

**ExxonMobil Pipeline Company**

**SCAT Area Transition Report for  
B28**

Silvertip Pipeline Incident  
Laurel, Montana

October 20, 2011



## **SCAT Area Transition Report for B28**

Silvertip Pipeline Incident  
Laurel, Montana

Prepared for:  
ExxonMobil Pipeline Company

Prepared by:  
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Our Ref.:  
B0085883.1103

Date:  
October 20, 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 B28, 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 B28. 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 B28, 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 B28 is 42.0. There were access issues associated with the right bank.

### **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 B28. One light to moderately oiled Canada goose (*Branta canadensis*) was observed but not captured for cleaning. A deceased catfish (unknown species) and a deceased western silvery minnow (*Hybognathus argyritis*) with no visible oiling were identified and retained. No Wildlife Priority Cleanup Areas were identified. No active migratory bird nests were identified in Area B28.

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

Table 1 (below) summarizes samples collected within Area B28. 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 B28 are provided on Figure 3.

**Table 1 Environmental Sampling Summary**

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
CTEH	BIMT0725SW613	7/25/11	Water_Surface	B28	45.7383	-108.5348
EPA	SPSO127D01_071511	7/15/11	Soil_Surface	SPSO127	45.7349534	-108.5304283

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, one exceedence is shown for benzene.

**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 B28 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area B28.

**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. 37](#) and [CTR No. 38](#)).

**1.6 Oil Removal Activities**

Oil removal activities were conducted within Area B28 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 B28 and developed a Pre-Inspection Survey Transmittal (PIST) associated with the left bank within Area B28, which is presented in Appendix C.

### **1.8 Post-Inspection Survey Transmittal**

A Post-Inspection Survey Transmittal (POST) was not conducted for this area.

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

Figure 5 shows the oiling conditions within Area B28 following completion of oil removal activities. The SCAT team performed final surveys of the right and left banks within SCAT Area B28 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 B28, no further treatment is recommended for this area. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition  
Report for B28**

Silvertip Pipeline Incident  
Laurel, Montana

**2. Transition Sign-Off Form**

**SCAT Area Transition Report for B28**

**Prepared for:**

**Unified Command**

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Date

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Unified Command – RP



SCAT Area Transition  
Report for B28

Silvertip Pipeline Incident  
Laurel, Montana

SCAT Area Transition Report for B28

Prepared for:

Unified Command

10/11/2011

Date

  
S. MERRIS  
Unified Command – FOSC



**SCAT Area Transition  
Report for B28**

Silvertip Pipeline Incident  
Laurel, Montana

**SCAT Area Transition Report for B28**

**Prepared for:**

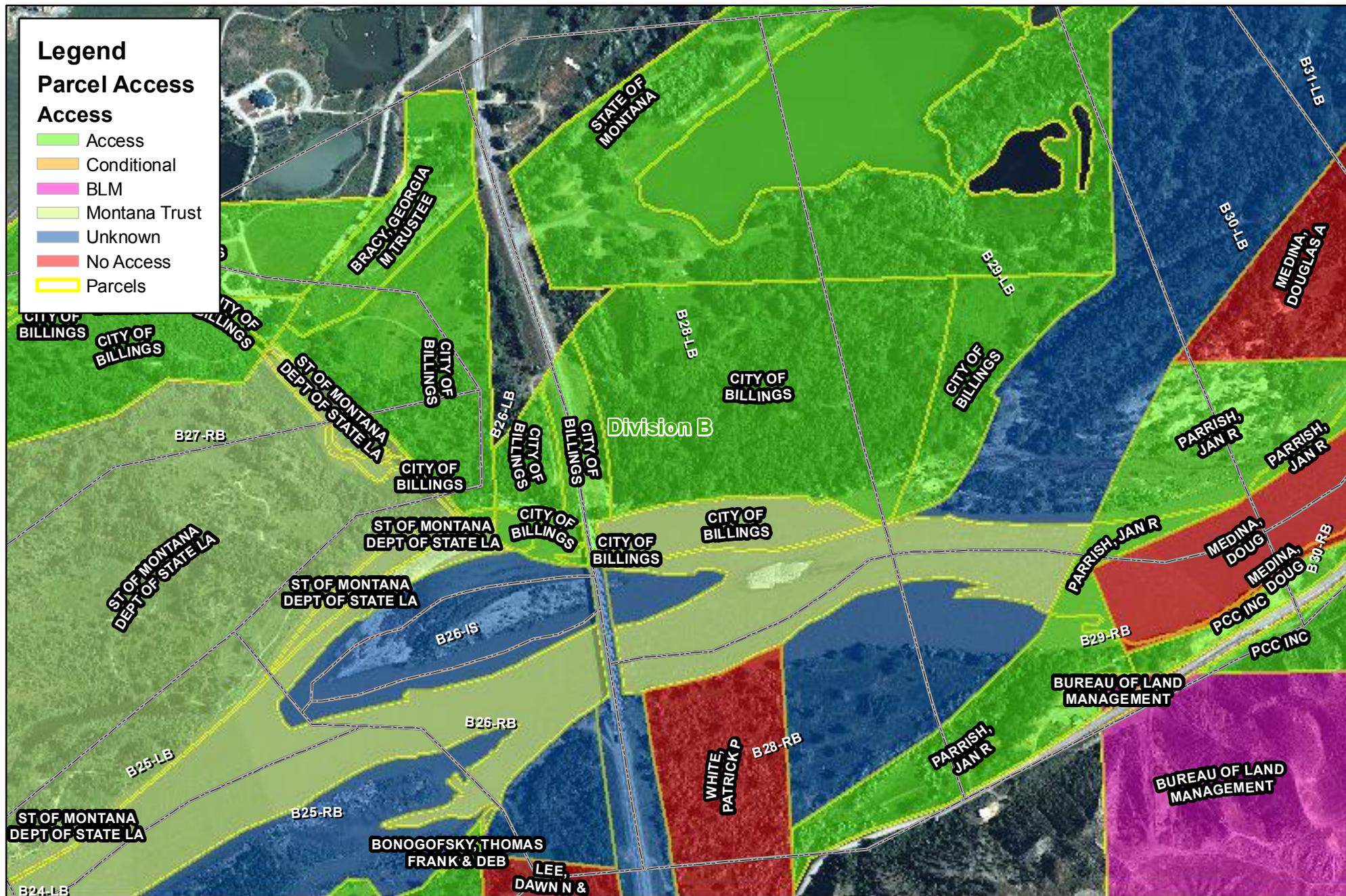
**Unified Command**

---

Date

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Unified Command – MDEQ



**Legend**

**Parcel Access**

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

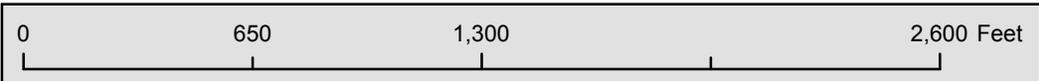
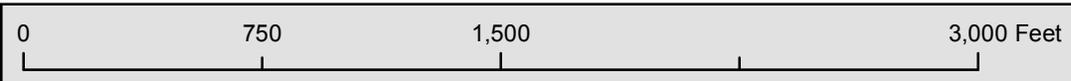
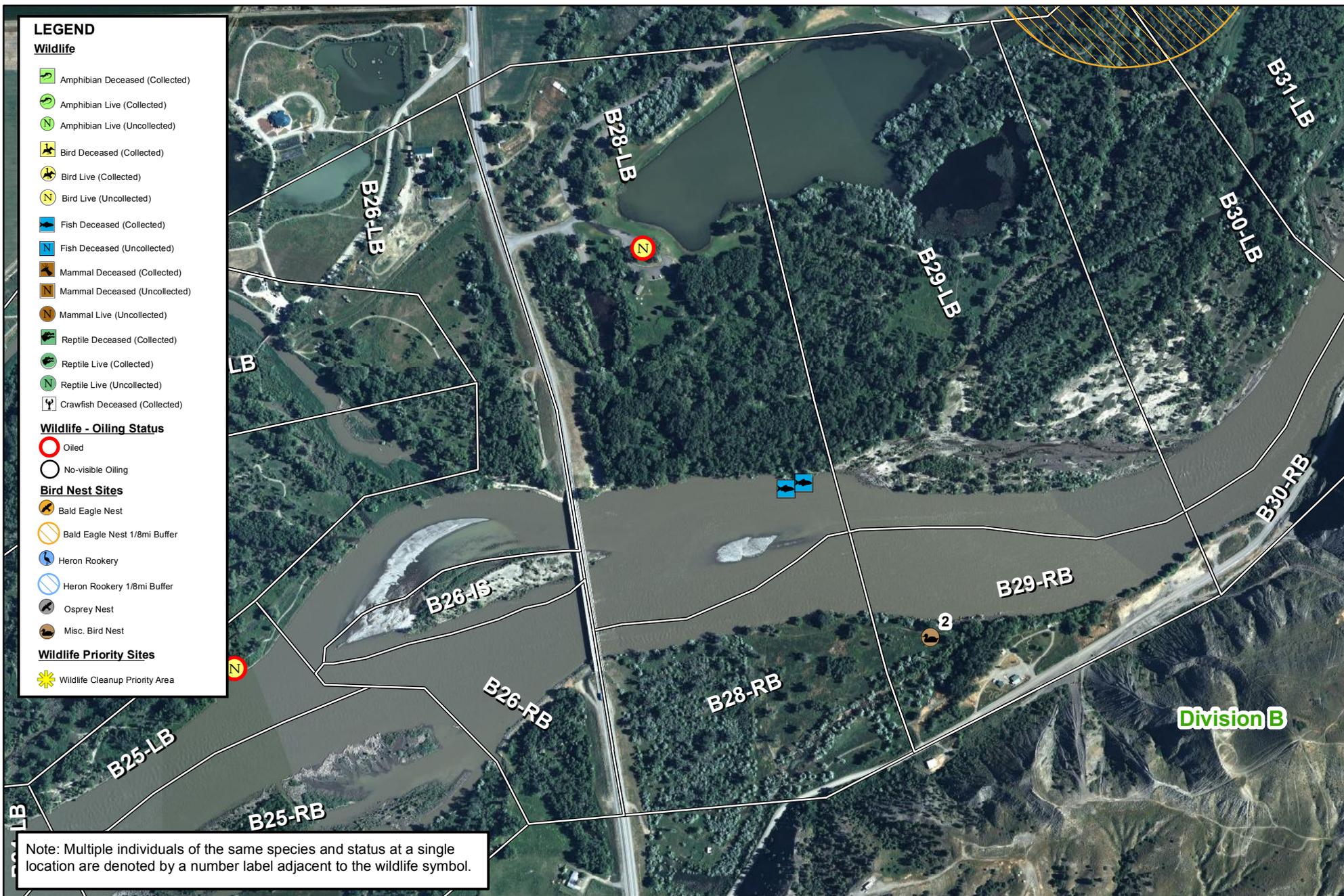


Figure 1

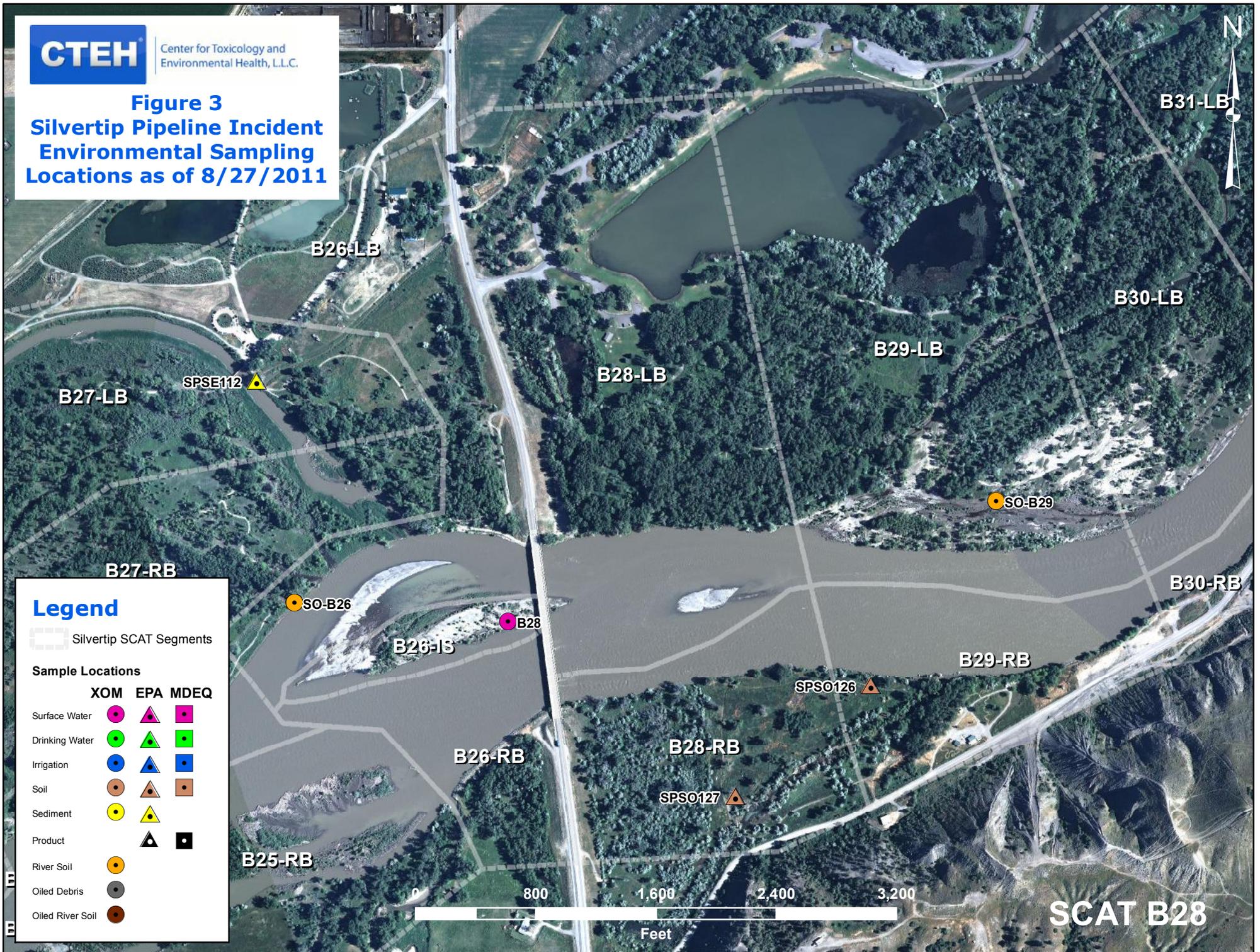


**Figure 2**  
**Wildlife Resources**



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

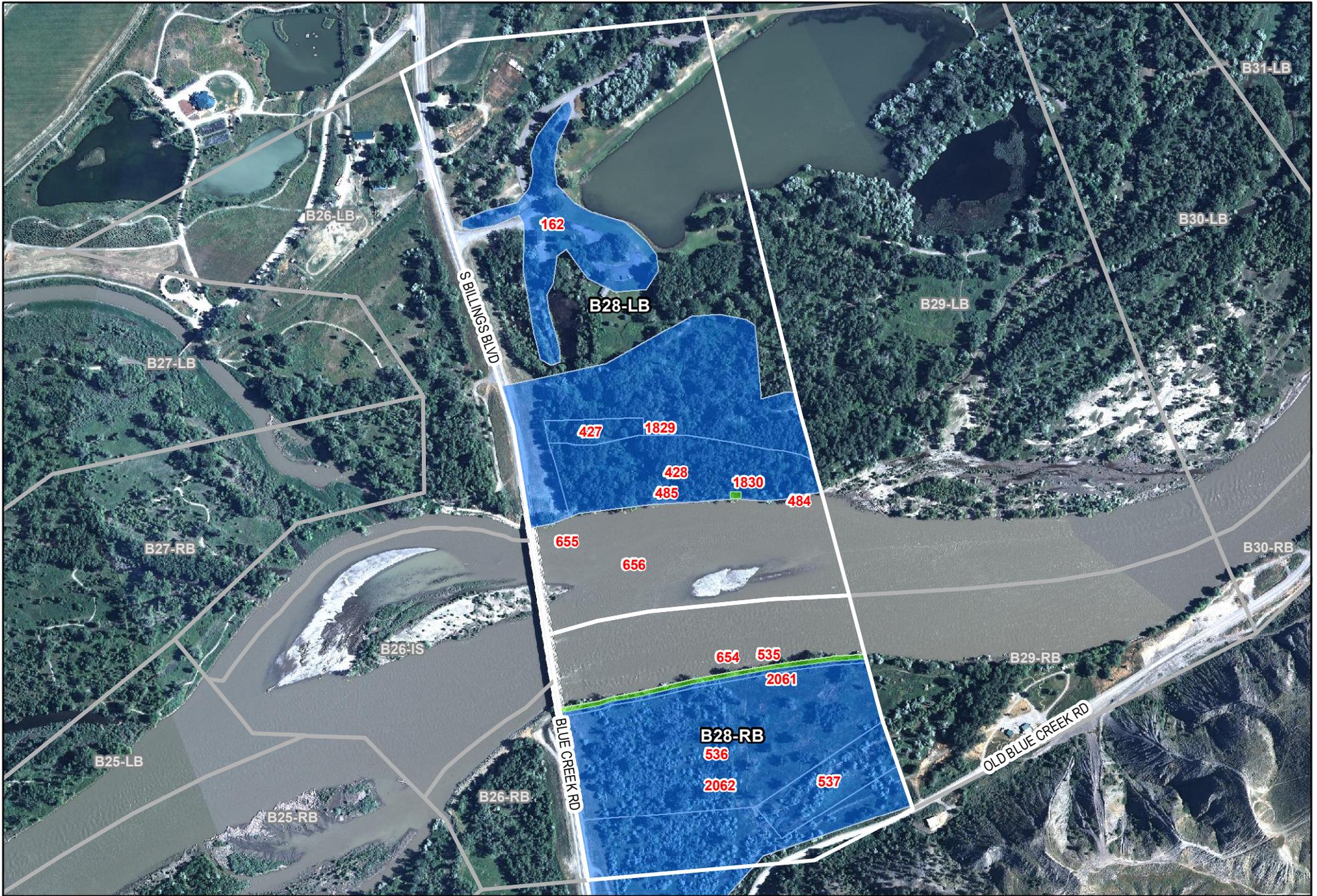
	XOM	EPA	MDEQ
Surface Water			
Drinking Water			
Irrigation			
Soil			
Sediment			
Product			
River Soil			
Oiled Debris			
Oiled River Soil			

**SCAT B28**



**Figure 4 - Maximum SCAT Observations For SCAT Area: B28**





	<b>9999</b> Oiling Zone ID		Light Oiling
	Heavy Oiling		Very Light Oiling
	Moderate Oiling		No Oil Observed



**Figure 5 - Final SCAT Observations  
For SCAT Area:**





## **Appendix A**

Sample Detections Summary



## Detections in Samples Collected in SCAT Area B28

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
BIMT0725SW613	07/25/2011	Field	Water_Surface	EPA 6020	Arsenic	Y	8.5	10		ug/L	no
BIMT0725SW613	07/25/2011	Field	Water_Surface	EPA 6020	Barium	Y	43.6	1000		ug/L	no
BIMT0725SW613	07/25/2011	Field	Water_Surface	EPA 6020	Calcium	Y	17400	NA		ug/L	no
BIMT0725SW613	07/25/2011	Field	Water_Surface	EPA 6020	Chromium	Y	1.7	100		ug/L	no
BIMT0725SW613	07/25/2011	Field	Water_Surface	EPA 6020	Lead	Y	1.2	15		ug/L	no
BIMT0725SW613	07/25/2011	Field	Water_Surface	EPA 6020	Magnesium	Y	5740	NA		ug/L	no
BIMT0725SW613	07/25/2011	Field	Water_Surface	EPA 6020	Nickel	Y	2.6	100		ug/L	no
BIMT0725SW613	07/25/2011	Field	Water_Surface	EPA 6020	Potassium	Y	2010	NA		ug/L	no
BIMT0725SW613	07/25/2011	Field	Water_Surface	EPA 6020	Sodium	Y	9770	NA		ug/L	no
BIMT0725SW613	07/25/2011	Field	Water_Surface	SM 2540D	Total Suspended Solids	Y	99.7	NA		mg/L	no
BIMT0725SW613	07/25/2011	Field	Water_Surface	EPA 6020	Vanadium	Y	3.5	180		ug/L	no
SPSO127D01_071511	07/15/2011	Field	Soil_Surface	MADEP VPH	Benzene	Y	0.046	0.04		mg/kg	YES



## **Appendix B**

Initial SCAT Survey Forms and  
Sketches



RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b> <i>Right Bank</i>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>B-28</u>	Left Bank <del>Right Bank</del> Island	19/07/11		low - mean <del>bankfull</del> overbank
Operations Division: B			hrs to	hrs <del>falling</del> steady - rising
Survey by: Foot / ATV / <del>Boat</del> Helicopter / Overlook /		(Sun) 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 50 m Segment/Reach Length Surveyed 381 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 \_\_\_\_\_ 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 \_\_\_\_\_ 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 \_\_\_\_\_ 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
<u>A</u>				X	<u>50</u>		<u>1</u>														<u>veg bank</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

OSR = 4      OSC = unknown      SSC = unknown

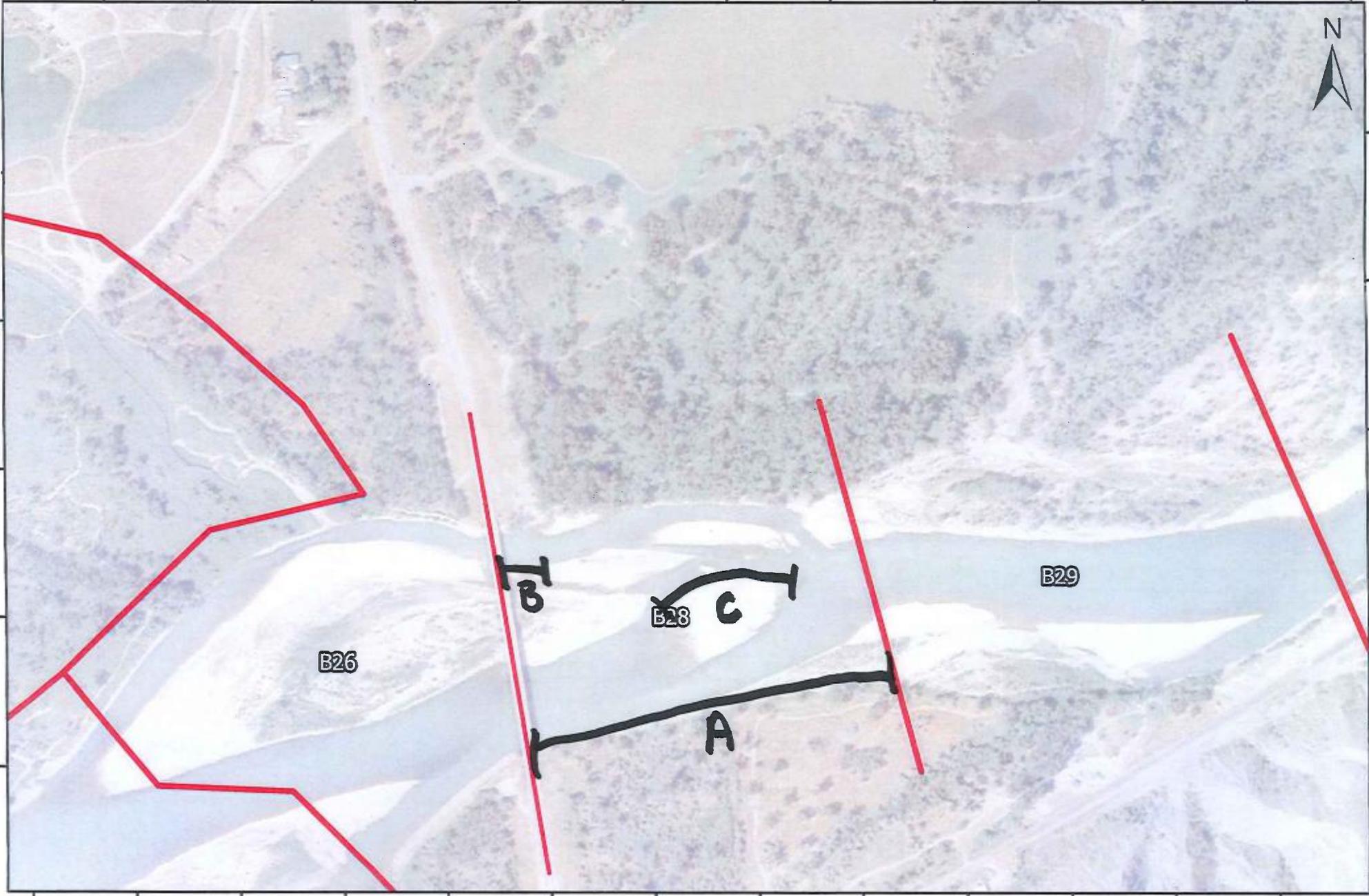
(for ALL sub-segments record: sub-segment ID, length, length surveyed, and GPS start/end fixes)

Sketch Yes/No Photos Yes/No (Roll # 5200 Frames 5200) Video Tape Yes/No (tape#)

108°32'20"W 108°32'15"W 108°32'10"W 108°32'5"W 108°32'0"W 108°31'55"W 108°31'50"W 108°31'45"W 108°31'40"W 108°31'35"W 108°31'30"W 108°31'25"W 108°31'20"W



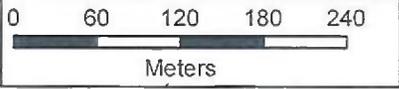
45°44'30"N  
45°44'25"N  
45°44'20"N  
45°44'15"N  
45°44'10"N  
45°44'5"N



**B28** -  
(L/R/I)??

DATE:  
TEAM:

COMMENTS:



108°32'25"W 108°32'20"W 108°32'15"W 108°32'10"W 108°32'5"W 108°32'0"W 108°31'55"W 108°31'50"W 108°31'45"W 108°31'40"W 108°31'35"W 108°31'30"W 108°31'25"W



DB/G/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 1

1 GENERAL INFORMATION  
 Segment/Reach ID: 822 Left Bank / Right Bank / Island  
 Date (dd/mm/yy) 22/07/11 Time (24h): std / daylight 13:15 hrs to 15:15 hrs  
 Water Level low - mean - bankfull - overbank  
 Operations Division: falling steady - rising  
 Survey by: Foot/ATV / Boat / Helicopter / Overlook / \_\_\_\_\_ Sun / Clouds / Fog / Rain / Snow / Windy / Calm Air Temp +/- 22 deg C

2 SURVEY TEAM # 4  
 name organization contact phone number  
John Matousek Cardan ENTRYX 989 277 2507  
Gary Riley EPA  
Courtney Taylor FWP 406 860 7814  
Justin Adkale FWP 406 697 3442

3 SEGMENT Total Segment/Reach Length 390 m Segment/Reach Length Surveyed 390 m  
 Start GPS: LATITUDE 45 deg. 44.152 min. LONGITUDE 108 deg. 32.009 min. Datum: WGS 84  
 End GPS: LATITUDE 45 deg. 44.194 min. LONGITUDE 108 deg. 31.725 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 P confined or leveed \_\_\_\_\_ Substrate Type: Veget  
 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 m est. water depth: <1m 1-3m 3-10m >10m m  
 shoal(s) present Y point bar present Y bar-shoal substrate: silt / sand / gravel / cobble / boulder / bedrock / debris  
 seasonal water level: low / mean / bank full / overbank flow est. change over next 7 days: falling - same - rising

5 OPERATIONAL FEATURES Sullable backshore staging Y/N Access: Direct from backshore Y/N Alongshore from next segment Y/N  
 Debris: X/N oiled X/N amount \_\_\_\_\_ bags or \_\_\_\_\_ trucks access restrictions  
 Oiled trees/shrubs Y/N River Current strong Y/N Other Features: Access along S. Billings Road

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

535  
536  
537

OIL ZONE	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		S		P	390	10	20			P	S						P					Veget
B				P	390	230	0														Neo	Veget
C				P	180	3%	30			P	S						P					Veget

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 (1) overbank survey complete (1) shoreline survey complete (1)  
 Zone A: Recommend low priority Vegetation Cut + Removal Along shoreline  
 Zone B: No oil  
 Zone C: Slough area inundated with cut oil Recommend cut + removal of vegetation along edge of slough

(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 # \_\_\_\_\_)

DB 16/5

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 1

**1 GENERAL INFORMATION**  
 Segment/Reach ID: B22 Left Bank / Right Bank / Island  
 Date (dd/mm/yy): 22/07/11 Time (24h): std / daylight 13:15 hrs to 15:15 hrs  
 Water Level: low - mean - bankfull - overbank  
 Operations Division: (falling) steady - rising

Survey by: (Foot) / ATV / Boat / Helicopter / Overlook /  
 Sun / (Clouds) / Fog / Rain / Snow / Windy / Calm Air Temp + / - 22 deg C  
**2 SURVEY TEAM #** 4 name organization contact phone number  
John Matousek Coordin ENTRIX 989 277 2587  
Gary Riley EPA  
Constance Tyler FWP 406 860 7814  
Natasha FWP 406 697 3412

**3 SEGMENT** Total Segment/Reach Length 398 m Segment/Reach Length Surveyed 398 m  
 Start GPS: LATITUDE 45 deg. 44.152 min. LONGITUDE 108 deg. 32.009 min. Datum: WGS 84  
 End GPS: LATITUDE 45 deg. 44.19 min. LONGITUDE 108 deg. 31.75 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 (P) Manmade: Solid (S) Permeable (type) (S) Wetland: Swamp Bog/Fen Marsh  
 Sediment Bank: Clay/Mud (S) Sand (S) Mixed (S) Pebble/Cobble (S) Boulder (S) Peat/Organic (S) Vegetated Bank: (P) Wooded Upland: (S)  
 Sediment Flat: Clay/Mud (S) Sand (S) Mixed/Coarse (S) Other: (S) If snow and ice use Winter River SOS

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

**4C RIVER CHANNEL CHARACTER** circle or select as appropriate  
 est. width: <1m 1-10m 10-100m (100m) >10m m est. water depth: <1m (1.3m) 3-10m >10m m  
 shoal(s) present (P) point bar present (P) 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 (P) amount (P) bags or (P) trucks access restrictions  
 Oiled trees/shrubs Y/N River Current strong Y/N Other Features: Access along S. Billing's bend

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

535  
536  
537

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		S		P	390	10	20			P	S						P					Veg	
B				P	390	220	0															None	Veg
C				P	180	30	30			P	S						P					Veg	

**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				

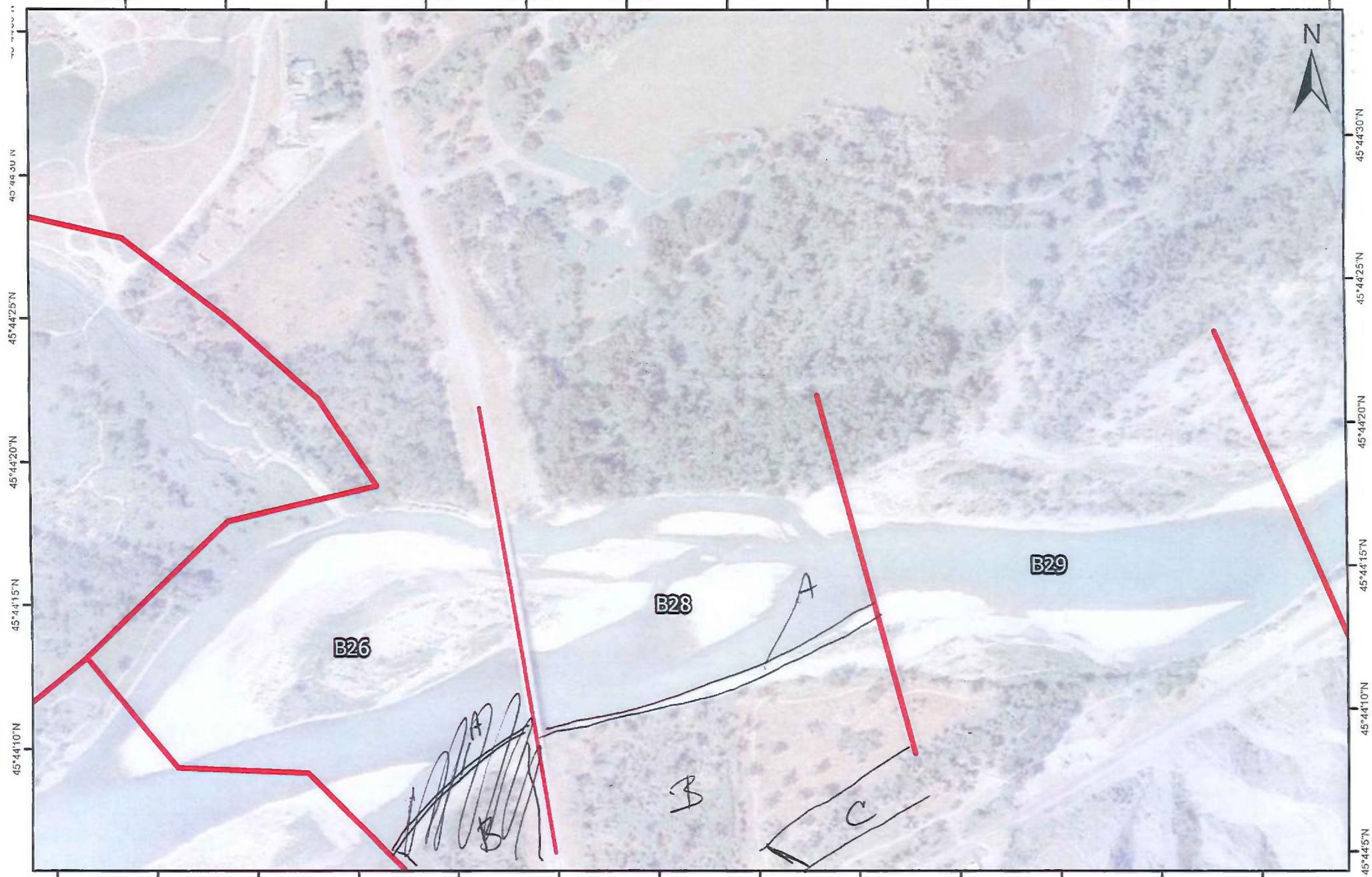
**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

overbank survey required (P) overbank survey complete (P) shoreline survey complete (P)  
 Zone A: Recommend Low Priority Vegetation Cut & Removal Along shoreline  
 Zone B: No oil  
 Zone C: Slough area inundated with cut oil Recommend cut & removal of vegetation along edge of slough

(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 # \_\_\_\_\_)

~~B28~~ B28 vs-28

108°32'20"W 108°32'15"W 108°32'10"W 108°32'5"W 108°32'0"W 108°31'55"W 108°31'50"W 108°31'45"W 108°31'40"W 108°31'35"W 108°31'30"W 108°31'25"W 108°31'20"W



**B28 -**  
(L/R/I)??

DATE:  
TEAM:

COMMENTS:



DB/G/Sc

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 12/07/2011	Time (24h): std / daylight 1440 hrs to 1502 hrs	<b>Water Level</b> low - mean - bankfull - overbank falling - steady - rising
Segment/Reach ID: B28 <u>Left Bank</u> / Right Bank/Island				
Operations Division: A				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - <u>27</u> deg C

<b>2 SURVEY TEAM # 3</b>	name	organization	contact phone number
Richard Marty		Polaris	208-360-0733 <i>Richard Marty</i>
Bruce Kvam <i>EBK</i>		Polaris	206-943-6904
Kim Dickerson <i>for 147</i>		US Fish and Wildlife	307-631-2031 <i>Kay</i>
Trevor Selch		Montana Fish and Game	406-444-5646
Travis Olson		US Coast Guard	608-566-9044 <i>Travis Olson</i>

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 580 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: \_\_\_\_\_

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: 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 177 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 \_\_\_\_\_ bags or \_\_\_\_\_ trucks access restrictions Existing trails can be used locked gate

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
<u>A</u>				<u>X</u>	<u>580</u>																<u>X</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
NONE																

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

Zone A is located in the overbank area in a region that has been flooded. No oil was observed on vegetation or on the water. Cleanup is not required.

(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 # \_\_\_\_\_)

DB/G/Se

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 12/07/2011	Time (24h): std / daylight 1440 hrs to 1502 hrs	Water Level low - mean - bankfull - overbank falling - steady - rising
Segment/Reach ID: B28 <u>Left Bank / Right Bank/Island</u>				
Operations Division: A				
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		<u>Sun / Clouds / Fog / Rain / Snow / Windy / Calm</u>		Air Temp +/- <u>27</u> deg C

<b>2 SURVEY TEAM # 3</b>	name	organization	contact phone number
Richard Marty		Polaris	208-360-0733
Bruce Kvam		Polaris	206-943-6904
Kim Dickerson		US Fish and Wildlife	307-631-2031
Trevor Selch		Montana Fish and Game	406-444-5646
Travis Olson		US Coast Guard	608-566-9044

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 580 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 \_\_\_\_\_ Shell \_\_\_\_\_ 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

Cliff or Bluff: \_\_\_\_\_ Est Height \_\_\_\_\_ m canyon \_\_\_\_\_ manmade \_\_\_\_\_ meander P confined or leveed \_\_\_\_\_

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

Substrate Type: Mud Forested / Vegetated / Bare

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

est. width: <1m 1-10m 10-100m >100m 177 m est. water depth: <1m 1-3m 3-10 m >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 Existing trails can be used locked gate

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	580																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				
NONE																

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

Zone A is located in the overbank area in a region that has been flooded. No oil was observed on vegetation or on the water. Cleanup is not required.

(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# \_\_\_\_\_)



Sketch Map  
B28 Left Bank  
12 July 2011

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

DBIG

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 19-Jul-2011	Time (24h): std / daylight 1023 hrs to 1028 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: B28 <u>Left Bank</u> / Right Bank / Island				
Operations Division: B				
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>31</u> deg C

<b>2 SURVEY TEAM # 1</b>	name	organization	contact phone number
Pete Lee	<i>PDL</i>	Polaris	
Larry Alheim	<i>LA</i>	MTDEQ	
Andy Johnson	<i>AJ</i>	USCG	<i>Andy Johnson</i>

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 381 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 S \_\_\_\_\_ Pebble/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Peal/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 20m 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 70 bags or \_\_\_\_\_ trucks access restrictions

Oiled trees/shrubs Y/N River Current strong Y/N Other Features: Hwy. 416 bridge is west segment boundary

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

483  
484  
485

OIL ZONE	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	38	1															X	Grass, trees, debris
B				X	78	1	100			X	X			X								Grass, trees, debris
C				X	265	1															X	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 band heights: Zone B - 40cm

**Treatment Recommendations:**  
 Zone A: No oil observed; no treatment required.  
 Zone B: Cut & remove oil coated vegetation smaller than 1" diameter. Wipe larger oil coated vegetation.  
 Zone C: No oil observed; no treatment 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 1166-1170 (Lee)

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 19-Jul-2011	Time (24h): std / daylight 3:28 1021 hrs to 1028 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady -- rising
Segment/Reach ID: B288 <u>Left Bank</u> / Right Bank / Island				
Operations Division: B				
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / <u>Windy</u> / Calm		Air Temp +/- <u>31</u> deg C

<b>2 SURVEY TEAM # 1</b>	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 467 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 S \_\_\_\_\_ Pebble/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Peal/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 400m 20 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 100 bags or \_\_\_\_\_ trucks access restrictions \_\_\_\_\_

Oiled trees/shrubs Y/N 10 River Current strong Y/N Other Features: HWY. 416 bridge at west boundary

**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	112	1															X	Grass, trees, debris
B				X	265	1	100			X	X			X								Grass, trees, debris
C				X	150	1															X	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 band heights: Zone B - 40cm

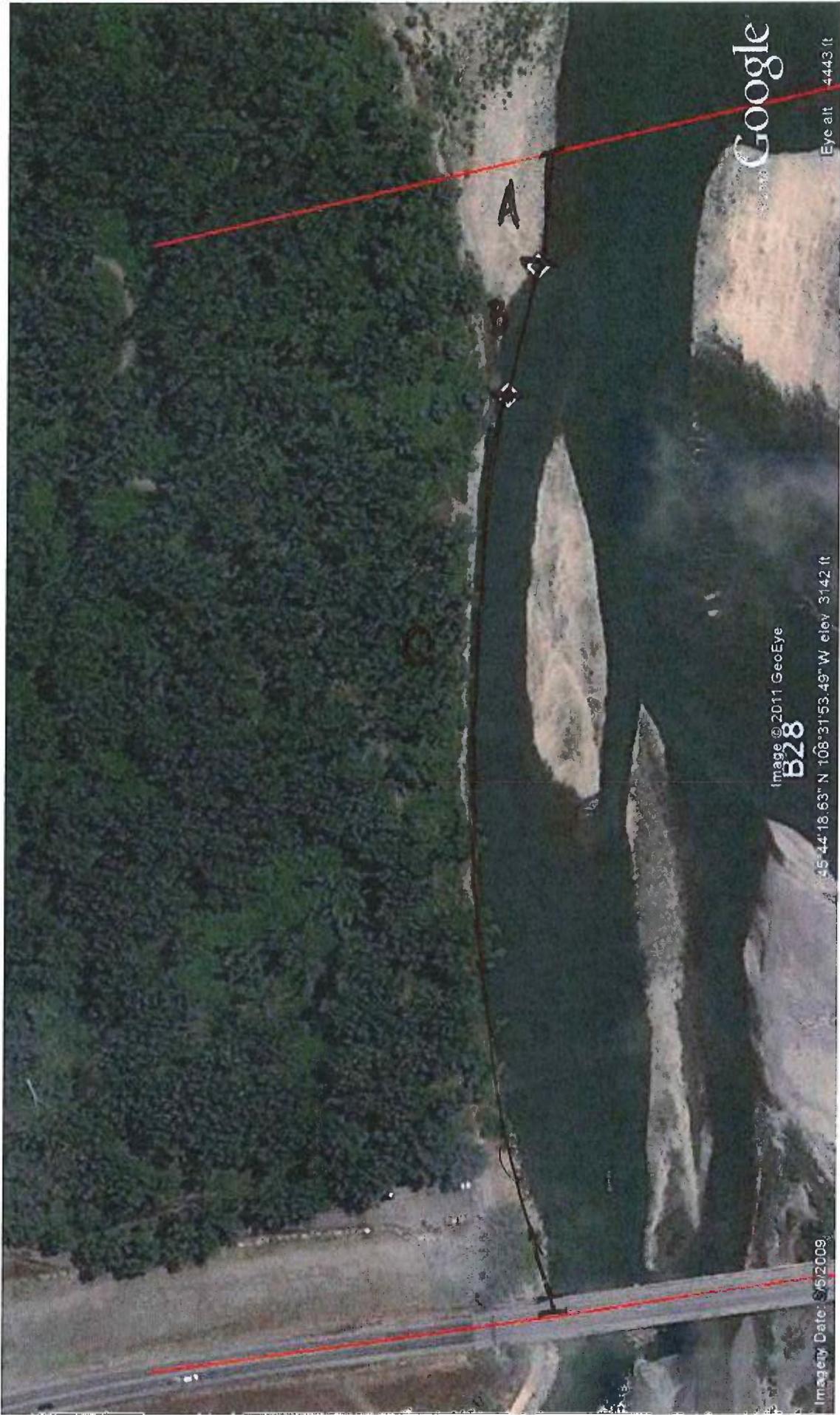
**Treatment Recommendations:**  
 Zone A: No oil observed; no treatment required.  
 Zone B: Cut & remove oil coated vegetation smaller than 1" diameter. Wipe larger oil coated vegetation.  
 Zone C: No oil observed; no treatment required.

\*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)

1166

Sketch Yes / No Photos Yes / No Frames 1456-1463 (Lee)

C = 143 + 157



Google

Eye alt 4443 ft

Image © 2011 GeoEye  
**B28**

45°44'18.63" N 108°31'53.49" W elev 3142 ft

Imagery Date: 5/5/2009

DB/G/S

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 07-21-11	Time (24h): std / daylight 11:22 hrs to 11:57 hrs	Water Level low - mean - <u>bankfull</u> - overbank <u>(falling)</u> - steady - rising
Segment/Reach ID: <u>B28</u> <u>Left Bank</u> / Right Bank / Island		Operations Division: <u>B</u>		
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		
		Air Temp +/- <u>28</u> deg C		

2 SURVEY TEAM # <u>2</u>	name	organization	contact phone number
	<u>Chuck Paris</u>	<u>Cardno ENTRIX</u>	<u>917-927-1154</u>
	<u>Ed Kiehl</u>	<u>MD DNR</u>	<u>406-461-3186</u>
	<u>Patrick Kriske</u>	<u>USCG</u>	<u>415-320-5348</u>

<b>3 SEGMENT</b>	Total Segment/Reach Length <u>350</u> m	Segment/Reach Length Surveyed <u>350</u> m
Start GPS: LATITUDE <u>45</u> deg. <u>44.775</u> min.	LONGITUDE <u>108</u> deg. <u>31.937</u> min.	Datum: <u>NAD83</u>
End GPS: LATITUDE <u>45</u> deg. <u>44.766</u> min.	LONGITUDE <u>108</u> deg. <u>31.765</u> 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	
Sediment Bank: Clay/Mud Sand <u>(P)</u> Mixed Pebble/Cobble <u>(S)</u> Boulder Peat/Organic	Vegetated Bank: <u>P</u>	Wooded Upland:	
Sediment Flat: Clay/Mud Sand Mixed/Coarse	Other:	If snow and ice use Winter River SOS	

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

<b>4C RIVER CHANNEL CHARACTER</b>				circle or select as appropriate
est. width: <1m 1-10m 10-100m >100m <u>180</u> m	est. water depth: <1m 1-3m <u>10</u> m >10m ___ m	shoal(s) present <u>(Y)</u> / N point bar present <u>(Y)</u> / N		bar-shoal substrate: silt / <u>sand</u> / gravel / <u>cobble</u> / boulder / bedrock / debris
seasonal water level: low / mean / <u>bank full</u> / overbank flow	est. change over next 7 days: <u>falling</u> - same - rising			

<b>5 OPERATIONAL FEATURES</b>		Suitable backshore staging Y/N	Access: Direct from backshore <u>(Y)</u> / N Alongshore from next segment Y / N
Debris <u>(Y)</u> / N oiled <u>(Y)</u> / N amount <u>20</u> bags or ___ trucks	access restrictions		Other Features:
Oiled trees/shrubs <u>(Y)</u> / N River Current strong <u>(Y)</u> / N			

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

427  
428

OIL ZONE	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>(/)</u>	<u>100</u>	<u>20</u>	<u>5</u>			<u>P</u>	<u>S</u>		<u>(/)</u>									<u>Sand</u>
B				<u>(/)</u>	<u>300</u>	<u>100</u>	<u>1</u>			<u>S</u>	<u>P</u>		<u>(/)</u>									<u>Sand</u>

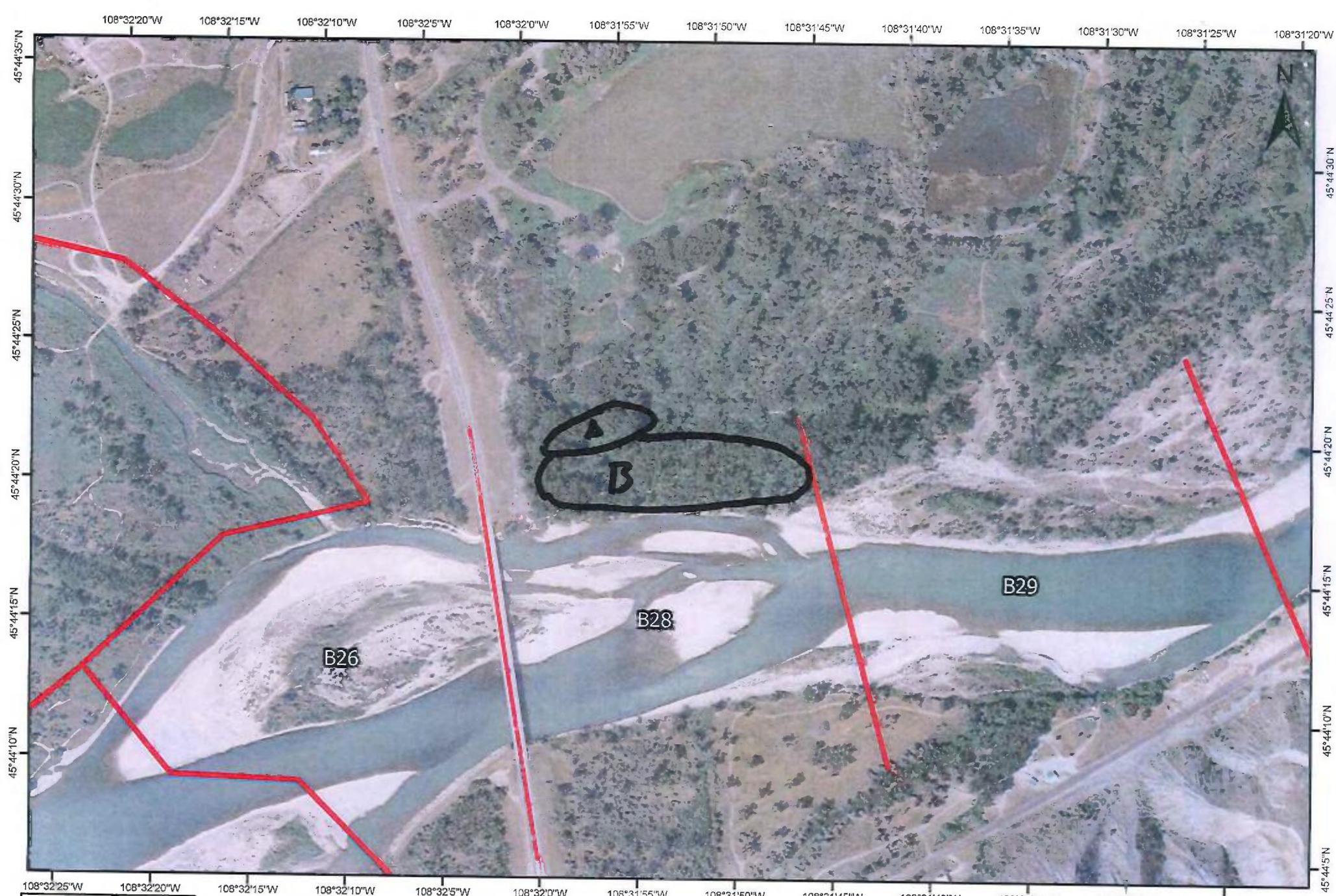
**7 SUBSURFACE OILING CONDITIONS** use letter for ZONE location plus Number of pit or trench - e.g., "A1"

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

Zones A + B both have sporadic control and sternal debris and veg. Debris is small and can be bagged and removed. Veg needs to be cut either sternal and removed.

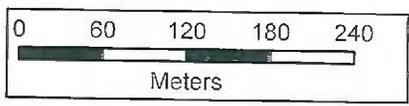
(for ALL sub-segments record: sub-segment ID, length, length surveyed, and GPS start/end fixes)  
Sketch Yes/No Photos Yes/No (Roll # \_\_\_ Frames \_\_\_) Video Tape Yes/No (tape # \_\_\_)



**B28 -**  
(L/R/I)??

DATE:  
TEAM:

COMMENTS:





## **Appendix C**

Pre-Inspection Survey Transmittal

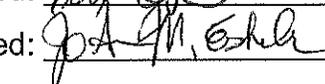
## SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 20 August, 2011

Segment: B28LB

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

Observer: Fred Stroud Signed: 

Observer JoAnn Eskelsen 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 segment passed with help with of a hotshot cleanup crew.



## **Appendix D**

Post-Inspection Survey Transmittal

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



## **Appendix E**

Final SCAT Survey Forms and  
Sketches

DB/6

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>B27</u>	Left Bank / <u>Right Bank</u> / Island	<u>02-9-11</u>	<u>8:00</u> hrs to <u>9:15</u> hrs	low - <u>mean</u> bankfull - overbank
Operations Division: <u>B</u>		<input checked="" type="checkbox"/> Sun / <input type="checkbox"/> Clouds / Fog / Rain / Snow / Windy / Calm		falling - steady - rising
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /				Air Temp +/- <u>22</u> deg C

<b>2 SURVEY TEAM # <u>3</u></b>	Name	Organization	Signature
	<u>Charles Paris</u>	<u>Center ENTRIX</u>	<u>Charles Paris</u>
	<u>Sirac OPP</u>	<u>DEW</u>	<u>[Signature]</u>
	<u>JERRY ADAMS</u>	<u>U.S. EPA</u>	<u>[Signature]</u>

**3 SEGMENT** Total Segment/Reach Length 380 m Segment/Reach Length Surveyed 380 m

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

End GPS: LATITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. LONGITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min.

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

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

Sediment Bank: Clay/Mud \_\_\_\_\_ Sand S Mixed P Pebble/Cobble S Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: S Wooded Uplands 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: Sml

Sloped: (>5°)(15°)(30°) straight X 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 200 est. water depth: <1m 1.5m 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 Y / N Access: Direct from backshore  / N Alongshore from next segment  / N

Debris  / N oiled Y /  amount \_\_\_\_\_ bags or \_\_\_\_\_ trucks access restrictions \_\_\_\_\_

Oiled trees/shrubs  / 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

2061  
2062

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>Y</u>	<u>380</u>	<u>5</u>	<u>cl</u>				<u>P</u>							<u>P</u>			<u>X</u>	<u>Sml</u>
B				<u>X</u>	<u>380</u>	<u>185</u>	<u>0</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 had less than 190 stem veg.

Zone B no oil ~~observed~~ observed

No for the trench

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

B28R  
9-2-11  
T-3



A

B

9/2/2011  
9/2/2011  
2011

1996

Image © 2011 GeoEye  
© 2011 Google  
Shastalin

45°44'04.86" N 108°31'48.43" W elev 3146 ft

Eye alt

DB 16

R

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 2

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>B2B</u> Left Bank / Right Bank / Island		<u>24-8-11</u>	<u>12:30</u> hrs to <u>13:30</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>B</u>				falling / steady - rising
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		<u>sun</u> Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>30</u> deg C

<b>2 SURVEY TEAM #</b> <u>1</u>	Name	Organization	Signature
	<u>Charles Port</u>	<u>ENRUX</u>	<u>Charles Port</u>
	<u>Robert Ashton</u>	<u>MDEQ</u>	<u>Robert Ashton</u>
	<u>Nathan Hammond</u>	<u>Carolus Entrix</u>	<u>Nathan Hammond</u>
	<u>Linda Watson</u>	<u>EPA</u>	<u>Linda Watson</u>

**3 SEGMENT** Total Segment/Reach Length 380 m Segment/Reach Length Surveyed 380 m

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

End GPS: LATITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. LONGITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min.

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

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

Sediment Bank: Clay/Mud \_\_\_\_\_ Sand S Mixed P Pebble/Cobble S Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: S Wooded Upland: 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 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 460m 270 est. water depth: <1m 1-3m 3-10m >10m \_\_\_\_\_ m

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

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

1829  
1830

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
<del>A</del>					<del>380</del>	<del>200</del>	<del>0</del>														
A				X	380	200	0														
B				X	10	5	41				P						S				

**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

~~No oil observed also for the project Rescat~~

Small amount of oil visible. No cold vials or debris found

No further treatment necessary

Rescat

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

@ 2011 Google

Image USDA Farm Service Agency

G2010

TEAM 1  
8/24/11  
B08LB

ZONE B  
VERY LIGHT  
NET

ZONE A  
M00



24-AUG-11 01:29:03 PM  
24-AUG-11 03:29:52

2011  
8/24/2011  
x

Camargo Blvd



## **Appendix F**

Completed SCAT Segment Sign-Off  
Forms

# SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

## SILVERTIP PIPELINE RELEASE

Segment B-28R Date of Survey 9-2-11

Dates of Initial SCAT Assessments 19 JUL 11 (IC)  
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 37

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).*

[Signature] TERESA TANNER / U.S. EPA 9/3/11  
Sign Name Print Name/ Affiliation Date  
**Federal Representative (EPA/USCG)**

[Signature] Steve Opp / DEQ 9/2/11  
Sign Name Print Name/ Affiliation Date  
**State Representative (DEQ/FWP)**

[Signature] Charles Pars / Cordus ENTRIX 9-2-11  
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.

