

**ExxonMobil Pipeline Company**

**SCAT Area Transition Report  
for A06**

Silvertip Pipeline Incident  
Laurel, Montana

October 27, 2011



## **SCAT Area Transition Report for A06**

Silvertip Pipeline Incident  
Laurel, Montana

Prepared for:  
ExxonMobil Pipeline Company

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Our Ref.:  
B0085883.1103

Date:  
October 27, 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 A06, 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 A06. 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 A06, 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 A06 is 13.9. There were access issues for the right and left 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 A06. Two oiled Woodhouse's toads (*Bufo woodhousii*) were captured, cleaned, and released. In addition, two Woodhouse's toads were captured and taken to the Wildlife Recovery Center for an oiling evaluation, determined to be un-oiled, and released. Two deceased catfish (unknown species) with no visible oiling were also recovered. Three Wildlife Priority Cleanup Areas (WPCAs) were identified. One WPCA was a heavily oiled debris pile near the western end of a small island adjacent to the south bank. The second WPCA consisted of two small pools with persistent sheen located on a gravel bar in the eastern portion of the previously noted small island. The third WPCA was oiled debris and vegetation around a spring located above rip-rap on the right bank; Unified Command generated a General Message for oil associated with the rip-rap. These WPCAs have been addressed and no longer pose a risk to wildlife. One spotted sandpiper (*Actitis macularius*) nest was identified on the eastern portion of the same small island.

**1.3 Summary of Environmental Sampling**

Table 1 (below) summarizes samples collected within Area A06. 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 A06 are provided on Figure 3.

**Table 1 Environmental Sampling Summary**

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
MDEQ	ST-072011-JS1	7/20/11	Soil_Surface	ST-JS-01	45.65056	-108.73719
MDEQ	ST-072011-JS2	7/20/11	Soil_Surface	ST-JS-02	45.65061	-108.73551
MDEQ	ST-072011-JS-DW	7/20/11	Water_Drinking	ST-JS-03	45.65062	-108.73646
CTEH	LAMT0816SO403	8/16/11	Soil_River	SO-A06-1	45.65027	-108.733332
CTEH	LAMT0825SE401	8/25/11	Sediment	A06	45.650638	-108.73124

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 15 exceedances: 1 each for arsenic, selenium, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, C11-C22 aromatics, C9-C12 aliphatics, C9-C18 aliphatics, and total purgeable hydrocarbons, and 4 for total extractable hydrocarbons.

**1.4 Summary of Initial SCAT Surveys**

The SCAT teams used systematic evaluation criteria and treatment method tables approved by the National Oceanic and Atmospheric Administration to provide a standard approach for data collection and conducting field surveys. The forms and sketches from the initial SCAT surveys performed along the river bank (water edge) and floodplain within Area A06 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area A06.

### **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. 5](#) and [CTR No. 10](#)).

### **1.6 Oil Removal Activities**

Oil removal activities were conducted within Area A06 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 A06 and developed a Post-Inspection Survey Transmittal (POST) associated with the right bank(s) within Area A06, which is presented in Appendix D.

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

Figure 5 shows the oiling conditions within Area A06 following completion of oil removal activities. The SCAT team performed final surveys of the right bank(s) within SCAT Area A06 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 initial SCAT surveys performed within Area A06, no oil was observed or no further treatment was recommended for the left bank. Based on the final SCAT surveys performed on the right bank(s) within Area A06, no further treatment is

recommended for these segments. SCAT Segment Sign-Off Forms are included as Appendix F.

As described in Section 1.2, the Wildlife Branch identified transferrable oil posing a risk to wildlife in three areas of Area A06. One of the three areas was addressed and signed off in the normal SCAT process (Appendix F) prior to the Wildlife Branch's first use of Exception Memos. An Exception Memo was generated for the two remaining locations: a debris pile on a small island, and oiled debris and vegetation around a spring. Both areas were addressed and the Exception Memo was signed off as complete (Appendix G).

Finally, a General Message was written to document that rip-rap on the right bank of Area A06 continued to generate a sheen after the completion of SCAT operations. Sorbent booms were put in place and flushing was performed for multiple days until no further sheen occurred. The MDEQ signed off on the area and the oil booms were removed.

**2. Transition Sign-Off Form**

**SCAT Area Transition Report for A06**

**Prepared for:**

**Unified Command**

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Date

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Unified Command – RP



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**Unified Command**

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Date

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Unified Command – FOSC



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**Unified Command**

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Date

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Unified Command – MDEQ

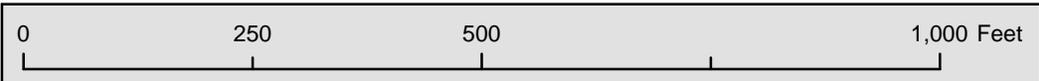
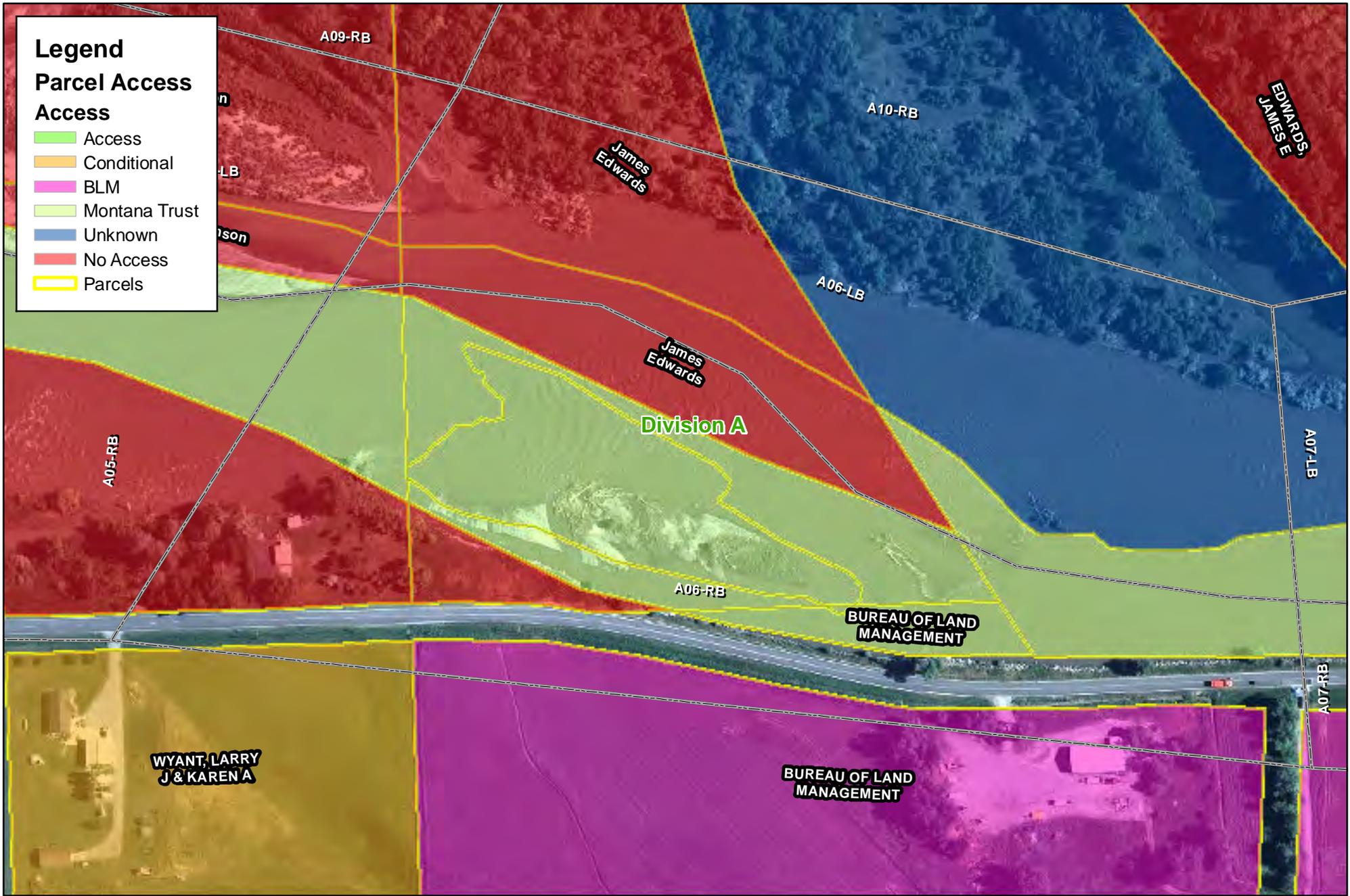
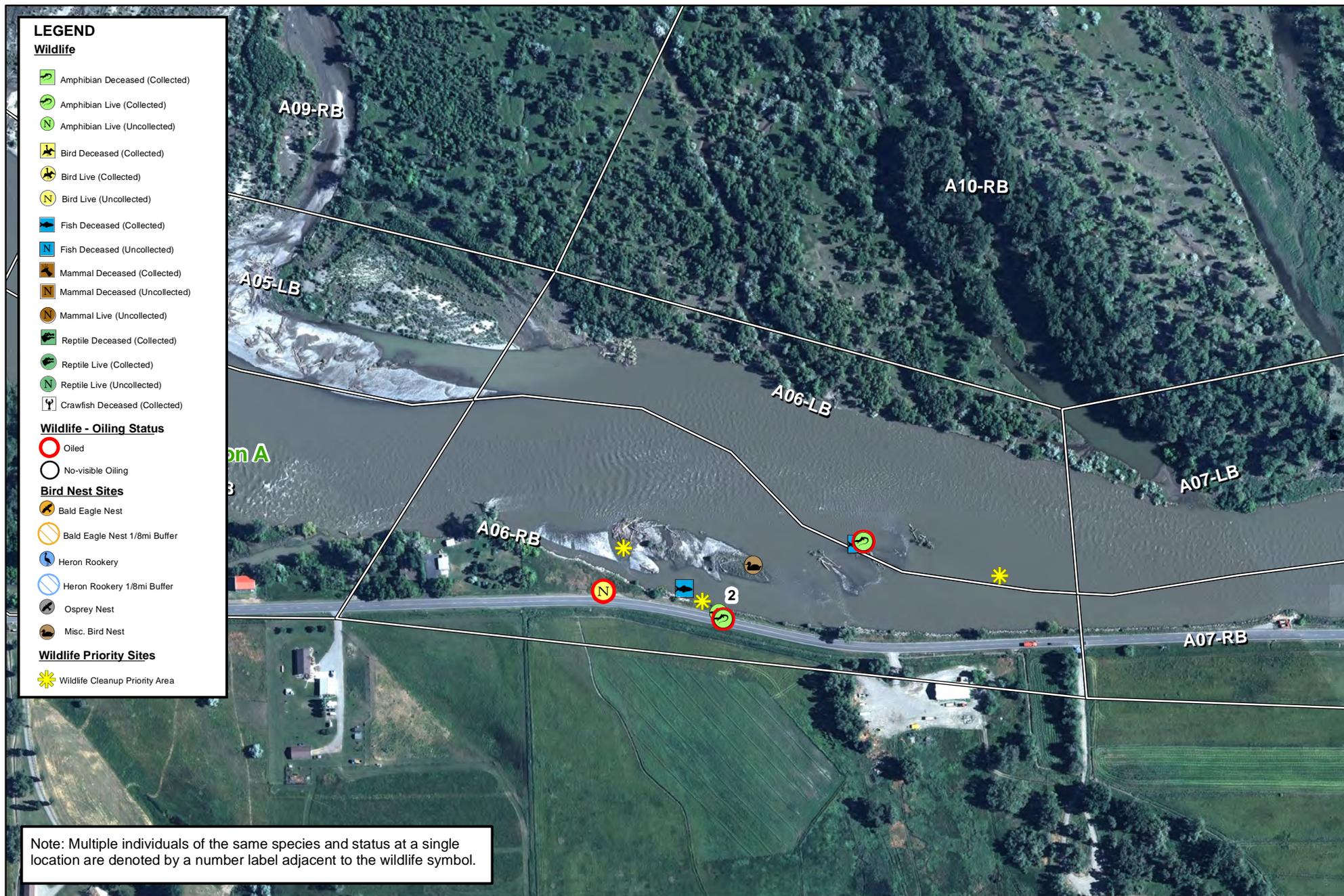


Figure 1



**LEGEND**

**Wildlife**

- Amphibian Deceased (Collected)
- Amphibian Live (Collected)
- Amphibian Live (Uncollected)
- Bird Deceased (Collected)
- Bird Live (Collected)
- Bird Live (Uncollected)
- Fish Deceased (Collected)
- Fish Deceased (Uncollected)
- Mammal Deceased (Collected)
- Mammal Deceased (Uncollected)
- Mammal Live (Uncollected)
- Reptile Deceased (Collected)
- Reptile Live (Collected)
- Reptile Live (Uncollected)
- Crawfish Deceased (Collected)

**Wildlife - Oiling Status**

- Oiled
- No-visible Oiling

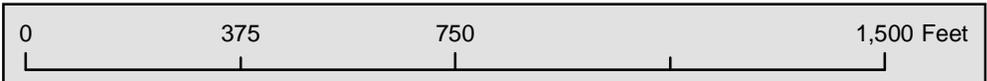
**Bird Nest Sites**

- Bald Eagle Nest
- Bald Eagle Nest 1/8mi Buffer
- Heron Rookery
- Heron Rookery 1/8mi Buffer
- Osprey Nest
- Misc. Bird Nest

**Wildlife Priority Sites**

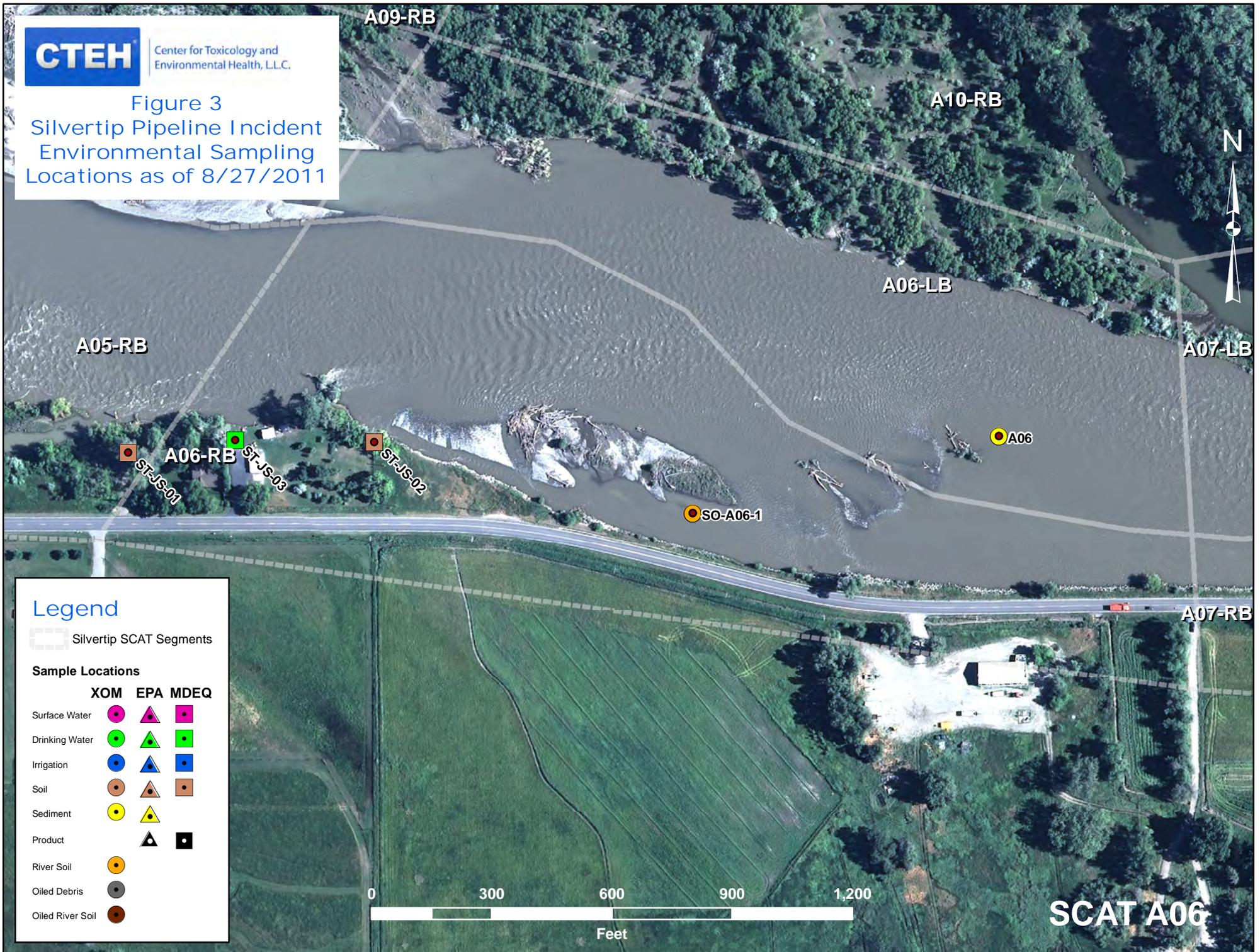
- Wildlife Cleanup Priority Area

Note: Multiple individuals of the same species and status at a single location are denoted by a number label adjacent to the wildlife symbol.



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

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



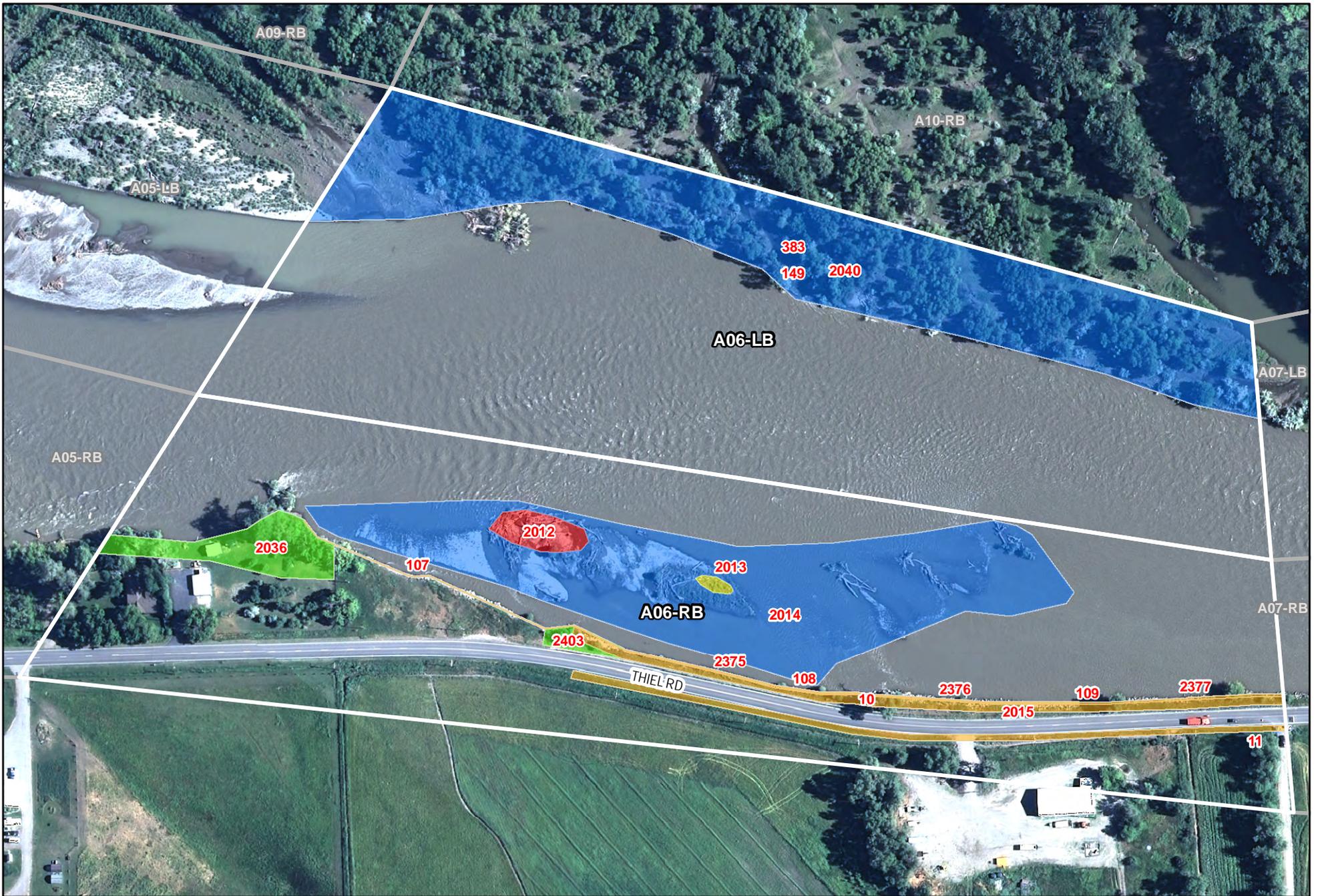
**Legend**

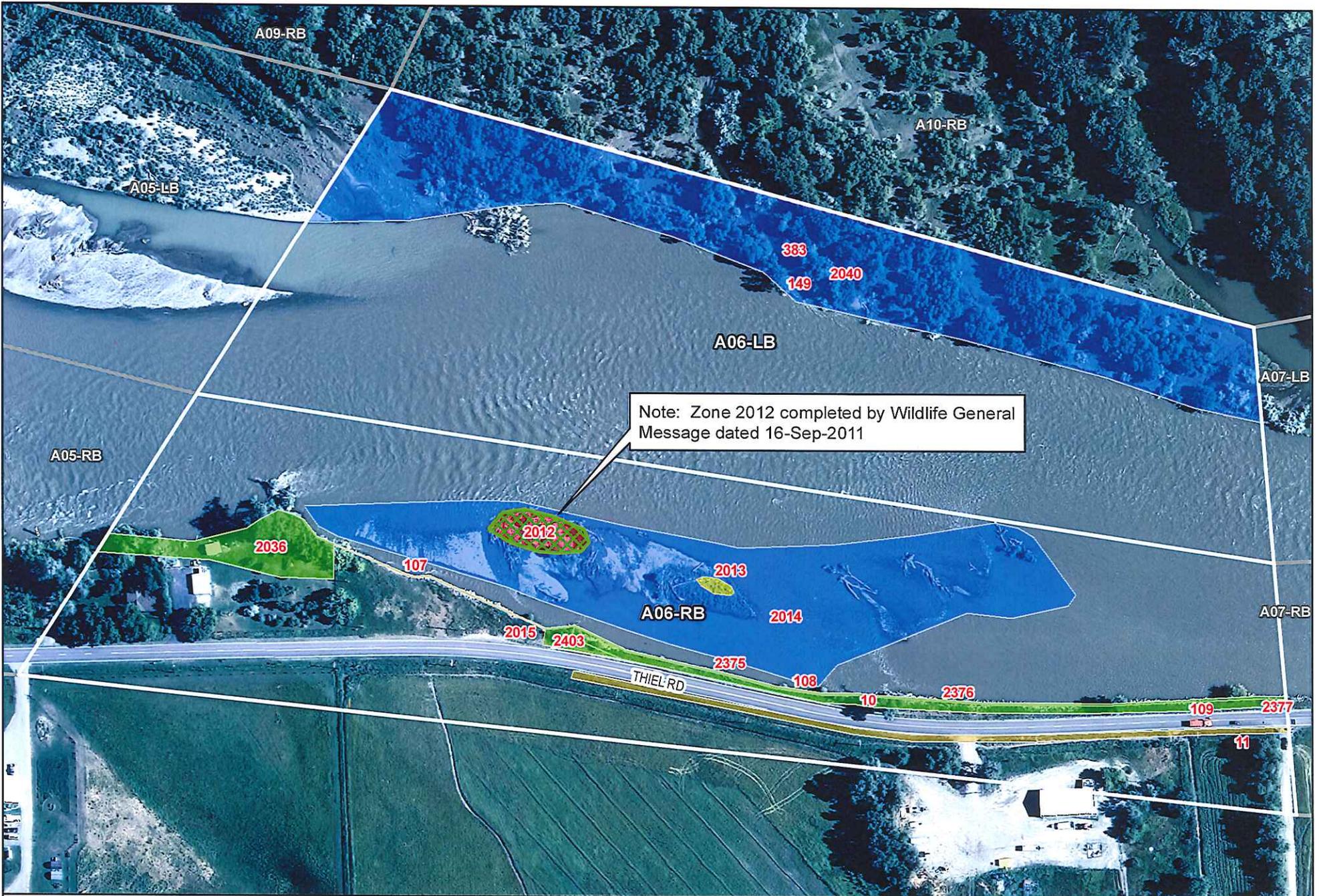
Silvertip SCAT Segments

**Sample Locations**

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

SCAT A06





Note: Zone 2012 completed by Wildlife General Message dated 16-Sep-2011

	<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: A06**





## **Appendix A**

Sample Detection Summary



## Detections in Samples Collected in SCAT Area A06

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 6010	Arsenic	Y	11.6	9.8		mg/kg	YES
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 6010	Barium	Y	162	NA		mg/kg	no
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 6010	Cadmium	Y	0.33	0.99		mg/kg	no
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 6010	Chromium	Y	25.7	43.4		mg/kg	no
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 8270 by SIM	Fluoranthene	Y	14.6	423		ug/kg	no
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 6010	Lead	Y	20.5	35.8		mg/kg	no
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 9060	Mean Total Organic Carbon	Y	3010	NA		mg/kg	no
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 7471	Mercury	Y	0.026	0.18		mg/kg	no
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 6010	Nickel	Y	19.2	22.7		mg/kg	no
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 9060	RSD%	Y	71.4	NA		%	no
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 6010	Selenium	Y	2.7	2		mg/kg	YES
LAMT0825SE401	08/25/2011	Field	Sediment	MADEP EPH	Total Extractable Hydrocarbons	Y	16.6	200		mg/kg	no
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 9060	Total Organic Carbon	Y	6200	NA		mg/kg	no
LAMT0825SE401	08/25/2011	Field	Sediment	EPA 6010	Vanadium	Y	44.2	NA		mg/kg	no
ST-072011-JS1		Field	Soil_Surface	8260B	1,2-Dichloroethane-d4	Y	75	NA		%	no
ST-072011-JS1		Field	Soil_Surface	8270C	2,4,6-Tribromophenol	Y	106	NA		%	no
ST-072011-JS1		Field	Soil_Surface	MA-EPH-MDEQ-REM	2-Bromonaphthalene	Y	75	NA		%	no
ST-072011-JS1		Field	Soil_Surface	8270C	2-Fluorobiphenyl	Y	86	NA		%	no
ST-072011-JS1		Field	Soil_Surface	MA-EPH-MDEQ-REM	2-Fluorobiphenyl	Y	74	NA		%	no
ST-072011-JS1		Field	Soil_Surface	8270C	Anthracene	Y	0.26	2000	J	mg/kg	no
ST-072011-JS1		Field	Soil_Surface	8270C	Benz[a]anthracene	Y	1.3	0.2		mg/kg	YES
ST-072011-JS1		Field	Soil_Surface	8270C	Benzo(b)fluoranthene	Y	1.7	0.2		mg/kg	YES
ST-072011-JS1		Field	Soil_Surface	8270C	Benzo[a]pyrene	Y	1.6	0.02		mg/kg	YES
ST-072011-JS1		Field	Soil_Surface	8270C	Benzo[ghi]perylene	Y	1.1	NA		mg/kg	no
ST-072011-JS1		Field	Soil_Surface	8270C	Benzo[k]fluoranthene	Y	0.88	2		mg/kg	no
ST-072011-JS1		Field	Soil_Surface	MA-EPH-MDEQ-REM	C11-C22 Aromatics	Y	110	400		mg/kg	no
ST-072011-JS1		Field	Soil_Surface	MA-EPH-MDEQ-REM	C19-C36 Aliphatics	Y	90	20000		mg/kg	no
ST-072011-JS1		Field	Soil_Surface	MA-VPH-MDEQ-REM	C9-C10 Aromatics	Y	2.3	100	J	mg/kg	no
ST-072011-JS1		Field	Soil_Surface	MA-VPH-MDEQ-REM	C9-C12 Aliphatics	Y	2.4	100	J	mg/kg	no
ST-072011-JS1		Field	Soil_Surface	MA-EPH-MDEQ-REM	C9-C18 Aliphatics	Y	26	200		mg/kg	no
ST-072011-JS1		Field	Soil_Surface	8270C	Chrysene	Y	1.7	20		mg/kg	no



## Detections in Samples Collected in SCAT Area A06

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
ST-072011-JS1		Field	Soil_Surface	8270C	Dibenz[a,h]anthracene	Y	0.41	0.02		mg/kg	YES
ST-072011-JS1		Field	Soil_Surface	8260B	Dibromofluoromethane	Y	85	NA		%	no
ST-072011-JS1		Field	Soil_Surface	8270C	Fluoranthene	Y	3	300		mg/kg	no
ST-072011-JS1		Field	Soil_Surface	8270C	Indeno[1,2,3-cd]pyrene	Y	2.1	0.2		mg/kg	YES
ST-072011-JS1		Field	Soil_Surface	8270C	Nitrobenzene-D5	Y	82	NA		%	no
ST-072011-JS1		Field	Soil_Surface	MA-EPH-MDEQ-REM	Octadecane, 1-chloro-	Y	81	NA		%	no
ST-072011-JS1		Field	Soil_Surface	8270C	o-Fluorophenol	Y	75	NA		%	no
ST-072011-JS1		Field	Soil_Surface	8015M-MDEQ-REM	o-Terphenyl	Y	87	NA		%	no
ST-072011-JS1		Field	Soil_Surface	MA-EPH-MDEQ-REM	o-Terphenyl	Y	82	NA		%	no
ST-072011-JS1		Field	Soil_Surface	8260B	p-Bromofluorobenzene	Y	90	NA		%	no
ST-072011-JS1		Field	Soil_Surface	8270C	Phenanthrene	Y	1	NA		mg/kg	no
ST-072011-JS1		Field	Soil_Surface	8270C	Phenol-d5	Y	77	NA		%	no
ST-072011-JS1		Field	Soil_Surface	8270C	Pyrene	Y	2.1	200		mg/kg	no
ST-072011-JS1		Field	Soil_Surface	8270C	Terphenyl-d14	Y	85	NA		%	no
ST-072011-JS1		Field	Soil_Surface	8260B	Toluene-d8	Y	86	NA		%	no
ST-072011-JS1		Field	Soil_Surface	MA-EPH-MDEQ-REM	Total Extractable Hydrocarbons	Y	285	200		mg/kg	YES
ST-072011-JS1		Field	Soil_Surface	8015M-MDEQ-REM	Total Extractable Hydrocarbons	Y	409	200		mg/kg	YES
ST-072011-JS1		Field	Soil_Surface	MA-VPH-MDEQ-REM	Total Purgeable Hydrocarbons	Y	10	200		mg/kg	no
ST-072011-JS2		Field	Soil_Surface	8260B	1,2-Dichloroethane-d4	Y	86	NA		%	no
ST-072011-JS2		Field	Soil_Surface	8270C	1-Methylnaphthalene	Y	1	22	DJ	mg/kg	no
ST-072011-JS2		Field	Soil_Surface	8270C	2,4,6-Tribromophenol	Y	103	NA	D	%	no
ST-072011-JS2		Field	Soil_Surface	MA-EPH-MDEQ-REM	2-Bromonaphthalene	Y	76	NA		%	no
ST-072011-JS2		Field	Soil_Surface	8270C	2-Fluorobiphenyl	Y	98	NA	D	%	no
ST-072011-JS2		Field	Soil_Surface	MA-EPH-MDEQ-REM	2-Fluorobiphenyl	Y	80	NA		%	no
ST-072011-JS2		Field	Soil_Surface	8270C	2-Methylnaphthalene	Y	1.1	310	DJ	mg/kg	no
ST-072011-JS2		Field	Soil_Surface	MA-EPH-MDEQ-REM	C11-C22 Aromatics	Y	2010	400		mg/kg	YES
ST-072011-JS2		Field	Soil_Surface	MA-EPH-MDEQ-REM	C19-C36 Aliphatics	Y	1970	20000		mg/kg	no
ST-072011-JS2		Field	Soil_Surface	MA-VPH-MDEQ-REM	C9-C10 Aromatics	Y	58	100		mg/kg	no
ST-072011-JS2		Field	Soil_Surface	MA-VPH-MDEQ-REM	C9-C12 Aliphatics	Y	135	100		mg/kg	YES
ST-072011-JS2		Field	Soil_Surface	MA-EPH-MDEQ-REM	C9-C18 Aliphatics	Y	1270	200		mg/kg	YES
ST-072011-JS2		Field	Soil_Surface	8260B	Dibromofluoromethane	Y	95	NA		%	no



## Detections in Samples Collected in SCAT Area A06

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
ST-072011-JS2		Field	Soil_Surface	MA-VPH-MDEQ-REM	Naphthalene	Y	1.5	4	UJ	mg/kg	no
ST-072011-JS2		Field	Soil_Surface	8270C	Nitrobenzene-D5	Y	67	NA	D	%	no
ST-072011-JS2		Field	Soil_Surface	MA-EPH-MDEQ-REM	Octadecane, 1-chloro-	Y	81	NA		%	no
ST-072011-JS2		Field	Soil_Surface	8270C	o-Fluorophenol	Y	89	NA	D	%	no
ST-072011-JS2		Field	Soil_Surface	MA-EPH-MDEQ-REM	o-Terphenyl	Y	113	NA		%	no
ST-072011-JS2		Field	Soil_Surface	8015M-MDEQ-REM	o-Terphenyl	Y	102	NA		%	no
ST-072011-JS2		Field	Soil_Surface	8260B	p-Bromofluorobenzene	Y	98	NA		%	no
ST-072011-JS2		Field	Soil_Surface	8270C	Phenol-d5	Y	85	NA	D	%	no
ST-072011-JS2		Field	Soil_Surface	8270C	Terphenyl-d14	Y	89	NA	D	%	no
ST-072011-JS2		Field	Soil_Surface	8260B	Toluene-d8	Y	98	NA		%	no
ST-072011-JS2		Field	Soil_Surface	8015M-MDEQ-REM	Total Extractable Hydrocarbons	Y	7410	200		mg/kg	YES
ST-072011-JS2		Field	Soil_Surface	MA-EPH-MDEQ-REM	Total Extractable Hydrocarbons	Y	5980	200		mg/kg	YES
ST-072011-JS2		Field	Soil_Surface	MA-VPH-MDEQ-REM	Total Purgeable Hydrocarbons	Y	280	200		mg/kg	YES
ST-072011-JS-DW		Field	Water_Drinking	524.2	1,2-Dichloroethane-d4	Y	124	NA		%	no
ST-072011-JS-DW		Field	Water_Drinking	525.2	2-Nitro-M-Xylene	Y	104	NA		%	no
ST-072011-JS-DW		Field	Water_Drinking	MA-VPH-MDEQ-REM	Ethylbenzene	Y	0.59	700		ug/l	no
ST-072011-JS-DW		Field	Water_Drinking	8015M-MDEQ-REM	o-Terphenyl	Y	60	NA		%	no
ST-072011-JS-DW		Field	Water_Drinking	524.2	p-Bromofluorobenzene	Y	109	NA		%	no
ST-072011-JS-DW		Field	Water_Drinking	525.2	Perylene-d12	Y	88	NA		%	no
ST-072011-JS-DW		Field	Water_Drinking	525.2	Pyrene-d10	Y	96	NA		%	no
ST-072011-JS-DW		Field	Water_Drinking	524.2	Toluene-d8	Y	102	NA		%	no
ST-072011-JS-DW		Field	Water_Drinking	525.2	Triphenyl phosphate	Y	100	NA		%	no



## **Appendix B**

Initial SCAT Survey Forms and  
Sketches

DB/a/sc

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 11-Jul-2011	Time (24h): std / daylight 1104 hrs to 1105 hrs	<b>Water Level</b> low - mean - bankfull - <u>overbank</u> falling - steady - rising
Segment/Reach ID: A6 <u>Left Bank / Right Bank / Island</u>				
Operations Division: A				
Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - <u>29.4</u> deg C

<b>2 SURVEY TEAM # 2 &amp; 4</b>	<b>name</b>	<b>organization</b>	<b>contact phone number</b>
Andrew Milanes		Polaris	
Tom Freeman		Polaris	<i>Tom Freeman</i>
Andrew Johnson		USCG	
Travis Olson		USCG	

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 485 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 \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: P Wooded Upland: S

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

**4B RIVER VALLEY CHARACTER** select as appropriate complete for primary

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

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

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

est. width: <1m 1-10m 10-100m >100m \_\_\_\_\_ 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

49

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		485	1														X	Grass, trees, debris	

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

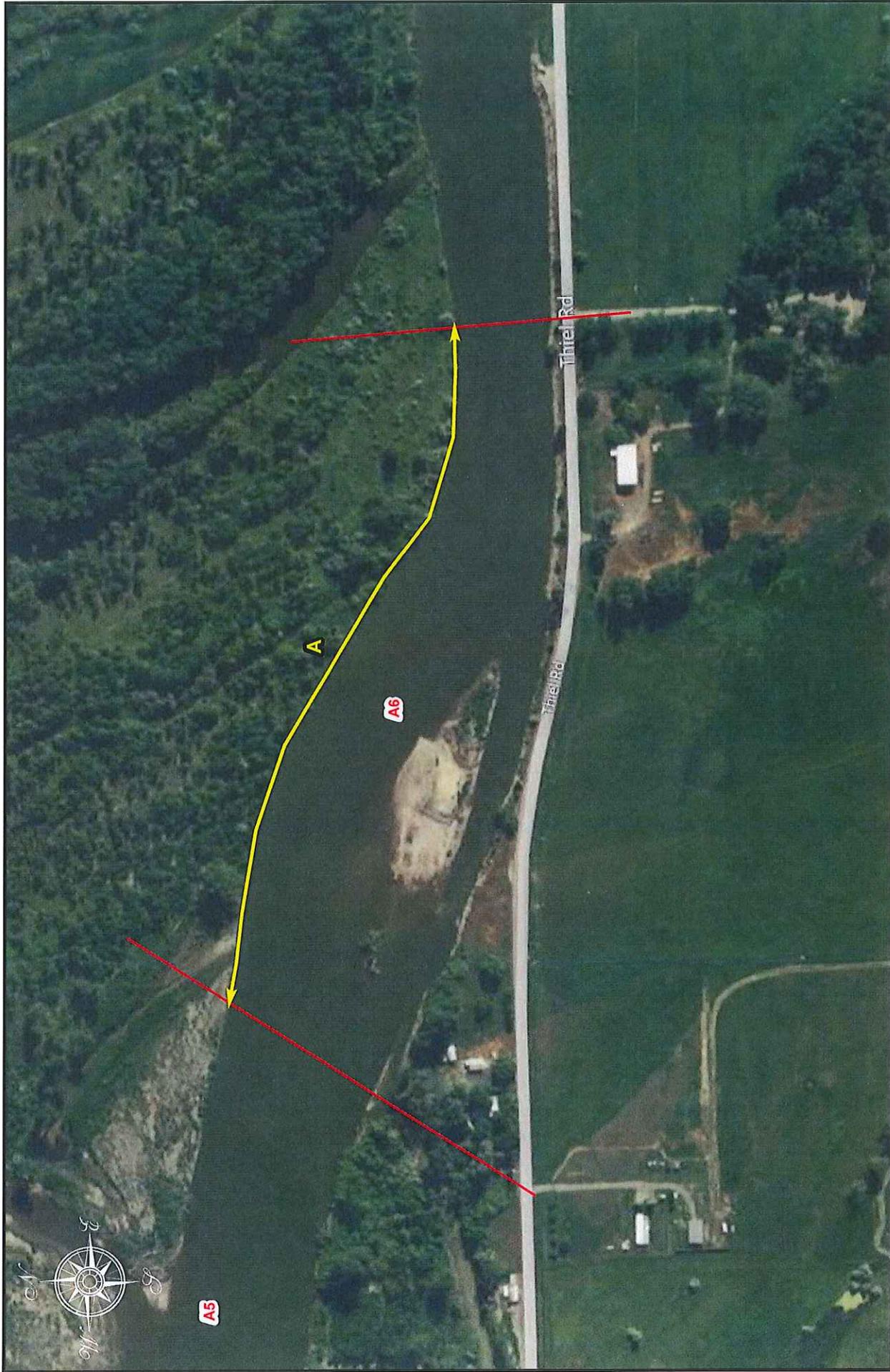
TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER							WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)		
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR	NO						

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

Cleanup Recommendations: No oil observed along river channel margin

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



**Legend**

Oil Zones

Segment Boundaries



**SCAT Teams 2 & 4 Survey**

Segment A6 Left Bank

11-Jul-2011

DB

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 1

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) <u>20/07/11</u>	Time (24h): std / daylight <u>1000</u> hrs to <u>1400</u> hrs	Water Level low - mean - bankfull - overbank <u>falling</u> - steady - rising
Segment/Reach ID: <u>AG</u> <u>Left Bank</u> / Right Bank / Island				
Operations Division: <u>A</u>				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / <u>(Sun)</u>		Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>20</u> deg C

<b>2 SURVEY TEAM</b>		
name	organization	contact phone number
<u>John Williams</u>	<u>Cardno ENTRIX</u>	<u>361 676 8138</u>
<u>Joe Boyle</u>	<u>Cardno ENTRIX</u>	<u>256 274 6858</u>
<u>Courtney Tyree</u>	<u>FWP</u>	<u>406 860 1814</u>
<u>Mike Ruggles</u>	<u>FWP</u>	<u>406 671 8863</u>
<u>Conny Riley</u>	<u>EPA</u>	<u>415 9215 0690</u>

<b>3 SEGMENT</b>	Total Segment/Reach Length <u>435</u> m	Segment/Reach Length Surveyed <u>435</u> m
Start GPS: LATITUDE <u>45</u> deg. <u>39.211</u> min.	LONGITUDE <u>108</u> deg. <u>44.394</u> min.	Datum: <u>WGS84</u>
End GPS: LATITUDE <u>45</u> deg. <u>39.062</u> min.	LONGITUDE <u>108</u> deg. <u>43.798</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 <u>Shelf</u>	Manmade: Solid <u>Permeable</u> (type)	Wetland: Swamp <u>Bog/Fen</u> Marsh
Sediment Bank: Clay/Mud <u>S</u> Sand <u>Mixed</u> Pebble/Cobble <u>Boulder</u> Peat/Organic	Vegetated Bank: <u>P</u> Wooded Upland:	
Sediment Flat: Clay/Mud <u>Sand</u> Mixed/Coarse	Other: If snow and ice use Winter River SOS	

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

<b>4C RIVER CHANNEL CHARACTER</b>		
circle or select as appropriate		
est. width: <1m <u>1-10m</u> 10-100m <u>&gt;100m</u> m	est. water depth: <1m <u>1-3m</u> 3-10m >10m m	
shoal(s) present <u>Y/N</u> point bar present <u>Y/N</u>	bar-shoal substrate: silt / sand / 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>bags</u> or <u>trucks</u>	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)		
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO	
A				<u>P</u>	<u>435</u>	<u>400</u>	<u>0</u>														<u>P</u>	<u>veg</u>

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

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

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

name Janice Witul organization EPA contact phone number 415 816 6582

gshetal

No recommendations for oil zone A in AG

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



A10

A15

A11

A8

A7

A

Low on A  
on AH, H5, H6,  
Sheets H3, H4, H5, H6, H7, H8, H9, H10

see second map

A9

A6

A5

A4

A3

© 2011 Google

Image © 2011 DigitalGlobe

2086 ft

Date: 5/1/2004

1996

45° 39.316' N 108° 43.941' W elev 3254 ft

Eye alt 12

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 03/09/11	Time (24h): std / daylight 1000 hrs to 1330 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: A <u>6</u> <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>22</u> deg C

<b>2 SURVEY TEAM # 2</b>	Name	Organization	Signature
Pete Lee	Polaris		P. Lee
Larry Alheim	MTDEQ		L. Alheim
Stephen Ball	USEPA		S. Ball

**3 SEGMENT** Total Segment/Reach Length 450 m Segment/Reach Length Surveyed 450 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 1-10 m 10-100 m >100m m est. water depth: < 1 m 1-3 m >10 m m

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

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

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

Debris: Y N oiled Y N amount \_\_\_\_\_ bags or \_\_\_\_\_ trucks Access restrictions: Boat only

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	%																		
A				<u>X</u>	450	45																		<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: \_\_\_\_\_

Treatment recommendations:  
 Zone A : No oil ; no treatment required  
 Zone : \_\_\_\_\_

Private land owner

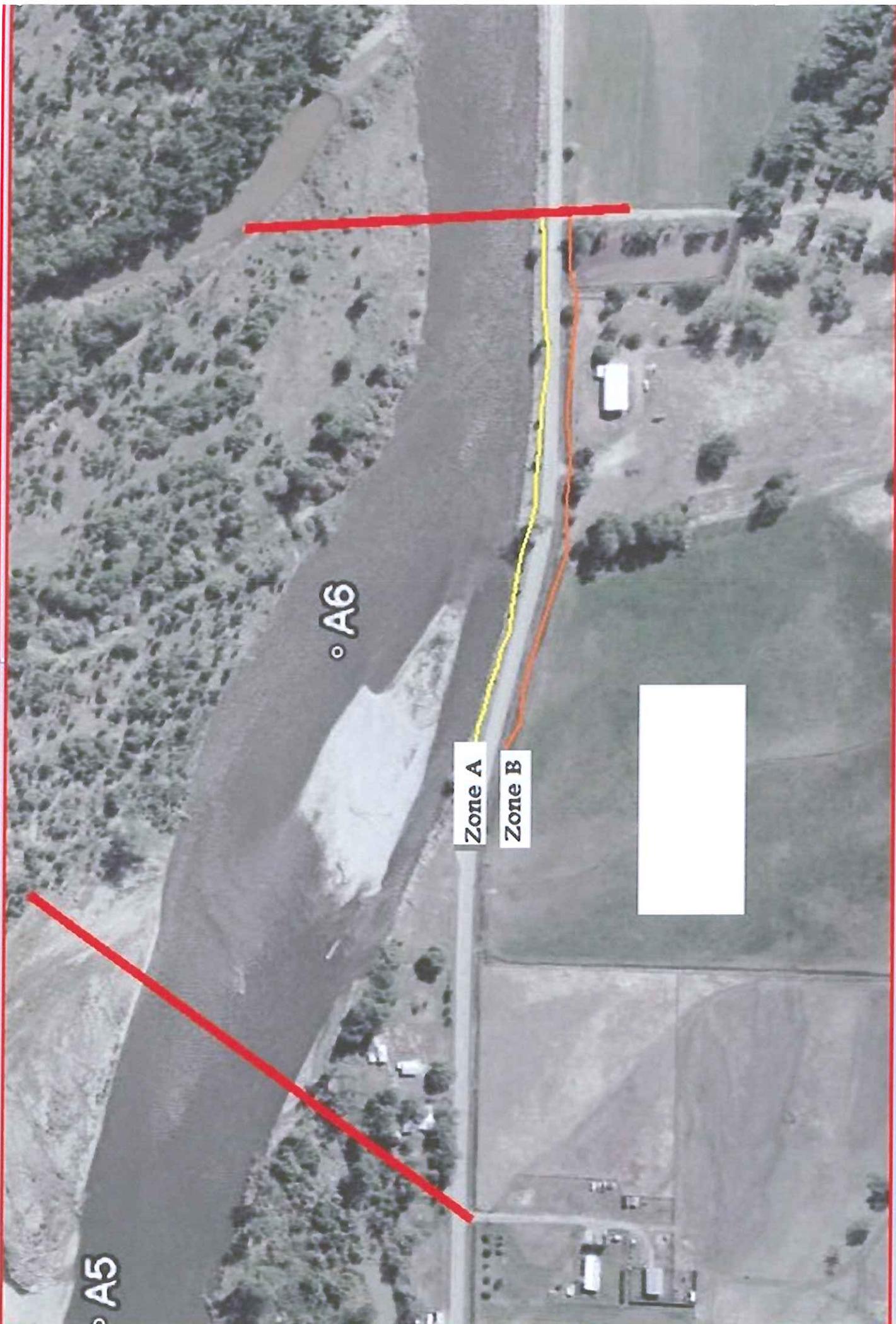
Sketch Yes / No Photos Yes / No Frames \_\_\_\_\_ Photographer \_\_\_\_\_



A06LB  
T2 9/3/11

DB 16 / 5c

<b>1 GENERAL INFORMATION</b>				Date (dd/mm/yy) 7/5/2011	Time (24h): std / daylight <input checked="" type="checkbox"/> 9:00 hrs to 10:00 hrs	<b>Water Level</b> low - mean - bankfull - <u>overbank</u> falling - steady - <u>rising</u> Air Temp + / - <u>80</u> deg C															
Segment/Reach ID: A-6 Left Bank (Right Bank) / Island																					
Operations Division:																					
Survey by: Foot / ATV / Boat / Helicopter / Overlook /				Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - <u>80</u> deg C															
<b>2 SURVEY TEAM #</b>				name		organization		contact phone number													
Tom Freeman				Andrew Johnson		Polaris		864-630-9004													
Larry Padden				Andrew Johnson		USCG		609-351-8517													
				Larry Padden		BLM		406-671-4155													
<b>3 SEGMENT</b>				Total Segment/Reach Length <u>578</u> m		Segment/Reach Length Surveyed <u>330</u> m															
Start GPS: LATITUDE <u>45°39'</u> deg. <u>01.01"</u> min.				LONGITUDE <u>108°44'</u> deg. <u>03.13"</u> min.		Datum: _____															
End GPS: LATITUDE <u>45°38'</u> deg. <u>59.40"</u> min.				LONGITUDE <u>108°43'</u> deg. <u>47.58"</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 _____ Mixed _____ Pebble/Cobble _____ 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 oiled grass</u>														
Sloped: _____ (>5°)(15°)(30°)				straight _____ braided _____ oxbow _____ flood plain valley <u>X</u>			Forested <u>(Vegetated)</u> / Bare														
<b>4C RIVER CHANNEL CHARACTER</b>				circle or select as appropriate																	
est. width: <1m 1-10m <u>10-100m</u> >100m _____ m				est. water depth: <1m 1-3m <u>3-10m</u> >10m _____ m																	
shoal(s) present <u>Y</u> <u>(N)</u> point bar present <u>Y</u> <u>(N)</u>				bar-shoal substrate: silt / sand / gravel / cobble / boulder / bedrock / debris																	
seasonal water level: low / mean / bank full <u>overbank flow</u>				est. change over next 7 days: falling — same — <u>rising</u>																	
<b>5 OPERATIONAL FEATURES</b>				Suitable backshore staging <u>Y</u> <u>(N)</u>			Access: Direct from backshore <u>Y</u> <u>(N)</u> Alongshore from next segment <u>Y</u> <u>(N)</u>														
Debris: <u>Y</u> <u>(N)</u> oiled <u>Y</u> <u>(N)</u> amount _____ bags or _____ trucks				access restrictions <u>Road is closed to provide staging area on road</u>																	
Oiled trees/shrubs <u>Y</u> <u>(N)</u> <u>shrubs</u> River Current strong <u>Y</u> <u>(N)</u>				Other Features: _____																	
<b>6 SURFACE OILING CONDITIONS</b>				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 m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	
A			<u>(X)</u>	X	330	5	100			X			X								grass / Neg
B				X	330	3	100			X			X								grass / Neg
<b>7 SUBSURFACE OILING CONDITIONS</b>				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																					
<p>1) Zone A = River bank on N side of Theil Rd                  2) Zone B = Drainage ditch on S side of Theil Rd.                  3) Operations active on site w/ sorbant boom / pad</p> <p>NOTE: <u>No</u> GPS track for this Zone (A/B) of bank, observations made during walk through w/ EPA &amp; Parties</p>																					



A5

A6

Zone A

Zone B



RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

DB/G/SC

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 11-Jul-2011	Time (24h): std / daylight 1104 hrs to 1105 hrs	Water Level low - mean - bankfull - <b>overbank</b> falling - steady - rising
Segment/Reach ID: A6 Left Bank / <b>Right Bank</b> / Island		Operations Division: A		
Survey by: Foot / ATV / <b>Boat</b> / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <b>29.4</b> deg C

2 SURVEY TEAM # 2 & 4	name	organization	contact phone number
Andrew Milanes		Polaris	
Tom Freeman		Polaris	
Andrew Johnson		USCG	
Travis Olson		USCG	

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 545 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 S Permeable S** (type) riprap \_\_\_\_\_ Wetland: Swamp \_\_\_\_\_ Bog/Fen \_\_\_\_\_ Marsh \_\_\_\_\_

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

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

**4B RIVER VALLEY CHARACTER** select as appropriate **complete for primary**

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

Sloped: (>5°)(15°)(30°) straight P braided 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 \_\_\_\_\_ 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 2 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

107  
108  
109

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			X		278	1	60			X	X		X									Grass, trees, debris, rocks
B			X		84	1	100		X	X	X		X									Grass, trees, debris, rocks
C			X		183	1	75			X	X		X									Grass, trees, debris, rocks

**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

Oiled Band Heights: Zone A - 50cm; Zone B - 75cm; Zone C - 75cm

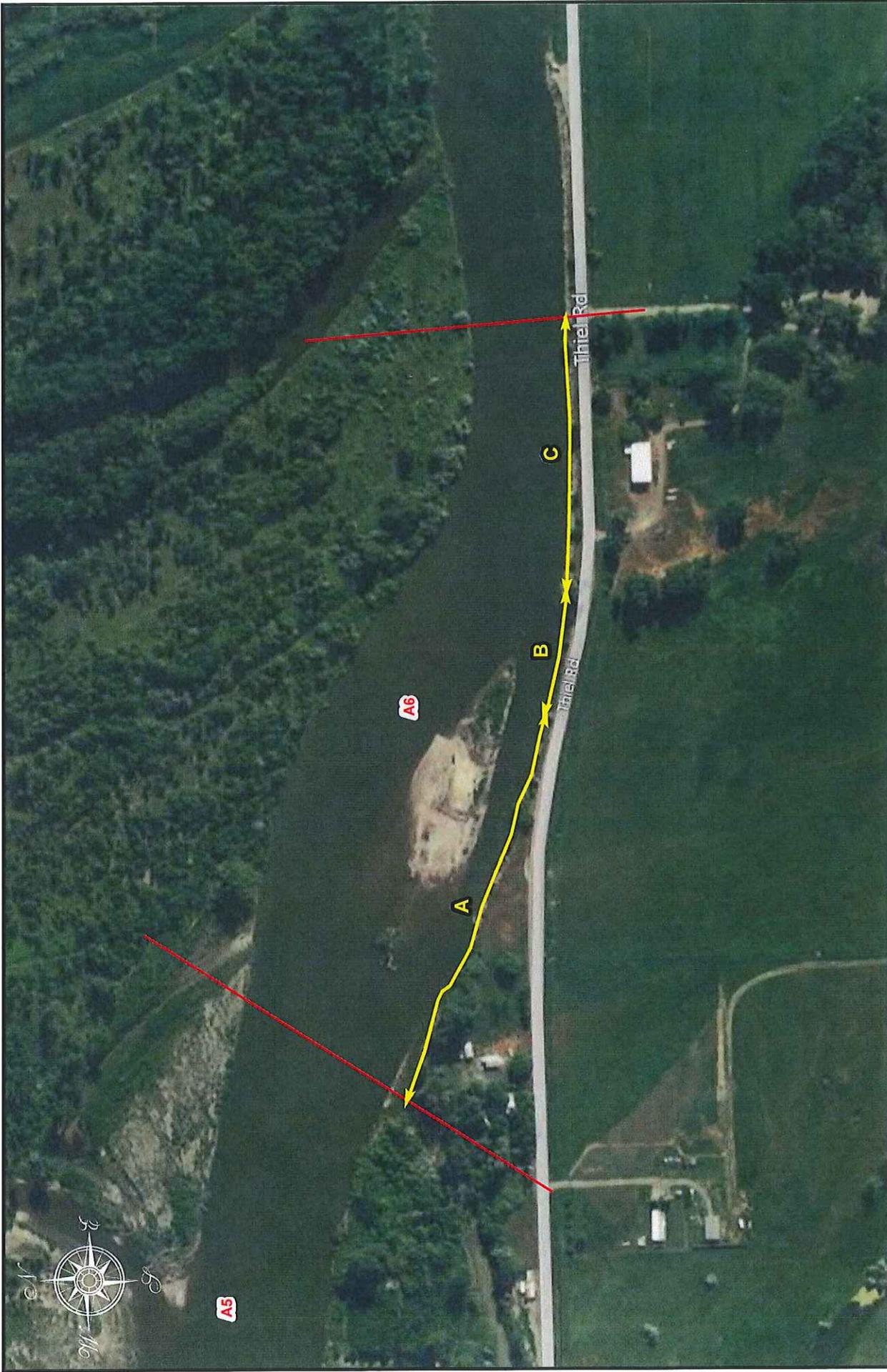
Due to survey platform (jet-drive boat) oil band width and heights are estimates. Unable to verify by foot.

Oil band also observed on side of barn.

Cleanup Recommendations: Trim oiled vegetation; wipe large oiled debris; remove small oiled debris; wipe oiled trees; wipe rocks (if can be performed safely).

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



**Legend**  
Oil Zones  
Segment Boundaries



**SCAT Teams 2 & 4 Survey**  
Segment A6 Right Bank  
11-Jul-2011

*DBIG*

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 19/08/11	Time (24h): std / daylight 0800 hrs to 0930 hrs	<b>Water Level</b> low - mean - bankfull - overbank falling - steady - rising
Segment/Reach ID: A6	Left Bank / <u>Right Bank</u> / Island			
Operations Division: A				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - _____ deg C	

<b>2 SURVEY TEAM # 5</b>	Name	Organization	Signature
Merlo Gauvreau	Polaris		(see original)
Todd Farrar	Polaris		(see original)
Ariel Blanc	Polaris		(see original)
Linda Watson	EPA		(see original)
Betsy Hovda	DEQ		(see original)

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 440 m

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

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

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

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

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

Sediment Flat: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed/Coarse S \_\_\_\_\_ 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 P \_\_\_\_\_ Substrate Type: sediment \_\_\_\_\_

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 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	
A			X		45	15	15		X	X	X											Debris/ wood
B			X		20	5	13				X											veg
C			X		345	55															X	Cobble

**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: Large oiled debris pile. Recommended ATM 10.

Zone B: NFT

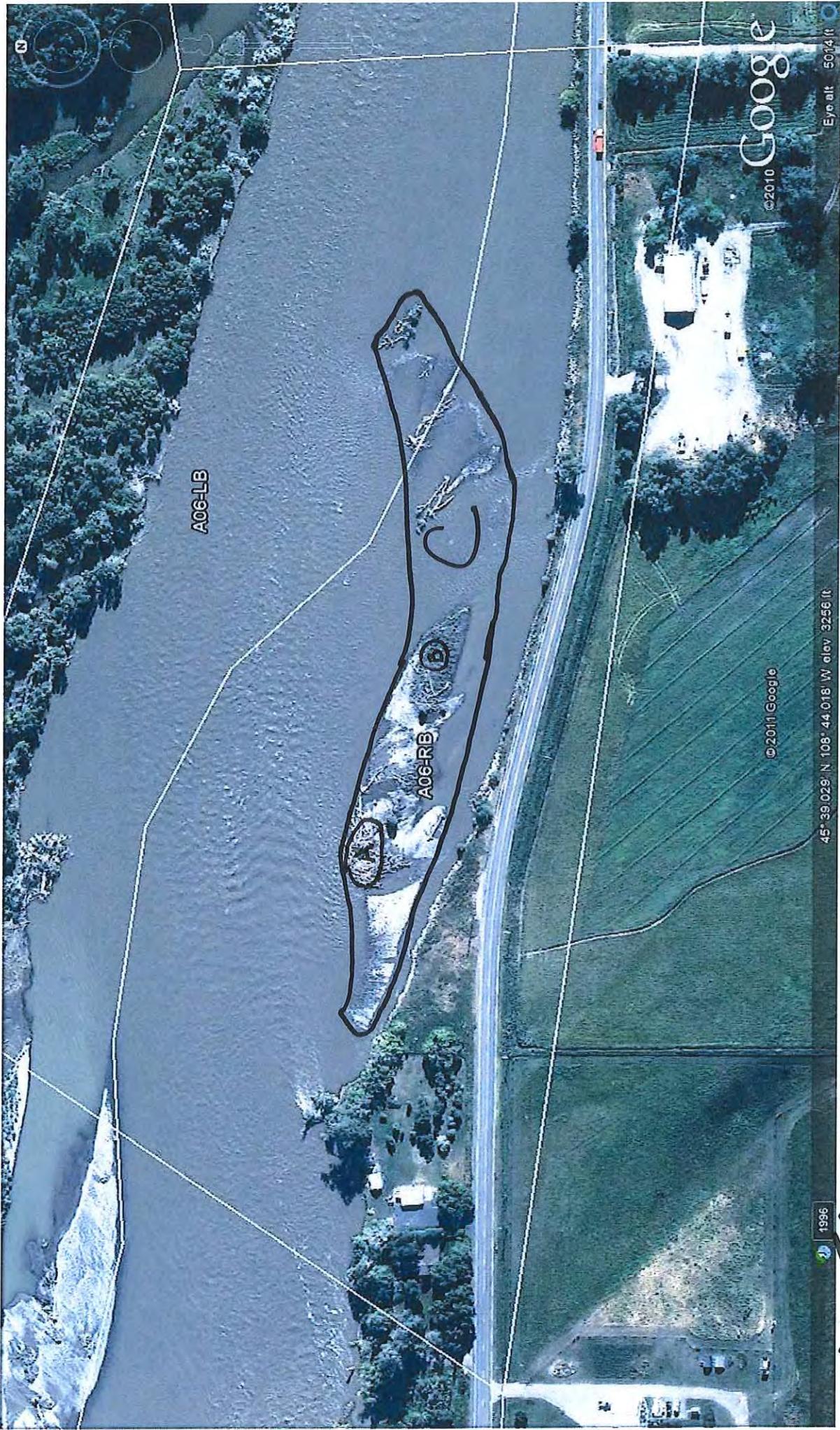
Zone C: NOO - NFT.

Wp. 222 - 1 X 0.1m, 30% CT on soil. Ops on site, placed sorbent on area.

Wp. 223 - 1 X 1m, 5% free oil on water, ops on site, placed sorbent on area.

*Revised by Connor Kobeski on 9/2/11 to reflect segment boundaries*

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



**A6-IS**  
**SCAT 5**  
**19 Aug 2011**

*Revised by Connor Kobeski  
9/2/11 to reflect  
segment boundaries*

DB/6

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 19/08/11	Time (24h): std / daylight 0800 hrs to 0930 hrs	<b>Water Level</b> low - mean - bankfull - overbank falling - steady - rising
Segment/Reach ID: A6 Left Bank / Right Bank / Island				
Operations Division: A				
Survey by: (Foot) ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- deg C

<b>2 SURVEY TEAM # 5</b>	Name	Organization	Signature
Merlo Gauvreau		Polaris	(see original)
Todd Farrar		Polaris	(see original)
Ariel Blanc		Polaris	(see original)
Linda Watson		EPA	(see original)
Betsy Hovda		DEQ	(see original)

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 785 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 P (type) riprap \_\_\_\_\_ Wetland: Swamp \_\_\_\_\_ Bog/Fen \_\_\_\_\_ Marsh \_\_\_\_\_

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

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

**4B RIVER VALLEY CHARACTER** select as appropriate complete for primary

Cliff or Bluff: Est Height 4 m canyon \_\_\_\_\_ manmade \_\_\_\_\_ meander \_\_\_\_\_ confined or leveed P Substrate Type: sed \_\_\_\_\_

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 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 3 trucks access restrictions \_\_\_\_\_

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

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

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS										OIL CHARACTER	SUBST. TYPE(S)			
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC			SR	AP	NO
A			X		95	15	15		X	X	X											debris/wood
B				X	375	0.5	75			X												veg
C			X		20	5	13				X											veg
D			X		345	55															X	cobble/pebble

**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: large oiled debris pile. Recommend ATM 10

Zone B: Oiled bank on veg. Access difficult over riprap. Recommend ATM 1+2

Zone C: NFT

Zone D: NOD - NFT

wp. 222 1x0.1m, 30% CT on soil. Ops on site, placed sorbant on area.

wp. 223 1x1m, 5% free oil on water, ops on site, placed sorbant on area

wp. 22B Rainbow Sheen + strands of black on water. Requested ops to place sorbant in area.

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

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A6-RB  
 SCAT 5  
 19 Aug 2011

DB/IG

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 19/08/11	Time (24h): std / daylight 0800 hrs to 0930 hrs	<b>Water Level</b> low (mean) bankfull - overbank (falling) steady - rising
Segment/Reach ID: A6	Left Bank / <u>Right Bank</u> / Island			
Operations Division: A				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - _____ deg C	

<b>2 SURVEY TEAM # 5</b>	Name	Organization	Signature
Merlo Gauvreau		Polaris	(see original)
Todd Farrar		Polaris	(see original)
Ariel Blanc		Polaris	(see original)
Linda Watson		EPA	(see original)
Betsy Hovda		DEQ	(see original)

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 375 m

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

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

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

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

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

Sediment Flat: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed/Coarse S \_\_\_\_\_ 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 P Substrate Type: sediment

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) 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	%																
A				X	375	0.5	75			X							X						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	OILED ZONE	SUBSURFACE OIL CHARACTER						WATER TABLE	SHEEN COLOUR	CLEAN BELOW	SUBST. TYPE(S)							
							SAP	OP	PP	OR	OF	TR					NO	cm	B, R, S, N	Yes / No			
					cm	cm-cm																	

**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: Oiled band on veg. Access difficult over riprap. Recommended ATM 1&2.

Wp. 225 - Rainbow sheen & strands of black on water, Requested ops to place sorbent in area.

Revised by Connor Kobeshki on 9/2/11 to reflect segment boundaries

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



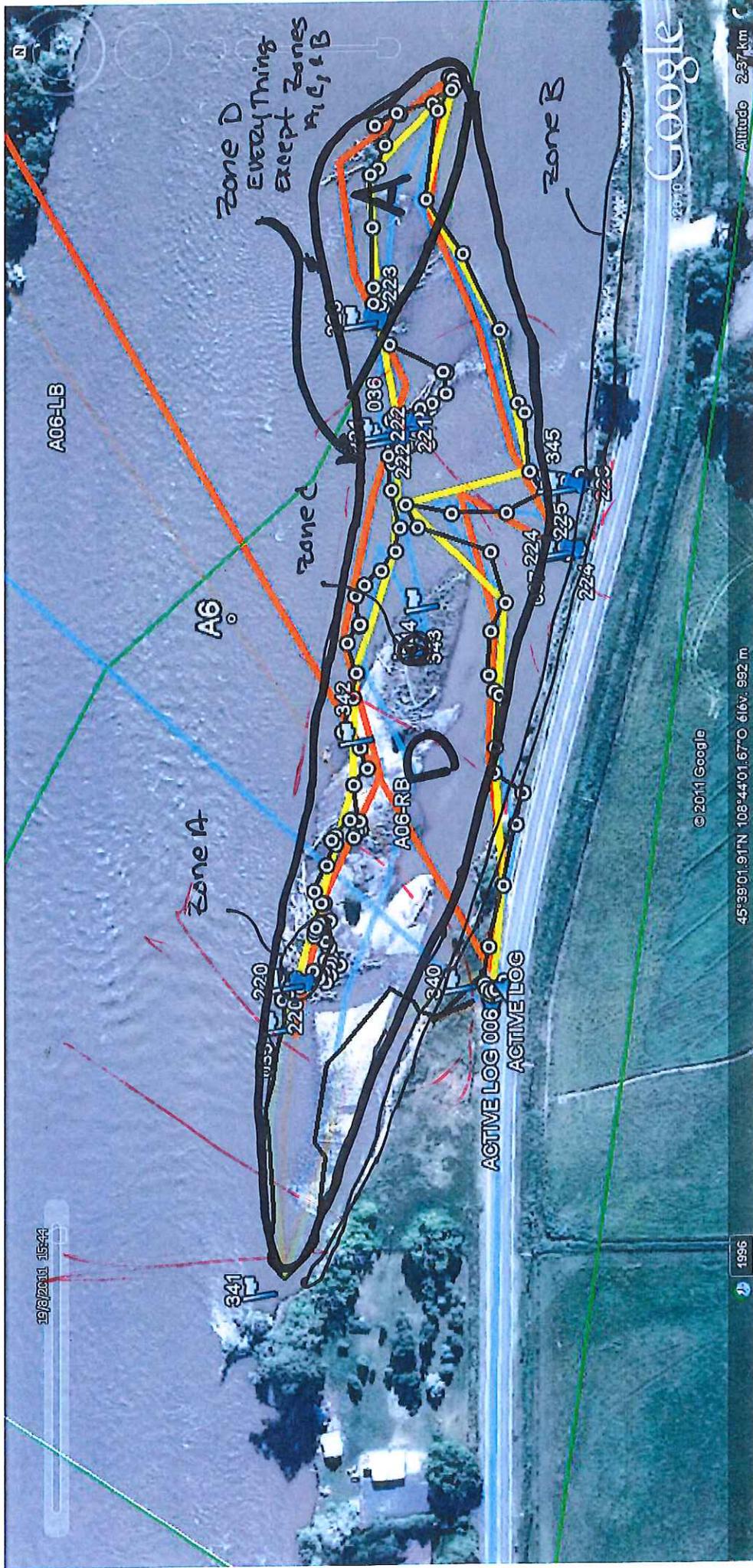
A6-RB  
SCAT 5  
19 Aug 2011

Revised by Connor Kobeski  
9/2/11 to reflect  
segment boundaries

*DB/G*

<b>1 GENERAL INFORMATION</b>				Date (dd/mm/yy) 19/08/11	Time (24h): std / daylight 0800 hrs to 0930 hrs	Water Level low - mean - bankfull - overbank falling - steady - rising																
Segment/Reach ID: A6 <u>Left Bank</u> / Right Bank / Island				Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ___ deg C														
<b>2 SURVEY TEAM # 5</b>				Name	Organization	Signature																
Merlo Gauvreau				Polaris		(see original)																
Todd Farrar				Polaris		(see original)																
Ariel Blanc				Polaris		(see original)																
Linda Watson				EPA		(see original)																
Betsy Hovda				DEQ		(see original)																
<b>3 SEGMENT</b>				Total Segment/Reach Length _____ m	Segment/Reach Length Surveyed <u>100</u> m																	
Start GPS: LATITUDE _____ deg. _____ min. LONGITUDE _____ deg. _____ min. Datum: _____				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 P (type) riprap ___			Wetland: Swamp ___ Bog/Fen ___ Marsh ___																
Sediment Bank: Clay/Mud ___ Sand ___ Mixed S ___ Pebble/Cobble ___ Boulder ___ Peat/Organic ___						Vegetated Banks <u>S</u>		Wooded Upland: ___														
Sediment Flat: Clay/Mud ___ Sand ___ Mixed/Coarse S ___				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 <u>P</u>		Substrate Type: <u>sed</u>															
Sloped: ___ (>5°)(15°)(30°)			straight ___ braided ___		oxbow ___ flood plain valley ___		Forested <u>Vegetated</u> 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</u> / N point bar present Y / N				bar-shoal substrate: silt / sand / gravel / <u>cobble</u> / boulder / bedrock / debris																		
seasonal water level: low / <u>mean</u> / bank full / overbank flow				est. change over next 7 days: falling - 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 / <u>N</u>																
Debris <u>Y</u> / N oiled <u>Y</u> / <u>N</u> amount ___ bags or ___ trucks				access restrictions																		
Oiled trees/shrubs <u>Y</u> / <u>N</u> River Current strong <u>Y</u> / N				Other Features: _____																		
<b>6 SURFACE OILING CONDITIONS</b> 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		<u>100</u>	<u>40</u>															X	<u>cobble/pebble</u>
<b>7 SUBSURFACE OILING CONDITIONS</b> 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					
<b>8 COMMENTS</b> 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: NOD - No f. NFT ck. 9/22/11																						
Sketch Yes / No Photos Yes / No Frames/Photographer: _____																						

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A6-LB  
SCAT 5  
19 Aug 2011

ORIGINAL

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>A6</u>	Left Bank / (Right Bank) / Island	<u>19/08/2011</u>	<u>0800</u> hrs to <u>0930</u> hrs	low - <u>mean</u> - bankfull - overbank
Operations Division: <u>A6</u>				(falling) - steady - rising
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /	Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - ___ deg C		

<b>2 SURVEY TEAM #</b> <u>5</u>	name	organization	contact phone number
Merlo Gauvreau		Polaris	
Todd Farrar		Polaris	
Ariel Blanc		Polaris	
Linda Watson		EPA	
Betsy Hovda		DEQ	

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 410 island m (785 total)  
 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 P (type) rip-rap Wetland: Swamp \_\_\_\_\_ Bog/Fen \_\_\_\_\_ Marsh \_\_\_\_\_  
 Sediment Bank: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed S Pebble/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: (S) Wooded Upland: \_\_\_\_\_  
 Sediment Flat: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed/Coarse P Other: \_\_\_\_\_ If snow and ice use Winter River SOS

**4B RIVER VALLEY CHARACTER** select as appropriate complete for primary

Cliff or Bluff: \_\_\_\_\_ Est Height 4 m canyon \_\_\_\_\_ manmade \_\_\_\_\_ meander \_\_\_\_\_ confined or leveed P Substrate Type: sand  
 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 3 trucks access restrictions steep bank  
 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		45	15	15		(X)	A	X											debris/wood
B				X	375	0.5	75			X												veg
C			X		20	5	13				X											veg
D			X		345	55	-														X	cobble/purple

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

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

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

Zone A: Large oiled debris pile. Recommend ATM/0,  
 Zone B: oiled band on veg. Access difficult, over rip-rap. Recommend ATM 1 & 2  
 Zone C: NFT  
 Zone D: NOO

wp. 222 1mx.1m 30% oil in soil. Ops on site, placed sorbant on area  
 wp. 223 1x1m 5% free oil on water, Ops on site, placed sorbant on area  
 wp. 225 Rainbow sheen & strands of black on water. Requested ops to place sorbant in area

(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/6

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 21/09/11	Time (24h): std / daylight 0900 hrs to 1100 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: A <u>6</u> Left Bank / <u>Right Bank</u> / Island				
Operations Division: A				
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - <u>    </u> deg C

<b>2 SURVEY TEAM # 3</b>	Name	Organization	Signature
Pete Lee		Polaris	<i>PBLee</i>
Jay Watson		MTFWP	

**3 SEGMENT** Total Segment/Reach Length 575 m Segment/Reach Length Surveyed 315 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: S Wooded Upland: S

Sediment Flat: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed/Coarse \_\_\_\_\_ Other: X RIP RAP (P) If snow and ice use Winter River SOS

**4B RIVER VALLEY CHARACTER** select as appropriate complete for primary

Cliff or Bluff: Est Height 3 m canyon \_\_\_\_\_ manmade XP 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: Adjacent to Thiel Rd.

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)	
	MS	LB	UB	OB	Length	Width	Distrib.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO
A			X		90	1	100			P	S						X				Grass, debris
B			X		145	1	10			P	S						X				Grass debris
C			X		80	1	21			S	P						X				"

2375  
2376  
2372

**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)

Oil height: 180-200 cm

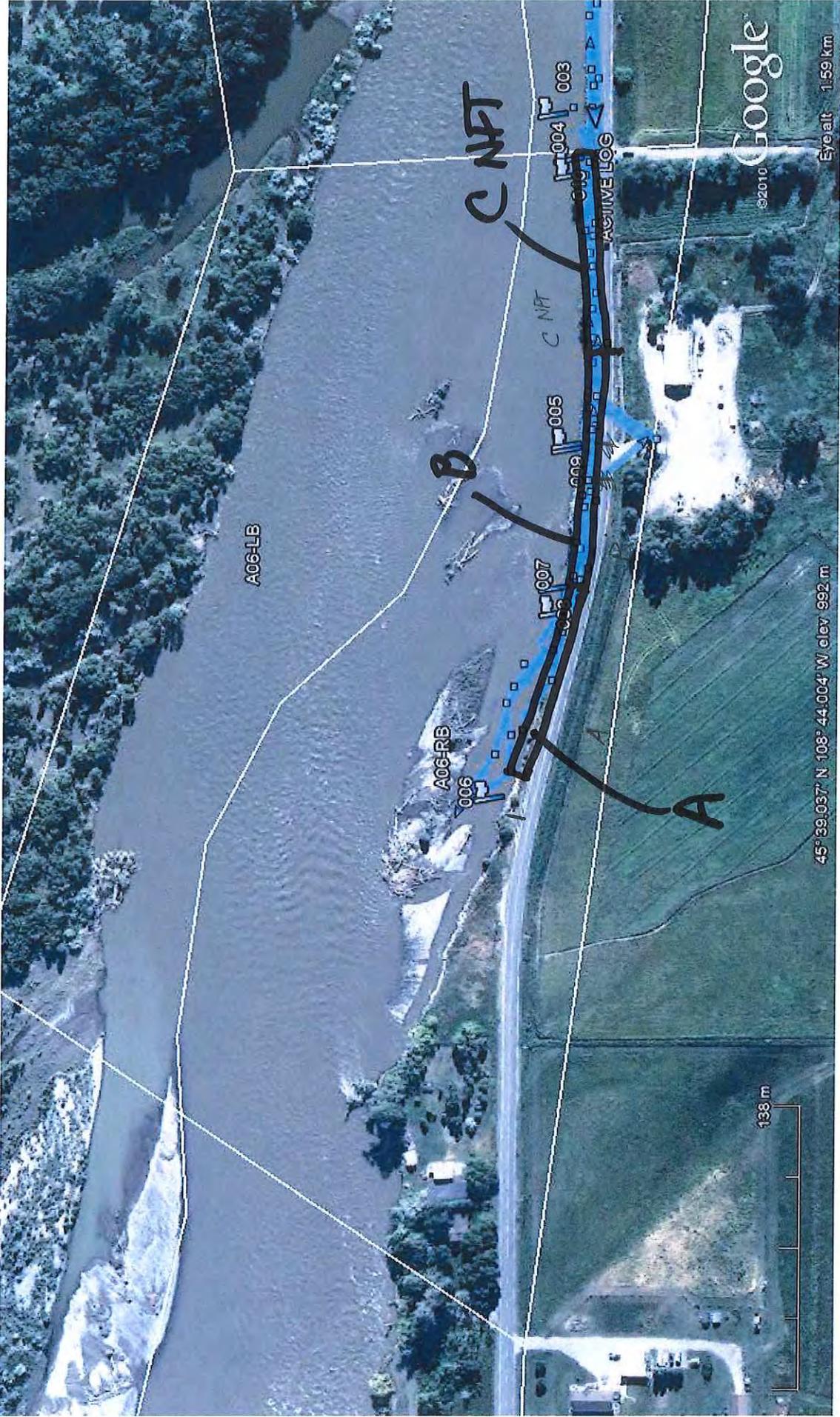
**Treatment recommendations:**

Zone A,B: ATM #1 ad #2

Zone C: Treated by Ops ad Hot Shot crew; no further treatment

Ops Hot Shot (Jose Estrada)

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



T3 9/21/11

Zous are 1 m wide



## **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 A6 RB

Date of Survey 9/21/11

SCAT Team Member Pelee/Polaris Signed: PBlee

SCAT Team Member Jay Watson/MTFWP Signed: \_\_\_\_\_

SCAT Team Member \_\_\_\_\_ Signed: \_\_\_\_\_

**Segment FAILED ReSCAT**

**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.

Zones A and B have transmittable oil-coated vegetation and debris that can be cut/removed. Bank is rip-rap. Ops safety conditions for steep slopes apply.

Zone Dimensions: Length 235 Width 1 GPS Waypoint: Lat. N45°39.0' Long. W 108°43.972'  
(required) (center of zone)

Estimated Work Effort: Number of People 10 Hours of Work 10 Applicable CTR(s) 5  
(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 \_\_\_\_\_



## **Appendix E**

Final SCAT Survey Forms and  
Sketches

PB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 27/09/11	Time (24h): std / daylight 0900 hrs to 1000 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: A <u>6</u> Left Bank / <u>Right Bank</u> / Island		Operations Division: A		
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>28</u> deg C

<b>2 SURVEY TEAM # 3</b>	Name	Organization	Signature
Pete Lee		Polaris	<i>Pete Lee</i>
Mark Ewanic		MTDEQ	<i>Mark Ewanic</i>

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 340 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 P (type) Rock Wetland: Swamp \_\_\_\_\_ Bog/Fen \_\_\_\_\_ Marsh \_\_\_\_\_

Sediment Bank: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed X Pebble/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: ES 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 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

2403

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>		340	5	<u>&lt;1</u>			<u>S</u>	<u>P</u>						<u>X</u>					Grass, trees, debris Rock

**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

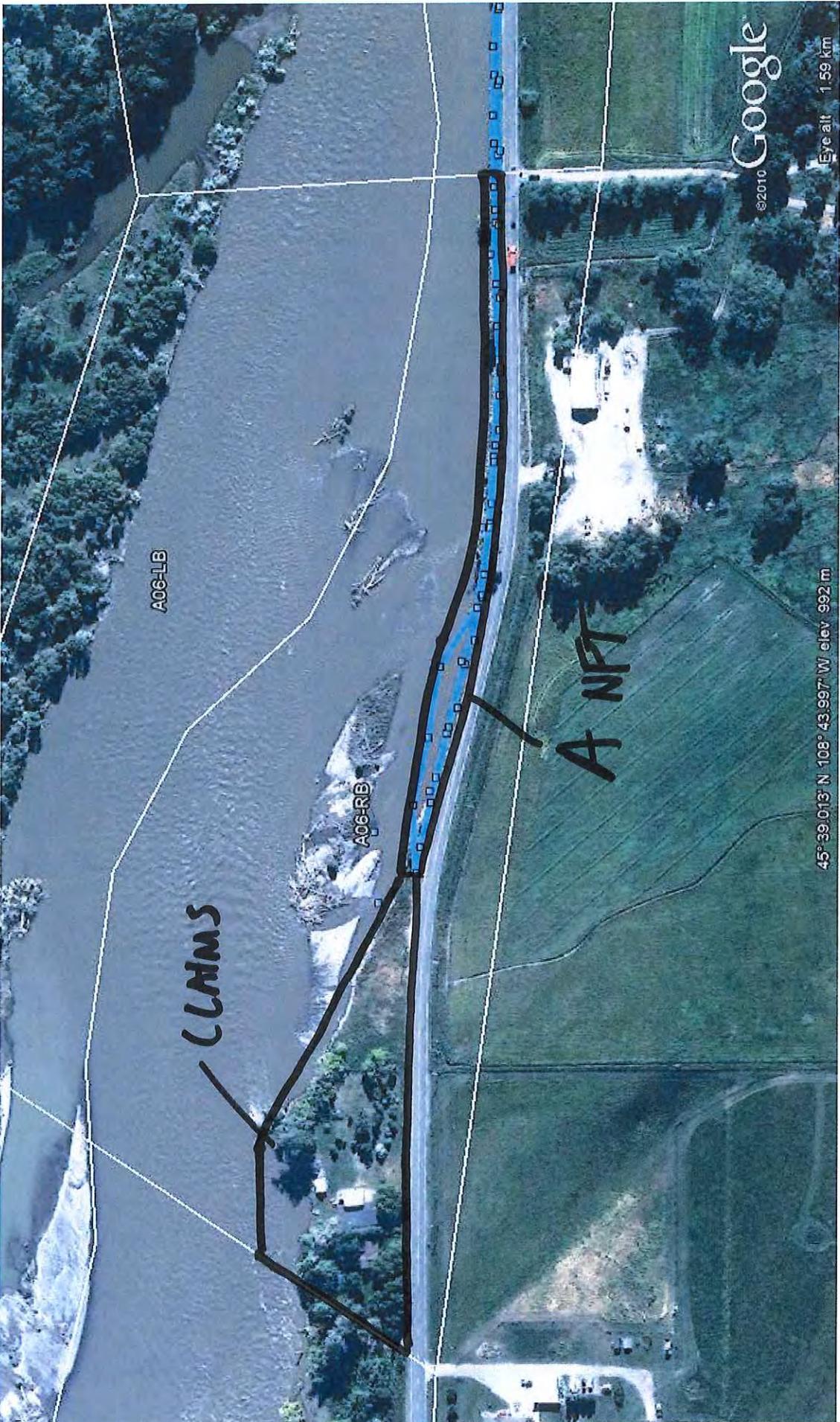
Oil height: 2-3 m

Treatment recommendations:  
 Zone A : Treated by Ops as per POST and HotShot crew;  
 Zone : No further Treatment (NFT)

RESCAT

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

P20f2



A6 RB  
T3 9/27/11

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>A6</u>	Left Bank / Right Bank / Island	<u>2-9-11</u>	<u>1600</u> hrs to <u>1645</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>A</u>				falling - steady - rising
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>	<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm			Air Temp + / - <u>20</u> deg C

<b>2 SURVEY TEAM # <u>J</u></b>	Name	Organization	Signature
	<u>Charles Ross</u>	<u>Conoco ENR</u>	<u>Charles Ross</u>
	<u>Steve Opp</u>	<u>DEQ</u>	<u>Steve Opp</u>
	<u>TERRY THUNER</u>	<u>U.S. EPA</u>	<u>Terry Thuner</u>

**3 SEGMENT** Total Segment/Reach Length 535 m Segment/Reach Length Surveyed 100 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

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

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

Debris: N oiled N amount 2 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

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>	<u>100</u>	<u>50</u>	<u>41</u>				<u>P</u>						<u>P</u>				<u>00</u>	<u>S</u>

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

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

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

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

Zone A has lost the 1% of stem vegetation

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

9/2/2011

9-2-11  
T-3  
~~A6R~~ A6R  
SWANSON



A-6a ACTIVE LOG 011

011 U01  
09.386  
16.8"

ACTIVE LOG 028

009

© 2011 Google

45°39'01.80" N 108°44'11.35" W elev 3256 ft

Date: 4/30/2004 1996

©2010 Google

Eye alt



## **Appendix F**

Completed SCAT Segment Sign-Off  
Forms

# SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

## SILVERTIP PIPELINE RELEASE

Segment A 6 RB Date of Survey 9/27/11

Dates of Initial SCAT Assessments 05 JUL 2011  
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 5

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)**

Mark Eunnic MARK EUNNIC/MT DEC 9/27/11  
Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_  
**State Representative (DEQ/FWP)**

Pblee Pepe Lee / Polaris 9/27/11  
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.



## **Appendix G**

Exception Memos

**GENERAL MESSAGE**

**TO:** Greg Weigel

**POSITION:** EPA Operations  
Silvertip Pipeline Incident

**FROM:** JoAnn Eskelsen, Gary Reiter, Ray McElvey

**POSITION:** SCAT/Ops Liaisons

**SUBJECT:** A-6 RB Rip Rap

**DATE:** 8/26/2011

**TIME:** 1130

**MESSAGE:**

We visited the area of riprap at A-6 RB where visible sheen has been noted emanating from the shore over past several weeks, especially when wakes from passing boats are breaking on the shoreline. The site presently has sorbent boom anchored offshore to contain and recover oil that leaches out of the riprap. The A-6 RB segment is not accessible at this time due to the owner denying his permission to either SCAT or conduct cleanup operations on his property. Therefore, at this time operations have been limited to booming from the river side by boat.

We have been told that agency representatives have recommended that the riprap be flushed with water to ensure that all oil is released, contained and recovered prior to closure of the site. The only flushing that could safely be conducted from the water side would be high pressure flushing using a portable pump. Our recommendation to flush the riprap would be limited to a high volume/low pressure flushing operation. Our preference for this operation would be to use a blanked off plastic or aluminum pipe with 1" holes drilled into the casing every four or five inches. Water would then be pumped into the pipe at low volume and the water allowed to flush the riprap area to release any oil held in the void spaces. Length of pipe would be defined by the pumps GPM capacity. However, this would require access to the shore to install the pipe and pump equipment as well as personnel for operation.

Until access to the shore is approved, we recommend no further action beyond maintenance of the present sorbent boom.

**SIGNATURE:**

*JoAnn M. Eskelsen*  
JoAnn Eskelsen

**POSITION:**

EPA SCAT/Ops Liaison

**REPLY:**

**DATE:**

**TIME:**

**SIGNATURE/POSITION:**

GENERAL MESSAGE - SCAT AND OPERATIONS GUIDANCE FOR A6RB/A7RB RIP RAP SHEENING

<b>TO:</b> Jimmie James, RPIC Mike Trombetta, SOSC Steven Merritt, FOSC	<b>POSITION:</b> ExxonMobil Montana DEQ State On-Scene Coordinator EPA Federal On-Scene Coordinator
<b>FROM:</b> JoAnn Eskelsen, Gary Reiter, Ray McElvey	<b>POSITION:</b> SCAT/Ops Liaisons
<b>SUBJECT:</b> A6RB and A7RB Rip Rap	<b>DATE:</b> 8/26/2011 <b>TIME:</b> 1130

**MESSAGE:**

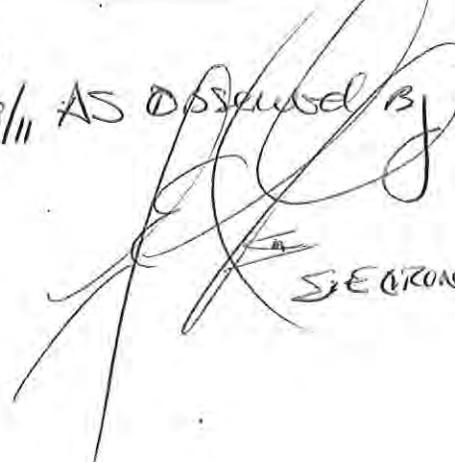
We visited the area of riprap at A-6 RB where visible sheen has been noted emanating from the shore over past several weeks, especially when wakes from passing boats are breaking on the shoreline. The site presently has sorbent boom anchored offshore to contain and recover oil that leaches out of the riprap. The A-6 RB segment is not accessible at this time due to the owner denying his permission to either SCAT or conduct cleanup operations on his property. Therefore, at this time operations have been limited to booming from the river side by boat.

We have been told that agency representatives have recommended that the riprap be flushed with water to ensure that all oil is released, contained and recovered prior to closure of the site. The only flushing that could safely be conducted from the water side would be high pressure flushing using a portable pump. Our recommendation to flush the riprap would be limited to a high volume/low pressure flushing operation. Our preference for this operation would be to use a blanked off plastic or aluminum pipe with 1" holes drilled into the casing every four or five inches. A high volume of water would then be pumped into the pipe at low pressure and the water directed through pipes as described to flush the riprap area to release any oil held in the void spaces and collect it within sorbent boom in the river. Length of pipe would be defined by the pumps GPM capacity. However, this would require access to the shore to install the pipe and pump equipment as well as personnel for operation.

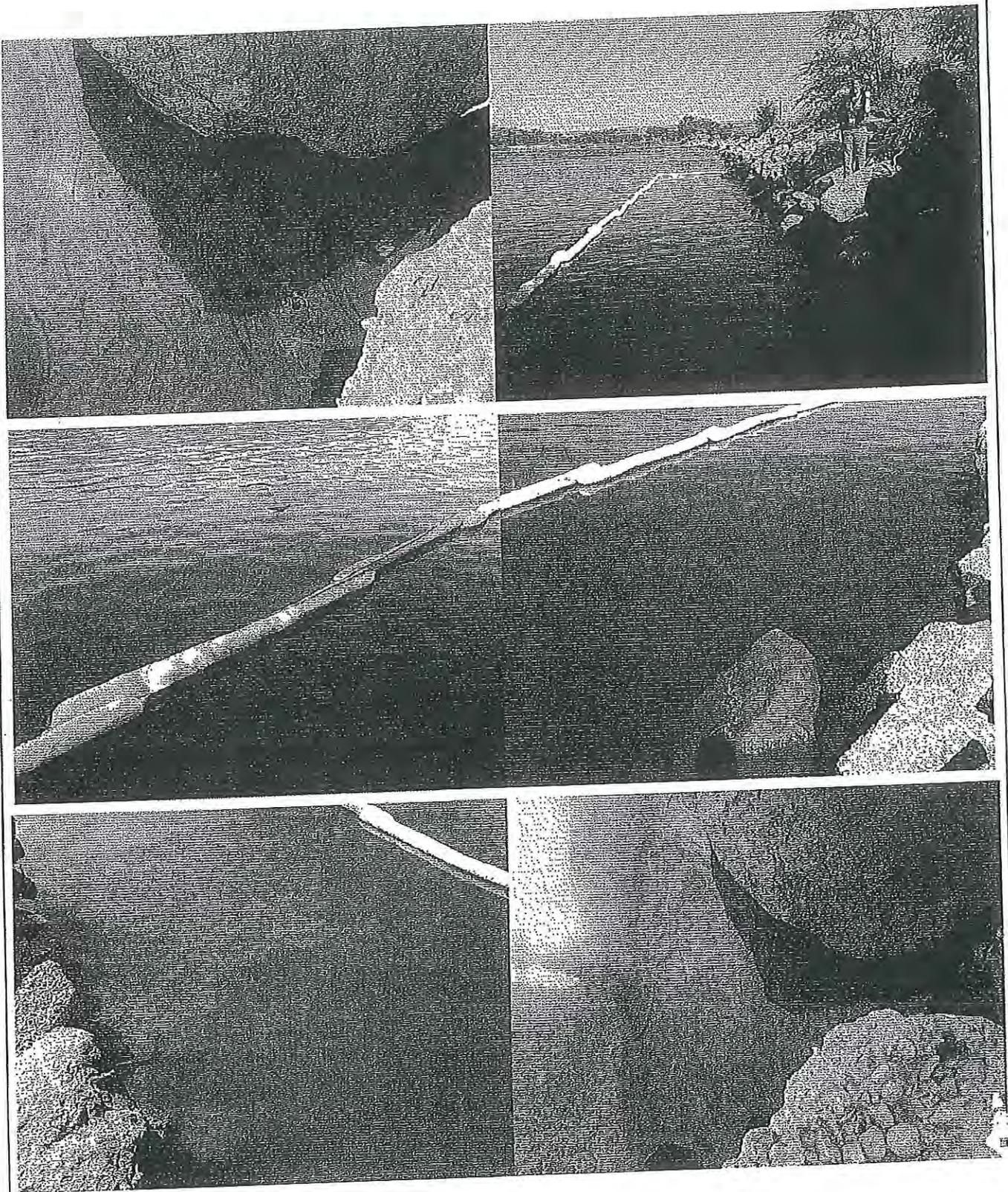
Until access to the shore is approved or negotiated with the landowner(s), we recommend no further action beyond maintenance of the present sorbent boom, which can be continued from the river.

Photos from a site visit conducted on 8/24/2011 are enclosed within the following page.

8/19/11 AS OBSERVED BY J.E. GIRONCEK / STEVEN CARRON



J.E. GIRONCEK



SIGNATURE:

*JoAnn Eskelsen*  
JoAnn Eskelsen, EPA ERT

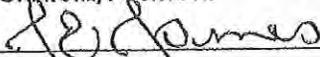
POSITION:

EPA SCAT/Ops Liaison

NFES 1336

**REPLY: SCAT and Operations**

The Unified Command is aware of this area within SCAT Segments A6RB and A7RB and that operations within these segments have been marked complete with the exception of this area by the Pre-Inspection Survey Teams and Re-SCAT efforts. We agree with the recommended treatment proposed by the SCAT/Operations Liaisons for this area, which is on BLM land and not private property, according to the Arcadis and Yellowstone County Parcel maps. Recommend consultation with BLM and the county roads department regarding the recommended treatment. Request that water-based operations crews continue to maintain a secure sorbent boom perimeter around these areas from the river to ensure that sheen is not released from saturated sorbents, as seen pictured above. Once coordination with the BLM or other easement property owner has been conducted, ExxonMobil will execute the recommended flushing operation under the direction of MTDEQ. In the meantime, this segment will be flagged and excised within GIS maps from the Re-SCAT report that will be produced to close-out the segment. This document will be included as an attachment to the Area Transition Report to document the need for additional work within this segment.

<b>DATE:</b> 8/30/2011	<b>TIME:</b> 1030	<b>SIGNATURE/POSITION:</b>  Jimmie James, RPIC
		 8/30/11 Mike Trombetta, SOSC
		 Steven Merritt, FOSC



Laurel-20110824-00045.jpg



Laurel-20110824-00046.jpg



South Yellowstone-20110824-00051.jpg



South Yellowstone-20110824-00050.jpg



South Yellowstone-20110824-00048.jpg



Laurel-20110824-00049.jpg

**GENERAL MESSAGE – SCAT AND OPERATIONS GUIDANCE FOR A6RB/A7RB RIP RAP SHEENING**

<b>TO:</b> Jimmie James, RPIC Mike Trombetta, SOSOC Steven Merritt, FOSC	<b>POSITION:</b> ExxonMobil Montana DEQ State On-Scene Coordinator EPA Federal On-Scene Coordinator
<b>FROM:</b> JoAnn Eskelsen, Gary Reiter, Ray McElvey	<b>POSITION:</b> SCAT/Ops Liaisons
<b>SUBJECT:</b> A6RB and A7RB Rip Rap	<b>DATE:</b> 8/26/2011 <b>TIME:</b> 1130

**MESSAGE:**

We visited the area of riprap at A-6 RB where visible sheen has been noted emanating from the shore over past several weeks, especially when wakes from passing boats are breaking on the shoreline. The site presently has sorbent boom anchored offshore to contain and recover oil that leaches out of the riprap. The A-6 RB segment is not accessible at this time due to the owner denying his permission to either SCAT or conduct cleanup operations on his property. Therefore, at this time operations have been limited to booming from the river side by boat.

We have been told that agency representatives have recommended that the riprap be flushed with water to ensure that all oil is released, contained and recovered prior to closure of the site. The only flushing that could safely be conducted from the water side would be high pressure flushing using a portable pump. Our recommendation to flush the riprap would be limited to a high volume/low pressure flushing operation. Our preference for this operation would be to use a blanked off plastic or aluminum pipe with 1" holes drilled into the casing every four or five inches. A high volume of water would then be pumped into the pipe at low pressure and the water directed through pipes as described to flush the riprap area to release any oil held in the void spaces and collect it within sorbent boom in the river. Length of pipe would be defined by the pumps GPM capacity. However, this would require access to the shore to install the pipe and pump equipment as well as personnel for operation.

Until access to the shore is approved or negotiated with the landowner(s), we recommend no further action beyond maintenance of the present sorbent boom, which can be continued from the river.

Photos from a site visit conducted on 8/24/2011 are enclosed within the following page.



**SIGNATURE:**

JoAnn Eskelsen, EPA ERT

**POSITION:**

EPA SCAT/Ops Liaison

**REPLY: SCAT and Operations**

The Unified Command is aware of this area within SCAT Segments A6RB and A7RB and that operations within these segments have been marked complete with the exception of this area by the Pre-Inspection Survey Teams and Re-SCAT efforts. We agree with the recommended treatment proposed by the SCAT/Operations Liaisons for this area, which is on BLM land and not private property, according to the Arcadis and Yellowstone County Parcel maps. Recommend consultation with BLM and the county roads department regarding the recommended treatment. Request that water-based operations crews continue to maintain a secure sorbent boom perimeter around these areas from the river to ensure that sheen is not released from saturated sorbents, as seen pictured above. Once coordination with the BLM or other easement property owner has been conducted, ExxonMobil will execute the recommended flushing operation under the direction of MTDEQ. In the meantime, this segment will be flagged and excised within GIS maps from the Re-SCAT report that will be produced to close-out the segment. This document will be included as an attachment to the Area Transition Report to document the need for additional work within this segment.

DATE:	TIME:	SIGNATURE/POSITION:
8/30/2011	1030	<p>_____ Jimmie James, RPIC</p> <p><i>Bob Habek</i> _____ Bob Habek Mike Trombetta, SOSC 9-20-11</p> <p>_____ Steven Merritt, FOSC</p>



Laurel-20110824-00045.jpg



Laurel-20110824-00046.jpg



South Yellowstone-20110824-00051.jpg



South Yellowstone-20110824-00050.jpg



South Yellowstone-20110824-00048.jpg



Laurel-20110824-00049.jpg

*Handwritten signature and notes:*  
9/20/11  
J.E. GRONECK  
EMPC

REPLY: SCAT and Operations

The Unified Command is aware of this area within SCAT Segments A6RB and A7RB and that operations within these segments have been marked complete with the exception of this area by the Pre-Inspection Survey Teams and Re-SCAT efforts. We agree with the recommended treatment proposed by the SCAT/Operations Liaisons for this area, which is on BLM land and not private property, according to the Arcadis and Yellowstone County Parcel maps. Recommend consultation with BLM and the county roads department regarding the recommended treatment. Request that water-based operations crews continue to maintain a secure sorbent boom perimeter around these areas from the river to ensure that sheen is not released from saturated sorbents, as seen pictured above. Once coordination with the BLM or other easement property owner has been conducted, ExxonMobil will execute the recommended flushing operation under the direction of MTDEQ. In the meantime, this segment will be flagged and excised within GIS maps from the Re-SCAT report that will be produced to close-out the segment. This document will be included as an attachment to the Area Transition Report to document the need for additional work within this segment.

DATE:	TIME:	SIGNATURE/POSITION:
8/30/2011	1030	Jimmie James, RPIC
		<i>Robert Habek</i> Bob Habek Mike Trombetta, SOSC
		9-20-11
		Steven Merritt, FOSC

- Laurel-20110824-00045.jpg
- Laurel-20110824-00046.jpg
- South Yellowstone-20110824-00051.jpg
- South Yellowstone-20110824-00050.jpg
- South Yellowstone-20110824-00048.jpg
- Laurel-20110824-00049.jpg

*J.E. Gronbeck*  
9/19/11  
J.E. GRONBECK  
SOPIC

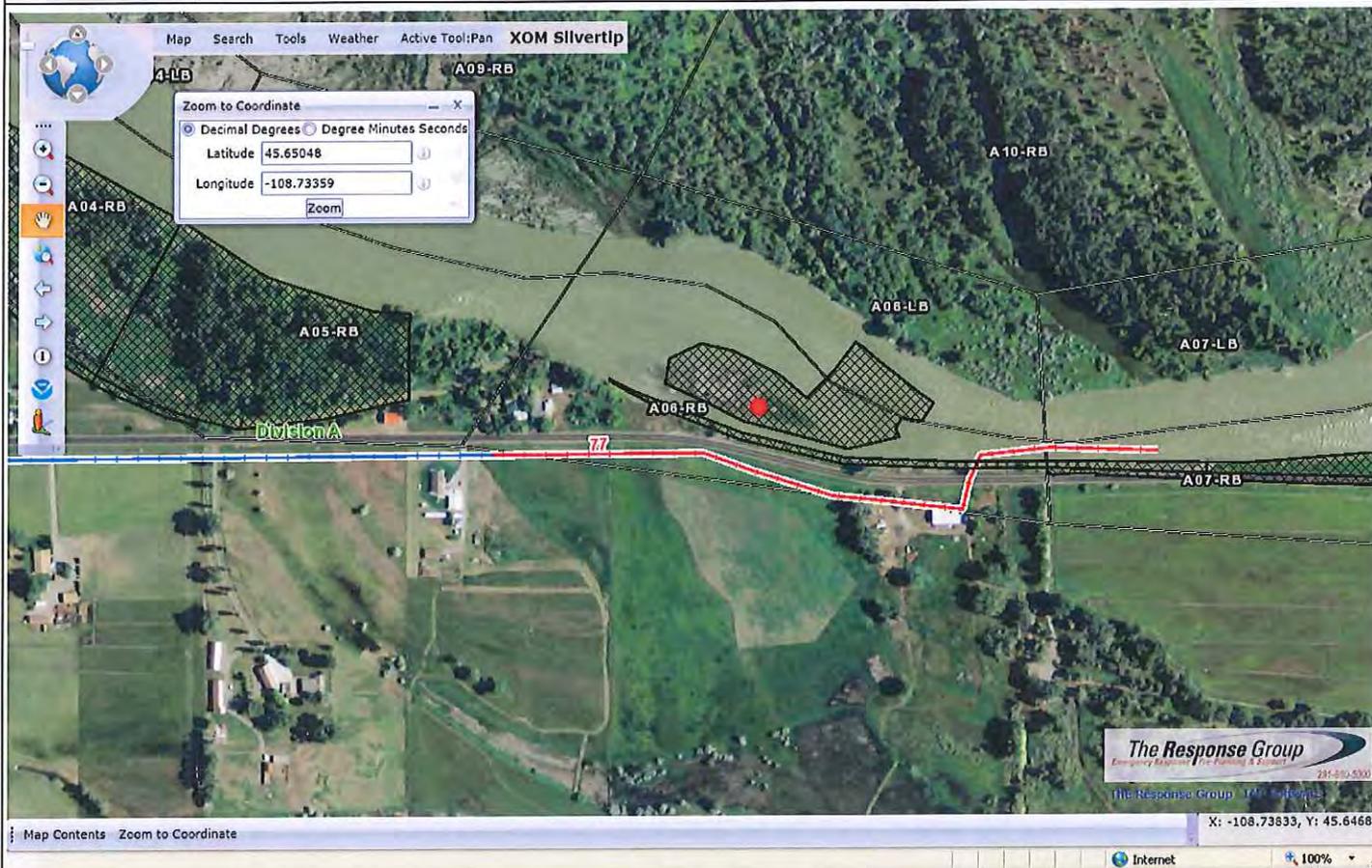
Flushing was performed until no sheen was found. Booms remained in place + did not catch sheen for a period of time. Flushing was again performed. No sheen developed. No additional work required.

*Laura Alvey* Laura Alvey MT DEQ (SOSC) 9-27-11  
*J. Glushko* LAUREN GLUSHKO POLARIS 9-27-11

**GENERAL MESSAGE - SCAT AND OPERATIONS GUIDANCE FOR A-6 RB (ISLAND) OIL IN DEBRIS PILE AND ALONG BANK**

<b>TO:</b> Jimmie James, RPIC Mike Trombetta, SOSC Steven Merritt, FOSC	<b>POSITION:</b> ExxonMobil Montana DEQ State On-Scene Coordinator EPA Federal On-Scene Coordinator
<b>FROM:</b> Wildlife Branch	<b>POSITION:</b> Wildlife Deputy Chief
<b>SUBJECT:</b> A-6 RB (island) debris pile and along bank	<b>DATE:</b> 09.06.2011 <b>TIME:</b> 1029

**MESSAGE:** International Bird Rescue and Resource Advisors with the USFWS identified several areas in SCAT sector A-6RB this includes the Island across from the bank. This segment already contains an exception report but is presenting a threat to wildlife. Several areas are recommended for remediation to reduce potential exposure. The area depicted in the map is a debris pile in need of cleaning. The other priority area in this sector is N 45.65019 by W 108.733711, this is an area were transferable oil is located in the debris line along the riprap and in vegetation above a spring located at this location. This area is a high priority.



<b>SIGNATURE:</b> Karen J. Nelson, USFWS EC Specialist	<b>POSITION:</b> Wildlife Deputy Chief
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**REPLY:** SCAT and Operations

*NATE COOK*      *9/16/11*  
*[Signature]*      *1700*

<b>DATE:</b> 09/09/2011	<b>TIME:</b> 11:00	<b>SIGNATURE/POSITION:</b> Jimmie James, RPIC <i>reviewed</i> <i>Jenny Chambers</i> Jenny Chambers, SOSC <i>Steven Merritt</i> Steven Merritt, FOSC
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