

ExxonMobil Pipeline Company

**SCAT Area Transition Report for
B10**

Silvertip Pipeline Incident
Laurel, Montana

October 21, 2011



SCAT Area Transition Report for B10

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Laurel, Montana

Prepared for:
ExxonMobil Pipeline Company

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Our Ref.:
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Date:
October 21, 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 B10, 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 B10. 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 B10, 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 B10 is 16. There were no access issues for this area.

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 B10. Ten possibly lightly oiled ducks (unknown species), two hens and broods, were observed but not captured for cleaning. No Wildlife Priority Cleanup Areas were identified. No active migratory bird nests were identified in Area B10.

1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area B10. 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 B10 are provided on Figure 3.

Table 1 Environmental Sampling Summary

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
CTEH	BIMT082350507	23-Aug-11	Soil_River	50-B10	45.707287	-108.596313
EPA	SP50212D01_071311	13-Jul-11	Soil_Surface	SP50212	45.705758	-108.598091
EPA	SP50213D01_071311	13-Jul-11	Soil_Surface	SP50213	45.7071039	-108.5965779

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 was one exceedance for total extractable hydrocarbons.

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 B10 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area B10.

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. 25](#) and [CTR No. 39](#)).

1.6 Oil Removal Activities

Oil removal activities were conducted within Area B10 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, plastic, trash, super sacks, wood chips, and contaminated wood.

1.7 Pre-Inspection Survey Transmittal

SCAT Operations liaisons performed an inspection of the remediated areas of SCAT Area B10 and developed a Pre-Inspection Survey Transmittal (PIST) associated with the right bank within Area B10, which is presented in Appendix C.

1.8 Post-Inspection Survey Transmittal

SCAT Operations liaisons performed an inspection of the remediated areas of SCAT Area B10 and developed a Post-Inspection Survey Transmittal (POST) associated with the left bank within Area B10, which is presented in Appendix D. This POST was signed, confirming the treatment recommended in the final SCAT survey of the left bank was completed.

1.9 Summary of Final SCAT Surveys

Figure 5 shows the oiling conditions within Area B10 following completion of oil removal activities. The SCAT team performed final surveys of the left and right banks within SCAT Area B10 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 right banks within Area B10, no further treatment is recommended. Based on the final SCAT survey and the POST conducted for the left bank, no further treatment is recommended. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition
Report for B10**

Silvertip Pipeline Incident
Laurel, Montana

2. Transition Sign-Off Form

SCAT Area Transition Report for B10

Prepared for:

Unified Command

Date

Unified Command – RP



**SCAT Area Transition
Report for B10**

Silvertip Pipeline Incident
Laurel, Montana

SCAT Area Transition Report for B10

Prepared for:

Unified Command

Date

Unified Command – FOSC



**SCAT Area Transition
Report for B10**

Silvertip Pipeline Incident
Laurel, Montana

SCAT Area Transition Report for B10

Prepared for:

Unified Command

Date

Unified Command – MDEQ

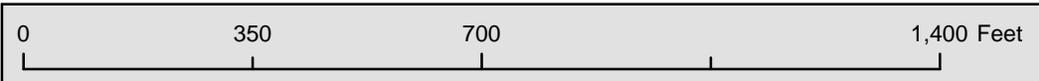
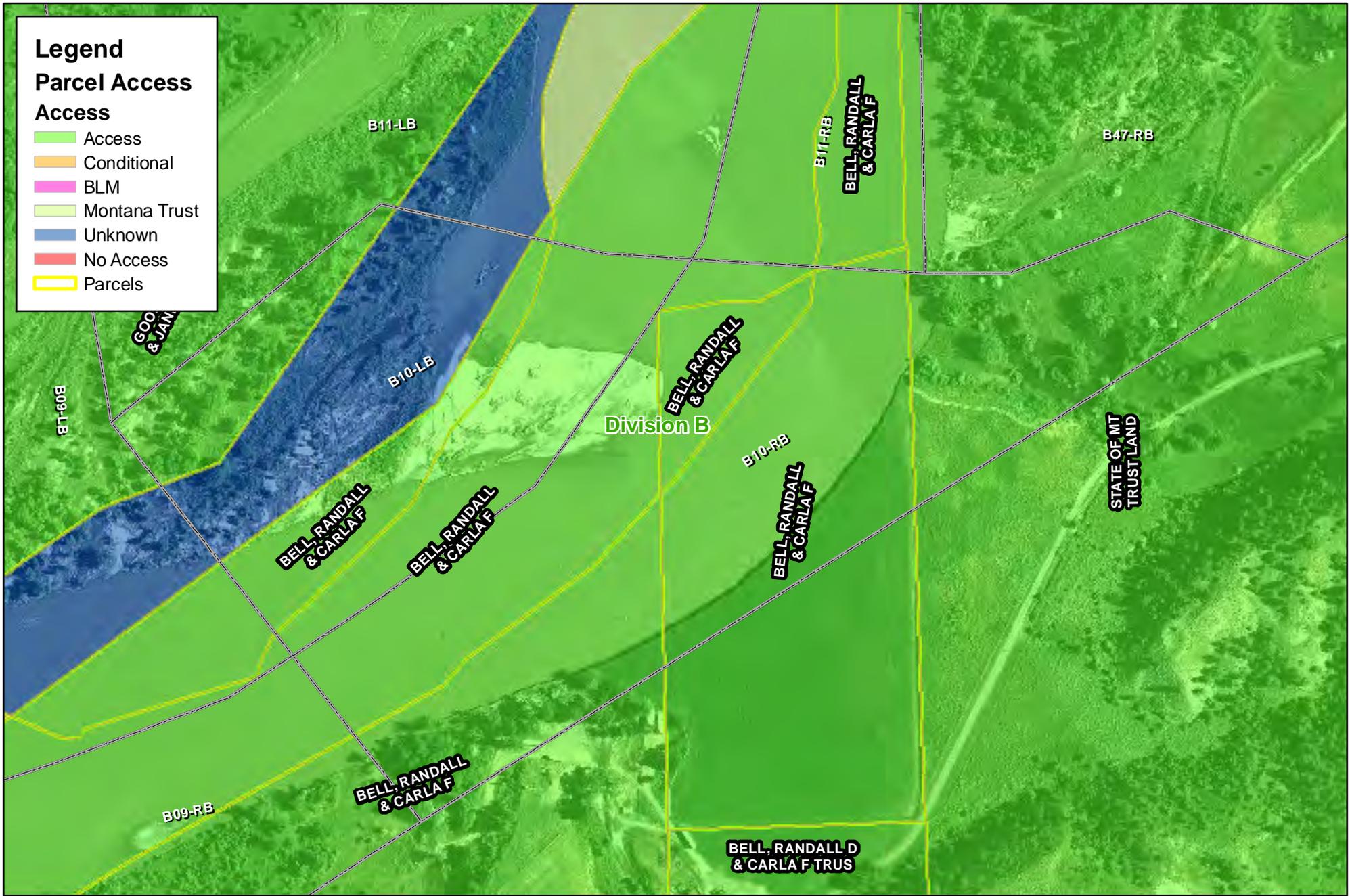
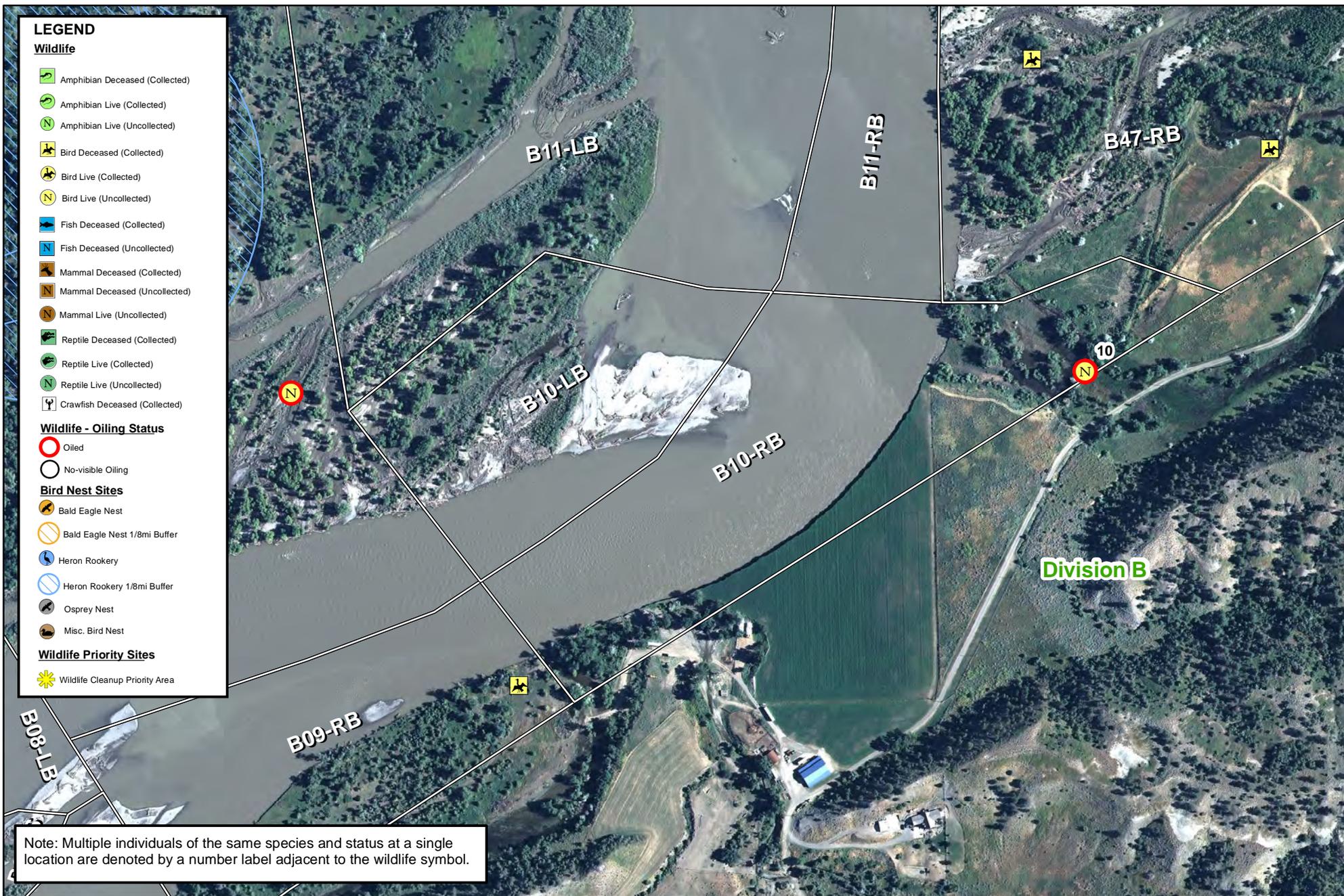


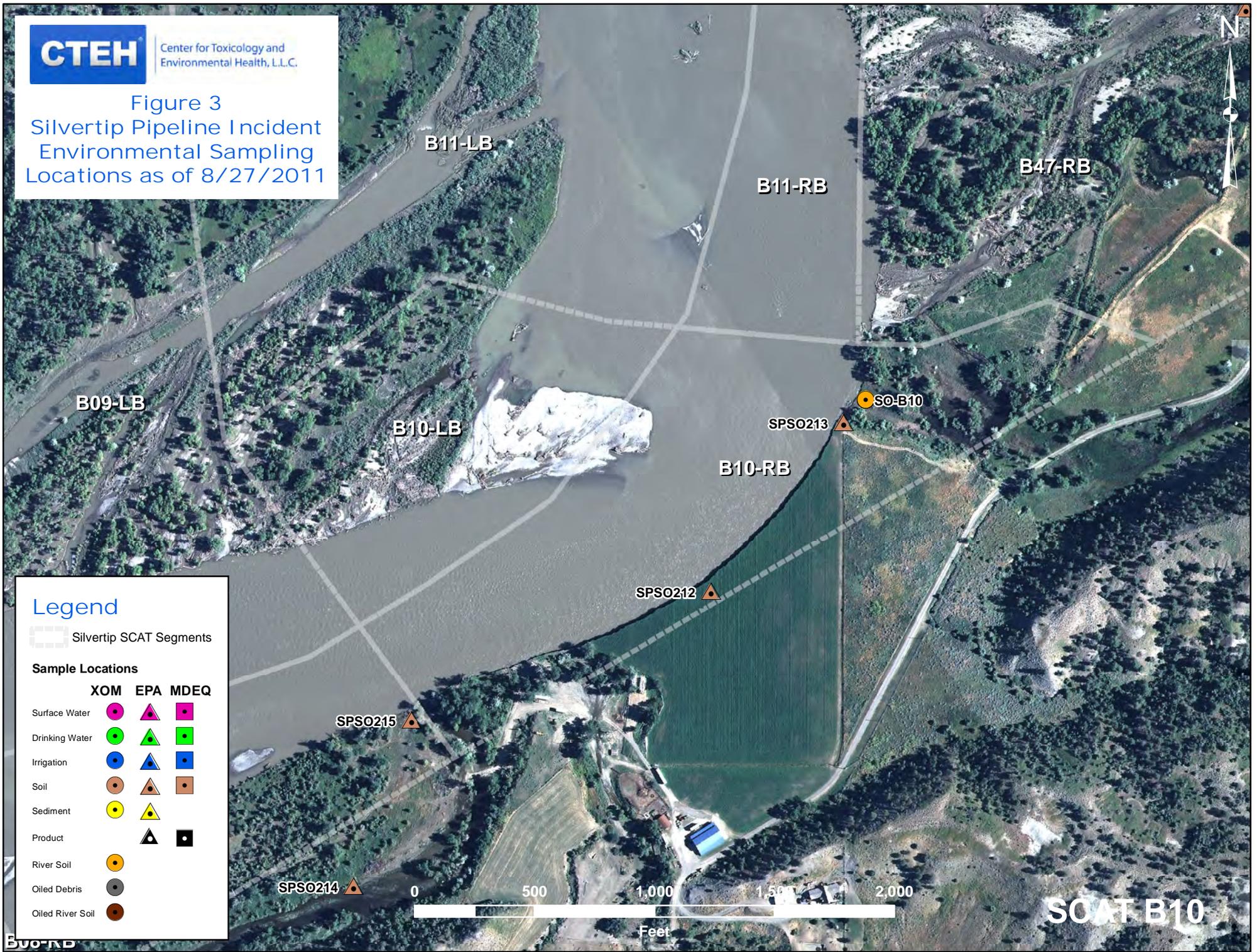
Figure 1





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

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



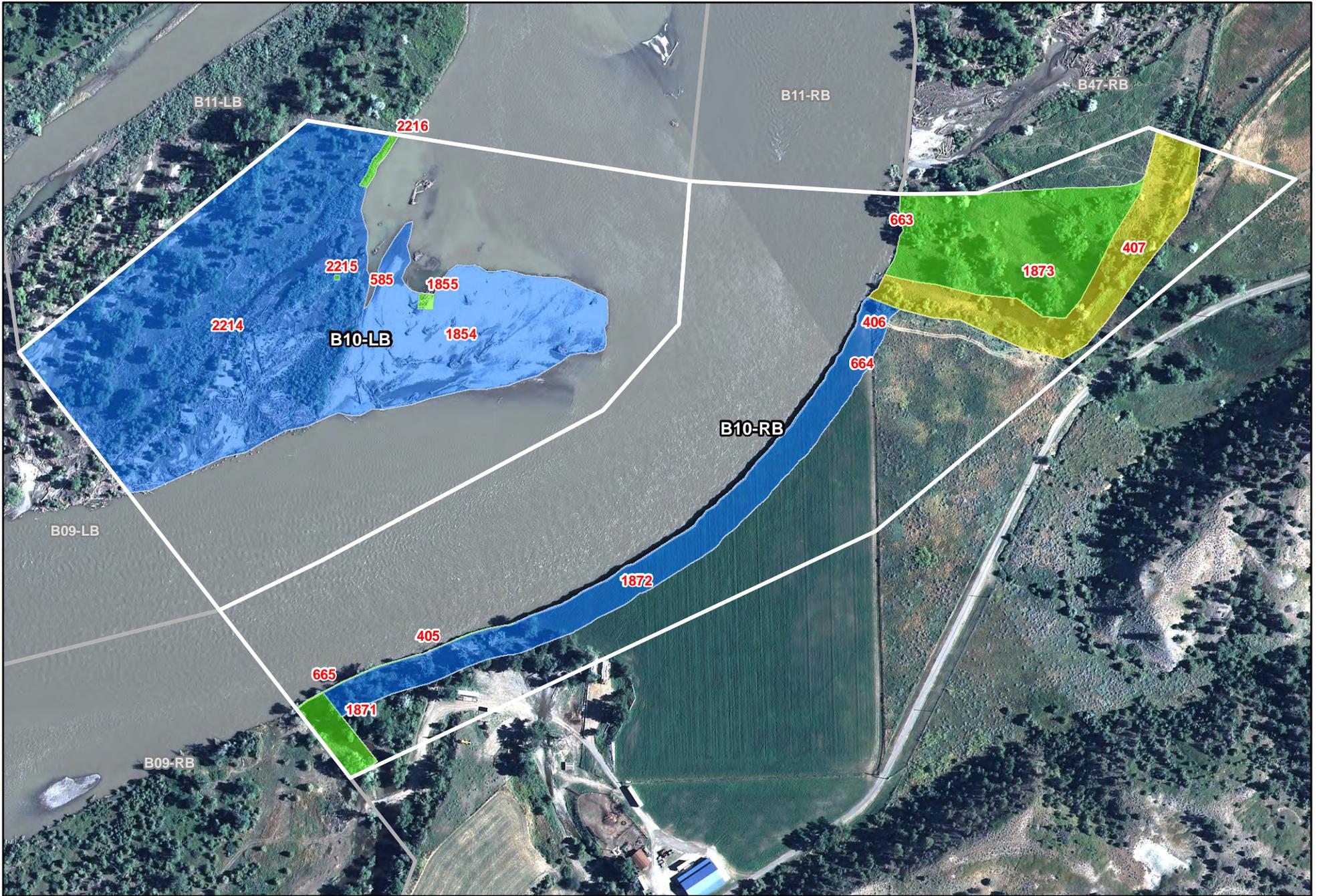
Legend

Silvertip SCAT Segments

Sample Locations

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

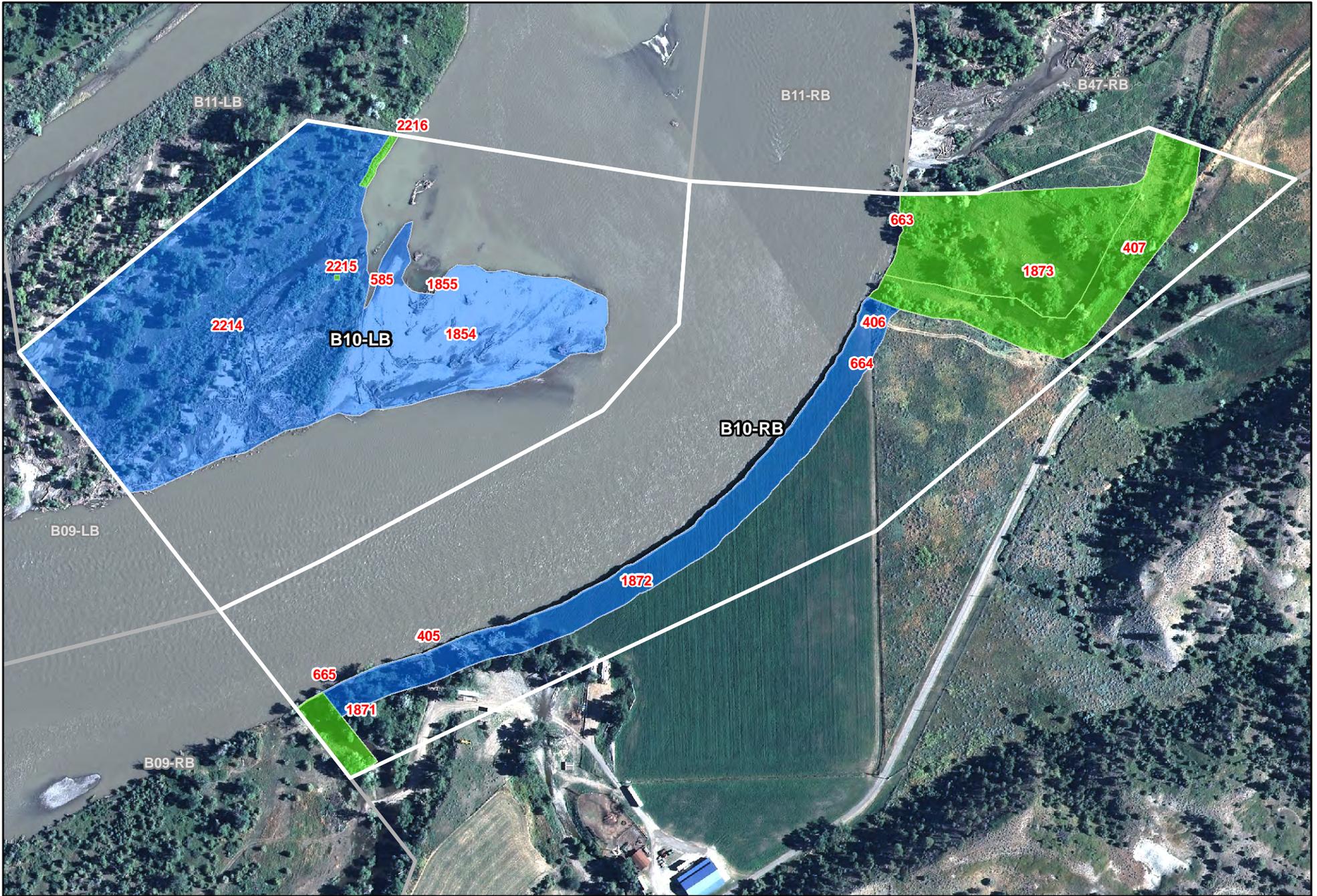
SCAT B10



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

Figure 4 - Maximum SCAT Observations For SCAT Area:





- 9999 Oiling Zone ID
- Heavy Oiling
- Moderate Oiling

- Light Oiling
- Very Light Oiling
- No Oil Observed



Figure 5 - Final SCAT Observations
For SCAT Area: B10





Appendix A

Sample Detection Summary



Detections in Samples Collected in SCAT Area B10

Printed 9/10/2011

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
BIMT0823SO507	23-Aug-11	Field	Soil_River	EPA 6010	Arsenic	Y	15.6	40		mg/kg	no
BIMT0823SO507	23-Aug-11	Field	Soil_River	EPA 6010	Barium	Y	153	820		mg/kg	no
BIMT0823SO507	23-Aug-11	Field	Soil_River	EPA 6010	Cadmium	Y	1.1	3.8		mg/kg	no
BIMT0823SO507	23-Aug-11	Field	Soil_River	EPA 6010	Chromium	Y	13.5	280		mg/kg	no
BIMT0823SO507	23-Aug-11	Field	Soil_River	EPA 6010	Lead	Y	10	400		mg/kg	no
BIMT0823SO507	23-Aug-11	Field	Soil_River	EPA 6010	Nickel	Y	14.8	150		mg/kg	no
BIMT0823SO507	23-Aug-11	Field	Soil_River	EPA 6010	Vanadium	Y	24	39		mg/kg	no
BIMT0823SO507	23-Aug-11	Field	Soil_River	EPA 9060	Mean Total Organic Carbon	Y	4660	NA		mg/kg	no
BIMT0823SO507	23-Aug-11	Field	Soil_River	EPA 9060	RSD%	Y	18.5	NA		%	no
BIMT0823SO507	23-Aug-11	Field	Soil_River	EPA 9060	Total Organic Carbon	Y	5930	NA		mg/kg	no
BIMT0823SO507	23-Aug-11	Field	Soil_River	MADEP EPH	Total Extractable Hydrocarbons	Y	21	200		mg/kg	no
SPSO212D01_071311	13-Jul-11	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	54200	200		mg/kg	YES
SPSO213D01_071311	13-Jul-11	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	26.5	200		mg/kg	no



Appendix B

Initial SCAT Survey Forms and
Sketches

1 GENERAL INFORMATION		Date (dd/mm/yy) 19-Jul-2011	Time (24h): std / daylight 1210 1211 1065 hrs to 1069 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: <u>B1/O</u> <u>Left Bank</u> / Right Bank / Island				
Operations Division: B				
Survey by: <u>Foot / ATV / Boat</u> / Helicopter / Overlook /		<u>Sun</u> / Clouds / Fog / Rain / Snow / <u>Windy</u> / Calm		Air Temp +/- <u>31</u> deg C

2 SURVEY TEAM # 1	name	organization	contact phone number
	Pete Lee	Polaris	
	Larry Alheim	MTDEQ	
	Andy Johnson	USCG	

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 331 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) Riprap Wetland: Swamp _____ Bog/Fen _____ Marsh _____

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

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

shoal(s) present Y 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 N Access: Direct from backshore N Alongshore from next segment Y / N

Debris: N oiled N amount 2 bags or _____ trucks access restrictions

Oiled trees/shrubs N River Current strong Y/N Other Features: Farm residence adjacent to north

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>331</u>	X	453	1															X	Grass, trees, debris, etc
B				X	25	1	100			X	X		X									Grass, trees, debris, etc
C				X	313	1															X	Grass, trees, debris, etc

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

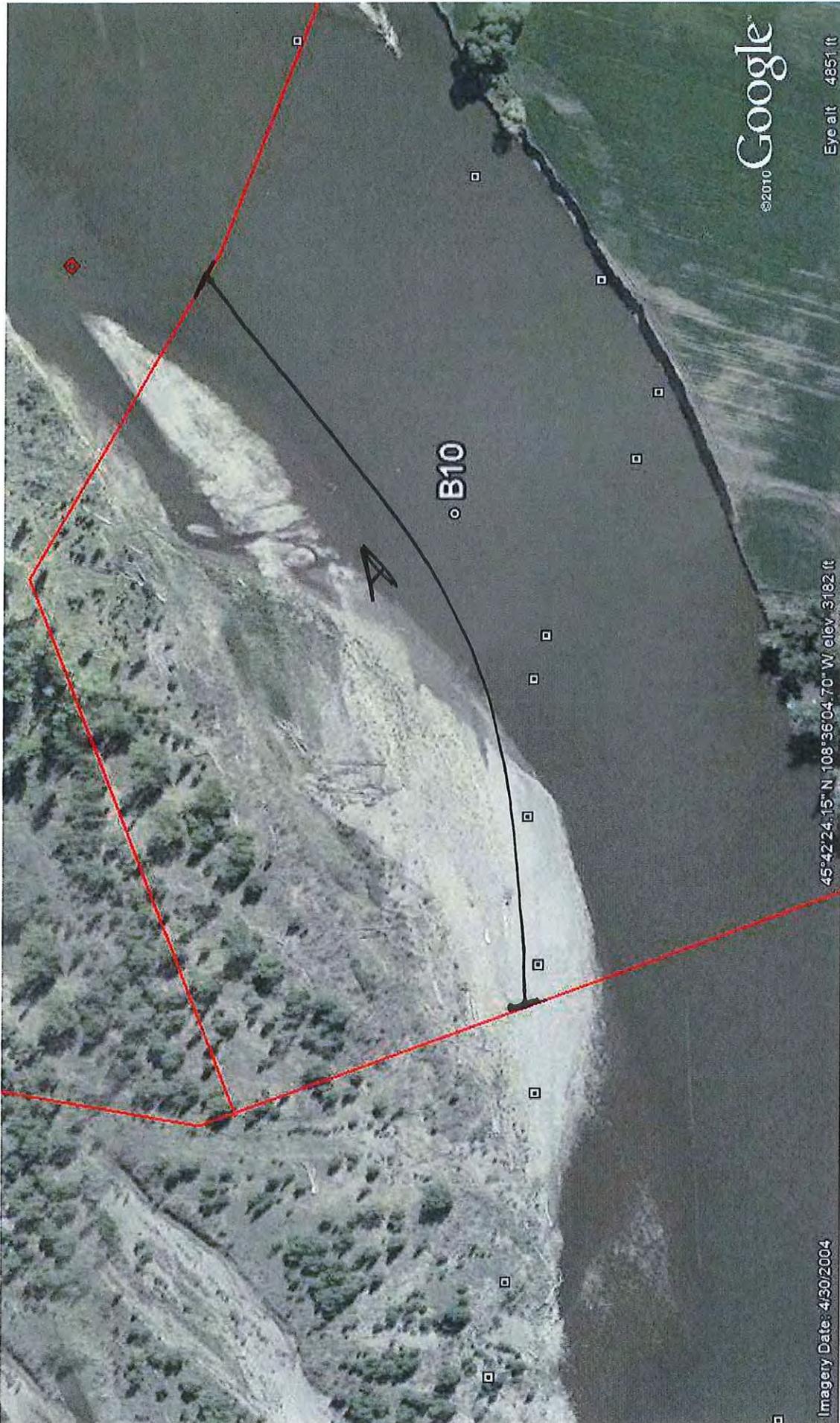
Oil band heights: Zone B: 00 cm NO

Treatment Recommendations:
 Zone A: None No oil observed; no treatment required.
 Zone B: Cut & remove oil coated vegetation smaller than 1" diameter. Wipe larger oil coated vegetation.

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

Sketch Yes / No Photos Yes / No Frames None 1236 (Lee)

A-2035128



©2010 Google

Eye alt 4851 ft

B10

A

45°42'24.15" N 108°36'04.70" W elev 3182 ft

Imagery Date: 4/30/2004

DBIG

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION

Segment/Reach ID: B10 Left Bank / Right Bank / Island Date (dd/mm/yy) 25/08/11 Time (24h): std / daylight 0913 hrs to 1535 hrs Water Level low - mean - bankfull - overbank

Operations Division: B CK 10/3/11 (Sun) Clouds / Fog / Rain / Snow / Windy / Calm (falling) steady - rising Air Temp +/- 26 deg C

Survey by: Foot / ATV / Boat / Helicopter / Overlook / (Sun) Clouds / Fog / Rain / Snow / Windy / Calm

2 SURVEY TEAM # 2

Name	Organization	Signature
<u>Joe Boyle</u>	<u>Cardno Entrix</u>	<u>[Signature]</u>
<u>Dave Hergenrider</u>	<u>FWP</u>	<u>[Signature]</u>
<u>Nathan Hammond</u>	<u>Cardno Entrix</u>	<u>[Signature]</u>

3 SEGMENT Total Segment/Reach Length 385 m Segment/Reach Length Surveyed 260 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 X Pebble/Cobble _____ Boulder _____ Peat/Organic _____ 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 X oxbow _____ flood plain valley _____ Forested / Vegetated (Bare)

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 400m 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 1 bags or _____ trucks access restrictions _____

Oiled trees/shrubs Y (N) River Current strong (Y) N Other Features: Island

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>X</u>				<u>260</u>	<u>140</u>	<u>0</u>														<u>✓</u>
<u>B</u>	<u>X</u>				<u>10</u>	<u>10</u>	<u><1</u>			<u>S</u>	<u>P</u>						<u>X</u>				<u>Debris</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								

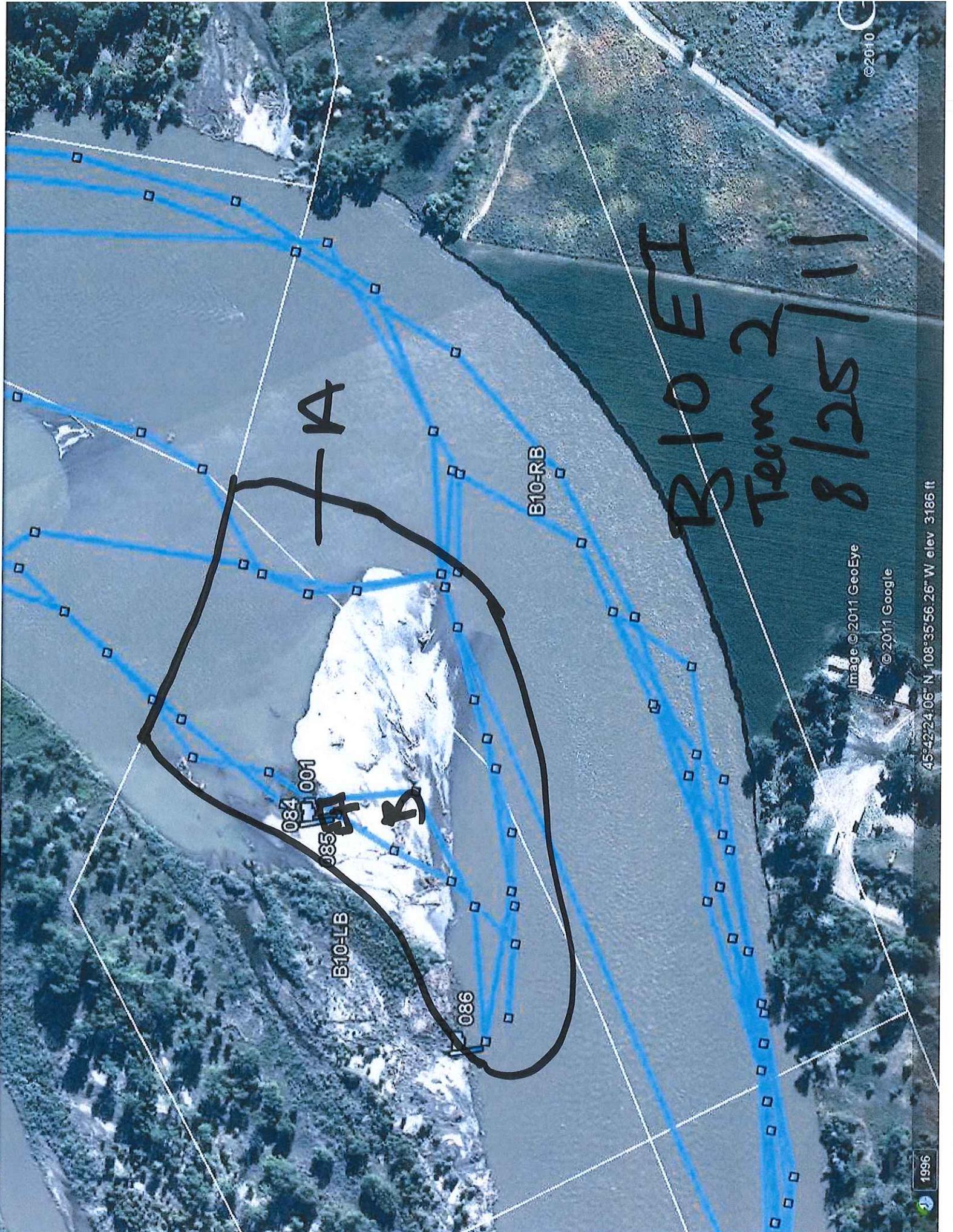
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

Overbank Survey Required Y (N) Overbank Survey Completed Y (N) Shoreline Survey Completed Y (N)

Zone A - NOO - No Further Treatment

Zone B - ATM 7 - No Further Treatment.

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



A

BIOE1
Team 2/11
8/25/11

B10-RB

B10-LB

084
085

086

Image © 2011 GeoEye
© 2011 Google

©2010

45°42'24.06" N 108°35'56.26" W elev 3186 ft

1996

DBIG 15

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>B10</u>	Left Bank <input type="checkbox"/> Right Bank <input checked="" type="checkbox"/> Island	19 / 07 / 11	<u>1211</u> hrs to <u>1212</u> hrs	low - mean <input type="checkbox"/> <u>bankfull</u> - overbank
Operations Division: B				<u>falling</u> steady - rising
Survey by: Foot / ATV / Boat <input checked="" type="checkbox"/> Helicopter / Overlook /		<u>Sun</u> Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - <u>35</u> deg C	

2 SURVEY TEAM # 5	name	organization	contact phone number
	Bob Nailon	Cardno ENTRIX	713 817 2469
	John Beach	EPA	707 364 0491
	Ken Frazer	FWP	406 247 2961

3 SEGMENT Total Segment/Reach Length 470 m Segment/Reach Length Surveyed 470 m

Start GPS: LATITUDE N deg. _____ min. LONGITUDE W deg. _____ min. Datum: WGS 84

End GPS: LATITUDE N deg. _____ min. LONGITUDE W 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 _____ Vegetated Bank: P 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 S 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 150 m 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 1500 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		
A				X	30		100				P	X										Debris log bank
B				X	430		100				P	X										log bank
C				X	10		50				P	X										log bank

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

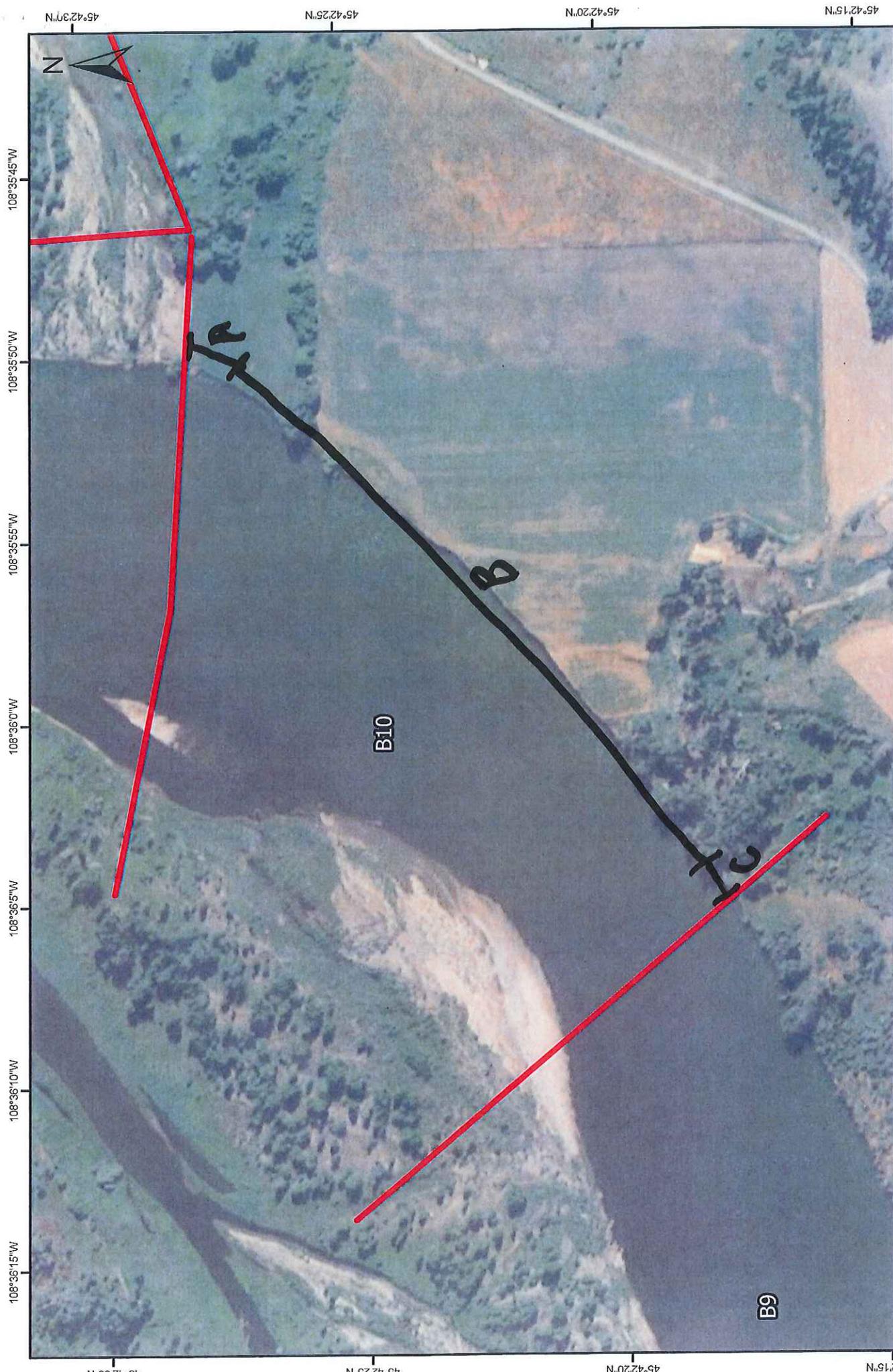
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

OSR = 4 OSC = unk SSC = unk

5341-5342

(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# _____)



45°42'30"N

108°35'45"W

108°35'50"W

108°35'55"W

108°36'0"W

108°36'5"W

108°36'10"W

108°36'15"W

45°42'25"N

45°42'20"N

45°42'15"N

108°35'45"W

108°35'50"W

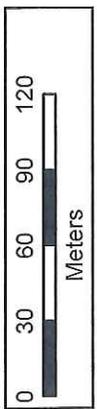
108°35'55"W

108°36'0"W

108°36'5"W

108°36'10"W

108°36'15"W



COMMENTS:

DATE:

TEAM:

B10 -
(L/R/I)??

DB / 6

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level	
Segment/Reach ID: B10	Left Bank/ <u>Right Bank</u> / Island	07/20/2011	1135 1215	low - mean <u>bankfull</u> overbank	
Operations Division: A			hrs to hrs	<u>falling</u> - steady - rising	
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - deg C		

2 SURVEY TEAM #	name	organization	contact phone number
	<u>EPIC</u>	Polaris Applied Sciences, LLC	(206)-953-6904
	<u>AM</u>	MTDEQ	(406) 431-2583
	<u>EDWARD KIELT</u>	USCG	(415) 596-6587

3 SEGMENT Total Segment/Reach Length 378 m Segment/Reach Length Surveyed 695 m

Start GPS: LATITUDE 45 deg. 4217 min. LONGITUDE 108 deg. 3604 min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 4227 min. LONGITUDE 108 deg. 3546 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 Vegetated Bank: P Wooded Upland: S

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: mixed

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10 m 10-100 m >100m 154 m est. water depth: <1 m 1-3 m 4-10 m >10 m 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: **89**

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

OIL ZONE	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER							SUBST. TYPE(S)			
					Length	Width	Distrib.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO		
	ID	MS	LB	UB	OB	m	m	%															
A				X	93	0.5	<1			X	<u>X</u>			X									Small woody debris, grass
B				X	285	0	0															X	
C				X	317	30	5			<u>X</u>	X			X									Small woody debris, 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	OILED ZONE	SUBSURFACE OIL CHARACTER						WATER TABLE	SHEEN COLOUR	CLEAN BELOW	SUBST. TYPE(S)							
	MS	LB	UB	OB			cm	cm-cm	SAP	OP	PP	OR					OF	TR	NO	cm	B, R, S, N	Yes / No	

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

405
406
407

Treatment Recommendations:

Zone A: None.

Zone C: Cut and remove oil coated vegetation smaller than 1" diameter. Remove oil coated debris smaller than 4" diameter.

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

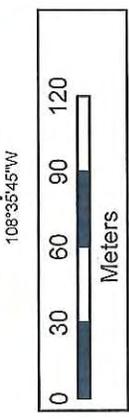
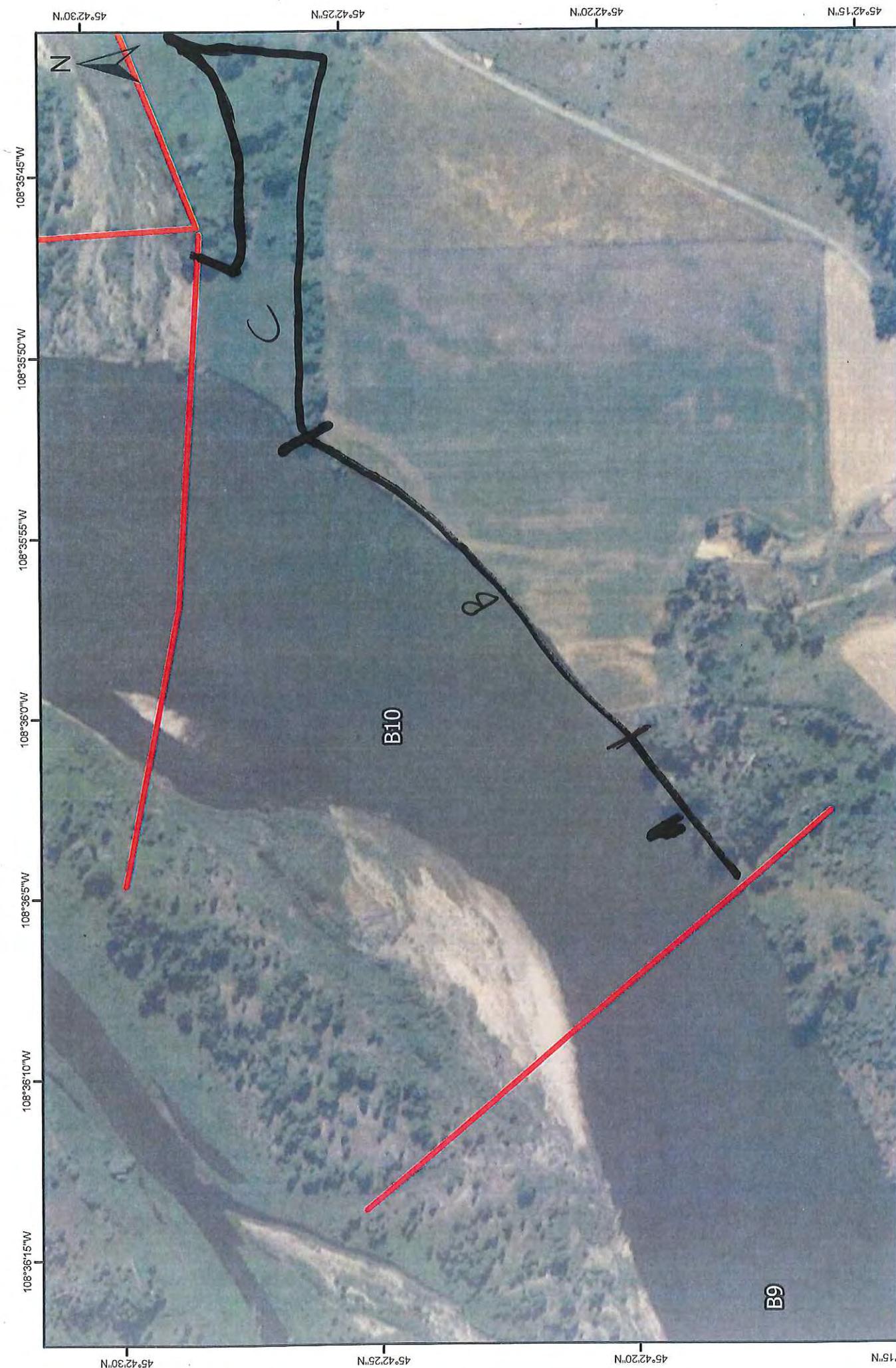
Sketch Yes/No Photos Yes/No (Roll # _____ Frames _____) Video Tape Yes/No (tape# _____)



Segment B10, Zone A.



Segment B10, Zone C.



COMMENTS:

DATE: 7/20/2011
TEAM: 2

B10 - (R)??

108°36'15"W 108°35'50"W 108°35'45"W

45°42'15"N 45°42'20"N 45°42'25"N 45°42'30"N

108°36'10"W 108°36'05"W 108°36'00"W 108°35'55"W

108°36'5"W 108°36'0"W 108°35'55"W 108°35'50"W

108°36'15"W 108°36'10"W 108°36'05"W 108°36'00"W

45°42'15"N 45°42'20"N 45°42'25"N 45°42'30"N

108°36'15"W 108°36'10"W 108°36'05"W 108°36'00"W



Appendix C

Pre-Inspection Survey Transmittal

SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 13 & 20 August, 2011

Segment: B10RB

Team: SCAT Liaison: John Spenik (Polaris) Signed: _____

USCG Observer: TRUMAN SKANG Signed: _____

Observer _____ Signed: _____

Observer _____ Signed: _____

Segment meets criteria? YES X NO _____

RBOS attached? YES _____ NO X

If NO:

Location Sketch attached? YES _____ NO X

CTR continue? YES _____ NO X

Comments: The noted segment was inspected over the course of two days. On the final Pre-inspection a hot shot cleanup crew was present to treat small patches of light oiling. The segment passed the pre inspection.



Appendix D

Post-Inspection Survey Transmittal

POST

Post Inspection Survey Transmittal

Segment BIO-LB

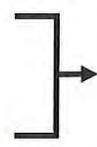
Date of Survey 09/09/11

SCAT Team Member Damien Korte Signed: [Signature]

SCAT Team Member MATTHEW KEAT/MT DER 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 C. Very light distribution of primarily coat with stain on willows. Oil is transferable. Recommend ATM 1 and 9. We tied pink flagging to mark oiled area.

Zone Dimensions: Length 40 m Width 5 m GPS Waypoint: Lat. 45°42.475' Long. 108°36.054'
(required) (center of zone)

Estimated Work Effort: Number of People 4-6 Hours of Work 2-3 Applicable CTR(s) 39
(required)

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

[Signature] John Spenik/Polaris 11 Sep 2011
Sign Name Print Name/Affiliation Date

[Signature] Donnie McCurry MT DER 9/11/11
Sign Name Print Name/Affiliation Date



Appendix E

Final SCAT Survey Forms and
Sketches

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>B10</u> Left Bank / Right Bank / Island		<u>09/09/11</u>	<u>1245</u> hrs to <u>1400</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>B</u>				falling - steady - rising
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		<u>Sun</u> Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>25</u> deg C

2 SURVEY TEAM # <u>5</u>	Name	Organization	Signature
	<u>Damien Korte</u>	<u>Cardno Eatrix</u>	<u>[Signature]</u>
	<u>Matthew Keat</u>	<u>DEQ</u>	<u>[Signature]</u>

3 SEGMENT Total Segment/Reach Length 270 m Segment/Reach Length Surveyed 270 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 _____ Vegetated Bank: (P) Wooded Upland: (S)

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: Grass, trees

Sloped: (>5°)(15°)(30°) straight _____ braided X 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 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

2214
2215
2216

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	270	200	0														✓	Grass, trees
B				X	3	3	<1			S	P						✓					Debris
C				X	40	5	<1			P	S						✓					Willows

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 - NOO

Zone B - Hot shot crew utilized ATM 2 to remove 1 bag of oiled debris. NFT recommended.

Zone C - Very light oil distribution of primarily coat with stain on willows. Oil is transferable. Recommend ATM 1 and 9.

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

9/9/2011 11:47 am
9/9/2011 3:58 pm
9/9/2011

SCAT
09/09/11
Team 5
B10-LB

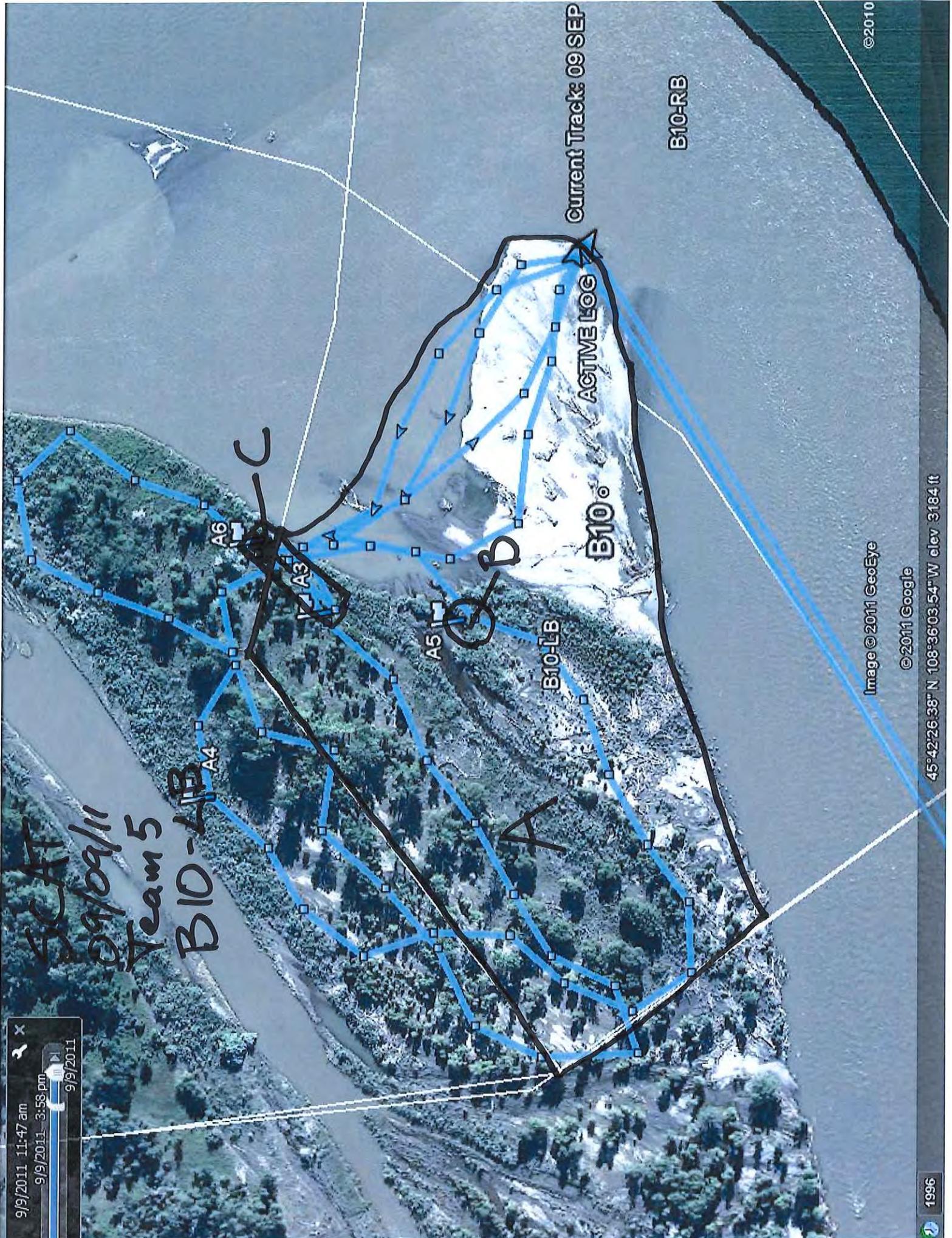


Image © 2011 GeoEye

© 2011 Google

45°42'26.38" N 108°36'03.54" W elev 3184 ft

© 2010

1996

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 2

1 GENERAL INFORMATION		Date (dd/mm/yy) <u>8/24/11</u>	Time (24h): std / daylight <u>10:00</u> hrs to <u>14:00</u> hrs	Water Level low - mean - bankfull - overbank falling - steady - rising
Segment/Reach ID: <u>10</u>	Left Bank <input type="checkbox"/> Right Bank <input checked="" type="checkbox"/> Island			
Operations Division: <u>B</u>		Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u> <input checked="" type="checkbox"/> Sun <input type="checkbox"/> Clouds / Fog / Rain / Snow / Windy / Calm		
Air Temp +/- <u>29</u> deg C				

2 SURVEY TEAM # <u>5</u>		Name	Organization	Signature
		<u>LARISA LEONOVA</u>	<u>RPA</u>	<u>Larisa Leonova</u>
		<u>DANIEL ELERANT</u>	<u>CARDNO ENTRA</u>	<u>Daniel Elerant</u>
		<u>MIKE HERMAN</u>	<u>FWP</u>	<u>Mike Herman</u>
		<u>DARRICK TURNER</u>	<u>DRA</u>	<u>Darrick Turner</u>
		<u>ARIEL BLADIC</u>	<u>POLARIS</u>	<u>Ariel Bladic</u>

3 SEGMENT Total Segment/Reach Length 700 m Segment/Reach Length Surveyed 700 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: 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 P confined or leveed _____ Substrate Type: VEG

Sloped: (>5°)(15°)(30°) straight _____ 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 160m 160m 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 N Access: Direct from backshore N Alongshore from next segment N

Debris N oiled N amount _____ bags or _____ 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	
<u>1871</u> <u>1872</u> <u>1873</u> A				<input checked="" type="checkbox"/>	<u>57</u>	<u>20</u>	<u><1</u>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>					<u>veg</u>
B				<input checked="" type="checkbox"/>	<u>447</u>	<u>20</u>	<u>-</u>														<u>X</u>	<u>veg</u>
C				<input checked="" type="checkbox"/>	<u>82</u>	<u>130</u>	<u><1</u>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>					<u>veg</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				

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

PRIMARY RIVER CHARACTER - CUT BANK OPPOSITE OF POINT BAR IN SECTION B10-LB.

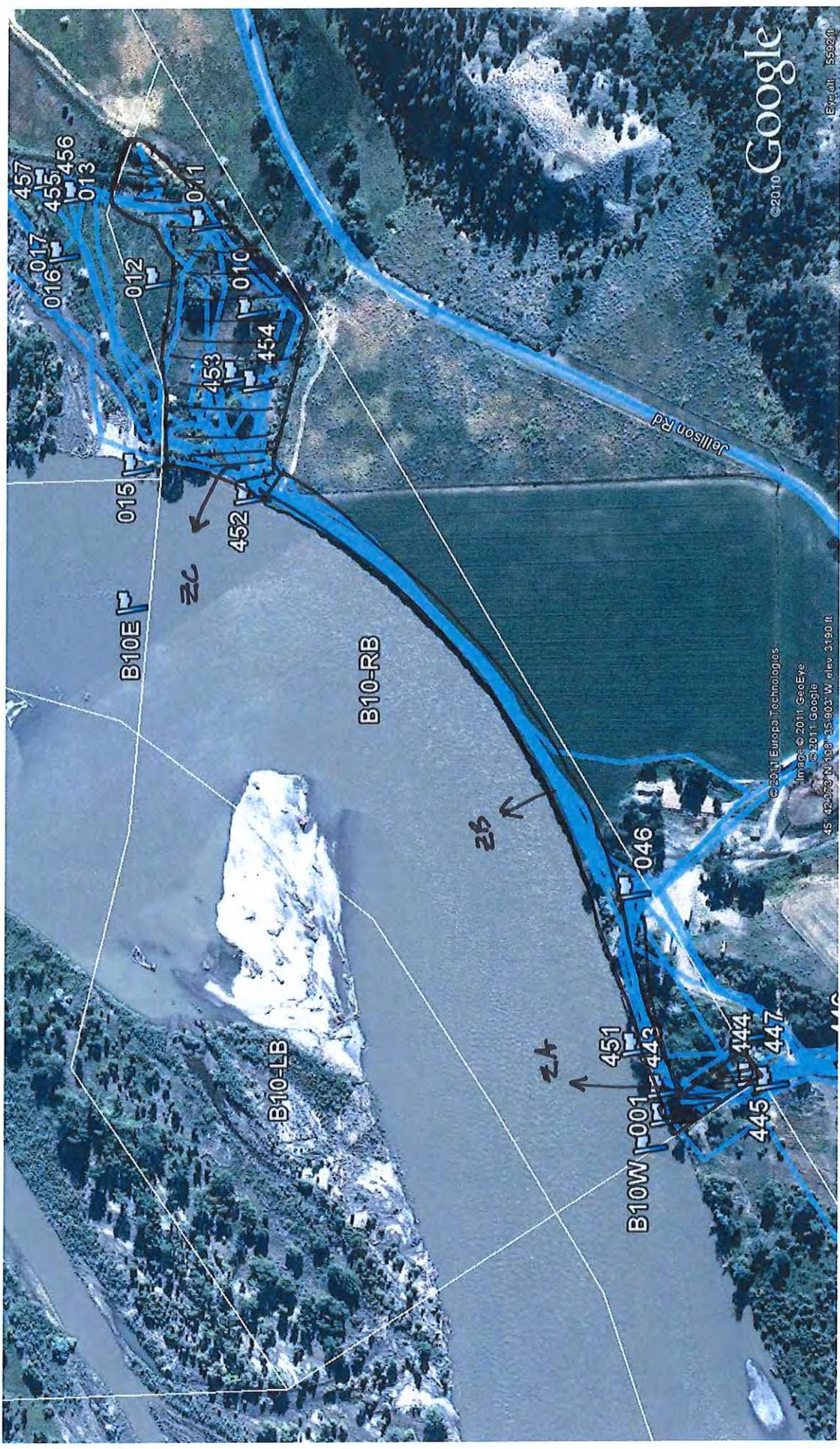
RESCAT: PASSES.

Zone A: Trace stain & coat on veg. Hotshoot crew removed remaining transferable oil. NFT

Zone B: NOO - NFT

Zone C: Trace stain & coat on veg. Hotshoot crew removed remaining transferable oil. NFT

Sketch No Photos No Frames _____ Photographer _____





Appendix F

Completed SCAT Segment Sign-Off
Forms

SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

SILVERTIP PIPELINE RELEASE

Segment B10-LB Date of Survey 09/09/11

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

CTR(s) Associated with SCAT Segment 39

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).

No federal rep.

Sign Name _____ Print Name/ Affiliation _____ Date _____
Federal Representative (EPA/USCG)

[Signature] Matthew Kent / MS DCA 9/8/2011
Sign Name _____ Print Name/ Affiliation _____ Date _____
State Representative (DEQ/FWP)

[Signature] Damien Korte / Cardio Extrix 09/09/11
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.

Silvertip Pipeline Spill SCAT Segment Sign-Off Sheet

COMPLETED

Operations Division: A B <u>X</u> C
SCAT Area Number (i.e. A12): <u>B10-RB</u>
SCAT Segment Number (i.e. A12-LB/IS/RB): <u>B10-RB</u>

Complete

Check if Complete:

1. Completion Date for Initial SCAT Assessment: 1720-July-2011

2. Combined Treatment Recommendations (CTRs) Developed/Issued:

Yes/No

List CTRs Applicable to SCAT Segment: 25

3. Clean-Up Operations Conducted:

4. Inspection (CTR Objectives and CTR Addendums Complete):

RP Representative (SCAT/Ops Liaison Contractor)	Date
---	------

5. SCAT Reassessment:

Yes/No

<i>L. Lednova</i>	<i>8/25/11</i>
-------------------	----------------

Federal Representative (EPA/USCG) <i>Larisa Lednova</i>	Date
---	------

<i>Danish Duran DEQ</i>	<i>8/25/11</i>
-------------------------	----------------

State Representative (DEQ/FWP)	Date
--------------------------------	------

<i>Ail Blane</i>	<i>24-Aug-2011</i>
------------------	--------------------

RP Representative (SCAT Contractor)	Date
-------------------------------------	------

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 Reassessment, the SCAT area will achieve the response endpoints and an Area Transition Report will be completed and submitted to EPA and DEQ upon completion.