

ExxonMobil Pipeline Company

**SCAT Area Transition Report
for B04**

Silvertip Pipeline Incident
Laurel, Montana

October 19, 2011



SCAT Area Transition Report for B04

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Laurel, Montana

Prepared for:
ExxonMobil Pipeline Company

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October 19, 2011

The observations described in this Report were made exclusively under the conditions at the time and subject to the limitations stated therein. It is understood by Client that ARCADIS has relied on the accuracy of documents, oral information, and other material and information provided by sources documented in this report, including but not limited to information provided by Client and Client's other contractors. ARCADIS has not independently verified any such information. The conclusions presented in the Report are based solely upon the observations and representations made by others.

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1. Executive Summary of Oil Removal Activities

This Shoreline Cleanup Assessment Technique (SCAT) Area Transition Report provides a summary of the SCAT surveys conducted to determine the extent of oiling along the riverbanks and floodplain within SCAT Area B04, as well as the oil remediation activities completed in this area based on the SCAT Team recommendations. This report also summarizes the environmental samples collected in SCAT Area B04. This report is intended to be read and used in conjunction with the Summary of Assessment and Oil Removal Activities report.

1.1 Land Ownership and Access Issues

Figure 1 provides an aerial map of SCAT Area B04, along with the (a) SCAT Area boundary, (b) parcel boundaries and respective property owners, and (c) access constraints identified during the oil cleanup process. The acreage surveyed in Area B04 is 28.5. There were no access issues for the left or right banks of Area B04.

1.2 Cultural, Historic, and Natural Resource Constraints

No historic properties or cultural resources have been identified within this area that would affect oil removal activities.

Figure 2 summarizes the natural resources identified in this segment. International Bird Rescue and Resource Advisors from U.S. Fish and Wildlife Service conducted regular inspections of Area B04. Four lightly oiled common mergansers (*Mergus merganser*) were observed but not captured for cleaning. A deceased bald eagle (*Haliaeetus leucocephalus*) and a fish (unknown species) with no visible oiling were identified and retained. One Wildlife Priority Cleanup Area (WPCA) was identified. The WPCA consisted of a debris pile with oiled woody debris and an associated pool with sheen. The WPCA was treated to reduce the potential for wildlife oiling and is no longer considered a wildlife hazard. Five active bird nests were identified in Area B04: an Osprey (*Pandion haliaetus*) nest, a northern flicker (*Colaptes auratus*) nest, a mourning dove (*Zenaidura macroura*) nest, a cavity nest (unknown species), and a white-breasted nuthatch (*Sitta carolinensis*) nest.

1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area B04. The analytical results for the samples collected can be accessed through a publicly accessible database on the United States Environmental Protection Agency's (USEPA's) website. The approximate locations of samples collected within Area B04 are provided on Figure 3.

Table 1 Environmental Sampling Summary

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
CTEH	LAMT0822SO110	22-Aug-11	Soil Surface	LAMT 552 SO110	45.695583	-108.640092
MDEQ	ST-071511-LM2	15-Jul-11	Soil Surface	ST-LM-02	45.69682	-108.63827

Appendix A contains a summary of sample results with detections for this sample set. Detections with a result above the screening level are highlighted; for this set, there were no exceedances.

1.4 Summary of Initial SCAT Surveys

The SCAT teams used systematic evaluation criteria and treatment method tables approved by the National Oceanic and Atmospheric Administration to provide a standard approach for data collection and conducting field surveys. The forms and sketches from the initial SCAT surveys performed along the river bank (water edge) and floodplain within Area B04 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area B04.

1.5 Applicable Compiled Treatment Recommendations

The SCAT team developed compiled treatment recommendations (CTRs) providing approved treatment methods (ATMs) for each oiling zone identified during the initial SCAT surveys ([CTR No. 20](#) and [CTR No. 41](#)).

1.6 Oil Removal Activities

Oil removal activities were conducted within Area B04 in accordance with the ATMs identified in the CTRs. [Appendix I](#) of the Summary of Assessment and Oil Removal Activities report presents this data including: date range/days worked, average number of people working per day, equipment used, and various types of bags removed: oily

debris, personal protective equipment (PPE), plastic, trash, super sacks, wood chips, and contaminated wood.

1.7 Pre-Inspection Survey Transmittal

A Pre-Inspection Survey Transmittal (PIST) was not conducted for this area.

1.8 Post-Inspection Survey Transmittal

SCAT Operations liaisons performed an inspection of the remediated areas of SCAT Area B04 and developed a Post Inspection Survey Transmittal (POST) associated with the right bank within Area B04, which is presented in Appendix D.

1.9 Summary of Final SCAT Surveys

Figure 5 shows the oiling conditions within Area B04 following completion of oil removal activities. The SCAT team performed final surveys of the left and right banks within SCAT Area B04 to confirm the agreed-upon cleanup endpoints identified in the applicable CTRs had been achieved. The final SCAT survey documentation is presented in Appendix E.

1.10 SCAT Area Conclusions

Based on the final SCAT surveys performed on the left bank and the POST associated with the right bank within Area B04, no further treatment is recommended for these segments. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition
Report for B04**

Silvertip Pipeline Incident
Laurel, Montana

2. Transition Sign-Off Form

SCAT Area Transition Report for B04

Prepared for:

Unified Command

Date

Unified Command – RP



**SCAT Area Transition
Report for B04**

Silvertip Pipeline Incident
Laurel, Montana

SCAT Area Transition Report for B04

Prepared for:

Unified Command

Date

Unified Command – FOSC



**SCAT Area Transition
Report for B04**

Silvertip Pipeline Incident
Laurel, Montana

SCAT Area Transition Report for B04

Prepared for:

Unified Command

Date

Unified Command – MDEQ

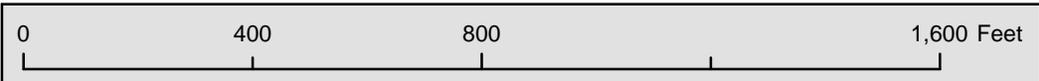


Figure 1

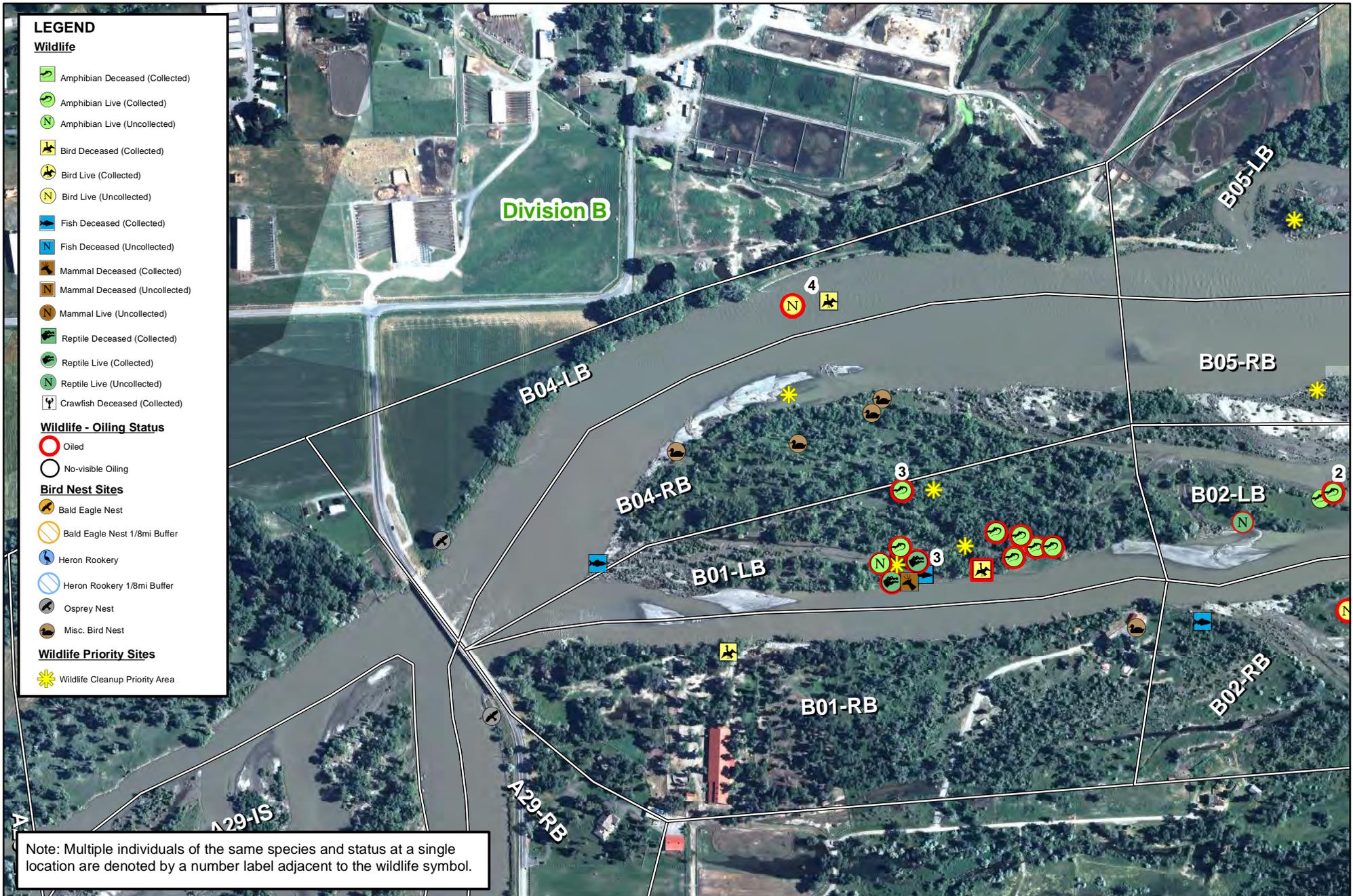
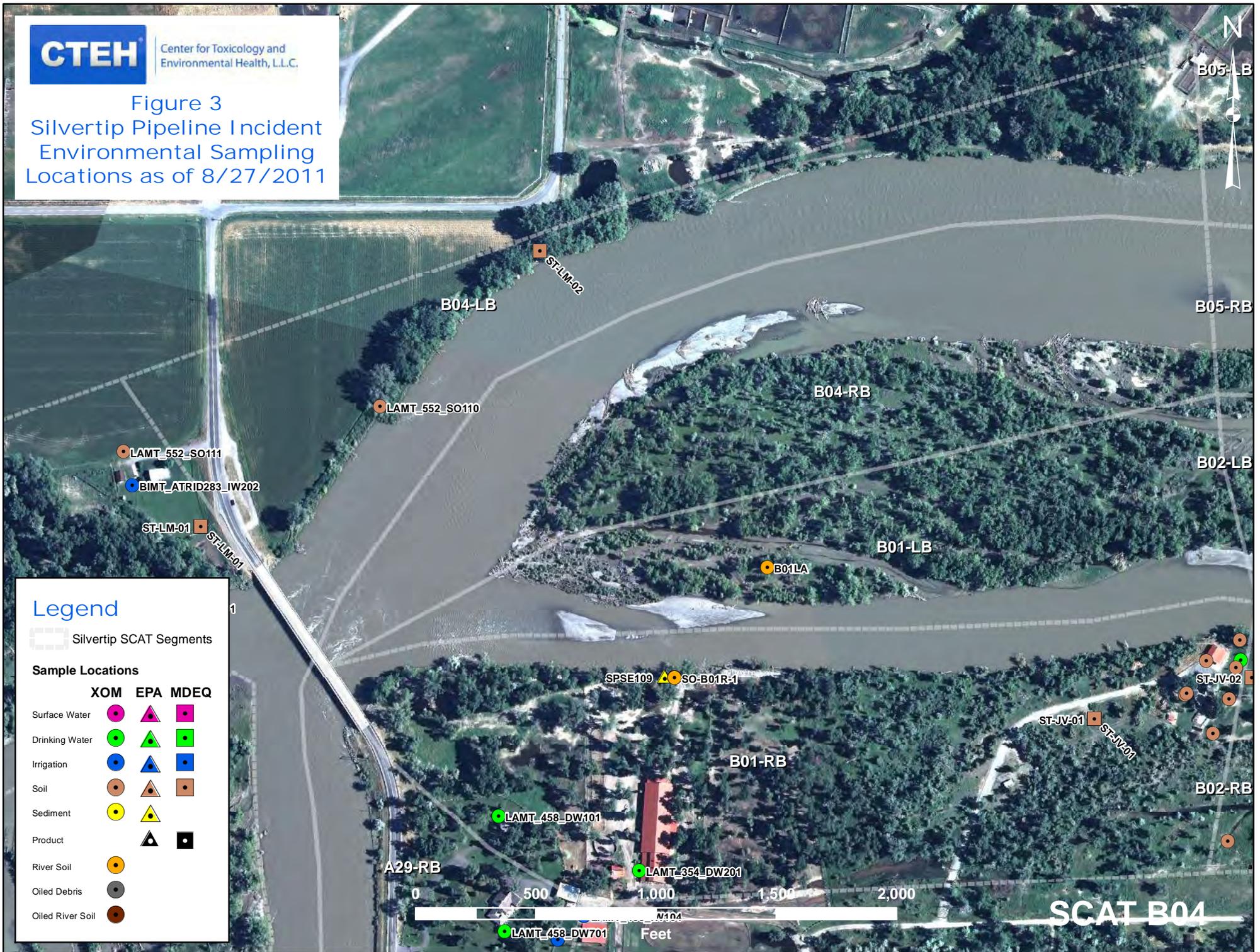


Figure 2
Wildlife Resources



Center for Toxicology and Environmental Health, L.L.C.

Figure 3
Silvertip Pipeline Incident
Environmental Sampling
Locations as of 8/27/2011



Legend

Silvertip SCAT Segments

Sample Locations

	XOM	EPA	MDEQ
Surface Water			
Drinking Water			
Irrigation			
Soil			
Sediment			
Product			
River Soil			
Oiled Debris			
Oiled River Soil			

SCAT B04



	9999 Oiling Zone ID	Light Oiling
	Heavy Oiling	Very Light Oiling
	Moderate Oiling	No Oil Observed

Figure 4 - Maximum SCAT Observations For SCAT Area: B04



- 9999 Oiling Zone ID
- Heavy Oiling
- Moderate Oiling

- Light Oiling
- Very Light Oiling
- No Oil Observed



Figure 5 - Final SCAT Observations
For SCAT Area: B04





Appendix A

Sample Detection Summary



Detections in Samples Collected in SCAT Area B04

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
LAMT0822SO110	08/22/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	5.4	40		mg/kg	no
LAMT0822SO110	08/22/2011	Field	Soil_Surface	EPA 6010	Barium	Y	87.1	820		mg/kg	no
LAMT0822SO110	08/22/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.13	3.8		mg/kg	no
LAMT0822SO110	08/22/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	14.1	280		mg/kg	no
LAMT0822SO110	08/22/2011	Field	Soil_Surface	EPA 6010	Lead	Y	10.3	400		mg/kg	no
LAMT0822SO110	08/22/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	10.3	150		mg/kg	no
LAMT0822SO110	08/22/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	0.94	2.6		mg/kg	no
LAMT0822SO110	08/22/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	25.9	39		mg/kg	no
ST-071511-LM2		Field	Soil_Surface	8260B	1,2-Dichloroethane-d4	Y	74	NA		%	no
ST-071511-LM2		Field	Soil_Surface	8270C	2,4,6-Tribromophenol	Y	79	NA		%	no
ST-071511-LM2		Field	Soil_Surface	8270C	2-Fluorobiphenyl	Y	77	NA		%	no
ST-071511-LM2		Field	Soil_Surface	8260B	Dibromofluoromethane	Y	79	NA		%	no
ST-071511-LM2		Field	Soil_Surface	8270C	Nitrobenzene-D5	Y	71	NA		%	no
ST-071511-LM2		Field	Soil_Surface	8270C	o-Fluorophenol	Y	66	NA		%	no
ST-071511-LM2		Field	Soil_Surface	8015M-MDEQ-REM	o-Terphenyl	Y	93	NA		%	no
ST-071511-LM2		Field	Soil_Surface	8260B	p-Bromofluorobenzene	Y	88	NA		%	no
ST-071511-LM2		Field	Soil_Surface	8270C	Phenol-d5	Y	75	NA		%	no
ST-071511-LM2		Field	Soil_Surface	8270C	Terphenyl-d14	Y	75	NA		%	no
ST-071511-LM2		Field	Soil_Surface	MA-VPH-MDEQ-REM	Toluene	Y	0.074	10		mg/kg	no
ST-071511-LM2		Field	Soil_Surface	8260B	Toluene-d8	Y	81	NA		%	no
ST-071511-LM2		Field	Soil_Surface	8015M-MDEQ-REM	Total Extractable Hydrocarbons	Y	39	200		mg/kg	no
ST-071511-LM2		Field	Soil_Surface	MA-VPH-MDEQ-REM	Total Purgeable Hydrocarbons	Y	2.7	200		mg/kg	no



Appendix B

Initial SCAT Survey Forms and
Sketches

86 16/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page _____ of _____

1 GENERAL INFORMATION		Date (dd/mm/yyyy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>B4</u> (Left Bank / Right Bank / Island)		<u>19/07/11</u>	<u>0848</u> hrs to <u>0916</u> hrs	low - mean - <u>bankfull</u> - overbank
Operations Division: <u>A</u>				falling - steady - rising
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / <u>Calm</u>		Air Temp +/- <u>25</u> deg C
2 SURVEY TEAM # <u>6</u>				
name		organization	contact phone number	
<u>Joe Boyle</u>		<u>Cardno FWTRIX</u>	<u>386 214 6858</u>	
<u>Chelsea Murphy</u>		<u>Cardno FWTRIX</u>	<u>775-313-3470</u>	
<u>JAMES ROBERTS USCG</u>		<u>USCG</u>	<u>727-244-8292</u>	
<u>Bob Roll</u>		<u>DEQ</u>	<u>208-871-8271</u>	

3 SEGMENT	Total Segment/Reach Length <u>1000</u> m	Segment/Reach Length Surveyed <u>1000</u> m
Start GPS: LATITUDE <u>45.6943</u> deg. min.	LONGITUDE <u>108.6382</u> deg. min.	Datum: <u>NAD83</u>
End GPS: LATITUDE <u>45.6770</u> deg. min.	LONGITUDE <u>108.6318</u> deg. min.	

4A RIVER BANK TYPE SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED

Bedrock: Cliff/Ramp _____ Shelf _____ Manmade: Solid _____ Permeable _____ (type) _____ Wetland: Swamp _____ Bog/Fen _____ Marsh _____

Sediment Bank: Clay/Mud B Sand _____ Mixed _____ Pebble/Cobble _____ Boulder _____ Peat/Organic _____ Vegetated Bank: (S) Wooded Upland: _____

Sediment Flat: Clay/Mud _____ Sand _____ Mixed/Coarse _____ Other: _____ If snow and ice use Winter River SOS _____

4B RIVER VALLEY CHARACTER select as appropriate

Cliff or Bluff: _____ Est Height _____ m canyon _____ manmade _____ meander S confined or leveed _____ Substrate Type: wood

Sloped: (>5°) (15°) (30°) _____ straight _____ braided P oxbow _____ flood plain valley _____ Forested / Vegetated / Bare _____

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 10 m est. water depth: <1m 1-3m 3-10 m >10m _____ m

shoal(s) present Y point bar present Y bar-shoal substrate: silt / sand / gravel / cobble / boulder / bedrock / debris

seasonal water level: low / mean / bank full / overbank flow est. change over next 7 days: falling S same — rising

5 OPERATIONAL FEATURES

Suitable backshore staging Y Access: Direct from backshore Y Alongshore from next segment Y

Debris: Y oiled Y amount _____ bags or _____ trucks access restrictions densely vegetated shoreline

Oiled trees/shrubs Y River Current strong Y Other Features: _____

6 SURFACE OILING CONDITIONS begin with "A" in the lowest tidal zone - circle the zone/s that correspond to primary shoreline type

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER							SUBST. TYPE(S)		
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO	
<u>A</u>			<u>P</u>	<u>S</u>	<u>1000</u>	<u>10</u>	<u>1</u>				<u>P</u>		<u>P</u>									<u>mud</u>
<u>B</u>		<u>S</u>	<u>P</u>		<u>60</u>	<u>3</u>	<u>4</u>				<u>P</u>		<u>P</u>									<u>mud</u>

7 SUBSURFACE OILING CONDITIONS use letter for ZONE location plus Number of pit or trench - e.g., "A1"

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)	
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					NO

8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

Zone A recommendation: hand removal of skewed veg at location 45.69783 N45.69683, w 108.63822

*No removal of vegetation on bank recommended

→ Recommend re-SCAT from boat due to dense vegetation

(for ALL sub-segments record: sub-segment ID, length, length surveyed, and GPS start/end fixes)

Sketch Yes/No Photos Yes/No (Roll # _____ Frames _____) Video Tape Yes/No (Tape # _____)

Zone B: NFT

Zone B: Added by C. Kobayashi 9/21/11 from BS-LB-2010719

108°38'30"W 108°38'25"W 108°38'20"W 108°38'15"W 108°38'10"W 108°38'5"W 108°38'0"W 108°37'55"W 108°37'50"W

45°41'55"N

45°41'50"N

45°41'45"N

45°41'40"N



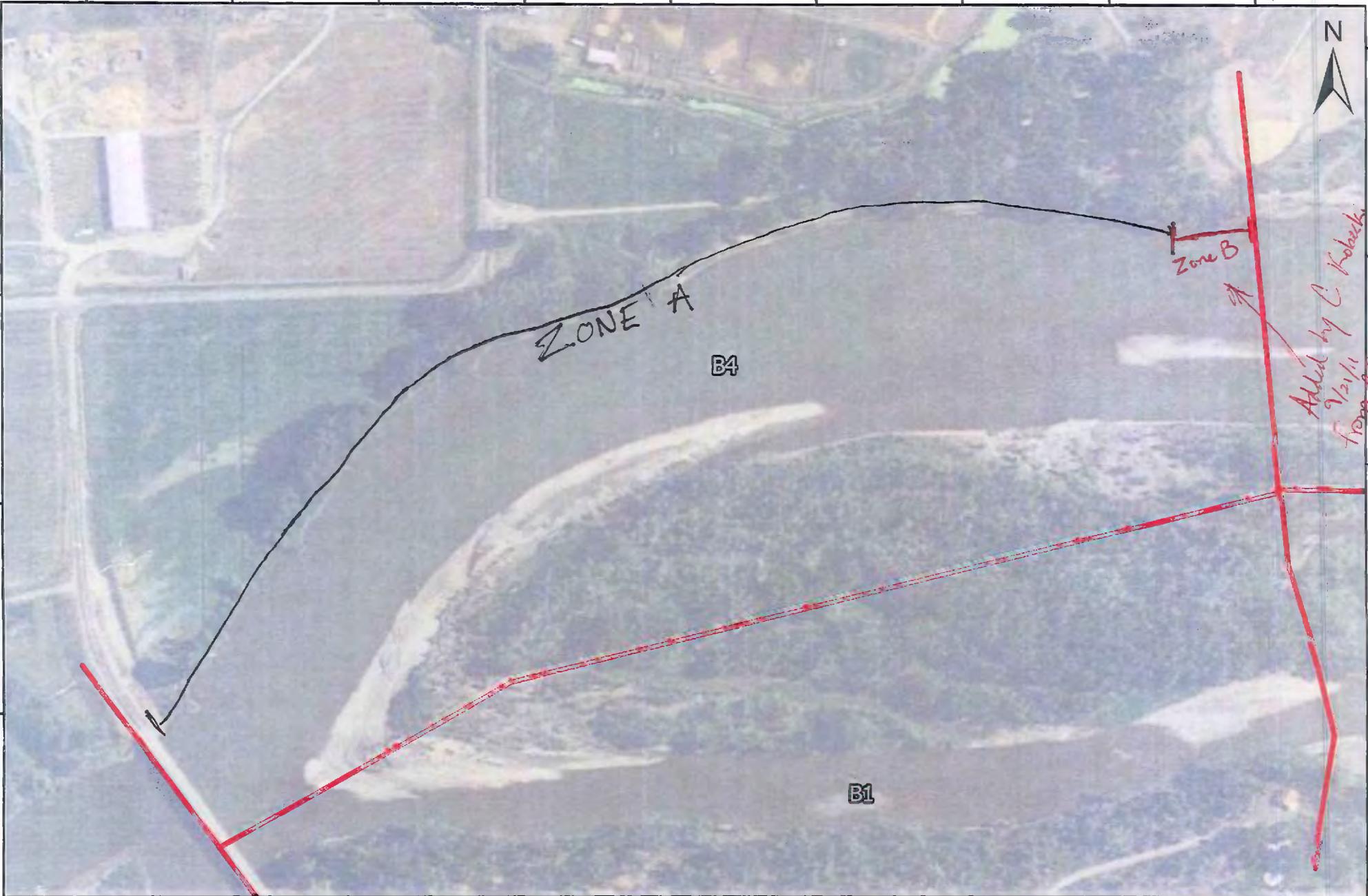
45°41'55"N

45°41'50"N

45°41'45"N

45°41'40"N

45°41'35"N



ZONE A

B4

Zone B

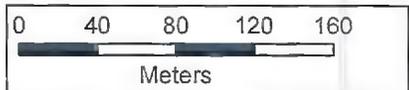
B1

Added by C. Kobusch
7/21/11
From B5 LB 20110714

B04 -
Ⓞ(R/I)??

DATE: 7/19/11
TEAM: G Chelsea

COMMENTS:



DB/G/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page _____ of _____

1 GENERAL INFORMATION		Date (dd/mm/yy) 07/30/2011	Time (24h): std / daylight 1045 1100 hrs to hrs	Water Level low - mean <u>(bankfull)</u> - overbank <u>(falling)</u> steady - rising
Segment/Reach ID: B4 <u>(Left Bank)</u> Right Bank / Island				
Operations Division: A				
Survey by: Foot / ATV / <u>(Boat)</u> / Helicopter / Overlook / _____		<u>(Sun)</u> Clouds / Fog / Rain / Snow / Windy / <u>(Calm)</u>	Air Temp + / - <u>35</u> deg C	

2 SURVEY TEAM # <u>2</u>	name	organization	contact phone number
	Bruce Kvam <u>Bruce Kvam</u>	Polaris Applied Sciences, LLC	(206) 953-6904
	Mark Peterson <u>M. Peterson</u>	MTDEQ	(406) 498-4835
	Peter Reich <u>Peter Reich</u>	USEPA	(415) 595-8352

3 SEGMENT	Total Segment/Reach Length <u>962</u> m	Segment/Reach Length Surveyed <u>962</u> m
Start GPS: LATITUDE <u>45</u> deg. <u>4138</u> min.	LONGITUDE <u>108</u> deg. <u>3828</u> min.	Datum: <u>WGS 84</u>
End GPS: LATITUDE <u>45</u> deg. <u>4150</u> min.	LONGITUDE <u>108</u> deg. <u>3750</u> min.	

4A RIVER BANK TYPE		SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED	
Bedrock: Cliff/Ramp _____ Shelf _____	Manmade: Solid _____ Permeable <u>S</u> (type) <u>rip-rap</u>	Wetland: Swamp _____ Bog/Fen _____ Marsh _____	
Sediment Bank: Clay/Mud _____ Sand _____ Mixed _____ Pebble/Cobble _____ Boulder _____ Peat/Organic _____	Vegetated Bank: <u>S</u>	Wooded Upland: <u>P</u>	
Sediment Flat: Clay/Mud _____ Sand _____ Mixed/Coarse _____	Other: _____	If snow and ice use Winter River SOS	

4B RIVER VALLEY CHARACTER			select as appropriate	complete for primary
Cliff or Bluff: _____ Est Height _____ m	canyon _____ manmade _____ meander _____	confined or leveed _____	Substrate Type: <u>mixed</u>	
Sloped: <5 (>5°)(15°)(30°)	straight _____ braided <u>P</u> oxbow _____	flood plain valley <u>S</u>	Forested / Vegetated / Bare	

4C RIVER CHANNEL CHARACTER		circle or select as appropriate
est. width: <1m 1-10m 10-100m >100m <u>400</u> m	est. water depth: <1m 1-3m <u>(3-10m)</u> >10m _____ m	
shoal(s) present <u>Y</u> / <u>(N)</u> point bar present <u>Y</u> / <u>(N)</u>	bar-shoal substrate: silt / sand / gravel / cobble / boulder / bedrock / debris	
seasonal water level: low / mean <u>(bank full)</u> / overbank flow	est. change over next 7 days: <u>(falling)</u> - same - rising	

5 OPERATIONAL FEATURES		Suitable backshore staging <u>Y</u> / <u>(N)</u>	Access: Direct from backshore <u>Y</u> / <u>(N)</u> Alongshore from next segment <u>Y</u> / <u>(N)</u>
Debris: <u>Y</u> / <u>(N)</u> oiled <u>Y</u> / <u>(N)</u> amount _____ bags or _____ trucks	access restrictions	Other Features:	
Oiled trees/shrubs <u>Y</u> / <u>(N)</u>	River Current strong <u>Y</u> / <u>(N)</u>		

6 SURFACE OILING CONDITIONS																					begin with "A" in the lowest tidal zone - circle the zone/s that correspond to primary shoreline type	
OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER								SUBST. TYPE(S)	
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP	NO		
1026 A				X	10	1	5				X		X								Rip-rap	
1027 B					952															X		

7 SUBSURFACE OILING CONDITIONS														use letter for ZONE location plus Number of pit or trench - e.g., "A1"			
TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)	
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					NO

8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

Treatment Recommendations:

Zone A: No further treatment recommended.

Zone B: No treatment necessary.

EBK #016

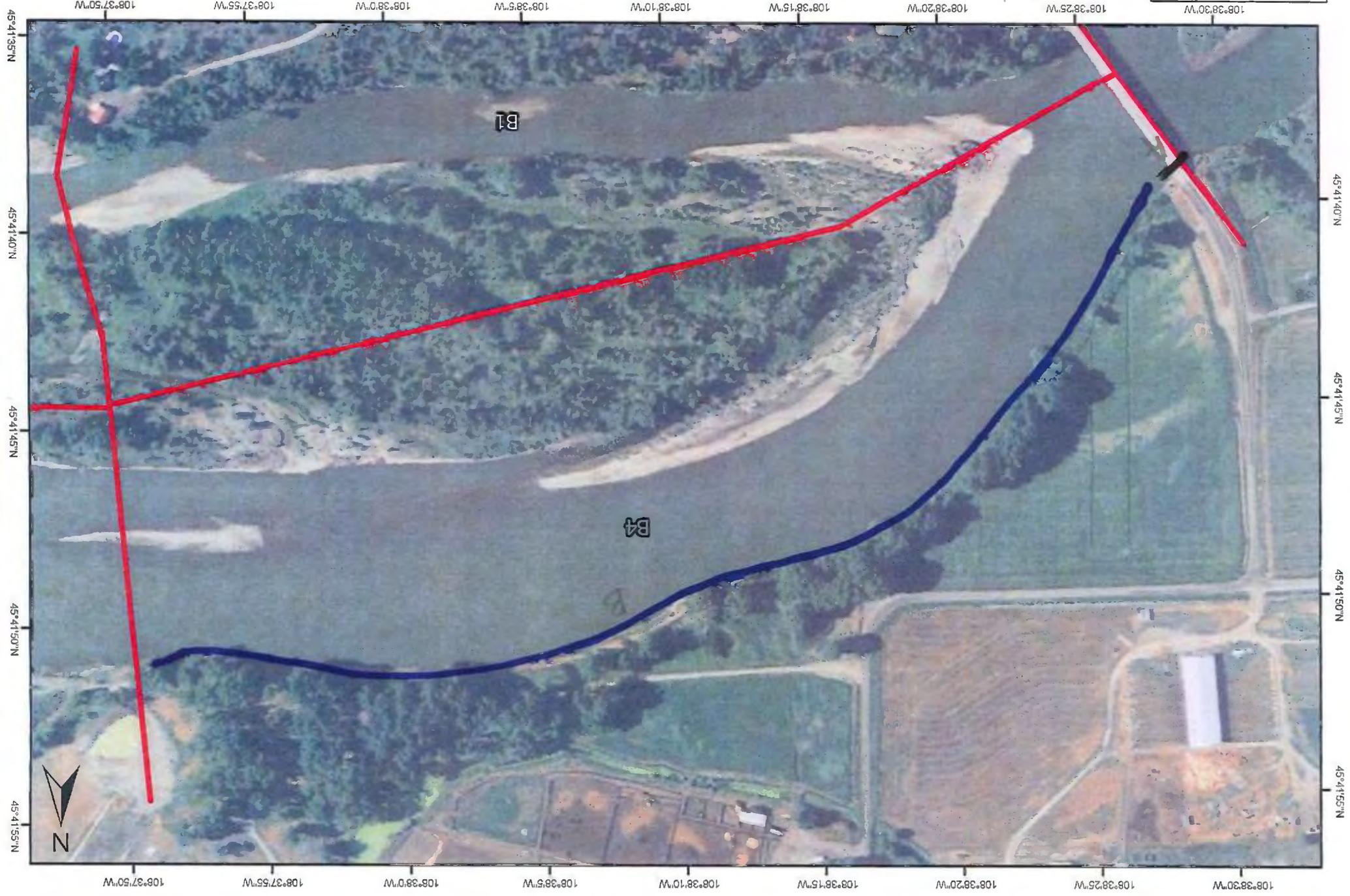
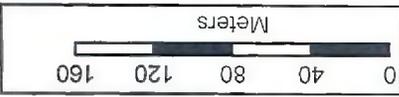
(for ALL sub-segments record: sub-segment ID, length, length surveyed, and GPS start/end fixes)

Sketch Y / (N) Photos Y / (N) (Roll # _____) Frames _____ Video Tape Y / (N) (tape # _____)

B04 -
①(R/1)??

DATE: 7/30/2011
TEAM: 2

COMMENTS:



45°41'35"N
45°41'40"N
45°41'45"N
45°41'50"N
45°41'55"N

45°41'40"N
45°41'45"N
45°41'50"N
45°41'55"N

108°37'50"W 108°37'55"W 108°38'0"W 108°38'5"W 108°38'10"W 108°38'15"W 108°38'20"W 108°38'25"W 108°38'30"W
108°37'50"W 108°37'55"W 108°38'0"W 108°38'5"W 108°38'10"W 108°38'15"W 108°38'20"W 108°38'25"W 108°38'30"W

VOIS

DB 16/5

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 1

1 GENERAL INFORMATION

Segment/Reach ID: B5 (Left Bank / Right Bank / Island) Date (dd/mm/yy) 19/07/11 Time (24h): std / daylight 0433 hrs to 1002 hrs Water Level low - mean - bankfull - overbank
 Operations Division: A Survey by: (Foot / ATV / Boat / Helicopter / Overlook / Sun) Clouds / Fog / Rain / Snow / Windy / Calm Air Temp +1-30 deg C

2 SURVEY TEAM #

name	organization	contact phone number
<u>Joe Boyle</u>	<u>Cardno ENTRX</u>	<u>386-2655</u>
<u>Chelsea Murray</u>	<u>"</u>	<u>775-3810</u>
<u>Bob Bell</u>	<u>MT DEQ</u>	<u>205-888</u>
<u>JAMES ROYERS</u>	<u>USCB PAC STRIKE TEAM</u>	<u>727-244</u>

ORIGINAL COPY

3 SEGMENT Total Segment/Reach Length 500 m Segment/Reach Length Surveyed 200 m

Start GPS: LATITUDE 45.6977 deg. LONGITUDE 108.6352 deg. Datum: WGS 84

End GPS: LATITUDE 45.6978 deg. LONGITUDE 108.6327 deg.

4A RIVER BANK TYPE SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED

Bedrock: Cliff/Ramp Shelf Manmade: Solid Permeable (type) Wetland: Swamp Bog/Fen Marsh

Sediment Bank: Clay/Mud Sand Mixed Pebble/Cobble Boulder Peat/Organic Vegetated Bank: S Wooded Upland:

Sediment Flat: Clay/Mud Sand Mixed/Coarse Other: hip hop (P) If snow and ice use Winter River SOS

4B RIVER VALLEY CHARACTER select as appropriate

Cliff or Bluff: Est Height 200 m canyon manmade meander 2 confined or leveed

Sloped: (>5°)(15°)(30°) 100° straight braided oxbow flood plain valley

Substrate Type: mud

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 110 m est. water depth: <1m 1-3m 3-10m >10m

shoal(s) present Y/N point bar present Y/N bar-shoal substrate: silt / sand / gravel / cobble / boulder / bedrock / debris

seasonal water level: low / mean / bank full / overbank flow est. change over next 7 days: falling - same - rising

5 OPERATIONAL FEATURES

Suitable backshore staging Y/N Access: Direct from backshore Y/N Alongshore from next segment Y N

Debris: Y/N oiled Y/N amount bags or trucks access restrictions

Oiled trees/shrubs Y/N River Current strong Y/N Other Features: roadway access along shoreline

6 SURFACE OILING CONDITIONS begin with "A" in the lowest tidal zone - circle the zone/s that correspond to primary shoreline type

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER					SUBST. TYPE(S)			
	MS	LB	UB	OB	Length	Width	Distrib.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	NO
	m	m	%																		
A		<u>S</u>	<u>P</u>		<u>200</u>	<u>3</u>	<u><1</u>				<u>P</u>		<u>P</u>								<u>mud</u>

ZONE Split to bc in B04LB AA rock 2/21/11

7 SURFACE OILING CONDITIONS use letter for ZONE location plus Number of pit or trench - e.g., "A1"

TRENCH or PIT NO.	OILED ZONE	SUBSURFACE OIL CHARACTER					WATER TABLE	SHEEN COLOUR	CLEAN BELOW	SUBST. TYPE(S)
		SAP	OP	PP	OR	OF				

8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

zone A: no further treatment
note: ops was observed in area on 07/18/11
grass appears to have been recently cut

(Pic #) 100-105

1 GENERAL INFORMATION		Date (dd/mm/yy) 19 and 20-Jul-2011	Time (24h): std / daylight 0915 hrs to 1017 hrs	Water Level low - mean - <u>bankfull</u> - overbank <u>falling</u> - steady - rising
Segment/Reach ID: B04 Left Bank / <u>Right Bank</u> / Island		Operations Division: B		Air Temp +/- <u>32</u> deg C
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		

2 SURVEY TEAM # 1 & 5	name	organization	contact phone number
Robert Nailon	<i>[Signature]</i>	Cardno ENTRIX	
John Beach	<i>[Signature]</i>	USEPA	
Ken Fraser	<i>[Signature]</i>	MT FWP	
Alison Bagley	<i>[Signature]</i>	MTFWP	
Chuck Pons	<i>[Signature]</i>	Cardno ENTRIX	

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 770 m

Start GPS: LATITUDE 45 deg. 41.762 min. LONGITUDE 108deg. 38.045 min. Datum: WGS84

End GPS: LATITUDE 45 deg. 41.714 min. LONGITUDE 108deg. 38.250 min.

4A RIVER BANK TYPE SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED

Bedrock: Cliff/Ramp _____ Shelf _____ Manmade: Solid _____ Permeable _____ (type) _____ Wetland: Swamp _____ Bog/Fen _____ Marsh _____

Sediment Bank: Clay/Mud S Sand P Mixed _____ Pebble/Cobble _____ Boulder _____ Peat/Organic _____ Vegetated Bank: S Wooded Upland: _____

Sediment Flat: Clay/Mud _____ Sand _____ Mixed/Coarse _____ Other: Oiled Woody Debris If snow and ice use Winter River SOS

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

Cliff or Bluff: _____ Est Height _____ m canyon _____ manmade _____ meander _____ confined or leveed _____ Substrate Type: mixed

Sloped: >5°(15°)(30°) straight P braided S oxbow _____ flood plain valley _____ Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 200m est. water depth: <1m 1-3m 3-10m >10m _____ m

shoal(s) present Y / N point bar present Y / N bar-shoal substrate: silt / sand / gravel / cobble / boulder / bedrock / debris

seasonal water level: low / mean / bank full / overbank flow est. change over next 7 days: falling — same — rising

5 OPERATIONAL FEATURES Suitable backshore staging Y / N Access: Direct from backshore Y / N Alongshore from next segment Y / N

Debris: Y / N oiled Y / N amount _____ bags or 10? trucks access restrictions: Island

Oiled trees/shrubs Y / N River Current strong Y / N Other Features: _____

6 SURFACE OILING CONDITIONS begin with "A" in the lowest tidal zone - circle the zone/s that correspond to primary shoreline type

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS								OIL CHARACTER								SUBST. TYPE(S)
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP	NO				
A		<u>(X)</u>			570	10	1-5				<u>P</u>	<u>S</u>		X								Oiled Woody Debris		
B				<u>(X)</u>	200	50	1-5				<u>S</u>		X									Oiled Grass		

7 SUBSURFACE OILING CONDITIONS use letter for ZONE location plus Number of pit or trench — e.g., "A1"

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER								WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)				
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR	NO									

8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

Oil band heights: Zone A – 30 cm; Zone B – 30cm;

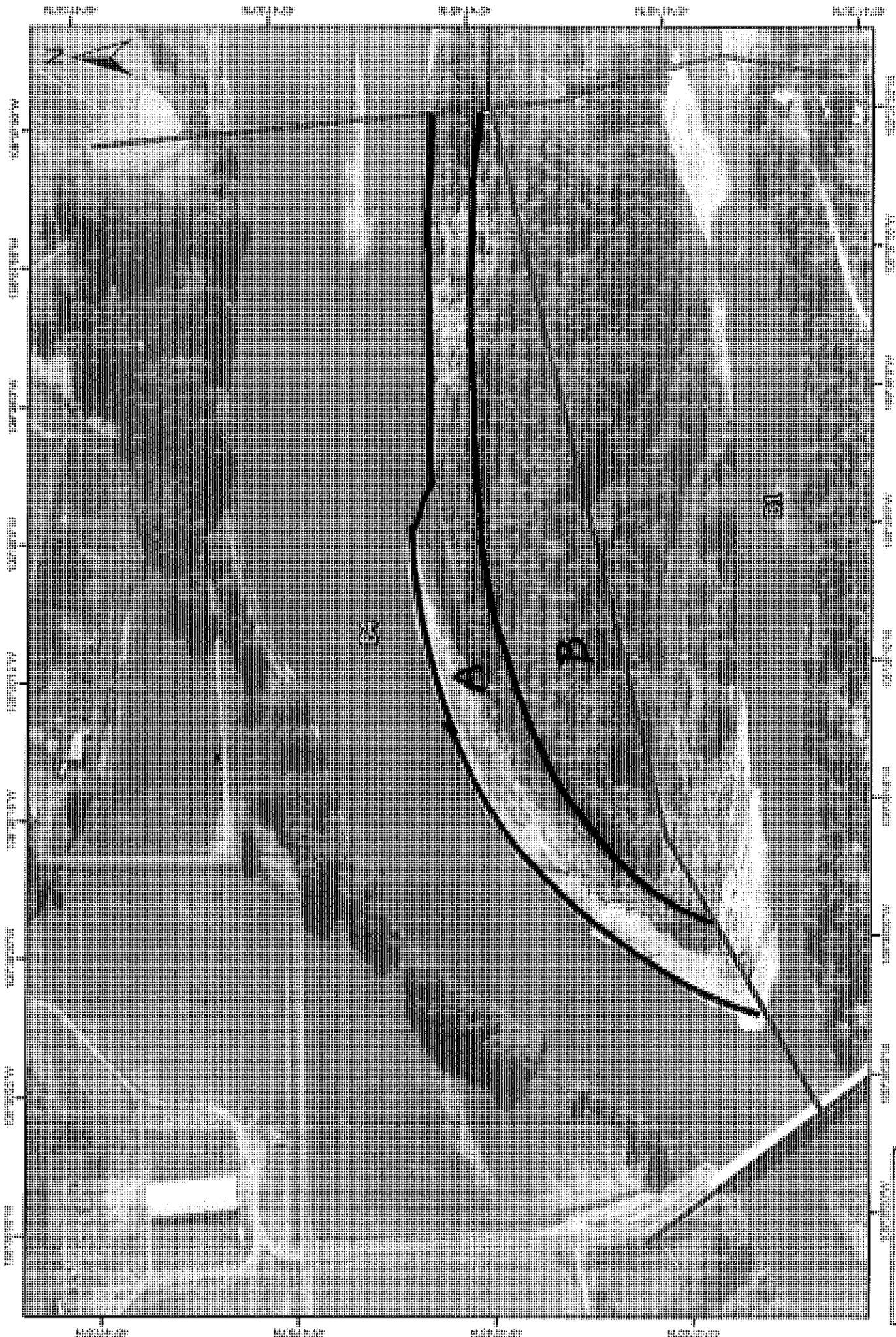
Treatment Recommendations:
 General recommendation: Wait until ground dries until equipment is mobilized to below bank zones.
 Cleanup crews step out from flagged locations 20 meters until area is cleaned.

Zone A: Remove oil coated debris smaller than 4" diameter. Wipe larger oil coated vegetation and debris. Due to the size and quantity of oil coated debris in this zone, alternative methods, such as burning, could be considered. Remove oil coated sediments with hand tools. Wipe oil coated cobble. The Technical Advisory Group will need to be consulted for alternative treatment methods for oiled debris.

Zones B: Cut & remove oil coated vegetation (primarily grass) smaller than 1" diameter. Remove oil coated debris smaller than 4" diameter. Wipe any larger oil coated vegetation and debris.

*Refer to current approved treatment methods #1 (Cutting of Vegetation), #2 (Dead Vegetation and Small Debris), #3 (Large Woody Debris), #6 (Sorbert Use), # (Unconsolidated Sediments)

Sketch Yes / No Photos Yes / No Frames _____



COMMENTS:

DATE:

TEAM:

B04 -
Camp



Site 9 → Segment B4 7/20/11
12:00pm



Appendix C

Pre-Inspection Survey Transmittal

**A Pre-Inspection Survey was
not conducted for this area**



Appendix D

Post-Inspection Survey Transmittal

POST

Post Inspection Survey Transmittal

Segment BO4-RB

Date of Survey August 30, 2011

SCAT Team Member Chris Poir Signed: [Signature]

SCAT Team Member Terry Tanner Signed: [Signature]

SCAT Team Member _____ Signed: _____

Segment FAILED ReSCAT



Referred to Ops
For Further Treatment

Segment Conditionally PASSES ReSCAT



IF the Segment FAILED ReSCAT, another ReSCAT is required after treatment has been completed.
IF the Segment Conditionally PASSES ReSCAT, a SCAT/Ops Liaison will verify treatment completion.

Describe the zone requiring further treatment. Comment on oiling conditions, relevant portions of the CTR(s), the appropriate ATMs to use, GPS waypoints, additional comments, etc. Attach map.

Zone A on the attached map has 710 cu of ~~oil~~ sludge + coal
veg + debris. Ops needs to contract to remove the coal metal

Zone Dimensions: Length 153 Width 100 GPS Waypoint: Lat. _____ Long. _____
(required) (center of zone)

Estimated Work Effort: Number of People 10 Hours of Work 3 Applicable CTR(s) _____
(required)

The undersigned attests that the above treatment has been completed and the identified area meets the Approved Treatment Methods Target Endpoints.

[Signature] LAUREN GLUSHIK / POLARIS 06 SEP 2011
Sign Name Print Name/ Affiliation Date

[Signature] Robert Ashton / MDEQ 9/6/2011
Sign Name Print Name/ Affiliation Date



Appendix E

Final SCAT Survey Forms and
Sketches

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

DBIG

1 GENERAL INFORMATION		Date (dd/mm/yy) 29/08/11	Time (24h): std / daylight 0936 hrs to 1100 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: B04 <u>Left Bank</u> / Right Bank / Island				
Operations Division:				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		<input checked="" type="checkbox"/> Sun / <input checked="" type="checkbox"/> Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>30</u> deg C

2 SURVEY TEAM # 1	Name	Organization	Signature
Josh Hofkes		Cardno ENTRIX	
Tom Bovington		DEQ	
Stephen Ball		EPA	

3 SEGMENT Total Segment/Reach Length 960 m Segment/Reach Length Surveyed 960 m

Start GPS: LATITUDE _____ deg. _____ min. LONGITUDE _____ deg. _____ min. Datum: _____

End GPS: LATITUDE _____ deg. _____ min. LONGITUDE _____ deg. _____ min.

4A RIVER BANK TYPE SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED

Bedrock: Cliff/Ramp _____ Shelf _____ Manmade: Solid _____ Permeable _____ (type) _____ Wetland: Swamp _____ Bog/Fen _____ Marsh _____

Sediment Bank: Clay/Mud _____ Sand _____ Mixed _____ Pebble/Cobble _____ Boulder _____ Peat/Organic _____ S _____ Vegetated Bank: _____ Wooded Upland: _____

Sediment Flat: Clay/Mud _____ Sand _____ Mixed/Coarse _____ Other: _____ If snow and ice use Winter River SOS

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

Cliff or Bluff: Est Height _____ m canyon _____ manmade _____ meander _____ confined or leveed _____ Substrate Type: _____

Sloped: (>5°)(15°)(30°) straight _____ braided _____ oxbow _____ flood plain valley X Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m est. water depth: <1m 1-3m 3-10m >10m _____ m

shoal(s) present Y / N point bar present Y / N bar-shoal substrate: silt / sand / gravel / cobble / boulder / bedrock / debris

seasonal water level: low / mean / bank full / overbank flow est. change over next 7 days: falling - same - rising

5 OPERATIONAL FEATURES

Suitable backshore staging Y / N Access: Direct from backshore Y / N Alongshore from next segment Y / N

Debris: Y / N oiled Y / N amount _____ bags or _____ trucks access restrictions _____

Oiled trees/shrubs Y / N River Current strong Y / N Other Features: _____

6 SURFACE OILING CONDITIONS begin with "A" in the lowest tidal zone - circle the zone/s that correspond to primary shoreline type

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER						SUBST. TYPE(S)			
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR		AP	NO	
1945 A				X	960	25	<1			X	⊗						X					mixed

7 SUBSURFACE OILING CONDITIONS use letter for ZONE location plus Number of pit or trench - e.g., "A1"

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)						
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					NO					

8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

Overbank Survey Required / N Overbank Survey Completed / N Shoreline Survey Completed / N

ZONE A: N.F.T.
 Ops: Matt Delong
 => Removed 2 bags of oiled veg./debris
 *ReSCAT

Sketch Yes / No Photos Yes / No Frames/Photographer: _____



TEAM 1 B4 LB
August 29, 2011

ZONE A: Less than 1% oiling
N. F. T.

DBIG

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 30/08/11	Time (24h): std / daylight 10:00 hrs to 12:30 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: B04 Left Bank / <u>Right Bank</u> / Island		Operations Division: B		
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - deg C

2 SURVEY TEAM # 1 and 3	Name	Organization	Signature
Josh Hofkes	Cardno ENTRIX		
Tom Freeman	Polaris		
Tom Bovington	DEQ		
Griff Miller	EPA		
Chuck Pons	Cardno ENTRIX		
Terry Tanner	EPA		
Mark Peterson	DEQ		

3 SEGMENT Total Segment/Reach Length 965.624 m Segment/Reach Length Surveyed 628 m

Start GPS: LATITUDE _____ deg. _____ min. LONGITUDE _____ deg. _____ min. Datum: _____

End GPS: LATITUDE _____ deg. _____ min. LONGITUDE _____ deg. _____ min.

4A RIVER BANK TYPE SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED

Bedrock: Cliff/Ramp _____ Shelf _____ Manmade: Solid _____ Permeable _____ (type) _____ Wetland: Swamp _____ Bog/Fen _____ Marsh _____

Sediment Bank: Clay/Mud _____ Sand S Mixed P Pebble/Cobble S Boulder _____ Peat/Organic _____ Vegetated Bank: S Wooded Upland: _____

Sediment Flat: Clay/Mud _____ Sand _____ Mixed/Coarse _____ Other: _____ If snow and ice use Winter River SOS

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

Cliff or Bluff: _____ Est Height _____ m canyon _____ manmade _____ meander _____ confined or leveed _____ Substrate Type: Sand

Sloped: _____ (>5°)(15°)(30°) straight _____ braided P oxbow _____ flood plain valley _____ Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m est. water depth: <1m 1-3m 3-10m >10m _____ m

shoal(s) present point bar present bar-shoal substrate: silt S / sand S / gravel S / cobble S / boulder / bedrock / debris

seasonal water level: low mean / bank full / overbank flow est. change over next 7 days: falling - same - rising

5 OPERATIONAL FEATURES Suitable backshore staging Y / N Access: Direct from backshore / N Alongshore from next segment / N

Debris / N oiled / N amount _____ bags or 75 trucks access restrictions _____

Oiled trees/shrubs / N River Current strong / N Other Features: _____

6 SURFACE OILING CONDITIONS begin with "A" in the lowest tidal zone - circle the zone/s that correspond to primary shoreline type

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER					SUBST. TYPE(S)				
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	NO	
A				X	157	100	10			S	P						P					Sand
B				X	475	110	0														X	Sand

7 SUBSURFACE OILING CONDITIONS use letter for ZONE location plus Number of pit or trench - e.g., "A1"

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)						
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					NO					

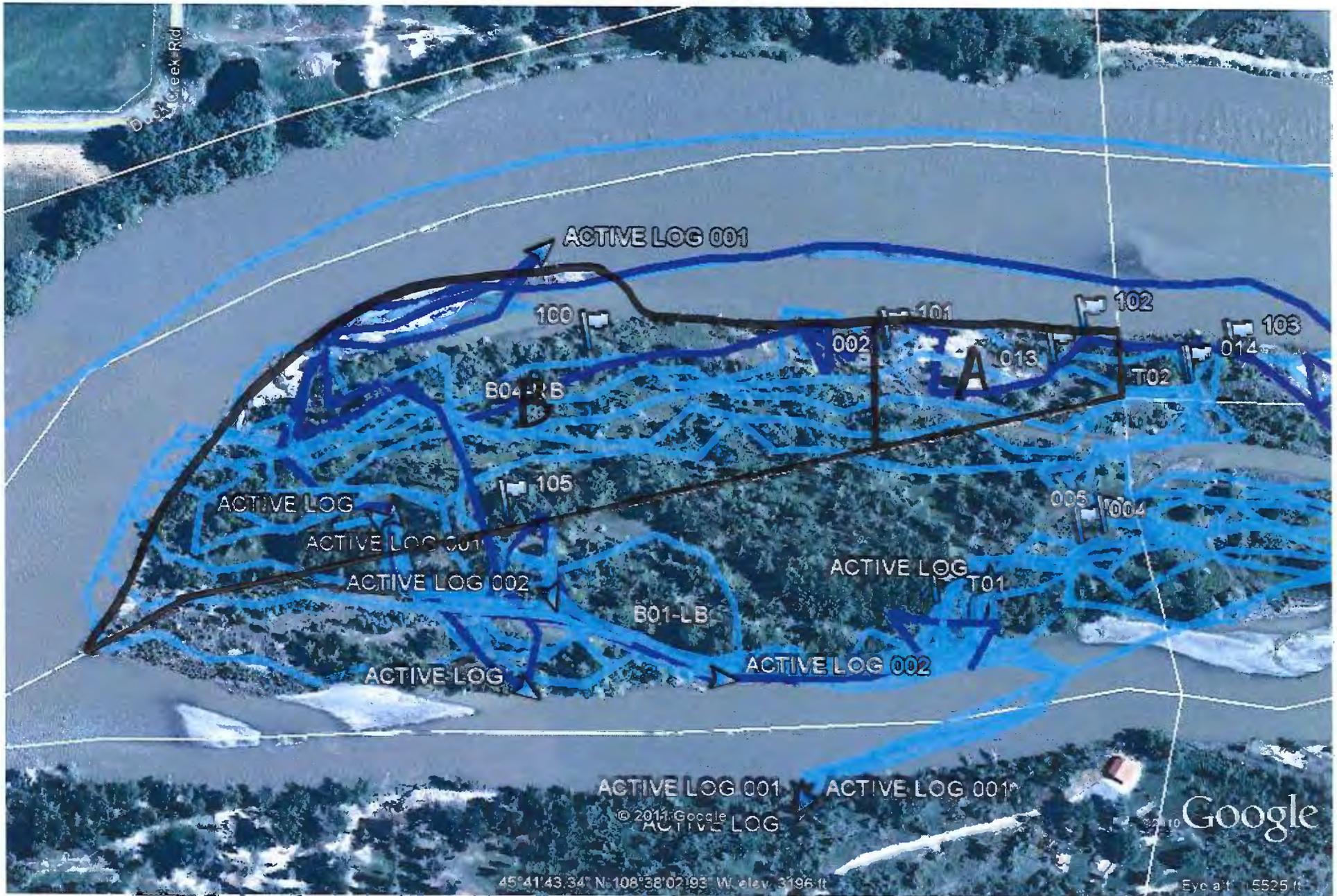
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

Overbank Survey Required Y / N Overbank Survey Completed Y / N Shoreline Survey Completed Y / N

Zone A - Spongy skin + coral veg + debris. Opt's can contact to work per CTN

Zone B. No further Action

Sketch Yes / No Photos Yes / No Frames/Photographer: _____



TEAM 143
 August 30, 2011

B04-RB

A: Coat/Stain > 10%
 B: N.F.T.



Appendix F

Completed SCAT Segment Sign-Off
Forms

SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

SILVERTIP PIPELINE RELEASE

Segment B04 LB Date of Survey 29/08/11

Dates of Initial SCAT Assessments _____
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 41

Segment has been treated by Operations or an Operations Hotshot Team YES NO

Segment Assessment Complete¹

Partial Segment Assessment

The undersigned are in agreement that the above segment or partial segment meets the Approved Treatment Methods Target Endpoints.

This Segment is **Conditionally Approved**
(See attached Post Inspection Survey Transmittal (POST))

The undersigned are in agreement that the above segment meets the Approved Treatment Methods Target Endpoints conditional upon completion of the treatment identified in the attached Post Inspection Survey Transmittal (POST).

Stephen Ball Stephen Ball - EPA 8/29/11
Sign Name Print Name/ Affiliation Date
Federal Representative (EPA/USCG)

Tom Bevington Tom Bevington 8/29/11
Sign Name Print Name/ Affiliation Date
State Representative (DEQ/FWP)

Josh Hofkes/Carano Josh Hofkes/Carano 8/29/11
Sign Name Print Name/ Affiliation Date
RP Representative (SCAT RP Representative)

Once all applicable SCAT Segments (i.e. LB, RB, and IS) within a particular SCAT Area (i.e. A21) have been successfully signed-off during a formal SCAT Assessment, the SCAT Area will achieve the Response Endpoints and an Area Transition Report will be completed and submitted to EPA and DEQ.

¹ A Segment Sign-Off Assessment is considered complete when all accessible lands that have not already been signed-off by a claims liaison have been surveyed. If any previous SCAT Assessments were conducted, all lands that were originally recommended for treatment must be re-surveyed in the Sign-Off Assessment. If the conducted survey does not meet these conditions it is considered a Partial Assessment. Multiple Partial Assessments that meet the conditions of a Complete Assessment may together constitute a Complete Sign-Off Assessment.

SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

SILVERTIP PIPELINE RELEASE

Segment BOY - RB Date of Survey August 30, 2011

Dates of Initial SCAT Assessments _____
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 20

Segment has been treated by Operations or an Operations Hotshot Team YES NO

Segment Assessment Complete¹

Partial Segment Assessment

The undersigned are in agreement that the above segment or partial segment meets the Approved Treatment Methods Target Endpoints.

This Segment is Conditionally Approved
(See attached Post Inspection Survey Transmittal (POST))

The undersigned are in agreement that the above segment meets the Approved Treatment Methods Target Endpoints conditional upon completion of the treatment identified in the attached Post Inspection Survey Transmittal (POST).

[Signature] Giff Miller / EPA 8-31-11
Sign Name Print Name/ Affiliation Date

Federal Representative (EPA/USCG)

[Signature] Tom Bavington / DEQ 8/31/11
Sign Name Print Name/ Affiliation Date

State Representative (DEQ/FWP)

[Signature] Josh Hoffes / Cardno 8/30/11
Sign Name Print Name/ Affiliation Date

RP Representative (SCAT RP Representative)

Once all applicable SCAT Segments (i.e. LB, RB, and IS) within a particular SCAT Area (i.e. A21) have been successfully signed-off during a formal SCAT Assessment, the SCAT Area will achieve the Response Endpoints and an Area Transition Report will be completed and submitted to EPA and DEQ.

¹ A Segment Sign-Off Assessment is considered complete when all accessible lands that have not already been signed-off by a claims liaison have been surveyed. If any previous SCAT Assessments were conducted, all lands that were originally recommended for treatment must be re-surveyed in the Sign-Off Assessment. If the conducted survey does not meet these conditions it is considered a Partial Assessment. Multiple Partial Assessments that meet the conditions of a Complete Assessment may together constitute a Complete Sign-Off Assessment.