bedrock outcrops or talus slopes, are the major habitat types.

Biota are sparse to moderately abundant on the cobble beaches. Barnacles, littorines, snails and limpets are the major species of the upper zone on these beaches. Towards the lower zone, mussels become more abundant and are present as dense patches between cobble and boulders on some beaches. Fucus is dense only on bedrock shores, near the middle to low intertidal zone.

The subtidal habitats adjacent to these shores appear to have eel grass and clam beds over a significant portion of the bottom.

Most shores appear healthy, with a diverse assemblage of species on bedrock, under cobble, and within the beach sediments.

General Zonation Pattern

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Distribution		- - - - -				
Bare Rock		- - - -				
Green Filamentous Algae		- - -	+++++++-+ +	- - - - -	- - - - -	- - - - -
Rockweed (Fucus)		- - -	+* + + + + + + + + +	- - - - -	- - - - -	- - - - -
Barnacles (Balanus)		- -	+++--++--	- - - - -	- - - - -	- - - - -
Littorine Snails		- -	+++* + + + + +	- - - - -	- - - - -	- - - - -
Limpets		-	++-+-	- + + + + +	- - - - -	- - - - -
Other Red Algae					--- ++ *	---+++**
Green Algae (Ulva/other)			- -	---+	- + + - -	- - +++
Mussels (Mytilus)			-	+++--+++++	- + -	-
Crustose Brown Algae (Hildenbrandia)			- - - - -	- - - - -	+ + -	
Upright Brown Algae (not Fucus)					- - - +	+++*+*+*+*+*
Eel Grass						-----*
Clams						- - +++ -

Legend: (-) Sparse to rare, (+) Moderate, (*) Abundant

Common Species on NK002-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp.,
Sytosiphon lomentaria
4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, Iridaea sp.,
Lithothamnion sp., Mastocarpus sp., Membranoptera dimorpha,
Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp.,
Ptilota filicina, Rhodomela larix
5. Higher Plants - Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - Halichondria bowerbanki?,
2. Anemones - Anthopleura artemesia, Metridium senile, Urticina crassicornis,

3. Hydroids - Sertulariidae, Aglaophenia sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile,
8. Polychaete Worms
 - Nereidae - Nereis spp.
 - Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
 - Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Semibalanus cariosus
 - c. Crabs - Paguridae (hermit crabs),
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons - Mopalia mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
 - Amphissa columbiana, Littorina sitkana, L. keenae, Natica clausa, Nucella lamellosa, N. lima, Searlesia dira
 - c. Limpets - Lottia digitalis, L. persona, L. limatula, Tectura fenestrata, T. scutum,
 - e. Bivalves - Chlamys hastata, Clinocardium sp., C. nuttalli, Macoma nasuta, Modiolus modiolus, Mytilus californianus, M. edulis, Pododesmus cepio, Prototheca staminea, Saxidomus giganteus
12. Echinoderms
 - a. Brittle Stars - Ophiolus aculeatus?, Ophiothrix spiculata?, Amphipholis?
 - b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Pycnopoda helianthoides,
 - c. Sea Cucumbers - Holothurians Eupentacta sp., Leptosynapta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Phidolopora pacifica, Schizoporella sp.
14. Ascidians - Synoicum? sp., Aplidium?
15. Fishes
 - Cottidae -
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

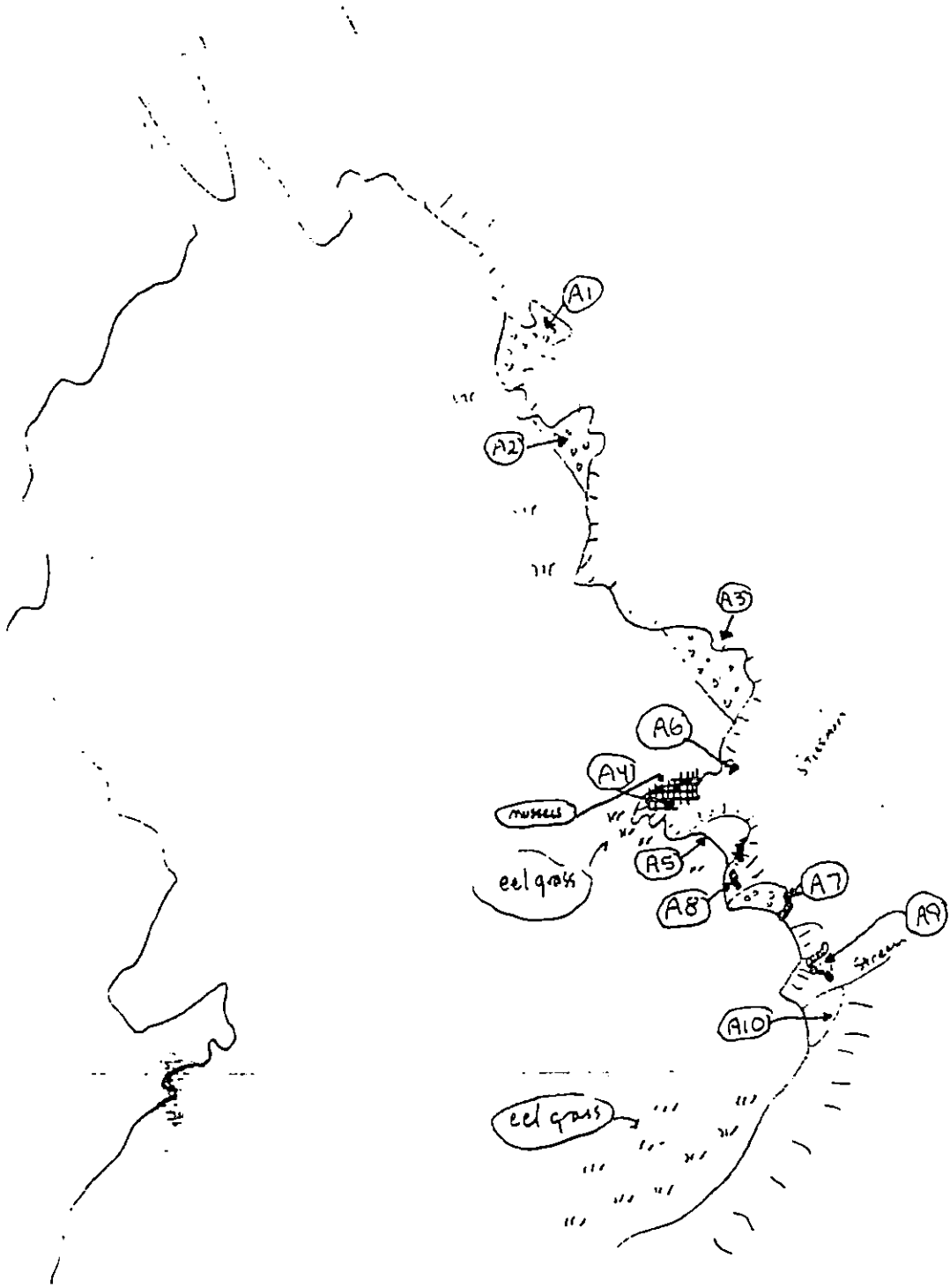
DIS SKETCH MAP

NK 002-A

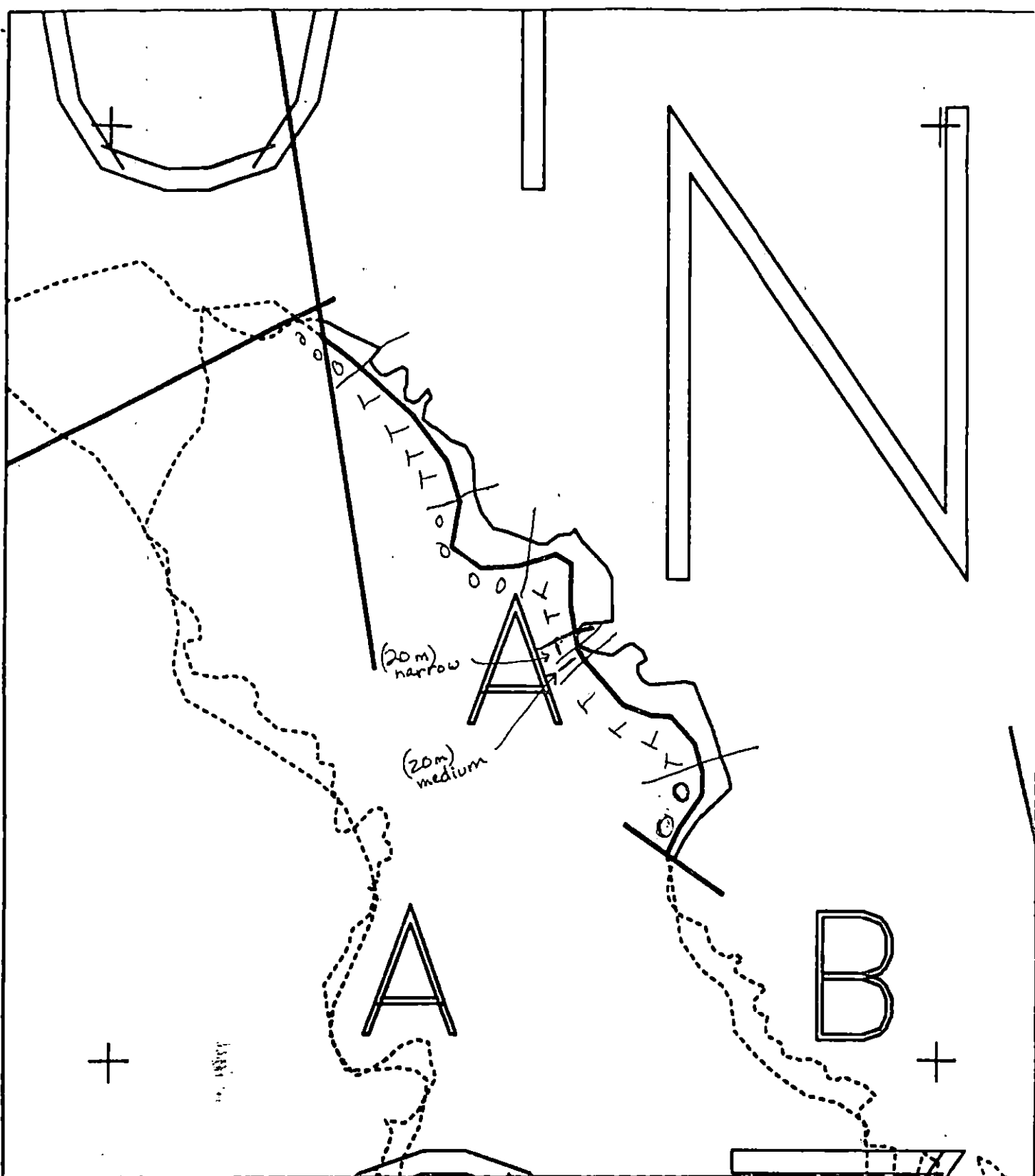
JP Barry

May 20, 1991

C957-1120



REVIEWED: F.W. 5/26/91



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

NK002 A
 ADEC Subsegment Length: 549m
 METERS
 0 100 200
 AK State Plane Zone 4
 480020



Subdivision Field Map
 Map Key: KENNK002A
 Name: J. M. Sempel
 Date: MAY 19 1991
 Date Entered:

REVISED: F.W. 5/26/91
 revised 5.25 9y

ASAP TAG REVIEW SHEET

Segment: NK 02 Subd: A Site: 1 Date
PRE-Review 11 AUG 90

Priority For Addressing In 1990

 HIGH MEDIUM X LOW NTR

Treatment
Recommended:

MANUAL REMOVE ASPHALT & MOUSSE
BIO-SOR

Priority Site For Reassessment In 1991

YES ☒ NO ☐ YES ☒ NO ☐ YES ☒ NO ☐ YES ☒ NO ☐
✓ CG ✓ ADEC ✓ EXXON ✓ LAND MGR

TAG 13AUG90

Manual Remove Asphalt &
Mousse & BIO

Medium Priority

WORK PLAN MODIFICATION RECOMMENDATION

SEGMENT NK-2 SUBDIVISION A DATED 8/3/90

MODIFICATION CLASS I X CLASS II CLASS III

1. REASON FOR MODIFICATION

OP AND OR OIL STILL REMAINING IN THIS SUBDIVISION.
LIGHT SHEEN COMING FROM SUBDIVISION

2. SUGGESTED ADJUSTMENT TO WORK PLAN

MANUAL PICK UP OF OP OIL AND TARMATS

3. TIMING ISSUES

N/A

ADEC John R. Reed

EXXON Keith Miller if resources permit

USCG SP Sullivan

LAND MANAGER [Signature] (ADNR) (If field rep is on scene)

TAG FOLDER

FIELD SHORELINE COMMENT SHEET

SEGMENT AS / NK-02 SUBDIVISION: A SITE: 01 DATE 3 Aug 1990

USCG

NAME SCHULTZ GREGORY J SIGNATURE Gregory J. Schultz

☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: THERE IS STILL A MODERATE AMOUNT OF OILY SEDIMENT IN THIS SUBDIVISION. THERE ARE 4 ANAD STREAMS IN THIS BAY AND THIS SUBDIVISION IS A LOW ENERGY AREA.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: sheen, Mousse, tar patches, and surface OR still remains at this site. These sites are protected and get very little wave action. Angular broken shale.

LAND MANAGER

NAME David K. Kenney ADNR SIGNATURE David K. Kenney

☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: Several areas observed in this subdivision with OP oil and pooled mousse. There are four anadromous streams (listed by ADF&G) at the head of the bay and adjacent to this subdivision. Sediments consist of fragmented shale, with only small amounts of rounded gravels. The subdivision is generally low energy; oil remaining will likely be present in 1991.

EXXON

NAME Keith Miles SIGNATURE Keith Miles

☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: This low energy area is still producing ^{silver} sheen in moderation. Some manual pickup (< 50 bags) should halt the sheening. Due to resource availability I would put a low priority on this site. We took a helio in and could not pickup any more weight.

ASAP SHORELINE OILING SUMMARY

TEAM NO. 04 EXXON Keith Miles SEGMENT AS/ NK-02
 OG Rich Marty USGS/USCG G. Schultz SUBDIVISION A
 ADEC Randy Reed LAND REP Dave Kenagy DNR TOTAL NO. SITES 1
 DATE 03 Aug /90 TIME 10:15 TIDE LEVEL -2' to +2'
 TOTAL EST LENGTH OF SHORELINE SURVEYED: 50 m
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WEATHER: ☐ Sun ☒ Clouds ☒ Fog ☒ Rain ☐ Snow
 OIL CATEGORY LENGTH: W — m M — m N 50 m VL — m NO — m US — m

SURFACE OIL

SITE 1

SITE 2

SITE 3

CHARACTER	DISTRIBUTION				OILED ZONES			
	/C	/B	/P	/S	SU	UI	MI	LI
ASPHALT						X	X	
S.O.R.		X				X	X	
POOLED								
COVER								
COAT								
STAIN								
MOUSSE			X			X	X	
PATTIES/T.B.								
FILM								
NO OIL								
EST. SITE LENGTH					50m			

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								

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	
		10	PRE				.						
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Photographs:

Roll No. —

Frames —

COMMENTS Oil remains fairly heavy on beach. Some clean coming off.

NK-01

NK-03

WORK
AREAS

Some mousse/tar
patches in small
pockets + broken SOR
in a ~3m band from
LITZ-UITZ. Some sheen
coming off.
RM 08/03/90

ACTIVE
NEST

BALD EAGLE
Buffer Zone

ASAP
Sketch map
08/03/90



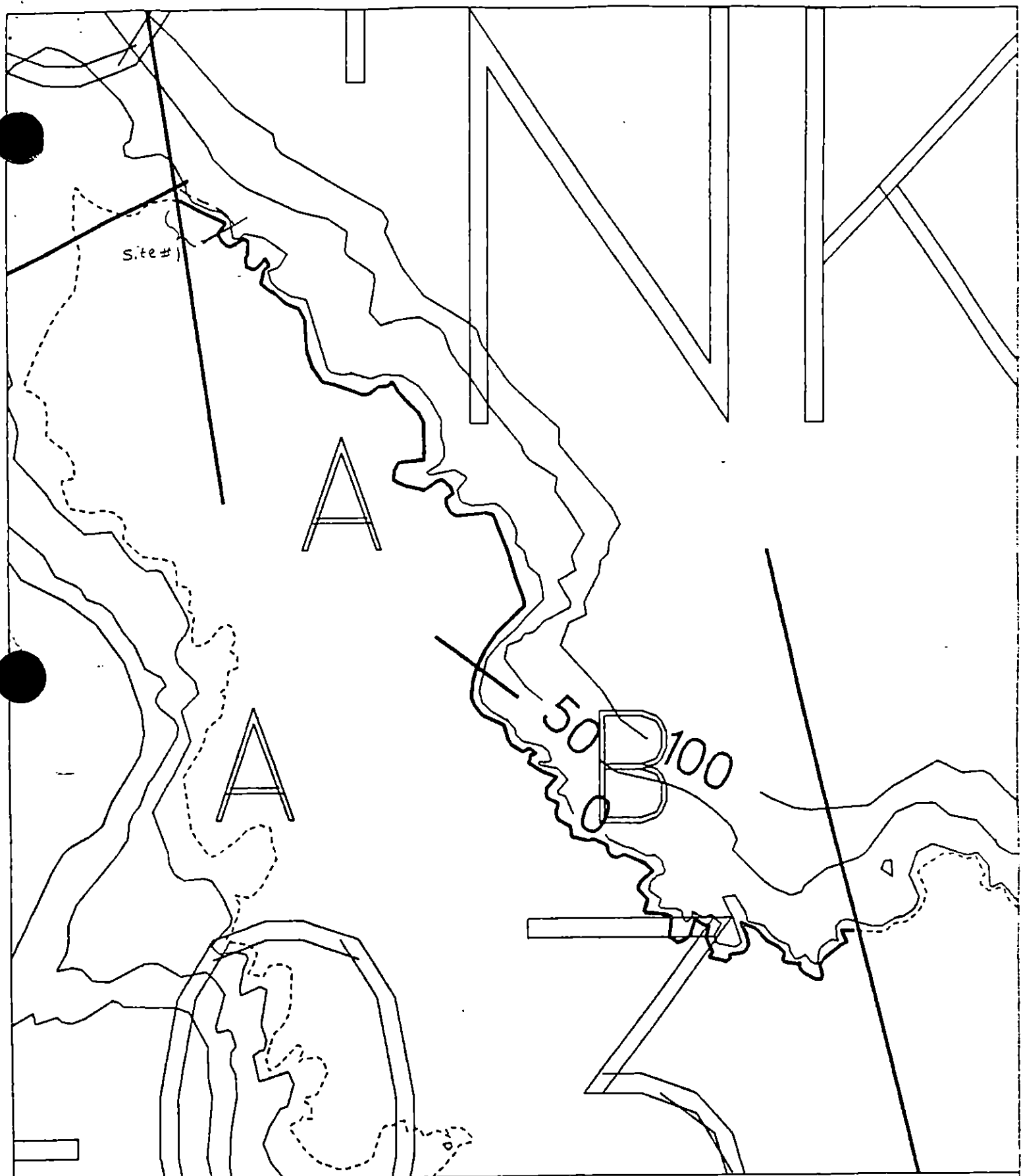
Exxon Company, USA
Map Key: KENK-2
May 17, 1990

ECOLOGY MAP
SEGMENT NK-2
SUBDIVISION A (1 of 2)
METERS



- ★ Seabird Colony
- ▲ Eagle Nest

~ R/R/R/R ~ R/R/R/R/R/R



SEGMENT NK-2

Segment Location Map

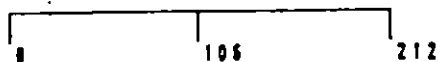
Map Key: KENNK-2

July 18, 1990

1:4180



METERS



REGION: KENAI

SEGMENT: ST/NK-03

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ NK-03 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4GG Alaska State Wilderness Park

5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 605 m: No Oil 817 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

X No Treatment Recommended
_____ Treatment Recommended
_____ Manual Pickup
_____ Bioremediation
_____ Tarmat Removal

_____ Snare/Absorbent Booms
_____ Oil Snares (pom poms)
_____ Absorbents (pads, rolls, etc)
_____ Spot Washing: _____ Wands
_____ Beach Cleaner
_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

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 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 (8/1 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
7I 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 / NK-03 SUBDIVISION: A (1 of 1) DATE 4/22/90

~~NOAA~~
~~SSAT~~

NAME Donald A. MacDonald SIGNATURE Donald A. MacDonald

☐ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Most of the segment was vertical bedrock with a few pocket beaches. Some boulder wet and landing present at northern end of segment. One sea was spotted toward the southern end of segment. Flourishing intertidal join.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Very scattered coat of splatters and band on protected vertical walls, Does not warrant treatment. I agree with data on SSAT Forms.

LAND MANAGER

NAME SHARIE MATTHEW-TONEY (ADNR) SIGNATURE Sharie Matthew-Toney

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Nuka Island Segment 3 - Northeast Cove lies within Kachemak Bay State Wilderness Park. This segment receives continuously flushing with the wave action. Only two of the pocket beaches can be safely surveyed by small helicopters. Shoreline is accessible only with good water conditions.

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

OG Sawyer NOAA MacDonald SEGMENT ST/ NK-3
 BIO Carr LAND REP Mathven-Toney SUBDIVISION A (1 OF 1)
 EXXON Boyer ADEC Reed TIME 15:00 to 16:45
 TEAM NO. 18 TIDE LEVEL +6 to +1.5 DATE Apr 12, 1990
 EST. SUBDIVISION LENGTH: 1752 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 75 % B 10 % C 5 % P 5 % G 0 % S 5 % M 0 % V 0 %
 SLOPE: Lang 25 % Hang 0 % Vert 75 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 750 m NO 1003 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	R	B	P	S	SW	W	GY	BL	BR	SU	U	M	L
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT													
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
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			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE Mousse#BAGS 1

Photographs:

Roll No. ST-18-8Frames 13 & 14

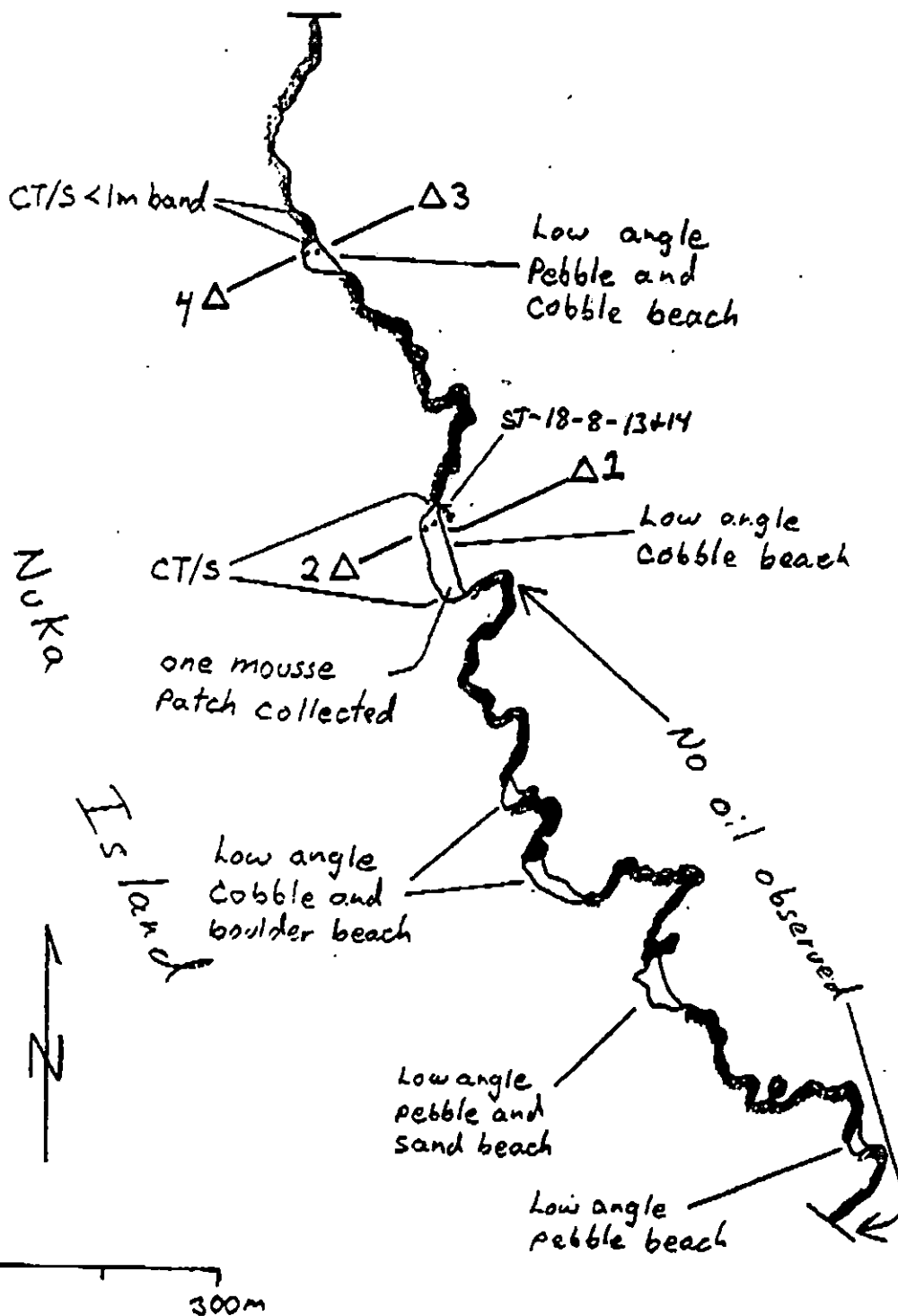
SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM)	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SHEEN (Y/N)	▽	SURFACE-SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SW	W	GY	BL	BR	SU	U	M	L				
1	20																					C-G
2	25																					C-P, G, C
3	20																					P-G, C
4	20																					P-S, f

COMMENTS ST/NK3 (Nuka Island) comprises mostly bedrock cliffs with several low angle pocket beaches. No oil was observed along the southern half of this segment, whereas a discontinuous, less than 1 meter wide band of splatters was observed along the northern half.

REVIEWED BAT DATE 23 Apr 90

SKETCH MAP



OG Sa

SEGMENT ST/NAK-3

SUBDIVISION A

DATE Apr 1 22 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx Scale
- ☐ Seg/Sub Body
- ☐ Oil Dist
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est 1990 A/VH
- ☐ SSS
- ☐ 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
Coarse Distribution

CT/B
Bottom Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

lll
Dead Vegetation

1 0+
Photo location, direction, and number

Oil Character Length (m): AP 0 PO 0 CV 0 CT 3.50 ST 0 MS 0 PT 0 TB 0 FL 0 NO 1700

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/80

Segment ST / NK-3 Subdivision A Date (mo / day / yr) 4-22-80

Time (24 hr) 1520 Biologist MARK CARR

(A) Substrate type and % of segments:
(1) Bedrock 75 (2) Boulder 10 (3) Cobble 5 (4) Pebble 5 (5) Sand 5 (6) Silt 0

(B) Overall % cover of biota (% of segment): Dense 70 Moderate 20 Low 10

(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-18-8

Frames 13, 14

BARNACLES

		Dense		Moderate		Sparse		Rare		
		1U	1M	1L	1U	1M	1L	1U	1M	1L
Bed	1U									
Bould	2									
Cobb	3									
Pebb	4									
	5									
	6									

MYTILUS

		Dense		Moderate		Sparse		Rare		
		1U	1M	1L	1U	1M	1L	1U	1M	1L
Bed	1U									
Bould	2									
Cobb	3									
Pebb	4									
	5									
	6									

GASTROPODS

		Dense		Moderate		Sparse		Rare		
		1U	1M	1L	1U	1M	1L	1U	1M	1L
Bed	1U									
Bould	2									
Cobb	3									
Pebb	4									
	5									
	6									

FUCUS

		Dense		Moderate		Sparse		Rare		
		1U	1M	1L	1U	1M	1L	1U	1M	1L
Bed	1U									
Bould	2									
Cobb	3									
Pebb	4									
	5									
	6									

Wildlife Observations/ General Comments:

glaucous-winged gull (10) sea otter (1) adult.
Common (1) oyster-catcher (5)

Ecological Considerations:

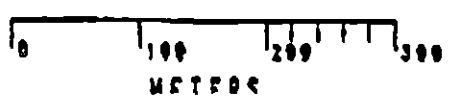
Sensitivity codes: ST, 466



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

NK-3

ADEC Segment Length: 1752m



Map Key: PWS-NK-3
Name: T. Sawyer
Date: 4-22-90
Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ NK-03 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4GG Alaska State Wilderness Park

5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: Charles E. Holmes

DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 605 m: No Oil 817 m

Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

X No Treatment Recommended

 Treatment Recommended

 Manual Pickup

 Bioremediation

 Tarmat Removal

 Snare/Absorbent Booms

 Oil Snares (pom poms)

 Absorbents (pads, rolls, etc)

 Spot Washing: Wands

 Beach Cleaner

 Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: May 5, 1990

ADEC Art Weiner

EXXON Mark N. Silbert

NOAA Gary Petros

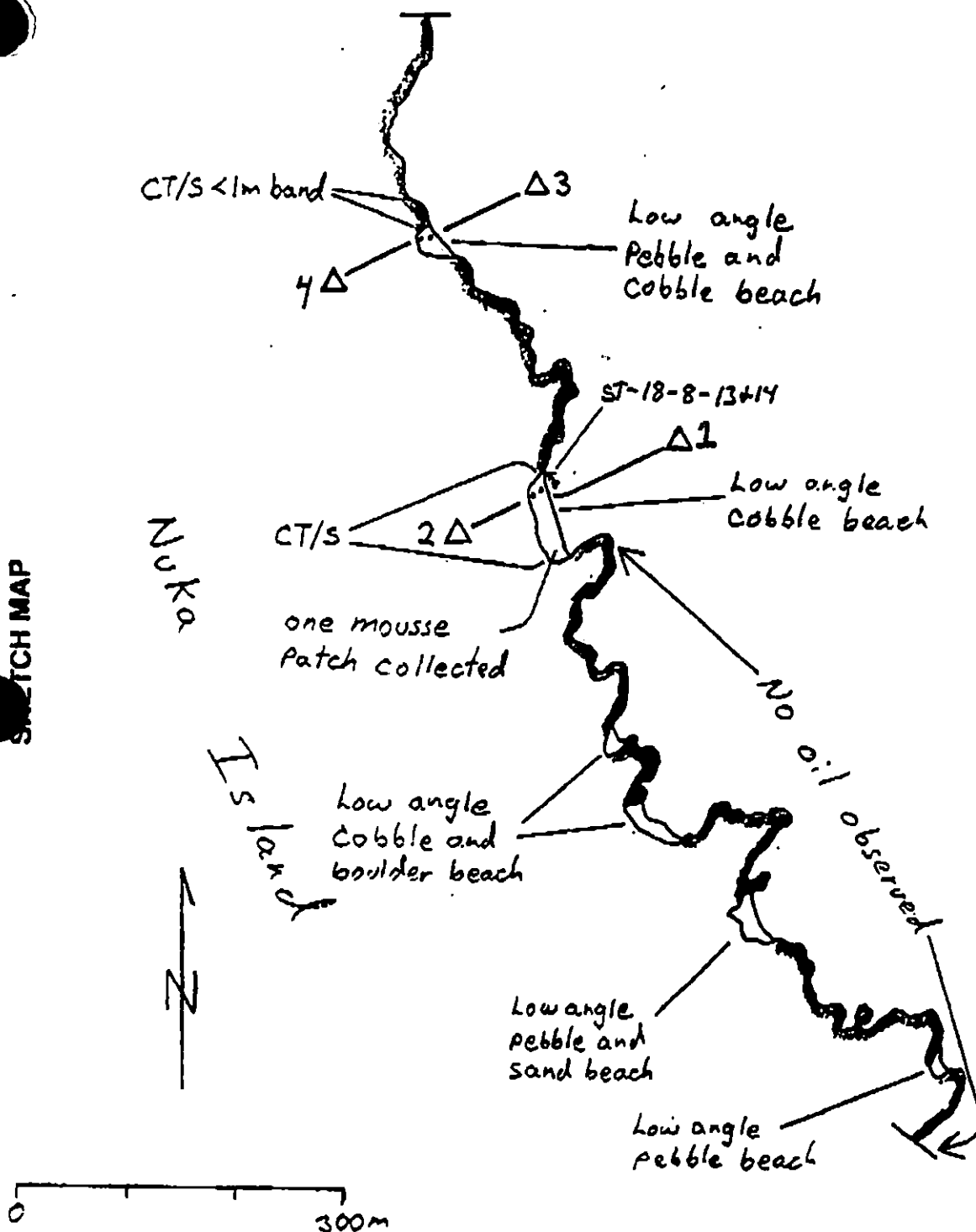
USCG G.A. Reiter

FOSC: W L

DATE: 5-9-90

ENCLOSURE 100000

SWITCH MAP



OG Saw
SEGMENT ST/HK-1
SUBDIVISION A
DATE Apr 1 22 90

CHECKLIST

N Area
Appar. Scale
Seagulls Entry
Oil Dist.
Wash
Length
% Cover
Substrate Character
Est. HMR/LWL
SSL
Profile Location(s)
Profile(s)
Photo Location(s)
Photo Location(s)

LEGEND

1 Δ

PH - No Subsurface Oil

2 Δ

PH - Subsurface Oil

CT/C

Coastal Distribution

CT/B

Broken Distribution

CT/P

Pebble Distribution

CT/S

Splashed Distribution

Oil Vegetation

Oil Vegetation

1 00

Photo location, direction, and number

Oil Character Length (m): AP 0 PO 0 CV 0 CT 350 ST 0 MS 0 PT 0 TB 0 FL 0 NO 1400



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

NK-3

ADEC Segment Length: 1752m



Map Key: PWS-NK-3
Name: T. Sawyer
Date: 4-22-90
Data Entered:

OILING LENGTHS
TO BE PROVIDED
AT A LATER DATE

ST/NK-4B

REGION: KENAI

SEGMENT: ST/NK-04

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ NK-04 SUBDIVISION B (2 OF 2) DATE 4/10/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
4GG State Wilderness Park
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6NN Recreation area: Sportfishing
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6X Recreation: Lodge (6/1 to 9/15)
9BB Privately developed land

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide _____ m: Medium _____ m: Narrow _____ m: V.Light _____ m: No Oil _____ 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: Recommended treatment includes 1) manual removal of tarmat, 2) manual pick up of mousse and patties, 3) bioremediation of surface coat areas shown on attached sketch map. Work should be conducted between 6/1 and 7/10 based on salmon constraints after consulting ADF&G and USFWS regarding eagle nest and possible seabird colony.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

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 (8/7 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 unrolled 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 (8/1 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 1 NK 4 SUBDIVISION: B DATE 4/9/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE Michel☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

The asphalt pavement and scattered mousse on the southern beach and the small area of subsurface oil on the northern beach should be manually removed. This is a very low energy lagoon, and natural removal of these thick oil deposits would be slow. The remaining oil is too light to warrant further treatment.

As a wilderness park, removal of this oil should be a high priority.

ADEC

NAME JOHN R REED SIGNATURE John R. Reed☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Asphalt pavement and mousse on southern shore should be picked up manually. Shovels or Hand Trowels should do the trick. This is a low energy lagoon that will need help cleaning itself. This is also a site with high Recreational Value. I have Read and agree with all data on S.S.A.T. Forms.

LAND MANAGER DNR/DPOR

NAME Jeffrey S. Johnson SIGNATURE Jeff S Johnson☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

This segment was previously treated, + needs more work. I agree with SSAT comments on forms. Manual methods should work.

Drift logs that were cut during past treatment efforts should either be removed, or visually mitigated. Perhaps splintering ends with explosives. Report saw cuts have significant negative visual impact in wilderness areas, and these must be taken care of, especially on the main lower beach (no sketch me)

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG MANN USCG/NOAA MICHEL SEGMENT ST/ NK 4
 BIO CARR LAND REP JOHNSON DNR SUBDIVISION B
 EXXON BOYER ADEC REED TIME 09:00 to 10:30
 TEAM NO.: 18 TIDE LEVEL: +0.3 to +6.0 DATE 4/19/90
 EST. SUBDIVISION LENGTH: 440.54m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: South to North
 SURFACE SEDIMENTS: R 50 % B 10 % C 30 % P 5 % G 0 % S 0 % M 5 % V 0 %
 SLOPE: Lang _____ % Hang _____ % Vert _____ % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 110 m NO 330 m

SURFACE OIL

DHM 4/10/90

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	N	P	B	SW	BR	FM	OT	SL	DR	TL	LR	SU	U	M	L
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL																

PAVEMENT: H (F) S 10 sq. m by 3 cm

PATTIES / TARBALLS 4 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☒ YES ☐ NO

TYPE patties/moss

#BAGS 1

Photographs:

Roll No. ST 18-5

Frames (21-34)

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	HO		VO	UG	SW BY	OR FM	OT L	OR T-L	LR	SU	U	M	U			
1	25					✓	-													Y	PGC over peat
2	25					✓	-													Y	" " "
3	30					✓	-													Y	" " "
4	20					✓	-													Y	" " " "
5	25		✓				0-3			✓						✓				Y	PGC over peat
6	15					✓	-													Y	" " (10-25)

COMMENTS Subdivision B occupies a lagoon nearly enclosed by 2 islands. Wave energy is low and floating debris accumulates here. On the north side, oil persists in the subsurface of a 2m² area and several smaller "film patches". Most of the remnant oil is on the southern pocket beach where CT/1's lines a rock wall; a line of mousse patties extends across the lower UITE and an area of scattered asphalt exists. Natural cleaning will be slow here.

REVIEWED DATE DATE 12 Apr 90

SEGMENT ST/ NK-Y SUBDIVISION B

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	BR	BL	BY	BN	BT	LS	SU	UI	MI	LI		
7	20					✓	.									✓				Y	PG over peat
8	30					✓	.									✓				Y	"
9	40					✓	.									✓				N	PC throughout
10	45					✓	.									✓				N	PCG
11	35					✓	.									✓				N	PCG
							.														
							.														
							.														
							.														
							.														
							.														
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							.														
							.														
							.														
							.														
							.														

COMMENTS

None of the oil on the southern pocket beach is subsurface. However most of the 2m² oil spot on the north side cove is subsurface.

REVIEWED

BAG

DATE 12 Apr 90

CHECKLIST

W

Appraisal Section
Sup/Sub Brnly

On Date:

11

大品

23

—
Earl Henry VIII

SBL**Probe Location**

Profile(s)

Pharmacokinetics

LEGEND

Δ

P17 - No Subsurface On

2

PH - Substances On

7

CIVIC

100%

CT/B

Best Practices

11

— **DATE** —

11

Factory Distribution

3

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に
に

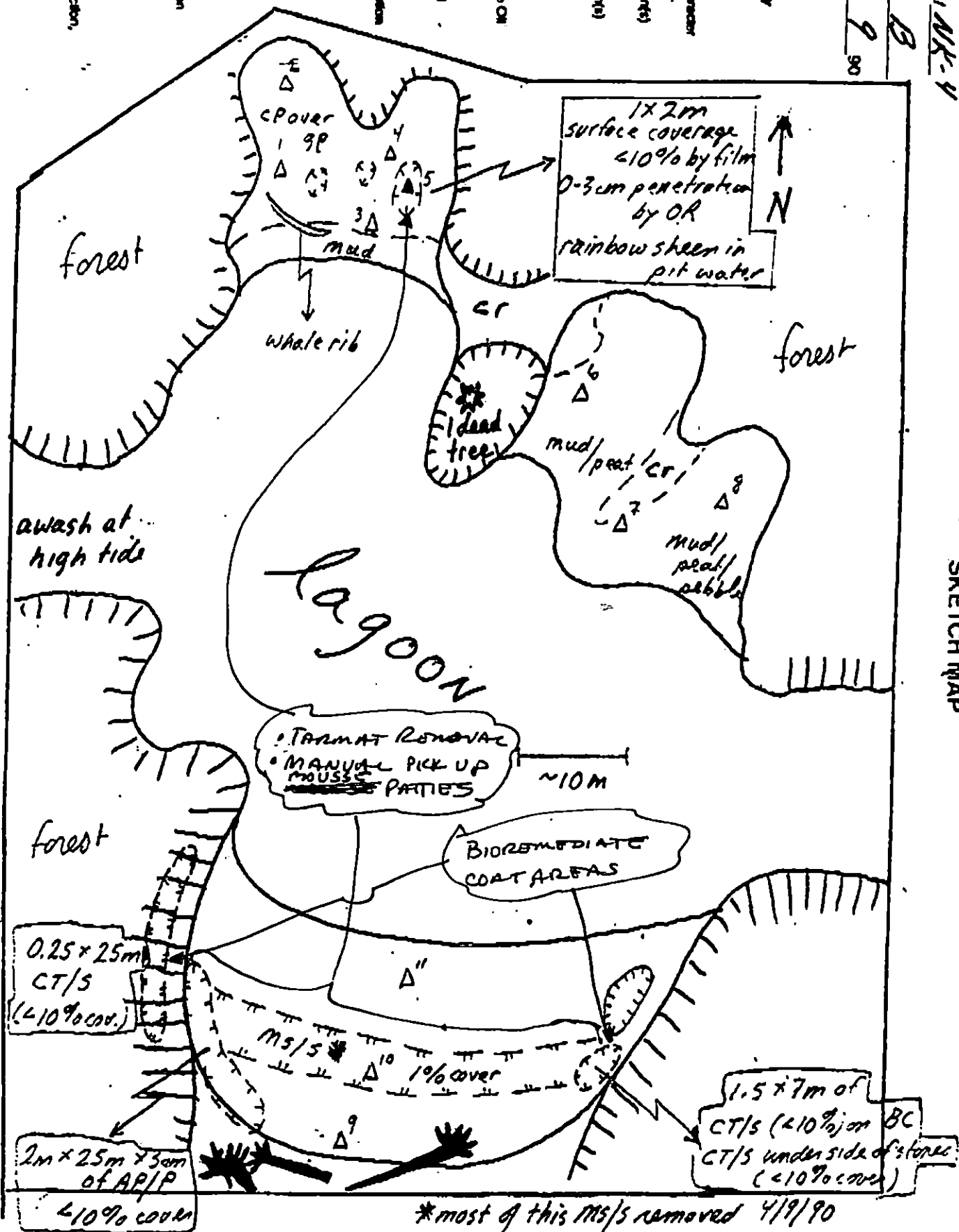
•

What's New?

1

Photo location, direction,
and number

SKETCH MAP



SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / NK-4 Subdivision B (of A-B) Date (mo / day / yr) 4-9-90Time (24 hr) _____ Biologist M. LARR(A) Substrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock 50 (2) Boulder 10 (3) Cobble 30 (4) Pebble 5 (5) Sand 5 (6) Silt _____(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 60 Moderate 20 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. 5Frames 21-34

BARNACLES

	Dense			Moderate			Sparse			Rare		
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
Bed	2	2	2	2	2	2	2	2	2	2	2	2
Boulder	3	3	3	3	3	3	3	3	3	3	3	3
Cobble	4	4	4	4	4	4	4	4	4	4	4	4
Pebble	5	5	5	5	5	5	5	5	5	5	5	5
Sand	6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT IN UPPER & LOWER BONE
NOT PRESENT
NOT PRESENT IN ANY B.

MYTILUS

	Dense			Moderate			Sparse			Rare		
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
Bed	2	2	2	2	2	2	2	2	2	2	2	2
Boulder	3	3	3	3	3	3	3	3	3	3	3	3
Cobble	4	4	4	4	4	4	4	4	4	4	4	4
Pebble	5	5	5	5	5	5	5	5	5	5	5	5
Sand	6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT IN LOWER BONE
NOT PRESENT
NOT PRESENT IN ANY BONE.

GASTROPODS

	Dense			Moderate			Sparse			Rare		
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
Bed	2	2	2	2	2	2	2	2	2	2	2	2
Boulder	3	3	3	3	3	3	3	3	3	3	3	3
Cobble	4	4	4	4	4	4	4	4	4	4	4	4
Pebble	5	5	5	5	5	5	5	5	5	5	5	5
Sand	6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT
NOT PRESENT IN ANY

FUCUS

	Dense			Moderate			Sparse			Rare		
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
Bed	2	2	2	2	2	2	2	2	2	2	2	2
Boulder	3	3	3	3	3	3	3	3	3	3	3	3
Cobble	4	4	4	4	4	4	4	4	4	4	4	4
Pebble	5	5	5	5	5	5	5	5	5	5	5	5
Sand	6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT
NOT PRESENT IN UPPER & LOWER BONE
NOT PRESENT IN ANY BONE.

Wildlife Observations/ General Comments:

NONE

Ecological Considerations:

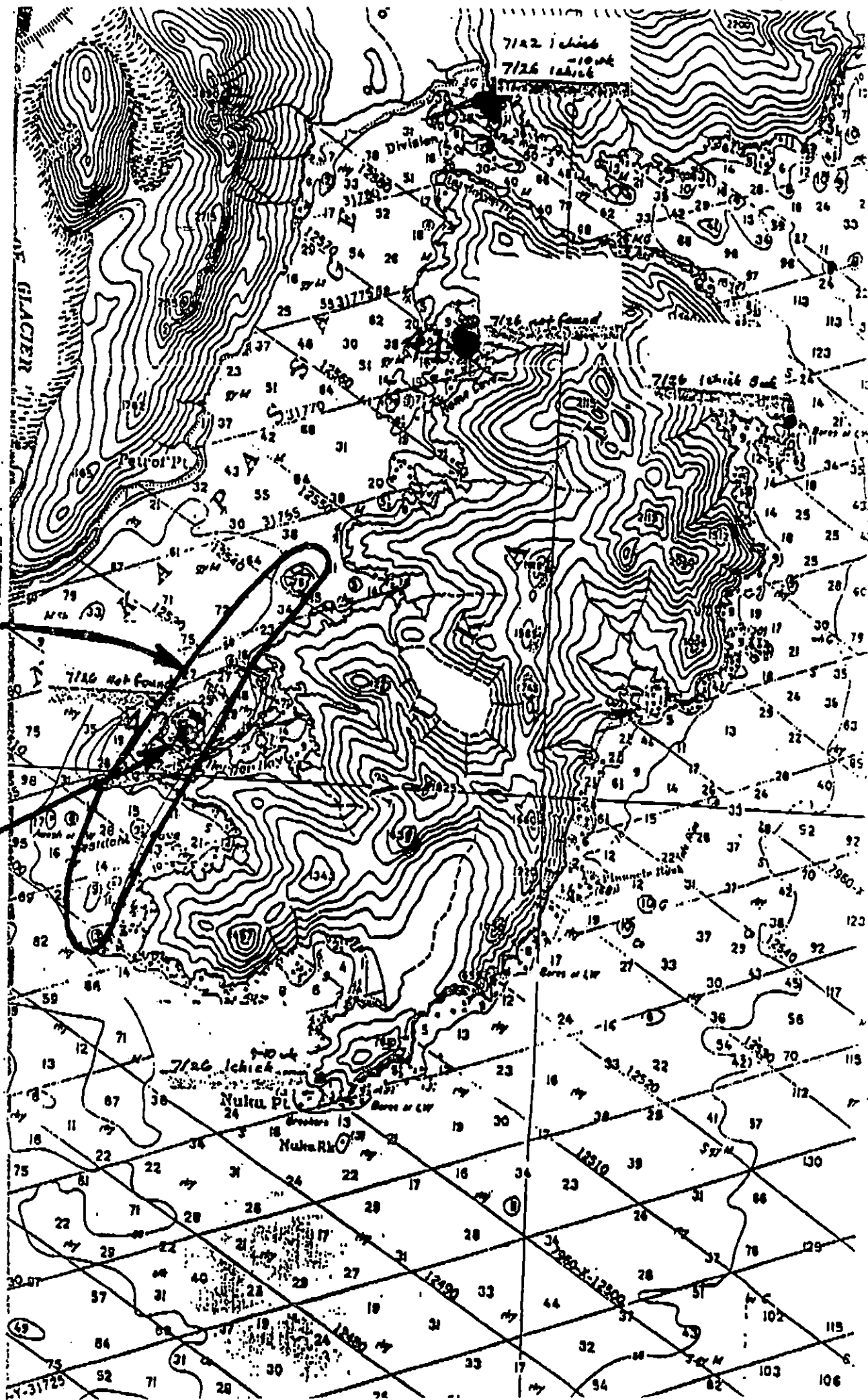
Sensitivity codes (see NK-4 A sheets)

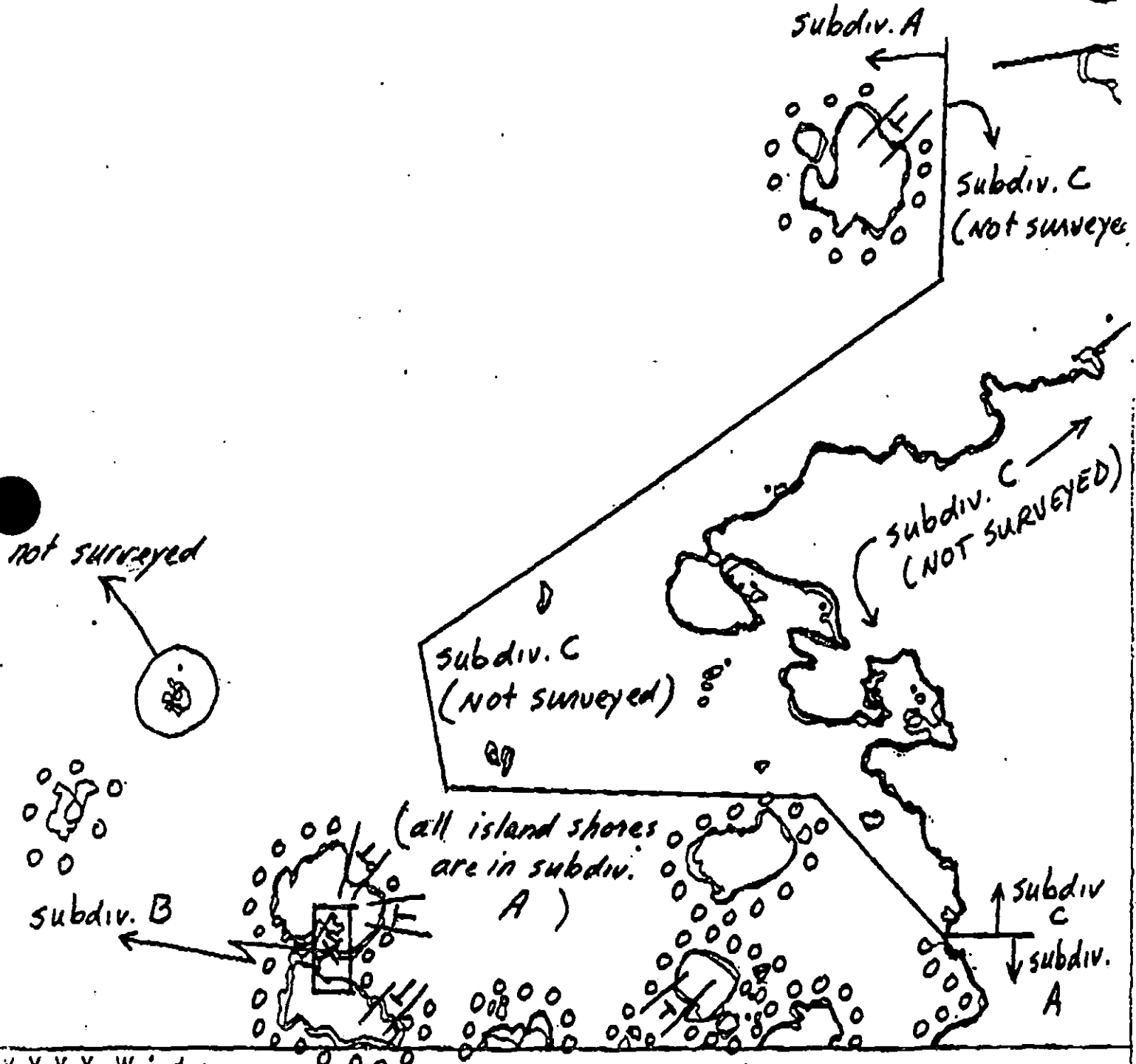
Sensitive Sites

NK-4

OFFSHORE ISLANDS
USED AS
SEABIRD
COLONIES

BALD EAGLE
NEST

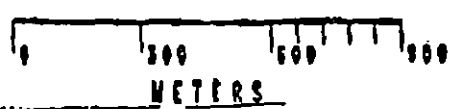




XXXX Wide
 // Medium
 --- Narrow
 TTTT Very Light
 OOOO No Oil

NK-4

ADEC Segment Length: 27376m



Map Key: PWS-592c
 Name: Man
 Date: 4/9/90
 Data Entered:

NK-4
subdiv. B

Mann
revised to show oil category lengths
on this en-
largement
4/10/90

(~3000x mag)



Attachment to NK-4 B

REGION: KENAI

SEGMENT: ST/NK-04

SUBDIVISIONS: C (3 OF 3)

NK-04-A AND NK-04-B WERE COMPLETED IN PHASE I.

SHORELINE EVALUATION

SEGMENT ST/ NK-04 SUBDIVISION C (3 OF 3) DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (6/20 to 9/30)
4GG Alaska State Parks
5R Seabird colony (5/1 to 9/1)
5T-4 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6NN Recreation: Sportfishing
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6X Recreation: Lodge (6/1 to 9/15)
9BB Privately Developed Lands

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:

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 0 m: V.Light 9282 m: No Oil 0 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 Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: Recommended treatment includes 1) manual pickup of mousse, 2) bioremediation in areas shown on attached sketch map. Work should be conducted between 6/1 and 7/9 due to eagle nests and salmon constraints after approval of USFWS regarding eagle nests and seabird colony, or after 9/30.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

AGENCY CONTACT PERSON: ADF&G John Morison 267-2324

AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214

Remote release site

AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214

1D	1F	1G	PWS Aquaculture Association	John McMillan or Bruce Suzumoto	424-7511
----	----	----	-----------------------------	---------------------------------	----------

Set net sites (6/11 to 7/25)

AGENCY CONTACT PERSON: ADF&G: James Brady 424-3212

AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235

AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235

ADF&G Don Calkins 267-2403

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom Rothy 267-2208

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

Sport Fishing

Invertebrate harvesting

AGENCY CONTACT PERSON: ADF&G Jim Fall 267-2359

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / NK-04 SUBDIVISION: C (3 of 3) DATE 4/22/92~~NOAA~~~~USCG~~NAME Donald A. Macdonald SIGNATURE Donald Macdonald☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

Special concern of NOAA in this segment is the anadromous fish stream located in the embayment at the north end of the segment and the marine mammal mammals, sea otters and seals in the area. Saw one sea otter with a pup. I'm in basic agreement with the SSAT report.

ADECNAME JOHN R. REED SIGNATURE John R. Reed☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

NK-04-C is the northern end of NK-04. Shoreline consists of small pocket beaches and vertical rock walls. Several of the pocket beaches have scattered mousse patties which can be manually removed by shovel. The area around the anadromous stream and lagoon was clean. This area has a high recreational value and should be cleaned. The mousse patties were found in low energy areas, so they are not going anywhere. I agree with SSAT F

LAND MANAGERNAME SHARIE Methven-TONEY SIGNATURE Sharie Methven-Toney☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS Nuka Island Segment 4 is within Kachemak Bay State Wilderness Area; located on the west side of the island. The segment is within Berger Bay and Mikes Bay. There are high recreation values, good anchoring anchorages in this unit, tent sites possible, relative high use, popular with commercial fishermen & pleasure boaters, high wilderness values. One anadromous stream in the segment. I recommend cleanup by manual removal of mousse patties using shovels, the areas observed with the mousse patties need to be worked with access with skiffs not a helicopter. The lagoons support dense beds of clams, supporting sea otters. I agree with the SSAT form.

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

OG Sawyer NOAA MacDonald SEGMENT ST/NK-4
 BIO Corr LAND REP Methuen-Taney SUBDIVISION C (3 OF 3)
 EXXON Bayer ADEC Reed TIME 18:00 to 20:45 and 07:00 to 10:10
 TEAM NO. 18 TIDE LEVEL +1 to +4.5 and -1 to +6.0 DATE Apr 12/23/90
 EST. SUBDIVISION LENGTH: 6956 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 60 % B 10 % C 10 % P 10 % G 0 % S 10 % M 0 % V 0 %
 SLOPE: Long 2.5 % Hang 15 % Vert 60 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 6956 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	B	P	M	SP	OR	OL	OP	NO	SV	UC	UC	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
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			DID YOU COLLECT DEBRIS?
	SM	MD	LG	
Logs				YES ☒ . NO ☐
Vegetation				
Trash				
Debris				
				TYPE <u>Mousse</u>
				#BAGS <u>4</u>

Photographs:

Roll No. ST-18-8

Frames 15-18

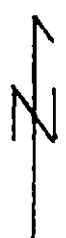
SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SHEEN (Y/N)	↓	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OP	NO		VO	UC	SP	OR	OL	OP	NO	SV	UC	UC	SU	U	M	U				
1	15						0-4																Y	5	C-P
2	15																								P-M
3	20																								P-M, G
4	25																								C-P, S
5	30																								C-P, M

COMMENTS ST/NK-4 comprises mostly bedrock highland with a number small 'pocket' beaches and one anadromous stream. The most significant oiling occurs near the south end of this sub-segment on a small beach where a near shore silver sheen was observed.

REVIEWED BAT DATE 29 Apr 90

300 600 900m



2 bags of mousse
(CT/S) collected from
low angle boulder
and cobble beach

ETCH MAP

low angle
cobble and
boulder beach

Collected one mousse patch

CT/S

ms/s collected 3 patches

CT/S

MANUAL PICKUP
OF MOUSSE
BIOREMEDIATION

Nuka Island

Anadromous stream

Stream

CT/S

ms/s

stream

Near shore silver sheen

ms/s

ms/s - about 50 patches
up to ~50cm² in a ~1m
wide band occur in the UIT

* Mousse may occur on
beaches where mousse
was collected.

OG 500m
SEGMENT NK-4
SUBDIVISION C

DATE Apr 12 1983

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Ship/Boat Entry
- ☐ Oil Out
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HMLA/WL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Photo 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 Splashed Distribution
- Oil Vegetation
- Photo location, direction, and number

OF Character Length (m): AP 0 PO 0 CV 0 CT 2600 ST 0 MS 4000 PT 0 TB 0 FL 0 NO 0

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / NK-4 Subdivision C Date (mo / day / yr) 4-22-90 4-23-90

Time (24 hr) 1800 0700 Biologist MARIL CARR

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

(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 80 Moderate 10 Low 10

(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-18-8

Frames 15-18

BARNACLES

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
SED	2	2	X	3	3	X	2	2	2	2	2	2	
GRAVEL	2	2	2	3	3	3	2	2	2	2	2	2	
COBB	3	3	3	3	3	3	2	2	2	2	2	2	
PEBB	4	4	4	4	4	4	4	4	4	X	X	X	NOT PRESENT
SAND	5	5	5	5	5	5	5	5	5	5	5	5	NOT PRESENT IN ANY ZONE.
	6	6	6	6	6	6	6	6	6	6	6	6	

MYTILUS

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
SED	2	2	2	2	2	2	2	2	2	2	2	2	
GRAVEL	2	2	2	2	2	2	2	2	2	2	2	2	
COBB	3	3	3	3	3	3	3	3	3	3	3	3	
PEBB	4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT IN UPPER ZONE
SAND	5	5	5	5	5	5	5	5	5	5	5	5	NOT PRESENT
	6	6	6	6	6	6	6	6	6	6	6	6	

GASTROPODS

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
SED	2	2	2	2	2	2	2	2	2	2	2	2	
GRAVEL	2	2	2	2	2	2	2	2	2	2	2	2	
COBB	3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
PEBB	4	4	4	4	4	4	4	4	4	4	4	4	
SAND	5	5	5	5	5	5	5	5	5	5	5	5	NOT PRESENT IN ANY ZONE
	6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
SED	2	2	2	2	2	2	2	2	2	2	2	2	
GRAVEL	2	2	2	2	2	2	2	2	2	2	2	2	
COBB	3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT IN UPPER ZONE
PEBB	4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT
SAND	5	5	5	5	5	5	5	5	5	5	5	5	NOT PRESENT IN ANY ZONE
	6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

N.W. CROWS (8), RAVEN (1), HARLEQUIN DUCKS (13), BALD EAGLE (6), w/ IMMATURE SEA OTTER (5), 1 PUP, STELLER'S JAY (7), HARBOR SEAL (2), glaucous-winged gull (1)

Ecological Considerations:

Low intertidal and shallow subtidal lagoons support dense beds of bivalves (Mytilus and clams). Supra-littoral sites in back-lagoon with abundant sea otter scat; evidence of frequent haul-out by sea otters. Scat comprised of Mytilus shells. Oil and cleanup activity should consider potential contamination (and population impact) of bivalves and subsequent effects on sea otters and birds. Sensitivity codes: ST-4 (EAGLE NESTS), 5R (SEA BIRD COLONY),



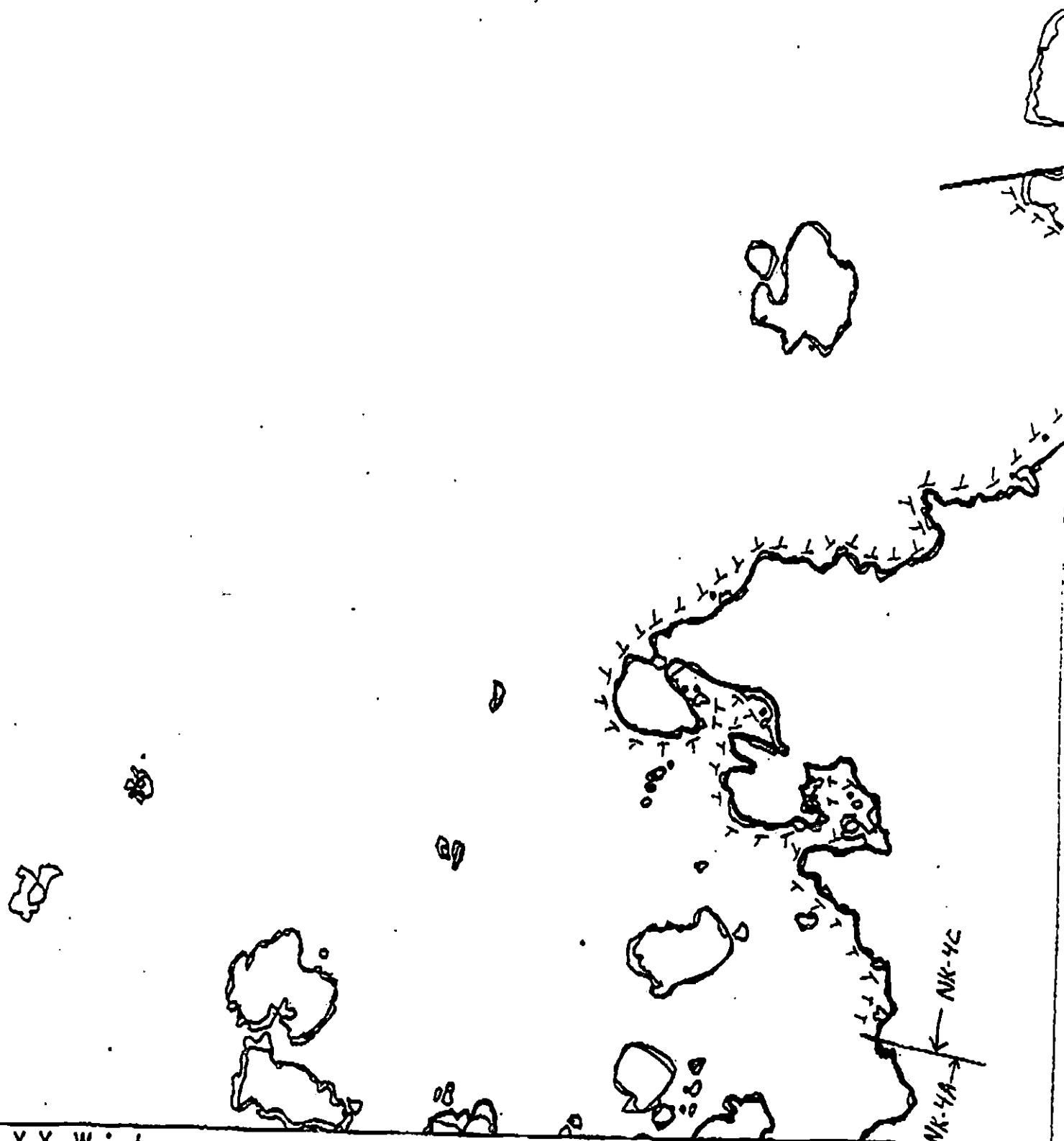
XX Wide
/// Medium
-- -- Narrow
TTTT Very Light

NK-4

ADEC Segment Length: 27376m

Map Key: PWS-592d

Name: SawyerDate: 4-23-90



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

NK-4

ADEC Segment Length: 27376m

Map Key: PWS-5920

Name: Sawyer

Date: 4-27-90

SHORELINE EVALUATION

SEGMENT ST/ NK-04 SUBDIVISION A (1 OF 2) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
4GG State Wilderness Park
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6NN Recreation area: Sportfishing
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6X Recreation: Lodge (6/1 to 9/15)
9BB Privately developed land

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoilied biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles E. Johnson DATE: 4/28/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 314 m: No Oil 14901 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: <u> </u> Wands
☐ Tarmat: ☐ Breakup	☐ Beach Cleaner
☐ Removal	☐ Other (see comments)

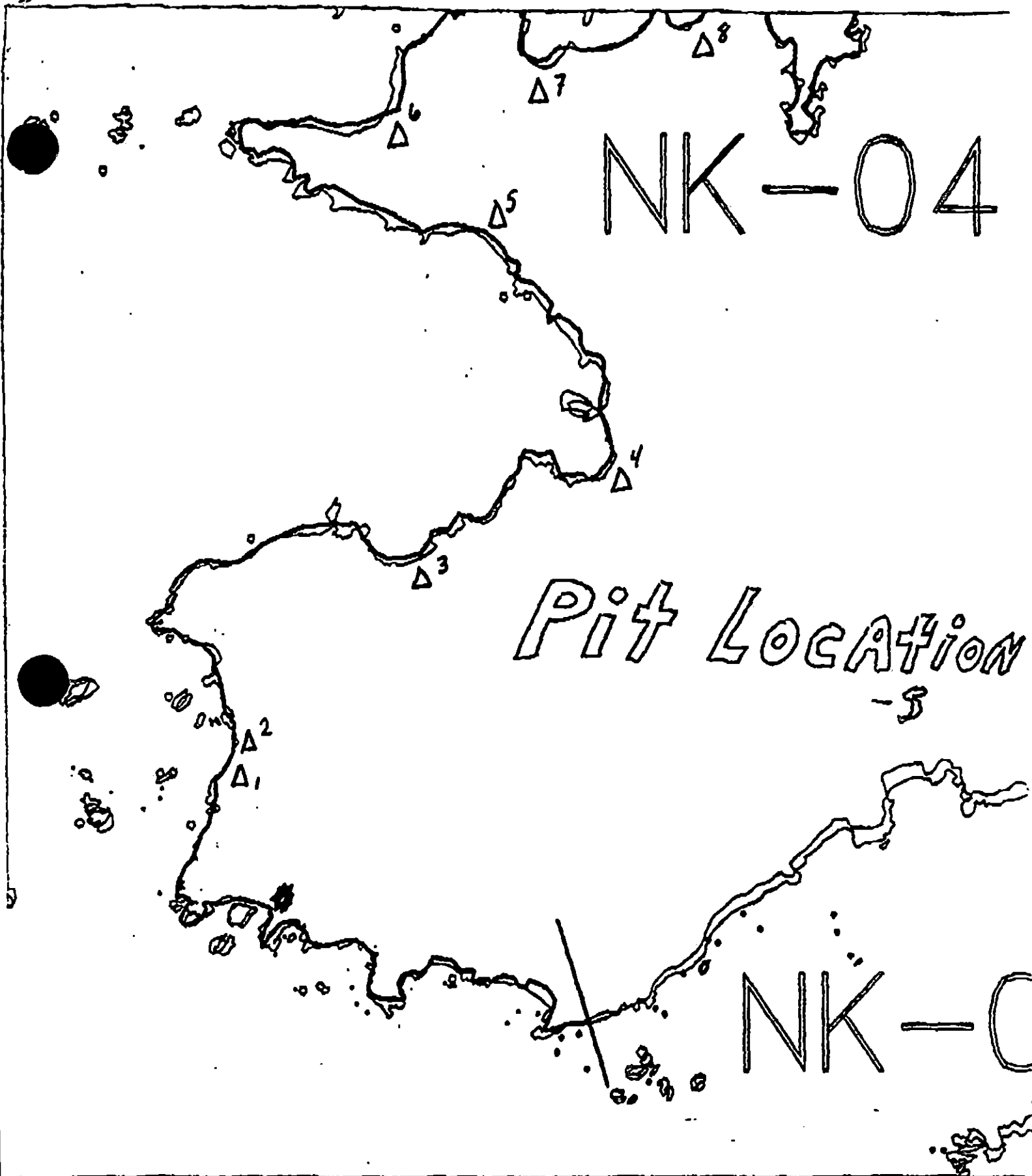
COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/26/90

ADEC JOHN BAUER
EXXON ARMY TEST
NOAA GARY PETRAE
USCG KENNETH KEENE

FOSC: W L DATE: 5-3-90



XXXX Wide

/// Medium

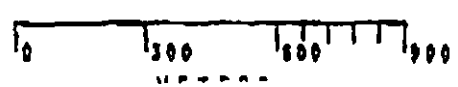
--- Narrow

TTTT Very Light

0000 No Oil

NK-4

ADEC Segment Length: 27376m

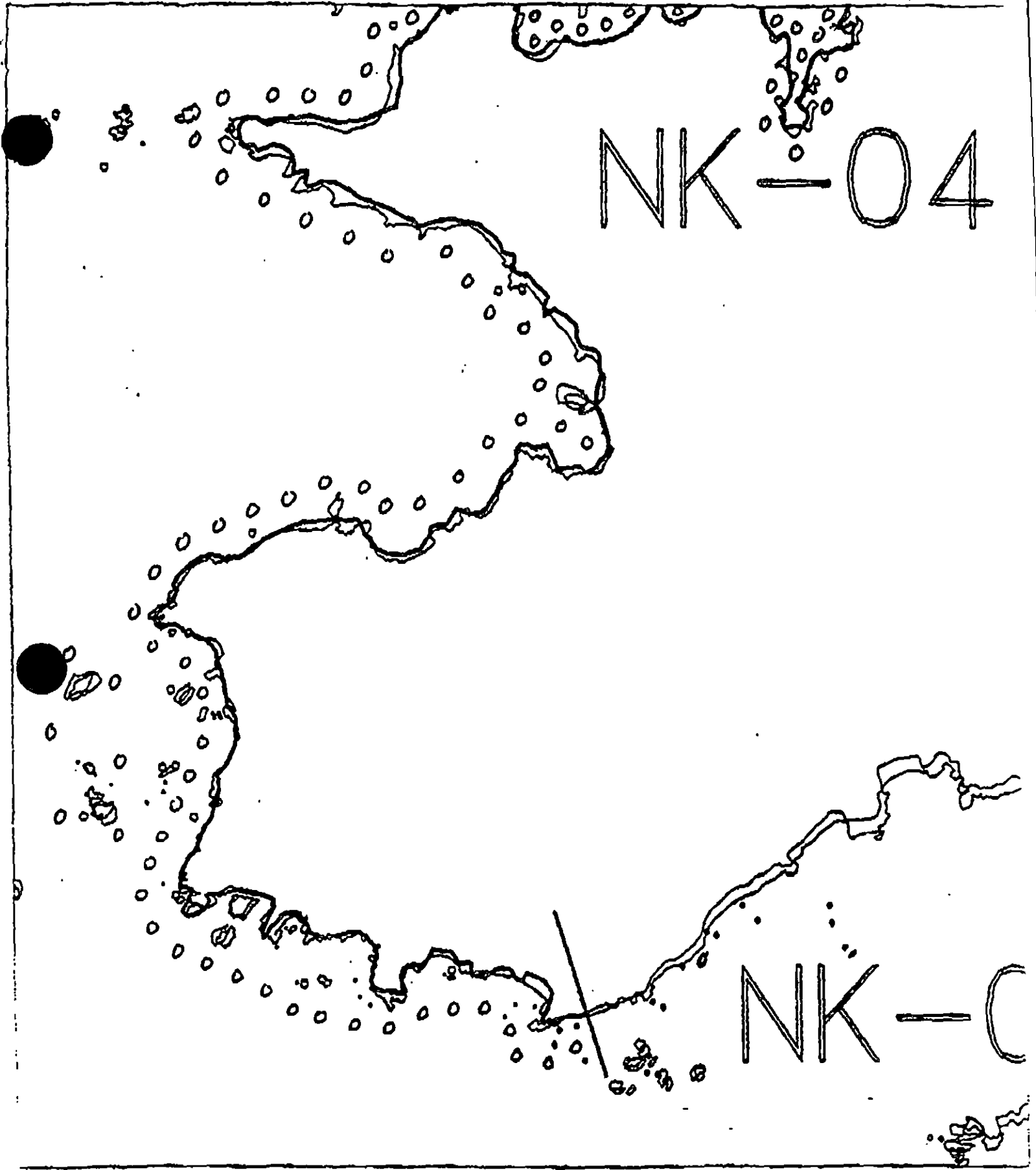


Map Key: PWS-592a

Name: Mann

Date: 4/8/90

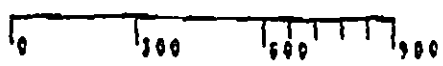
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XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
OOOO No Oil

NK-4

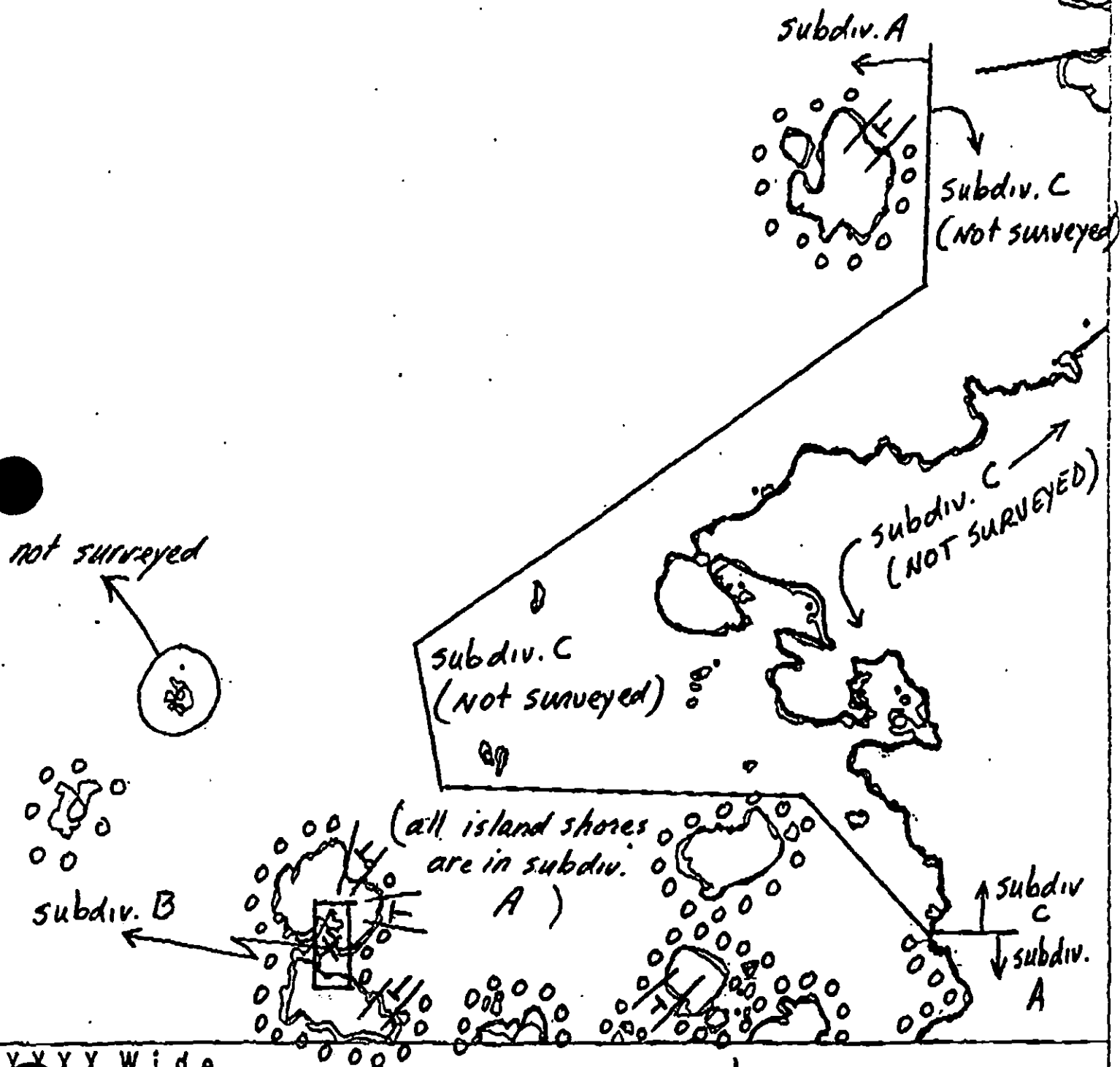
ADEC Segment Length: 27376m



Map Key: PWS-592a

Name: Mann

Date: 4/8/90



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

NK-4

ADEC Segment Length: 27376m

0 300 600 900

Map Key: PWS-592c

Name: Mann

Date: 4/9/90

SHORELINE EVALUATION

SEGMENT ST/ NK-04 SUBDIVISION C (3 OF 3) DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (6/20 to 9/30)
4GG Alaska State Parks
5R Seabird colony (5/1 to 9/1)
5T-4 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6NN Recreation: Sportfishing
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6X Recreation: Lodge (6/1 to 9/15)
9BB Privately Developed Lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINT: An Exxon archaeological monitor is required on-site during shoreline treatment.

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

SHPO SIGNATURE: *[Signature]* DATE: 5/7/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 9282 m: No Oil 0 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>X</u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>BE</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> </u> Tarmat Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

B COMMENTS: Recommended treatment includes 1) manual pickup of mousse,
2) ~~bioremediation in areas shown on attached sketch map.~~ Work should
be conducted between 6/1 and 7/9 due to eagle nests and salmon con-
straints after approval of USFWS regarding eagle nests and seabird
colony, or after 9/30.

TAG COMMENTS:

TAG APPROVAL DATE: 5/7/90.
ADEC *[Signature]*
EXXON *[Signature]*
NOAA *[Signature]*
USCG *[Signature]*

FOSC: *[Signature]*

DATE: 5-7-90

ADVR monitor must be
on scene during cleanup ops

OG Say
SEGMENT SUNK-4
SUBDIVISION C
DATE Apr 17 1983

CHECKLIST

N Arrow
Approx. Scale
Seafloor Entry
Oil Dist.
Width
Length
% Cover
Substrate Character
Est. HML/LWL
SSS
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
Core/Split Distribution

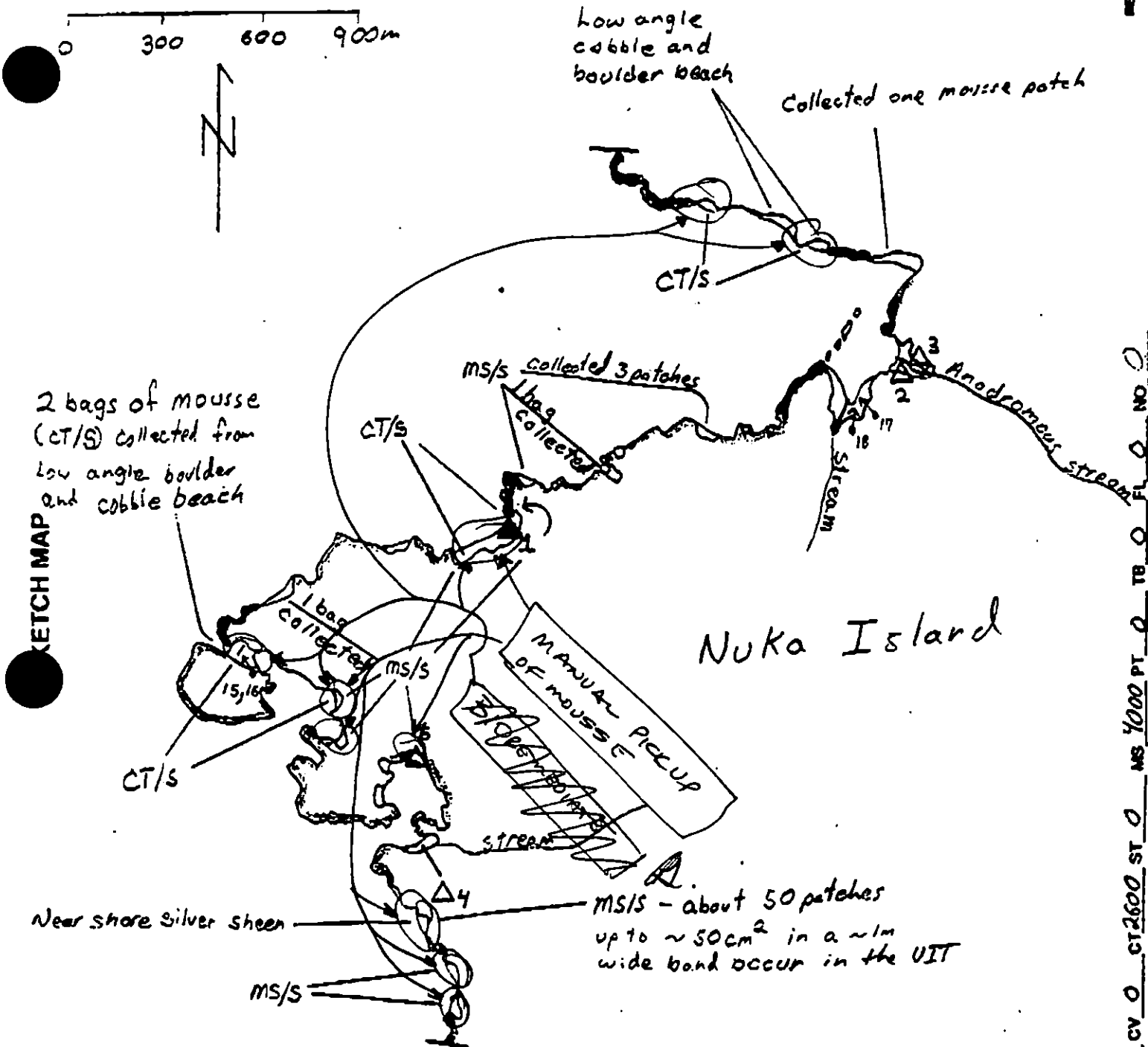
CT/B
Broken Distribution

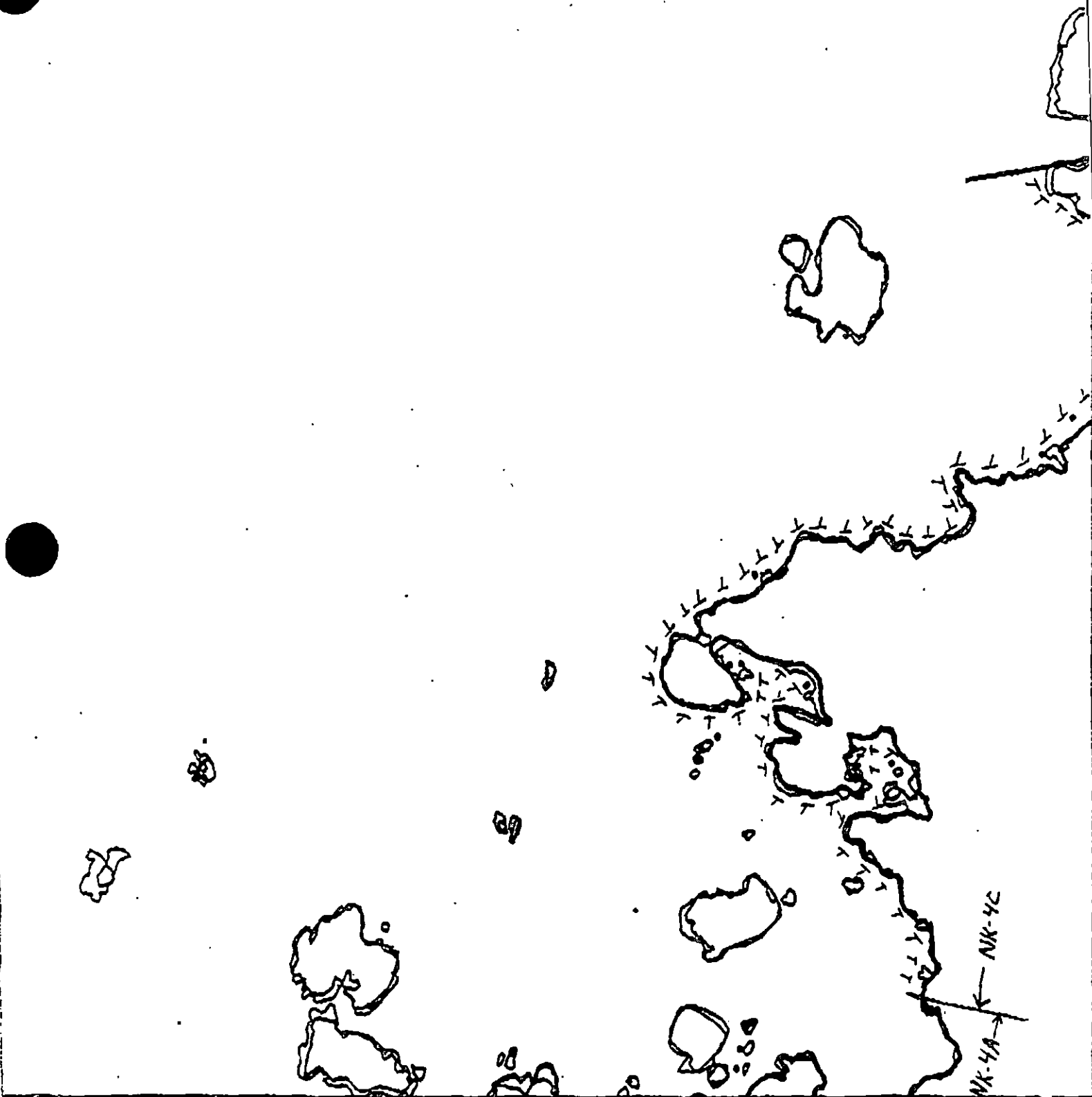
CT/P
Pebble Distribution

CT/S
Splashed Distribution

Oil Vegetation

Photo location, direction, and number





XXX Wide

/// Medium

--- Narrow

TTTT Very Light

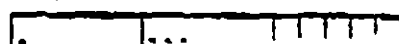
NK-4

ADEC Segment Length: 27376m

Map Key: PWS-392c

Name: Sawyer

Date: 4-23-90



APR-05-1990 13:10 FROM EXXON SCAT

TO

Ensco Atlas

P.02



XXX Wide

NK-4

//// Medium

--- Narrow

ADEC Segment Length: 27376m

TTTT Very Light

0 100 200 300 400 500 600

Map Key: PW3-5926

Name: SawyerDate: 4-23-90

SHORELINE EVALUATION

SEGMENT ST/ NK-04 SUBDIVISION B (2 OF 2) DATE 4/10/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
4GG State Wilderness Park
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6NN Recreation area: Sportfishing
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6X Recreation: Lodge (6/1 to 9/15)
9BB Privately developed land

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unloiled 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 F. H. H. H. DATE: 4/28/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 90 m: No Oil 258 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>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) manual removal of tarmat,
2) manual pick up of mousse and patties, 3) bioremediation of surface
coat areas shown on attached sketch map. Work should be conducted be-
tween 6/1 and 7/10 based on salmon constraints after consulting ADF&G
and USFWS regarding eagle nest and possible seabird colony.

TAG COMMENTS:

TAG APPROVAL DATE: 4/26/90
ADEC JOHN BAUER
EXXON ANDY TAYLOR
NOAA GARY PETROSE
USCG KENNETH KETNER

FOSC: myl DATE: 5-6-90

CHECKLIST

W Ascor
Approx. 80%
Sag/Std Brndy
On Del.

5

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238

Chapters

5-1

www.elsevier.com

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Localities:

Phil

Completed

Legend

Δ

P11 - No Subsurface Contamination

24

PH - Selection Of

3

Conservation Dispositions

3

100

Business Objectives:

CT/

11-10

7.

CT/S

Abstract

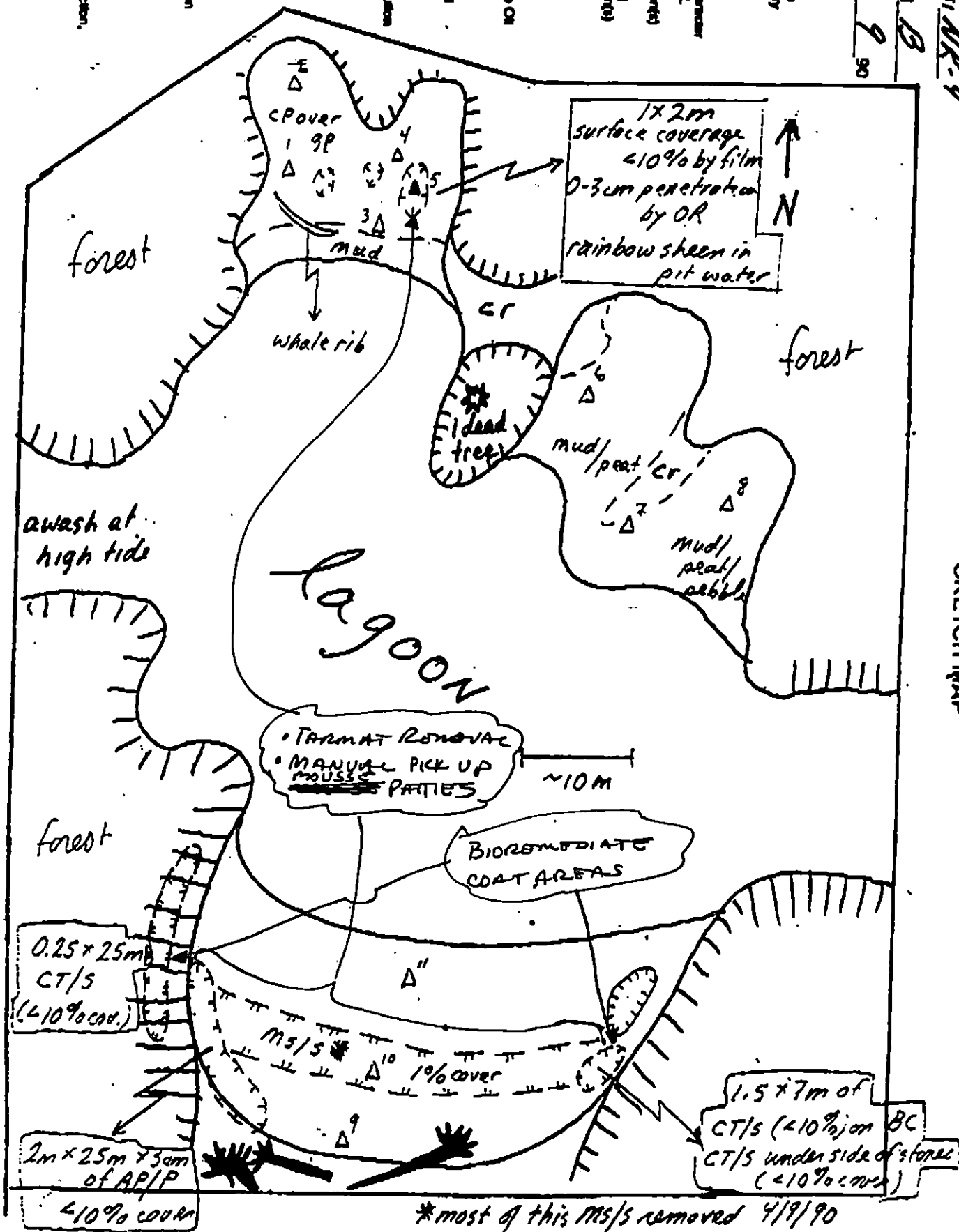
2005-2006

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Photo location, direction,
and number

SKETCH MAP

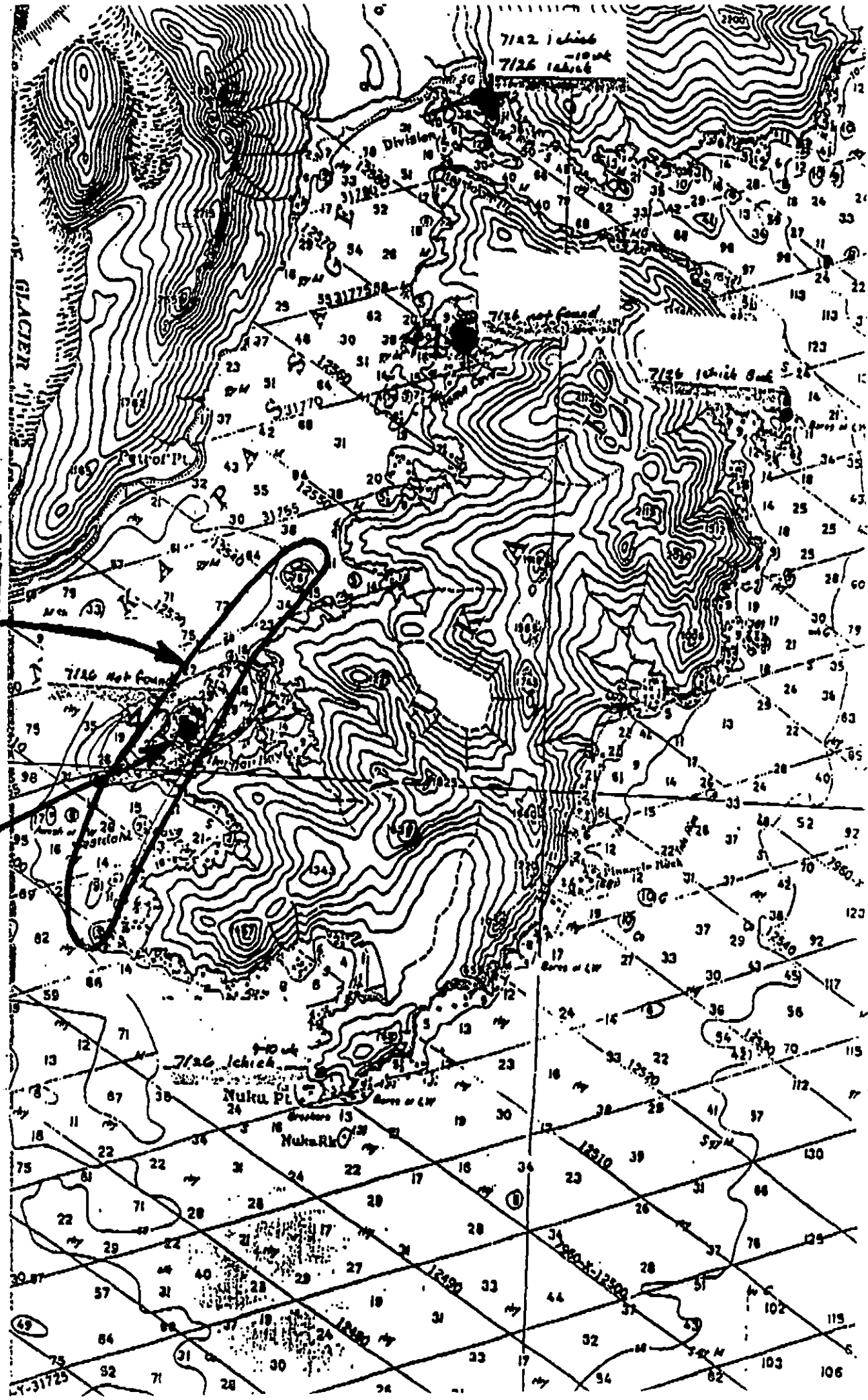


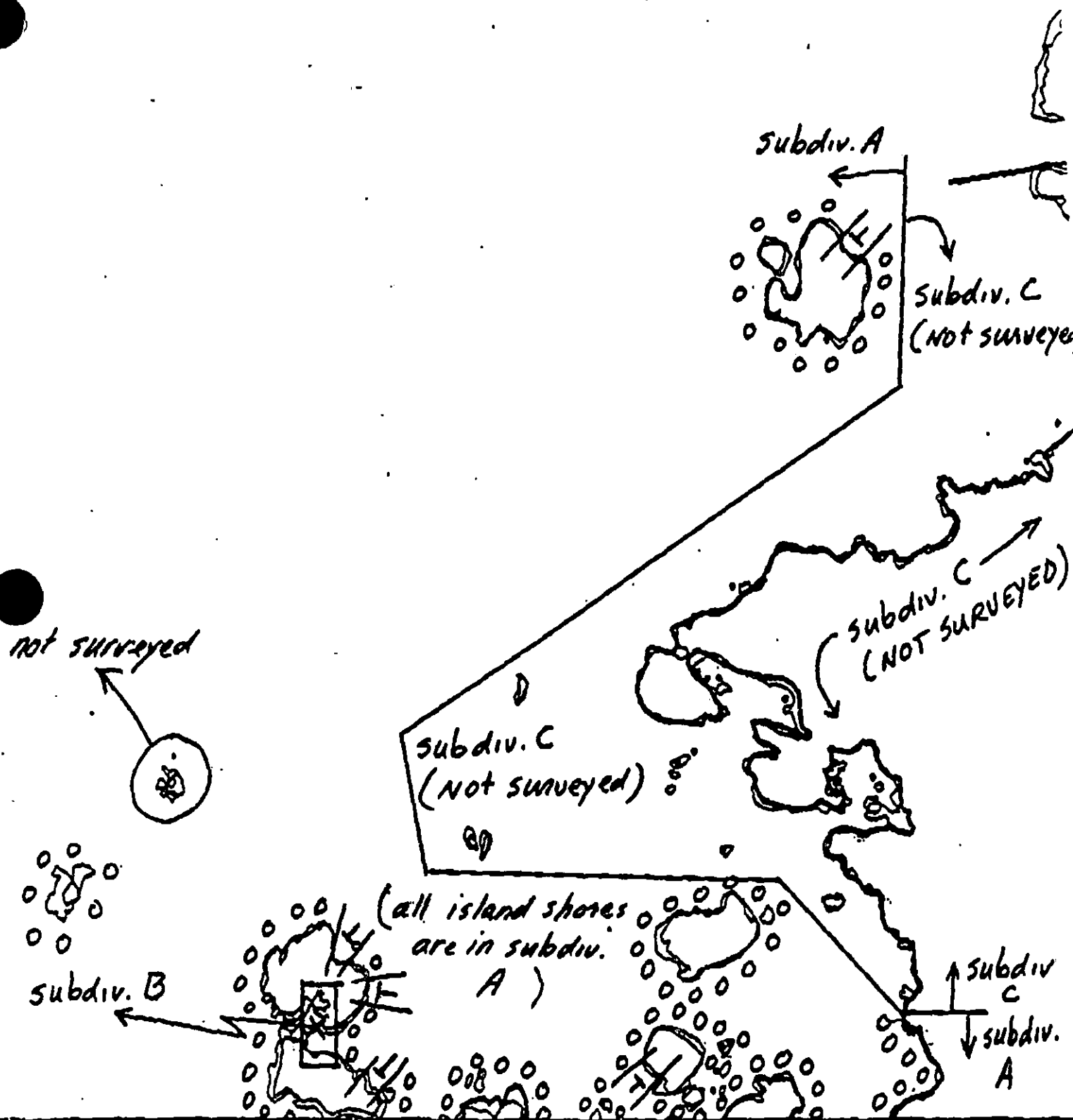
Sensitive Sites

NK-4

OFFSHORE ISLANDS USED AS SEABIRD COLONIES

BALD EAGLE NEST





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

NK-4

ADEC Segment Length: 27376m



Map Key: PWS-392c

Name: Man

Date: 4/9/90

Date Entered:

NK-4

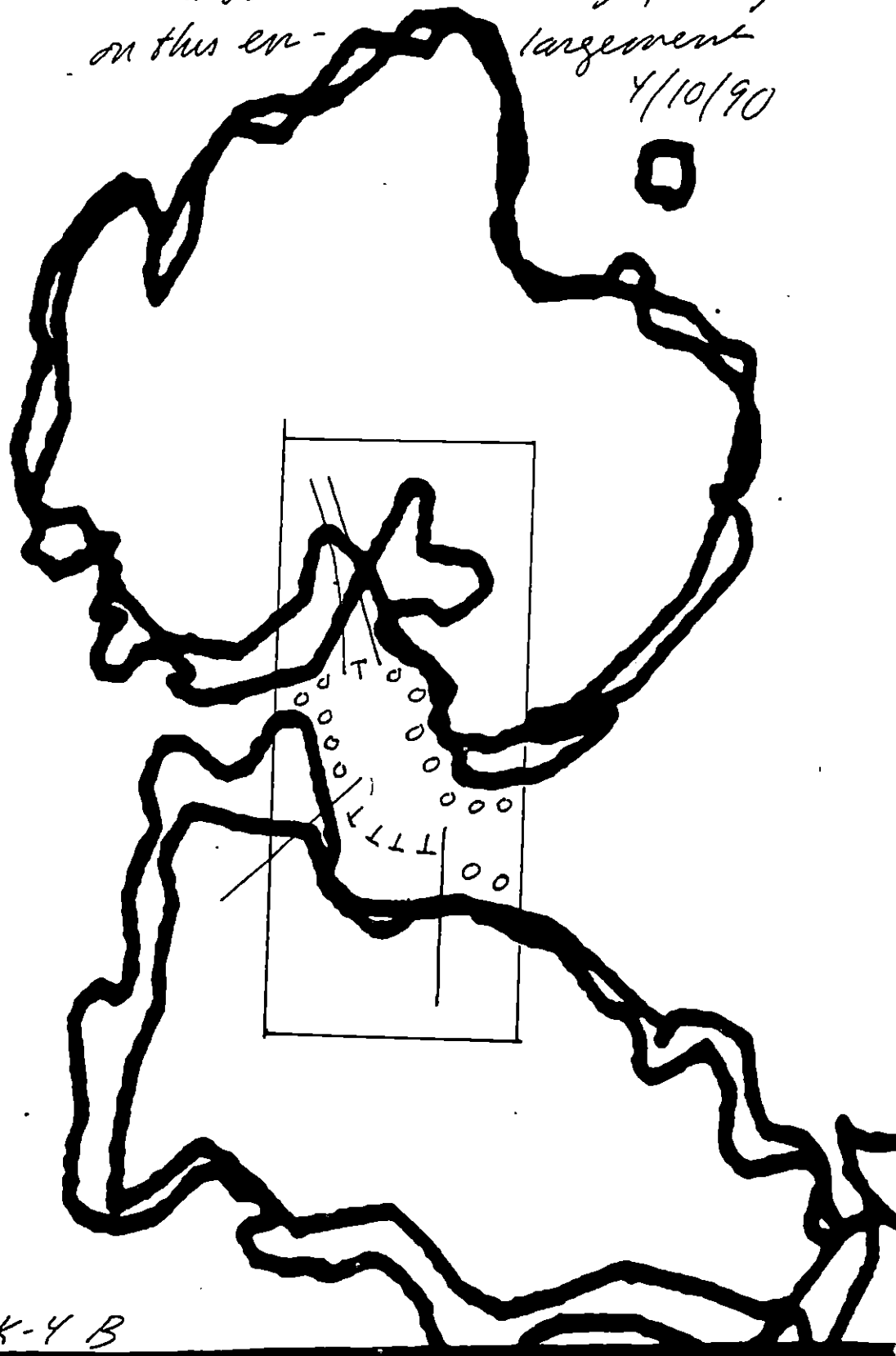
subdiv. B

Mann

revised to show oil category lengths
on this en-
largement

4/10/90

(~3000x mag)



Attachment to NK-4 B

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT NK-4 SUBDIVISION B (2 of 3)

WORK WINDOW	
Manual Pickup Tarmat Removal	CLOSED
Bioremediation	CLOSED

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

- | | | |
|-------|------------------|---|
| 1A,1B | Salmon Stream | NO CONSTRAINT. ADF&G catalogued anadromous streams (232-15-10270, 232-15-10280, 232-15-10290, and 232-15-10300) are in Subdivision B and are more than 100m from the work site. |
| 1J | Purse Seine Area | Closed to bioremediation after 7/10. No constraint to manual pickup and tarmat removal. |
| 5T | Bald Eagle Nest | USFWS 6/1/90 map indicates an active nest in Subdivision A. Closed to manual pickup, tarmat removal, and bioremediation within 400m of active nest. No constraint to manual pickup, tarmat removal, bioremediation more than 400m from active nest. |

OTHER ECOLOGICAL CONSIDERATIONS

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

FOSC

[Signature]

Date

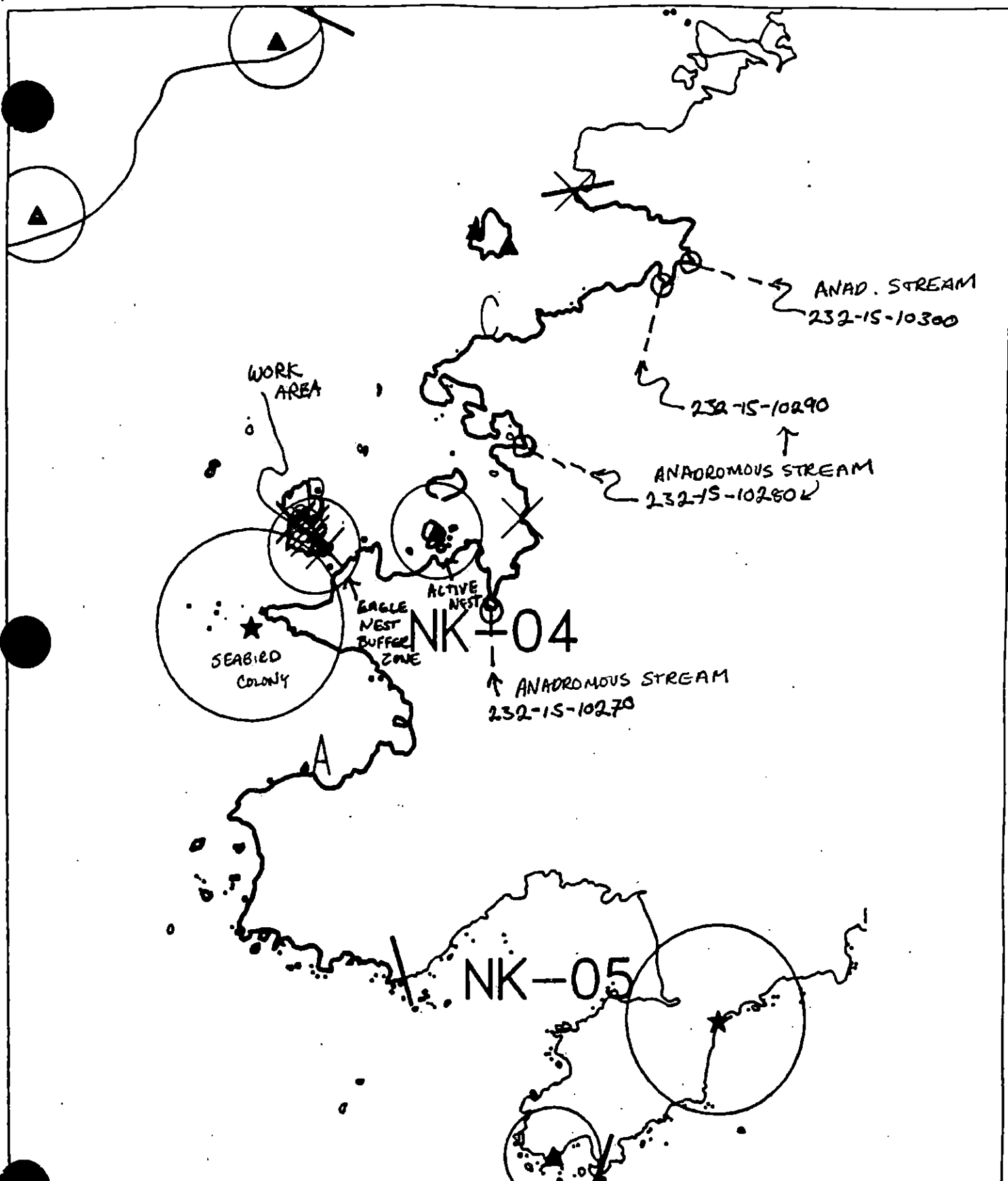
6/14/90

Prepared by

[Signature]

Date

6/14/90



Exxon Company, USA



ECOLOGY MAP
SEGMENT NK-4
SUBDIVISION B (2 of 3)
METROS

- ★ Seabird Colony
- ▲ Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ NK-04 SUBDIVISION B (2 OF 2) DATE 4/10/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
- 1B Salmon stream mouth - spawning (7/10 to 8/31)
- 4GG State Wilderness Park
- 5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
- 6NN Recreation area: Sportfishing
- 6U Recreation: Tent sites (6/1 to 9/15)
- 6V Recreation: Anchorages (6/1 to 9/15)
- 6X Recreation: Lodge (6/1 to 9/15)
- 9BB Privately developed land

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles F. Johnson DATE: 4/28/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 90 m: No Oil 258 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>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) manual removal of tarmat, 2) manual pick up of mousse and patties, 3) bioremediation of surface coat areas shown on attached sketch map. Work should be conducted between 6/1 and 7/10 based on salmon constraints after consulting ADF&G and USFWS regarding eagle nest and possible seabird colony.

TAG COMMENTS: SEE CONSTRAINTS ADDENDUM dated 6/14/90 JRP

TAG APPROVAL DATE: 4/26/90

ADEC JOHN BAUER
EXXON ANDY TAYLOR
NOAA GARY PATRAC
USCG KENNETH KEENE

FOSC: WHL DATE: 5-6-90

OILING LENGTHS
TO BE PROVIDED
AT A LATER DATE

ST/NK-4A

REGION: KENAI

SEGMENT: ST/NK-04

SUBDIVISIONS: A (1 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ NK-04 SUBDIVISION A (1 OF 2) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
4GG State Wilderness Park
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6NN Recreation area: Sportfishing
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6X Recreation: Lodge (6/1 to 9/15)
9BB Privately developed land
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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide _____ m: Medium _____ m: Narrow _____ m: V. Light _____ m: No Oil _____ 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: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ NK 4 SUBDIVISION: A DATE 4/9/90

NOAA
NAME JACQUI MICHEL

SIGNATURE Michel

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Only five small areas were observed to have a very light oiling. However, this subdivision has a highly irregular coastline, the original contamination was light and discontinuous, and the shoreline is composed of dark meta sedimentary rocks. We could have missed some oiled spots, but they would be small. ^{we did survey by foot areas of potential oil accumulation.} The northern part of this subdivision is very low energy so any oil from last year would still be present.

ADEC However, no further treatment is warranted.

NAME JOHN R. REED

SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Very light scattered oiling in this very long segment. No oil was observed around the anadromous stream. No treatment was recommended for this segment. I have read and agree with all information on S.S.A.T. forms.

LAND MANAGER DNR/OPDR

NAME Jeffery S. Johnson

SIGNATURE Jeffery S. Johnson

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Agree with SSAT + comments on forms; very light oiling, mostly rock + rocky cliffs with low beaches. No oiled debris found, surface or subsurface oil was found, virtually no visual indications of any past treatment activities.

SHORELINE OILING SUMMARY

REVISION NO. 03/12/90

OG MANN USCG/NOAA MICHEL SEGMENT ST/ NK 4
 BIO CARR LAND REP JOHNSON - STATE PARKS SUBDIVISION A
 EXXON BOYER ADEC REED (DUR) TIME 07:12 to 11:30
 TEAM NO.: 18 TIDE LEVEL: -0.4 to +6.0 DATE 4 / 9 / 90
 ST. SUBDIVISION LENGTH: 19,980 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: SOUTH to NORTH
 SURFACE SEDIMENTS: R 57 % B 10 % C 15 % P 15 % G 0 % S 0 % M 2 % V 1 %
 SLOPE: Lang 60 % Hang 20 % Vert 20 % WAVE EXPOSURE: ☒ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 270 m NO 19,710 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	C	B	P	S	50L BR	00L RM	01 SL	02 TL	03 LR	SU	UI	M	U
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT			✓	✓		✓					✓		
STAIN				✓		✓					✓		
MOUSSE													
PATTIES													
TARBALLS													
ILM													
NO OIL										✓		✓	✓

PAVEMENT: H F S NO sq. m by 0 cmPATTIES / TARBALLS N/A BAGSNEAR SHORE SHEEN? ☒ BR ☐ RW ☐ SL ☐ TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED

☐ YES ☒ NOTYPE None#BAGS 0

Photographs:

Roll No. 518-5Frames (14-20)

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	UC	BR	OR	OL	OF	NO	BR	OR	OL	OF	SU	UI	ME			U
1	35					✓	-												✓					GP throughout
2	40					✓	-												✓					" "
3	30					✓	-												✓					PC throughout
4	50					✓	-												✓					" "
5	25					✓	-												✓					" "
6	35					✓	-												✓					GP throughout

COMMENTS

This subdivision includes a diversity of shoreline types ranging from intertidal mud flats to sea stacks. Its only common feature is the scarcity of oil. The shoreline is intricate from Westdahl Cove northward. The present segment boundaries are unfortunately placed. Dark bedrock makes oil detection difficult and slow work. The northern part of NK-4 remains to be

REVISION 03/23/02

SUBSURFACE OIL (CONTINUED)

[illegible]

We stopped at pocket beaches that were accessible by skiff and that had accumulations of some drift material. No subsurface (or surface) oil was found nor was any oiled debris.

REVIEWED BA7 DATE 2 Apr 90

OG WN

SEGMENT ST/ NK 04

SUBDIVISION A

DATE 4 1 9 90

CHECKLIST

- ☐ N Area
- ☐ Approx. Scale
- ☐ Seg/Sub Bndry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HW/LA/VL
- ☐ SSI
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ PI Location(s)
- ☐ Photo Location(s)

LEGEND

1 

PII - No Subsurface Oil

2 

PII - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oiled Vegetation

1 

Photo location, direction,
and number

SKETCH MAP

NO SKETCH MAP.

Oil Character Length (m): AP 0 PO 0 CV 0 CT 25 ST 10 MS 0 PT 0 TB 0 FL 0 NO 19945

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST NK-4 Subdivision A (of A-B) Date (mo / day / yr) 4/9/90
 Time (24 hr) 0705 Biologist M. CARR

- (A) Substrate type and % of ^{SUBDIVISION} segments:
 (1) Bedrock 10 (2) Boulder 10 (3) Cobble 15 (4) Pebble 15 (5) Sand (6) Silt
- (B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 70 Moderate 10 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. 5

Frames 14-20

BARNACLES

	Dense			Moderate			Sparse			Rare		
Bed	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
Bould	2	2	2	2	2	2	2	2	2	2	2	2
Cobb	3	3	3	3	3	3	3	3	3	3	3	3
Pebb	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		
Bed	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
Bould	2	2	2	2	2	2	2	2	2	2	2	2
Cobb	3	3	3	3	3	3	3	3	3	3	3	3
Pebb	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		
Bed	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
Bould	2	2	2	2	2	2	2	2	2	2	2	2
Cobb	3	3	3	3	3	3	3	3	3	3	3	3
Pebb	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		
Bed	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
Bould	2	2	2	2	2	2	2	2	2	2	2	2
Cobb	3	3	3	3	3	3	3	3	3	3	3	3
Pebb	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:

LAND OTTER (TRACKS)

HARLEQUIN DUCKS (34)

SEA OTTER (3)

DOUBLE-CRESTED COMORANT (17)

OYSTER CATCHER (3)

GLAUCOUS-WINGED GULL (11)

BALD EAGLE (2), NATURE

N.W. CROWS (11)

HARBOR SEAL (1)

SURF-SCOTER (12)

Ecological Considerations:

Sensitivity codes: 4-GG (Alaska State Park), 5-T (Bald Eagle Nest),
 5-R (Sea Bird Colony)

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 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 [REDACTED] (6/1 to 9/15)
- 6V [REDACTED] (6/1 to 9/15)
- 6W Forest Service cabins (6/1 to 9/15)
- 6X [REDACTED] (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.

NK-04

Pit Location
-5

NK-C

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

NK-4

ADEC Segment Length: 27376m



Map Key: PWS-592a

Name: Namr

Date: 4/8/90

Data Entered:

NK-04

NK-C

NK-4

ADEC Segment Length: 27376m

Map Key: PWS-592a

Name: Mann

Date: 4/8/90

Data Entered:

XXXX Wide

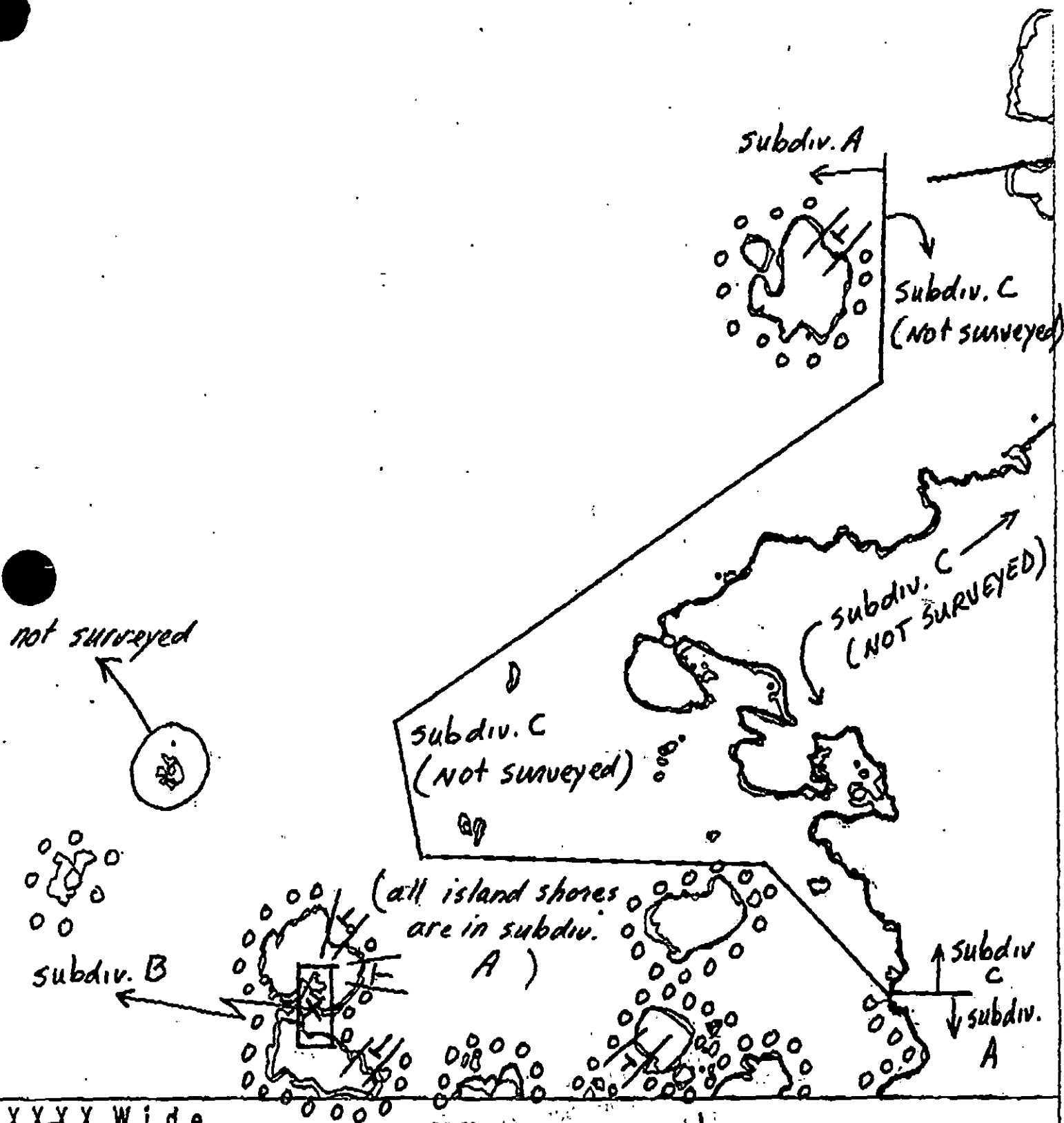
/// Medium

--- Narrow

TTTT Very Light

0000 No Oil





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

NK-4

ADEC Segment Length: 27376m



Map Key: PWS-5926

Name: Manu

Date: 4/9/90

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