

Preassessment Data Report #7

M/V *Selendang Ayu*
Background Beaching and Oiling Rates for Bird Carcasses

COMMENTS OF THE RESPONSIBLE PARTY

Page 1; Paragraph 1; Introduction

“Following the grounding, crews searched nearby beaches to recover dead and injured animals, collecting approximately 1,749 seabird carcasses.”

Is this the correct number? There were 1723 entries in the morgue records, 1680 were “bird like”, 350 had feathers and no bone resulting in 1330. Of those 79 were only bones. What is a bird, and how many do we have are important questions to answer.

Delete reference to the number of carcasses found until an agreement can be reached on the number to be used.

Page 2; Paragraph 3; Methods

“No protected beaches were found in the area.”

Does the lack of a protected beach affect the results?

Page 3; Paragraph 1; Nikolski

As with the description of the Chernofski study, a list of the species recovered at Nikolski, and the number of each, should be provided.

“At Nikolski Bay, a total of 43 carcasses were collected, of which three carcasses (6.25%) showed evidence of oiling. The carcass deposition rate at Nikolski was 0.92 birds/km (std. error 0.26) (Table 2). The deposition rate for visibly oiled birds was 0.06 birds/km and for visibly unoiled birds 0.85 birds/km (std. error 0.25). Bird carcass encounter rates by date of survey are shown in Figure 4.”

The oil on the three carcasses has not been, and must be fingerprinted to determine whether the oil was from the *Selendang Ayu*.

It should be noted that background oiling of birds and beaches in the Aleutian Islands has been well documented (Byrd et al 1995)¹. While the study focused on the western and central Aleutian Islands, the following excerpts are relevant to this PADR:

¹ Byrd, G.V., J.C. Williams and G. Thomson. 1995. The status of oil pollution on beaches of the Alaska Maritime National Wildlife Refuge, 1992-1994. Alaska Maritime National Wildlife Refuge, Homer, AK.

“Effects of beach oil on wildlife was not measured, but we found oil on live and dead birds of nearly every species that occurs in the nearshore zone.”

“Nearly 1,000 km away in the eastern Aleutian Islands, observers found 11 dead oiled birds at Yunaska on one sample beach between 28 May and 4 June.”

“The fact that we found no oil spots during brief surveys on narrow transects at particular islands should not be interpreted as evidence that no oil was present”

“The samples that we had analyzed indicated the majority was probably bunker C, a fuel used in many commercial ships today and the main fuel used for ships during WWII.”

The findings of Byrd et al. (1995) was confirmed in the study area by the documentation of oil not consistent with the *Selendang Ayu* source oil (Figure 1) in the study area and elsewhere.

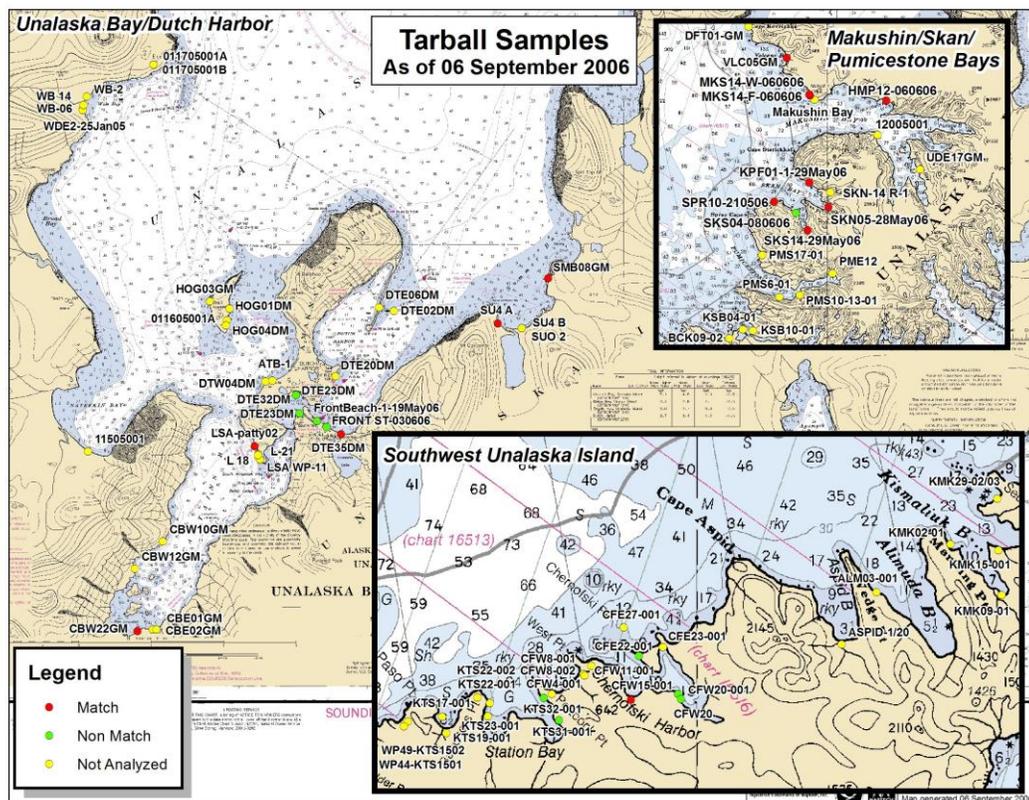


Figure 1. Results of source allocation of Tarball Samples in the vicinity of the *Selendang Ayu*.

Page 5; Paragraph 1; Discussion

“Most of the shoreline between the spill site and Chernofski Harbor as well as the shoreline between Chernofski Harbor and the south-west tip of Unalaska Island was oiled to some degree, varying from very light to heavy.”

The sentence is misleading. It is very important to understand the extent and nature of the beach oiling in this area.

SCAT data are collected to assist in defining cleanup priorities and methods. While the data are quite specific in this regard, they can easily be misconstrued. This is particularly so for those not familiar with the process or the site. For purposes of summarizing observations, mapping an entire segment is categorized by the heaviest oiling within that segment. For example, the SCAT Team found, and removed, one tarball within Segment PMS14. While no oil remained on the shoreline, 2.35 km was then classified as very light.

For a better perspective of actual shoreline oiling, the SCAT database was queried to assess the linear extent of oiling by category. The data forms and field notes of each segment and zone were evaluated. The data and results are shown in the following table.

Segements = Spray Cape to Konets Head

Segment	Oil Category	Length (Km)	Oiled Length (Km)	Oiled Zone(s) Descriptions
SPR01	Moderate	1.74	0.03	30m of 50% coat on cobbles and vegetation
SPR02	Moderate	0.27	0.05	50m of 10% TB and TP
SPR03	Light	0.04	0.004	Oiled debris
SPR04	Moderate	0.81	0.07	70m of TP and mat on sand and veg. some SSO
SPR05	NOO	0.21	0.00	
SPR06	Very Light	1.01	0.50	light spatter and TPs
SPR07	Moderate	0.38	0.10	15% PO, TP and heavy spatter between c/b
SPR08	NOO	0.51	0.00	
SPR09	Moderate	0.85	0.30	Occasional TB / TP, soybean/oil emulsion (light)
SPR10	Light	0.56	0.54	Sporadic TB / TP
SPR11	Moderate	1.21	0.35	PO, TB, TP and lots of oiled debris (helo parts)
SPR12	Moderate	0.59	0.20	PO and SSO in berm and grass
SPR13	Moderate	0.45	0.05	< 8m of oiled grass and pebble berm (high energy/NFT)
SPR14	Light	0.25	0.01	2% avg. cover, very dangerous/ NFT
Spray Cape TOTAL		8.89	2.20	
PMN01	NOO	0.98	0.00	
PMN02	NOO	0.26	0.00	
PMN03	NOO	0.25	0.00	
PMN04	NOO	0.47	0.00	
PMN05	NOO	0.05	0.00	
PMN06	NOO	0.34	0.00	
PMN07	NOO	0.41	0.00	
PMN08	NOO	1.95	0.00	
PMN09	NOO	1.62	0.00	
PMN10	NOO	0.64	0.00	
PMN11	NOO	0.40	0.00	
PMN12	Light	0.86	0.01	trace drips and splats
PMN13	Very Light	0.83	0.00	trace splats
PMN14	Light	1.84	0.15	oiled grass, shell and rock
PMN15	Moderate	0.38	0.15	oiled grass, shell and rock
PMN16	Moderate	0.49	0.07	oiled grass and 1% of TPs
PMN17	Very Light	1.21	0.01	TBs, oiled rope and net collected
PMN18	NOO	0.50	0.00	
PMN19	NOO	0.13	0.00	
PMN20	NOO	0.45	0.00	
PMN21	NOO	1.76	0.00	
PMN22	NOO	0.99	0.00	
PMN23	NOO	0.16	0.00	
PMN24	NOO	0.90	0.00	
PMN25	NOO	0.45	0.00	
PMN26	NOO	1.61	0.00	
PMN27	NOO	2.14	0.00	
PMN28	Heavy	1.96	0.02	20mx6m of oiled mat with mixture of grass
PMN TOTAL		24.06	0.41	
PME01	NOO	0.47	0.00	
PME02	NOO	0.26	0.00	
PME03	NOO	0.35	0.00	
PME04	NOO	0.35	0.00	
PME05	NOO	0.77	0.00	
PME06	NOO	0.37	0.00	
PME07	NOO	0.13	0.00	
PME08	NOO	0.25	0.00	
PME09	NOO	0.18	0.00	
PME10	NOO	0.16	0.00	
PME11	NOO	0.50	0.00	
PME12	NOO	1.14	0.00	
PME13	NOO	1.98	0.00	
PME14	NOO	1.28	0.00	
PME15	NOO	1.51	0.00	

Segements = Spray Cape to Konets Head

Segment	Oil Category	Length (Km)	Oiled Length (Km)	Oiled Zone(s) Descriptions
PME16	NOO	0.76	0.00	
PME17	NOO	0.36	0.00	
PME18	NOO	1.26	0.00	
PME19	NOO	0.62	0.00	
PME20	NOO	0.30	0.00	
	PME TOTAL	12.97	0.00	
PMS01	Very Light	0.35	0.00	trace drips
PMS02	Very Light	0.51	0.00	trace drips
PMS03	Light	1.14	0.01	<20 drips, 1 slightly oiled limb and oiled float (PMS 1-5)
PMS04	Light	1.38	0.00	see above
PMS05	Light	2.42	0.00	see above
PMS06	Moderate	3.34	0.01	trace drips and sporadic TBs collected
PMS07	Light	0.11	0.01	sporadic drips and TBs
PMS08	Light	0.53	0.05	drips and sporadic TBs collected, some buried TBs in berm
PMS09	Light	0.05	0.01	sporadic TBs collected
PMS10a	NOO	0.24	0.00	
PMS10b	Moderate	0.83	0.10	TP, mats and oiled debris
PMS11	Very Light	0.52	0.10	sporadic TBs collected
PMS12	NOO	0.08	0.00	
PMS13	NOO	1.56	0.00	
PMS14	Very Light	2.35	0.00	1 TB observed and collected
PMS15	NOO	1.17	0.00	
PMS16	NOO	0.67	0.00	
PMS17	NOO	0.30	0.00	
PMS18	NOO	0.25	0.00	
PMS19	NOO	0.38	0.00	
PMS20	NOO	0.49	0.00	
PMS21	NOO	0.36	0.00	
	PMS TOTAL	19.02	0.29	
MCB01	Moderate	0.67	0.20	mousse, patchy residue and oiled grass
MCB02	Heavy	0.88	0.23	mousse, patchy residue and oiled grass
MCB03	NOO	0.74	0.00	
MCB04	Very Light	0.05	0.01	12 splats <3 cm dia
MCB05	NOO	0.24	0.00	
MCB06	NOO	0.18	0.00	
MCB07	NOO	0.09	0.00	
MCB08	NOO	1.62	0.00	
MCB09	NOO	0.32	0.00	
MCB10	NOO	0.42	0.00	
MCB11	NOO	0.36	0.00	
MCB12	NOO	0.16	0.00	
MCB13	NOO	1.12	0.00	
MCB14	NOO	0.41	0.00	
MCB15	NOO	1.41	0.00	
	MCB TOTAL	8.65	0.44	
KSB01	Moderate	0.51	0.01	sporadic PO, TBs and drips and oiled debris removed
KSB02	Heavy	0.43	0.09	PO between boulders, abundant of oiled debris
KSB03	Heavy	0.94	0.11	PO between boulders, abundant of oiled debris
KSB04	Light	0.43	0.02	drips and TB's (collected)
KSB05	Light	0.14	0.01	drips and TB's (collected)
KSB06	Light	0.09	0.02	drips and TB's (collected)
KSB07	Light	0.57	0.03	drips and TB's (collected)
KSB08	Moderate	0.45	0.04	40m of TB along berm and buried in upper 10-20cm
KSB09	NOO	1.46	0.00	
KSB10	Moderate	1.04	0.13	TBs and TPs in berm, oiled debris
KSB11	NOO	0.09	0.00	
KSB12	Very Light	0.98	0.01	few tar drips in p/c
KSB13	Very Light	0.99	0.01	few isolated drips on boulders
KSB14	Very Light	0.31	0.01	trace drips on boulders

Segements = Spray Cape to Konets Head

Segment	Oil Category	Length (Km)	Oiled Length (Km)	Oiled Zone(s) Descriptions
KSB15	Light	0.69	0.02	25m of PO between boulders and oiled grass (patchy)
KSB16	NOO	0.88	0.00	
	KSB TOTAL	9.99	0.51	
BCK01	Very Light	1.15	0.01	high energy, VL oil in berm and lightly oiled debris, safety
BCK02	Very Light	0.91	0.01	high energy, VL oil in berm and lightly oiled debris, safety
BCK03	Very Light	0.77	0.01	high energy, VL oil in berm and lightly oiled debris, safety
BCK04	Very Light	0.44	0.01	high energy, VL oil in berm and lightly oiled debris, safety
BCK05	Very Light	2.41	0.01	high energy, VL oil in berm and lightly oiled debris, safety
BCK06	Very Light	0.53	0.01	high energy, VL oil in berm and lightly oiled debris, safety
BCK07	Heavy	1.21	0.10	Oiled berm forming asphalt ~70m, and oiled debris
BCK08	NOO	0.06	0.00	
BCK09	Moderate	1.04	0.02	SSO in berm, oiled logs
BCK10	Very Light	0.34	0.09	trace drips and splats
BCK11	Moderate	0.95	0.06	Oiled grass, storm berm and debris
BCK12	Moderate	0.52	0.14	Oiled grass and storm berms
BCK13	NOO	0.33	0.00	
BCK14	Heavy	0.97	0.05	50m of oiled storm berms and grass
	BCK TOTAL	11.63	0.52	
KMK01	NOO	0.86	0.00	
KMK02	Heavy	1.15	0.20	200mx3.5m area of TB,TP, SSO and oiled debris & rope
KMK03	Moderate	0.19	0.15	15mx15m area TB,TP and PO on rock/grass. Safety
KMK04	Light	0.25	0.01	Partially oiled rope and a few drips on p/c/b and logs
KMK05	Moderate	1.41	0.60	1 zone has TB,TP and some SSO, access and safety
KMK06	Moderate	0.63	0.20	sporadic drips and asphalt on p/c/b
KMK07	Heavy	0.86	0.60	PO and asphalt on p/c berm, oiled net
KMK08	NOO	0.11	0.00	
KMK09	Heavy	0.18	0.17	8mx2m PO and tar mats on p/c, TP/TB and drips
KMK10	Light	1.55	0.05	TB and TP (most collected)
KMK11	Heavy	0.46	0.16	100mx2m oiled berm, some SSO. Oiled rope & debris
KMK12	Light	0.64	0.00	Oiled rope, oiled fish tote lid
KMK13	Moderate	1.68	0.30	well formed fairly hard asphalt 8m x .5m, trace drips
KMK14	Light	0.59	0.01	drips and sporadic oil on grass fringe, oiled net
KMK15	Light	0.88	0.04	40mx2m area with TB, TP, SSO and oiled debris
KMK16	Light	1.60	0.00	Single TB 3cm mixed with grass and feathers
KMK17	NOO	0.06	0.00	
KMK18	NOO	1.26	0.00	
KMK19	NOO	0.66	0.00	
KMK20	NOO	0.80	0.00	
KMK21	NOO	0.62	0.00	
KMK22	NOO	0.74	0.00	
KMK23	NOO	0.43	0.00	
KMK24	Very Light	0.17	0.00	Only a handful of drips observed, essentially NOO
KMK25	NOO	1.32	0.00	
KMK26	Moderate	0.27	0.07	recoverable oil bands and mats, oily debris and grass
KMK27	Heavy	0.56	0.07	75mx5m oiled grass, debris and splats on rocks
KMK28	Heavy	0.32	0.03	20mx2.5 oiled grass, p/c/b and debris
KMK29	Light	0.28	0.01	1% mousse, oiled grass, oiled rope
KMK30	Light	1.84	0.17	3% oiled berm, grass, rope and net
KMK31	NOO	0.27	0.00	
KMK32	Moderate	0.37	0.08	oiled p/c berm
KMK33	NOO	0.39	0.00	
	KMK TOTAL	23.39	2.92	
ALM01	Very Light	0.62	0.01	trace drips and oiled rope
ALM02	Light	1.74	0.04	trace drips and TBs collected
ALM03	Moderate	1.12	0.08	sporadic drips and TBs, Oiled debris, rope & net
ALM04	Light	0.05	0.01	drips and sporadic TBs
ALM05	Very Light	1.50	0.01	TB, and oiled debris collected
ALM06	Light	2.16	0.01	trace oiled debris and splat collected
ALM07	NOO	0.08	0.00	

Segements = Spray Cape to Konets Head

Segment	Oil Category	Length (Km)	Oiled Length (Km)	Oiled Zone(s) Descriptions
ALM08	Light	0.73	0.01	Oiled debris and splats collected
ALM09	Moderate	0.13	0.01	Oily rope and driftwood
ALM10	NOO	0.46	0.00	
ALM11	Light	1.05	0.01	2 patties and 1 oiled feather
ALM12	Light	0.54	0.01	trace splats on small area of p/c collected
ALM13	Very Light	1.53	0.01	trace drips, 1 tar patty and oiled rope collected
ALM14	Light	0.47	0.01	<1% trace drips on p/c (collected)
ALM15	NOO	0.88	0.00	
ALM16	NOO	0.13	0.00	
ALM17	NOO	0.21	0.00	
ALM18	NOO	0.37	0.00	
ALM19	NOO	0.22	0.00	
ALM20	Light	0.36	0.01	<1% trace drips on p/c (collected)
ALM21	Light	0.33	0.01	Oiled grass collected
ALM23	Light	0.68	0.01	oiled grass and debris collected (2 bags)
	ALM TOTAL	15.37	0.25	
ASP01	Very Light	0.67	0.01	trace drip behind boulder
ASP02	NOO	0.22	0.00	
ASP03	Light	0.10	0.00	1 drip and 1 TB
ASP04	NOO	0.37	0.00	
ASP05	Very Light	1.16	0.01	trace drips on grass wisp (2 areas of 10m lengths)
ASP06	NOO	0.27	0.00	
ASP07	Light	2.02	0.01	trace drip, oiled rope and net in log jam
ASP08	Very Light	0.12	0.01	<<1% drips, trace oil on grass, oiled rope collected
ASP09	Very Light	0.60	0.01	<<1% mousse drips
ASP10	Light	0.07	0.01	<<1% mousse drips
ASP11	Light	1.21	0.01	<<1% drip on boulder/grass, oiled debris & net.
ASP12	NOO	0.06	0.00	
ASP13	Light	0.98	0.01	3 mousse drips on entire segment
ASP14	Moderate	0.63	0.06	Trace drip <1%, oiled rope and net
ASP15	Light	0.08	0.00	Oiled rope - NOO on beach
ASP16	Very Light	1.04	0.000	Oiled rope and debris - NOO on beach
ASP17	NOO	1.92	0.00	
ASP18	Very Light	1.95	0.01	Less than 10 oil drips over 2 km segment
	ASP TOTAL	13.47	0.15	
CFE01	NOO			Stream Mouth
CFE02	NOO	0.35	0.00	
CFE03	NOO	0.51	0.00	
CFE04	NOO	0.33	0.00	
CFE05	NOO	0.31	0.00	
CFE06	NOO	0.58	0.00	
CFE07	NOO	0.26	0.00	
CFE08	NOO	0.61	0.00	
CFE09	NOO	0.68	0.00	
CFE10	NOO	0.96	0.00	
CFE11	NOO	0.21	0.00	
CFE12	NOO	0.59	0.00	
CFE13	NOO	0.55	0.00	
CFE14	NOO	1.04	0.00	
CFE15	NOO			Stream Mouth
CFE16	NOO	0.32	0.00	
CFE17	NOO	1.00	0.00	
CFE18	NOO	0.46	0.00	
CFE19	Very Light	1.31	0.04	only trace drips along 40m area
CFE20	NOO	0.51	0.00	
CFE21	NOO	1.14	0.00	
CFE22	NOO	0.67	0.00	
CFE23	NOO	0.58	0.00	
CFE24	Light	0.58	0.01	isolated trace drips on p/c

Segements = Spray Cape to Konets Head

Segment	Oil Category	Length (Km)	Oiled Length (Km)	Oiled Zone(s) Descriptions
CFE25	Light	0.56	0.03	trace drips, isolated patties and oiled rope collected
CFE26	Very Light	0.29	0.01	trace drips, oiled rope and debris collected
CFE27	Very Light	1.24	0.01	variable patches of TBs on p/c - all large collected
CFE28	NOO	0.81	0.00	
CFE29	Light	0.64	0.01	trace drips, few TBs collected
CFE30	Very Light	0.46	0.01	trace drips on p/c
CFE31	Very Light	0.47	0.01	few trace drips on rock
CFE32	NOO			Stream Mouth
CFE33	NOO	0.79	0.00	
CFE34	NOO	1.38	0.00	
	CFE TOTAL	20.21	0.13	
CFW01	NOO	0.27	0.00	
CFW02	NOO	0.29	0.00	
CFW03	Light	0.49	0.01	trace drips, 3 TBs and lightly oiled rope and log
CFW04	Light	0.68	0.01	Isolated patch of TBs (collected) and drips (2mx10m area)
CFW05	Very Light	0.82	0.01	1 TB, few drips, 2 tar on sticks (collected)
CFW06	NOO	0.71	0.00	
CFW07	NOO	0.76	0.00	
CFW08	NOO	0.50	0.00	
CFW09	NOO	0.68	0.00	
CFW10	NOO	0.81	0.00	
CFW11	Light	1.23	0.01	trace drips, single TB, sm piece of oiled wood
CFW12	Light	1.17	0.01	trace drip on boulder ~ every 25m
CFW13	NOO	0.74	0.00	
CFW14	NOO	0.50	0.00	
CFW15	NOO	0.72	0.00	
CFW16	NOO	0.35	0.00	
CFW17	NOO	0.30	0.00	
CFW18	NOO	0.74	0.00	
CFW19	Very Light	0.33	0.01	few isolated drips (soft) on boulders
CFW20	Very Light	0.59	0.01	few drips (old/hard), 1 single splat on cobble collected
CFW21	NOO	1.07	0.00	
CFW22	NOO	0.48	0.00	
CFW23	NOO	0.40	0.00	
CFW24	NOO	1.13	0.00	
	CFW TOTAL	15.77	0.07	
KTS01	Very Light	2.12	0.00	2 drips on driftwood / NOO
KTS02	NOO	1.08	0.00	
KTS03	NOO	0.67	0.00	
KTS04	Very Light	0.97	0.00	Oiled rope - Beach NOO
KTS05	Very Light	0.72	0.01	2 weathered drips on a cobble
KTS06	Very Light	1.48	0.01	< 1cm dia. drip on cobble
KTS07	Very Light	1.25	0.01	Oil grass fringe << 1%
KTS08	NOO	2.30	0.00	
KTS09	NOO	1.49	0.00	
KTS10	NOO	1.54	0.00	
KTS11	Very Light	1.43	0.03	trace oil (2cm dia. splat), 30m oiled grass <<1%
KTS12	NOO	0.91	0.00	
KTS13	Very Light	1.61	0.01	trace oil <<1%; 1 oiled bird, oiled debris collected
KTS14	Very Light	2.42	0.01	trace oil as a few spots
KTS15	Moderate	2.66	0.05	Oiled grass with tb/tp & oiled debris - all collected
KTS16	Very Light	1.74	0.01	trace drips on pebble/cobble
KTS17	Light	1.60	0.01	random TBs collected
KTS18	Light	1.00	0.01	TBs and oiled rope & grass removed
KTS19	Light	0.41	0.002	Oiled rope and TBs collected
KTS20	Moderate	0.77	0.05	TBs and oiled rope & grass removed
KTS21	Light	1.66	0.05	trace to sporadic oiled grass, random TBs
KTS22	Moderate	2.60	0.02	tar matted grass, tb/tp, sm pocket of SSO
KTS23	Very Light	1.62	0.01	2 TBs found, one collected as sample

Segements = Spray Cape to Konets Head

Segment	Oil Category	Length (Km)	Oiled Length (Km)	Oiled Zone(s) Descriptions
KTS24	Light	1.19	0.01	trace tar in grass (2m x .1m)
KTS25	Light	1.91	0.01	trace drips on pebble/cobble, <<1%
KTS26	NOO	0.54	0.00	
KTS27	Very Light	1.86	0.01	Trace spot ~ every 150m
KTS28	NOO	0.44	0.00	
KTS29	NOO	0.61	0.00	
KTS30	NOO	0.81	0.00	
KTS31	NOO	1.78	0.00	
KTS32	NOO	1.35	0.00	
KTS TOTAL		44.55	0.32	

Oiling Category	Seg. Length (Km)	Actual Length of Oiling (Km)	Percent Oiling of Total Shoreline (Spray Cape to Konets Head)
NOO	96.91	0.00	96.40%
Very Light	47.74	1.10	0.48%
Light	44.43	1.54	0.67%
Moderate	28.98	3.75	1.64%
Heavy	9.91	1.83	0.80%
TOTAL Lenghts	227.97	8.22	100.00%

Between the spill site and Konets Head, 1.83 km, or 0.80% were classified as heavy; 3.75 km, or 1.64% as moderate; 1.54 km or 0.67% as light; 1.10 km, or 0.48% as very light; and 219.75 km, or 96.40% as no observed oil.

Page 5; Paragraph 1; Discussion

It would be difficult or impossible to separate ambient deposition from spill related deposition in this context.”

There is no discussion of post-mortem oiling.

Page 5; Paragraph 2; Discussion

“...shoreline effects of M/V Selendang Ayu oil and oiled birds represented only 7.5% of the total recoveries.”

Add “Until the oil from these 3 carcasses is fingerprinted, it cannot be said that the oil on these birds was *Selendang Ayu* oil.” After the above sentence.

Page 5; Paragraph 3; Discussion

Insert “To arrive at the actual rate of background deposition would require adjustments due to Searcher efficiency and scavenging rates.” After the first sentence.

“But if visible oiling tends to underestimate oil related mortality by approximately 50% as suggested by Ford (2007), then virtually all of the birds recovered at Chernofski Harbor were linked to affects of M/V Selendang Ayu oiling. This would imply that very little background deposition occurred at Chernofski Harbor. At Nikolski Bay, by comparison, the natural deposition rate would still be about 0.79 birds/km even if only half the spill related birds were visibly oiled. It is therefore possible that background deposition at Nikolski Bay is considerably higher than at Chernofski Harbor, though we currently have no data to support or to reject this hypothesis.”

This is speculative and should be deleted. The purpose of the report is to present the data from the background mortality study, not to draw questionable conclusions from it.

The entire discussion in this last paragraph hinges on the assumption that the oil on the oiled carcasses was from the incident. Further, the assumption that as many visibly unoiled birds die as the number of visibly oiled birds may not hold up once you are a significant distance from the spill site. The problem is that in using the lower value of 0.79 birds/km (instead of the 0.92 birds/km figure) results in approximately 10,000 more dead birds attributable to the spill once one does the “big math” of extrapolation.

Therefore, the oil on the three oiled carcasses from Nikolski Bay must be fingerprinted.