

**ExxonMobil Pipeline Company**

**SCAT Area Transition Report  
for C10**

Silvertip Pipeline Incident  
Laurel, Montana

October 29, 2011



## **SCAT Area Transition Report for C10**

Silvertip Pipeline Incident  
Laurel, Montana

Prepared for:  
ExxonMobil Pipeline Company

Prepared by:  
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Our Ref.:  
B0085883.1103

Date:  
October 29, 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 C10, 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 C10. 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 C10, 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 C10 is 42.0. No access was granted for the eastern portion of the left bank of Area C10.

### **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 limited inspections of Area C10 due to the low level of oiling in Division C. No oiled wildlife was observed or recovered. No Wildlife Priority Cleanup Areas were identified. A great blue heron (*Ardea herodias*) rookery was identified in Area C10 and a  $\frac{1}{8}$ -mile buffer zone was provided to Operations to protect the nests.

### **1.3 Summary of Environmental Sampling**

Table 1 (below) summarizes samples collected within Area C10. 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 C10 are provided on Figure 3.

**Table 1 Environmental Sampling Summary**

Area	Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
C10		No Samples Collected*					

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 detections in this area because no samples were taken.

**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 C10 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area C10.

**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. 60](#)).

**1.6 Oil Removal Activities**

Oil removal activities were conducted within Area C10 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 C10 and developed a Post-Inspection Survey Transmittal (POST) associated with the right bank within Area C10, which is presented in Appendix D.

### **1.9 Summary of Final SCAT Surveys**

Figure 5 shows the oiling conditions within Area C10 following completion of oil removal activities. The SCAT team performed final surveys of the right and left banks within SCAT Area C10 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 and left banks within Area C10, no further treatment is recommended for these segments. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition  
Report for C10**

Silvertip Pipeline Incident  
Laurel, Montana

**2. Transition Sign-Off Form**

**SCAT Area Transition Report for C10**

**Prepared for:**

**Unified Command**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Unified Command – RP

## **SCAT Area Transition Report for C10**

**Prepared for:**

**Unified Command**

---

Date

---

Unified Command – FOSC



**SCAT Area Transition  
Report for C10**

Silvertip Pipeline Incident  
Laurel, Montana

**SCAT Area Transition Report for C10**

**Prepared for:**

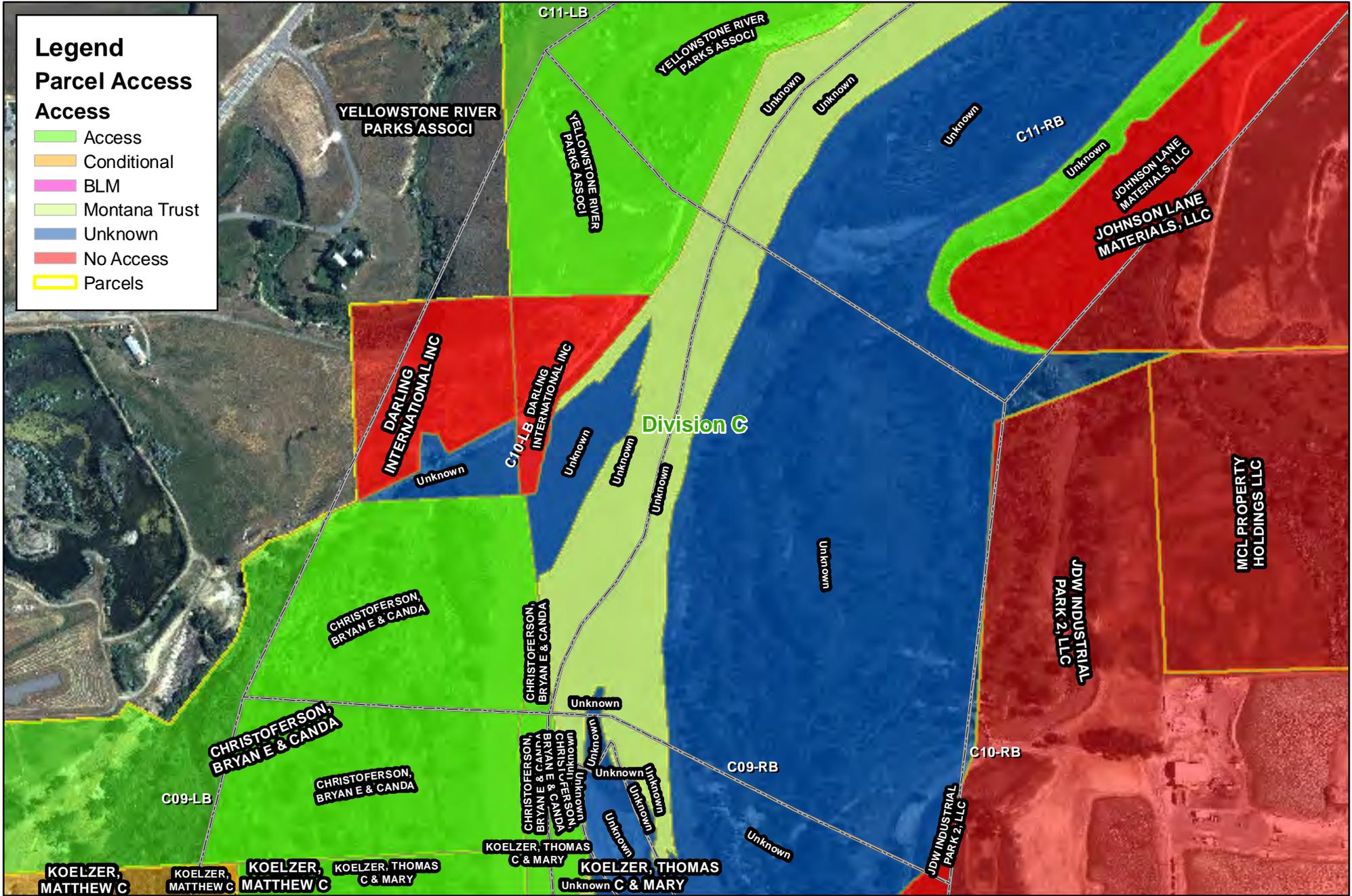
**Unified Command**

---

Date

---

Unified Command – MDEQ



**Legend**

**Parcel Access**

**Access**

- Access
- Conditional
- BLM
- Montana Trust
- Unknown
- No Access
- Parcels

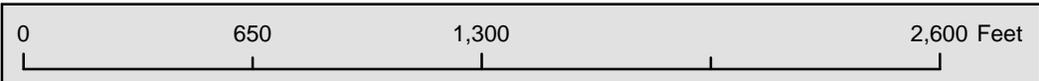
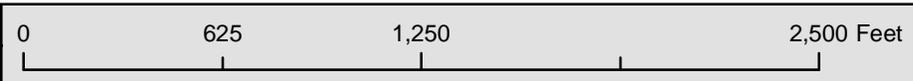
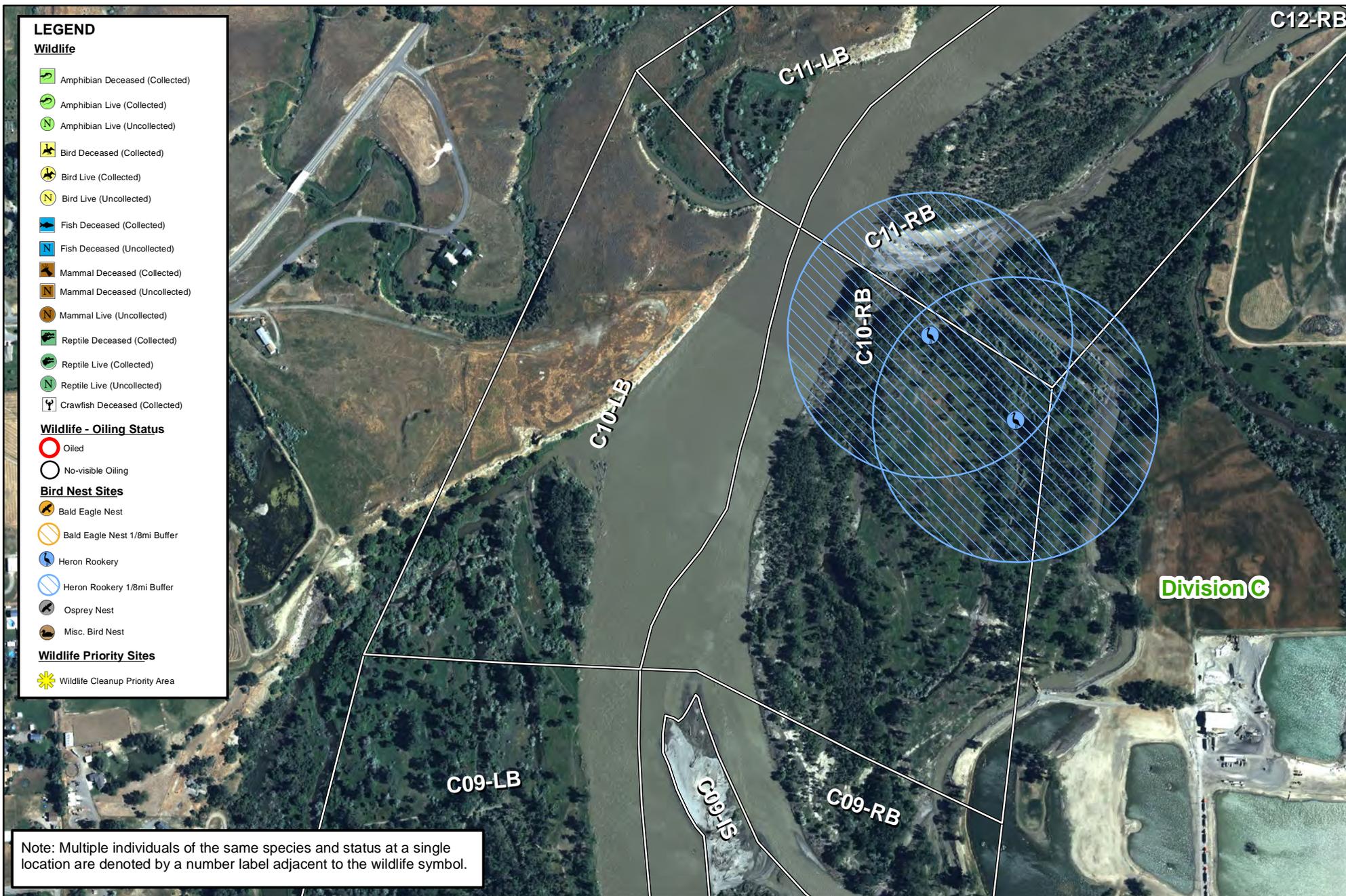


Figure 1

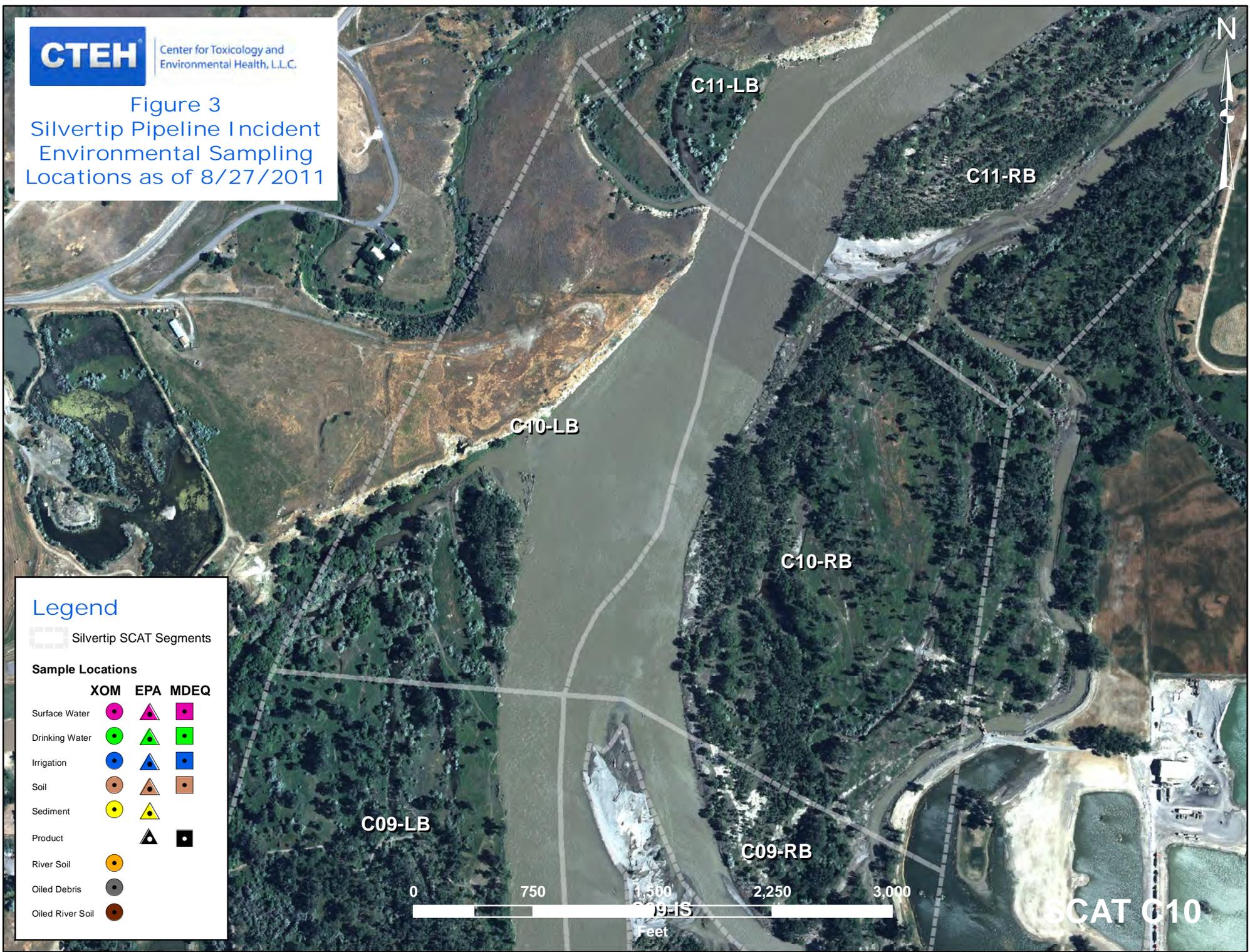


**Figure 2**  
**Wildlife Resources**



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

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



### Legend

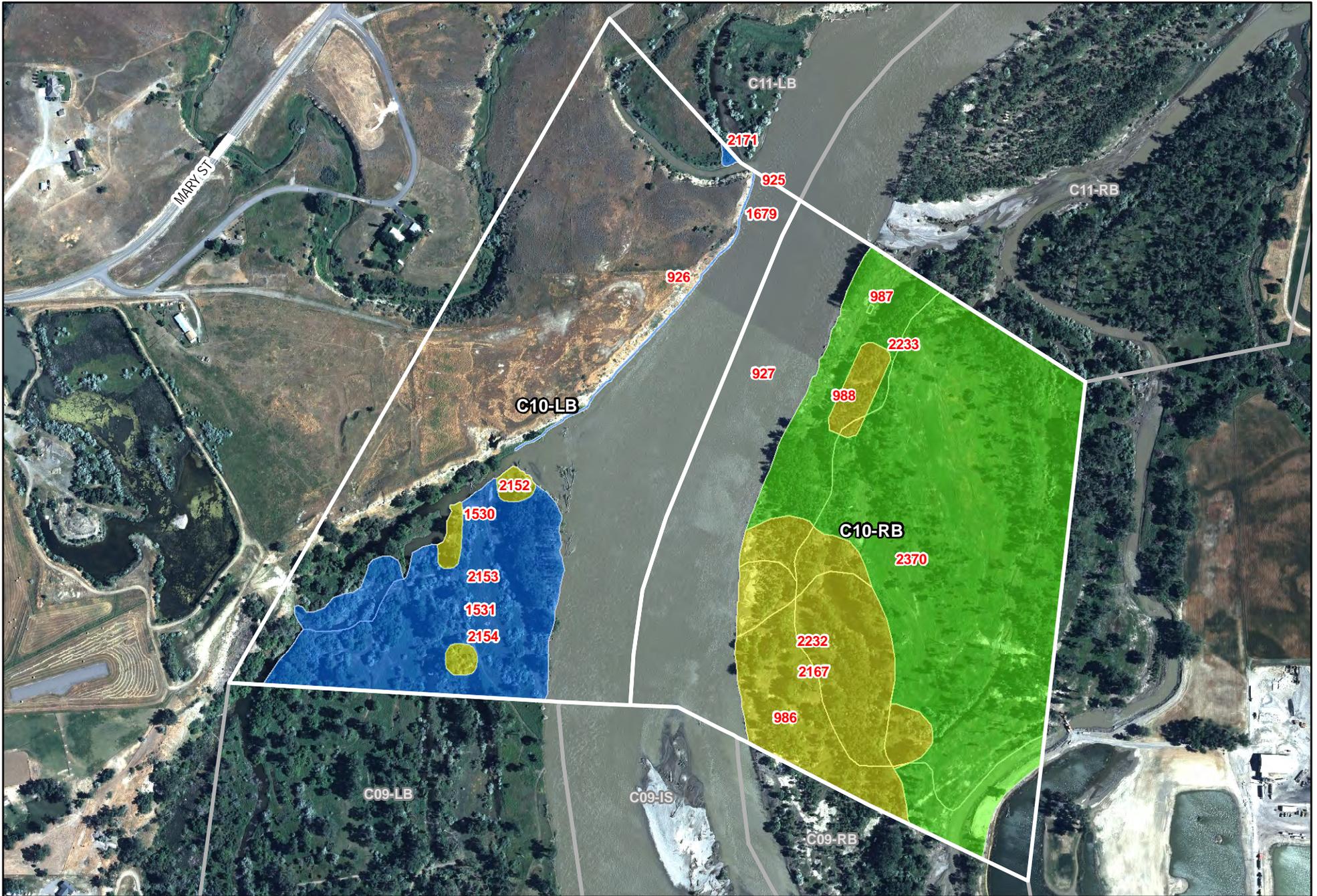
--- Silvertip SCAT Segments

#### Sample Locations

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



SCAT 010

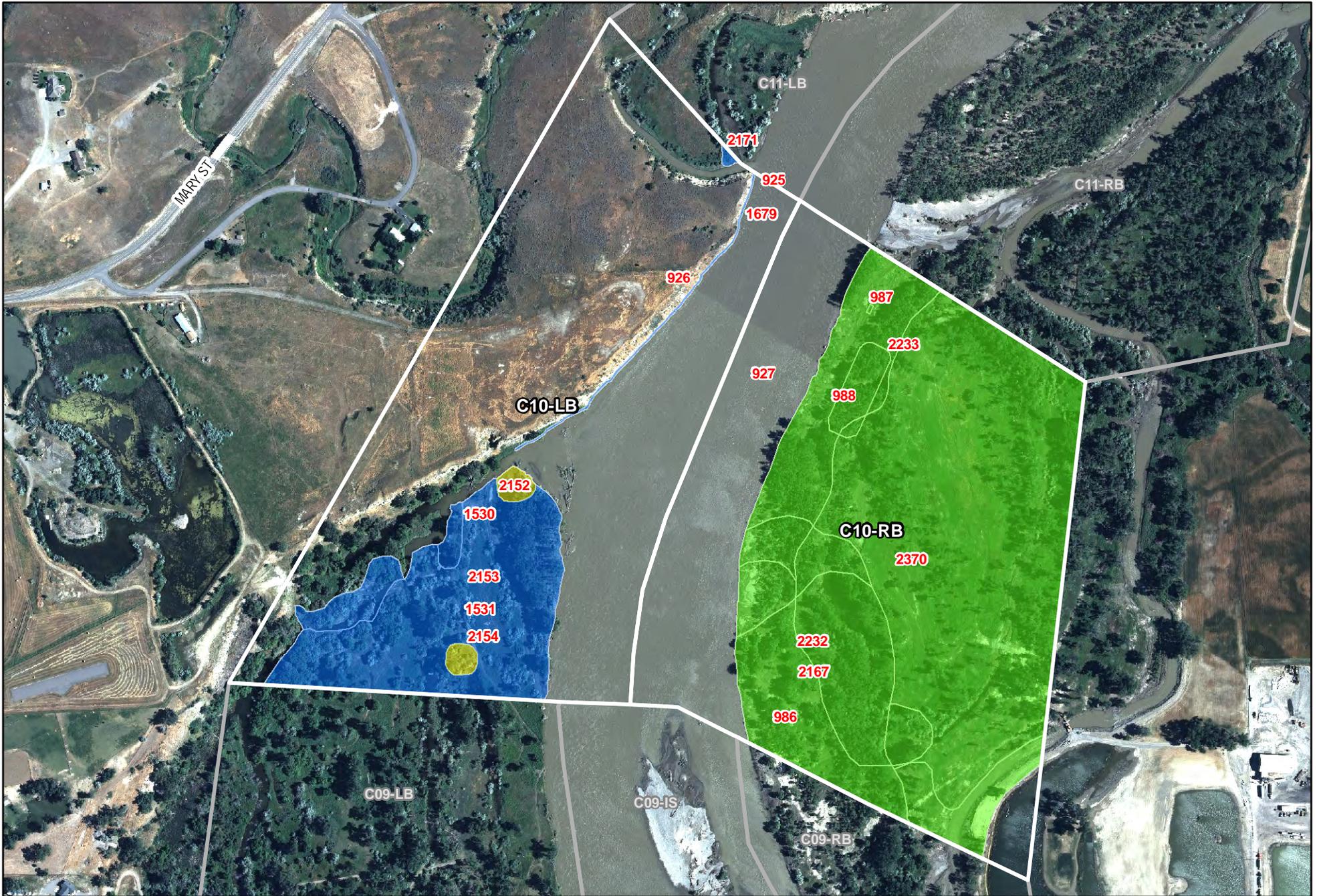


- 9999 Oiling Zone ID
- Heavy Oiling
- Moderate Oiling

- Light Oiling
- Very Light 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

400 0 400 800 Feet

Figure 5 - Final SCAT Observations For SCAT Area:





## **Appendix A**

Sample Detection Summary



Sample Results For  
SCAT Area C10

Printed 10/25/2011

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
------------	------	-------------	--------	-------------------	---------	----------	--------	-----------------	------------------	-------	--------

No Samples Taken



## **Appendix B**

Initial SCAT Survey Forms  
and Sketches

DB/G

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>C10</u>	Left Bank / <u>Right Bank</u> / Island	<u>27/07/11</u>	<u>1209</u> hrs to <u>1211</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>C</u>				<u>falling</u> - steady - rising
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook / _____	<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm			Air Temp +/- <u>30</u> deg C

2 SURVEY TEAM #	Name	Organization	Signature
<u>1</u>	<u>Chuck Pore</u>	<u>Canada ENTRIX</u>	<u>[Signature]</u>
	<u>Jay Watson</u>	<u>MFWP</u>	
	<u>Ernie McKenzie</u>	<u>US BLM</u>	

**3 SEGMENT** Total Segment/Reach Length 655 m Segment/Reach Length Surveyed 655 m

Start GPS: LATITUDE 45 deg. 50'32.91 min. LONGITUDE 108 deg. 25'13.51 min. Datum: WGS81

End GPS: LATITUDE 45 deg. 50'14.71 min. LONGITUDE 108 deg. 25'27.99 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 P Mixed \_\_\_\_\_ Pebble/Cobble S Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: Y Wooded Upland: Y

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: Sw

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 100m 110 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	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	%															
<u>927</u> A					<u>655</u>	<u>2</u>	<u>0</u>														<u>Y</u>	<u>Sw/Gr</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 - No o.i observed



DB/G/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 30/07/11	Time (24h): std / daylight 0915 hrs to 1220 hrs	Water Level low - mean - bankfull - overbank falling - steady - rising
Segment/Reach ID: C10 Left Bank (Right Bank) / Island		Operations Division:		
Survey by: Foot / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- 2.5 deg C

<b>2 SURVEY TEAM # 3</b>	Name	Organization	Signature
John Bauer		Polaris	<i>[Signature]</i>
Mark Ewanic		MT DEQ	<i>[Signature]</i>
Gary Riley		EPA	<i>[Signature]</i>
Travis Cain		EPA	<i>[Signature]</i>
Josh Hofkes		Cardno Entrix	<i>[Signature]</i>

**3 SEGMENT** Total Segment/Reach Length 620 m Segment/Reach Length Surveyed 620 m

Start GPS: LATITUDE 45 deg. 50.212 min. LONGITUDE 108 deg. 25.337 min. Datum: WGS 84 End

GPS: LATITUDE 43 deg. 50.552 min. LONGITUDE 108 deg. 25.229 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 s \_\_\_ Pebble/Cobble \_\_\_ Boulder \_\_\_ Peat/Organic \_\_\_ Vegetated Bank: P Wooded Upland: \_\_\_

Sediment Flat: Clay/Mud s \_\_\_ 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 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 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 Y/N Access: Direct from backshore Y/N Alongshore from next segment Y/N

Debris: Y/N oiled Y/N amount 30 bags or \_\_\_ trucks access restrictions Need approval to enter from

Oiled trees/shrubs Y/N River Current strong Y/N Other Features: Weaver and Mauntyer

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

986  
987  
988

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	230	30	<1		Y	(A)	X		(A)									Veget
B				X	10	5	<1		Y	(B)	X		(B)									Veget
C				X	380	70															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

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

Oil band heights:

**Treatment Recommendations:**  
 Zone : A, B. Cut and remove oiled grass. Remove oiled small debris and vegetation.  
 C. No oil observed, no cleanup required

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 \_\_\_\_\_ Photographer \_\_\_\_\_



C10 TEAM 3  
July 30, 2011

NO PROPERTY ACCESS  
PER LAND OWNER

DB/G

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 06/09/11	Time (24h): std / daylight 1525 hrs to 1615 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: C10 Left Bank / <u>Right Bank</u> / Island				
Operations Division: C				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - 28 _ deg C

<b>2 SURVEY TEAM # 3</b>	Name	Organization	Signature
	Adam Bausch	Cardno Entrix	<i>[Signature]</i>
	Mike Shannon	USCG	<i>[Signature]</i>
	Jay Watson	FWP	<i>[Signature]</i>

**3 SEGMENT** Total Segment/Reach Length 620 m Segment/Reach Length Surveyed \_\_\_\_\_ 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: 3 Wooded Upland: 0

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 \_\_\_\_\_ Forested / Vegetated / Bare

**4C RIVER CHANNEL CHARACTER** circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 160m est. water depth: <1m 1-3m 3-10m >10m \_\_\_\_\_ m

shoal(s) present  N point bar present  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 25 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	
A				<input checked="" type="checkbox"/>	250	72	10			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				Vegetation, Debris

**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  Y /  N Shoreline Survey Completed  Y /  N

Partial Survey

Zone A - Tar Coat and tarballs on woody vegetation @ 2-5ft. Several Woody Debris Piles  
 Recommend Hot Shot crew of 5-10 for 4-6 hrs until ReSCAT can be complete

Sketch  Yes /  No Photos  Yes /  No Frames \_\_\_\_\_ Photographer \_\_\_\_\_



*Zone A - Hot Shot Crew + Re-SCAT*

D/B/G/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>10C</u>	<input checked="" type="checkbox"/> Left Bank / <input type="checkbox"/> Right Bank / Island	<u>27/07/11</u>	<u>9:37</u> hrs to <u>9:38</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>C</u>				<input checked="" type="checkbox"/> falling - <input type="checkbox"/> steady - <input type="checkbox"/> rising
Survey by: <input checked="" type="checkbox"/> Foot / <input type="checkbox"/> ATV / <input type="checkbox"/> Boat / <input type="checkbox"/> Helicopter / <input type="checkbox"/> Overlook /	<input checked="" type="checkbox"/> Sun / <input type="checkbox"/> Clouds / <input type="checkbox"/> Fog / <input type="checkbox"/> Rain / <input type="checkbox"/> Snow / <input type="checkbox"/> Windy / <input type="checkbox"/> Calm			Air Temp +/- <u>30</u> deg C

<b>2 SURVEY TEAM #</b> <u>1</u>	Name	Organization	Signature
	<u>Chuck Pans</u>	<u>Cardno ENTRIX</u>	<u>Chuck Pans</u>
	<u>Joy Watson</u>	<u>MFWP</u>	
	<u>Ernie McKenzie</u>	<u>US BLM</u>	

**3 SEGMENT** Total Segment/Reach Length 655 m Segment/Reach Length Surveyed 655 m

Start GPS: LATITUDE 45 deg. 50134.94 min. LONGITUDE 108 deg. 2517.94 min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 50147.2 min. LONGITUDE 108 deg. 2530.94 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 P Mixed \_\_\_ 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 \_\_\_ confined or leveed \_\_\_ Substrate Type: Sand

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

shoal(s) present  / N point bar present  / 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: Y  / N oiled Y / 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>925</u> <u>926</u> A			<u>X</u>	<u>X</u>	<u>25</u>	<u>2</u>	<u>60</u>			<u>S</u>	<u>P</u>	<u>.</u>	<u>X</u>										<u>Sand/veg</u>	
B			<u>X</u>	<u>X</u>	<u>630</u>	<u>2</u>	<u>0</u>													<u>X</u>			<u>Sand/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	TR					NO

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

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

Zone A has stream and could veg (primarily grass)

Veg needs to be cut and/or trimmed and removed.



DB/GIS

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident PARTIAL SURVEY

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 13/08/2011	Time (24h): std / daylight 1020 hrs to 1143 hrs	<b>Water Level</b> low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: C10 <u>Left Bank</u> / Right Bank / Island				
Operations Division: C				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>25</u> deg C

<b>2 SURVEY TEAM # 3</b>	Name	Organization	Signature
Richard Marty		Polaris	<i>Richard Marty</i>
Rachelle Thompson		USEPA	<i>Rachelle Thompson</i>
Matthew Kent		State of Montana, DEQ	<i>Matthew Kent</i>

**3 SEGMENT** Total Segment/Reach Length 670 m Segment/Reach Length Surveyed 295 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 S \_\_\_\_\_ 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 X Substrate Type: Silt/mud

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

**4C RIVER CHANNEL CHARACTER** circle or select as appropriate

est. width: <1m 1-10m 10-100m >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: Must have landowner permission

Oiled trees/shrubs Y RM 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	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			
A				X	75	30	<1		P	S														On and in vegetation
B			S	P	295	<u>300</u>	0																X	All

**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		
None																								

**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

This survey is limited to the southern portion of the segment because the shoreline of the northern portion of the segment is dominated by steep cliffs at the water's edge. This northern portion could not be surveyed by foot.

Oiling in Zones A is primarily balls of oil and debris trapped on branches of bushes and small trees. The oiling is not abundant and is not readily transferable. Natural Attenuation is appropriate for this oiling.

Sketch Yes / No Photos Yes / No Frames \_\_\_\_\_ Photographer \_\_\_\_\_

C10LB

Team 3 - 13 August 2011



Zone A = <1% 75m  
Zone B = N00. 295m.

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>10</u>	<u>Left Bank</u> Right Bank / Island	<u>8/20/11</u>	<u>1400</u> hrs to <u>1730</u> hrs	low - (mean) - bankfull - overbank
Operations Division: <u>C</u>				(falling) - steady - rising
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook / _____	<u>(Sun)</u> / Clouds / Fog / Rain / Snow / Windy / Calm			Air Temp +/- <u>29</u> deg C

2 SURVEY TEAM #	Name	Organization	Signature
<u>92</u>	<u>Joe Busalacchi - Cardno Entry</u>	<u>Cardno ENTRIX</u>	<u>[Signature]</u>
	<u>Amal Blanc - Polaris</u>	<u>Polaris</u>	<u>[Signature]</u>
	<u>Jessica Ross - DEQ</u>	<u>M DEQ</u>	<u>[Signature]</u>
	<u>John Davis - DEQ</u>	<u>USGS</u>	
	<u>Joe Boyle</u>		

**3 SEGMENT** Total Segment/Reach Length 620 m Segment/Reach Length Surveyed 620 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/Rock (P) Shelf \_\_\_\_\_ Manmade: Solid \_\_\_\_\_ Permeable \_\_\_\_\_ (type) \_\_\_\_\_ Wetland: Swamp \_\_\_\_\_ Bog/Fen \_\_\_\_\_ Marsh \_\_\_\_\_

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

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 P confined or leveed \_\_\_\_\_

Sloped: \_\_\_\_\_ (>5°)(15°)(30°) straight X braided \_\_\_\_\_ oxbow \_\_\_\_\_ flood plain valley \_\_\_\_\_

Substrate Type: Mixed

Forested / Vegetated / Bare \_\_\_\_\_

**4C RIVER CHANNEL CHARACTER** circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 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 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: Boat Access

**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>X</u>	<u>620</u>	<u>2</u>	<u>0</u>														<u>X</u>	<u>B</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	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

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

Zone A - NOO

Sketch Yes / No Photos Yes / No Frames \_\_\_\_\_ Photographer \_\_\_\_\_





## **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 C10 RB

Date of Survey Sept 6, 2011

SCAT Team Member Adam Bausch

Signed: [Signature]

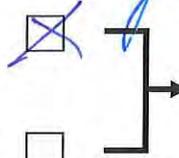
SCAT Team Member Jay Watson

Signed: [Signature]

SCAT Team Member Mike Shannon

Signed: [Signature]

### 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.

Partial ReSCAT revealed zone of tarballs and tar coat on vegetation and woody debris patchy ~30% distribution  
Recommend Hot Shot Ops crew of 5-10 for 4-6 hrs to clean area before ReSCAT can be completed

Zone Dimensions: Length 250m Width 72m GPS Waypoint: Lat. 45°30'15.88"N Long. 108°25'16.37"W  
(required) (center of zone)

Estimated Work Effort: Number of People 5-10 Hours of Work 4-6 <sup>CTR</sup> Access Issues? \_\_\_\_\_  
(required)

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

Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_

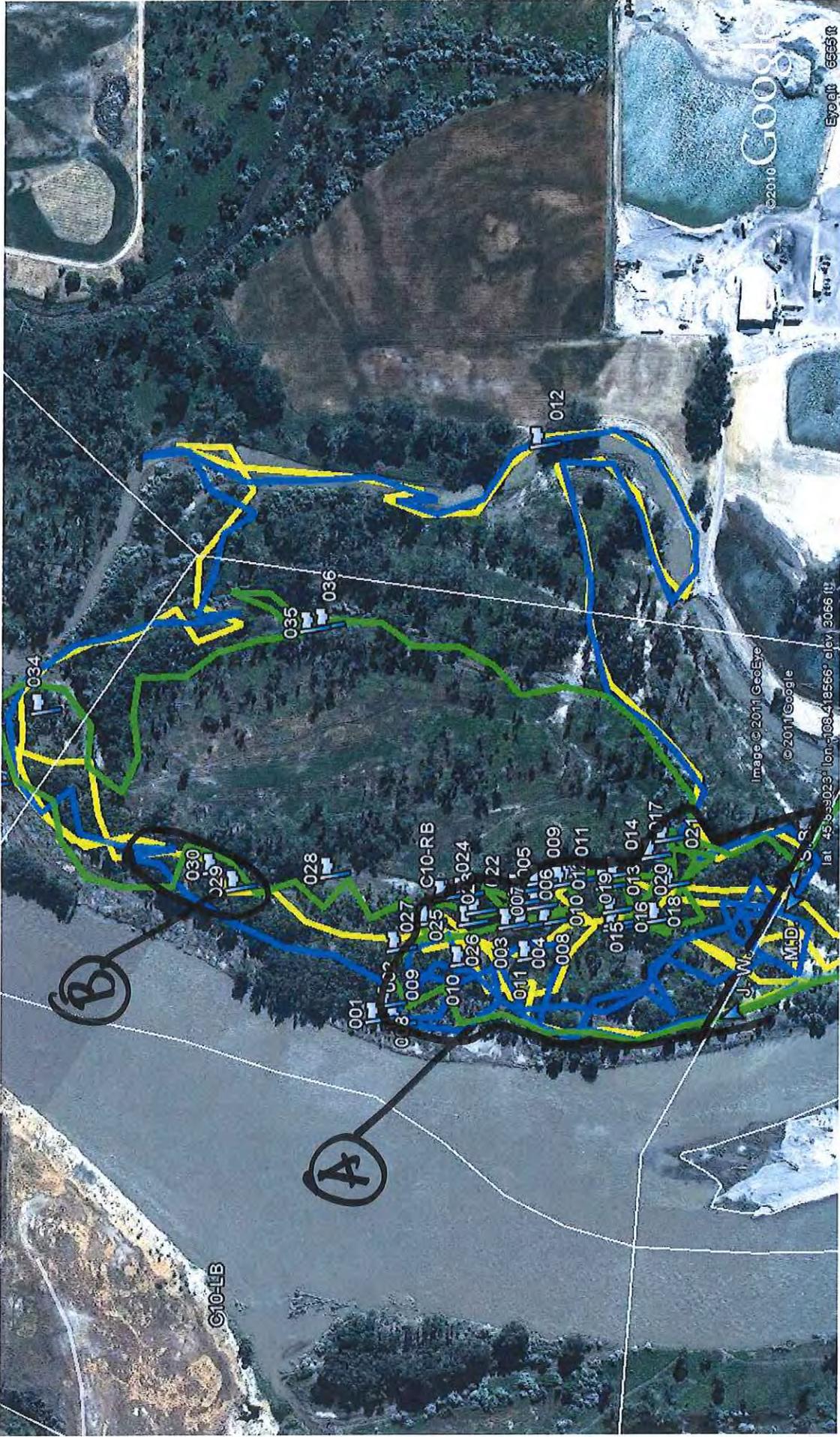
Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_  
Silvertip Pipeline Response Updated: 8/29/2011



## **Appendix E**

Final SCAT Survey Forms  
and Sketches





SCAT TEAM 4 09/09/11 C10 RB

ZONES A & B: NO FURTHER TREATMENT

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 23/09/11	Time (24h): std / daylight 1400 hrs to 1500 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: C <u>10</u> Left Bank / <u>Right Bank</u> / Island		Operations Division: C		
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>36</u> deg C

<b>2 SURVEY TEAM # 1</b>	Name	Organization	Signature
Todd Farrar		Polaris	<i>[Signature]</i>
Pete Lee		Polaris	<i>[Signature]</i>
Jeffrey Frank Herrick		MTDEQ	<i>[Signature]</i>

**3 SEGMENT** Total Segment/Reach Length 620 m Segment/Reach Length Surveyed 620 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: 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: \_\_\_\_\_

Sloped: \_\_\_\_\_ (>5°)(15°)(30°) straight \_\_\_\_\_ braided X 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 m est. water depth: <1m 1-3m >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	
A				<u>X</u>	620	390	<1			<u>S</u>	<u>P</u>						<u>X</u>					Grass, trees, debris

**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 height: 30-60 cm

Treatment recommendations:

Zone A : Sporadic CT with primary ST on woody debris and shrubs. Hot Shot Ops crew treated oiled material; NO Further Treatment (NFT)

Sketch Yes / No Photos Yes / No Frames \_\_\_\_\_ Photographer \_\_\_\_\_

9/23/2011 4:23 pm

Team 1  
C10 RB  
Sept 23, 2011

C10-LB

C10-RB

2-Zone  
A  
NFT

Johnson Ln

-LB

Image © 2011 GeoEye  
© 2011 Google

45°50'19.98" N 108°25'10.54" W elev 3066 ft

1996

Eyealt



D/B/G

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: C10 <u>Left Bank / Right Bank / Island</u>		06/09/11	1320 hrs to 1455 hrs	low - <u>mean</u> - bankfull - overbank
Operations Division: C				falling - steady - rising
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- 8.5 ° F

<b>2 SURVEY TEAM # 4</b>	Name	Organization	Signature
Michael Dirks		Cardno ENTRIX	<i>Michael P. Dirks</i>
Earl Radonski		MTFWP	<i>Earl Radonski</i>
Jamel Dallas		USCG	

<b>3 SEGMENT</b>	Total Segment/Reach Length _____ m	Segment/Reach Length Surveyed <u>343</u> m
Start GPS: LATITUDE _____ deg. _____ min.	LONGITUDE _____ deg. _____ min.	Datum: <u>WGS84</u>
End GPS: LATITUDE _____ deg. _____ min.	LONGITUDE _____ deg. _____ min.	

<b>4A RIVER BANK TYPE</b>				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 _____		Vegetated Bank: <u>S</u>		Wooded Upland: <u>P</u>
Sediment Bank: Clay/Mud _____ Sand x _____	Mixed <u>x - P</u>	Pebble/Cobble _____	Boulder _____	Peat/Organic _____	If snow and ice use Winter River SOS		
Sediment Flat: Clay/Mud x _____ Sand _____	Mixed/Coarse _____	Other: _____					

<b>4B RIVER VALLEY CHARACTER</b>				select as appropriate				complete for primary			
Cliff or Bluff: <u>x</u> Est Height <u>10</u> m	canyon _____	manmade _____	meander _____	confined or leveed _____	Substrate Type: <u>soil/sand</u>						
Sloped: <u>&gt;5°</u> (15°)(30°)	straight _____	braided <u>x-S</u>	oxbow _____	flood plain valley <u>x-P</u>	Forested / Vegetated / Bare						

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

<b>5 OPERATIONAL FEATURES</b>		Suitable backshore staging <u>Y/N</u>	Access: Direct from backshore <u>Y/N</u> Alongshore from next segment <u>Y/N</u>
Debris: <u>Y/N</u> oiled <u>Y/N</u> amount <u>2</u> bags or _____ trucks		access restrictions:	
Oiled trees/shrubs <u>Y/N</u> River Current strong <u>Y/N</u>		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)		
					Length	Width	Distrib.	THICKNESS					CHARACTER									
	MS	LB	UB	OB	m	m	%	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO	
A		P	S		40	35	1			P	S						X					Sand, shrubs, grass, trees, debris piles
B			P	S	270	273	0													X		Sand, shrubs, grass, trees, debris piles
C			P	S	33	33	1			P	S						X					Sand, shrubs, grass, trees, debris piles

**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

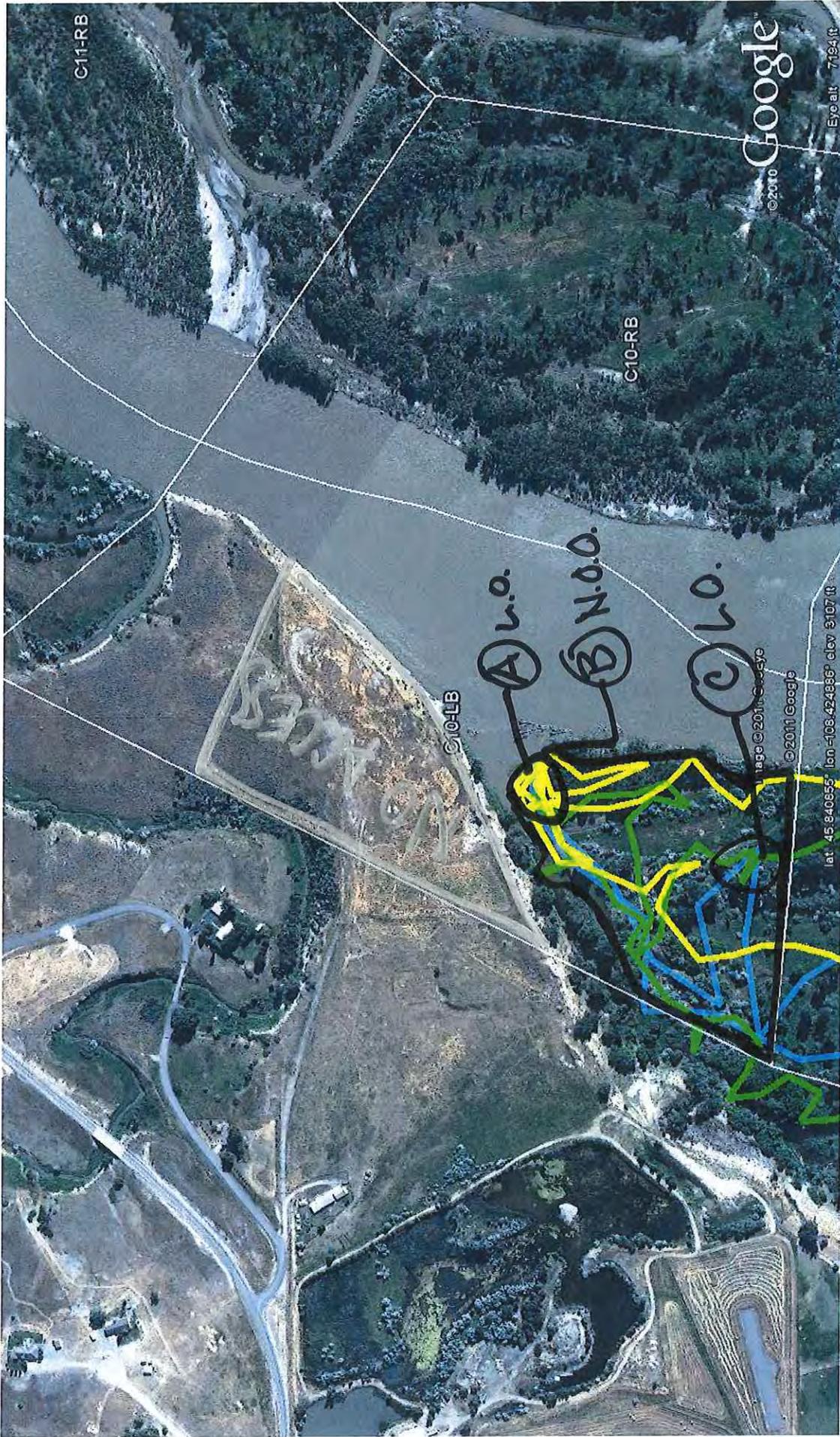
Overbank Survey Required Y/N Overbank Survey Completed Y/N Shoreline Survey Completed Y/N

RESCAT

Zones A & C: Light treatment by previous teams. Vegetation with stain and light coat trimmed, debris removed and dust fixative applied to large tree trunks (ATM#1,2 & 9). No further treatment recommended by consensus.

Zones B: No oil observed. No further treatment recommended by consensus.

Sketch Yes / No    Photos Yes / No    Frames/Photographer: \_\_\_\_\_



09/06/11 SCAT TEAM 4

- ZONE A: LIGHT OIL, ATM#1, ATM#2 & ATM#8 BY HOT SHOTS. N.F.T
- ZONE B: NO OIL OBSERVED, N.F.T.
- ZONE C: LIGHT OIL, ATM #1, ATM #2 &

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: C10	Left Bank / Right Bank / Island			low - mean - bankfull - overbank
Operations Division: C		07/09/11	1000 hrs to 1030 hrs	falling - steady - rising
Survey by: Foot / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- 8.5 ° F

<b>2 SURVEY TEAM # 4</b>	Name	Organization	Signature
Michael Dirks		Cardno ENTRIX	<i>Michael P. Dirks</i>
Brad Olszeski		MTFWP	<i>Brad Olszeski</i>
Jamel Dallas		USCG	

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 10 m

Start GPS: LATITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. LONGITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. Datum: WGS84

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 x \_\_\_\_\_ Mixed x - P. Pebble/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: P Wooded Upland: S

Sediment Flat: Clay/Mud x \_\_\_\_\_ 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: x Est Height 10 m canyon \_\_\_\_\_ manmade \_\_\_\_\_ meander \_\_\_\_\_ confined or leveed \_\_\_\_\_ Substrate Type: soil/sand

Sloped: >5°(15°)(30°) straight \_\_\_\_\_ braided x-S oxbow \_\_\_\_\_ flood plain valley x-P 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 0 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		P	S		10	10	0														X	Sand, shrubs, grass trees, debris piles

**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				

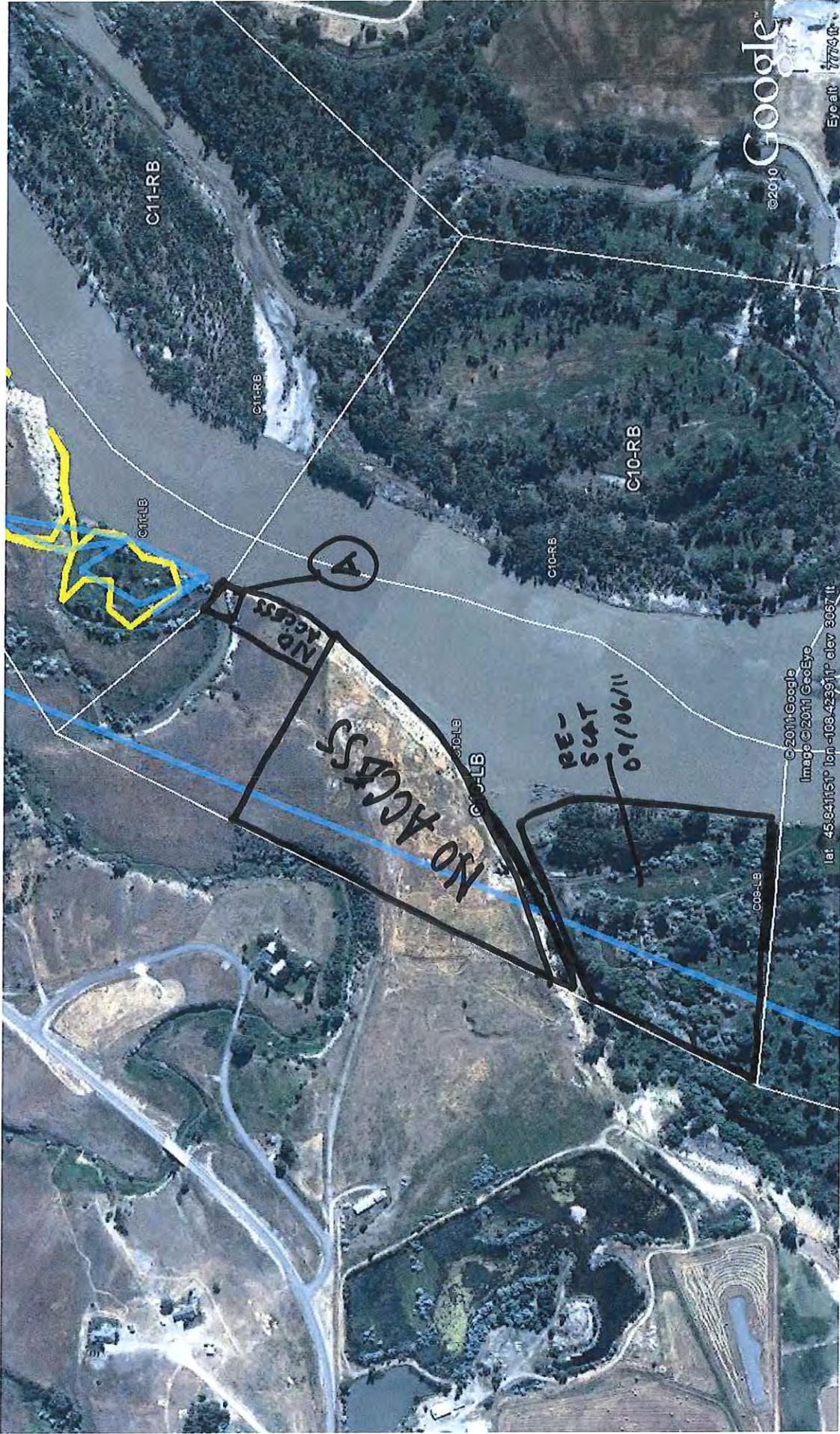
**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

RESCAT

Zones A: No further treatment recommended by consensus.

Sketch Yes / No Photos Yes / No Frames/Photographer: \_\_\_\_\_



09/07/11 ZONEA: NFT

SCAT 4



## **Appendix F**

Completed SCAT Segment  
Sign-Off Forms

# SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

## SILVERTIP PIPELINE RELEASE

Segment C10 RB Date of Survey 09/09/11

Dates of Initial SCAT Assessments 2750C11 (PL)  
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 60

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

Segment Assessment Complete<sup>1</sup>

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)**

Jay Watson \_\_\_\_\_ JAY WATSON FWP \_\_\_\_\_ 9/9/11  
Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_  
**State Representative (DEQ/FWP)**

Michael D. Dirks \_\_\_\_\_ MIKE DIRKS / Cardno ENTRY \_\_\_\_\_ 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.

<sup>1</sup> 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 C10-RB Date of Survey Sept. 23, 2011

Dates of Initial SCAT Assessments 27 Jul 2011 (R)  
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 60

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

Segment Assessment Complete<sup>1</sup>   
 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 Present*

Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_  
**Federal Representative (EPA/USCG)**

Sign Name Jeffrey Frank Herrick Print Name/ Affiliation MT DEQ Date 23 Sept. 2011  
**State Representative (DEQ/FWP)**

Sign Name Todd Farrar Print Name/ Affiliation Todd Farrar / Polaris Date 9/23/11  
**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.

<sup>1</sup> 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 C10 LB Date of Survey 06/09/11

Dates of Initial SCAT Assessments 27 JUL 11 (2)  
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment CTR 60

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

Segment Assessment Complete<sup>1</sup>

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).*

Jamel H. Dallas JAMEL H. DALLAS 9/7/11  
Sign Name Print Name/ Affiliation Date  
**Federal Representative (EPA/USCG)**

Earl Radonski Earl Radonski 9/7/11  
Sign Name Print Name/ Affiliation Date  
**State Representative (DEQ/FWP)**

Michael D. Dirks MIKE DIRKS / Cardno ENTRIX 09/06/11  
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.

<sup>1</sup> 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 C10 LB Date of Survey 09/07/11

Dates of Initial SCAT Assessments 27 JUL 11 (LB)  
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 60

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

Segment Assessment Complete<sup>1</sup>

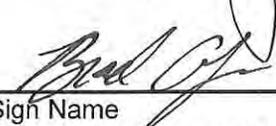
Partial Segment Assessment

*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).*

  
Sign Name \_\_\_\_\_ Print Name/ Affiliation JAMEL H. DAWAS Date 9/7/11  
**Federal Representative (EPA/USCG)**

  
Sign Name \_\_\_\_\_ Print Name/ Affiliation BRAD OUZENSKI / FWP Date 9/7/11  
**State Representative (DEQ/FWP)**

  
Sign Name \_\_\_\_\_ Print Name/ Affiliation MIKE DIRKS / Cardno ENERGY Date 09/07/11  
**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.

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