

AN-213B
RUA COVE

ASC 16853



DOCUMENTS IN STREAM FILES

ASC# _____ Segment # _____

____ '89 Intertidal Assessment Survey, Sport/Com. Fish
____ '89 Shoreline Clean-Up Program (SAT)
____ '89 Anadromous Fish Stream Authorization, for instream work
____ '89 Stream Treatment Reports
____ '89 Demobilization Reports ____ Bioremediation ____ other
____ '89 RLS Sheet ____ Oil sed. sample ____ Egg sample
____ '89 Fall Walk-a-thon Survey, ADEC
____ '89 Winter Assess. Study Site ____ Winter Stream Survey Form
____ '89 Other Documents _____

____ '90 Pre-Anadscat Survey, multi-assessment form
____ '90 Anadscat Survey
____ '90 Anadromous Fish Stream Evaluation (work order)
____ '90 Anadromous Fish Stream Addendum to work order
____ '90 Shoreline Evaluation, SAT and work order for segment
____ '90 Anadromous Fish Stream Authorization, Title 16 permit
____ '90 Stream Treatment Report
____ '90 ADEC Demobilization Report for Bio
____ '90 ADF&G Oiling Condition Survey, for ASAP use (Aug. Surv.)
____ '90 ASAP Survey ____ ASAP Rec. ____ ADEC Rec. (____)
____ '90 Other Documents _____

AJW
Pre-ANADSCAT-90

ADF&G MULTI-ASSESSMENT DATA FORM

1 SURVEY TYPE: BS SS DS TS AVS SCHA MMS PTA 2 REGION: PWS KP,CI K,AP
METHOD: Aerial Ground Boat
3 DATE: 4.12-90 15 HIGH TIDE TIMES: 1 21 TEAM RECORDER: R. Gustin
4 START TIME: 0808 16 HIGH TIDE HTS: 1 22 OBSERVERS: 1 pilot
5 STOP TIME: 0815 17 LOW TIDE TIMES: 1 23 AGENCY: ADF&G HAB
6 SEGMENT #: KN213 18 LOW TIDE HTS: 1 24 PHOTOS TAKEN: Y N
7 STATION #: _____ 19 TIDE HT AT SURVEY: _____ Roll #: _____ Frame: _____
8 K-UNIT: _____ Ebb Slack Flood Slack 25 VIDEO TAKEN: Y N TAPE#: _____
9 STAT AREA: _____ 20 USCG QUAD: _____ Start: _____ End: _____
10 LAT: _____ 11 LONG: _____ 26 SAMPLES TAKEN? Y N Number
12 SOURCE: Map Loran 011 _____
13 LOCATION: KNIGHT IS. Sediment _____
14 DESCRIPTION: PCA COVE Biological _____
Water _____

EXTENT OF OIL

	SHORELINE				STREAM			
	L	W	M ²	%	L	W	M ²	%
27 SURFACE COVERAGE								
28 SURFACE THICKNESS								
29 PENETRATION								

30 OVERALL OIL IMPACT: N VL L M H 36 CATALOGED ANAD. FISH SREAM? Y N
31 OIL TYPE: Pooled Mousse Tar Asphalt Sticky Stain 37 CATALOG #: 16853 JW
32 OILED DEBRIS? Y N 38 STREAM NAME: _____
33 SHORELINE TYPE: Headland Low-lying Rocks Beach Cove 39 OIL IN STREAM BED? Y N
Lagoon Marsh 40 OIL ON STREAM BANKS? Y N
34 WAVE EXPOSURE: High Moderate Low 41 OIL ON BEACH ADJACENT TO MOUTH? Y N
(within 50 meters)
35 SUBSTRATE TYPE: Bedrock ✓ Boulder Cobble ✓ 42 OIL WITHIN 1 MILE OF STREAM? Y N
Gravel ✓ Sand Mud/silt

Where: upper-middle inter-tidal

43 ANADROMOUS FISH PRESENT? Y N

44 ANADROMOUS FISH OBSERVATION

Species	Aerial	Ground

COMMENTS: penetration varied from 1-2mm to 4-6" or more.

large patches of mousse on south side of stream.

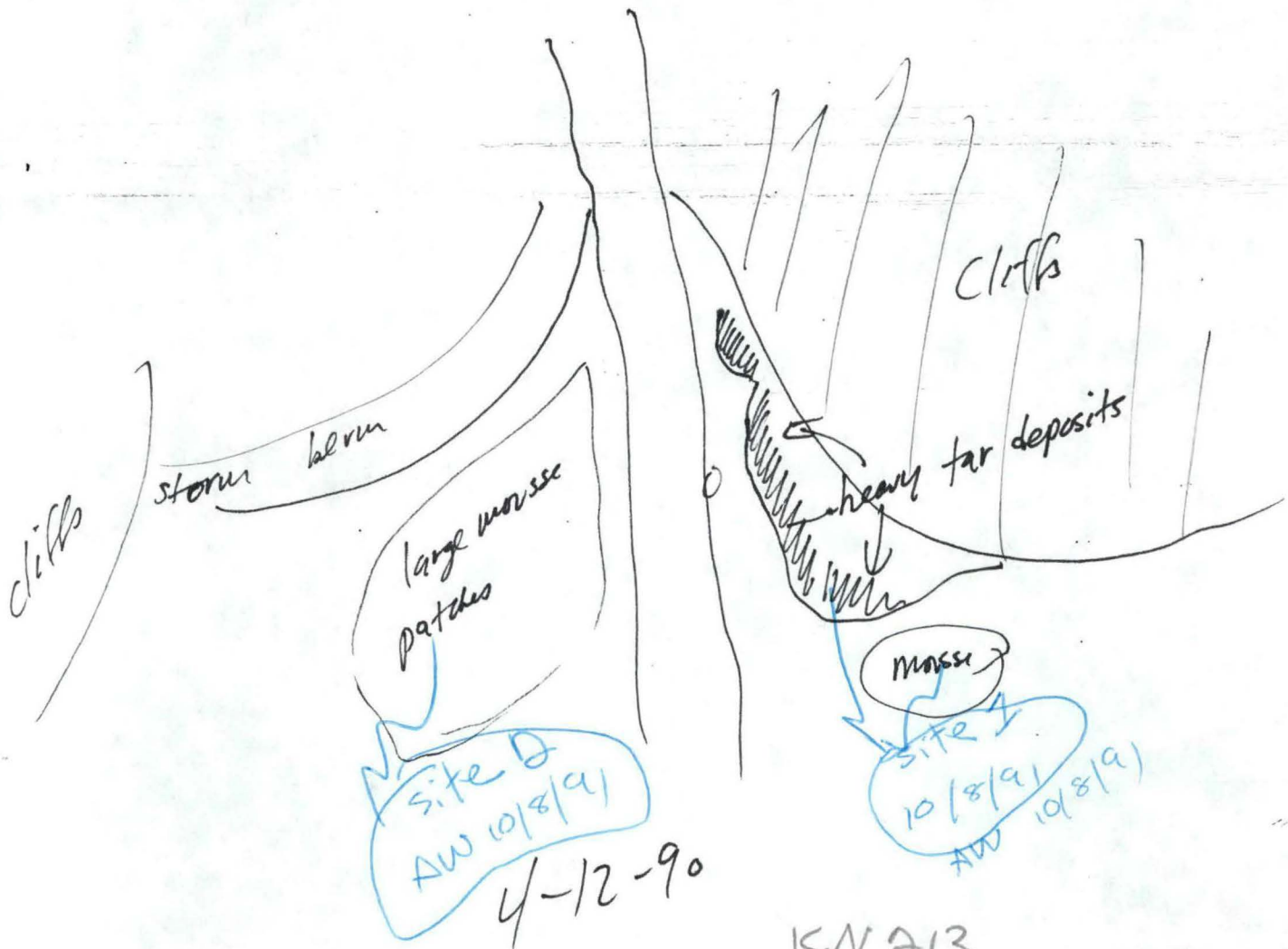
heavily oiled cliffs on North side like with needles

impregnated in them.

shovel / stream

FRAME(S)

DESCRIPTION

46 OIL DISTRIBUTION DIAGRAM

= Sample taken
 = Photo frame # and
 shot direction.



AJW
Pre-ANADSCAT-90

ADF&G MULTI-ASSESSMENT DATA FORM

1 SURVEY TYPE: BS SS DS TS AVS SCHA MMS PTA

2 REGION: PWS KP, CI K, AP

METHOD: Aerial Ground Boat

3 DATE: 4.12-90

15 HIGH TIDE TIMES: 1

21 TEAM RECORDER: R. Gustin

4 START TIME: 0808

16 HIGH TIDE HTS: 1

22 OBSERVERS: 1 pilot

5 STOP TIME: 0815

17 LOW TIDE TIMES: 1

23 AGENCY: ADF&G HAB

6 SEGMENT #: KN213

18 LOW TIDE HTS: 1

24 PHOTOS TAKEN: Y (N)

7 STATION #: _____

19 TIDE HT AT SURVEY: _____

Roll #: _____ Frame: _____

8 K-UNIT: _____

Ebb Slack Flood Slack

25 VIDEO TAKEN: Y (N) TAPE#: _____

9 STAT AREA: _____

20 USCG QUAD: _____

Start: _____ End: _____

10 LAT: _____

11 LONG: _____

26 SAMPLES TAKEN? Y (N) Number _____

12 SOURCE: Map Loran

Oil _____

13 LOCATION: KNIGHT IS.

Sediment _____

14 DESCRIPTION: POA COVE

Biological _____

Water _____

EXTENT OF OIL

	SHORELINE				STREAM			
	L	W	M ²	%	L	W	M ²	%
27 SURFACE COVERAGE								
28 SURFACE THICKNESS								
29 PENETRATION								

30 OVERALL OIL IMPACT: N VL L M H TC

31 OIL TYPE: Pooled Mousse Tar Asphalt Sticky Stain

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 ✓ Boulder ✓ Cobble ✓
Gravel ✓ Sand ✓ Mud/silt ✓

36 CATALOGED ANAD. FISH SREAM? (Y) N

37 CATALOG #: 806-39-16853

38 STREAM NAME: _____

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: Upper-middle inter-tidal

43 ANADROMOUS FISH PRESENT? Y N

44 ANADROMOUS FISH OBSERVATION

Species Aerial Ground

COMMENTS: penetration varied from 1-2mm to 4-6" or more.

large patches of mousse on south side of stream.

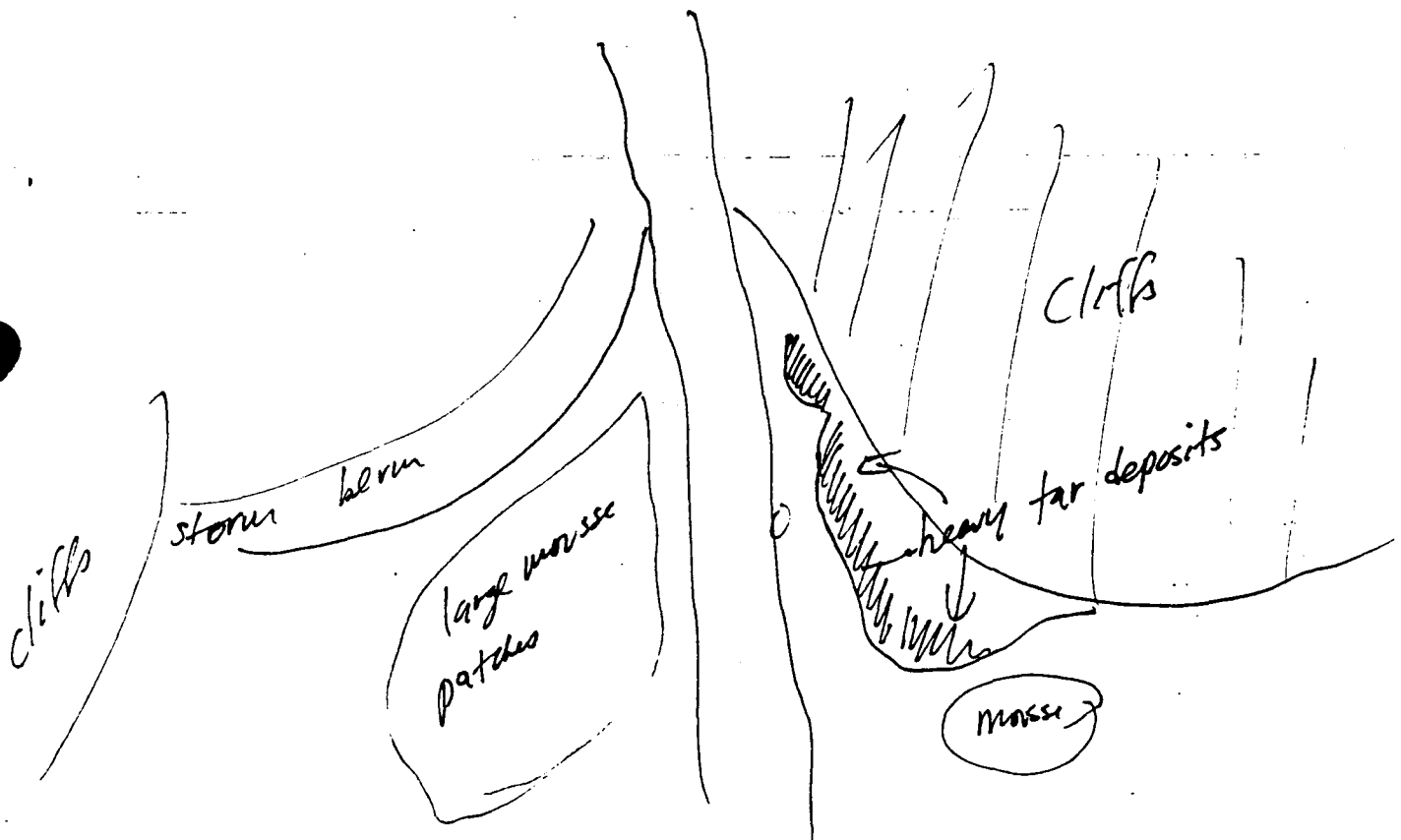
heavily oiled cliffs on North side with needles

impressed on them.

shovel/steam

FRAME(S)

DESCRIPTION

46 OIL DISTRIBUTION DIAGRAM

4-12-90

KN 213

226-30-16853 ^{HW}

ASC NUMBER:	SEGMENT NUMBER:	YR CATALOGED:
LOCATION:		
STREAM NAME:		LATITUDE:
KODIAK K-UNIT: .	LOCAL STREAM #:	LONGITUDE:
USGS QUADRANGLE:		LEGAL:
SHORELINE TYPE:	ALL SEGMENTS:	
WAVE EXPOSURE:		

ASC NUMBER: 226-30-16853
 SURVEY TYPE:
 METHOD:
 DATE: 4/12/96
 START TIME:
 STOP TIME:

TEAM RECORDER:
 OBSERVERS:
 AGENCY(IES):
 PHOTOS TAKEN?
 Roll #: Frames:
 VIDEO TAKEN? Tape Number:
 Counter Start:

SAMPLES TAKEN?

SAMPLE I.D. NUMBERS: 1. 2. 3.
 4. 5. 6.

	LENGTH m	WIDTH m	M2	%	THICK cm	PEN cm	OIL TYPE
SITE 1							AP/CT
SITE 2							MS/
SITE 3							MS
SITE 4							
SITE 5							

OVERALL OIL IMPACT: H

OIL IN STREAM CHANNEL?

SUBSTRATE

Bedrock ✓	Granule
Boulder ✓	Sand ✓
Cobble	Silt
Pebble	Veget. ✓

OIL ON BEACH WITHIN 50M OF STREAM MOUTH?

SPECIES					
COUNT					

COMMENTS: Oil on stream banks.

ANADSCAT-90

ADF&G MULTI-ASSESSMENT DATA FORM

1 SURVEY TYPE: BS SS DS TS AVS SCHA MMHS PTA 2 REGION: PWS KP,CI K,AP

METHOD: Aerial Ground Boat

3 DATE: April 27 1990 15 HIGH TIDE TIMES: 1 21 TEAM RECORDER: TOM CROWE

4 START TIME: 0726 16 HIGH TIDE HTS: 1 22 OBSERVERS: MIKE WILDERMER

5 STOP TIME: 0849 17 LOW TIDE TIMES: 1 23 AGENCY: ADF-G ADAR SCOT

6 SEGMENT #: KN213 18 LOW TIDE HTS: 1 24 PHOTOS TAKEN: Y N

7 STATION #: _____ 19 TIDE HT AT SURVEY: _____ Roll #: _____ Frame: _____

8 K-UNIT: _____ Ebb Slack Flood Slack 25 VIDEO TAKEN: Y N TAPE#: _____

9 STAT AREA: _____ 20 USCG QUAD: SEWARD B/2 Start: _____ End: _____

10 LAT: _____ 11 LONG: _____ 26 SAMPLES TAKEN? Y N Number

12 SOURCE: Map Loran 011 _____

13 LOCATION: RUA COVE Sediment _____

14 DESCRIPTION: KNIGHT ISLAND Biological _____

Water _____

EXTENT OF OIL

	SHORELINE				STREAM			
	L	W	M ²	%	L	W	M ²	%
27 SURFACE COVERAGE								
28 SURFACE THICKNESS	(SEE MAP)							
29 PENETRATION								

30 OVERALL OIL IMPACT: N VL L M H

31 OIL TYPE: Pooled Mousse Tar Asphalt Sticky Stain

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 Boulder X Cobble
Gravel X Sand Mud/silt

36 CATALOGED ANAD. FISH SREAM? Y N

37 CATALOG #: 226-30-16953

38 STREAM NAME: RUA CREEK

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: _____

43 ANADROMOUS FISH PRESENT? Y N

44 ANADROMOUS FISH OBSERVATION

Species	Aerial	Ground

(note) COMMENTS: LARGE EAGLE NEST LEFT SIDE OF CREEK

E(S)

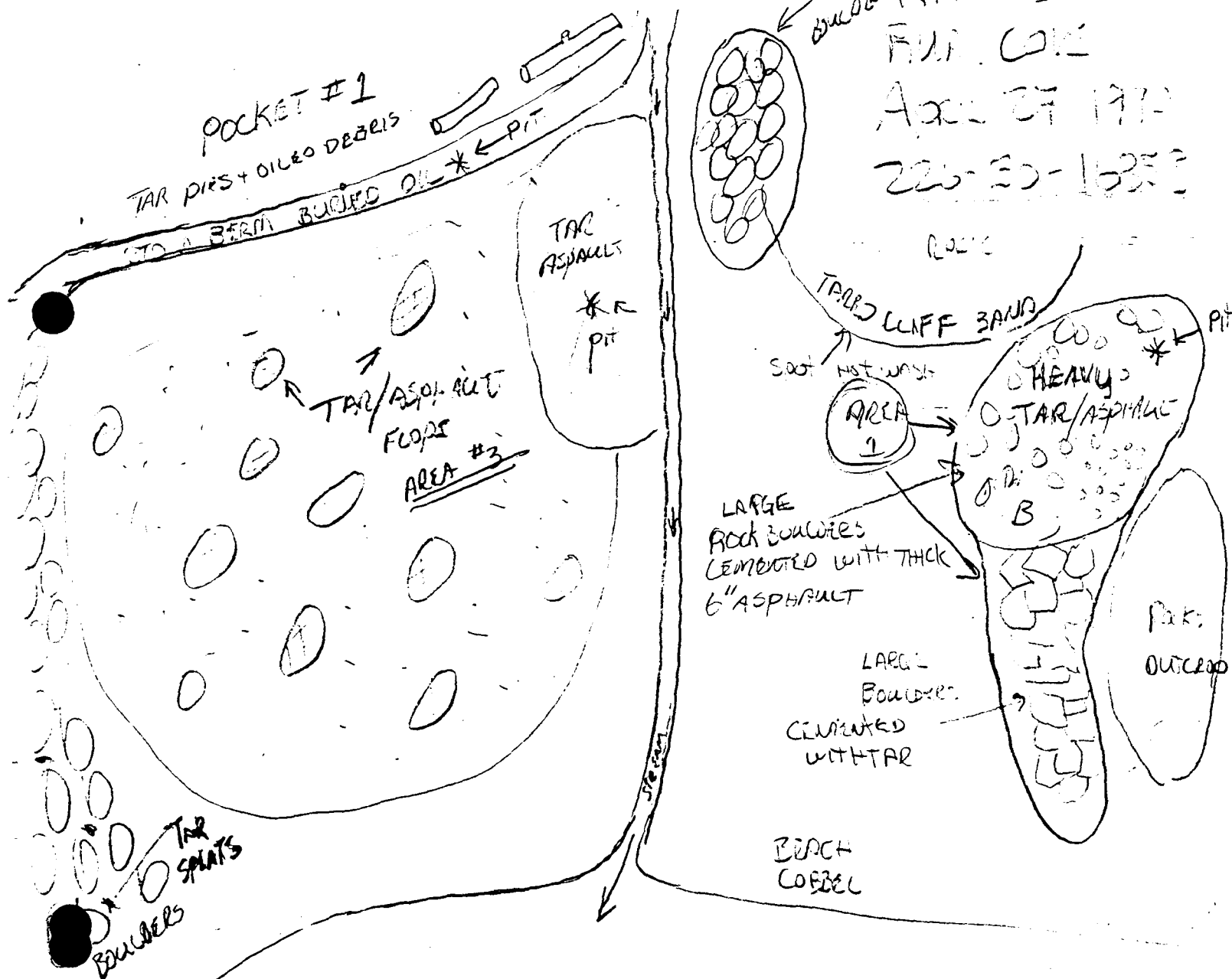
RECOMMENDATION

DESCRIPTION

THIS COAST GUARD STATION STOPS THE STEADY
WIND FROM THE NORTHEAST AND THE SOUTHWEST
AREA A - 1 - 500' OF COAST - LEAST SIDE OF AREA (B) AND
POCKET #1 SUPERFICIAL TAR OILS AND OILED DEBRIS. SITE TWO NOT
WIND AROUND OF LARGE ROCKS, BOULDERS AND CLIFF SAND
AREA 1, 2, 3 - SITE - TILL AREA WITH CAT + ROUSE
BAR AND HOT WATER WASH STORM BERM AND AREA 1 + 11
A SECOND TIME - STEP TO PUMP SOLD FERTILIZER (12 LBS)
IN A FLOW AT STORM BERM (SEE ATTACHED MAP).

INIPOL IS NOT RECOMMENDED

48 OIL DISTRIBUTION DIAGRAM



ASC NUMBER: SEGMENT NUMBER: YR CATALOGED:
 LOCATION: LATITUDE:
 STREAM NAME: LONGITUDE:
 KODIAK K-UNIT: LOCAL STREAM #:
 USGS QUADRANGLE: LEGAL:
 SHORELINE TYPE: ALL SEGMENTS:
 WAVE EXPOSURE:

ASC NUMBER: 226-30-16853 TEAM RECORDER:
 SURVEY TYPE: OBSERVERS:
 METHOD: AGENCY(IES):
 DATE: 4/27/90 PHOTOS TAKEN?
 START TIME: Roll #: Frames:
 STOP TIME: VIDEO TAKEN? Tape Number:
 Counter Start:

SAMPLES TAKEN?

SAMPLE I.D. NUMBERS: 1. 2. 3.
 4. 5. 6.

	LENGTH m	WIDTH m	M2	%	THICK ^m cm	PEN cm	OIL TYPE
SITE 1					.15		AD
SITE 2							TTB CT/CV
SITE 3							AD
SITE 4							TTB/OR
SITE 5							

OVERALL OIL IMPACT: H

OIL IN STREAM CHANNEL?

OIL ON BEACH WITHIN 50M OF STREAM MOUTH?

SUBSTRATE

Bedrock Granule
 Boulder Sand
 Cobble Silt
 Pebble Veget.

SPECIES					
COUNT					

COMMENTS: Recommendations - This cove should be treated in steps.

The 1st step would be to manually remove all asphalt on area(3A) right side of creek, left side at Area(1B) and pocket #1 soprattutto tar pies and oiled debris.

Step 2nd - Hot wash areas of large rocks, boulders and cliff band areas 1,2,3.

Step 3 - Till areas with cat & bar and hot water wash storm berm and area 1+3 a second time.

Step 4 - Bury solid fertilizer pellets in a furrow at storm berm (see attached map). Tripol is not recommended.

ANADSCAT
90

#1

ADF&G MULTI-ASSESSMENT DATA FORM

1 SURVEY TYPE: BS ☒ DS TS AVS SCHA MMHS PTA2 REGION: ☒ PWS KP, CI K, APMETHOD: Aerial ☒ Ground Boat3 DATE: April 27 199015 HIGH TIDE TIMES: /21 TEAM RECORDER: TOM CROW4 START TIME: 072616 HIGH TIDE HTS: /22 OBSERVERS: MIKE WIDOMER5 STOP TIME: 084917 LOW TIDE TIMES: /23 AGENCY: ADFG ANADSCAT6 SEGMENT #: KN21318 LOW TIDE HTS: /24 PHOTOS TAKEN: Y ☒ N

7 STATION #:

19 TIDE HT AT SURVEY:

Roll #: Frame:

8 K-UNIT:

Ebb Slack Flood Slack

25 VIDEO TAKEN: Y ☒ N TAPE#:

9 STAT AREA:

20 USCG QUAD: SEWARD B/2

Start: End:

10 LAT:

11 LONG:

26 SAMPLES TAKEN? Y ☒ N Number

12 SOURCE: Map Loran

13 LOCATION: RUA Cove14 DESCRIPTION: KNIGHT ISLAND

Oil

Sediment

Biological

Water

EXTENT OF OIL

27 SURFACE COVERAGE

28 SURFACE THICKNESS

29 PENETRATION

30 OVERALL OIL IMPACT: N VL L M H31 OIL TYPE: Pooled Mousse Tar Asphalt Sticky Stain32 OILED DEBRIS? Y N33 SHORELINE TYPE: Headland Low-lying Rocks Beach Cove
Lagoon Marsh34 WAVE EXPOSURE: High Moderate Low35 SUBSTRATE TYPE: Bedrock Boulder X CobbleGravel X Sand Mud/silt36 CATALOGED ANAD. FISH SREAM? Y N37 CATALOG #: 226-30-1685338 STREAM NAME: RUA Creek

39 OIL IN STREAM BED? Y N

40 OIL ON STREAM BANKS? Y N41 OIL ON BEACH ADJACENT TO MOUTH? Y N
(within 50 meters)

42 OIL WITHIN 1 MILE OF STREAM? Y N

Where:

43 ANADROMOUS FISH PRESENT? Y N

44 ANADROMOUS FISH OBSERVATION
Species Aerial Ground

COMMENTS:

note: LARGE EAGLE NEST LEFT SIDE OF CREEK

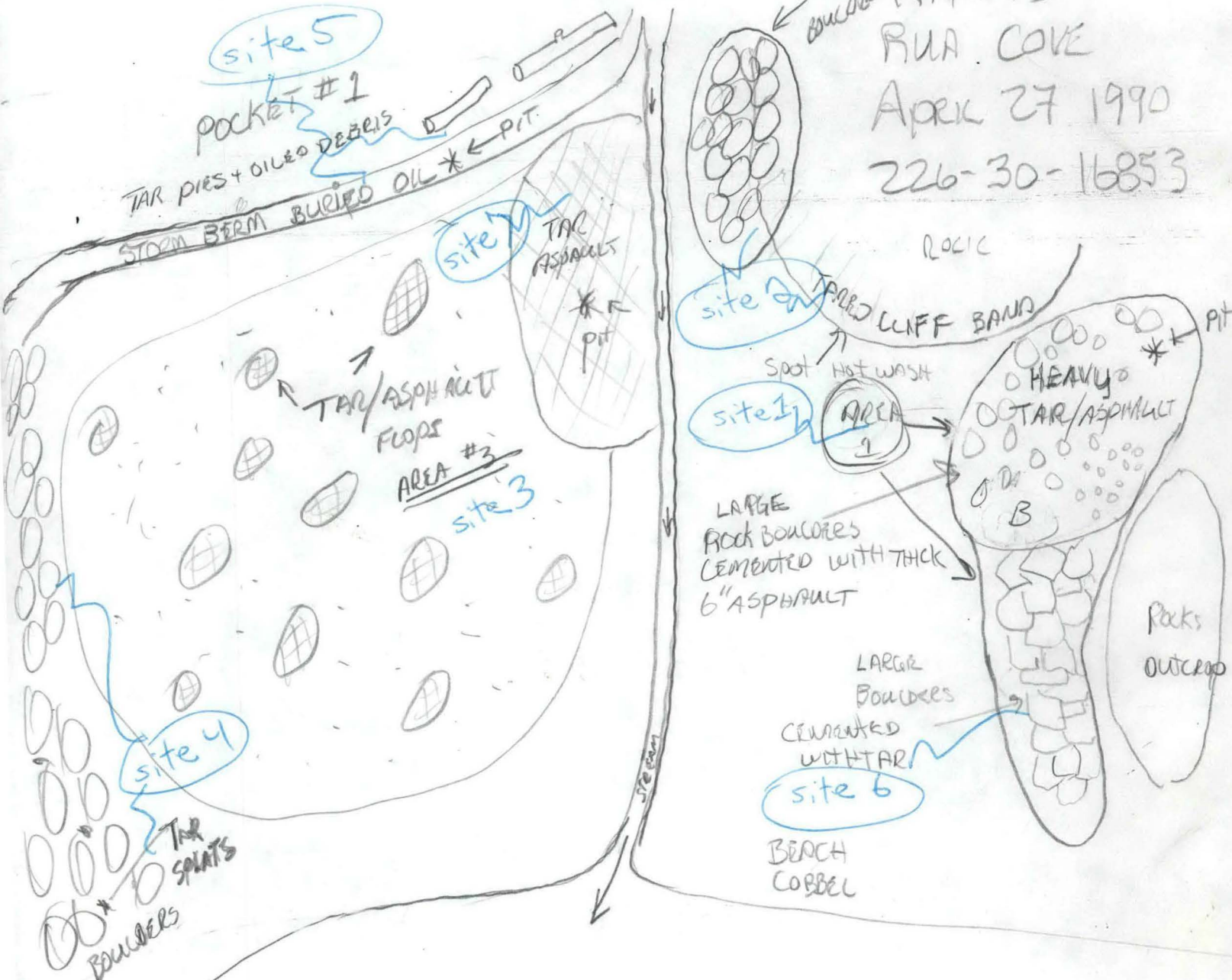
FRAME(S)

RECOMMENDATION:

DESCRIPTION

THIS COVE SHOULD BE TREATED IN STEPS. THE 1ST STEP WOULD BE TO MANUALLY REMOVE ALL ASPHALT ON AREA (A) RIGHT SIDE OF CREEK, LEFT SIDE AT AREA (B) AND PACKET #1 SUPERFICIAL TAR PIES AND OILED DEBRIS. STEP TWO HOT WASH AREAS OF LARGE ROCKS, BOULDERS AND CLIFF BAND AREA 1, 2, 3. STEP III TILL AREAS WITH CAT + ROPSE BAR AND HOT WATER WASH STORM BERM AND AREA I+III A SECOND TIME. STEP IV BURN SOLID FERTILIZER PELLETS IN A FURROW AT STORM BERM (SEE ATTACHED MAP).
 INIPOL IS NOT RECOMMENDED.

46 OIL DISTRIBUTION DIAGRAM



Alaska Department of Fish and Game
ANADSCAT Observations and Recommendations
Team 15 - Michael Wiedmer and Tom Crowe

27 April 1990

ASC # 226-30-16853

Segment KN-213

Observations The intertidal zone surrounding this channel is sheltered from wave action by large bedrock outcrops guarding either side of the stream mouth. Very heavy oiling remains at this site. Additionally, large volumes of mobile oil near the stream will act as a source of chronic re-oiling if not thoroughly treated.

3 North of the channel (the right side of ADF&G's Multi-Assessment Data Form diagram), a very heavy tar mat covers an extensive portion of the upper-intertidal zone, coating boulders and cobbles. Closer to the channel and further upstream, large tar patties are trapped between boulders. Bedrock walls bordering the beach are coated with a thick layer of tar.

Immediately adjacent to the south of the channel, tar mats cover and penetrate into a cobble substrate. Beyond this patch, scattered tar patties occur throughout the mid- and upper-intertidal zone. The gravel storm berm contains buried oil and oiled debris (logs and pom-poms). Tar splatters occur on the boulders at the southern edge of the cove.

Approximately 100 meters north of the channel, a protected cove contains large amounts of mobile oil trapped between boulders.

Treatment Recommendations Manually remove all surface tar mats and patties. Remove oiled debris from storm berm. Hot water wash oiled large boulders and bedrock walls. Displace clean gravel from the storm berm to expose zone of oil. Remove oil sediments, hot washing if necessary. Till heavily oiled areas after surface oil removal to speed weathering of remaining contaminated substrate. See ADF&G's Multi-Assessment Data Form for additional treatment suggestions.

The large volume of mobile oil 100 meters north of the channel must be thoroughly treated to prevent the chronic re-oiling of this stream.

SURFELINE OILING SUMMARY (ANAD.)

REVISION NO.

OG WILLIAM LEID USCG McMAHON SEGMENT ST/ KN213
 BIO MICHAEL FAWCETT LAND REP TOM CLOWE AVE STRAIN 226-30-16851 OF
 EXXON GUS GARCIA ADFG MIKE WIDNER TIME 7:30
 TEAM NO. 15 TIDE LEVEL +1 FT DATE 27 APR 1990 10/6
 EST. SUBDIVISION LENGTH: 70 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo
 SURFACE SEDIMENTS: R 30 % B 30 % C 50 % P 20 % G 0 % S 0 % M 0 % V 0
 SLOPE: Long 80 % Hang 20 % Vert 0 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ Ht
 OIL CATEGORY LENGTH: W 30 m M 0 m N 2 m VL 0 m NO 38

SURFACE OIL

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

PAVEMENT H (F) 375 sq. m by 7PATTIES / TARBALLS 1 ENEAR SHORE SHEEN? (NO) BR RW SL

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

Did you Col
DEBRIS
☐ YES ☒ NO

TYPE 0#BAGS 0

Photographs:

Roll No. AS-15-6Frames 25-31

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR				PIT ZONE				A N A	S U B	T	SURFA SUBSURF SEDIME
		OP	OR	OL	OF	NO		UO	VO	1	2	3	4	SU	M	E	U				
1	40			X			10-20	X						X					N		P/C
* 2	25		X				0-10	X							X				N		P/G
* 3	35		X				0-7	X						X					N		P/G

COMMENTS

* OILED INTERVAL < 5cm IN PIT NOS. 2 AND 3. DOES NOT CONSTITUTE SUBSURFACE OIL.

Not true
A.W 10/8/91
AOTG
Any oil deeper than 5cm constitutes subsurface

REVIEWED JWDATE 5-1-90

11/63
 WILLIAM NEID
 SEGMENT ST/ KN213
 STREAM 226-30-16853

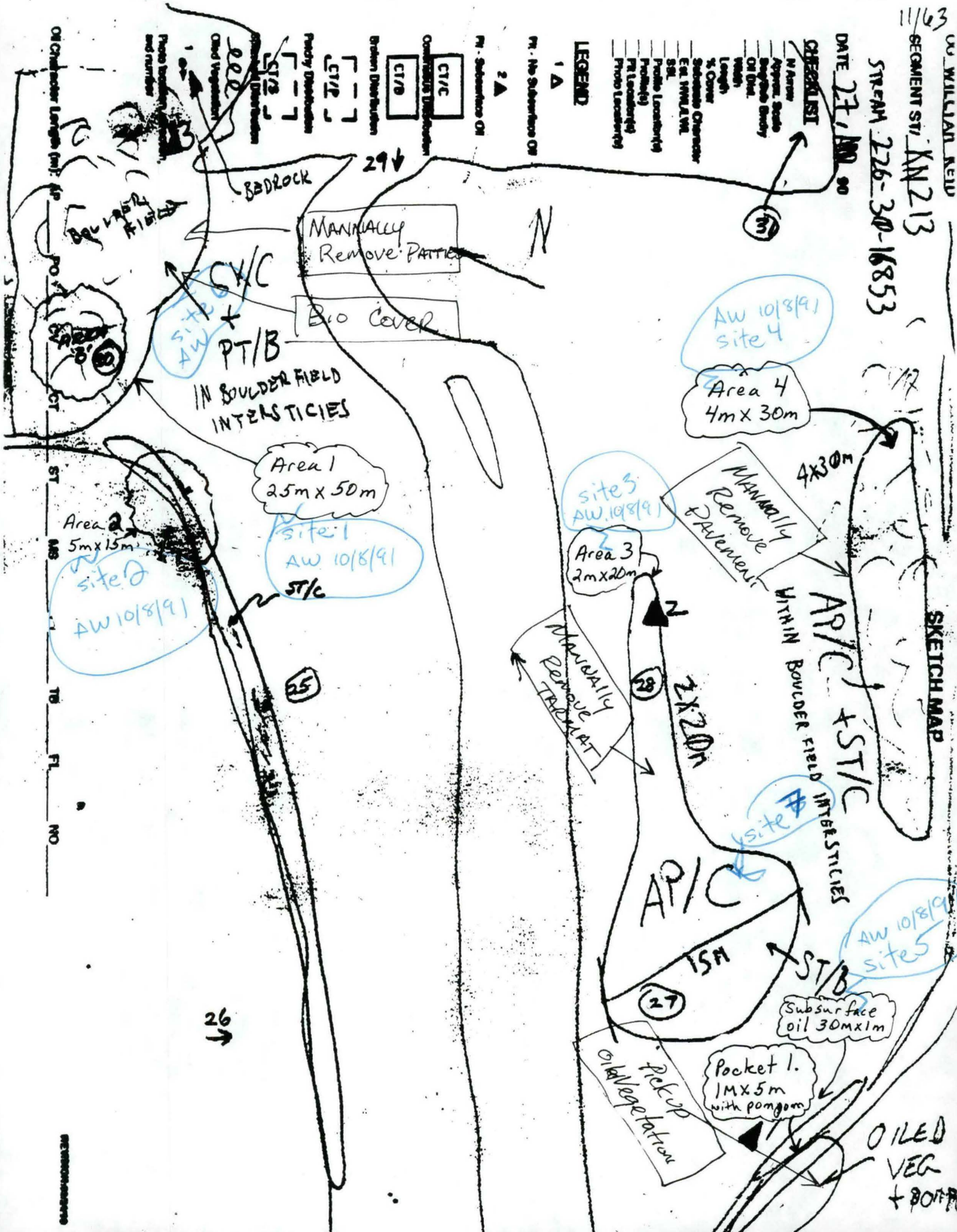
DATE 27, APR 90

CHECKLIST

- M Area
- Approx. State
- Geologic Study
- Oil Data
- Veget.
- Length
- % Cover
- Substrate Character
- Est. INHABIT
- Stl.
- Pondus (Lumens)
- Proctos
- Fl. (Lumens)
- Photo (Lumens)

LEGEND

- 1 A
- 2 A
- 3 A
- 4 A
- 5 A
- 6 A
- 7 A
- 8 A
- 9 A
- 10 A
- 11 A
- 12 A
- 13 A
- 14 A
- 15 A
- 16 A
- 17 A
- 18 A
- 19 A
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- 96 A
- 97 A
- 98 A
- 99 A
- 100 A



P 1 of 2 14/65

Segment KN 213

27 April 90

Stream 226-30-16333

Michael Fawcett

Ecological Summary

This medium-size stream has an intertidal portion about 60m long, partially sheltered from waves by bedrock outcrops at the mouth of the cove. The heaviest remaining oil is an asphalt pavement area among UTZ boulders directly behind the bedrock outcrop that forms the NE part of the mouth of the cove.

Other asphalt and buried oil was found on the south side of the stream in the UTZ. Below the oiled areas is a biologically rich MTZ and LTZ, especially near the stream mouth. The sand/pebble LTZ has infaunal clams, moon snails, worms, etc., and shows signs of a lot of recent sea otter activity (craters in the bottom and broken clam shells). Dense populations of barnacles, *Fucus*, littorines, and whelks occur on boulders and bedrock, and a dense mussel bed exists below the asphalt area on the north side of the stream. Tilling, hot wash, manual removal and bio-remediation are recommended for removing the remaining oil. These activities should be conducted with careful attention to placement of absorbent booms and pom-poms to prevent run-off of

segment KN215
stream 226-30-16853

P 2 of 2 15/6
27 Apr 90

close supervision of workers to minimize
trampling and disturbance in the mussel
beds and the rich lower intertidal area.

M H Fawcett

FIELD C.ORELINE COMMENT SHEET

SEGMENT ST 1 RN 213 SUBDIVISION: 30-16 853 DATE 4/27/90

USCG

NAME CWO MC NATION SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

1. MANUAL CLEAN-UP: REMOVE MOUSSE + TAR PATTIES (PER MAP)
2. SPOT WASH (PER MAP)
3. BIOREMEDIATE (PER MAP)

ADF16
ADEC

NAME TOM CROWE SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

THIS AREA SHOULD BE TREATED IN SEVERAL STEPS. FIRST STEP WOULD BE TO REMOVE ALL TAR AND ASPHALT AS POSSIBLE FROM STORM BERM, AREAS #1, #2, #3 AND TAR FROM BETWEEN BOULDERS. SECOND STEP WOULD BE TO HOT WATER WASH ALL OILED AREAS IN THE COVE INCLUDING TARED CLIFF AREAS AND BOULDERS. ONCE THIS HAD BEEN COMPLETED AREA #1 AND #3 SHOULD BE TILLED WITH PICK AND SHOVEL OR WITH USE OF A DOZER WITH RIPPER BAR ATTACHED. STEP #4 WOULD BE TO HOT WATER WASH THESE AREAS AGAIN. THE LAST STEP IS TO BURY SOLID FERTILIZE PELLETS IN UPPER INTERTIDAL STORM BERM TO INHANCE BIOREMEDIATION.

LAND MANAGER

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

PWS, SEWARD AND TOWMER 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 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 267-2206
- ✓ 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 (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
 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

1A 1B
ST
AY

3410
1000
1000
1000

1. $\frac{d}{dt} \left(\frac{1}{2} m v^2 \right) = \frac{d}{dt} \left(\frac{1}{2} m \dot{r}^2 \right)$
 2. $\frac{d}{dt} \left(\frac{1}{2} m \dot{r}^2 \right) = m \dot{r} \ddot{r}$
 3. $\frac{d}{dt} \left(\frac{1}{2} m \dot{r}^2 \right) = m \dot{r} \ddot{r}$
 4. $\frac{d}{dt} \left(\frac{1}{2} m \dot{r}^2 \right) = m \dot{r} \ddot{r}$
 5. $\frac{d}{dt} \left(\frac{1}{2} m \dot{r}^2 \right) = m \dot{r} \ddot{r}$
 6. $\frac{d}{dt} \left(\frac{1}{2} m \dot{r}^2 \right) = m \dot{r} \ddot{r}$
 7. $\frac{d}{dt} \left(\frac{1}{2} m \dot{r}^2 \right) = m \dot{r} \ddot{r}$
 8. $\frac{d}{dt} \left(\frac{1}{2} m \dot{r}^2 \right) = m \dot{r} \ddot{r}$
 9. $\frac{d}{dt} \left(\frac{1}{2} m \dot{r}^2 \right) = m \dot{r} \ddot{r}$
 10. $\frac{d}{dt} \left(\frac{1}{2} m \dot{r}^2 \right) = m \dot{r} \ddot{r}$

10m of
T.

KN-215

A

494

KN - 213

ADEC Segment Length: 3351m

Exon 4 : 3662m

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

METERS

Name: G. MACDONALD

Date: 3/31/90

Date Entered:

Jan
5/18/90

RECEIVED
MAY 15 1990

DEPT. OF
ENVIRONMENTAL CONSERVATION

ANADROMOUS FISH STREAM ASSESSMENT

REGION: PRINCE WILLIAM SOUND

SEGMENT: KN-213

SUBDIVISION: B

STREAM NO: 226-30-16853

Till or excavate storm berm & bio.
Rake or till pit areas & bio
Remove tan from beneath boulders
discuss Don's recommendation

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/ KN-213 STREAM NO: 226-30-16853 DATE 4/27/90

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)

5T-1 All Bald Eagle nests (3/1 to 6/1)

6Y Recreation: Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Subject stream is located within subdivision B (2 of 5). Avoid trampling and oiling of biologically rich MITZ AND LITZ.

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: Rickie Lee Dore DATE: 5/30/90

Subsurface Oil Observed: Yes X No Maximum Depth 20cm

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: Recommended treatment includes: 1) manual removal of tarmat and patties, 2) remove oiled vegetation and boom SUTZ and 3) bioremediate continuous cover in UITZ as indicated on attached sketch map. Work from 6/1 to 7/9 with approval of USFWS regarding eagle nest.

TAG COMMENTS:

TAG APPROVAL DATE: 5/29/90

ADEC ART WEINER Art Weiner

EXXON ANDY TGM Andy TGM

NOAA Barl Wessert Barl Wessert

USCG G.A. REITER G.A. Reiter

FOSC

[Signature]

DATE:

5/31/90

ANADROMOUS FISH STREAM EVALUATION ADDENDUM

CONSTRAINTS FOR STREAM NO. 226-30-16853

SEGMENT KN-213 SUBDIVISION B

WORK WINDOW

Manual Pickup
Tarmat Removal

OPEN

Bioremediation Less Than 100m From Stream

WORK PRIOR TO 7/10
(ADF&G MONITOR REQ.)

Bioremediation More Than 100m From Stream

OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

ADF&G catalogued anadromous stream (226-30-16853) is in Subdivision B. 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.

5T Bald Eagle Nest

NO CONSTRAINT. USFWS 6/1/90 map indicates no active nest within 400m of Subdivision B work site.

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

SEE SUBDIVISION CONSTRAINT ADDENDUM KN-213B
FOR ADDITIONAL CONSTRAINT INFORMATION.

FOSC

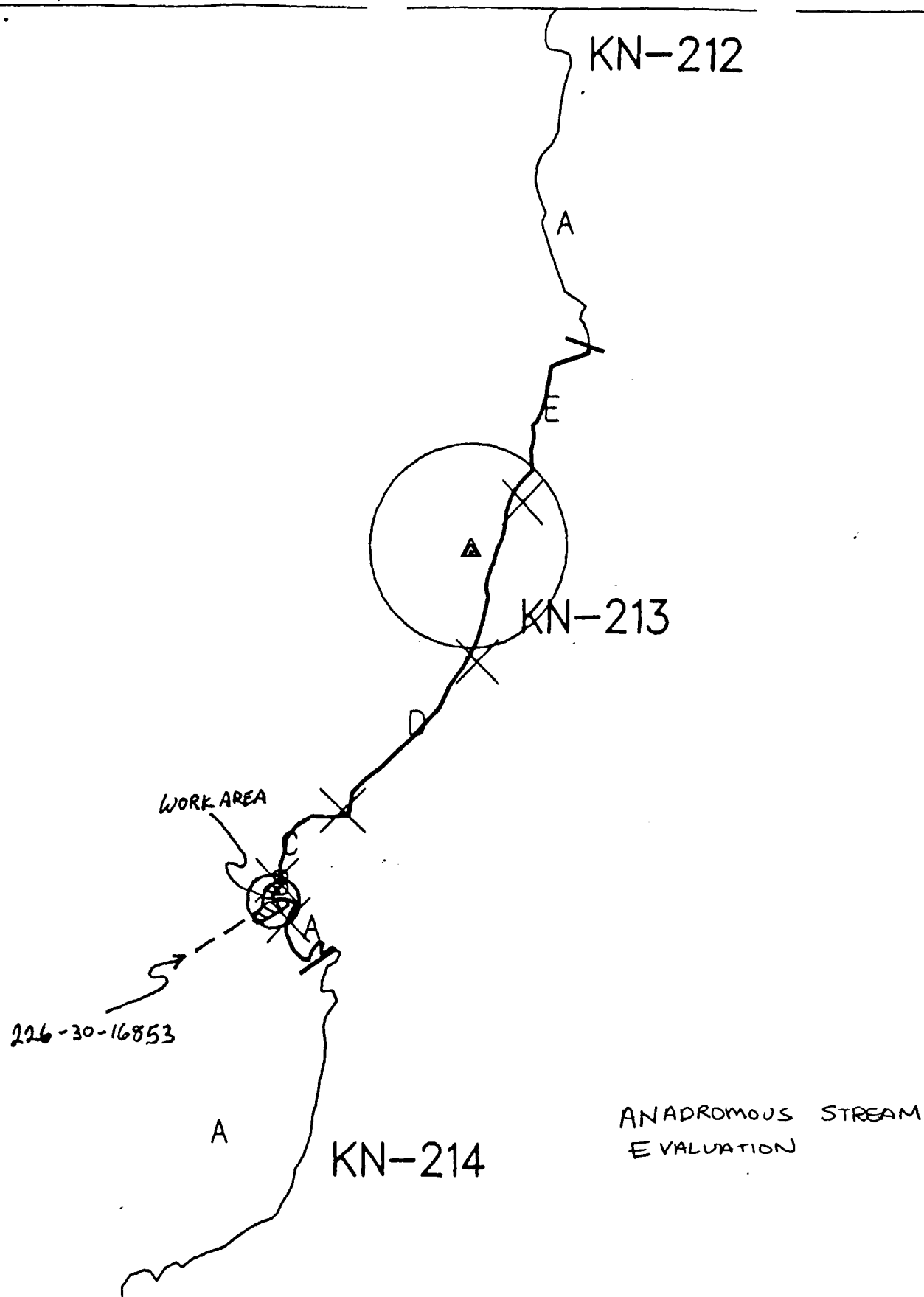
Date

6-10-90

Prepared by

Date

6/10/90



Exxon Company, USA
Map Key: PWS-KN-213
June 05, 1990



ECOLOGY MAP
SEGMENT KN-213
SUBDIVISION B (2 of 5)
METERS



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



ADF&G MULTI-ASSESSMENT DATA FORM

- 1) SURVEY TYPE: BS SS
- 2) REGION: PWS KP, CI K, AP
- 3) METHOD: Aerial Ground Boat
- 4) DATE: 5/13/91 16) HIGH TIDE TIME: _____
- 5) START TIME: 1900 17) HIGH TIDE HTS: _____
- 6) STOP TIME: 2000 18) LOW TIDE TIMES: 1900
- 7) SEGMENT #: KNA13B 19) LOW TIDE HTS: +2
- 8) K-UNIT: _____ 20) TIDE HT AT SURVEY: +2
- 9) LAT: _____ Ebb Slack Flood Slack
- 10) LONG: _____ 21) USCG QUAD: _____
- 11) ASC #: 226-30-16853
- 12) STREAM NAME: Aimee's Creek
- 13) LOCATION: Rua Cove Knight I
- 14) WAVE EXPOSURE: High Moderate Low
- 15) SHORELINE TYPE: Headland Low-lying Rocks Beach
Cove Lagoon Marsh
- 22) TEAM RECORDER: A. Weseman
- 23) OBSERVERS: Wes Ghormley ADEC
- 24) AGENCY: ADFG, ADEC
- 25) PHOTOS TAKEN: Y (N)
- ROLL #: _____ FRAMES: _____
- 26) VIDEO TAKEN: Y (N)
- TAPE # _____
- START: _____ STOP: _____
- 27) SAMPLES TAKEN? Y (N)
- SAMPLE I.D. _____

28) EXTENT OF OIL

	LENGTH m	WIDTH m	M2	%	THICK cm	PEN cm	OIL TYPE
SITE 1	10	30		10			HSOR
SITE 2	30	2			3cm		HSOR
SITE 3	10	1				0-15cm	LOR/OF
SITE 4	40	10		1	3-5cm		HSOR
SITE 5	20	10		30	3-5cm		HSOR

29) OVERALL OIL IMPACT:

H = >6m band with ≥50% oil coverage

(M) = >6m band with ≤ 50% oil coverage or ≥3m to ≤6m with ≥10% oil coverage

L = <3m band with >10% oil coverage

VL = ≤10% oil coverage regardless of band width

N = No oil observed

30) OIL IN STREAMBED: Y (N)

31) OIL ON BEACH ADJACENT TO MOUTH: (Y) N

32) SUBSTRATE TYPE (PERCENT):

Bedrock 10 Boulder 25 Gravel 20 Sand 5 Cobble 40 Mud/Silt _____

35) COMMENTS: Area looks 100% improved from 1 year ago. Residual tar/mat/mousse still present in site 1 and should be removed. Site 3 on stream bank contains LOR sed which should be manually tilled. HSOR sed in site 5 that are accessible should be removed. Site 6 contains accessible LOR sediments which if not removed will remain because they are in sheltered area. I was unable to locate oil in storm berms that I saw last fall - Active berm area; gravels had been removed & ^{new} logs deposited by storms. Imp to till area near stream - stream could migrate. Undiscovered residual HSOR sediments to right of site 3 may become apparent when weather warms or some rocks are turned. They should be picked up where encountered.

33) ANADROMOUS FISH PRESENT: Y N

34) WILDLIFE OBSERVATION

Species	Number
Hoary Marmot	1
Eagle	1
Raven	4
Gulls	6

KN 213B

ASC # 226-30-16853

5/13/91 MAYSAP 1900-2000

A. Weseman

pits

- #1 5-15cm OF
- 2 NO
- 3 20cm NO
- 4 35cm NO
- 5 35cm Lht st
- 6 NO
- 7 0-15cm LOR
- 8 0-20cm NO
- 9 0-5 OF
- 10 0-20 LOR st
- 11 0-20 HOR
- 1 06-NO
- 13 0-10- HOR

x - bedrock

☁ - large rocks & boulders

—•— drift logs

Rua Cove

N
↑

tombolo
divides subsegments
C4B

KN 213C

AP

HSOR
MS

site 1
HSOR
10x30-10%
ct - 20%

40 C/P
5/15
1/5

site 2
-30R/1patty e 3m/s

site 3
LOR/OF
1x10m
• 5m from stream

site 4
HSOR 1%
10x10-1%
ct - 10-20

site 5
H-Lsor
10x30
30%

site 6
HOR
5x5m
continuous

CT/S
5x30m

↑

↑

↑

↑

36) PHOTOLOG

FRAME(S)

DESCRIPTION

site 6 - $\frac{w}{5 \times 5m}$ $\frac{70}{100\%}$ $\frac{pen}{0-20cm}$ $\frac{oil}{HOR}$

▲
2

* Sample Taken
 * Photo Frame # and
 Shot Direction

A:EDC
April 3,

ADF&G MULTI-ASSESSMENT DATA FORM

- 1) SURVEY TYPE: BS SS 2) REGION: PWS KP, CI K, AP
- 3) METHOD: Aerial Ground Boat
- 4) DATE: 5/13/91 16) HIGH TIDE TIME: _____
- 5) START TIME: 1900 17) HIGH TIDE HTS: _____
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- 7) SEGMENT #: KN213B 19) LOW TIDE HTS: +2
- 8) K-UNIT: _____ 20) TIDE HT AT SURVEY: +2
- 9) LAT: _____ Ebb Slack Flood Slack
- 10) LONG: _____ 21) USCG QUAD: _____
- 11) ASC #: 226-30-16853
- 12) STREAM NAME: Aimee's Creek
- 13) LOCATION: Rva Cove Knight I
- 14) WAVE EXPOSURE: High Moderate Low
- 15) SHORELINE TYPE: Headland Low-lying Rocks Beach
Cove Lagoon Marsh
- 22) TEAM RECORDER: A. Weseman
- 23) OBSERVERS: Wes Ghermley ADEC
- 24) AGENCY: ADF&G
- 25) PHOTOS TAKEN: Y (N)
- ROLL #: _____ FRAMES: _____
- 26) VIDEO TAKEN: Y (N)
- TAPE # _____
- START: _____ STOP: _____
- 27) SAMPLES TAKEN? Y (N)
- SAMPLE I.D. _____

28) EXTENT OF OIL

	LENGTH m	WIDTH m	M2	%	THICK cm	PEN cm	OIL TYPE
SITE 1	10	30		10			HSOR
SITE 2	30	2			3cm		HSOR
SITE 3	10	1				0-15cm	LOR/OF
SITE 4	40	10		1	3-5cm		HSOR
SITE 5	20	10		30	3-5cm		HSOR

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H = >6m band with ≥50% oil coverage

(M) = >6m band with ≤ 50% oil coverage or ≥3m to <6m with ≥10% oil coverage

L = <3m band with >10% oil coverage

VL = ≤10% oil coverage regardless of band width

N = No oil observed

30) OIL IN STREAMBED: Y (N)

31) OIL ON BEACH ADJACENT TO MOUTH: (Y) N

32) SUBSTRATE TYPE (PERCENT):

Bedrock _____ Boulder _____ Gravel _____ Sand _____ Cobble _____ Mud/Silt _____

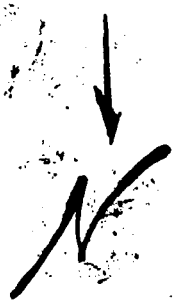
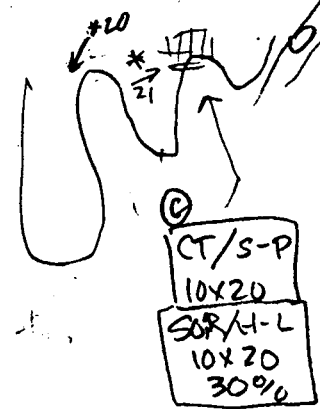
33) ANADROMOUS FISH PRESENT: Y N

34) WILDLIFE OBSERVATION

Species	Number
<u>Raven</u>	<u>4</u>
<u>Golden Eagle</u>	<u>1</u>
<u>Hoary marmot</u>	<u>1</u>
_____	_____
_____	_____

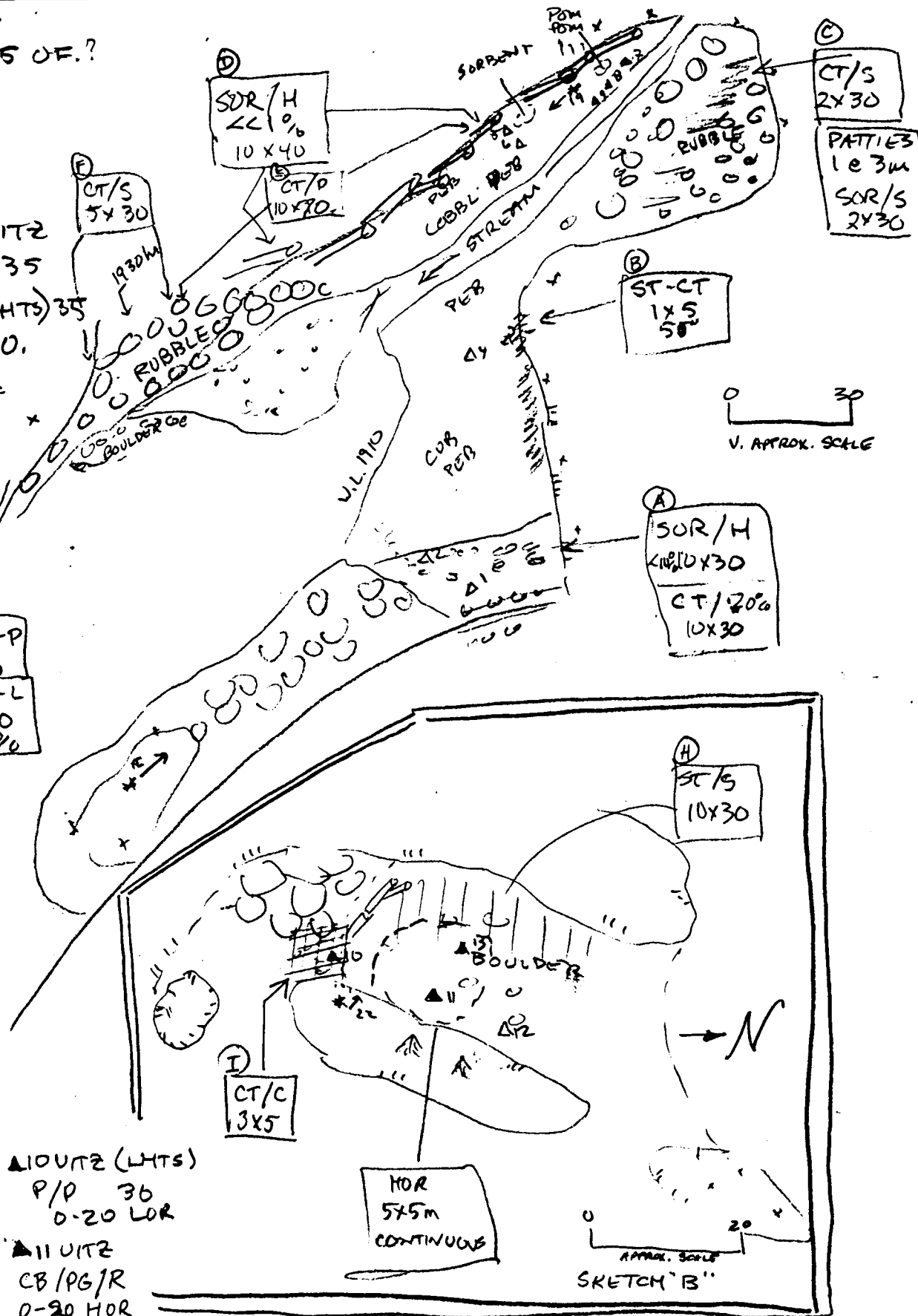
35) COMMENTS: Area looks 100% improved from 1 year ago. Residual tar mat/mousse still present in site 1 and should be removed. Site 3 on stream bank contains LOR sed which should be manually tilled. HSOR sed in site 5 that are accessible should be removed. Site 6 contains accessible LOR sediments which if not removed will remain because they are in sheltered area. I was unable to locate oil in storm berms that I saw last fall - Active berm area; gravels had been removed & ^{new} logs deposited by storms. Imp to till area near stream - stream could migrate. Undiscovered residual HSOR sediments to right of site 3 may become apparent when weather warms or some rocks are turned. They should be picked up where encountered.

Δ1 U1T2 15
 PC/SG 5-15 OF.
 Δ2 U1T2
 C/SG N.O.
 Δ3 U1T2 20
 P/GP/R N.O.
 Δ4 U1T2/M1T2
 P/SG N.O. 35
 Δ5 U1T2 (LHTS) 35
 GP/GP N.O.
 Δ6 U1T2/M1T2
 CP/GS N.O.

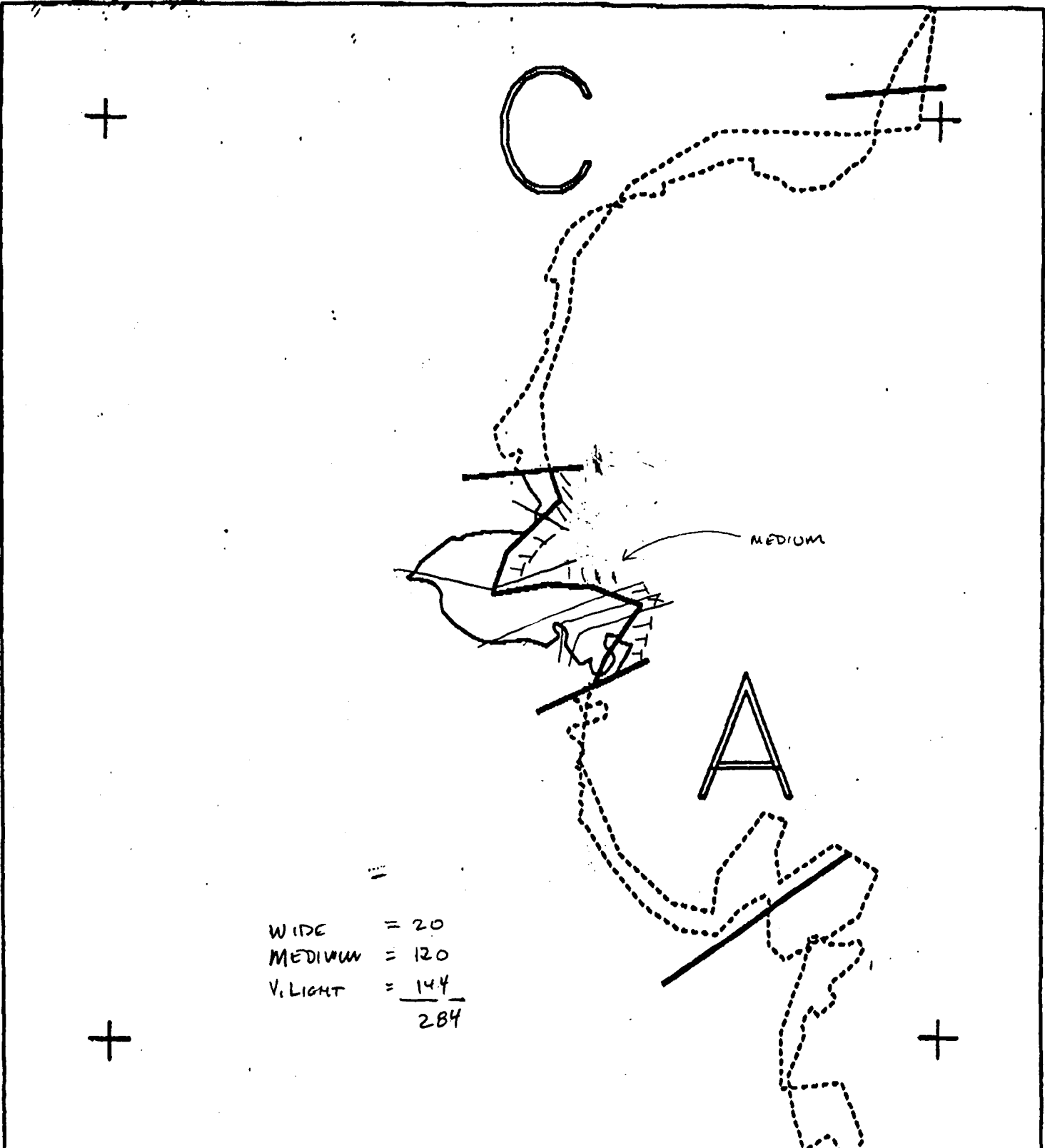


Δ7 U1T2
 PC/SG
 0-15 LOR
 Δ8 U1T2
 PC/SG
 0-20 N.O.
 Δ9 U1T2
 PC/SG
 0-5 OF.

Δ10 U1T2 (LHTS)
 P/P 36
 0-20 LOR
 Δ11 U1T2
 CB/PG/R
 0-20 HOR
 Δ12 U1T2 20
 CB/SG N.O.
 Δ13 U1T2 0-10
 C/SG/R HOR



ORIGINAL FIELD SKETCHES



WIDE = 20
MEDIUM = 120
V. LIGHT = 144
284

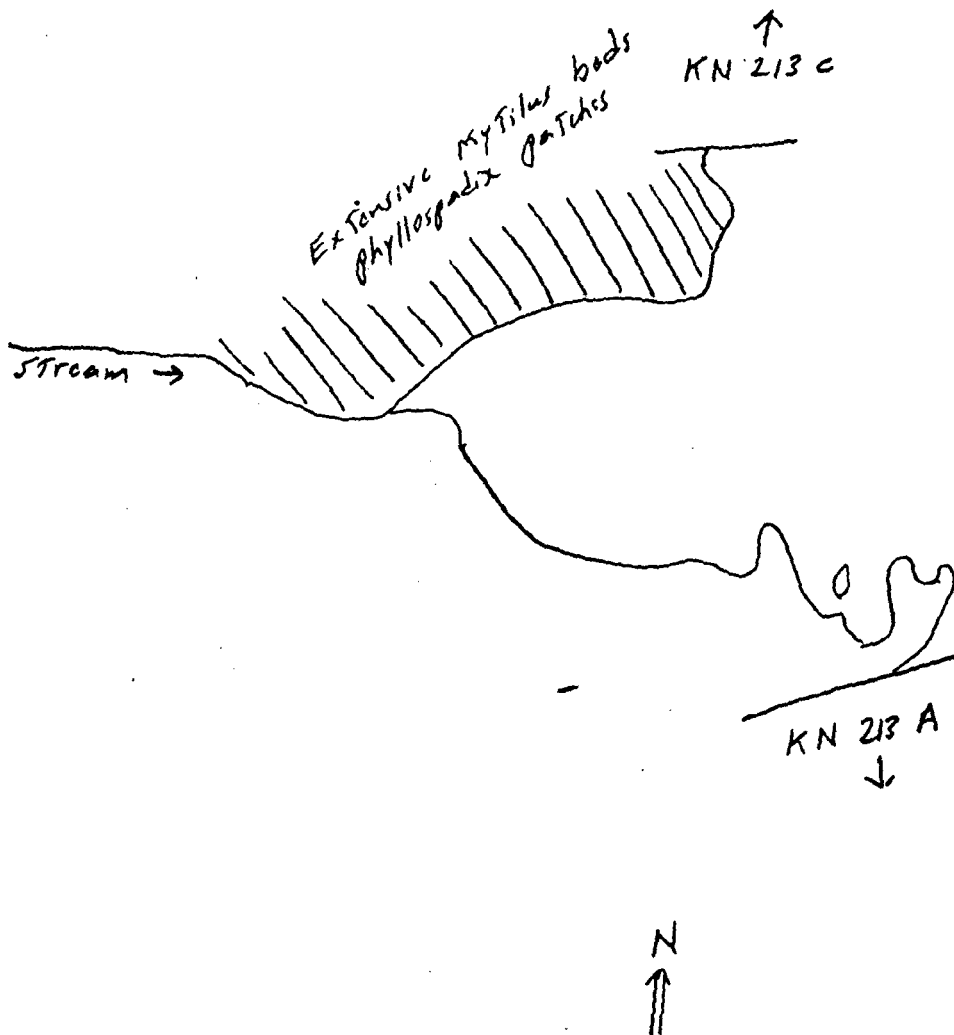
XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
0000 No Oil

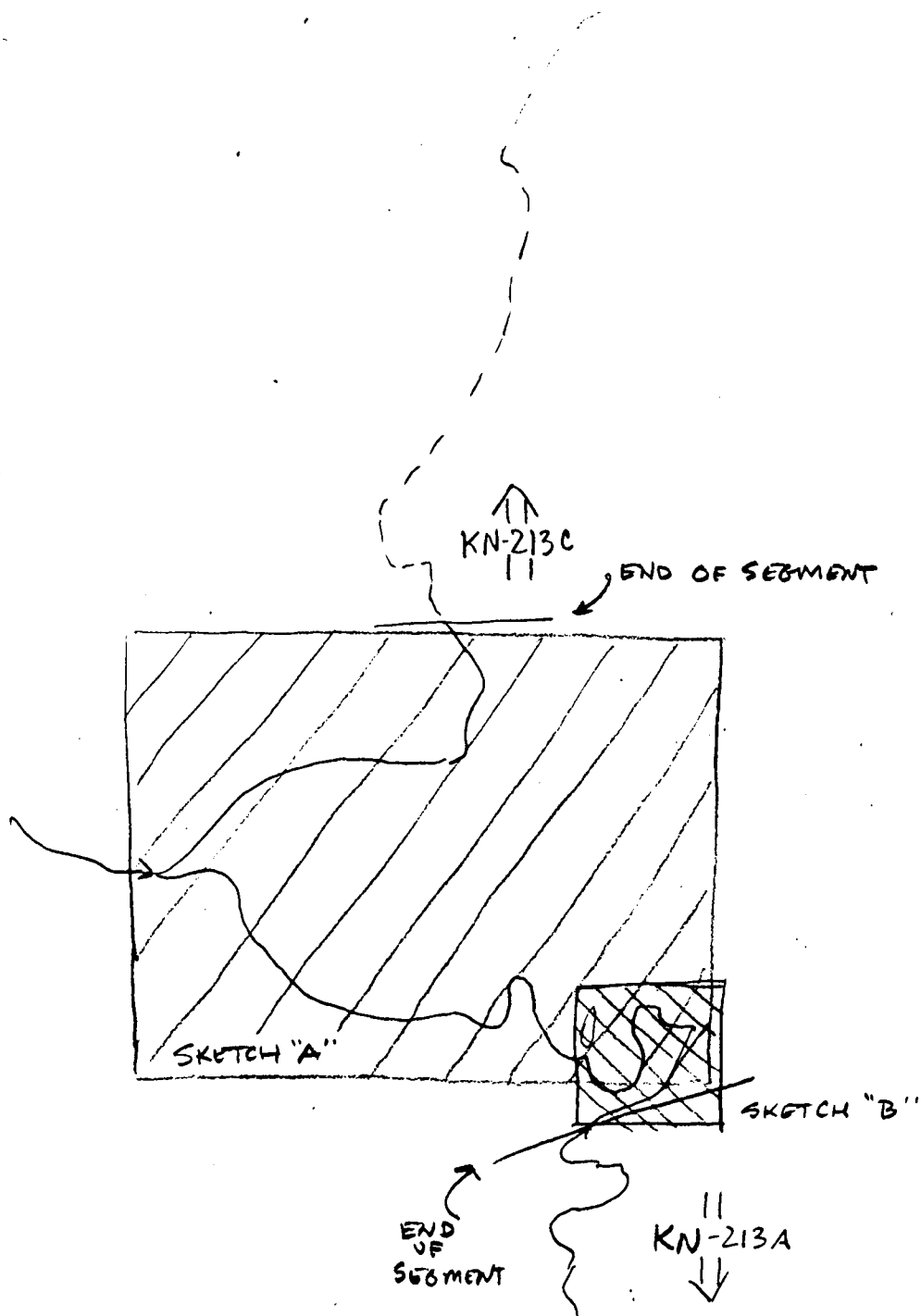
KN0213 B
ADEC Subsegment Length: 284m
METERS
0 100 200
AK State Plane Zone 4
850213b

Subdivision Field Map
Map Key: KNKN0213B
Name: HARPER
Date: 14 May 91
Date Entered:



Bio Sketch





KN-213B
SKETCH LOCATION
MAP
13 MAY 91
HARPER

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 3 **DATE** 5/13/91
SEGMENT # KN 213 **TIDAL HEIGHT(Range)** 2-3'
SUBDIVISION B **BIOLOGIST** STOKOR
SEA STATE Calm **WIND SPEED/DIRECTION** Calm
PHOTOGRAPHS: ROLL # **FRAME #**

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

Subsegment consists of a low energy cave beach of rubble/cobble/boulder enclosed by rock headlands and transected by an anadromous stream.

Biota in the upper intertidal is generally sparse, particularly on unstable rubble/cobble substrate, where it is limited to filamentous green algae and sparse barnacles.

Mid intertidal biota on stable boulders and bedrock consists of generally dense Fucus, patchy and generally dense barnacles and spat, and patches of attached Mytilus. Both barnacles/spat and attached Mytilus are more abundant S. of the stream. Interbedded Mytilus, conversely, are moderately dense and extensively distributed N. of the stream. Littorina (and egg masses) are widely distributed and dense on rubble/boulder. Limpets occur in scattered clusters on/under rubble/boulder, amphipods under cobbles, Nucella in dense clusters on boulders to S. of stream. Several surfgrass (Phyllospadix) patches occur N. of the stream. All in all a fairly complex subsegment in terms of distribution and abundance. Overall, community seems relatively abundant and diverse, with evidence of recent growth and recruitment.

Biota within/adjacent to surface oil area A is sparse or absent, increasing down slope to include extensive interbedded Mytilus, patchy Fucus, moderately dense barnacles, Littorina and egg masses, limpets, amphipods, patches of Phyllospadix.

(CONT. on attached sheet)

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds			
Waterfowl			
Gulls/kittiwakes	1	6	
Shorebirds			
Corvids	Ravens	4	
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

1. Bio Summary (cont) KN 213 B

- Biota within/adjacent to surface oil areas B & C is sparse, limited essentially to filamentous green algae and oligochaete worms (probably associated with the oil). Downslope biota consists primarily of patchy barnacles & spat, fairly dense Littorina with egg masses, clusters of limpets, and some interbedded Mytilus and amphipods.
- Biota within or proximal to surface oil areas D-F and subsurface pits 8 & 9 consists primarily of sparse barnacles and moderately dense Littorina. Downslope biota includes increased densities of barnacles and spat and Littorina and egg masses, filamentous green algae, patches of attached Mytilus (generally sparse), scattered clusters of limpets, amphipods, Nucella, and patches of Fucus.
- Biota within/proximal to surface oil area G consists of generally sparse barnacles and little else. Downslope biota includes dense barnacles and spat, Fucus, patches of attached Mytilus, dense clusters of Nucella, Pagurus, and moderately dense limpets.
- Biota within/adjacent to surface oil areas H & I sparse or absent. Downslope biota characterized by patchily dense Fucus, barnacles and spat, filamentous green algae, clusters of Nucella, and sparse limpets.

If additional cleanup is undertaken, avoid unnecessary disruption of established community in the mid to lower intertidal downslope from oiled areas. This applies particularly to the Mytilus and Phyllosopora beds N. of the stream mouth.

MAYSAP FIELD SHORELINE COMMENT SHEET


 TEAM NO. 3 SEGMENT KN 213 SUBDIVISION B DATE 5/13/91

ADEC

NAME Wesley GhormleySIGNATURE Wesley Ghormley

☐ NTR ☒ TREATMENT RECOMMENDED - subdivision contains an anadromous fish stream. Subsurface oil is present 1' from stream. Manually till area on rising tide, aggregate retrieve oil w/ snare boom. Remove all sorlap that is present thru-out area adjacent to stream. Subsurface HBR 6x5m area is very accessible & could be removed very easily. The subsurface oil is more characteristic of mousse, it is very soft & would melt & flow easily by increased temperature if not removed I believe it may become mobile & cause a threat to adjacent salmon spawning area.

EXXON

NAME Jon P. CzarneckiSIGNATURE Jon Czarnecki

☒ NTR This is AN ANADROMOUS stream segment. There is some subsurface oil and however the subsurface oil that is there appears to be in pockets and not uniform across the stream bed. There appears to be no sheen's present until the pits were dug. The cover is clean and creating no apparent problems. The beach life for a high energy area is abundant and healthy. The flora in and around the stream bed are alive and doing well.

LANDMANAGER

NAME Ed Haltness

OF

CAC

SIGNATURE

Richard E. Holtzman

☐ NTR This segment showed heavy oiling in various scattered locations, with patties and stained rock throughout. Some subsurface oil was detected in sections of this segment.

USCG/NOAA

NAME Jeffrey Dahlin / Peter Gleason LTJG

SIGNATURE

Peter Gleason

☒ NTR Only very low concentrations of oil and mostly none mobile. There is healthy biota present. Only area with significant oil is at the very south end (H&I) I concur with above NOAA statement (USCG)

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 3

SEGMENT KN 213

SUBDIVISION B

DATE 5/13/91

ADF+G

NAME Aimee Weseman

SIGNATURE Aimee Weseman

☐ NTR ☒ Treatment Recommended

Treatment to this Anadromous Fish Stream and high public use area should consist of:

- the manual tilling on a rising tide of SOR sediments along the streambank in the vicinity of pits #149. Tho not heavily oiled these sediments should be degraded while fish are absent to prevent possible contamination should the stream divert or overflow its banks

- the manual removal of any accessible AP/HSOR sediments adjacent to the stream, specifically in areas A, C, D, & G.

- the manual removal of HOR sediments in the vicinity of pits 11913.

This 5x5m continuous patch of moussey sediments is accessible & will weather very slowly due to it's sheltered location. It will remain for years if not removed.

MAYSAP FIELD SHORELINE TREATMENT SHEET

TEAM NO. 3

SEGMENT KN 213

SUBMISSION B

DATE 5/13/91

ADF+G

NAME Aimee Weseman

SIGNATURE Aimee Weseman

☐ NTR ☒ Treatment Recommended

Treatment to this Anadromous Fish Stream and high public use area should consist of:

- the manual tilling on a rising tide of SOR sediments along the streambank in the vicinity of pits #194. When not readily oiled these sediments should be degraded while fish are absent to prevent possible contamination should the stream divert or overflow its banks.

- the manual removal of any accreted HP/HSOR sediments adjacent to the stream specifically in areas A, C, D, & G.

- the manual removal of HGR sediments in the vicinity of pits 11913.

This 5x5m continuous patch of moussey sediments is accessible & will weather very slowly due to its sheltered location. It will remain for years if not removed.

Discrepancy comments:

KN213 B 22630-16853

5/20/91

complement
(HAB. has additional
site 3 based on
photo 7-9)

HAB

OG

Site 1

(same)

10x30

100% H50A

200% CT

Site A

(same)

Site 2

(same)

2x30 CT/S

Site C

ADF&G MULTI-ASSESSMENT DATA FORM

- 1) SURVEY TYPE: BS SS 2) REGION: PWS KP, CI K, AP
- 3) METHOD: Aerial Ground Boat
- 4) DATE: 5/13/91 16) HIGH TIDE TIME: _____
- 5) START TIME: 1900 17) HIGH TIDE HTS: _____
- 6) STOP TIME: 2000 18) LOW TIDE TIMES: 1900
- 7) SEGMENT #: KN213B 19) LOW TIDE HTS: +2
- 8) K-UNIT: _____ 20) TIDE HT AT SURVEY: +2
- 9) LAT: _____ Ebb Slack Flood Slack
- 10) LONG: _____ 21) USCG QUAD: _____
- 11) ASC #: 226-30-16853
- 12) STREAM NAME: Aimee's Creek
- 13) LOCATION: Rua Cave Knight I
- 14) WAVE EXPOSURE: High Moderate Low
- 15) SHORELINE TYPE: Headland Low-lying Rocks Beach
Cove Lagoon Marsh
- 22) TEAM RECORDER: A. Weseman
- 23) OBSERVERS: Wes Ghormley ADEC
- 24) AGENCY: ADF+G
- 25) PHOTOS TAKEN: Y (N)
- ROLL #: _____ FRAMES: _____
- 26) VIDEO TAKEN: Y (N)
- TAPE # _____
- START: _____ STOP: _____
- 27) SAMPLES TAKEN? Y (N)
- SAMPLE I.D. _____

28) EXTENT OF OIL

	LENGTH m	WIDTH m	M2	%	THICK cm	PEN cm	OIL TYPE
SITE 1	10	30		10			HSOR
SITE 2	30	2			3cm		HSOR
SITE 3	10	1				0-15cm	LOR/OF
SITE 4	40	10		1	3-5cm		HSOR
SITE 5	20	10		30	3-5cm		HSOR

29) OVERALL OIL IMPACT:

H = >6m band with ≥50% oil coverage

(M) = >6m band with ≤50% oil coverage or ≥3m to ≤6m with ≥10% oil coverage

L = <3m band with >10% oil coverage

VL = ≤10% oil coverage regardless of band width

N = No oil observed

30) OIL IN STREAMBED: Y (N)31) OIL ON BEACH ADJACENT TO MOUTH: (Y) N

32) SUBSTRATE TYPE (PERCENT):

Bedrock _____ Boulder _____ Gravel _____ Sand _____ Cobble _____ Mud/Silt _____

33) ANADROMOUS FISH PRESENT: Y N

34) WILDLIFE OBSERVATION

Species	Number
Hoary Marmot	1
Eagle	1
Raven	4
Gulls	6

35) COMMENTS: Area looks 100% improved from 1 year ago. Residual tar mat/mousse still present in site 1 and should be removed. Site 3 on stream bank contains LOR sed which should be manually tilled. HSOR sed in site 5 that are accessible should be removed. Site 6 contains accessible LOR sediments which, if not removed, will remain because they are in sheltered area. I was unable to locate oil in storm berms that I saw last fall - Active berm area; gravels had been removed & ^{new} logs deposited by storms. Imp to till area near stream - stream could migrate. Undiscovered residual HSOR sediments to right of site 3 may become apparent when weather warms or some rocks are turned. They should be picked up where encountered.

100

DESCRIPTION

site 6 - $\frac{w}{5} \times \frac{h}{5} m$ $\frac{7e}{100\%}$ $\frac{pen}{0-20 cm}$ $\frac{oil}{Hor}$

二二

A:EDDATFO
April 3, 1991

KN 213B

ASC # 226-30-16853

5/13/91 MAYSAP 1900-2000

A. Weseman

pits

- #1 5-15cm OF
- 2 NO
- 3 20cm NO
- 4 35cm NO
- 5 35cm Lkt st
- 6 NO
- 7 0-15cm LOR
- 8 0-20cm NO
- 9 0-5 OF
- 10 0-20 LOR ST
- 11 0-20 HOR
- 12 0-10 NO
- 13 0-10- HOR

x - bedrock

☼ - large rocks & boulders

— - drift logs

Rua Cove



KN 213C

tombolo
divides subsegments
C+B

HSOR
MS

site 1
HSOR
10x30-10%
CT - 20%

site 3
LOR/OF
1x10m
5m from stream

site 4
HSOR-10%
10x40
CT-10x20

site 2
HSOR/1 patty e 3m/s
2x30m

site 6
HOR
5x5m
continuous

CT/S
5x30m

ANADROMOUS FISH STREAM

Berm

MAXSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 3

SEGMENT KN 213

SUBDIVISION B

DATE 5/13/91

ADF+G

NAME Aimee Weseman

SIGNATURE Aimee Weseman

☐ NTR ☒ Treatment Recommended

Treatment to this Anadromous Fish Stream and high public use area should consist of:

- the manual tilling on a rising tide of SOR sediments along the streambank in the vicinity of pits #3+9. Tho not heavily oiled these sediments should be degraded while fish are absent to prevent possible contamination should the stream divert or overflow its banks.

- the manual removal of any accessible AP/HSOR sediments adjacent to the stream, specifically in areas A, C, D, & G.

- the manual removal of HOR sediments in the vicinity of pits 11913.

This 5x5m continuous patch of moussey sediments is accessible & will weather very slowly due to it's sheltered location. It will remain for years if not removed.



ANADROMOUS FISH STREAMS/OILING CONDITION
PWS

Segment # 1N/213 ASC# 226-30-16853 Location Rua Cove

Date 8/4/90 Recorder/Observer Aimee Weseman

Oil in streambed yes Oil on streambanks yes
erodes from banks

Oil within 50m of mouth yes Anadromous Fish present yes

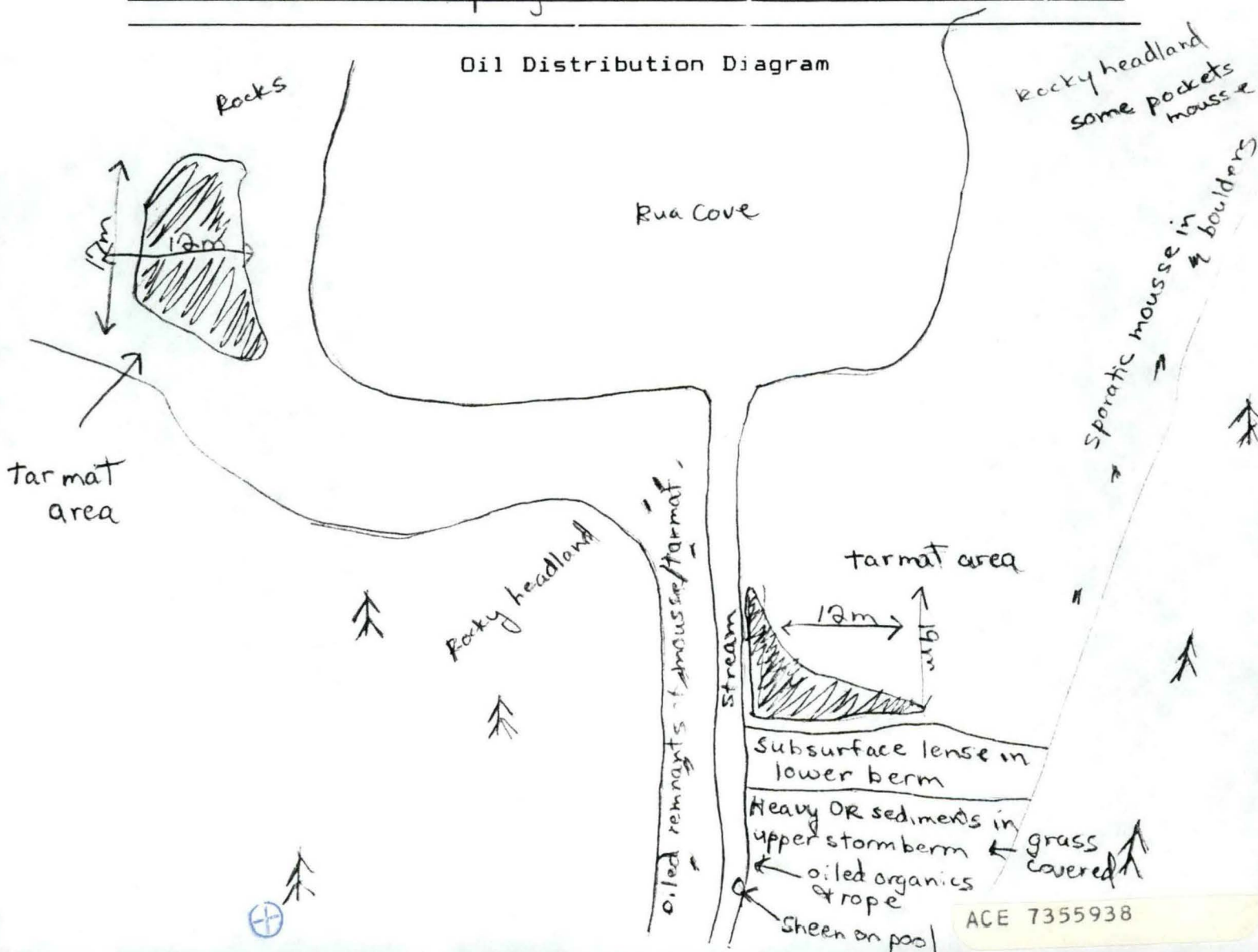
5,000 off mouth in stream. some spawners

Description of oil and comments

tarmat reforming in tarmat area's
Recent storm exposed OR sediments in upper storm berm
on southern stream bank - eroding into stream. Sheen on pool
Lower storm berm has buried oil lense - part of which was removed

We recommend the manual removal of the remaining tarmat & oiled
organics. Also the filling or relocation of the 2 storm berms.
Fish in stream not a problem
Re-assessment next spring

Oil Distribution Diagram



ACE 7355938

ANADROMOUS FISH STREAMS/OILING CONDITION
PWS

Segment # KN213 ASC# 226-30-16853 Location Rua Cove

Date 8/4/90 Recorder/Observer Aimee Weseman

Oil in streambed yes Oil on streambanks yes
erodes from banks

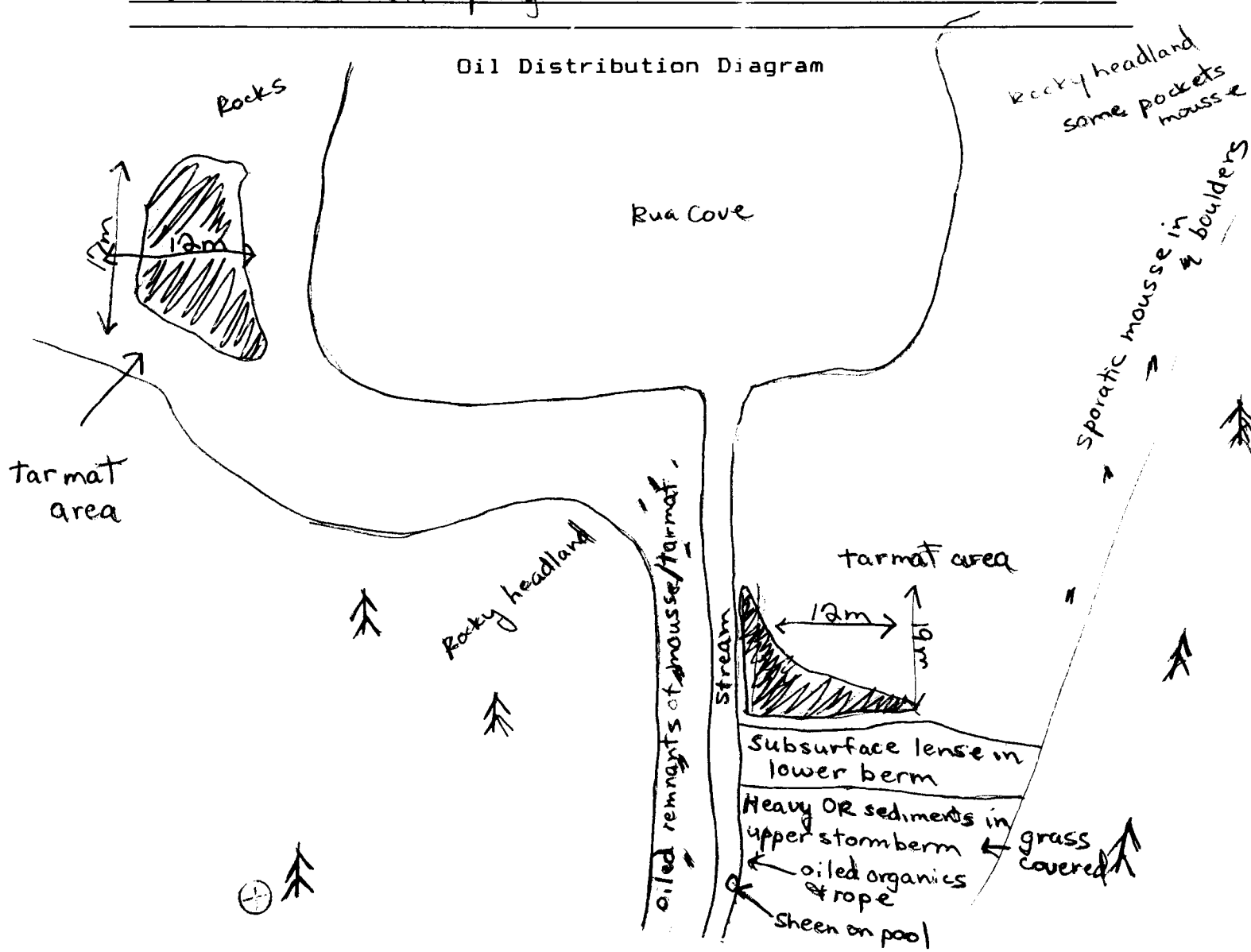
Oil within 50m of mouth yes Anadromous Fish present yes

5,000 off mouth in stream. some spawners

Description of oil and comments

tarmat reforming in tarmat area's
Recent storm exposed OR sediments in upper storm berm
on southern stream bank - eroding into stream. Sheen on pool
Lower storm berm has buried oil lense part of which was removed

We recommend the manual removal of the remaining tarmat & oiled
organics. Also the filling or relocation of the 2 storm berms.
Fish in stream not a problem
Re-assessment next spring



ANADROMOUS FISH STREAMS/OILING CONDITION
PWS

Segment # 1A/213 ASC# 226-30-16853 Location Rua Cove

Date 8/4/90 Recorder/Observer Aimee Weseman

Oil in streambed yes Oil on streambanks yes
erode from banks

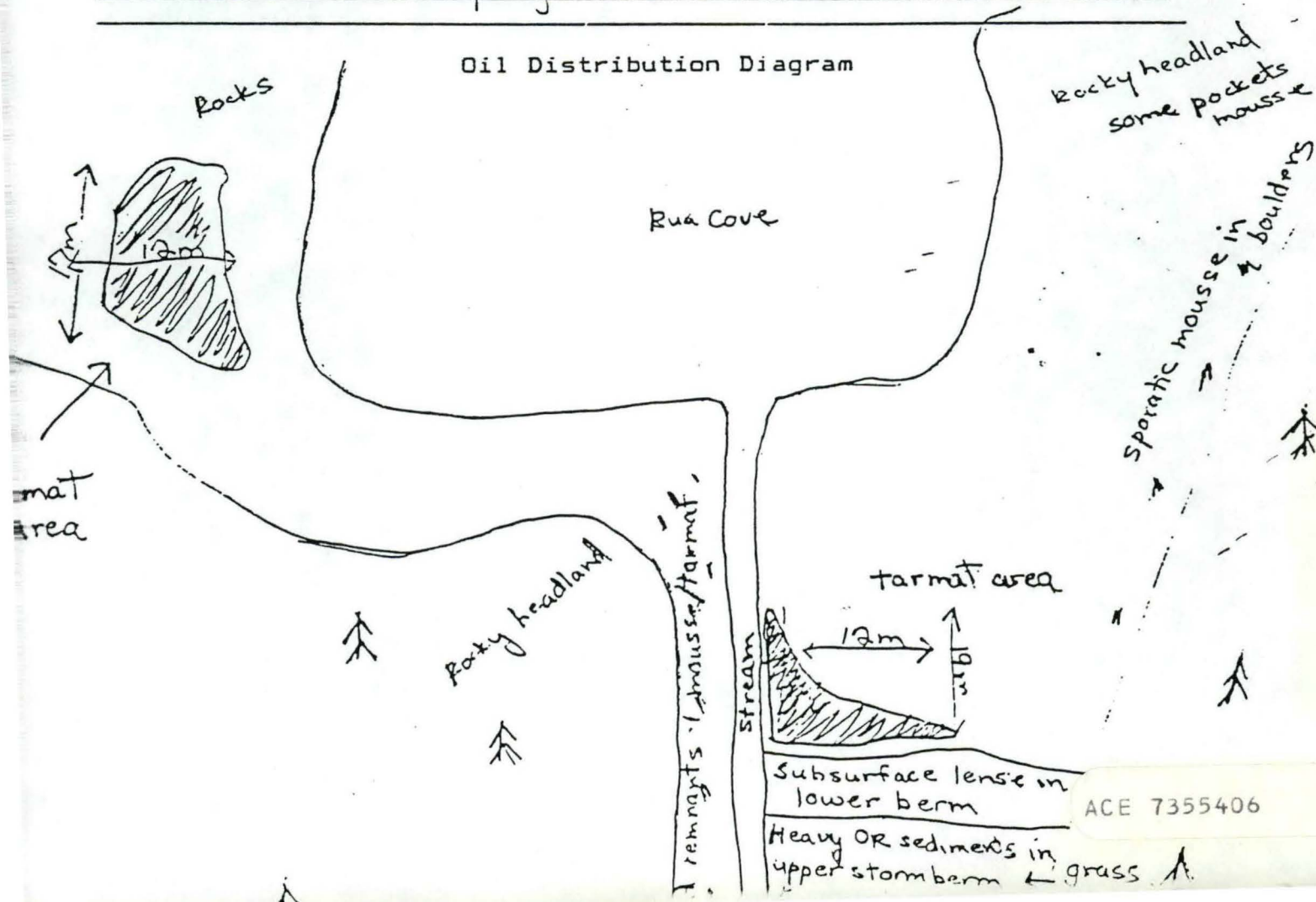
Oil within 50m of mouth yes Anadromous Fish present yes

500D off mouth in stream. some spawners

Description of oil and comments

Recent storm exposed NE sediments in Upper storm berm on southern Etrat bank - eroding into stream. Shells on pool. Lower storm berm has buried oil lenses - part of which was removed.

We recommend the manual removal of the remaining tar mat & oiled organics. Also the filling or relocation of the JQ storm berms. Fish in stream not a problem. E-assessment next spring.



ANADROMOUS FISH STREAMS/OILING CONDITION
PWS

Segment # KN/213 ASC# 226-30-16853 Location Rua Cove

Date 8/4/90 Recorder/Observer Aimee Weseman

Oil in streambed yes Oil on streambanks yes
erode from banks

Oil within 50m of mouth yfs Anadromous Fish present yes

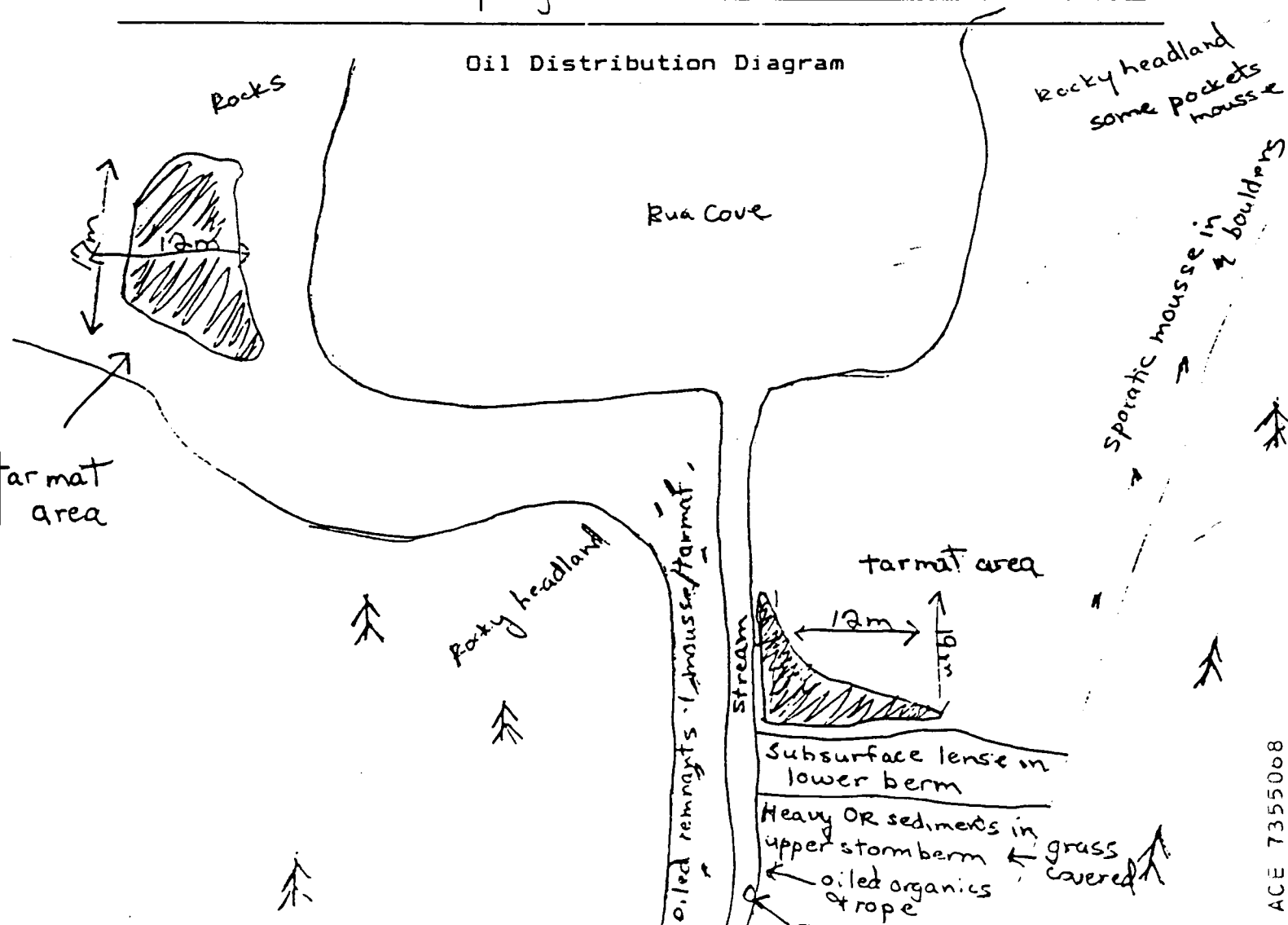
500D off mouth in stream some spawners

Description of oil and comments

tarmat reforming in tarmat area's
Recent storm. Exposed OK sediments in upper storm berm
on southern stream bank - eroding into stream. Sheen on pool
lower storm berm has buried oil lense - part of which was removed

We recommend the manual removal of the remaining tarmat & oiled
organics. Also the tillage or relocation of the JQ storm berm.
Fish in stream not a problem
Re-assessment next spring

Oil Distribution Diagram



WORK PLAN MODIFICATION RECOMMENDATION

SEGMENT: KN-213

SUBDIVISION: B *

DATED: 6/10/90 ADDENDUM

***Anadromous Fish Stream No. 226-30-16853**

MODIFICATION CLASS I X CLASS II _____ CLASS III _____

1. REASON FOR MODIFICATION:

Current work order addendum specifies manual pickup, tar mat removal and bioremediation. Manual pickup and tar mat removal was completed on July 6, 1990. Customblen was applied in accordance with the Work Plan.

Approval was requested to apply Inipol on remaining oiled areas, but ADEC did not concur, based on recommendation made by ADF&G.

USCG monitor recommended application of Inipol.

Exxon Squad Leader recommended application of Inipol.

Ques I

Delebe Injal per Adec

2. SUGGESTED ADJUSTMENT TO WORK PLAN:

ADEC recommendation is to delete application of Inipol.

USCG recommendation is to apply Inipol if approved by ADEC.

Exxon recommendation is to apply Inipol if approved by ADEC.

3. TIMING ISSUES:

Inipol application must be completed by July 10, 1990.

ADEC ~~_____~~ JAN KRUEGER

EXXON *K E Hansen R G Harrison*

USCG Matt Kaminski USCG Ltjg. (E-6) 0004

LAND MANAGER ADPFG *[Signature]* (If field rep is on scene)



*Received
4/19.*

RECEIVED
APR 17 1990

DEPT. OF
ENVIRONMENTAL CONSERVATION

REGION: PRINCE WILLIAM SOUND

SEGMENT: KN-213

SUBDIVISIONS: A (1 OF 5)

Current rec'd.

SHORELINE EVALUATION

SEGMENT ST/ KN-213 SUBDIVISION A (1 of 5) DATE 03/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G Stream #226-30-16853

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

1B Salmon stream mouth - spawning (7/10 to 8/31)

5T All Bald Eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)

6Y Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

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 417 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: _____

PWS, SEWARD A 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 (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 SITE RELINE COMMENT SHEET

SEGMENT ST/ KN-213 SUBDIVISION: A DATE 3/31/90

USCG

NAME SCOTT CAUSFORD SIGNATURE Scott Causford MST

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME Wesley Ghermley SIGNATURE Wesley Ghermley

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

LAND MANAGER

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

SHORELINE OILING SUMMARY

REVISION NO. 00/20/90

OG G. Macdonald USCG S. RAINSFORD SEGMENT ST/ KN-213
 BIO MA. SCOTT LAND REP JOHNSON L (CAC) SUBDIVISION A (1043)
 EXXON J. BUTLER ADEC W. GORMLEY TIME 07:30 to 08:00
 TEAM NO.: 3 TIDE LEVEL: 5 to 4 FT DATE 3 / 31 / 90
 EST. SUBDIVISION LENGTH: 425 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 90 % B 5 % C 5 % P - % G - % S - % M - % V - %
 SLOPE: Long - % Hang 20 % Vert 80 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W - m M - m N - m VL - m NO 425 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR				IMPACTED ZONES			
	N	E	S	W	1	2	3	4	SW	U	M	U
ASPHALT PAVEMENT												
POOLED												
COVER												
COAT												
STAIN												
MOUSSE												
PATTIES												
TARBALLS												
FILM												
NO OIL									X	X	X	

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED

☐ YES ☒ NOTYPE -#BAGS -

Photographs:

Roll No. ST-3-1Frames 17-20

SUBSURFACE OIL NO PITS - ALL ROCK & LARGE BOULDERS

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR				PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	VO	1	2	3	4	SW	U	M	U		
							.												
							.												
							.												
							.												
							.												
							.												
							.												

COMMENTS steep rocky shore w/ occasional boulder pocket
 over bedrock. NO OIL
 + 4 ft tide prevented examination of LITZ.
 vertical - overhanging cliffs to 20m.

SHORE E ECOLOGICAL SUMMARY

REVISION: 03/22/94

Segment ST / KN213 Subdivision A Date (mo / day / yr) 3/31/90

Time (24 hr) 4:30 Biologist MASOTT

(A) Substrate type and % of segments:
(1) Bedrock 90 (2) Boulder 5 (3) Cobble 5 (4) Pebble — (5) Sand — (6) Silt —

(B) Overall % cover of biota (% of segment): Dense — Moderate — 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. ST-3-1

Frames 17-20

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:

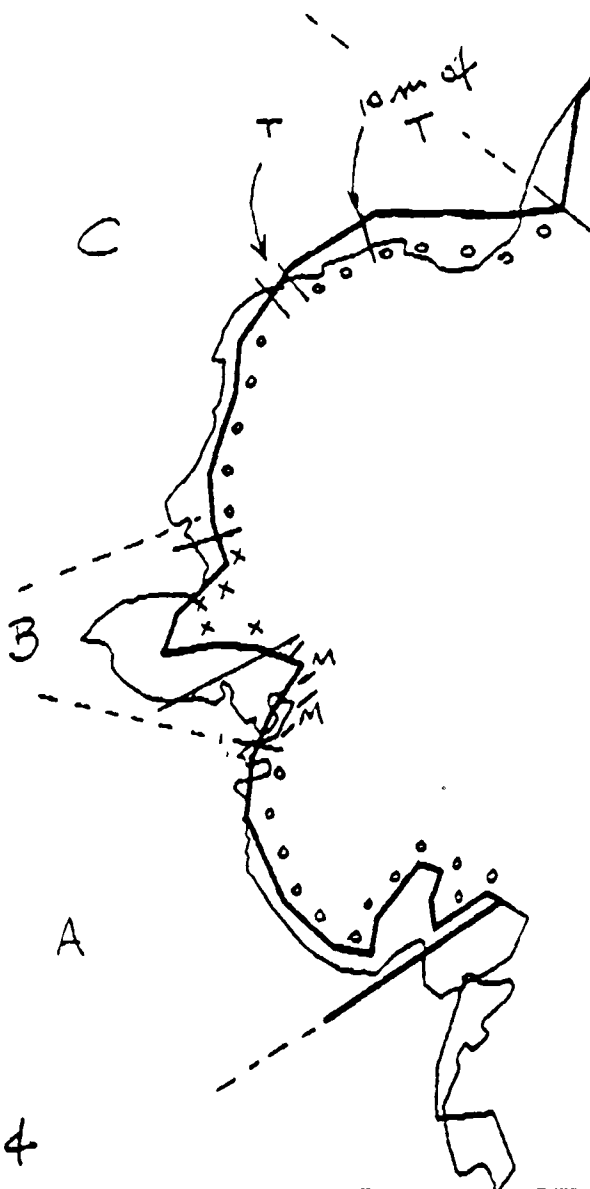
2 seals
1 bald eagle

Ecological Considerations:

diverse, moderate density MTE

1260 m

↑ PWS
341a



4 of 4

XXXX Wide

//// Medium - M

---- Narrow

TTTT Very Light

0000 No Oil

KN-213

ADEC Segment Length: 3351m

Exxon - " : 2662m

0 100 200 300

METERS

Map Key: PWS-341a

Name: Gr. MACDONALD

Date: 3/31/90

Date Entered:

*Received
4/19.*

RECEIVED
APR 17 1990

DEPT. OF
ENVIRONMENTAL CONSERVATION

REGION: PRINCE WILLIAM SOUND

SEGMENT: KN-213

SUBDIVISIONS: B (2 OF 5)

*Cancon w/parent rec'd
document
Tedd Y. Smith
Caucasian & Smith*

SHORELINE EVALUATION

SEGMENT ST/ KN-213 SUBDIVISION B (2 of 5) DATE 03/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G stream #226-30-16853

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

1B Salmon stream mouth - spawning (7/10 to 8/31)

5T All Bald Eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

6Y Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid any unnecessary disturbance or 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 189 m: Medium 95 m: Narrow 0 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 20cm

RECOMMENDATIONS:

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

COMMENTS: The recommended treatment activities are as follows: 1) Manual pick-up of mousse patties, 2) Removal of tarmats and 3) Bioremediation of areas shown on the attached sketch map but not within 100m of anadrmous stream. Work should be conducted between 6/1 and 7/9 based on above salmon constraints and with approval from ADF&G and USFWS regarding eagle nests.

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD A HOMER ECOLOGICAL CONSTRAINTS

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
 1B Salmon stream mouth - spawning (7/10 to 8/31)
 No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.
- 1C Salmon fry nursery area (4/31 to 7/31)
- 1D Esther Hatchery release (4/15 to 6/1)
- 1E Main Bay Hatchery release (4/20 to 5/10)
- 1F Sawmill Bay Hatchery release (4/15 to 6/1)
- 1G Cannery Creek Hatchery release (4/21 to 6/1)
- 1H Remote release site
- 1I Gill net area (6/7 to 8/31)
- 1J Purse seine area (7/20 to 9/30)
- 1K Purse seine hook-off (7/20 to 9/30)
- 1L Set net sites (6/11 to 7/25)
 For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.
- 2M Herring spawning (4/1 to 6/15)
 Restrict boat traffic to essential minimum. Avoid damage to unholed intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.
- 3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
 3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.
- 5R Seabird colony (5/1 to 9/1)
 Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic.
- 5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
- 6U 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
- 7H Deer harvesting (8/15 to 2/28)
- 7JJ Invertebrate harvesting
 For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / KN-213 SUBDIVISION: B. DATE 3/31/90

USCG

NAME SCOTT RAINSFORD SIGNATURE Scott Rainsford 1571

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

ADEC

NAME Wesley Ghormley SIGNATURE Wesley Ghormley

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

THIS segment has major patches of asphalt pavement thru-out segment that go to a depth of 15cm. Other areas are highly contaminated by a coat & cover greater than 50% of area. I recomme. this area be excavated by some type of small mechanical device (perhaps a bobcat?) which I think would work extremely well in this terrain. The terrain consists of small boulders & cobble & a bobcat could maneuver well in this area as it stripped the top 10-15cm of contaminated material. Manual removal would take a massive assault by numerous workers removing numerous bags of contaminated waste. Also snow covers oily logs at the site and should be reassessed at a later date when snow melts to see exactly what the logs show.

LAND MANAGER

NAME LORA JOHNSON SIGNATURE Lora L. Johnson

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

RESURVEY OF UPLANDS NEEDED DUE TO SNOW COVER.

PRELIMINARY OILING SUMMARY

REVISION NO. 02/22/91

OG G. MACDONALD USCG S. RAINSFORD SEGMENT ST/ KN - 213
 BIO M.A. SCOTT LAND REP L. JOHNSON (CAC) SUBDIVISION B (2 of 5)
 EXXON J. BUTLER ADEC W. GORMLEY TIME 08:00:10:00
 TEAM NO.: 3 TIDE LEVEL: +4 to -1 FT DATE 3/31/90
 EST. SUBDIVISION LENGTH: 375 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 20 % C 20 % P 30 % G 10 % S 5 % M 0 % V 0
 SLOPE: Long 30 % Hang 50 % Vert 20 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 235 m M 120 m N 0 m VL 0 m NO 20 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR							IMPACTED ZONES			
	C	B	P	S	SB B	DB W	GY B	DBA T	LR B	SU	U	M	L		
ASPHALT PAVEMENT		X	X					X		X	X				
POOLED															
COVER		X	X					X			X	X			
COAT		X	X	X	X	X		X		X	X	X			
STAIN															
MOUSSE			X					X			X				
PATTIES			X					X			X	X			
TARBALLS															
FILM															
NO OIL													X		

PAVEMENT: H F (S) 1,200 sq. m by 10 c

PATTIES / TARBALLS > 20 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

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

DEBRIS COLLECTED

☐ YES ☒ NO

TYPE 0

#BAGS 0

Photographs:

Roll No. ST-3-1

Frames 21-29

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	SO BR	DO RW	GY BL	DR TL	LR	SU	W	E	U			
1	25					X	.								X			Z	G P C		
2	20					X	.								X			Z	C P G		
3	20					X	.								X			Z	G P		
4	20					X	.								X			Z	C B		
5	30		X				5 * 20		X				X		X			Z	P C R		
6	30					X	.									X		Z	C P G		
7	20					X	.										X	Z	C P G		

COMMENTS

low L B,P beach between bordered by ragged steep rocky shore; Mainly surface oil as 15 cm thick. All trapped behind rock outcrop, plus PT & pervasive mousse cover.

SEGMENT ST/ KN-213 B

SUBDIVISION B

DATE 3/31/90

CHECKLIST

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

LEGEND

1 Δ
Pit - No Subsurface Oil

2 Δ_o
Pit - Subsurface Oil

CT/C
Continuous Distribution

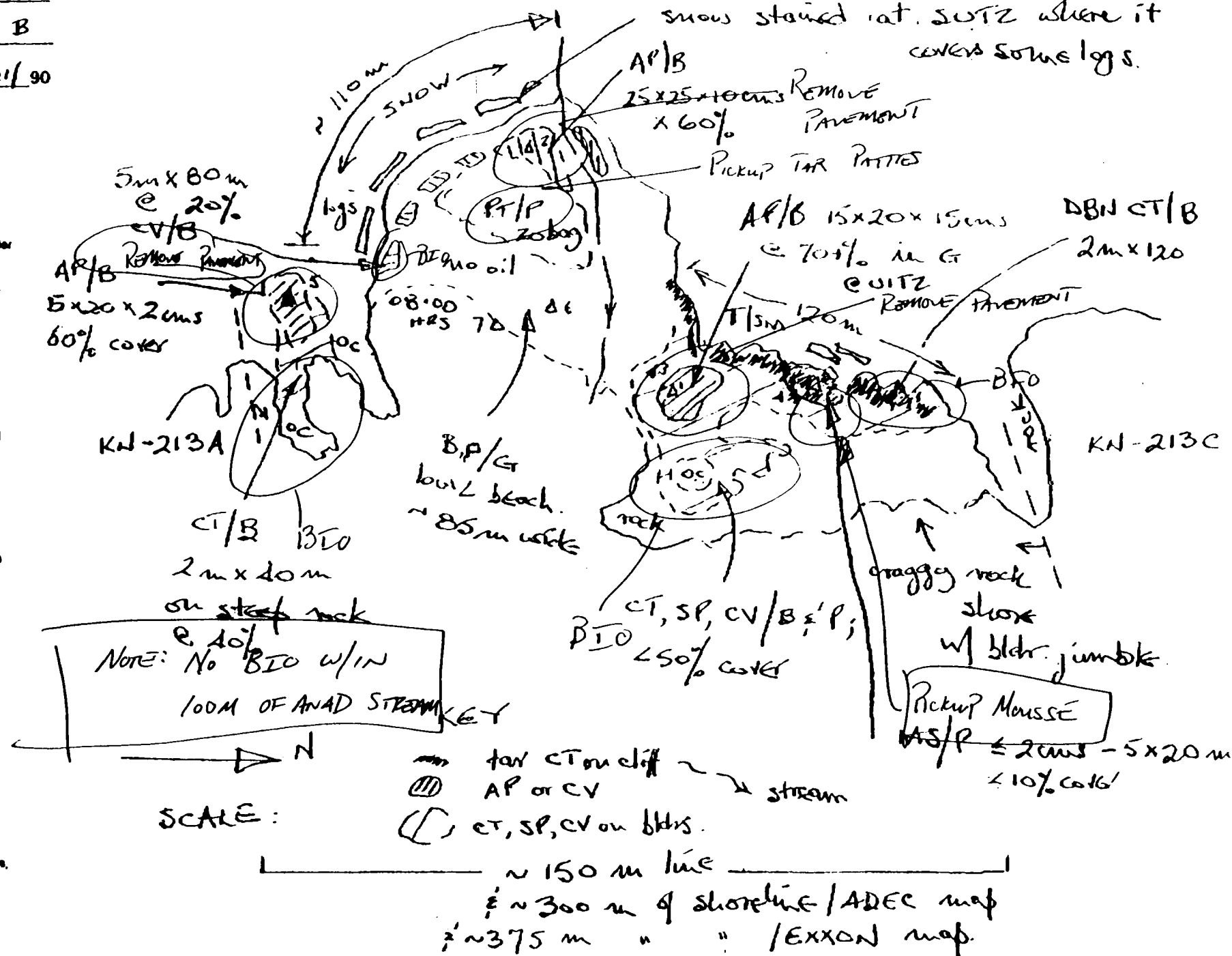
CT/B
Broken Distribution

CT/P
Patched Distribution

CT/S
Splashed Distribution

Oiled Vegetation

1 ●
Photo location, direction, and number



Oil Character Length (m): AP 45 PO 0 CV 220 CT 280 ST 0 MS 0 PT 100 TB 0 FL 0 NO 20

REVISION 03/24/90

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST/KN2L3 Subdivision 16 Date (mo / day / yr) 3/31/90

Time (24 hr) 8:15 Biologist MASCO

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

(B) Overall % cover of biota (% of segment): Dense — Moderate — 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. 57-3-1

Frames 21-28

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:

3 deer at snow line in cove

Ecological Considerations:

mid tidal - bedrock + boulder dense covering of algae

394

1260 m

↑ PWS
E-110



494

XXXX Wide

//// Medium - M

--- Narrow

TTTT Very Light

0000 No Oil

KN-213

ADEC Segment Length: 3351m

EXON " " : 2662m



METERS

Map Key: PWS-341a

Name: G. MACDONALD

Date: 3/31/90

Date Entered:

*Process
4/19
RH*

RECEIVED
APR 17 1990

REGION: PRINCE WILLIAM SOUND

DEPT. OF
ENVIRONMENTAL CONSERVATION

SEGMENT: KN-213

SUBDIVISIONS: C (3 OF 5)

*Re-evaluate Inshore coastal
coastal gauge*

SHORELINE EVALUATION

SEGMENT ST/ KN-213 SUBDIVISION C (3 of 5) DATE 03/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G stream #226-30-16853

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

1B Salmon stream mouth - spawning (7/10 to 8/31)

5T All Bald Eagle nests (3/1 to 6/1)-Active eagle nest (3/1 to 9/1)

6Y Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

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

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 32 m: No Oil 406 m

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

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: _____

PWS, SEWARD AREA HOMER ECOLOGICAL CONSTRAINTS

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
- 1B Salmon stream mouth - spawning (7/10 to 8/31)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.
- 1C Salmon fry nursery area (4/31 to 7/31)
- 1D Esther Hatchery release (4/15 to 6/1)
- 1E Main Bay Hatchery release (4/20 to 5/10)
- 1F Sawmill Bay Hatchery release (4/15 to 6/1)
- 1G Cannery Creek Hatchery release (4/21 to 6/1)
- 1H Remote release site
- 1I Gill net area (6/7 to 8/31)
- 1J Purse seine area (7/20 to 9/30)
- 1K Purse seine hook-off (7/20 to 9/30)
- 1L Set net sites (6/11 to 7/25)
For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.
- 2M Herring spawning (4/1 to 6/15)
Restrict boat traffic to essential minimum. Avoid damage to unholed intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.
- 3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
- 3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.
- 5R Seabird colony (5/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic.
- 5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
- 6U 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
- 7H Deer harvesting (8/15 to 2/28)
- 7JJ Invertebrate harvesting
For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / KN-213 SUBDIVISION: C DATE 3/30/90

USCG

NAME SCOTT RAINSFORD SIGNATURE Scott Rainford MST1

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME Wesley Ghormley SIGNATURE Wesley Ghormley

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

LAND MANAGER

NAME LORA JOHNSON SIGNATURE Lora L. Johnson

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

SNOW COVER NEAR STREAM INHIBITED SURVEY
OF UPLANDS.

394

SHORELINE OILING SUMMARY

REVISION NO. 10/2/88

OG G. MACDONALD USCG S. RAINSFORD SEGMENT ST/ KN-213
 BIO MA. SCOTT LAND REP L. JOHNSON (CAC) SUBDIVISION C (3049)
 EXXON J. BUTLER ADEC W. GORNLEY TIME 10:00 10:10 45
 TEAM NO.: 3 TIDE LEVEL: -1 10 -1 FT DATE 3 / 31 / 90
 EST. SUBDIVISION LENGTH: 460 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S 10 N
 SURFACE SEDIMENTS: R 15 % B 5 % C 35 % P 35 % G 10 % S 0 % M 0 % V 0 %
 SLOPE: Lang 60 % Hang 10 % Vert 30 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 10 m NO 450 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	S	P	S	SW	BL	WH	GY	SL	DR	TL	LR	SU	U	M	L
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT				X		X							X			
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL													X	X	X	

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

PATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED

☐ YES ☒ NO

TYPE 0

#BAGS 0

Photographs:

Roll No. ST-3-1

Frames 30-31

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
		OF	OR	OL	OF	NO		UO	UC	SW	BL	WH	GY	SL	DR	TL	LR			
1	15					X	.											X		CP
2	15					X	.											X		CP
3	25					X	.											X		PG
4	15					X	.											X		CP
							.													
							.													

COMMENTS

Rugged rock & cliff shore w/ 2. low L cob./sed. benches
 southern beach has small cabin; trace of oil as CT/P @
 up. HRTZ on boulder, rock & crevices.
 Pit locations representative of HI-SUTZ; no sketch nec.

SHORE LINE ECOLOGICAL SUMMARY

REVISION: 02/22/80

Segment ST KN-21 3 Subdivision C Date (mo / day / yr) 3/31/80

Time (24 hr) 10:10 Biologist MASCOFF

(A) Substrate type and % of segments:
(1) Bedrock 15 (2) Boulder 5 (3) Cobble 35 (4) Pebble 45 (5) Sand 0 (6) Silt 0

(B) Overall % cover of biota (% of segment): Dense Moderate 2 Low 3

(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-3-1

Frames 20-31

BARNACLES

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

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	<u>X</u>	<u>2</u>	2	2	2	2	
3	3	3	3	3	3	<u>X</u>	3	3	<u>X</u>	<u>X</u>	<u>X</u>	
4	4	4	4	4	4	<u>X</u>	4	4	<u>X</u>	<u>4</u>	<u>4</u>	
5	5	5	5	5	5	5	5	5	<u>X</u>	<u>5</u>	<u>5</u>	
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	<u>2</u>	2	2	<u>X</u>	2	<u>X</u>	2	2	
3	3	3	3	3	3	3	3	<u>X</u>	<u>X</u>	<u>X</u>	3	
4	4	4	4	4	4	4	4	<u>X</u>	<u>X</u>	<u>X</u>	4	
5	5	5	5	5	5	5	5	5	<u>X</u>	<u>5</u>	5	
6	6	6	6	6	6	6	6	6	<u>X</u>	<u>6</u>	6	

Wildlife Observations/ General Comments:

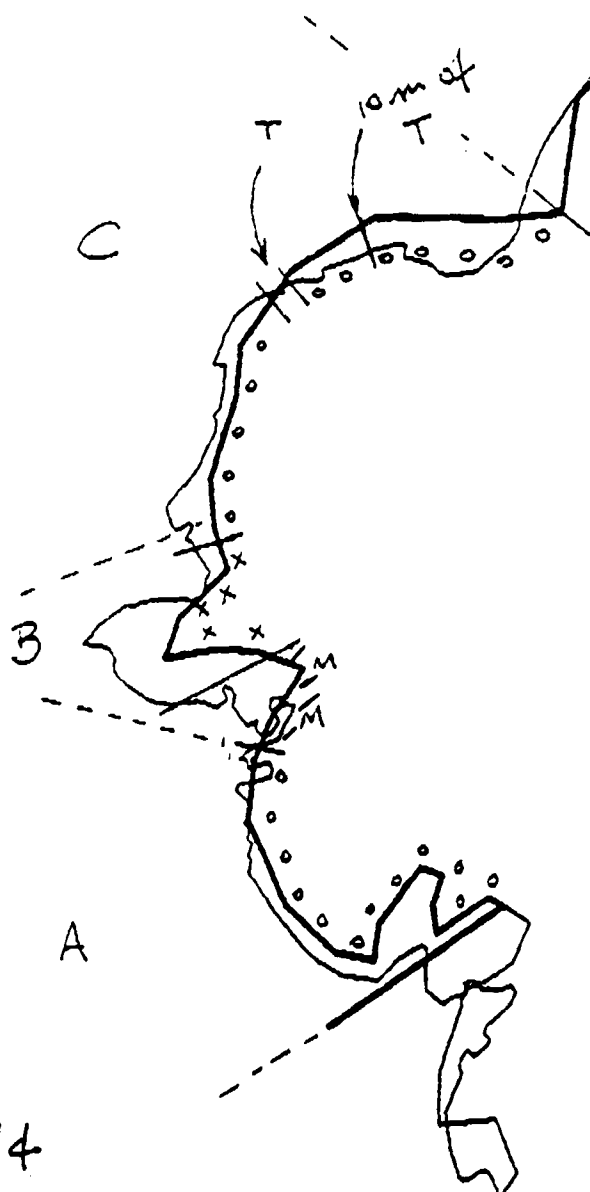
Ecological Considerations:

LTZ - dense, diverse algal cover

294

1260 m

↑ PWS-341a
E-110



494

12

XXXX Wide

//// Medium - M

---- Narrow

TTTT Very Light

0000 No Oil

KN-213

ADEC Segment Length: 3351m

EXON - " : 2662m

0 100 200 300
METERS

Map Key: PWS-341a

Name: Gr. MACDONALD

Date: 3/31/90

Date Entered:

*Processed
4/19*

RECEIVED
APR 17 1990

DEPT. OF
ENVIRONMENTAL CONSERVATION

REGION: PRINCE WILLIAM SOUND

SEGMENT: KN-213

SUBDIVISIONS: D (4 OF 5)

Pic-up board!

SE ELINE EVALUATION

SEGMENT ST/ KN-213 SUBDIVISION D (4 of 5) DATE 03/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G stream #226-30-16853

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

1B Salmon stream mouth - spawning (7/10 to 8/31)

5T All Bald Eagle nests (3/1 to 6/1)-Active eagle nest (3/1 to 9/1)

6Y Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

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

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 792 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 manual pick up of small amount of oil spill response debris (sorbent boom) shown on attached sketch map.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AREA 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 (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
 7H 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/ K1213 SUBDIVISION: D DATE 3/31/90

USCG

NAME MAURICE S. SHARP SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME S. FERGUSON SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

4 SAUSAGE BOOM SECTIONS AT HITZ (SHOWN
ON MAP) (DEBRIS PICK-UP)

LAND MANAGER

NAME M. C. T. SMITH SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

SHORELINE OILING SUMMARY

REVISION NO. 03-27-79

OG K. Ramsey USCG R. Sharpe SEGMENT ST/ KU-213
 BIO G. Penn LAND REP m. Smith (CAC) SUBDIVISION D 4 of 5
 EXXON S. Reid ADEC S. Ferguson TIME 9:25 to 11:30
 TEAM NO.: 4 TIDE LEVEL: 0 to -1 DATE 3/31/90
 EST. SUBDIVISION LENGTH: 1441 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☒ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 0 % B 0 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 20 % Hang 80 % Vert 0 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 1441 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	C	B	P	S	BL BR	BL RW	GY	SL TL	LB	SU	UI	M	U	
ASPHALT PAVEMENT														
POOLED														
COVER														
COAT														
STAIN														
MOUSSE														
PATTIES														
TARBALLS														
FILM														
NO OIL										X	X	X	X	

PAVEMENT: H F NA sq. m by 0 cr
 PATTIES / TARBALLS NA BAGS
 NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED ☐ YES ☐ NO
 TYPE 0
 #BAGS 0

Photographs:

Roll No.
 Frames

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	SOL BR	DBL RW	GY BL	DRP TL	LBR	SU	UI	ME	LI			
							.														
							.														
							.														
							.														
							.														
							.														

COMMENTS

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/88

Segment ST / KN-213 Subdivision U Date (mo / day / yr) 03/31/90

Time (24 hr) _____ Biologist PENN

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

(B) Overall % cover of biota (% of segment): Dense 2 Moderate 3 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 _____

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

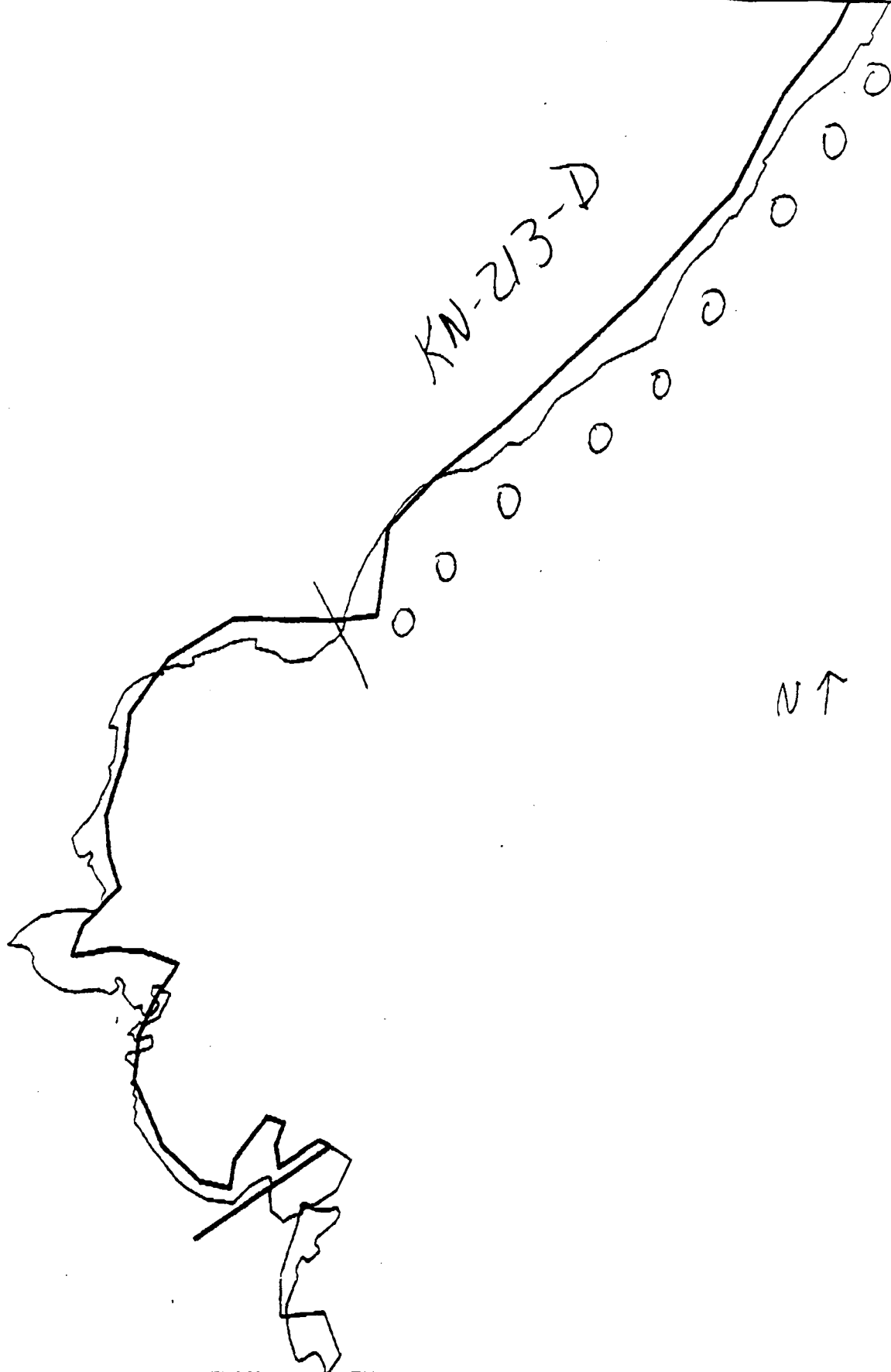
Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

Wildlife Observations/ General Comments:

1 Harbor Seal 2 eagles
1 Cormorant 1 Song Sparrow

Ecological Considerations:



KN-213-D

N ↑

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

KN-213

ADEC Segment Length: 3351m

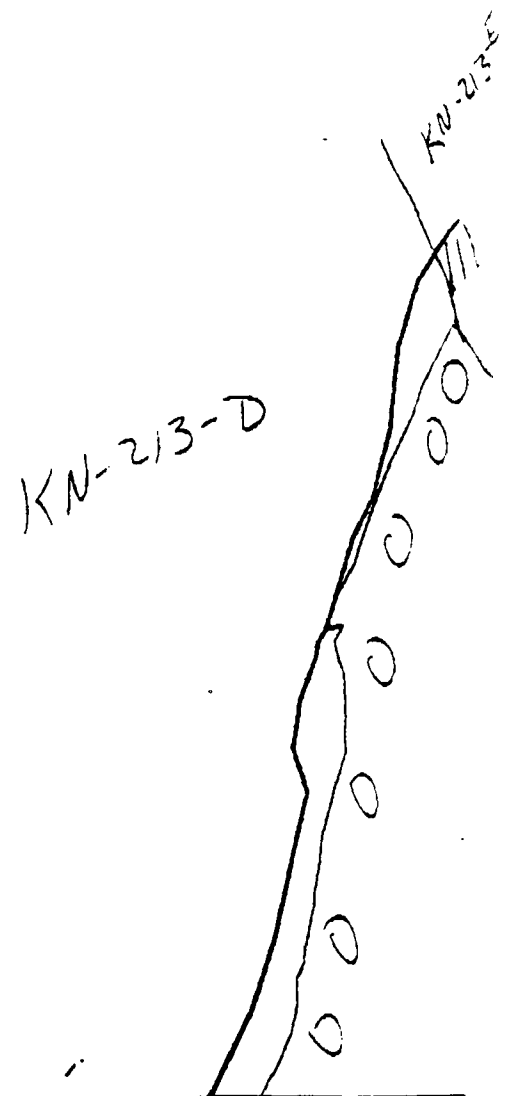


Map Key: PWS-341a

Name: Ramsey

Date: 3/31/90

Data Entered: _____



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

KN-213

ADEC Segment Length: 3351m



Map Key: PWS-341c

Name: Ramsey

Date: 3/31/90

Data Entered:

24

KN-213 :

KN-213-E

KN-2

KN-213-D

XXX Wide
/// Medium
--- Narrow
TTT Very Light
OOO No Oil



*Process
4/19.*

RECEIVED
APR 17 1990

DEPT. OF
ENVIRONMENTAL CONSERVATION
REGION: PRINCE WILLIAM SOUND

SEGMENT: KN-213

SUBDIVISIONS: E (5 OF 5)

*Manual pic up
release before
pic-up take
pictures of the Inuit*

SH SHORELINE EVALUATION

SEGMENT ST/ KN-213 SUBDIVISION E (5 of 5) DATE 03/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G stream #226-30-16853

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

1B Salmon stream mouth - spawning (7/10 to 8/31)

5T All Bald Eagle nests (3/1 to 6/1) - Active eagle nest (3/1 to 9/1)

6Y Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid any unnecessary disturbance or 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 89 m: Narrow 0 m: V.Light 213 m: No Oil 381 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 9 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 in area of surface cover. Work 6/1 - 7/10 based on salmon constraints, and with approval from ADF&G and USFWS regarding eagles.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AREA 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 (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 SITE RELINE COMMENT SHEET

SEGMENT ST / KN-213 SUBDIVISION: E DATE 3/31/90

USCG

NAME MAURICE J. SHARPE SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

ADEC

NAME S. FERGUSON SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

MANUAL AND MENT. IF POSSIBLE ON WIDE AREA
OF OILING

LAND MANAGER

NAME M.C.T. SMITH SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

SNOW COVER PREVENTED ADEQUATE SURVEY OF OILED DEBRIS.
NEED TO RESURVEY FOR DEBRIS AFTER SNOW MELT.

SHO LINE OILING SUMMARY

REVISION NO. 02/89

OG K. Ramsey USCG R. Sharpe SEGMENT ST/ KN-213
 BIO G. Denn LAND REP M. Smith (CK) SUBDIVISION E 5.45
 EXXON S. Reid ADEC S. Ferguson TIME 7:40 to 9:25
 TEAM NO.: 4 TIDE LEVEL: 3.5' to 0 DATE 3/31/90
 EST. SUBDIVISION LENGTH: 1661 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 40 % B 48 % C 10 % P 2 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 2 % Hang 38 % Vert 10 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 28 m N 0-0 m VL 0-20 m NO 623 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	R	B	P	C	1	2	3	4	5	6	7	8	SU	UI	M	U
ASPHALT PAVEMENT																
POOLED																
COVER		X														
COAT																
STAIN			X													
MOUSSE																
PATTIES																
TARBALLS				X												
FILM																
NO OIL															X	X

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs	X		
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE 0#BAGS 0

Photographs:

Roll No. 1Frames 8, 9

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	1	2	3	4	5	6	7	8			
2	9cm	X					5-9	X			X							X	N	B, C, P

COMMENTS

SHOREL : ECOLOGICAL SUMMARY

REVISION: 03/31/90

Segment ST / KN-2/3 Subdivision E Date (mo / day / yr) 03/31/90

Time (24 hr) _____ Biologist Penn

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

(B) Overall % cover of biota (% of segment): Dense <1 Moderate 5 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 _____

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	X	X	X	2	2	2
3	3	3	3	3	3	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	X	X	X	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	X	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	X	X	X	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- Pelagic Cormorant

2 Ravens

1 Deer (Live)

2- Cormorants

1 Harbor Seal

1 Deer - Cliff Fall Killed?

2- Common Merganser

1 immature eagle

1 Sea Otter (Live)

1 Song Sparrow

Ecological Considerations:

OG K. Ramsey
 SEGMENT ST/ K-213
 SUBDIVISION E
 DATE 3/31/90

SKETCH MAP

CHECKLIST

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

LEGEND

1 Δ
 Pit - No Subsurface Oil

2 Δ
 Pit - Subsurface Oil

CT/C
 Continuous Distribution

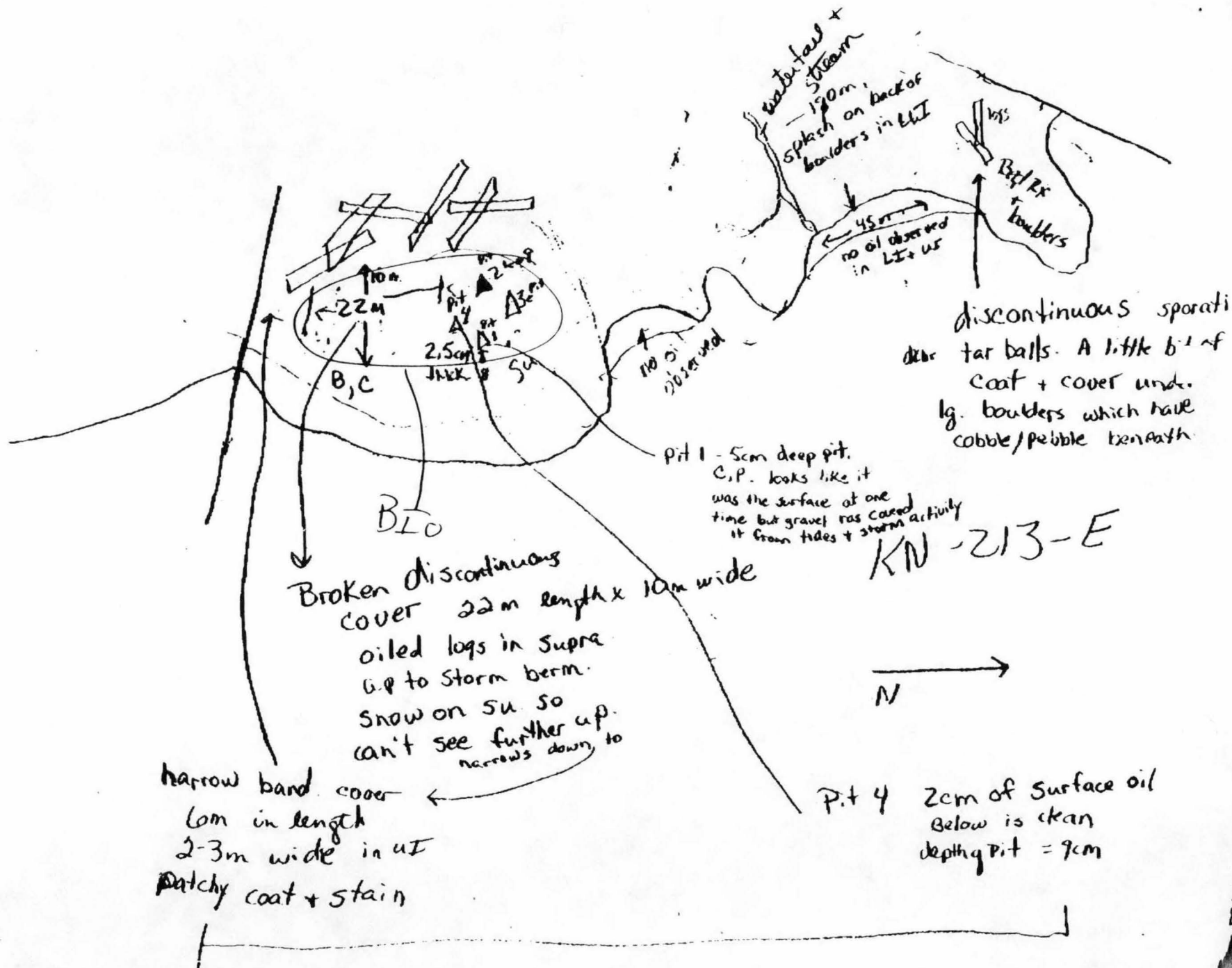
CT/B
 Broken Distribution

CT/P
 Patchy Distribution

CT/S
 Splashed Distribution

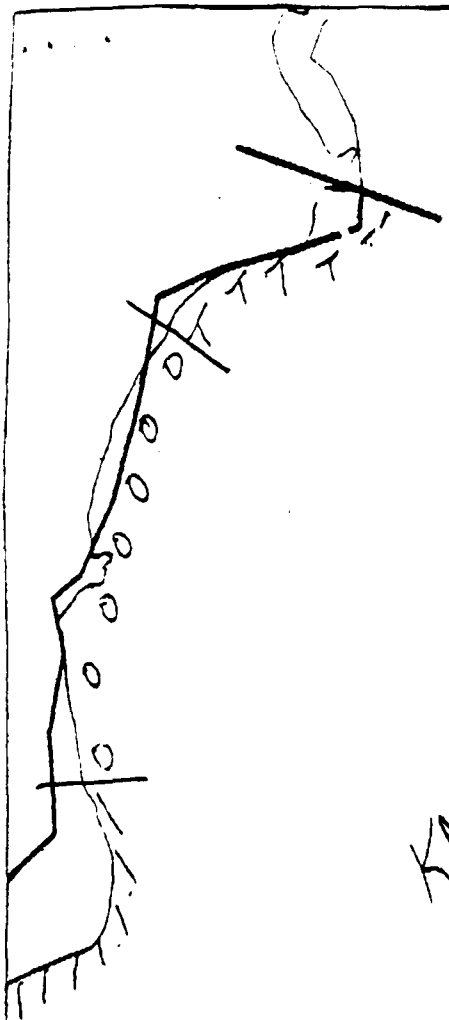
Oiled Vegetation

1 ●→
 Photo location, direction,
 and number



Oil Character Length (m): AP 0 PO 0 CV 28 CT 0 ST 28 MS 0 PT 0 TB 2 FL 0 NO 6 23

REVISION 000000



KN-213-E

KN-213

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

KN-213

ADEC Segment Length: 335m



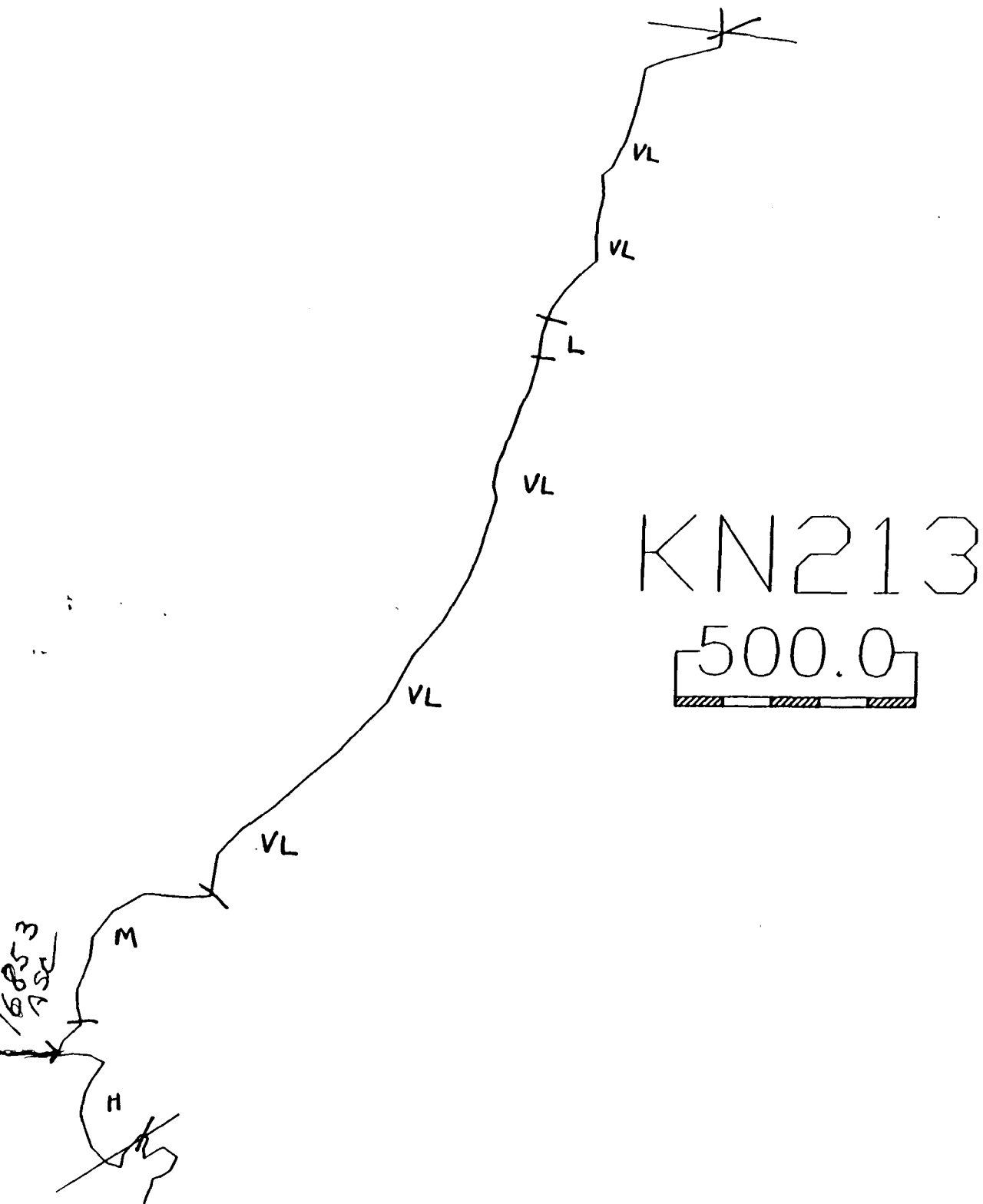
Map Key: PWS-341d

Name: Ramsey

Date: 3/31/90

Data Entered:

Z3



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

N

ADF&G WINTER STREAM SURVEY FORM

Shoreline Segment No: KN 213 Stream Catalog No: 16853
 Geographic Location: NORTHWEST OF MARSHA BAY ON THE WEST COAST OF KNIGHT ISLAND

Date: 1-2-90 Start Time: 1013 End Time: 1108
 Observers: TOM CROWE (ADF&G) VINCE MATHEWS DEC

Low Tide: (time and height) 10:43 AM .4 FT 4
 High Tide: 4:34 PM 11.1 FT

SHORELINE DIMENSIONS AT STREAM SITE

Intertidal Zone: 70 METERS FROM MEAN HIGH TIDE MARK

Area to Right of Stream: 45 METERS

Area to Left of Stream: 60 METERS

Wave Exposure: HIGH ☒ MEDIUM ☒ LOW ☐

SHORELINE TYPE

Steep Bedrock ☐ Low Angle Bedrock ☐ Gravel (0.1 to 2 inch dia) ☒ Cobble (2 to 10 inch) ☒ Boulder (>10 inches) ☐
 Other ☐

STREAM CHARACTERISTICS

Length through Intertidal Zone: 70 METERS

Average Width: 4 METERS

Channel/Bed Configuration:

Single Channel ☒ Multiple Channels ☐ Number ☐

Note: (see diagram attached)

BIOLOGICAL OBSERVATIONS

LARGE EAGLE NEST OVER HANGING LEFT SIDE OF STREAM INTERTIDAL ZONE. UNABLE TO DETERMIN AMOUNT OF OIL IF ANY THAT HAS BEEN COVERED BY SNOW. DUE TO THE FROZEN CONDITION OF THE SUBSTRATE IT IS HARD TO DETERMIN OIL PENETRATION

CHARACTERISTICS OF OIL DEPOSITS

DEPOSIT A

Distance from Stream 1-2 meters
 Surface Area _____
 Thickness 6"
 Penetration Depth ?
 Tar _____ Asphalt x
 Mousse _____ Stain _____
 % Coverage of Deposit _____
 Tidal Zone upper

DEPOSIT B

Distance from Stream 40 meters
 Surface Area _____
 Thickness _____
 Penetration Depth _____
 Tar x Asphalt _____
 Mousse _____ Stain x
 % Coverage of Deposit _____
 Tidal Zone _____

DEPOSIT C

Distance from Stream 1 meter
 Surface Area _____
 Thickness _____
 Penetration Depth _____
 Tar _____ Asphalt _____
 Mousse _____ Stain _____
 % Coverage of Deposit _____
 Tidal Zone _____

DEPOSIT D

Distance from Stream _____
 Surface Area _____
 Thickness _____
 Penetration Depth _____
 Tar _____ Asphalt _____
 Mousse _____ Stain _____
 % Coverage of Deposit _____
 Tidal Zone _____

DEPOSIT E

Distance from Stream _____
 Surface Area _____
 Thickness _____
 Penetration Depth _____
 Tar _____ Asphalt _____
 Mousse _____ Stain _____
 % Coverage of Deposit _____
 Tidal Zone _____

DEPOSIT F

Distance from Stream 1 meter
 Surface Area _____
 Thickness 2 mm
 Penetration Depth SURFACE
 Tar x Asphalt _____
 Mousse _____ Stain _____
 % Coverage of Deposit _____
 Tidal Zone upper

CLIFF BAND COVERED WITH TAR

PHOTOGRAPHIC EVIDENCE

VIDEO

Cassette No. WTC01VHS
 Beginning Footage 2232

Photographer TOM CROWE
 Ending Footage 2720

35 MM

Roll Number _____
 Frame Numbers _____

Photographer _____

Polaroid

Number of Prints _____

Photographer _____

CHARACTERISTICS OF OIL DEPOSITS

DEPOSIT A

Distance from Stream 1-2 METERS
 Surface Area _____
 Thickness 6-8"
 Penetration Depth 6-8"
 Tar _____ Asphalt X
 Mousse _____ Stain _____
 % Coverage of Deposit 60%
 Tidal Zone 100%
 Comments: 100% TIDAL
100% TIDAL

DEPOSIT B

Distance from Stream 1-2 METERS
 Surface Area _____
 Thickness 1 mm
 Penetration Depth SURFACE
 Tar X Asphalt _____
 Mousse _____ Stain X
 % Coverage of Deposit 60%
 Tidal Zone 100%
 Comments: 100% TIDAL
100% TIDAL

DEPOSIT C

Distance from Stream 50 METERS
 Surface Area 75%
 Thickness 6-8"
 Penetration Depth 1-2 METERS
 Tar X Asphalt X
 Mousse _____ Stain _____
 % Coverage of Deposit 90%
 Tidal Zone 100%
 Comments: 100% TIDAL
100% TIDAL

DEPOSIT D

Distance from Stream 10 METERS
 Surface Area _____
 Thickness 1-2 mm
 Penetration Depth SURFACE
 Tar X Asphalt _____
 Mousse _____ Stain X
 % Coverage of Deposit 50%
 Tidal Zone 100%
 Comments: 100% TIDAL
100% TIDAL

DEPOSIT E

Distance from Stream 1 METERS
 Surface Area _____
 Thickness 2 mm
 Penetration Depth 1-2 METERS
 Tar X Asphalt _____
 Mousse _____ Stain _____
 % Coverage of Deposit 100%
 Tidal Zone 100%
 Comments: 100% TIDAL
100% TIDAL

DEPOSIT F

Distance from Stream 1 METERS
 Surface Area _____
 Thickness _____
 Penetration Depth _____
 Tar _____ Asphalt _____
 Mousse _____ Stain _____
 % Coverage of Deposit _____
 Tidal Zone 100%
 Comments: 100% TIDAL
100% TIDAL

PHOTOGRAPHIC EVIDENCE

VIDEO

Cassette No. WTCOLVHS
 Beginning Footage 2800

Photographer TOM FINE
 Ending Footage 2920

35 MM

Roll Number _____
 Frame Numbers _____

Photographer _____

Polaroid

Number of Prints _____

Photographer _____

ADF&G OIL SPILL RESPONSE MONITORING

ASC# 226-30-16853

Date: 6/19/91

Stream Name: Aimee's Creek

Observer: Aimee Weseman

Segment-Sub Unit KN213B

Location: Rva Cove, E Knight I

Anad. Stream Permit Issued? ☒ Y ☐ N

Date: 6/18/91

Work Order Issued: ☒ Y ☐ N

Date: 6/5/91

Demob Date: 6/19/91

Oil Characteristics (circle appropriate ones)

Surface: ☒ AP, ☒ MS, TB, ☒ SOR, ☒ CV, ☒ CT, ☒ ST, FL, ☒ DB, None
Subsurface: ☐ OP, ☒ HOR, MOR, ☒ LOR, ☒ OF, ☐ TR, None

Treatment Techniques:

Manual Removal ☒ X
Manual Raking ☒ X
Spot Wash
Other

Bioremediation & Type
Mechanical Tilling
Header Flood (Hot/Cold)

Crew Size: 10 + foreman

Lbs. or Bags of Oil/Sediment Removed 3 super sacks

Other Agency Reps, and Names: Larry Olson - Exxon
Wes Ghermy - ADEC Vince Mulligan - USCG

Photos	Y ☒ N	Roll #	Frames
		_____	_____
		_____	_____

Video	Tape #	Start	End
	<u>N</u>	_____	_____
	_____	_____	_____

Sediment/Oil Samples	(Y ☒ N)	Collection Number

Purpose of Trip * treatment

* Form designed primarily for cleanup inspection trips, but should be used for any field trips, i.e., to check on bird rookeries, seal haulouts, special habitat areas, etc.

Describe extent of remaining oil (any comments on expected completion of cleanup).

oil remaining includes; LOR in globs under & between rocks along streambed
Mousse pockets in boulder interstices - unreachable due to size of substrate

LSOR in tarmat areas both sides of stream

CV & CT with oiled spruce needles on bedrock & boulders throughout

& H/MOR/OP in site 6 (areas H & I OG map)

Comments: (Are work order procedures being followed?, etc.)

Treatment to this stream area was very thorough. It fulfilled & went beyond the scope of the work order, including new oiled areas not identified in MAY SAP 91. A crew of 10, worked the site for 9.5 hours, removing any oil that I deemed necessary. The Exxon supervisor, USCG & ADEC Reps were all extremely cooperative.

I personally tilled the area of subsurface oil along the stream bank. This oil is characterized as globs of mousse underneath & between rocks. I diverted stream water through some of the area in an attempt to flush it out. I would guess that the rest of the beach contains similar pockets & globs. Not much can be done for it short of full scale mechanical tilling & I don't know that it warrants it.

The area of site 6 (H & I OG map) still contains heavy oiling & should be re-assessed for further treatment. Area of subsurface on streambank could be retilled at the same time

A:OPRESP
April 2, 1991

EXXON Valdez Oilspill Cleanup

Anadromous Fish Stream Authorization

Date June 18 1991

EXXON Authorized Representative Larry Olson

Shoreline Segment KN 213B

Anadromous Fish Stream Number(s) 226-30-16853

Approved Cleanup Techniques Manual Removal and
tilling of oiled sediments

Approved Cleanup Period May 10 to July 10, 1991

Alaska Department of Fish and Game

Aimee Weseman
Authorized Officer

Larry Olson
Permittee's Signature

ADF&G MULTI-ASSESSMENT FORM
1991 GENERAL ENTRY CHECKLIST

STREAM#: 2263016853
SEGMENT: KN213

PAGE 8

DATE PRINTED: 08/26/91

LOCATION: KNIGHT ISLAND, RUA COVE

SURVEY TYPE: 91 POST TREATMENT - SS

METHOD: GROUND

DATE: 08/02/91

TEAM RECORDER: WESEMAN

START TIME: 0950

OBSERVERS: FINK KUWADA MIDDLETON

END TIME: 1120

TIDES: ~~3.6~~ ^{3.6 to 2.0} ~~2.0~~ ^{0.6}
OG/HAB DISCREPANCIES: -

AGENCY: FG

PHOTOS TAKEN: N

STATION: 2263016853

ROLL#: -0-

FRAME: -0-

VIDEO TAKEN: N

TAPE#: -0-

START: -0-

END: -0-

SAMPLES TAKEN: N

SAMPLE NUMBERS: -0-

-0-

-0-

-0-

-0-

-0-

OIL IN STREAM BED: Y

OVERALL OIL IMPACT: -0-

OIL ON BEACH BY MOUTH: Y

WAVE EXPOSURE: MOD

SHORELINE TYPE: LOW-LYING ROCKS BEACH
COVE

SUBSTRATE TYPE: BEDROCK Y

BOULDER Y

COBBLE Y

VEGETAT -0-

GRAVEL Y

SAND Y

MUD/SILT Y

GRANULE -0-

ANADROMOUS FISH PRESENT: N

SPECIES: -0-

COUNT: -0-

-0-

-0-

-0-

-0-

-0-

-0-

-0-

-0-

ADF&G MULTI-ASSESSMENT FORM
1991 OILING ENTRY CHECKLIST

PAGE 12

DATE PRINTED: 08/26/91

STREAM# : 2263016853
SEGMENT#: KN213

SURVEY TYPE : 91 POST TREATMENT - SS LOCATION: KNIGHT ISLAND, RUA COVE
DATE: 08/02/91
TIMES: 0950 - 1120

TEAM RECORDER: WESEMAN

-- OILING EXTENT --

SITE#	SITE TYPE	DEPTH (cm)	LENGTH (m)	WIDTH (m)	AREA (m)	%	THICK (cm)	PEN (cm)	OIL TYPE CODES
A	SURF	-0-	13	25	-0-	5	-0-	-0-	AP MS
B	SURF	-0-	18	20	-0-	7	2-3	-0-	AP HSOR
C	SURF	-0-	.5	.5	-0-	90	3	-0-	HSOR
D	SUBS	-0-	18	3	-0-	-0-	8	-0-	HOR MOR OP
E	SUBS	-0-	1	5	-0-	-0-	-0-	-0-	LOR OF
F	SUBS	-0-	18	2	-0-	-0-	-0-	-0-	HOR MOR
G	SURF	-0-	40	10	-0-	<1	-0-	-0-	AP HSOR
H	SURF	-0-	30	5	-0-	1	-0-	-0-	MS AP

ADF&G MULTI-ASSESSMENT FORM
1991 POST TREATMENT PIT INFO

PAGE 5

DATE PRINTED: 08/26/91

STREAM# : 2263016853
SEGMENT#: KN213

SURVEY TYPE : 91 POST TREATMENT - SS LOCATION: KNIGHT ISLAND, RUA COVE DATE: TIMES: 0950 - 1120										
-- PIT DETAILS --										
SITE#	SITE TYPE	TOT DP (cm)	OIL DP (cm)	CLEAN BELOW	SHEEN	W/T (cm)	SEDIM CODES	TIDE ZONE	OIL TYPE CODES	PIT-SPECIFIC COMMENTS
6	PIT	10	-0-	Y	N	8	PGS	MITZ	-0-	NO DISCERNABLE LENSE ALONG STREAM BANK
D1	PIT	17	15-17	U	N	-0-	RPCC	UITZ	OP HOR	OIL POCKET IN BOULDER INTERSTICE ALONG CLIFF
D2	PIT	20	10-20	U	N	-0-	PCG	UITZ	OP	-0-
D3	PIT	20	10-20	U	S	15	PCG	UITZ	MOR	-0-
D4	PIT	24	22-24	U	N	-0-	PCG	UITZ	HOR	-0-
E10	PIT	25	0-12	Y	N	-0-	PG	SUPRA	MOR HOR	BEHIND SEA STACK
E5	PIT	9	-0-	U	SLIGHT SILVER	7	PGS	MITZ	LOR TR	NO DISCERNABLE LENSE ALONG STREAM BANK
F7	PIT	22	0-15	Y	N	-0-	PGS	SUPRA	MOR	-0- Behind sea stack
E8	PIT	29	2-29	N	N	-0-	PG	SUPRA	HOR	BEHIND SEA STACK
E9	PIT	47	5-47	N	N	-0-	PG	SUPRA	LOR MOR	BEHIND SEA STACK

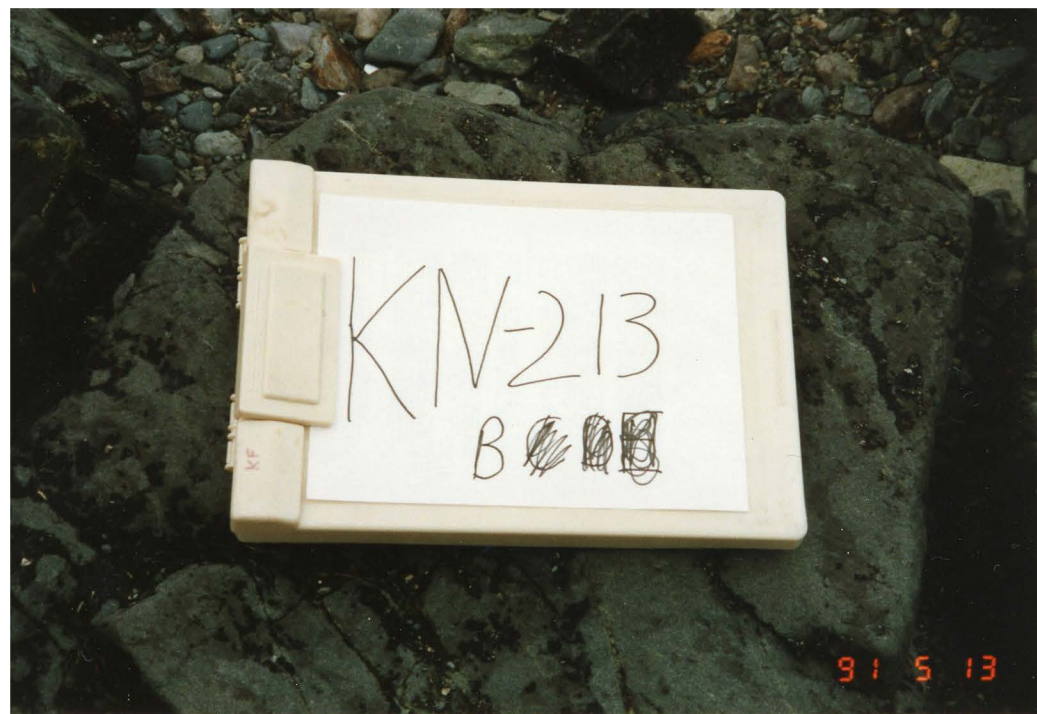
ADF&G MULTI-ASSESSMENT FORM
1991 OILING ENTRY CHECKLIST

PAGE 13

DATE PRINTED: 08/26/91

COMMENTS:

NEW AREA OF SUBSURFACE OIL DISCOVERED ALONG CLIFF EDGE - SITE D.
SUBSURFACE OIL ALONG STREAM BANK IMPROVED (SITE E) - SLIGHT SILVER SHEEN IN
2 PITS ONLY. SMALL 'HSOR' PATCH ON NORTH STREAM BANK - SITE C - SHOULD BE
RETILLED. SITE F CONTAINS A 2 X 18 PATCH H/MOR WHICH SHOULD BE REMOVED.
THIS OIL IS LOCATED IN SHELTERED LOCATION - VERY SLOW DEGRADATION RATE.
AREAS F AND C WARRANT REASSESSMENT IN 1992. STREAM AREA IS IN RELATIVELY
GOOD SHAPE. *SURVEY FOCUSED ON DOCUMENTED OIL TREATED IN 1991.



KN213B 5/13/91 #900





Segment No KN0213 Subdivision B
Date 5/13/91 Log Frame No 17
Photographer JEFFREY DAHLIN
Location KNIGHT ISLAND
Comments START FRAME FOR KN0213-B

Roll No MAYSAP-3-13 Neg. No 16
Control No 900 (Office Use Only)



Segment No KN0213 Subdivision B
Date 5/13/91 Log Frame No 18
Photographer JEFFREY DAHLIN
Location N. SIDE SEGMENT
Comments BEACH OVERVIEW LOOKING WEST
UPSTREAM

Roll No MAYSAP-3-13 Neg. No 17
Control No 900 (Office Use Only)



Segment No KN0213 Subdivision B
Date 5/13/91 Log Frame No 19
Photographer JEFFREY DAHLIN
Location FROM PIT 9, S. SIDE STREAM
Comments OVERVIEW BEACH LOOKING
DOWNSTREAM

Roll No MAYSAP-3-13 Neg. No 18
Control No 900 (Office Use Only)



Segment No KN0213 Subdivision B
Date 5/13/91 Log Frame No 20
Photographer JEFFREY DAHLIN
Location SOUTH END
Comments MID INTERTIDAL MUSSEL/
BARNACLE/NUCELLA DOWNSHORE FROM
OILED AREAS

Roll No MAYSAP-3-13 Neg. No 19
Control No 900 (Office Use Only)



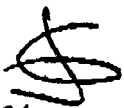
Segment No KN0213 Subdivision B
 Date 5/13/91 Log Frame No 21
 Photographer JEFFREY DAHLIN
 Location SOUTH END, C
 Comments SOR BETWEEN ROCKS, AREA
JUST UPSHORE FROM PHOTO 20

Roll No MAYSAP-3-13 Neg. No 20
 Control No 900 (Office Use Only)

Segment No KN0213 Subdivision B
 Date 5/13/91 Log Frame No 22
 Photographer JEFFREY DAHLIN
 Location SOUTH EDGE SUBDIVISION, I
 Comments VIEW NORTH OF 5 X 5 M HOR
AREA

Roll No MAYSAP-3-13 Neg. No 21
 Control No 900 (Office Use Only)

TO: John Bauer

FROM: Jeff Ginalias 

DATE: August 13, 1991

RE: KN-213B

This memorandum is prepared to clarify any confusion concerning treatment activities at segment KN-213B by the Don Bollinger squad on August 12, 1991. KN-213B contains an anadromous stream and prior to treatment the agency personnel on the treatment squad (Exxon, USCG, ADEC) elected to provide ADF&G notice of treatment activities and the opportunity to provide specific treatment guidelines. I placed a call to the ADEC Anchorage OSRC to advise of our approach and requesting that the Anchorage office notify ADF&G to see if special treatment concerns existed. If none were forwarded, the Bollinger squad was to apply the standard ADF&G guidelines, i.e., no Inipol application within 100 meters of the stream. We arrived at the site at approximately 10:30, and I attempted radio contact with Anchorage OSRC, but had negative contact. We proceeded to review the site.

Upon arriving at the beach, we noticed a few salmon in the bay. None were observed in the stream. The treatment area is the boulder/cobble field to the north of the stream, just below the tombolo. Oiling conditions consisted of weathered mid to light SOR, beneath and amongst the rocks, in an area 10m x 20m. The area definitely was within the 100 meter distance from the anadromous stream. The oiling band was patchy and no subsurface oil was observed. After reviewing the site and considering all factors it was the consensus of the parties that proper treatment consisted of breakup of the SOR and deletion of application of Inipol and Customblen. This treatment was completed.

The question was raised to me regarding your interpretation from the August 12, 1991 Exxon Operations Daily Report, Squad #1, concerning the language in the Operational Comments section concerning "skipping" segment KN-213B. The segment was not skipped, but rather all parties deemed the above as the proper treatment and the segment should be considered as completed.

cc: Frank Box



ADF&G OIL SPILL RESPONSE MONITORING

ASC# 226-30-16853

Date: 6/25/91

Stream Name: _____

Observer: Mark Fink

Segment-Sub Unit KN213B

Mark Kuwada

Location: Rua Cove, Knight Is.

Anne Weseman

Anad. Stream Permit Issued? ☒ Y ☐ N

Date: 6/18/91

Work Order Issued: ☒ Y ☐ N

Date: 6/5/91

Demob Date: 6/19/91

Oil Characteristics (circle appropriate ones)

Surface: AP, MS, TB, SOR, CV, CT, ST, FL, DB, None

Subsurface: OP, HOR, MOR, LOR, OF, TR, None

Treatment Techniques:

Manual Removal

Bioremediation & Type

Manual Raking

Mechanical Tilling

Spot Wash

Header Flood (Hot/Cold)

Other

Crew Size: _____

Lbs. or Bags of Oil/Sediment Removed _____

Other Agency Reps, and Names: Deborah Walkers, DEC

Photos

Y ☒ N

Roll #

Frames

Video

☒ Tape #

Start _____ End _____

Sediment/Oil Samples (Y ☒ N)

Collection Number

Purpose of Trip * Reassess clean-up

* Form designed primarily for cleanup inspection trips, but should be used for any field trips, i.e., to check on bird rookeries, seal haulouts, special habitat areas, etc.

Describe extent of remaining oil (any comments on expected completion of cleanup).

North side of stream looks good. Some areas of LOR in southside bank of stream (silver sheening), site 3 of MARSAP. Around the point south of stream there was a 1m x 1m area of HOR behind rock outcrop, site 6 MAD (H, 06 map)

Comments: (Are work order procedures being followed?, etc.)

The area along southern stream bank could be retilled, but it is "spotty" and might not be necessary. The HOR in site 6 could be removed if the state vessel was in the area. We did look at 213C, just north around the corner and noted some mousse and flowing oil amongst the boulder field. Overall 213C had been cleaned as best as could be expected.

A:OPRESP
April 2, 1991

1991 MAYSAP EVALUATION

ASC# 226-30-16553

SEGMENT: KN 213 SUB: B REGION: PWS SURVEY DATE: 5/13/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 7/10 - 9/15

Ecological/Constraints (see page two for details) Anadromous stream

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; 564-3657; (Anchorage) or 229-1514 (24 hrs.). *Cell*

for SHPO *Charles E. Holmes*

5/30/91

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Y

Y

Manual Pickup (Check as Req.)

X

X

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG: MANUAL PICKUP OF EASILY ACCESSIBLE AP/HBOR
IN AREAS A, C + D.

FOSC:

TAG APPROVAL DATE: MAY 29 1991

FOSC APPROVAL DATE: 6/5/91

ADEC

FOSC

EXXON

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

USCG

NOAA



1991 STATE WORK ORDER
EXXON VALDEZ OIL SPILL PROJECT
STATE OF ALASKA

PRINCE WILLIAM SOUND

maysap-y

2263016853

SEGMENT: KN213
anadromous fish stream

SUBDIVISION: B

SITE:

RECOMMENDED TREATMENT:

- In areas A, C, D, and G:
- Manually remove AP/HSOR.
In areas around pits 7 and 9:
- Manually till SOR.

ENVIRONMENTAL SENSITIVITIES:
anadromous fish stream

WORK WINDOW: 05/29/91 - 07/10/91

CLEANUP PLAN AND COST ESTIMATE DUE:

DATE SUBMITTED: 05/29/91

STATE ON SCENE COORDINATOR:

 C. S. Piper





OFFICIAL PHOTOGRAPH ADF&G EXXON VALDEZ OIL SPILL

OFFICE: VALDEZ

DATE: 08/17/89

TIME: 14:45

SEGMENT#: KN 213
LOCATION: KNIGHT ISLAND, RUA COVE

STATION#: -0-

REASON FOR TAKING PHOTO: OILED UNCATALOGED ANADROMOUS FISH STREAM -
SOUTH BANK LOOKING UPSTREAM. AREA WAS NEVER TREATED.

TAKEN BY: AIMEE WESEMAN

INITIALS: _____

ROLL #: 89AW014V FRAME #: 27

EVIDENCE ID#: 10193

Taken by: _____

Roll #: _____ Frame #: 27



OFFICIAL PHOTOGRAPH

OFFICIAL PHOTOGRAPH ADF&G EXXON VALDEZ OIL SPILL

OFFICE: VALDEZ DATE: 08/17/89 TIME: 14:45

SEGMENT#: KN 213 STATION#: -0-
LOCATION: KNIGHT ISLAND, RUA COVE

REASON FOR TAKING PHOTO: OILED UNCATALOGED ANADROMOUS FISH STREAM -
SOUTH BANK WAS NEVER TREATED.

TAKEN BY: AIMEE WESEMAN

INITIALS: _____

ROLL #: 89AW014V FRAME #: 28

EVIDENCE ID#: 10193

Taken by: _____

Roll #: _____ Frame #: 28



OFFICIAL PHOTOGRAPH ADF&G EXXON VALDEZ OIL SPILL

OFFICE: VALDEZ

DATE: 08/17/89

TIME: 14:45

SEGMENT#: KN 213

STATION#: -0-

LOCATION: KNIGHT ISLAND, RUA COVE

REASON FOR TAKING PHOTO: OILED UNCATOLOGED ANADROMOUS FISH STREAM -
SOUTH BANK WAS NEVER TREATED.

TAKEN BY: AIMEE WESEMAN

INITIALS: _____

ROLL #: 89AW014V FRAME #: 29

EVIDENCE ID#: 10193

Taken by: _____

Roll #: _____ Frame #: 29



OFFICIAL PHOTOGRAPH ADF&G EXXON VALDEZ OIL SPILL

OFFICE: VALDEZ

DATE: 08/17/89

TIME: 14:45

SEGMENT#: KN 213

STATION#: -0-

LOCATION: KNIGHT ISLAND, RUA COVE

REASON FOR TAKING PHOTO: OILED UNCATALOGED ANADROMOUS FISH STREAM -
SOUTH BANK WAS NEVER TREATED.

TAKEN BY: AIMEE WESEMAN

INITIALS: _____

ROLL #: 89AW014V FRAME #: 30

EVIDENCE ID#: 10193

Roll #: _____ Frame #: 30





OFFICIAL PHOTOGRAPH ADF&G EXXON VALDEZ OIL SPILL

OFFICE: VALDEZ

DATE: 08/17/89

TIME: 14:45

SEGMENT#: KN 213

STATION#: -0-

LOCATION: KNIGHT ISLAND, RUA COVE

REASON FOR TAKING PHOTO: OILED UNCATALOGED ANADROMOUS FISH STREAM -
SOUTH BANK WAS NEVER TREATED.

TAKEN BY: AIMEE WESEMAN

INITIALS: _____

ROLL #: 89AW014V FRAME #: 31

EVIDENCE ID#: 10193

Roll #: _____ Frame #: 31



OFFICIAL PHOTOGRAPH

OFFICIAL PHOTOGRAPH ADF&G EXXON VALDEZ OIL SPILL

OFFICE: VALDEZ

DATE: 08/17/89

TIME: 14:45

SEGMENT#: KN 213

STATION#: -0-

LOCATION: KNIGHT ISLAND, RUA COVE

REASON FOR TAKING PHOTO: OILED UNCATALOGED ANADROMOUS FISH STREAM -
SOUTH BANK WAS NEVER TREATED.

TAKEN BY: AIMEE WESEMAN

INITIALS: _____

ROLL #: 89AW014V

FRAME #: 32

EVIDENCE ID#: 10193

Roll #: _____ Frame #: 32



OFFICIAL PHOTOGRAPH

ADFG

OFFICIAL PHOTOGRAPH ADF&G EXXON VALDEZ OIL SPILL

OFFICE: VALDEZ

DATE: 08/17/89

TIME: 14:45

SEGMENT#: KN 213

STATION#: -0-

LOCATION: KNIGHT ISLAND, RUA COVE

REASON FOR TAKING PHOTO: OILED UNCATALOGED ANADROMOUS FISH STREAM -
SOUTH BANK WAS NEVER TREATED.

TAKEN BY: AIMEE WESEMAN

INITIALS: _____

ROLL #: 89AW014V

FRAME #: 33

EVIDENCE ID#: 10193

Roll #: _____ Frame #: 33



OFFICIAL PHOTOGRAPH ADF&G EXXON VALDEZ OIL SPILL

OFFICE: VALDEZ

DATE: 08/17/89

TIME: 14:45

SEGMENT#: KN 213

STATION#: -0-

LOCATION: KNIGHT ISLAND, RUA COVE

REASON FOR TAKING PHOTO: OILED UNCATOLOGED ANADROMOUS FISH STREAM -
NORTH BANK WAS NEVER TREATED.

TAKEN BY: AIMEE WESEMAN

INITIALS: _____

ROLL #: 89AW014V

FRAME #: 34

EVIDENCE ID#: 10193

Taken by: _____

Roll #: _____ Frame #: 34



Roll #: _____
Frame #: _____

OFFICIAL PHOTOGRAPH ADF&G EXXON VALDEZ OIL SPILL

OFFICE: VALDEZ DATE: 08/24/89 TIME: -0-

SEGMENT#: KN213 STATION#: -0-
LOCATION: RUA COVE, KNIGHT ISLAND

REASON FOR TAKING PHOTO: AERIAL VIEW - LOCATION OF STREAM SEDIMENT
SAMPLING SITE.

TAKEN BY: RICK GUSTIN

INITIALS: _____

ROLL #: 89RLG004V FRAME #: 29

EVIDENCE ID#: 10251

ADF&G

OFFICIAL PHOTOGRAPH

29



OFFICIAL PHOTOGRAPH ADF&G EXXON VALDEZ OIL SPILL

OFFICE: VALDEZ

DATE: 08/17/89

TIME: 14:45

SEGMENT#: KN 213

STATION#: -0-

LOCATION: KNIGHT ISLAND, RUA COVE

REASON FOR TAKING PHOTO: OILED UNCATALOGED ANADROMOUS FISH STREAM -
NORTH BANK WAS NEVER TREATED.

TAKEN BY: AIMEE WESEMAN

INITIALS: _____

ROLL #: 89AW014V FRAME #: 35

EVIDENCE ID#: 10193

Roll #: _____ Frame #: 35

CATALOG NUMBER: 2263016853
 STREAM NAME:
 LOCATION: KNIGHT ISLAND, RUA COVE

SEGMENT NUMBER: KN213 B
 SHORELINE TYPE:
 DATE: 04/12/90 TIME: HEADL-0815

SITE	WIDTH (m)	LENGTH (m)	AREA (sqm)	PERCENT OIL	THICKNESS (cm)	PENETRATION (cm)	SURFACE SUBSURF	OIL TYPES	COMMENTS
1							SURFACE	AP CT OP MS/CV	North side of stream - heavy tar & mousse
2							SURFACE	MS OP	South side of stream - adjacent in m+U1TZ
3							SURFACE	MS	large mousse patches

COMMENTS:
 PENETRATION VARIED FROM 1-2MM TO 4-6" OR NONE. LARGE PATCHES OF MOUSSE ON SOUTH SIDE OF STREAM. HEAVILY OILED CLIFFS ON NORTH TAR LIKE WITH NEEDLES COMPRESSED ON THEM. SHOVEL/STEAM. OIL ON STREAM BANKS: YES OIL WITHIN 1 MILE OF STREAM: YES, UPPER TO MIDDLE INTERTIDAL.

CATALOG NUMBER: 2263016853
 STREAM NAME:
 LOCATION: KNIGHT ISLAND, RUA COVE

SEGMENT NUMBER: KN213 B
 SHORELINE TYPE:
 DATE: 04/27/90 TIME: HEADL-0849

SITE	WIDTH (m)	LENGTH (m)	AREA (sqm)	PERCENT OIL	THICKNESS (cm)	PENETRATION (cm)	SURFACE SUBSURF	OIL TYPES	COMMENTS
1				91-100	15		SURFACE	AP / CV	North side of stream - heavy AP & tar in U1TZ
2							SURFACE	CT CV PT	" " along stream - large PT in boulders; coaton
3				11-50			SURFACE	AP / PT	South side of stream - m+U1TZ - scattered PT cliff
4							SURFACE	TB OR	South " " U1TZ - tar splatters

COMMENTS:
 NOTE: LARGE EAGLE NEST LEFT SIDE OF CREEK. RECOMMENDATIONS: THIS COVE SHOULD BE TREATED IN STEPS. THE 1ST STEP WOULD BE TO MANUALLY REMOVE ALL ASPHALT ON AREA 3A, RIGHT SIDE OF CREEK, LEFT SIDE AT AREA 1B, AND POCKET #1 SUPRATIDAL TAR PIES AND OILED DEBRIS. STEP TWO HOT WASH AREAS OF LARGE ROCKS, BOULDERS AND CLIFF BAND AREA 1, 2, 3. STEP THREE TILL RAEAS WITH CAT & RIPPER BAR AND HOT WATER WASH STORM BERM AND AREAS 1, 3, A SECOND TIME. STEP IV BURY SOLID FERTILIZER PELLETS IN A FARROW AT STORM BERM (SEE ATTACHED MAP). INIPOL IS NOT RECOMMENDED. OIL ON STREAM BANKS: YES OIL WITHIN 1 MILE OF STREAM:

5							surf & sub	OR & org	South side - storm berm - buried oil & organic debris
6					15cm		surf	PT / CV	North side - Boulders cemented with tar
7							surf	AP	South bank - TAR / AP

CATALOG NUMBER: 2263016853
 STREAM NAME:
 LOCATION: KNIGHT ISLAND, RUA COVE

SEGMENT NUMBER: KN213 B
 SHORELINE TYPE:
 DATE: 05/13/91 TIME: HEADL-2000

SITE	WIDTH (m)	LENGTH (m)	AREA (sqm)	PERCENT OIL	THICKNESS (cm)	PENETRATION (cm)	SURFACE SUBSURF	OIL TYPES	COMMENTS
1	30	10		10			SURFACE	HSOR	
2	2	30			3		SURFACE	HSOR	
3	1	10				0-15	SURFACE	LOR OF	
4	10	40		1	3-5		SURFACE	HSOR	
5	10	20		30	3-5		SURFACE	HSOR	
6	5	5		100	0-20		SURFACE	HOR	

COMMENTS:

AREA LOOKS 100% IMPROVED FROM 1 YEAR AGO. RESIDUAL TARMAT/MOUSSE STILL PRESENT IN SITE #1 AND SHOULD BE REMOVED. SITE #3 ON STREAM BANK CONTAINS 'LOR' SEDIMENTS WHICH SHOULD BE MANUALLY TILLED. 'HSOR' SEDIMENT IN SITE #5 THAT ARE ACCESSIBLE SHOULD BE REMOVED. SITE #6 CONTAINS ACCESSIBLE 'HOR' SEDIMENTS WHICH, IF NOT REMOVED, WILL REMAIN BECAUSE THEY ARE IN SHELTERED AREA. I WAS UNABLE TO LOCATE OIL IN STORM BERMS THAT I SAW LAST FALL. ACTIVE BERM AREA; GRAVELS HAD BEEN REMOVED & NEW LOGS DEPOSITED BY STORMS. IMPOSSIBLE TO TILL AREA NEAR STREAM - STREAM COULD MIGRATE. UNDISCOVERED RESIDUAL 'HSOR' SEDIMENTS TO RIGHT OF SITE #3 MAY BECOME APPARENT WHEN WEATHER WARMS OR SOME ROCKS ARE TURNED. THEY SOULD BE PICKED UP WHERE ENCOUNTERED.

CATALOG NUMBER: 2263016853

STREAM NAME:

LOCATION: KNIGHT ISLAND, RUA COVE

SEGMENT NUMBER: KN213 B

SHORELINE TYPE:

DATE: 08/02/91 TIME: HEADL-1120

SITE	WIDTH (m)	LENGTH (m)	AREA (sqm)	PERCENT OIL	THICKNESS (cm)	PENETRATION (cm)	SURFACE SUBSURF	OIL TYPES	COMMENTS
6							PIT		
D1							PIT	OP HOR	NO DISCERNABLE LENSE ALONG STREAM BANK
D2							PIT	OP	OIL POCKET IN BOULDER INTERSTICE ALONG CLIFF
D3							PIT	MOR	
D4							PIT	HOR	
E5							PIT	LOR TR	NO DISCERNABLE LENSE ALONG STREAM BANK
F10							PIT	MOR HOR	BEHIND SEA STACK
F7							PIT	MOR	BEHIND SEA STACK
F8							PIT	HOR	BEHIND SEA STACK
F9							PIT	LOR MOR	BEHIND SEA STACK
D	3	18			8		SUBSUR	HOR MOR OP	
E	5	1					SUBSUR	LOR OF	ON STREAM BANK
F	2	18					SUBSUR	HOR MOR	
A	25	13		5			SURF	AP MS	IN INTERSTICES
B	20	18		7	2-3		SURF	AP HSOR	
C	.5	.5		90	3		SURF	HSOR	ON STREAM BANK
G	10	40		<1			SURF	AP HSOR	
H	5	30		1			SURF	MS AP	

COMMENTS:

NEW AREA OF SUBSURFACE OIL DISCOVERED ALONG CLIFF EDGE - SITE D. SUBSURFACE OIL ALONG STREAM BANK IMPROVED (SITE E) - SLIGHT SILVER SHEEN IN 2 PITS ONLY. SMALL 'HSOR' PATCH ON NORTH STREAM BANK - SITE C - SHOULD BE RETILLED. SITE F CONTAINS A 2 X 18 PATCH H/MOR WHICH SHOULD BE REMOVED. THIS OIL IS LOCATED IN SHELTERED LOCATION - VERY SLOW DEGRADATION RATE. AREAS F AND C WARRANT REASSESSMENT IN 1992. STREAM AREA IS IN RELATIVELY GOOD SHAPE. *SURVEY FOCUSED ON DOCUMENTED OIL TREATED IN 1991.

OG SUPPLEMENTAL INFO TO MAD

RECORDER: Wesemen REC-DATE: 10/8/91

REC-DATE: 10/8/91

PAGE

CATALOG NUMBER: 226-35-16853

STREAM NAME:

LOCATION: Rva Cove, knight +

SEGMENT NUMBER: KN 213B

SHORELINE TYPE:

DATE: 4/22/91

OG vs. MAD: Better oil descriptions

OG data more complete than mod

Better oil descriptions

[illegible]

ADEC EXXON VALDEZ POST-TREATMENT SURVEY REPORT

SEGMENT#: KN213
LOCATION: E CENTRAL KNIGHT ISLAND

DATE: 09/30/89
TIME: 18:30

Survey Type: Boat, Ground
Team: G. Pavia, D. Gardner

WEATHER AND SEA CONDITIONS

Weather: Cloudy, Rain Wind Direction: NE
Sea State: Moderate Knots: 0-15

Low Tide: 20:39 Feet: -0.2 High Tide: 2:18 Feet: 11.9
Low Tide: 8:15 Feet: 0.9 High Tide: 14:22 Feet: 12.7

SHORELINE DESCRIPTION

Shoretypes: H,LR,B,C
(H=headland, LR=low-lying rock, B=beach, C=cove, L=lagoon, M=marsh)

Wave Exposure: H,M,L (H=high, M=moderate, L=low)
Shoreline Composition: R,B,C,G,S
(R=bedrock, B=boulder, C=cobble, G=gravel, S=sand, M=silt)

OIL CHARACTERISTICS

Degree of Oiling: VL,L,M,H
(N=none, VL=very light, L=Light, M=moderate, H=heavy)
Area of Impact: S,H,M
(S=supratidal, H=high intertidal, M=mid tidal, L=low intertidal)

Max. Oil Thickness: 5 mm (1 = 1 mm or less, 0 = no oil)
Max. Oil Penetration: 30 cm (35 = 35 cm or greater)

Percent Segment Categorized as Oiled: 100%
Presence of Oiled Driftwood (y/n): y
Oil Types: M,SY,T,A,ST
(P=pooled, M=mousse, SY=sticky, T=tar, A=asphalt, ST=stain)
Samples: KN213-1 / KN213-2 / none / none

DAMAGED OR OILED ORGANISMS

Fucus (y/n): n Barnacles (y/n): y Mussels (y/n): n
Dead Mammals: 0 Dead Birds: 0

SOLID WASTE FOUND

Type: Few localities, cleanup debris, garbage
Bags Collected: 1

Draft

Printed: 12/12/89 11:35

Walk-a-thon

ASAP Follow-Up Recommendations
TAG Recommendations - August 21, 1990

SEGMENT

KN-04	A Site 1	Manual rake in area of test pit 2 and bioremediation (M.P.) <i>or</i>
KN-05	B Site 1	Manual pickup of AP-mousse followed by bioremediation (M.P.) <i>or</i>
KN-026	A Site 1	NTR - Reassessment in 1991 ✓
KN-113	A Site 1	NTR - Reassessment in 1991 ✓
KN-134	A Site 1	Check for AP in vicinity of stream and remove re-bioremediate remainder of the site. (L.P.) <i>or</i>
KN-135	B Site 1	Manual pickup of small patches of AP re-bioremediate <i>or</i> including the storm berm. (M.P.)
KN-136	A Site 1	NTR - Reassessment in 1991 ✓
KN-208	A Site 1	NTR - Reassessment in 1991 ✓
KN-213	B Site 1	NTR - Reassessment in 1991 ✓
KN-213	E Site 1	NTR - Reassessment in 1991 ✓
KN-300	A Site 1	NTR - Reassessment in 1991 ✓
KN-500	A Site 1	Re-bioremediate and reassessment in 1991 (check with ADF&G for <i>or</i> bioremediation approval) (M.P.) <i>ARCHAEOLOGICAL INSPECTION CONSTRAINT APPLIES</i>
KN-506	A Site 2	NTR - Reassessment in 1991 ✓
	Site 3	NTR - Reassessment in 1991 ✓

TAG APPROVAL DATE Aug 21 1990.

EXXON ANDY TEAL *Andy Teal*

ADEC RAY MORRIS *Ray Morris*

USCG G.A. TEITER *G.A. Teiter*

NOAA Burl Wescott *Burl Wescott*

SHPO Rachel Jean Dore 8/22/90

ORIGINAL CONSTRAINTS APPLY

FOSC *[Signature]*

DATE 8/23/90

LIST OF ASAP REPORTS and TAG RECOMMENDATIONS
CONTAINING ANDROMOUS STREAMS

9/10/90

<u>SEGMENT</u>	<u>CATALOG #</u>	<u>TAG RECOMMENDATION</u>
BA002A	226-40-16450	
BP004	226-20-16392	
BP004	226-20-16397	Bio/Customblen
BP004	226-20-16388	
BP004	226-20-16395	
CH002A	226-20-16180	
CH009B	226-20-16182	Tarmat removal/Bio
CH900A	226-20-16200	
CU014A	224-20-13036	
CU013A	224-20-13030	
EL052B	226-10-16902	NTR
EV014A	226-40-16640	
EV017A	226-40-16620	
EV025A	226-40-16613	
EV071B	228-40-16484	
GR007A	NOT CATALOGED	
GR103A	227-20-17880	
KN213B	226-30-16853	NTR
KN129A	226-10-16975	
KN129B	NOT CATALOGED	
KN132B	226-10-16982	
KN135A	226-30-16285	
KN211E	226-10-16875	NTR
KN401A	226-30-16820	
KN500A	226-10-16992	NTR
KN701B	226-30-16840	NTR
LA018A	226-40-16780	
LA021B	226-40-16776	
LA021A	226-40-16774	

Final Anadromous Stream Treatment Information

Segment ID - Stream ID	NTR	Bio	Bio Start	Bio End	Man	Man Start	Man End
K0911-CD020 262-10-10080					X	6/28/90	6/28/90
K0911-CD020 262-10-10092					X	6/28/90	6/28/90
K0917-CC100 262-15-10040	X						
K0919-HB001 262-20-10040					X	6/12/90	6/14/90
K0919-HB004 262-20-10030	X						
K1002-AB002 262-65-655					X	7/7/90	7/8/90
K1007-PB001 262-70-10025					X	6/23/90	6/24/90
K1007-PB016 262-70-10010					X	7/10/90	7/10/90
K1009-DB008 262-75-10020	X						
KN0103 226-10-16922		X	7/7/90	9/1/90	X	7/7/90	7/7/90
KN0106 226-10-16890					X	6/30/90	6/30/90
KN0110 226-10-16928	X						
KN0120 226-10-16940	X						
KN0129 226-10-16975					X	5/30/90	5/30/90
KN0129 KN0129-UNCAT		X	6/19/90	6/19/90	X	5/30/90	5/30/90
KN0132 226-10-16982		X	6/19/90	9/11/90	X	5/26/90	5/29/90
KN0134 226-30-16865		X	6/23/90	6/23/90	X	6/23/90	6/23/90
KN0201 226-30-16872					X	6/1/90	6/1/90
KN0205 226-30-16860					X	6/1/90	6/3/90
KN0211 226-10-16875		X	7/1/90	7/9/90	X	7/1/90	7/9/90
KN0211 226-10-16880					X	7/1/90	7/1/90
KN0213 226-30-16853		X	7/1/90	7/6/90	X	7/1/90	7/6/90
KN0401 226-30-16820					X	6/30/90	6/30/90
KN0500 226-10-16992		X	7/5/90	9/11/90	X	7/5/90	7/7/90
KN0500 226-10-16996		X	7/7/90	9/11/90	X	7/5/90	7/7/90
KN0601 226-40-16855	X						
KN0602 226-40-16851	X						
KN0602 226-40-16853	X						
KN0701 226-30-16840		X	6/30/90	9/13/90	X	6/30/90	7/27/90
KN0704 226-30-16844	X						
LA015 226-40-16782		X	7/3/90	7/8/90	X	7/3/90	7/8/90
LA018 226-40-16780		X	7/3/90	8/26/90	X	6/15/90	7/4/90
LA021 226-40-16774		X	6/17/90	6/17/90	X	6/13/90	6/14/90
LA021 226-40-16776	X						
LA023 226-40-16772	X						
LA029 226-40-16788	X						
LA031 226-40-16785	X						
MA009 226-20-15044	X						
MN001 227-20-17570	X						
NA026 226-40-12950	X						
NK001 232-21-10230		X	7/3/90	7/4/90	X	7/3/90	7/4/90
PD002 242-42-10450					X	6/21/90	6/23/90
PD003 242-42-10460					X	6/21/90	6/23/90
TB002 232-10-10340					X	7/1/90	7/1/90
TB003 232-10-10342					X	6/20/90	7/1/90
WB001 242-32-10155					X	6/19/90	6/19/90
WB003 242-32-10160					X	6/19/90	6/19/90
WH003 226-40-16322		X	7/8/90	7/8/90	X	7/8/90	7/8/90

ANAD ONLY 226-30-16853

213 SUBDIVISION: B SITE: 1 DATE 11 AUG 902.6m USC6
70e, NOAASIGNATURE [Signature] / David C. Orr☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

0/5 IN ANADROMOUS STREAM SEGMENT. AREAS WHICH HAVE BEEN
 "N", STILL SHOW HEAVY OILING ALONG STREAM BANKS. PATCHY ASPHALT,
 VER NOTED WITH INTERSTITIAL MOUSSE, COVER, AND STAIN ALONG ROCK
 ONS. WORK CREWS SHOULD CONTINUE IN AREA AND REMOVE REMOVAL RESIDUAL
 CLEAN-UP EFFORTS. PRIORITY REASSESSMENT IN 1991.

Cready SIGNATURE [Signature]

☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

- banks at 50 are heavily oiled and will require relocation - with
 aid facilitating this process. Also areas where manual removal
 occurs, further manual removal is required. MS patches,
 and untreated AP also require removal. Due to the
 of this Anad. Stream, particular attention and care should
 to clean the beach further. ASAP / same crew has recommended
 further treatment in 90% Stream bank shows OR penetrations
 to 40cm.

INSON SIGNATURE [Signature]

☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

WITH USC6 & ADEL COMMENTS. SEE SSAT SKETCHES
 IMEND CONTINUED MANUAL/MECHANICAL

KN 213-B, AS# 226-30-16853

DEON

SIGNATURE [Signature]☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

SKETCH MAP

SEGMENT ST/ KN-213

SUBDIVISION B

DATE Aug 11 90

CHECKLIST

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

LEGEND

1 Δ
PH - No Subsurface Oil

2 Δ
PH - Subsurface Oil

CT/C
Congruent Distribution

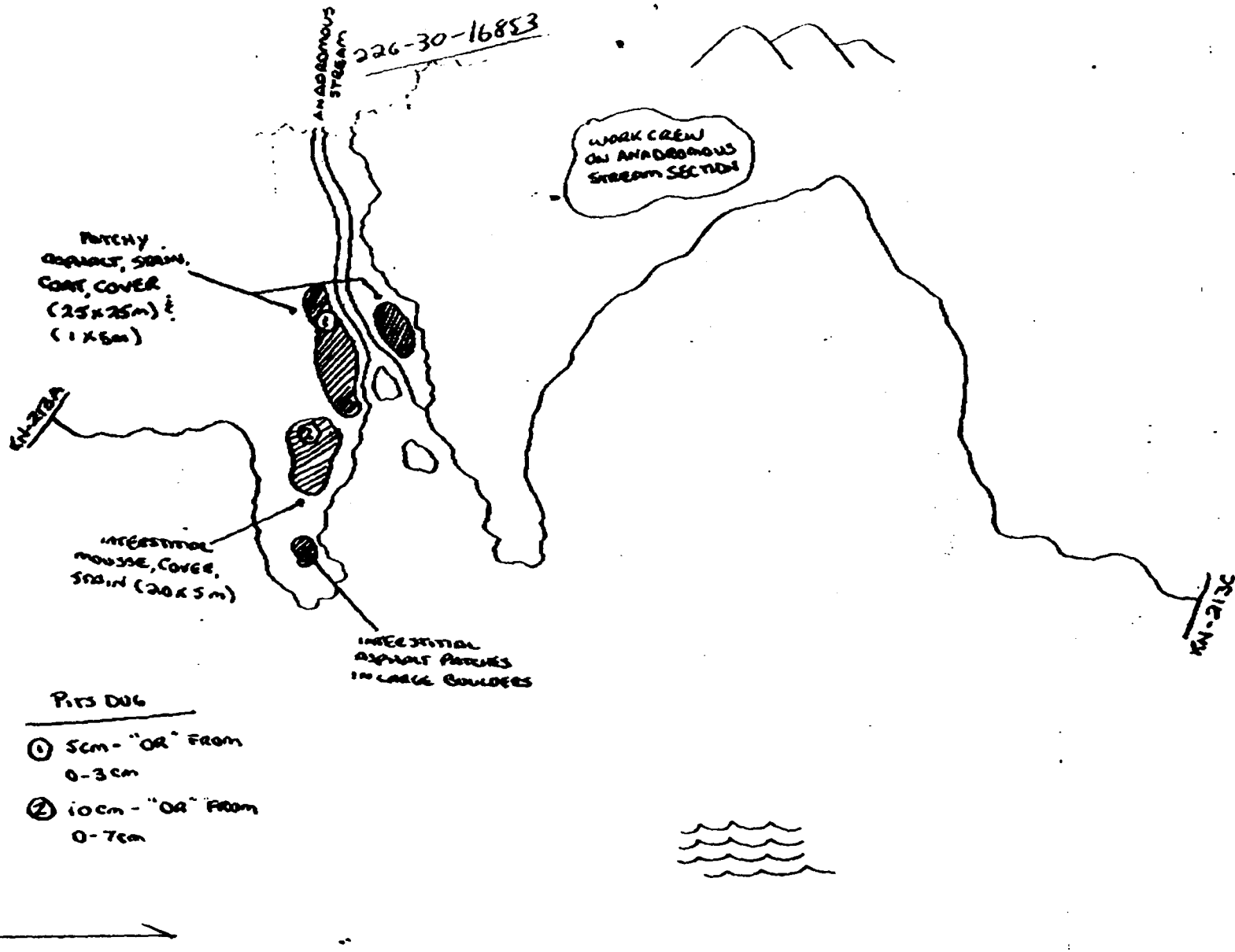
CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

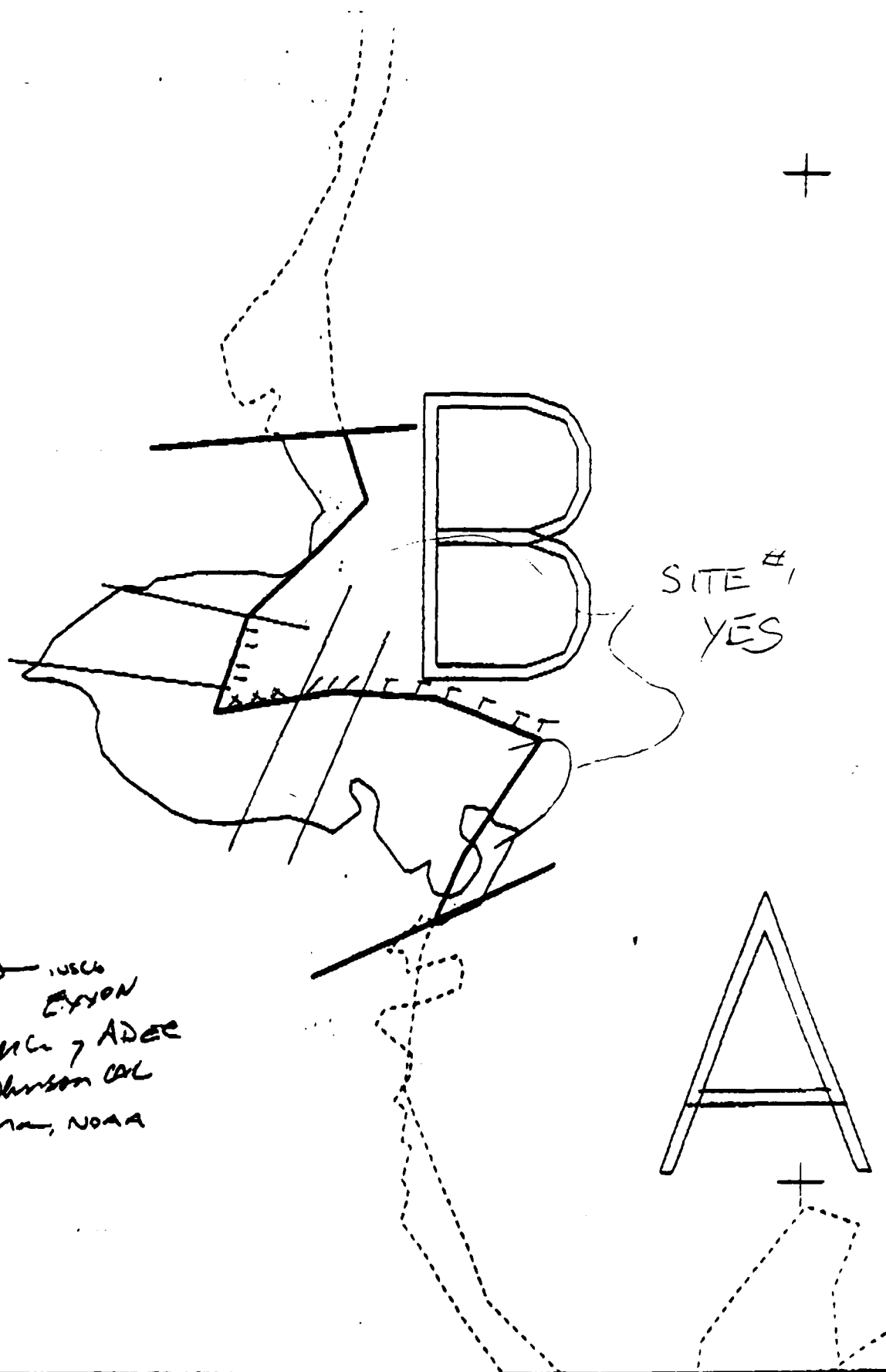
Oil Vegetation

1 →
Photo location, direction,
and number

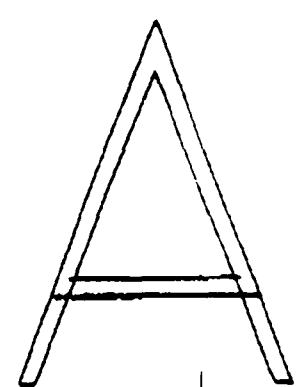


Oil Character Length (m): AP PO CV CT ST MS PT TB FL NO

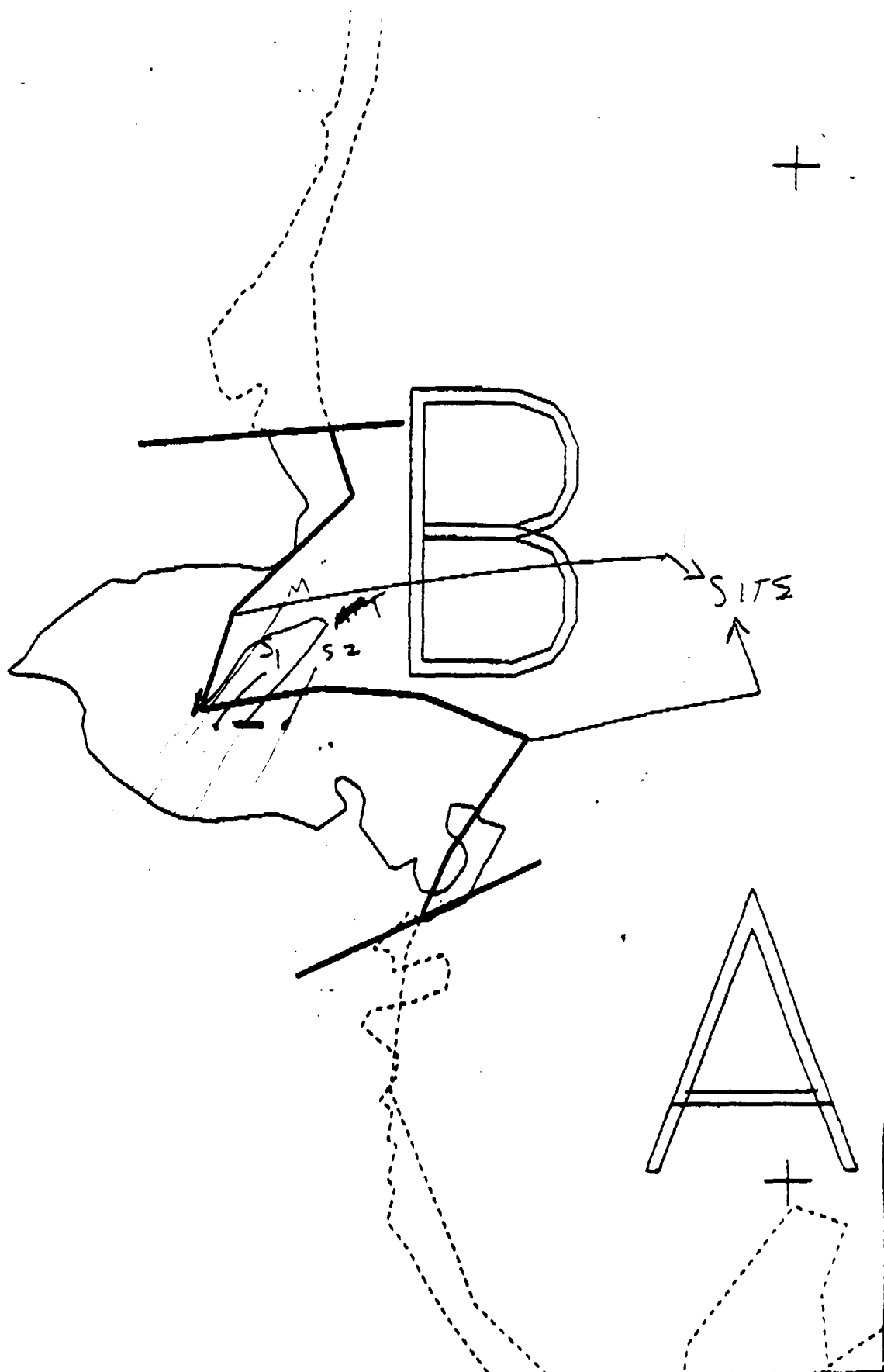




YES 91 Dms - 1056
 YES 81 1110 ERYON
 YES 71 R.B. 1110 7 ADEC
 YES 91 Thompson car
 YES 91 1110 1110, NOAA



XXXX	Wide	KN-213 B	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 284m	Map Key: KNKN-213B
---	Narrow	METERS	Name: <u>NAKASHIMA</u>
TTTT	Very Light	0 100 200	Date: <u>8/11/90</u>
0000	No Oil	AK State Plane Zone 4 1:1056	Date Entered:
		KN-213B	



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

KN-213 B
 ADEC Subsegment Length: 284m
 METERS

0 50 100

AK State Plane Zone 4 1:1050
 kn-213b



Subdivision Field Map
 Map Key: KNKN-213B
 Name: NAKASHIMA
 Date: 8/11/90
 Date Entered:

ASAP FOLLOWUP RECOMMENDATIONS

Segment: AS/KV-213 Subd.: B Site: _____ Date: 8-11-90 1990

LIMITED TO AUA Stream 226.30-16853 ONLY

Conditions Observed: An area of residual AP, SO₂, CT, CV, ST and a small amount of OR oil remains on this segment. In addition scattered tar patches, LMS patches remain. In treated area exists in between large boulders in untreated south portion of segment. Stems from bar south bank of stream has approx 400m protection of OR-DE oiling.

Followup Recommendations: See below for treatment recommendations

Completed by Pickup Crew: ☐ YES ☐ NO

Priority for Addressing in 1990: ☐ High ☐ Med ☐ Low

ADEC Bob McCreary

(name)

Robert B. McCreary

(signature)

Comments: Mechanical relocation of stems from caught with further manual removal completely the removal of all AP, LMS, CT, CV, ST, and OR and debris oil

Exxon JOHN DEAN

(name)

John Dean

(signature)

Comments: ADDITIONAL OIL RECOVERY IS POSSIBLE HOWEVER SCOPE OF WORK IS TOO GREAT TO BE ACCOMPLISHED BY ASAP WORK CREW. ANY WORK SCHEDULED MUST BE SENSITIVE TO PINK SALMON RUN PRESENTLY OCCURRING.

USCG DON OREIS

(name)

Don Oreis

(signature)

Comments: VERY HEAVY OILING NOTED IN AREAS REPORTED CLEAN BY O/S WORK CREW. HEAVY DEPOSITS OF MOUSSE COVER AND SOOT STILL REMAINS. SUGGEST WORK CREW CONTINUE IN AUA. LACK OF SALMON EGGS IN STREAM CREATES SENSITIVE ENVIRONMENT AND SHOULD BE ADDRESSED

Land Rep. LORA JOHNSON

(name)

Lora L. Johnson

(signature)

Comments: VERY HEAVY OIL STILL PRESENT AT RUA CAVE. MOUSSE, CT, CV AND EDGES OF AP NEED TO BE TREATED/REMOVED. SEE SSAT SKETCHES OF OIL DISTRIBUTIONS ALSO. KEEP WORKING IN 1990.

Aimee Weseman
ADF&G/Oil Spill Response
M/V Corinthian, PWS

Sept 17, 1990

Re: Stream Report
ASC# 226-30-16853, Seg. KN 213B, Rua Cove

Manual treatment to this heavily oiled anadromous fish stream occurred from July 1 to July 6, 1990. The re-application of Custom-Blen and first application of INIPOL(>100m from the stream) occurred on Aug 30, 1990.

Having missed treatment in 1989 due to the presence of salmon when encountered by clean-up crews, this segment was a classic example of what an oiled area is like if one lets "nature" do the clean-up.

Located in a small, shallow cove on Knight Island's eastern coastline, it receives a fair amount of exposure and is subject to nature's weathering processes. Even so, over a year after the oil spill, two extensive areas of from 6" to 8" thick asphalt/tarmat remained adjacent to the stream/intertidal spawning area. Pockets of pooled oil remained between the rock and boulder interstices, and OR and OP sediments remained buried in the 2 UITZ storm berms. Having seen the stream area both last year and this year, it was evident to me that during periods of high water, chunks of the tarmat on the streambank regularly broke off and were washed into the stream itself.

When crews began work on the area this July, the enormity of the task was such that a backhoe was sought to assist with the break-up and removal of the tarmat. None being available, a crew of from 9 to 20 workers labored for 6 days removing the oiled material with picks, shovels, trowels and four-wheelers. I was present for 4 out of six days of treatment to the site and know that well over 30 supersacks of heavily oiled material were removed from the tarmat and boulder areas. The oil buried in the storm berms was not addressed.

Once EXXON and the USCG judged that the manual removal was completed on the site, they pushed heavily for the application of INIPOL. Declining the INIPOL, ADF&G agreed to the application of 25# of CustomBlen to the northern tarmat area.

The site was demobilized on July 6. I was not present at that time and therefore was unable to have the additional oiled material removed that I deemed necessary.

On August 30 the site received a second application of CustomBlen (363#) to the oiled tarmat and boulder areas maintaining a 15' buffer from the water. One hundred and twenty gallons of INIPOL were applied north of the stream to a still oiled tarmat area. ADF&G was present for the application and required a buffer of 50m from the intertidal spawning area and 100m from the stream itself.

The oiling condition of the stream area was post-assessed by both ADF&G and the interagency ASAP survey team on August 4, and 11 respectively. Both surveys call for further treatment. It is recommended that remaining OP, AP, and OR sediments in the tarmat/boulder areas be removed, and that the storm berms be mechanically relocated with the removal of those OP sediments.

Aimee Weseman

STATE OF ALASKA

STEVE COWPER, GOVERNOR

DEPARTMENT OF FISH AND GAME

333 RASPBERRY ROAD
ANCHORAGE, ALASKA 99518-1599
PHONE: (907) 344-0541

EXXON Valdez Oilspill Cleanup

Anadromous Fish Stream Authorization

Date 7/1/90

EXXON Authorized Representative Darryl Yoes

Shoreline Segment KN-013

Anadromous Fish Stream Number(s) 226-30-16853

Approved Cleanup Techniques in accordance with the Anad-
romous Fish Stream work orders approved by the FOGC with special
emphasis on manual removal of oil within the stream channel
of bottom substrate & on the stream banks within the high
water limits

Approved Cleanup Period 5/15/90 to 7/10/90

Alaska Department of Fish and Game

Renee W. Laxman
Authorized Officer

M. Cowper 7/1/90
Permittee's Signature

AX 226-30-16853

ASAP TAG REVIEW SHEET

Segment: KN 213 Subd: B Site: L

Date
PRE-Review 14 AUG 90

Priority For Addressing In 1990

 HIGH MEDIUM X LOW NTR

Treatment

Recommended:

MANUAL PICKUP - Asphalt Patches +
MOUSSE

OG - Asphalt (I) > NTR
 - Mousse (I)

SKETCH / Recommend / COMMENT - indicate
Patchy AP

Priority Site For Reassessment In 1991

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

TAB 21 AUG

NTR

Reassess 91

ASAP FOLLOWUP RECOMMENDATIONS

Segment: AS/KV-213 Subd.: B Site: _____ Date: 8-11-90 1990

LIMITED TO AUNA Stream - 226-30-16853 ONLY

Conditions Observed: An area of residual AP SDZ CT CV ST and a small amount of OR oil remains on this segment. In addition scattered tar patches / OMS patches remain. In treated area exists in between large boulders in untreated south portion of segment. Stream berm on south bank of stream has approx 400m perimeter of OR-DE oiling.

Followup Recommendations: See below for treatment recommendations

Completed by Pickup Crew: ☐ YES ☐ NO

Priority for Addressing in 1990: ☐ High ☐ Med ☐ Low

AADC Bob McCrory (name) Robert B. McCrory (signature)

Comments: Mechanical relocation of stream berm coupled with further manual removal completely the removal of all AP. In treated area, OR and OR and before oil

Exxon John Dean (name) John Dean (signature)

Comments: ADDITIONAL OIL RECOVERY IS POSSIBLE HOWEVER SCOPE OF WORK IS TOO GREAT TO BE ACCOMPLISHED BY ASAP WORK CREW. ANY WORK SCHEDULED MUST BE SENSITIVE TO PINK SALMON RUN PRESENTLY OCCURRING.

USCG Dan Davis (name) Dan Davis (signature)

Comments: VERY HEAVY OILING NOTED IN AREAS REPORTED CLEAN BY O/S WORK CREW. HEAVY DEPOSITS OF MOUSSE COVER AND SOOT STILL REMAINS. SUGGEST WORK CREW CONTINUE IN BUA. LARGE SALMON EYDS IN STREAM CREATES SENSITIVE ENVIRONMENT AND SHOULD BE ADDRESSED

Land Rep. LORA JOHNSON (name) Lora L. Johnson (signature)

Comments: VERY HEAVY OIL STILL PRESENT AT RUA COVE. MOUSSE, CT, CV AND EDGES OF AP NEED TO BE TREATED/REMOVED SEE SSAT SKETCHES FOR OIL DISTRIBUTIONS ALSO. KEEP WORKING IN 1990.

ANAD ONLY 226-30-16853

1.213 SUBDIVISION: 3 SITE: 1 DATE 11 AUG 902.6M USCG
702, NOAA

SIGNATURE

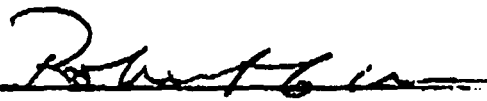
☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

NO O/S IN ANADROMOUS STREAM SEGMENT. AREAS WHICH HAVE BEEN
 "N", STILL SHOW HEAVY OILING ALONG STREAM BANKS. PATCHY ASPHALT,
 VER NOTED WITH INTERSTITIAL MOUSSE, COVER, AND STAIN ALONG ROCK
 ONS. WORK CREWS SHOULD CONTINUE IN AREA AND REMOVE REMOVAL RESIDUAL
 CLEAN-UP EFFORTS. PRIORITY REASSESSMENT IN 1991.

C. Brady

SIGNATURE

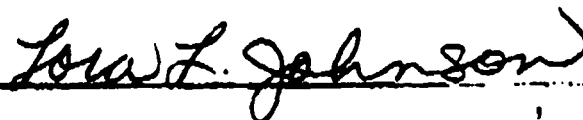
☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

~ banks at 50 are heavily oiled and will require relocation - with
 aid facilitating this process. Also areas where manual removal
 needed, further manual removal is required. MS patches,
 1) and untreated AP also require removal. Due to the
 2) of this Anad. Stream particular attention and care should
 3) to clean the beach further. ASAP / Sailing crew has removed
 further treatment in 90% Stream bank shows OR penetrations
 to 40cm.

H. SON

SIGNATURE

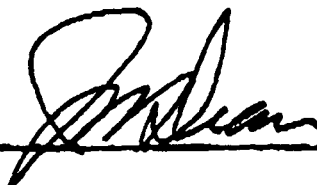
☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

WITH USCG & ADEL COMMENTS. SEE SSAT SKETCHES
 1) MEND CONTINUED MANUAL/MECHANICAL

DEAN

SIGNATURE

☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

SKETCH MAP

SEGMENT ST/ KN-213

SUBDIVISION B

DATE ALX / 11 / 90

CHECKLIST

☐ H Area
☐ Approx. Scale
☐ Seg/Sub Bdry
☐ Oil Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HULL/ML
☐ SSI
☐ Profile Location(s)
☐ Profile(s)
☐ Pit 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

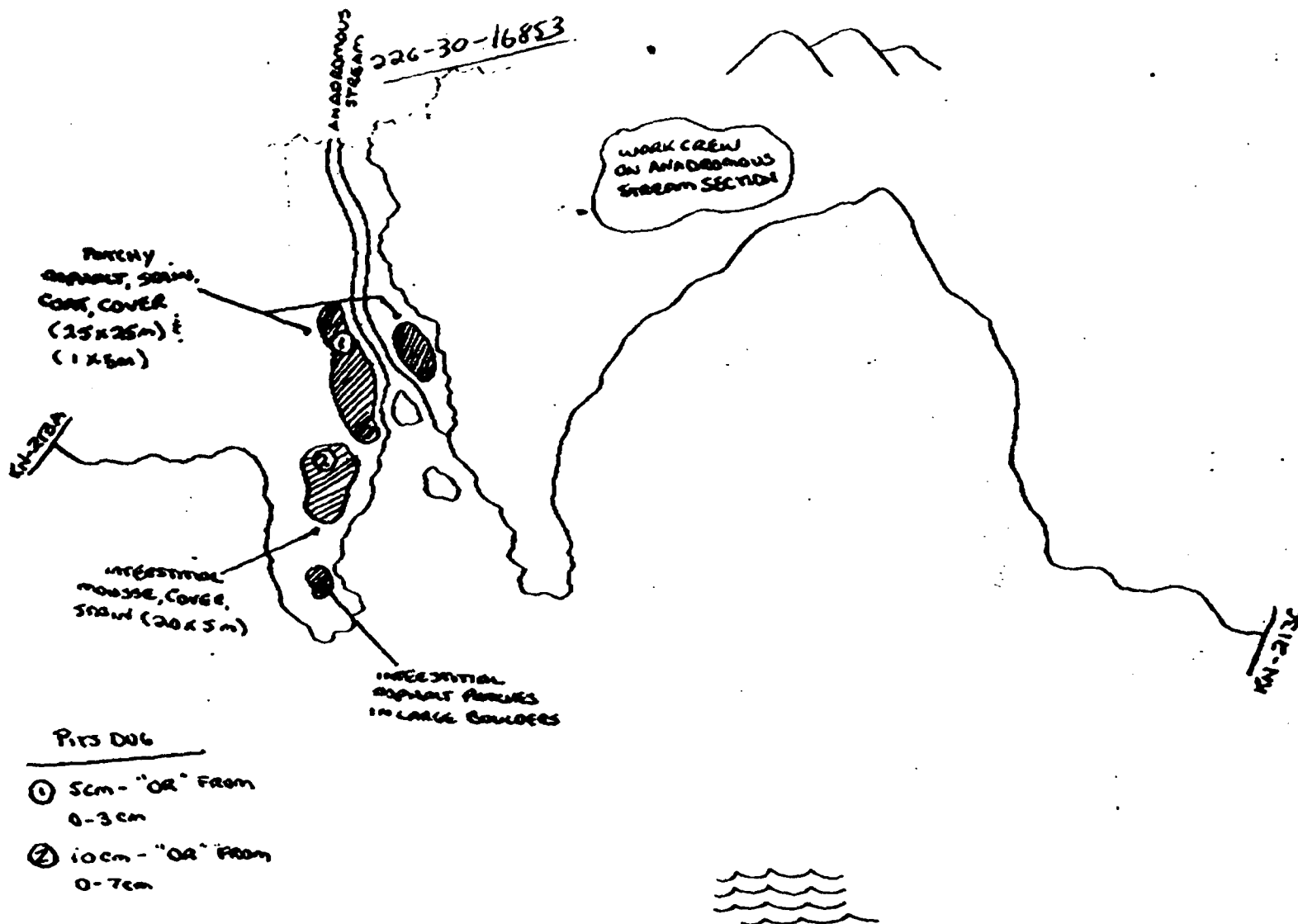
Splashed Distribution

lll

Oiled Vegetation

1 →

Photo location, direction, and number



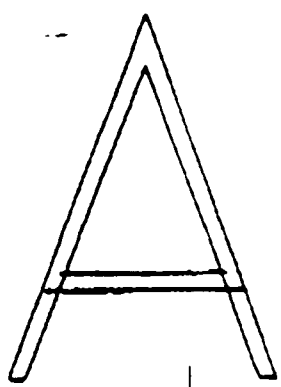
PITS DUG

- ① 5cm - "OR" FROM 0-3cm
- ② 10cm - "OR" FROM 0-7cm



SITE #1
YES

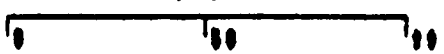
YES 91 DNEC - USCG
YES 81 JMD ERYON
YES 71 R.B. MCG 7 ADEC
YES 91 Thompson COC
YES 91 Davidson, NOAA



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

KN-213 B

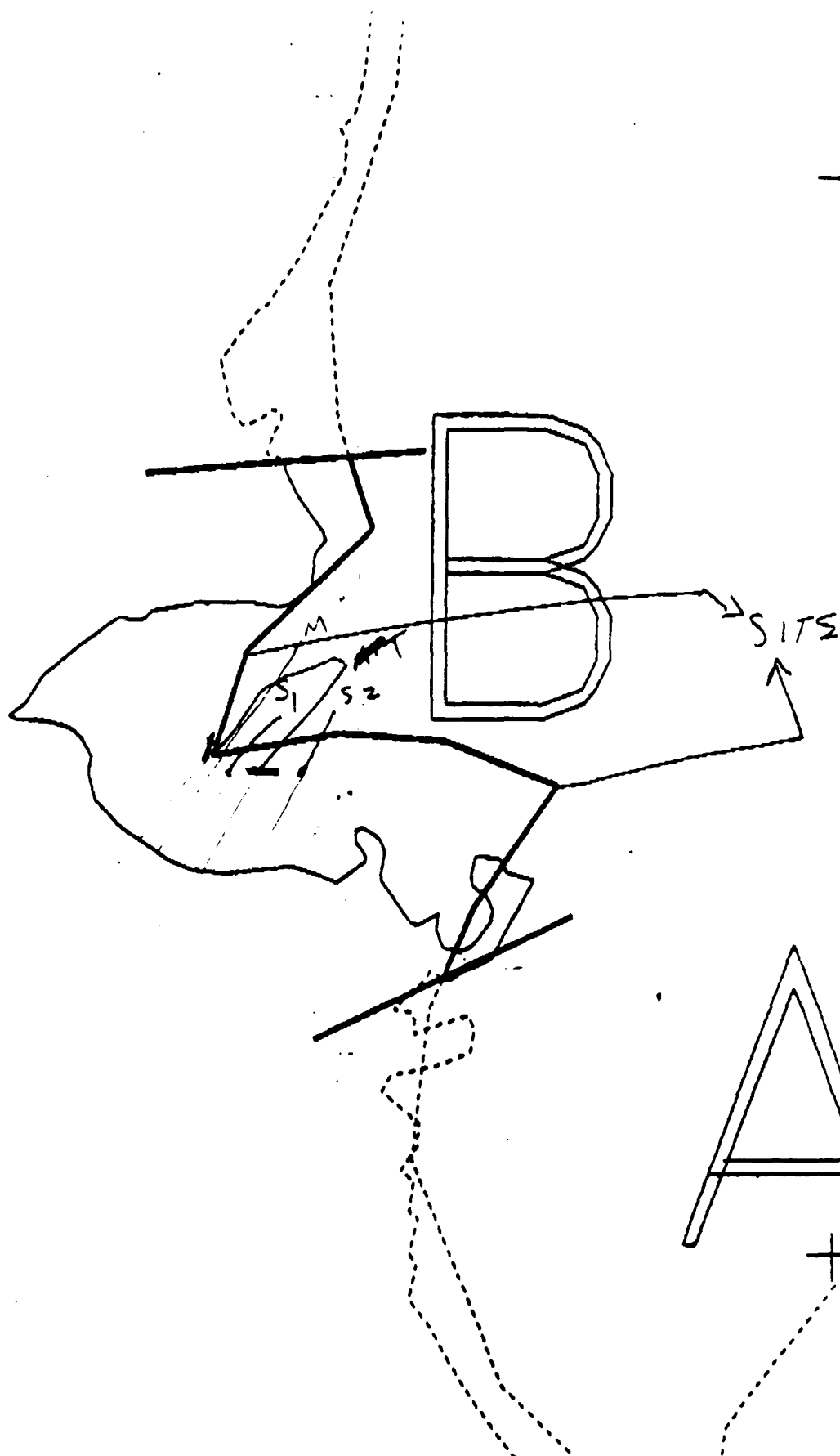
ADEC Subsegment Length: 284m
 METERS



AK State Plane Zone 4 1:1050
 KN-213B



Subdivision Field Map
 Map Key: KNKN-213B
 Name: NAKASHIMA
 Date: 8/11/90
 Date Entered:



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

KN-213 B

ADEC Subsegment Length: 284m
 METERS

0 50 100

AK State Plane Zone 4 1:1950
 kn-213b



Subdivision Field Map
 Map Key: KNKN-213B
 Name: NAKASHIMA
 Date: 8/11/90
 Date Entered:

ADEC BIOREMEDIATION DAILY REPORT

DATE: 8/30/90ADEC Monitor: Rowann Hudnall

TIDES: TIME: HEIGHT:
 Low _____
 High _____
 Low _____
 High _____

WEATHER: Cloudy Rain Fog Sun
 TEMP: 65 SEA COND: calm
 WIND DIR: N-NE-E-SE-S-SW-W-NW
 WIND SPEED 0-15 16-30 30+

USCG Dan Percy
 OOPS James Byers

Exxon Al Snook
 Other _____

OGS Dan Mann, Jim Conners

Segment	Sub	No. Sites	Inipol (gal)	Custom (lbs.)	Comments
---------	-----	-----------	--------------	---------------	----------

KN019	A	4	3	4	
KN205	B	2	0	134	
KN209	A	2	200	140	
KN209	D	3	37	23	
KN213	B	4	120	363	
KN213	BS	-	-	-	
KN403	A	2	0	881	
KN134	A	1	90	45	

> treated together 1st treatment

\shorelin\rowann\biorept 8/7/90

ADEC DEMOBILIZATION REPORT
FOR INIPOL AND CUSTOMBLEN TREATMENT

To: Alaska Department of Environmental Conservation
Oil Spill Response Center
Anchorage, Alaska

Attn: John Bauer
FAX 265-4666

From: _____ (please print)

RE: SEGMENT NUMBER KN213 SUBSEGMENT NUMBER B + Banad stream

ADEC REP Rowann Hucknall USCG REP Dan Percy

EXXON REP Al Snook BOAT NAME/SQUAD NUMBER Don Bollinger
Squad 3

Site #	Length (along shore m)	Area m ²	Inipol (gallons)	Customblen (lbs.)
--------	---------------------------	------------------------	---------------------	----------------------

See daily report + OG report for details

Has work been completed as stated on the work order? If your answer is no please explain in detail how the work performed was different from the work order language.

yes. bio application. 1st treatment. Pooled oil wiped up with sorbent pads, some OP seeds removed prior to bio.

Describe the amount of oil remaining (type, size of area and location).

Heavy oiling. Area is still leaching brown mobile oil from under large boulders.

Additional Comments (keep objective)

APF + G Aimee Weseman on site during treatment + approved treatment in anad stream area.

signature Rowann T. Hucknall

Date and time of demobilization from segment 8/30/90

Shoremon\Demob.bio 55/30/90

ADEC DEMOBILIZATION REPORT
FOR PHYSICAL/MECHANICAL TREATMENT AND CUSTOMBLEN

To: Alaska Department of Environmental Conservation
Oil Spill Response Center
Anchorage, Alaska

Attn: John Bauer
FAX 265-4666, 265-4656

[ANAD. STREAM # 226-10-16853
ONLY]

RE: SEGMENT NUMBER KN-213

SUBSEGMENT NUMBER B

DEC REP JOHN KRIBER, JEFF GUNAWAS USCG REP SCOTT RAINSFORD

EXXON REP RIK HARRISON

BOAT NAME/SQUAD NUMBER M/V CRENSHAW SQUAD #1

Has work been completed as stated on the work order? If your answer is no please explain in detail how the work performed was different from the work order language.

YES, 25 LBS OF CUSTOMBLEN WAS APPLIED TO
NORTH END OF WORK AREA ON BOULDER/CORAL BEACH.

Is there additional oil remaining which can be removed with further physical/mechanical treatment? If yes what is the recommended treatment method.

No

Describe the amount of oil remaining (type, size of area and location).

— PLEASE SEE MAP —

SPITCU LOCATED ON ^{ROCK} BOWDOCK & CORAL IN WITZ.

Additional Comments (keep objective)

THIS DEMOB IS FOR THE ANAD. SLAT ONLY. THERE IS
STILL REMAINING OIL TO BE TREATED IN KN-213 E

signature John Kruber

Date and time of demobilization from segment 07/06/90 16:00
Shoremon\55 5-12-90

CREW WORK PERFORMANCE GRADE

(A)

ADEC DEMOBILIZATION REPORT
FOR PHYSICAL/MECHANICAL TREATMENT AND CUSTOMER

To: Alaska Department of Environmental Conservation
Oil Spill Response Center
Anchorage, Alaska

Attn: John Bauer
FAX 265-4666, 265-4656

RE: SEGMENT NUMBER KN 213

SUBSEGMENT NUMBER B

DEC REP Marianne Profita

USCG REP David Sylvester

EXXON REP John Dean

BOAT NAME/SQUAD NUMBER M/V ENSCO ATLAS
Squad # 8

Has work been completed as stated on the work order? If your answer is no please explain in detail how the work performed was different from the work order language.

Yes.

Is there additional oil remaining which can be removed with further physical/mechanical treatment? If yes what is the recommended treatment method.

- In 1991 Further manual treatment will be required
- Mechanical equipment would be difficult to land on beach due to bedrock in cove.

Describe the amount of oil remaining (type, size of area and location).

- Mousse trapped under and between large boulders.
- OP/OR on edges of boulder areas.
- Sticky coat/pine needles cobble north end, and on Boulder outcrop (back side) north of stream.

Additional Comments (keep objective)

- Heavy rain made removal of oiled sediments difficult.
- Upon demob even cleaned sediments were looking reoiled.

signature Marianne Profita

Date and time of demobilization from segment 1500 8/27/90

Shoremon\55 5-12-90

ASAP FOLLOW UP RECOMMENDATIONS

Segment: AS/KN-213 Subd.: B Site: _____ Date: 8-11-90 1990

LIMITED TO R/VND STREAM-226-30-16853 ONLY

Conditions Observed: An area of residual AP 502 CT CV ST and a small amount of OP oil remains on this segment. In addition scattered TAN patches / MS patches remain. Indicated that MS exists in between large boulders in untreated sand portion of segment. Stream bed on south bank of stream appears HDOs present in OP-DE oiling.

Followup Recommendations: See below for treatment recommendations

Completed by Pickup Crew: ☐ YES ☐ NO

Priority for Addressing in 1990: ☐ High ☐ Medium ☐ Low

ADEC

Bob McCreary
(name)

Robert B. McCreary
(signature)

Comments: Mechanical relocation of stream bed was completed with further manual removal completely the residual AP. In this area MS, OP and OR boulders are

Exxon

JOHN DEAN
(name)

John Dean
(signature)

Comments: ADDITIONAL OIL RECOVERY IS POSSIBLE HOWEVER SCOPE OF WORK IS TOO GREAT TO BE ACCOMPLISHED BY ASAP WORK CREW. ANY WORK SCHEDULED MUST BE SENSITIVE TO PINIC SALMON RUN PRESENTLY OCCURRING.

USCG

DON O'NEIL
(name)

Don O'Neil
(signature)

Comments: VERY HEAVY OILING NOTED IN AREAS REPORTED CLEAN BY O/S WORK CREW. HEAVY DEPOSITS OF MOUSSE COVER AND COAT STILL REMAINS. SUGGEST WORK CREW CONTINUE TO AVAL. LARGE SALMON EGGS IN STREAM. CREATES SENSITIVE ENVIRONMENT AND SHOULD BE PROTECTED.

Land Rep.

LORA JOHNSON
(name)

Lora L. Johnson
(signature)

Comments: VERY HEAVY OIL STILL PRESENT AT R/VND COVE. MOUSSE, CT CV AND EDGES OF AP NEED TO BE TREATED/REMOVED. SEE SSAT SKETCHES OF OIL DISTRIBUTIONS ALSO. KEEP WORKING IN 1990.

SEGMENT KN-213SUBDIVISION BDATE AUG 11 90

CHECKLIST

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

LEGEND



Pit - No Subsurface Oil



Pit - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

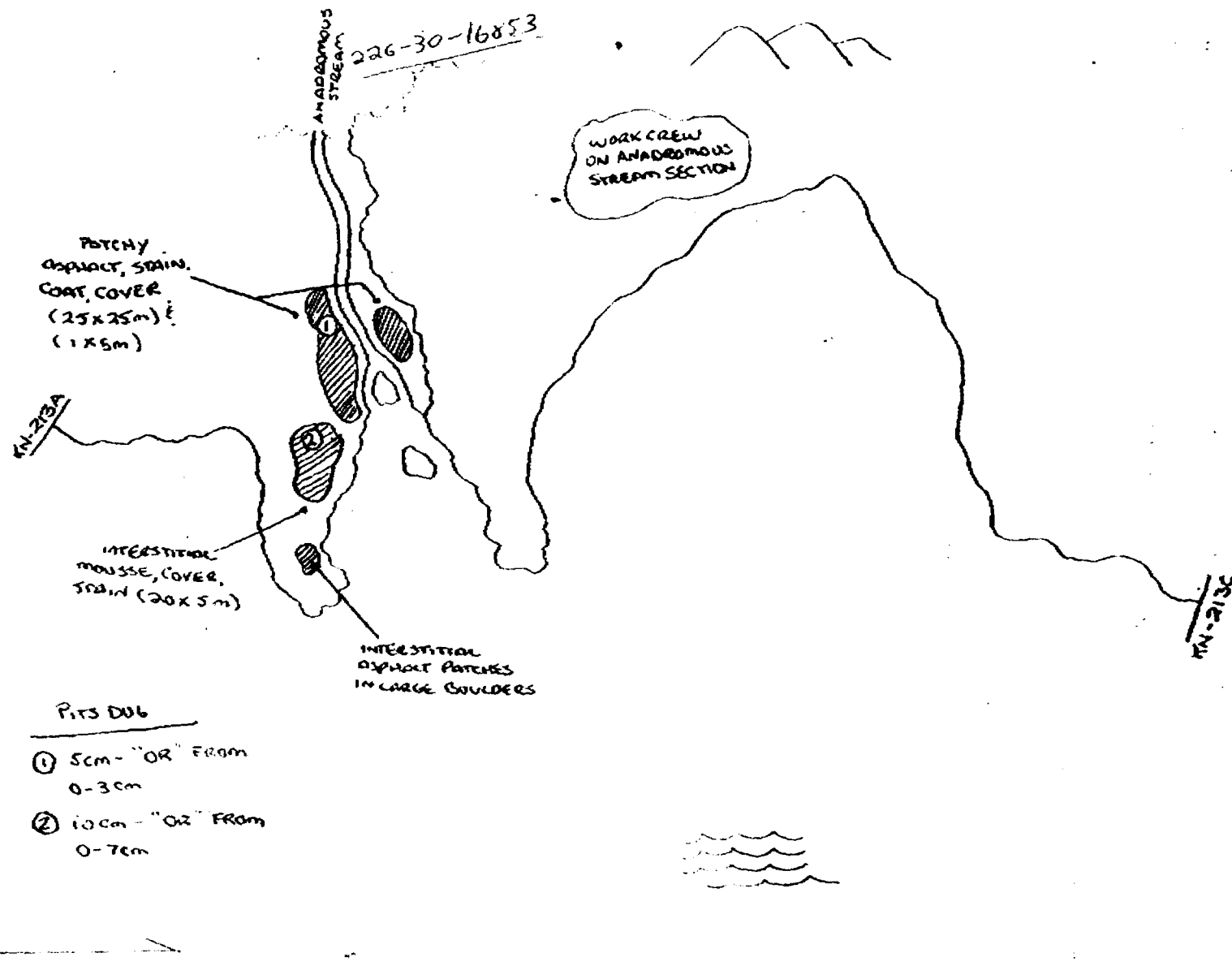
CT/S

Splashed Distribution

Oiled Vegetation



Photos, Samples, and Profiles



PITS DUG

- ① 5cm - "OR" FROM
0-3cm
- ② 10cm - "OR" FROM
0-7cm

A.S.A.P.

KN 213-b anad
site 1

August 11, 1990

ADEC recommends the following treatment:

- 1) Manual removal of all AP, OP, and OR oil.
- 2) Mechanically relocate storm berm and remove OP sediments.
- 3) Bioremediate remaining OR sediments upon ADF&G approval.

1991 STREAM FILE LOG HABITAT

STREAM CATALOG # : 226-30-16853
STREAM NAME : Knight Island

LOCATION : P.W.S.
SEGMENT : KN-213B

[illegible]

Post-treatment assessment
ADF&G MULTI-ASSESSMENT DATA FORM

226-30-16853
KN213B

- 1) SURVEY TYPE: BS SS 2) REGION: PWS KP, CI K, AP
- 3) METHOD: Aerial Ground Boat
- 4) DATE: 8/2/91 16) HIGH TIDE TIME: 602 22) TEAM RECORDER: A. Weseman
- 5) START TIME: 950 17) HIGH TIDE HTS: 8.5ft 23) OBSERVERS: Mfink, Middleton Kuwada
- 6) STOP TIME: 1120 18) LOW TIDE TIMES: 1200 24) AGENCY: ADF&G
- 7) SEGMENT #: KN213B 19) LOW TIDE HTS: 2 ft 25) PHOTOS TAKEN: Y (N)
- 8) K-UNIT: _____ 20) TIDE HT AT SURVEY: +3.6 - +2ft ROLL #: _____ FRAMES: _____
- 9) LAT: _____ Ebb Slack Flood Slack 26) VIDEO TAKEN: Y (N)
- 10) LONG: _____ 21) USCG QUAD: _____ TAPE # _____
- 11) ASC #: 226-30-16853 START: _____ STOP: _____
- 12) STREAM NAME: Aimee's Creek 27) SAMPLES TAKEN? Y (N)
- 13) LOCATION: Rua Cove, Knight I SAMPLE I.D. _____
- 14) WAVE EXPOSURE: High Moderate Low
- 15) SHORELINE TYPE: Headland Low-lying Rocks Beach
- Cove Lagoon Marsh

28) EXTENT OF OIL

	LENGTH m	WIDTH m	M2	%	THICK cm	PEN cm	OIL TYPE
SITE 1 A	13	25		5			AP/MS in interstices
SITE 2 B	18	20		7	2-3cm		AP/HSOR
SITE 3 C	.5	.5		90	3cm		HSOR on stream bank
SITE 4 D	18	3			8cm		HOR/MOR/OP 2-10cm
SITE 5 E	1	5					LOP/OF streambank

29) OVERALL OIL IMPACT:

- H = >6m band with $\geq 50\%$ oil coverage
- M = >6m band with $\leq 50\%$ oil coverage or $\geq 3m$ to $\leq 6m$ with $\geq 10\%$ oil coverage
- L = <3m band with $> 10\%$ oil coverage
- VL = $\leq 10\%$ oil coverage regardless of band width
- N = No oil observed

33) ANADROMOUS FISH PRESENT: Y (N)

30) OIL IN STREAMBED: (Y) N

31) OIL ON BEACH ADJACENT TO MOUTH: (Y) N

32) SUBSTRATE TYPE (PERCENT):

Bedrock ☒ Boulder ☒ Gravel ☒ Sand ☒ Cobble ☒ Mud/Silt ☒

35) COMMENTS:

New area of subsurface oil discovered along cliff edge - site D.

Subsurface oil along streambank improved (site E) - slight silver sheen in 2 pits only. Small HSOR patch on north stream bank - site C - should be re-tilled. Site E contains a 2x18 patch H/MOR which should be removed. Oil is located in sheltered location - very slow degradation rate.

Areas F & C warrant re-assessment in '90. Stream area is in relatively good shape. Survey focused on documented oil, treated in 1991.

34) WILDLIFE OBSERVATION

Species Number

36) PHOTOLOG

FRAME(S)

DESCRIPTION

Δ = Sample Taken
2/ = Photo Frame # and
Shot Direction

A:EDDATFO
April 3, 1991

36) PHOTOLOG

FRAME(S)

DESCRIPTION

▲ = Sample Taken
 2/ = Photo Frame # and
 Shot Direction

PAGE 1 OF 2

SEGMENT KN 213

SUBDIVISION B

DATE 8 / 2 / 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_____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 #

FRAMES

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

10 25 X X 0-12 Y N N X

COMMENTS:
New area of subsurface oil discovered in vicinity of pits 1-4 along cliff edge. - $3 \times 18\text{m} = \textcircled{D}$
Subsurface oil along streambank improved - slight silver sheen in 2 pits only $1 \times 5 = \textcircled{E}$
Area of surface/subsurface oil in vicinity of pits 7-10 warrants re-assessment in '92 $2 \times 18\text{m} = \textcircled{F}$

All in all, Aimee's Creek is in good shape

Survey focused on documented oil, treated in 1991

KN 213B

ASC# 226-30-16853

8/2/91 A. Weseman

9:50-11:20 Post-treatment assess

#pit cm TD oil clean below sheen w/T sed zone

x - bedrock

⬢ - large rock & boulders

oil pocket in boulder interstices - along cliff

①	17	15-bottom OP/HOR	?	N	N	RPCC	UITZ
②	20	10-20 OP	?	N	N	PCG	UITZ
③	20	10-20 HOR	?	S	15	PCG	UITZ
④	24	22-24 HOR	?	N	N	PCG	UITZ
⑤	9	NO Discernable lense	?	slight silver	7	PGS	MITZ - along stream bank
⑥	10	N	Y	N	8	PGS	MITZ " " "
⑦	22	0-15 HOR	Y	N	N	PGS	supra
⑧	29	2-29 HOR	NO	N	N	PG	Supra - Behind seawall
⑨	47	5-47 L-HOR	NO	N	N	PG	supra " " "
⑩	25	0-10 m/HOR	Y	N	N	PG	" " "

RUA COVE



Post-treatment assessment
ADF&G MULTI-ASSESSMENT DATA FORM

- 1) SURVEY TYPE: BS SS 2) REGION: PWS KP, CI K, AP
- 3) METHOD: Aerial Ground Boat
- 4) DATE: 8/2/91 16) HIGH TIDE TIME: 602 22) TEAM RECORDER: A. Weseman
- 5) START TIME: 950 17) HIGH TIDE HTS: 8.5 ft 23) OBSERVERS: M. Fink, Middleton, Kuwada
- 6) STOP TIME: 1120 18) LOW TIDE TIMES: 1200 24) AGENCY: ADF&G
- 7) SEGMENT #: KW213B 19) LOW TIDE HTS: 2 ft 25) PHOTOS TAKEN: Y (N)
- 8) K-UNIT: _____ 20) TIDE HT AT SURVEY: +3.6 - +2 ft ROLL #: _____ FRAMES: _____
- 9) LAT: _____ Ebb Slack Flood Slack 26) VIDEO TAKEN: Y (N)
- 10) LONG: _____ 21) USCG QUAD: _____ TAPE #: _____
- 11) ASC #: 226-30-16853 START: _____ STOP: _____
- 12) STREAM NAME: Aimee's Creek 27) SAMPLES TAKEN? Y (N)
- 13) LOCATION: Rua Cove, Knight I SAMPLE I.D. _____
- 14) WAVE EXPOSURE: High Moderate Low
- 15) SHORELINE TYPE: Headland Low-lying Rocks Beach
- Cove Lagoon Marsh

28) EXTENT OF OIL

	LENGTH m	WIDTH m	M2	%	THICK cm	PEN cm	OIL TYPE
<u>Surf</u> SITE 1 A	<u>13</u>	<u>25</u>		<u>5</u>			<u>AP/MS (in interstices)</u>
<u>Surf</u> SITE 2 B	<u>18</u>	<u>20</u>		<u>7</u>	<u>2-3 cm</u>		<u>AP/HSOR</u>
<u>Surf</u> SITE 3 C	<u>.5</u>	<u>.5</u>		<u>90</u>	<u>3 cm</u>		<u>HSOR on stream bank</u>
<u>sub</u> SITE 4 D	<u>18</u>	<u>3</u>			<u>8 cm</u>		<u>HOR/MOR/OP 2-10c</u>
<u>sub</u> SITE 5 E	<u>1</u>	<u>5</u>					<u>LOR/OF (streambank)</u>

29) OVERALL OIL IMPACT:

- H = >6m band with $\geq 50\%$ oil coverage
- M = >6m band with $\leq 50\%$ oil coverage or $\geq 3m$ to $\leq 6m$ with $\geq 10\%$ oil coverage
- L = <3m band with $> 10\%$ oil coverage
- VL = $\leq 10\%$ oil coverage regardless of band width
- N = No oil observed

33) ANADROMOUS FISH PRESENT: Y (N) *observed*

34) WILDLIFE OBSERVATION

Species _____ Number _____

30) OIL IN STREAMBED: (Y) N

31) OIL ON BEACH ADJACENT TO MOUTH: (Y) N

32) SUBSTRATE TYPE (PERCENT):

Bedrock ☒ Boulder ☒ Gravel ☒ Sand ☒ Cobble ☒ Mud/Silt ☒

35) COMMENTS:

New area of subsurface oil discovered along cliff edge - site D.

Subsurface oil along streambank improved (site E) - slight silver sheen in 2 pits only. Small HSOR patch on north stream bank - site C - should be re-tilled. Site E contains a 2x18 patch H/MOR which should be removed. ^{This} Oil is located in sheltered location - very slow degradation rate.

Areas F & C warrant re-assessment in '98. Stream area is in relatively good shape. Survey focused on documented oil, treated in 1991.

ADF&G MULTI-ASSESSMENT DATA FORM

- 1) SURVEY TYPE: BS SS 2) REGION: PWS KP,CI K,AP
- 3) METHOD: Aerial Ground Boat
- 4) DATE: 8/2/91 16) HIGH TIDE TIME: 22) TEAM RECORDER: Weseman
- 5) START TIME: 17) HIGH TIDE HTS: 23) OBSERVERS:
- 6) STOP TIME: 18) LOW TIDE TIMES: 24) AGENCY: ADF&G
- 7) SEGMENT #: KN213B 19) LOW TIDE HTS: 25) PHOTOS TAKEN: Y N
- 8) K-UNIT: 20) TIDE HT AT SURVEY: ROLL #: FRAMES:
- 9) LAT: Ebb Slack Flood Slack 26) VIDEO TAKEN: Y N
- 10) LONG: 21) USCG QUAD: TAPE #
- 11) ASC #: START: STOP:
- 12) STREAM NAME: 27) SAMPLES TAKEN? Y N
- 13) LOCATION: SAMPLE I.D.
- 14) WAVE EXPOSURE: High Moderate Low
- 15) SHORELINE TYPE: Headland Low-lying Rocks Beach
Cove Lagoon Marsh

28) EXTENT OF OIL

	LENGTH m	WIDTH m	M2	%	THICK cm	PEN cm	OIL TYPE
SITE 1 F	18	2					H/MOR
SITE 2 G	40	10		21			AP/H&SOR
SITE 3 H	30	5		1			MS/AP
SITE 4							
SITE 5							

- 29) OVERALL OIL IMPACT: 33) ANADROMOUS FISH PRESENT: Y N
- H = >6m band with $\geq 50\%$ oil coverage
- M = >6m band with $\leq 50\%$ oil coverage or $\geq 3\text{m}$ to $\leq 6\text{m}$ with $\geq 10\%$ oil coverage
- L = <3m band with $> 10\%$ oil coverage
- VL = $\leq 10\%$ oil coverage regardless of band width
- N = No oil observed
- 30) OIL IN STREAMBED: Y N
- 31) OIL ON BEACH ADJACENT TO MOUTH: Y N
- 32) SUBSTRATE TYPE (PERCENT):
- Bedrock _____ Boulder _____ Gravel _____ Sand _____ Cobble _____ Mud/Silt _____
- 34) WILDLIFE OBSERVATION
- | Species | Number |
|---------|--------|
| | |
| | |
| | |
| | |
| | |
- 35) COMMENTS:

ADFG SHORELINE OILING SUMMARY
A.S.C. NO. 226-30-16853

PAGE 1 OF 2

A.S.C. NO. 226-30-16853

Team Recorder: Aimee Weseman

SEGMENT KN 213

SUBDIVISION B

DATE 8 / 2 / 91

Observers: M. Fink, M. Kuwada

K. Middleton

TIME 9:50 to 11:20

TIDE LEVEL +3.6 ft. to +2 ft.

ENERGY LEVEL: ☐ H ☒ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO

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

TOTAL LENGTH SHORELINE SURVEYED: _____ m

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

EST. OIL CATEGORY LENGTH: W_____m M_____m N_____m VL_____m NO_____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 #

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	12	X	X						15 - 17	?	N	N		X			RPCG	In B Interstices
2	20	X							10 - 20	?	N	N		X			PCG	
3	20			X					10 - 20	?	15	S		X			PCG	
4	24		X						22 - 24	?	N	N		X			PCG	
5	9				X		X		0 - 9	?	7	S			X		PGS	no discoloration
6	10							N	-		8	N			X		PGS	
7	22			X					0 - 15	Y	N	N	X				PCGS	Behind sea strake
8	29		X						2 - 29	N	N	N	X				PGC	" "
9	47			X	X				5 - 47	N	N	N	X				PGC	" "

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

10 25 X X 0-12 Y N N X

PG

OG COMMENTS:

COMMENTS:
New area of subsurface oil discovered in vicinity of pits 1-4 along cliff edge. - 3 x 18m = (D)
Subsurface oil along streambank improved - slight silver sheen in 2 pits only 1 x 5 = (E)

Area of surface/subsurface oil in vicinity of pits > 10 warrants re-assessment in '92 & 18 (F)

All in all, Aimee's Creek is in good shape

Survey Focused on: documented oil, treated in 1991

KN 213B

ASC# 226-30-16853

8/2/91 A. Weseman

9:50-11:30 Post-treatment assess

#pit cm oil clean below sheen w/T sed zone

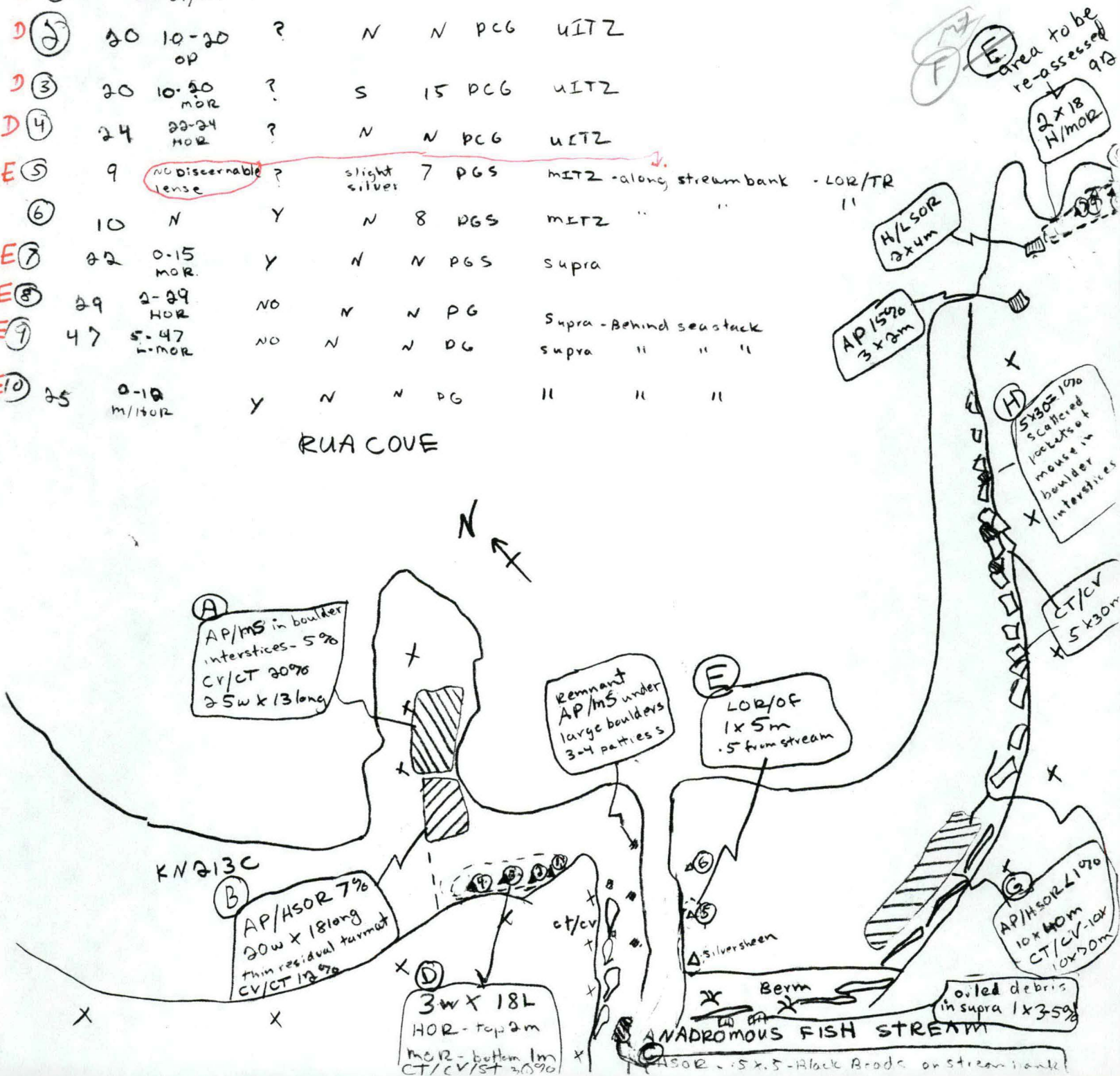
x - bedrock

⊕ - large rocks & boulders

oil pocket in boulder interstices - along el. ss

D 1	17	15-17 bottom OP/HOR	?	N	N	RPCC	UITZ
D 2	20	10-20 OP	?	N	N	PCG	UITZ
D 3	20	10-20 MOR	?	S	15	PCG	UITZ
D 4	24	22-24 HOR	?	N	N	PCG	UITZ
E 5	9	NO discernable lense	?	slight silver	7	PGS	MITZ - along streambank
6	10	N	Y	N	8	PGS	MITZ " "
E 7	22	0-15 MOR	Y	N	N	PGS	supra
E 8	29	2-29 HOR	NO	N	N	PG	Supra - Behind seastack
E 9	47	5-47 M-MOR	NO	N	N	PG	supra " " "
E 10	25	0-10 M/HOR	Y	N	N	PG	" " "

RUA COVE



ADF&G OIL SPILL RESPONSE MONITORING

ASC# 226-30-16853

Date: 6/25/91

Stream Name: _____

Observer: Mark Fink

Segment-Sub Unit KN213B

Mark Knevela
Amiee Wesserman

Location: Roa Cove, Knight Is.

Anad. Stream Permit Issued? ☒ Y ☐ N

Date: 6/18/91

Work Order Issued: ☒ Y ☐ N

Date: 6/5/91

Demob Date: 6/19/91

Oil Characteristics (circle appropriate ones)

Surface: AP, MS, TB, SOR, CV, CT, ST, FL, DB, None
Subsurface: OP, HOR, MOR, LOR, OF, TR, None

Treatment Techniques:

Manual Removal
Manual Raking
Spot Wash
Other

Bioremediation & Type
Mechanical Tilling
Header Flood (Hot/Cold)

Crew Size: _____

Lbs. or Bags of Oil/Sediment Removed _____

Other Agency Reps, and Names: Deborah Walker, DEC

Photos Y ☒ N

Roll #

Frames

Video ☒ Tape #

Start End

Sediment/Oil Samples (Y ☒ N) Collection Number

Purpose of Trip * Reassess cleanup

* Form designed primarily for cleanup inspection trips, but should be used for any field trips, i.e., to check on bird rookeries, seal haulouts, special habitat areas. etc.

Describe extent of remaining oil (any comments on expected completion of cleanup).

North side of stream looks good. Some areas of LOR in southside bank of stream (silver sheening), site 3 of MARSAP. Around the point south of stream there was a 1m x 1m area of HOR behind rock outcrop, site 6 MAD (H, 06 map)

Comments: (Are work order procedures being followed?, etc.)

The area along southern stream bank could be retilled, but it is "spotty" and might not be necessary. The HOR in site 6 could be removed if the state vessel was in the area. We did look at 213C, just north around the corner and noted some mousse and flowing oil amongst the boulder field. Overall 213C had been cleaned as best as could be expected.

ADF&G OIL SPILL RESPONSE MONITORING

ASC# 226-30-16853

Date: 6/19/91

Stream Name: Aimee's Creek

Observer: Aimee Weseman

Segment-Sub Unit KN 213 B

Location: Rua Cove, E Knight I

Anad. Stream Permit Issued? ☒ Y ☐ N

Date: 6/18/91

Work Order Issued: ☒ Y ☐ N

Date: 6/5/91

Demob Date: 6/19/91

Oil Characteristics (circle appropriate ones)

Surface: ☒ AP, ☒ MS, TB, ☒ SOR, ☒ CV, ☒ CT, ☒ ST, FL, ☒ DB, None
Subsurface: ☐ OP, ☒ HOR, MOR, ☒ LOR, ☒ OF, TR, None

Treatment Techniques:

Manual Removal ☒ X
Manual Raking ☒ X
Spot Wash
Other

Bioremediation & Type
Mechanical Tilling
Header Flood (Hot/Cold)

Crew Size: 10 + foreman

Lbs. or Bags of Oil/Sediment Removed 3 super sacks

Other Agency Reps, and Names: Larry Olson - Exxon
Wes Ghermy - ADEC Vince Mulligan - USCG

Photos Y ☒ N

Roll #

Frames

Video

Tape #

Start

End

Sediment/Oil Samples (Y-N) ☒ Y ☐ N

Collection Number

Purpose of Trip * treatment

* Form designed primarily for cleanup inspection trips, but should be used for any field trips, i.e., to check on bird rookeries, seal haulouts, special habitat areas, etc.

Describe extent of remaining oil (any comments on expected completion of cleanup).

oil remaining includes; LOR in globs under & between rocks along streambed
Mousse pockets in boulder interstices - unreachable due to size of substrate
LSOR in tarmat areas both sides of stream
CV & CT with oiled spruce needles on bedrock & boulders throughout
H/MOR/OP in site 6 (areas H&I OG map)

Comments: (Are work order procedures being followed?, etc.)

Treatment to this stream area was very thorough. It fulfilled & went beyond the scope of the work order, including new oiled areas not identified in MAYSAP 91. A crew of 10, worked the site for 9.5 hours, removing any oil that I deemed necessary. The Exxon supervisor, USCG & ADEC Reps were all extremely cooperative.

I personally tilled the area of subsurface oil along the stream bank. This oil is characterized as globs of mousse underneath & between rocks. I diverted stream water through some of the area in an attempt to flush it out. I would guess that the rest of the beach contains similar pockets & globs. Not much can be done for it short of full scale mechanical tilling & I don't know that it warrants it.

The area of site 6 (H&I OG map) still contains heavy oiling & should be re-assessed for further treatment. Area of subsurface on streambank could be retilled at the same time

A:OPRESP
April 2, 1991

KN 213B

ASC # 226-30-16853

5/13/91 MAYSAP 1900-2000

A. Weseman

#	Size	Notes
1	5-15 cm	OF
2		NO
3	20 cm	NO
4	35 cm	NO
5	35 cm	Lt st
6		NO
7	0-15 cm	LOR
8	0-20 cm	NO
9	0-5	OF
10	0-20	LOR ST
11	0-20	HOR
12	36	NO
13	0-10	HOR

#1	5-15 cm	OF
2		NO
3	20 cm	NO
4	35 cm	NO
5	35 cm	Lht ST
6		NO
7	0-15 cm	LOR
8	0-20 cm	NO
9	0-5	OF
10	0-20	LOR ST
11	0-20	HOR
12	06 -	NO
13	0-10 -	HOR

#	Size	Notes
1	5-15 cm	OF
2		NO
3	20 cm	NO
4	35 cm	NO
5	35 cm	Lt St
6		NO
7	0-15 cm	LOR
8	0-20 cm	NO
9	0-5	OF
10	0-20	LOR ST
11	0-20	HOR
12	36	NO
13	0-10	HOR

#	Size	Notes
1	5-15 cm	OF
2		NO
3	20 cm	NO
4	35 cm	NO
5	35 cm	Lt St
6		NO
7	0-15 cm	LOR
8	0-20 cm	NO
9	0-5	OF
10	0-20	LOR ST
11	0-20	HOR
12	36	NO
13	0-10	HOR

#	Size	Notes
1	5-15 cm	OF
2		NO
3	20 cm	NO
4	35 cm	NO
5	35 cm	Lt St
6		NO
7	0-15 cm	LOR
8	0-20 cm	NO
9	0-5	OF
10	0-20	LOR ST
11	0-20	HOR
12	36	NO
13	0-10	HOR

EXXON Valdez Oilspill Cleanup

Anadromous Fish Stream Authorization

Date June 18 1991

EXXON Authorized Representative Larry Olson

Shoreline Segment KN 213B

Anadromous Fish Stream Number(s) 226-30-16853

Approved Cleanup Techniques Manual Removal and
tilling of oiled sediments

Approved Cleanup Period May 10 to July 10, 1991

Alaska Department of Fish and Game

Aimee Weseman
Authorized Officer

Larry Olson
Permittee's Signature

EXXON Valdez Oilspill Cleanup

Anadromous Fish Stream Authorization

Date June 18 1991

EXXON Authorized Representative Larry Olson

Shoreline Segment KN 213B

Anadromous Fish Stream Number(s) 226-30-16853

Approved Cleanup Techniques Manual Removal and

tilling of oiled sediments

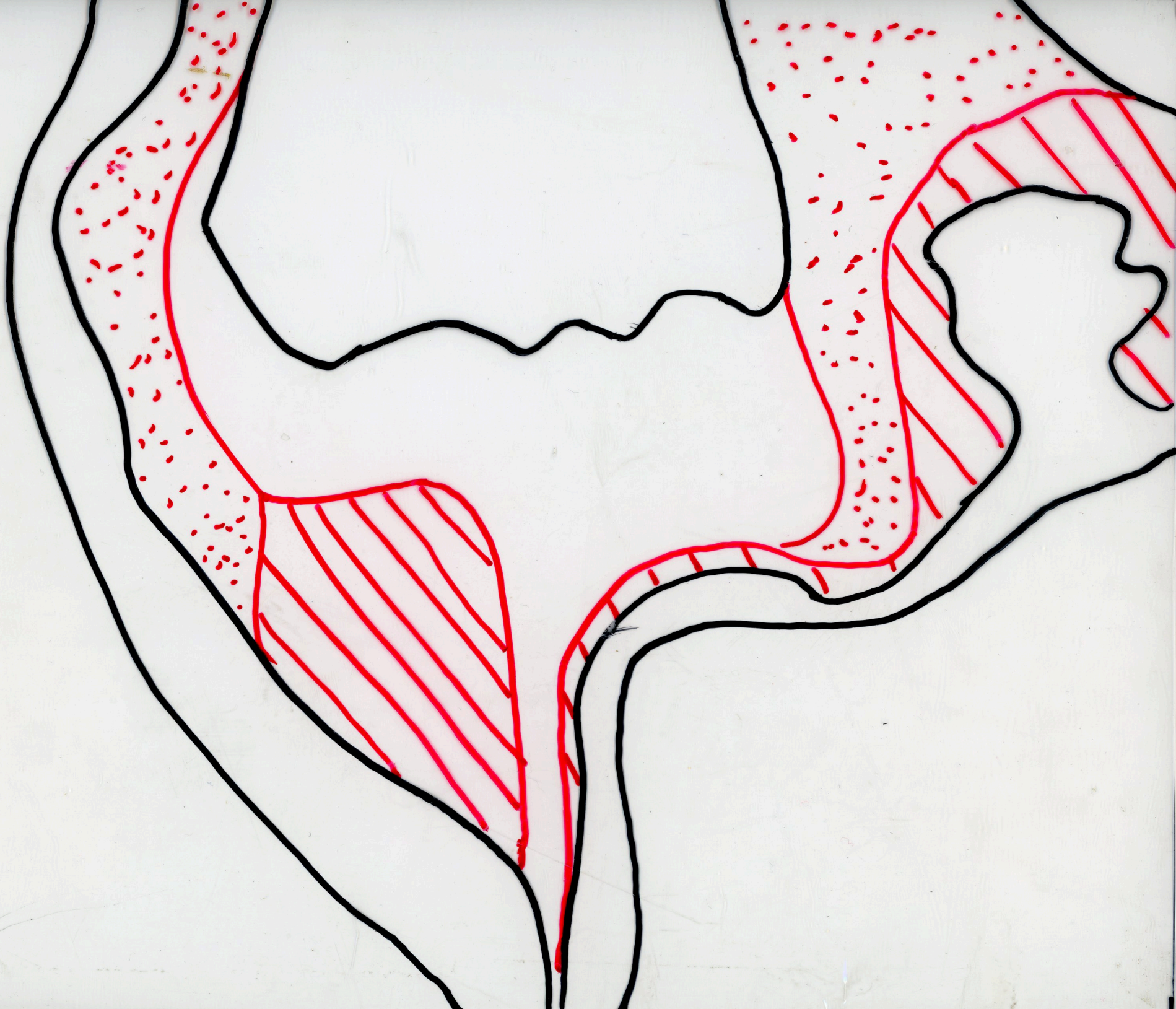
Approved Cleanup Period May 10 to July 10, 1991

Alaska Department of Fish and Game

Aimee Weseman
Authorized Officer

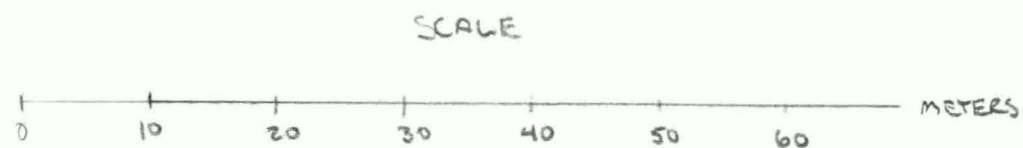
Larry Olson
Permittee's Signature



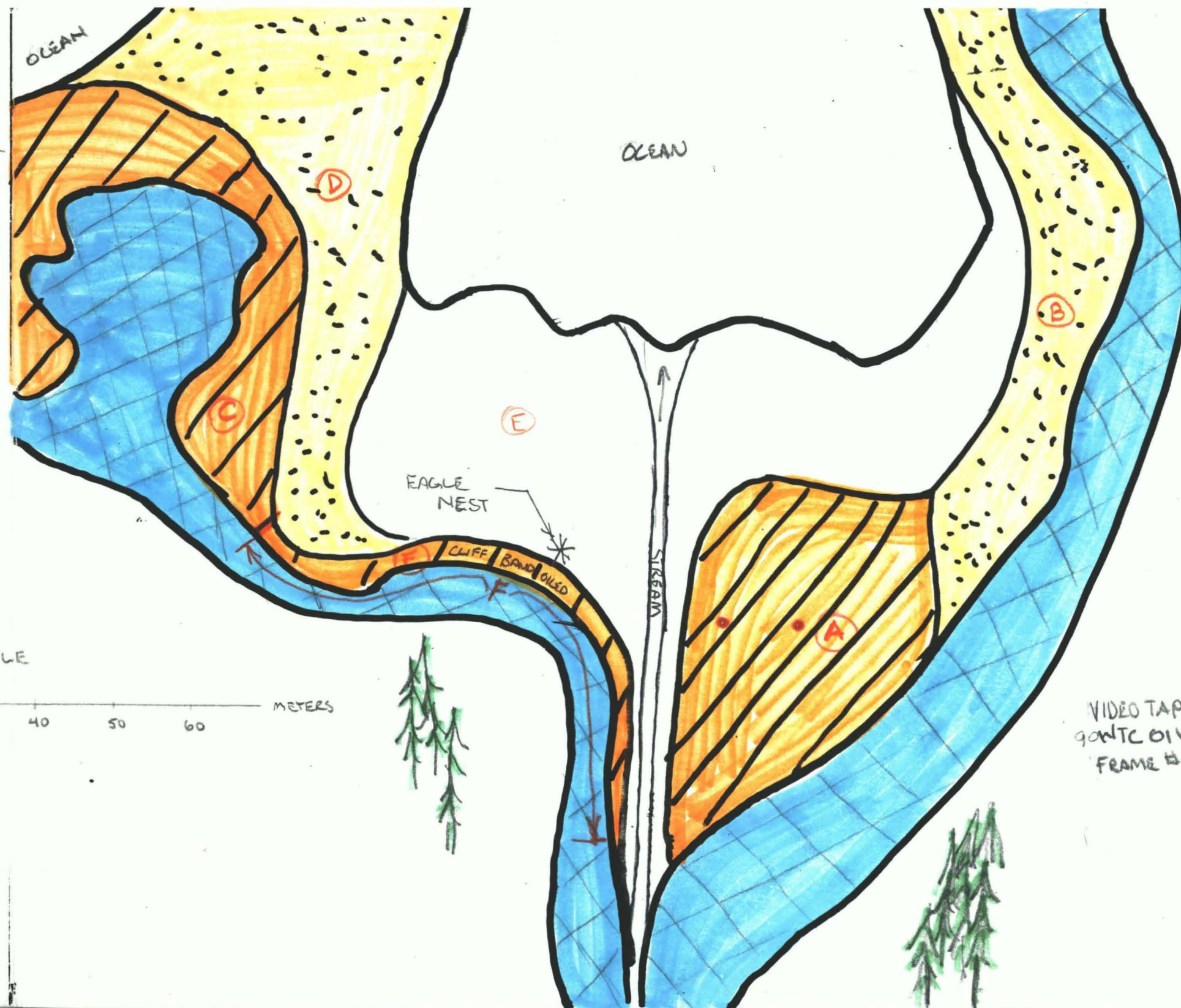


-  → LIGHT TO MODERATE
-  → HEAVY
-  → SNOW COVERED

RUA COVE



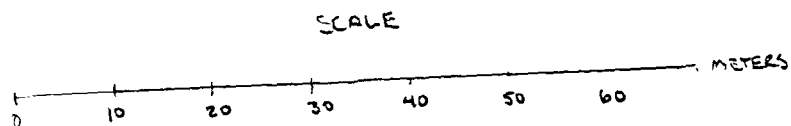
ASC 16853
KN-213
1-2-90



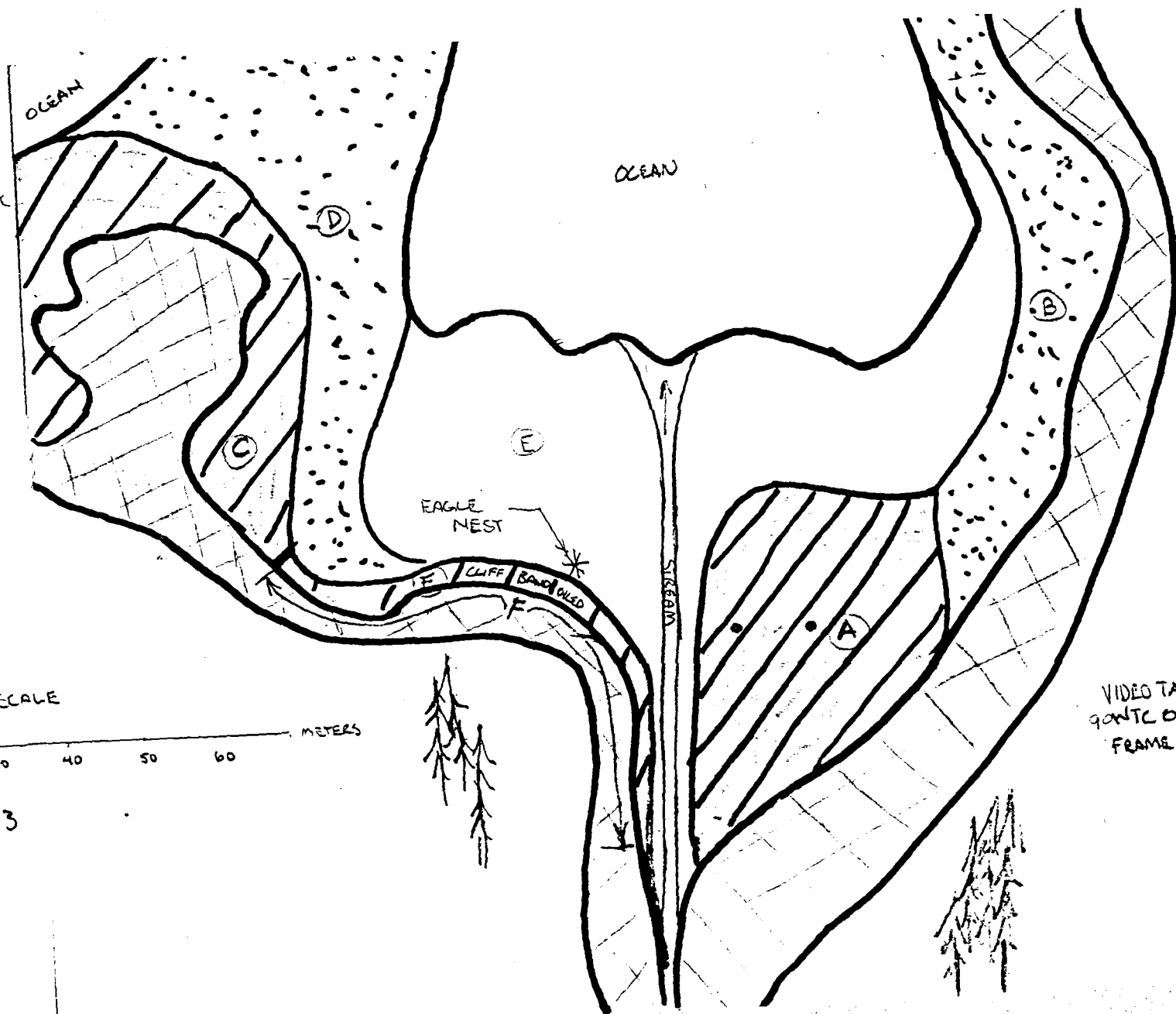
VIDEO TAPE #
90NTC 01VHS
FRAME # 2684

-  → LIGHT TO MODERATE
-  → HEAVY
-  → SNOW COVERED

RUA COVE



ASC 16853
KN-213
1-2-90



VIDEO TAPE #
90NTC 01VHS
FRAME # 2684

near stream.

74-30-16853

KN 813C

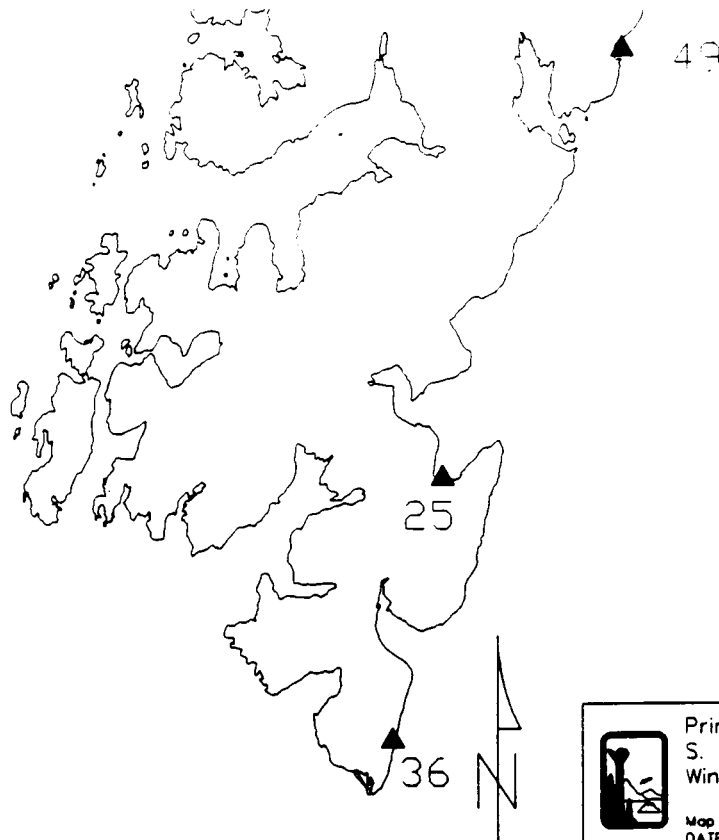
3.11 Station 49, Rua Cove, Knight Island

This was a very heavily oiled site located along the central portion of the eastern shore of Knight Island. The cove contains a boulder, cobble and gravel beach in front of vertical cliffs. A large outcrop just south of the transect separates this shoreline from a nearby drainage. Tertiary pillow basalt rubble forms the substrate which generally reduces in size seaward. Treatment consisted of hot water flush and bioremediation. Surveys from 17 August 1989, 14 November 1989, and 21 March 1990, are compared.

In August 1989 100 percent of the beach face was covered by a tar coat of oil. Pooled mousse was situated between large boulders against the vertical cliffs. Penetration was 20 cm in the upper beach, and decreased seaward.

In November 1989 the surface of the beach remained heavily contaminated with a surface coating of weathered mousse and tar. Coverage was 75 to 85 percent, and penetration was 10 to 20 cm. Asphalt covered 40 percent of the beach surface in the drainage area to the south of the transect.

On 21 March 1990 oil was still very common at the site, although substantially reduced from the previous November. Surface coverage was reduced to 15-35 percent along the upper beach and 5-10 percent along the lower portion. The depth of oil penetration remained 20-25 cm along the upper beach and 7 cm along the lower beach.



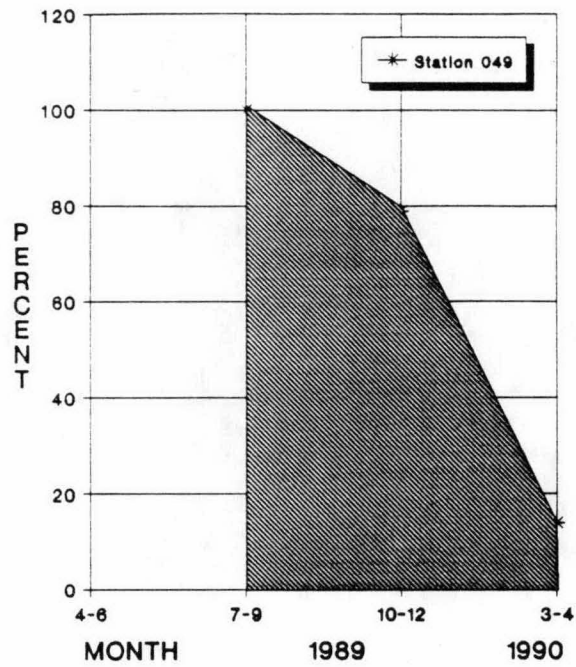
Prince William Sound
S. Knight Island
Winter Station Map

Map Projection: UTM, Zone 6
DATE: 04/06/90

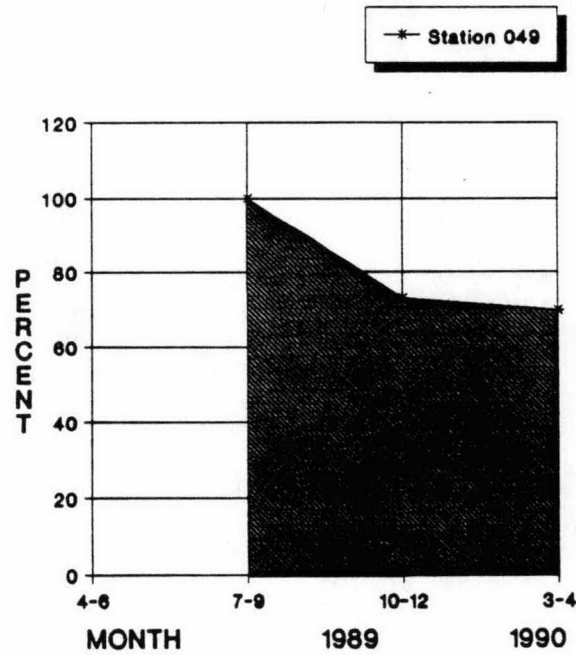
Drawn By: J. M. Stewart

Printed At: 04/06/90

CUMULATIVE SURFACE OIL COVERAGE



CUMULATIVE VOLUME OF SUBSURFACE OILED SEDIMENT



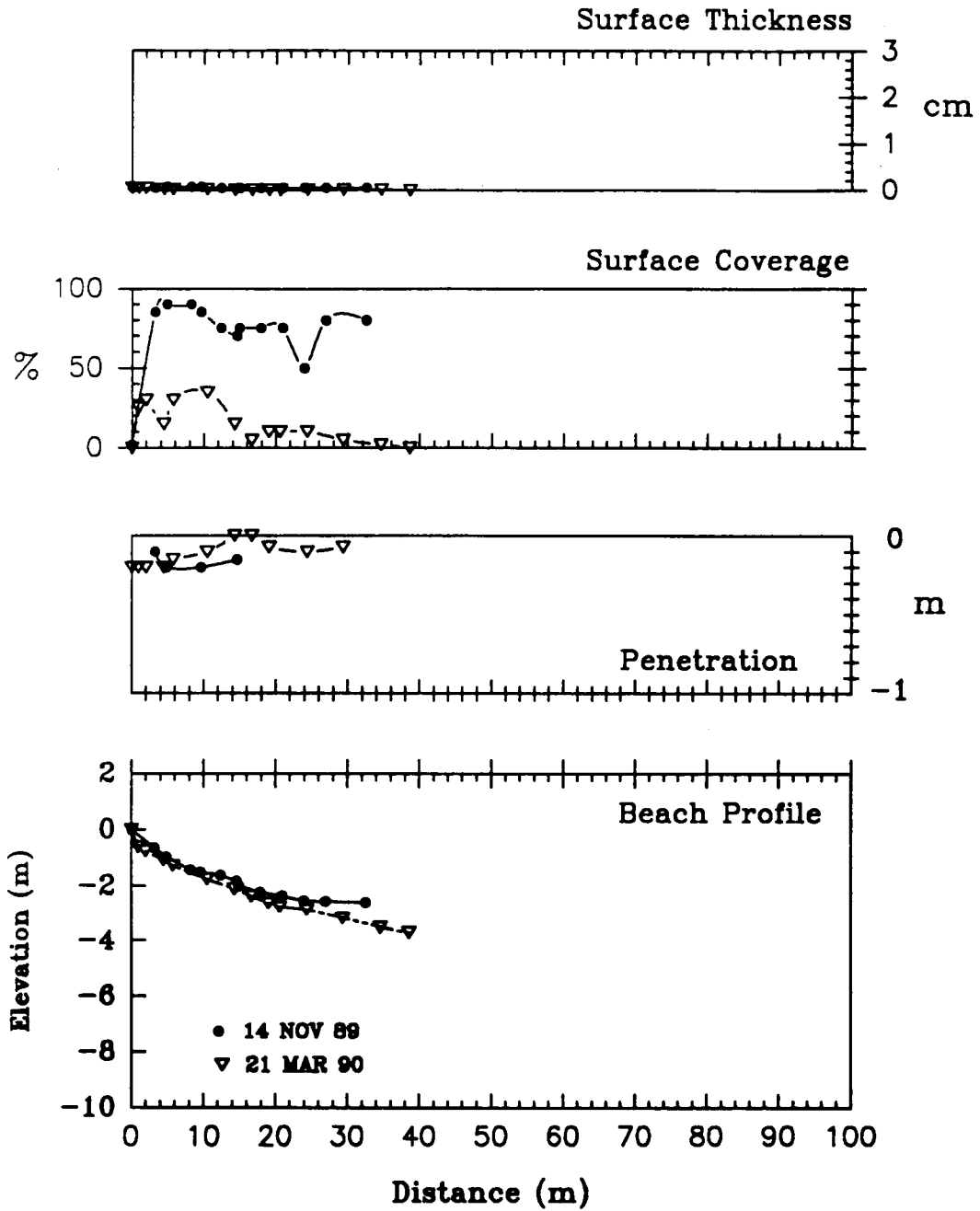
* Values are set to 100 percent for the first survey to enable comparisons on a percentage basis.

Alaska Department of Environmental Conservation
BEACH TRANSECT DATA

RUA COVE, KNIGHT ISLAND

Segment KN213

Station 049

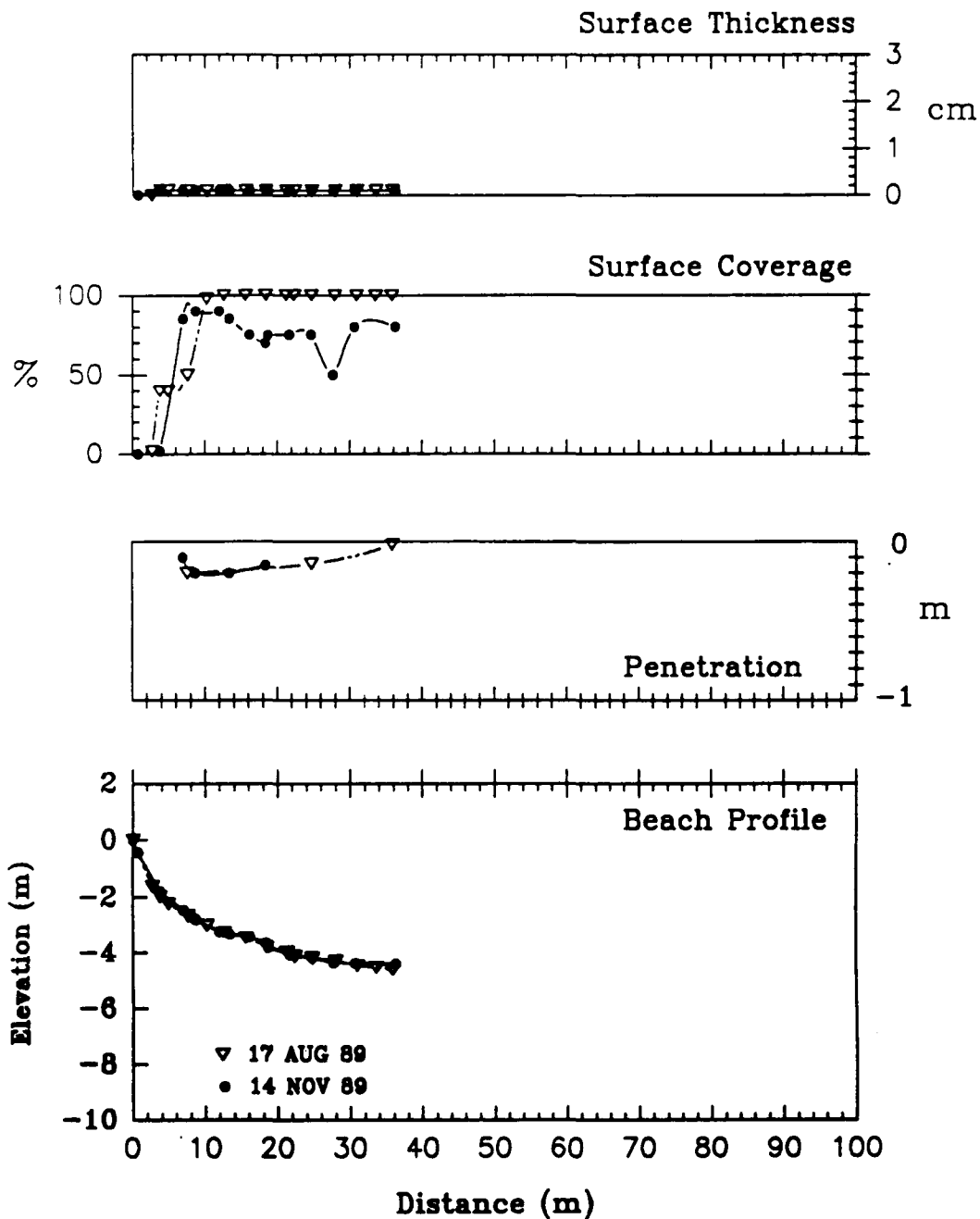


Alaska Department of Environmental Conservation
BEACH TRANSECT DATA

RUA COVE, KNIGHT ISLAND

Segment KN213

Station 049



KN213-C

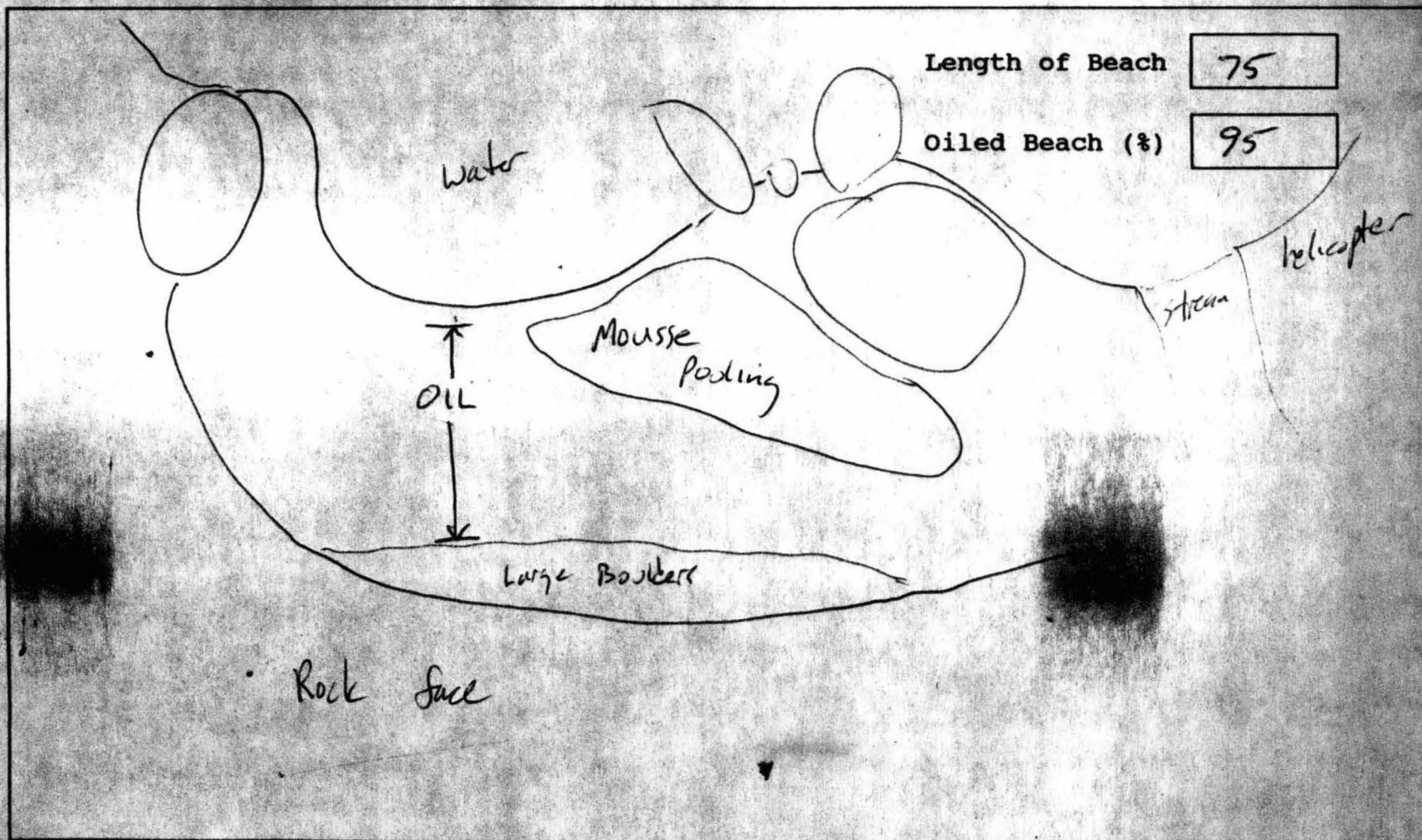
Shoreline Impact Survey Form

Site # Date Location Bench Mark ^{Back} Ang

Low Tide Time Start Finish Recorders Photos

Weather Predominant Sediment Type

Sketch of Survey Site



Shoreline Impact Survey Form

Date 5/17/88 Site # 49 Location RUA BAY/COVE

✓ cum check

Horiz. (m)	4.8	2.5	6.9	4.6	6.3	7.0	3.4										
Vert. (in)	-90.0	-18.0	-27.8	14.5	-28.7	-14.2	-8.9										
% Coverage	0	30%	100%	100%	100%	100%	85%										
Flora	0	0	0	STARTING SANDWALD													
Fauna	0	0	0	0	0	0	0										
Oil Thickness (mm)	0	20	2 on SURF 3cm POOL			5cm POOL 3cm SURF											
Comments	START of oil	LARGE Boulders	VERY HEAVY POOLING MOUSSE	SMALL Boulders HEAVY POOLING		HEAVY POOLING	Water Line @ 2001 LOWEST LOSS										

(A)

Water Line

Station

A				B				C				D				E			
Sediment		Oil		Sediment		Oil		Sediment		Oil		Sediment		Oil		Sediment		Oil	
Type	Depth	Type	Depth	Type	Depth	Type	Depth	Type	Depth	Type	Depth	Type	Depth	Type	Depth	Type	Depth	Type	Depth
C	0	m	0		0		0		0		0		0		0		0		0
	5		5		5		5		5		5		5		5		5		5
G	10		10		10		10		10		10		10		10		10		10
	15		15		15		15		15		15		15		15		15		15
	20		20		20		20		20		20		20		20		20		20
	30		30		30		30		30		30		30		30		30		30
	40		40		40		40		40		40		40		40		40		40
	50		50		50		50		50		50		50		50		50		50
	60		60		60		60		60		60		60		60		60		60

KEY

S- sand	LO- lite oil
G- gravel	BO- blk oil
C- cobble	M- mousse
B- boulder	S- sheen
P- peat	GW- Ground water

DATE

5/17/89

PAGE

PROFILE

49

START

FINISH

TIDAL STAGE

FRONT STAKE HT

LOCATION

RVA Bay/Cove

LOW TIDE

BACK STAKE HT

Cumulative

HORIZONTAL (M)

VERTICAL (cm)

% OIL COVER

OIL THICKNESS (cm)

Vert (cm)

COORDINATES

Penetration (cm)

4.80	7.30	14.20	18.80	25.10	32.10	35.50													
-90.0	-108.0	-135.8	-150.3	-179.0	-193.2	-202.1													
0	30	100	100	100	100	85													
0	20	-	-	-	-	-													
-228.6	-274.32	-344.93	-381.76	-454.66	-490.73	-513.33													

CHECK LIST

SAMPLES TAKEN -

depth of oil burial -

layer thickness -

oil penetration =

grain size -

BIOLOGICAL IMPACT

CLEANUP: # men -

equipment type & # -

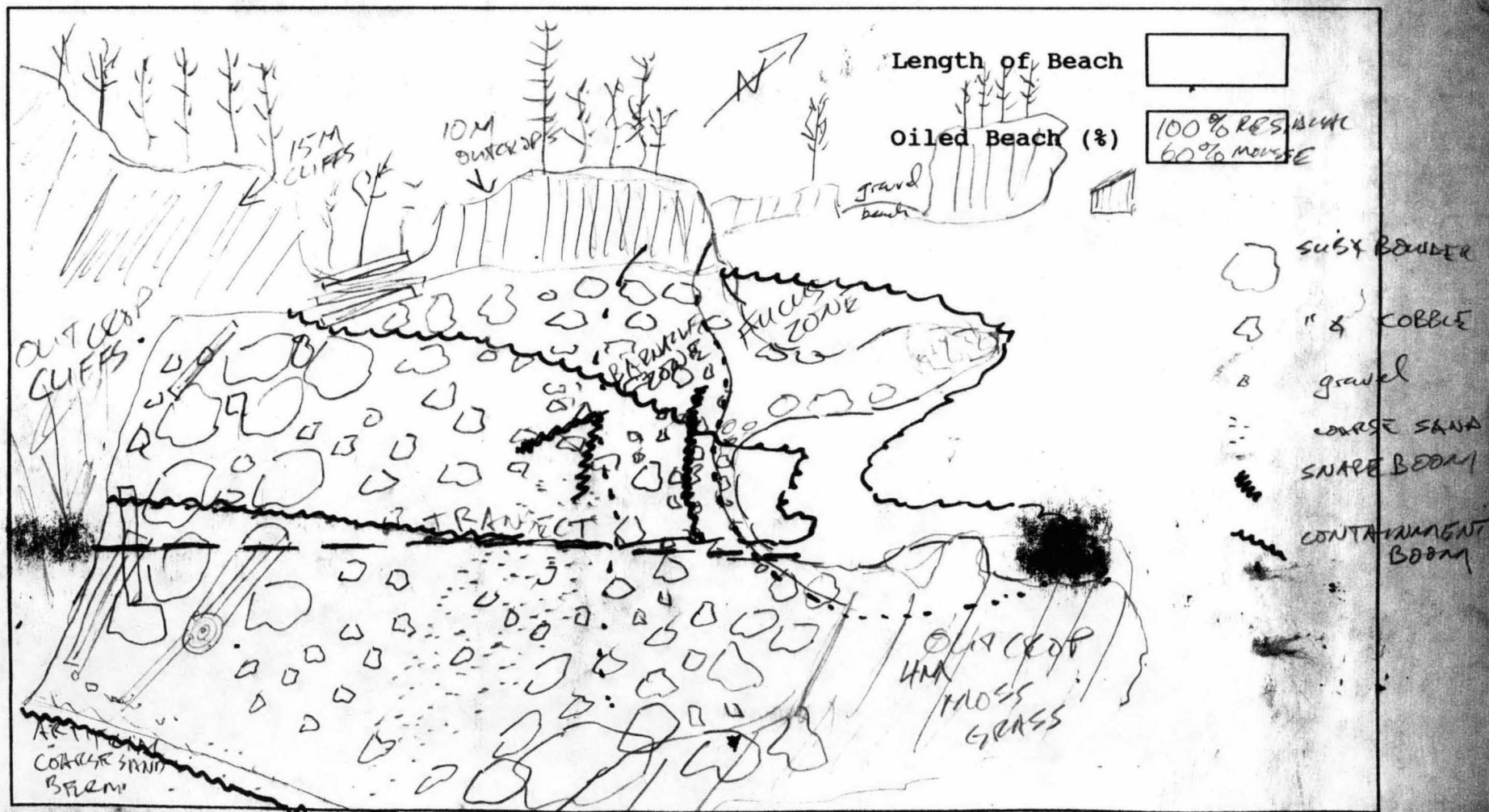
Shoreline Impact Survey Form

Site # 49 Date 8/17/89 Location Rua Cove, Knight I Bench Mark small tree Ang 163 *

Low Tide 8:15 Time Start 10:30 Finish Recorders DH, GP Photos DH

Weather #rain, overcast Predominant Sediment Type

Sketch of Survey Site



Shoreline Impact Survey Form

Date 8/17/82 Site # 49 Location River Cove, Knight I

BACK STAKE
247

35A

Horiz. (m)	2.70	1.11	1.14	2.66	2.65	2.40	2.96	2.77	2.87	1.87	2.40	3.23	3.0	2.65	2.27
Vert. (m)	962	-36	-25	-41	-35	-24	-21	-34	-19	-15	-6	-10	-18	-6	-8
% Coverage	2%	40%	40%	50%	98%	100% 50% mud	100% 50%	100%	100%	100%	100%	100%	100%	100%	100%
Flora	BEACH GRASS	—	VINE PLANT	—	—	—	—	—	—	—	—	—	—	FUCLUS	FUCLUS
Fauna	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Oil Thickness	0	.25mm	.25mm	<.25	<.25	<.25	<.25	<.25	<.25	<.25	<.25	<.25	<.25	<.25	<.25
Comments	SOME SPENT SOME PARTIES AT BOTTOM	FRONT BEHIND LG BOULDER DOWN OIL STAIN	TAR STAIN POOLING W/VEG	OLIVAR VS. COAST MUSSELS CLAMMIP	LIGHT RESIDUAL COATING	RESIDUAL	—	—	—	—	—	—	—	—	—

PENETRATION

Station

UPPER				MID 20cm				LOWER TIDAL				14cm			
A		B		C		D		E							
Sediment	Oil	Sediment	Oil	Sediment	Oil	Sediment	Oil	Sediment	Oil	Sediment	Oil	Sediment	Oil	Sediment	Oil
Type	Depth	Type	Depth	Type	Depth	Type	Depth	Type	Depth	Type	Depth	Type	Depth	Type	Depth
	0		0		0		0		0		0		0		0
	5		5		5		5		5		5		5		5
	10		10		10		10		10		10		10		10
	15		15		15		15		15		15		15		15
	20		20		20		20		20		20		20		20
	30		30		30		30		30		30		30		30
	40		40		40		40		40		40		40		40
	50		50		50		50		50		50		50		50
	60		60		60		60		60		60		60		60

KEY

S- sand	LO- lite oil
G- gravel	BO- blk oil
C- cobble	M- mousse
B- boulder	S- sheen
P- peat	GW- Ground water

ENTIRE
GREEN HUE

233
-180
53

ENTERED GP

PROFILE 49 LOCATION SEA COVE DATE 11-14-89
RECORDERS G.P., G.W. PHOTOGRAPHS GP 54, 17-30 TIME 1600
TIDE STAGE MID WEATHER SNOW WIND SPEED 15-20 WIND DIRECTION NE
PROFILE ANGLE _____ WAVE HT. 1-2 FT SAMPLES TAKEN: BIO _____ CHEM _____ SED X PTA, C
SEDIMENT TYPE B, C, G (BETWEEN) UNDERLAIN BY FINES 89GW49-1, -2



DATE 11-14-89 PROFILE 49 START 1600 FINISH 1654 TIDAL STAGE Mid FRONT STAKE HT 1654
 LOCATION RUN COVE E FARKAT 2 LOI: TIDE 2001/-3.3 BACK STAKE HT 160

HORIZONTAL (M)	.80	3.10	1.71	3.31	1.37	2.80	2.22	.30	3.0	3.0	3.0	3.0	3.0	56	WEATHER GETTING ROCKET DARK 1250
VERTICAL (CM)	158	-64	-32	-46	-8	-11	-22	-16	-24	-12	-18	-2	-3		
% OIL COVER	2	85	90	90	85	70	70	75	75	75	50	80	80		
OIL THICKNESS	.5	.5	.75	.75	.75	.5	.5	.5	.5	.5	.5	.5	.5		
COMMENTS	PAINT ON CLIFF	PAINT ON CLIFF	PAINT ON CLIFF	PAINT ON CLIFF	PAINT ON CLIFF	PAINT ON CLIFF	PAINT ON CLIFF	PAINT ON CLIFF	PAINT ON CLIFF	PAINT ON CLIFF	PAINT ON CLIFF	PAINT ON CLIFF	PAINT ON CLIFF		

PENETR: (cm)

CHECK LIST

SAMPLES TAKEN -

- depth of oil burial -
- layer thickness -
- oil penetration -
- grain size -

BIOLOGICAL IMPACT

CLEANUP: # men -

equipment type & # -

DATE 11-14-89PAGE PROFILE 49START FINISH TIDAL STAGE FRONT STAKE HT 44LOCATION RUA COVE E KNIGHT ISLANDLOW TIDE BACK STAKE HT 160PAINT (160)
BK STAKEPT
STAKE (44)

CUMULATIVE

HORIZONTAL (M)	.80	3.76	6.96	8.67	11.98	13.35	16.15	18.37	18.67	21.67	24.67	27.67	30.67	36.27			
VERTICAL (CM)		-38	-102	-134	-180	-188	-199	-221	-237	-261	-273	-291	-293	-296			
% OIL COVER																	
OIL THICKNESS																	
COMMENTS																	

PENETR:

CHECK LIST

SAMPLES TAKEN -

depth of oil burial -

layer thickness -

oil penetration -

grain size -

BIOLOGICAL IMPACT

CLEANUP: # men -

equipment type & # -

(version 5/02/89)

SHORELINE CLEANUP PROGRAM

DATE 2 JUNE '89 SHORELINE SEGMENT KN-213
LOCATION: (see enclosed map) ~~THE~~ KNIGHT ISLAND,
NORTHERN EAST COASTLINE.

ADEC NO. _____ SHORELINE ASSESSMENT DATE: _____

Recommended Cleanup Activity(ies):

NO CLEANUP RECOMMENDED : ONLY VERY LIGHT
SPORADIC OIL DISTRIBUTION, VERY THIN OIL COAT,
INSUFFICIENT OIL TO JUSTIFY CLEANUP.

Priorities Considerations:

4 A

Ecological Constraints (from site survey):

Archeological Constraints (from site survey):

If heretofore undiscovered cultural materials are uncovered during cleanup, contact Exxon's Archeological Field Director and take actions prescribed in the Operational Guidelines for Shoreline Cleanup dated 4/21/89 as amended.

If cleanup occurs on beach #5 then archaeological monitoring of the mine-related buildings in the upland may be necessary, if the normal restriction of access to the upland can not be accomplished.

Date: _____

State Historic Preservation Officer *

EXXON: _____

Date: _____

FOSC: _____

Date: _____

* Signature required to satisfy stipulations in Alaska DNR land use permits for tide and submerged lands .

DOCUMENTATION:

Map/Aerial photo marking segment boundaries _____

VTR: Y/N Tape Number(s) _____

Photography: Y/N Roll Number(s) _____

Sample Numbers Collected: _____

KNIGHT ISLAND

KN - 213.

seg 212

beach 1 200m, light-no oil;

beach 2 200m, light-no oil

tar band + trace
mousse in
small cuts & rock
crevices, also
mousse as v. thin coat
or stain on shingle (<2x5,

10'-30' steep cliff, black
tar band @ high tide level
observed occasionally,
restricted to S/SE aspects.

No mousse on HM, or L
cliff.

segment
KN 213

beach 3 <100m, light-no oil; sporadic tar band (<1m)
w/ mousse patches.

beach 4 100 m, light-no oil; sporadic tar band (<1m), w/
small (<15m) band of mousse
<1m wide.

beach 5

RUA
COVE

CABIN

6/1 & 6/2

G. Macdonald - O.G.

Scale N 2 1/2" : 1 mile.

beach sketches attached.

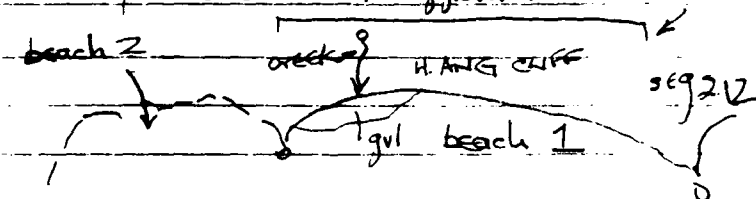
GEO. SCATS

1st JUNE 89 E. Knight, Bay of Isles

ALL. MARY JANE II @ 12.30

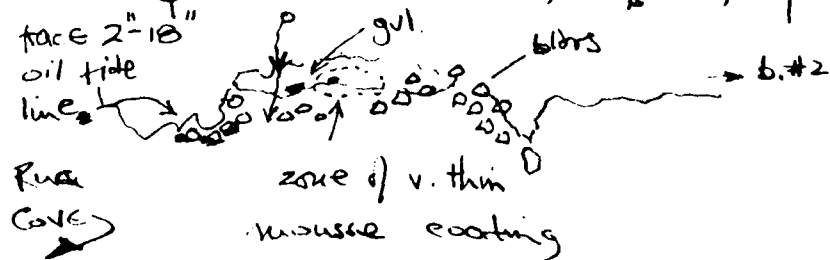
segment Z12, beaches 0-6, mousse covered at S NW aspects only, become thin - may exist to S. Most surficial cover @ hi-vhi tide line, decreasing to seaward. 15.45 pm

4.23 pm seg. 213 bldr beach w/ H. ANG cliff; "cured" blk oil tide mark extensive; rare crusted choc. mousse splashes; dk. brn-blk oil stain on <10% of small bldr. faces; trace of free oil in crevices* & cuts parallel to shore @ HTL; MIN cleanup. activity advised. L. shoreline clean and no sign of oil or sheen - 2 hrs before L. Tide. Hi vol. stream flushing beach. Local o.c. of meta. pillow basalts + agglomerate. Zoom



Peat moss could be applied here *

5:15pm, beach 3, seg 213; v. light of thin crustal mousse; v. atky; U-Mid level; stream flushing gvl; no obs. tide mark of oil; v. thin coating/stn; no cleanup advised. >80 bldr, 15% oil, 5 pbs.



gate warning fm. Vaco timekeeper / F&W. MJ @ 8:00pm

6/2 (to tide 07:00, -2.7')

beach 2, seg 213 ~200m wide - bldr 30% pbs 70%; mat. sloping pbs beach w/ li. ang greenstone pillow basalt headwall cliffs. oil only as single lt. coating on super li. storm scarp, to 6", stky choc. mousse, 100' x 18" only, unless later contam. is obs, only gvl/pbs shovelling & sluice box cleaning or removal is worthwhile here.



v. light coat of dk. choc brn moss, only a few pbs, one totally stained. BEACH 2, seg 213.

07:30; oily coated cliff * could be hand wiped w/ solvent, < 10' x 4'. soft mousse.

Beach 4 seg 213; 08:40. 100m wide @ LT. med-L ANG. gvl/pbs beach in cove; dried mousse @ li. tide level again as pervasive stain, 50' ext. of gvl. @ U. beach has mousse to ~8" deep in local smearing; loc. adj + N of Rua Cove beach. no oil obs on mid of l. beach;



BEACH 5 seg 213 ; 09.20 ; 50m wide
80% bldr, 10 cbs, 10 pbs,


dried mouse
skin in blobs,
no oil @ depth or
underneath blobs,
additional oil tide line @
hi tide again, dk brn mouse
cover, < 30% of total beach str.

All segment 213 is v. low priority ; poss. for
omission @ hi tide only w/ brn/skin ;
any cleanup would have to have
excl. skin fact. to justify any action
here. Oil staining < 2mm thick, mouse
on the shingle < 10" deep, avg < 1".
END OF SEGMENT.

CAMERA MALFUNCTION — NO PHOTO.

ECOLOGICAL EVALUATION

LOCATION: KNIGHT IS. SITE: _____ OBSERVER: A. E. JAHN
 LOCATION PREFIX: KN SEG. NO.: KN-213 LENGTH: 2700 (M)
 DATE: 6/11/2/89 TIME (HHMM): 6/1 1600-1800 TIDE HT.: -2 to +2 ft (M)
 TIME (HHMM): 0720-0730

OILED ZONE: Splash (High) Medium Low

SUBSTRATUM: (Rock) (Boulder) (Cobble) (Gravel) Sand Mud

LIVE BIOTA

Fucus (algae): Patchy (Y/N) Contin. Y/N Dense (Y/N) Sparse Y/N None Y/N

Mytilus (Mussels): Patchy (Y/N) Contin. Y/N Dense (Y/N) Sparse Y/N None Y

Balanus (Barnacles): Patchy (Y/N) Contin. Y/N Dense (Y/N) Sparse Y/N None Y

Littorina

Patchy (Y/N) Contin. Y/N Dense (Y/N) Sparse Y/N None Y/N

dense on some boulders, absent on others

Limpets: Patchy (Y/N) Contin. Y/N Dense Y/N Sparse (Y/N) None Y/N

concentrated in upper tide zone on clean boulders

OTHER OBSERVATIONS: possible salmon stream @ Buoy #5 -
near mine shack

CLEANUP PRECAUTIONS: no good reason to clear this segment

MAMMALS: Otters _____ Harbor Seals _____ Sea Lions _____ Whales _____
 Other _____

BIRDS: pidgeon guillemots, gulls, eagles

GENERAL OBSERVATIONS: _____

(version of 4/29/89)

CULTURAL RESOURCE EVALUATION

Date 6/2/89 Location Kingst Island Site _____

Location Prefix KN Segment # KN-213 Length 2700m

Survey Method:

Air _____ (A - indicate on map) Boat THE REST (A - indicate on map)

Ground ✓ BEACHES (G - indicate on map)

Known cultural resources (AHRS #) 49 Data Source 14(4), ?

Oil conditions/beach visibility none to medium

Width of beach zone surveyed 5-15 m Tree fringe surveyed 10

Cultural resources observed in beach zone (AHRS code) None

Cultural resources observed in tree fringe (AHRS code) MNE

General observations justifying survey method and segment's site probability:

Shore Profile beaches mostly cobble and boulders covered

Fresh Water Sources several streams

Sea Exposure east

Access/Safety beaches good, the rest poor

Probability of undiscovered sites in beach zone (circle one) 1 (2) 3 4 5

Monitoring during cleanup needed yes (no) Collection yes (no)

Photos: Color Roll # _____ Frames _____

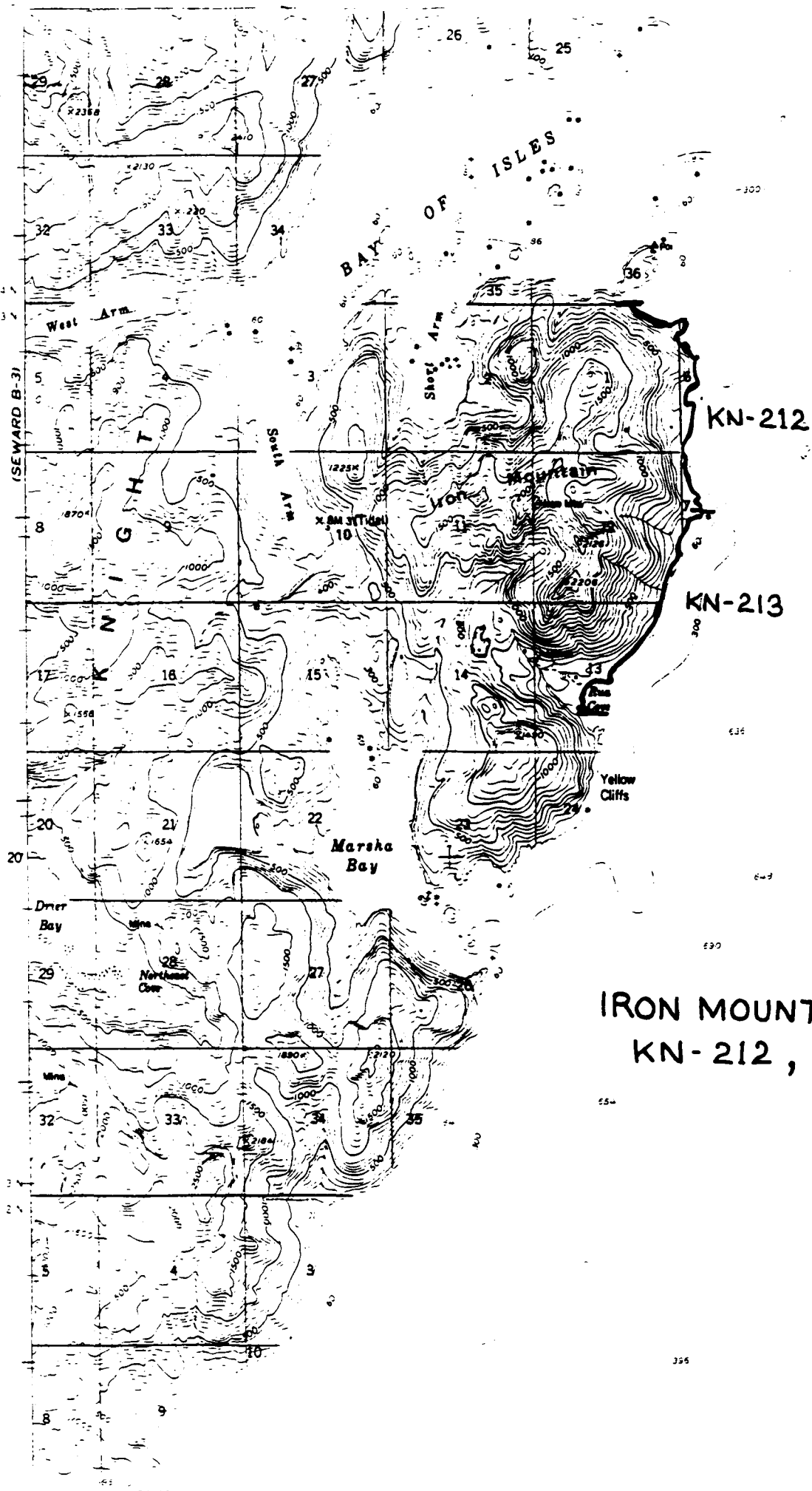
B/W Roll # _____ Frames _____

Observer(s) C. Wilson

Time survey started 6/1/89 1420 Time survey ended 6/2/89 1000

Cultural resource considerations/restraints:

If cleanup occurs the restriction against upland access should be strictly enforced on beach 5. If heretofore undiscovered cultural resources are uncovered during cleanup contact Exxon archaeologist, C. Mobley, immediately.



IRON MOUNTAIN BLOCK
KN-212, KN-213