

ExxonMobil Pipeline Company

**SCAT Area Transition Report
for A12**

Silvertip Pipeline Incident
Laurel, Montana

October 18, 2011



SCAT Area Transition Report for A12

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Laurel, Montana

Prepared for:
ExxonMobil Pipeline Company

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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 A12, 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 A12. 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 A12, 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 A12 is 29.4. There were no access issues for this area.

1.2 Cultural, Historic, and Natural Resource Constraints

A single historic property was identified within the area by Cultural Heritage personnel. The property, an early twentieth century homestead complex, has been documented and determined potentially eligible for the National Register of Historical Places (NRHP).

The property was impacted by the Silvertip Pipeline Incident. An exclusion area was set up around the property and the impacts were mitigated by cleaning using approved methods under the supervision of an archaeologist, thus mitigating the impacts. A finding of No Adverse Effect was determined by the United States Environmental Protection Agency (USEPA) and concurred with by the State Historic Preservation Office (SHPO).

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 A12. Four oiled Woodhouse's toads (*Bufo woodhousii*) and one western terrestrial garter snake (*Thamnophis elegans*) were captured, cleaned, and released. In addition, three Woodhouse's toads were captured and taken to the Wildlife Recovery Center for an oiling evaluation and release. One Wildlife Priority Cleanup Area (WPCA) was identified. The WPCA consisted of several debris piles that contained oily debris as well as transferable oil on the ground. The WPCA was treated to reduce the potential for wildlife oiling and it is no longer considered a hazard.

Five active migratory bird nests were identified in Area A12: three unknown species nests, one mourning dove (*Zenaida macroura*) nest, and one cedar waxwing (*Bombycilla cedrorum*) nest.

1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area A12. The analytical results for the samples collected can be accessed through a publicly accessible database on the USEPA’s website. The approximate locations of samples collected within Area A12 are provided on Figure 3.

Table 1 Environmental Sampling Summary

Agency	Samp_No	Date	Matrix	Location	Latitude	Longitude
CTEH	BIMT0825S0505	8/25/11	Soil_River	SD-A12RA	45.650691	-108.71546
CTEH	BIMT0825S0510	8/25/11	Soil_River	SD-A12RB	45.650718	-108.715673
CTEH	BIMT0826S0501	8/26/11	Soil_River	SD-A12RC	45.650764	-108.715714
CTEH	BIMT0826S0502	8/26/11	Soil_River	SD-A12RC	45.650764	-108.715714
CTEH	BIMT0826S0503	8/26/11	Soil_River	SD-A12RC	45.650764	-108.715714
CTEH	BIMT0826S0504	8/26/11	Soil_River	SD-A12RC	45.650764	-108.715714
CTEH	BIMT0826S0505	8/26/11	Soil_River	SD-A12RC	45.650764	-108.715714
CTEH	LAMT0724SW507	7/24/11	Water_Surface	A13	45.650489	-108.7133
CTEH	LAMT0823S0606	8/23/11	Soil_River	SD-A12L	45.651459	-108.713342
EPA	SPSW507_072411	7/24/11	Water_Surface	SPSW507	45.65053534	-108.7134175

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 16 exceedances: 2 for total extractable hydrocarbons, 7 for selenium, and 7 for vanadium.

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 A12 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area A12.

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. 1](#) and [CTR No. 4](#)).

1.6 Oil Removal Activities

Oil removal activities were conducted within Area A12 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

SCAT Operations liaisons performed an inspection of the remediated areas of SCAT Area A12 and developed a Pre-Inspection Survey Transmittal (PIST) associated with the right and left banks within Area A12, which is presented in Appendix C.

1.8 Post-Inspection Survey Transmittal

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

1.9 Summary of Final SCAT Surveys

Figure 5 shows the oiling conditions within Area A12 following completion of oil removal activities. The SCAT team performed final surveys of the right and left banks within SCAT Area A12 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.



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1.10 SCAT Area Conclusions

Based on the final SCAT surveys performed on the right and left banks within Area A12, no further treatment is recommended for this area. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition
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2. Transition Sign-Off Form

SCAT Area Transition Report for A12

Prepared for:

Unified Command

Date

Unified Command – RP



**SCAT Area Transition
Report for A12**

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Laurel, Montana

SCAT Area Transition Report for A12

Prepared for:

Unified Command

9/28/2011

Date

 S. MERRITT

Unified Command – FOSC



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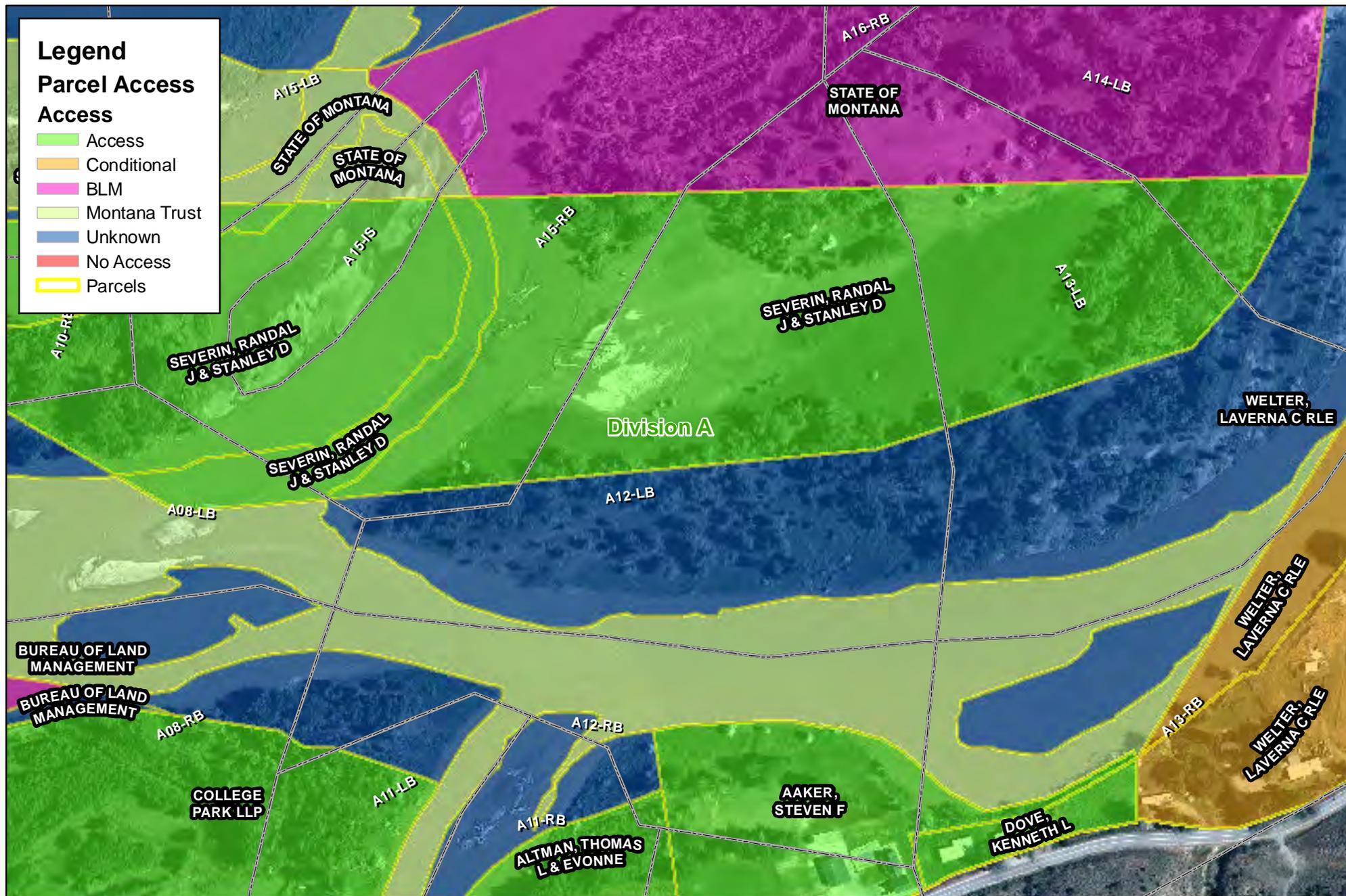
SCAT Area Transition Report for A12

Prepared for:

Unified Command

9/28/11
Date


Unified Command – MDEQ



Legend

Parcel Access

Access

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

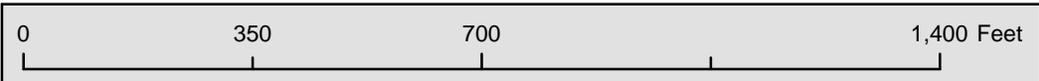


Figure 1

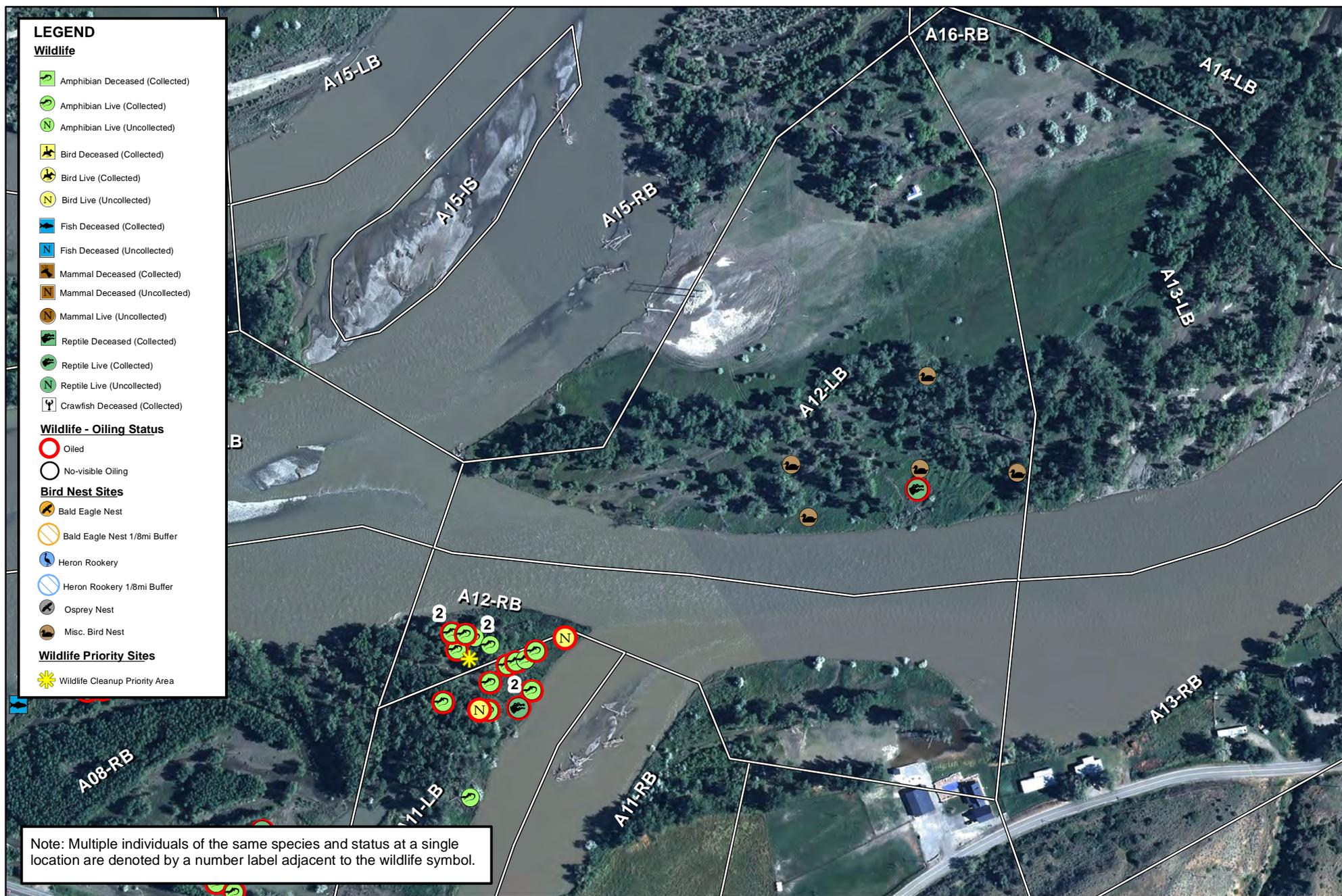
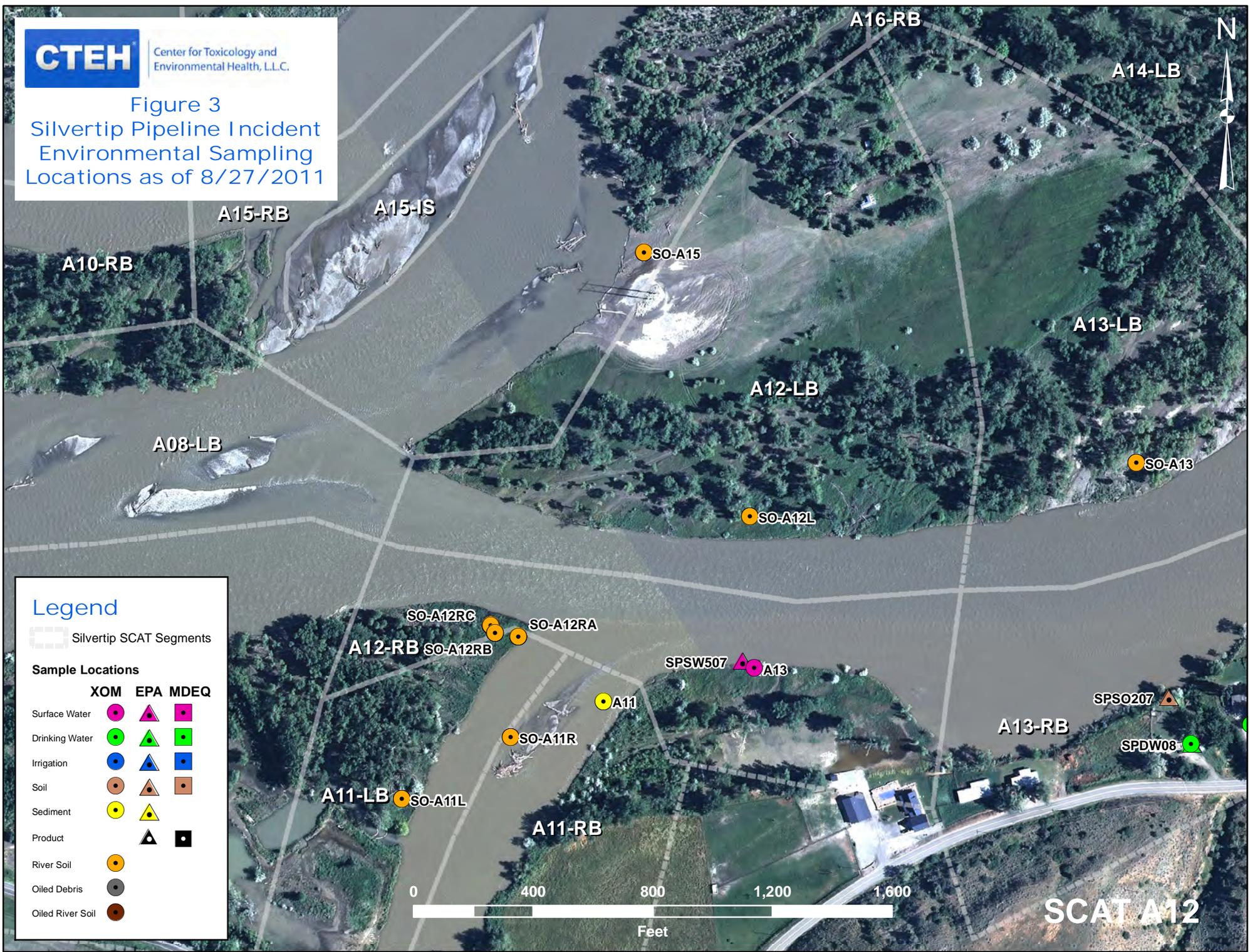


Figure 2
Wildlife Resources

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

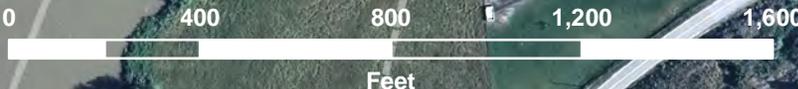


Legend

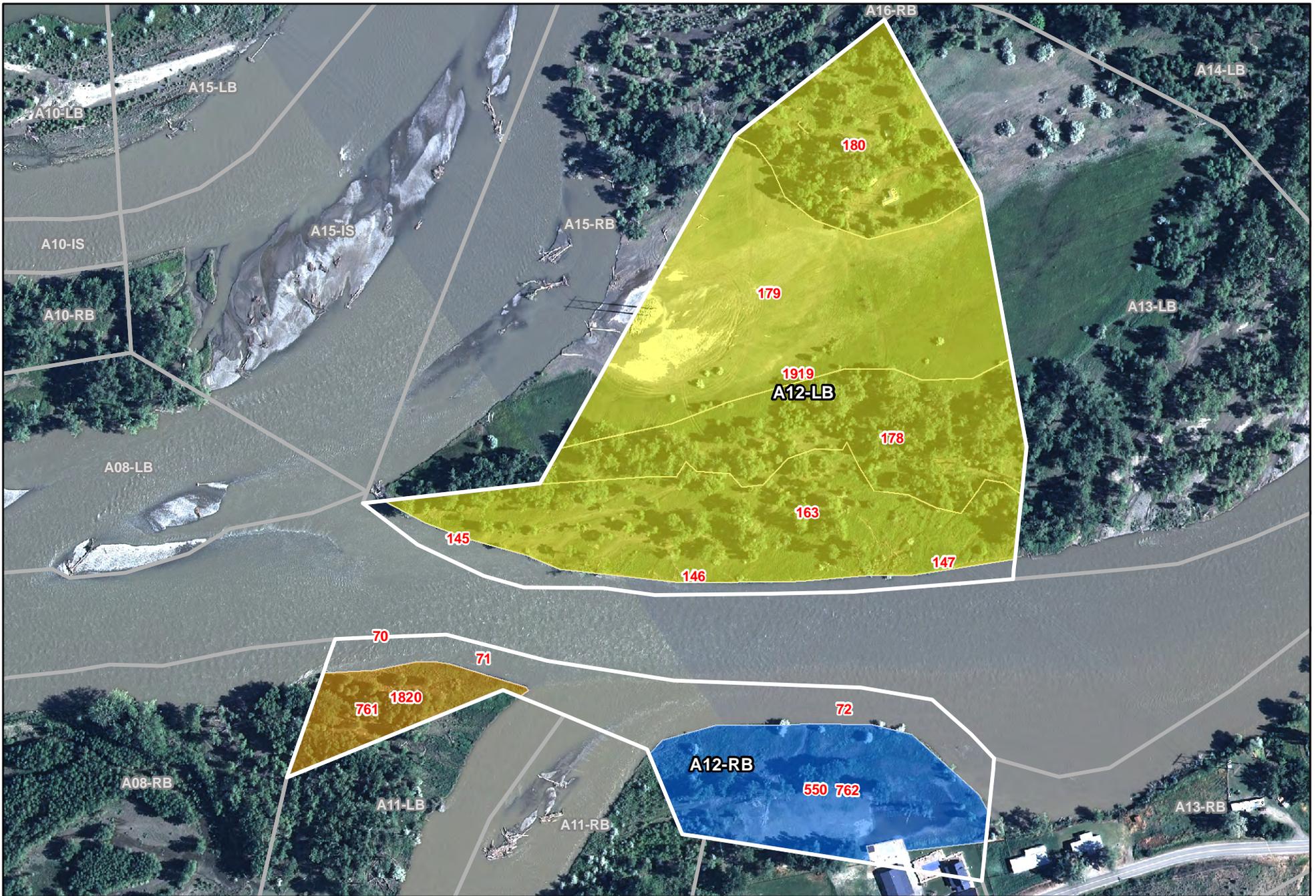
Silvertip SCAT Segments

Sample Locations

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



SCAT A12



9999 Oiling Zone ID
 Heavy Oiling
 Moderate Oiling

Light Oiling
 Very Light Oiling
 No Oil Observed

Figure 4 - Maximum SCAT Observations
For SCAT Area: A12





- 9999 Oiling Zone ID
- Heavy Oiling
- Moderate Oiling

- Light Oiling
- Very Light Oiling
- No Oil Observed

Figure 5 - Final SCAT Observations
For SCAT Area: A12





Appendix A

Sample Detections Summary



Detections in Samples Collected in SCAT Area A12

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 6010	Arsenic	Y	8.8	40		mg/kg	no
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 6010	Barium	Y	141	820		mg/kg	no
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 6010	Cadmium	Y	0.26	3.8		mg/kg	no
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 6010	Chromium	Y	23.5	280		mg/kg	no
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 8270 by SIM	Chrysene	Y	14.3	20000		ug/kg	no
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 6010	Lead	Y	21	400		mg/kg	no
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 9060	Mean Total Organic Carbon	Y	20600	NA		mg/kg	no
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 7471	Mercury	Y	0.023	1		mg/kg	no
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 6010	Nickel	Y	17.5	150		mg/kg	no
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 9060	RSD%	Y	41.1	NA		%	no
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 6010	Selenium	Y	2.9	2.6		mg/kg	YES
BIMT0825SO505	08/25/2011	Field	Soil_River	MADEP EPH	Total Extractable Hydrocarbons	Y	468	200		mg/kg	YES
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 9060	Total Organic Carbon	Y	33100	NA		mg/kg	no
BIMT0825SO505	08/25/2011	Field	Soil_River	EPA 6010	Vanadium	Y	45.6	39		mg/kg	YES
BIMT0825SO510	08/25/2011	Field	Soil_River	MADEP EPH	Aromatic (C11-22)	Y	53	400		mg/kg	no
BIMT0825SO510	08/25/2011	Field	Soil_River	EPA 6010	Arsenic	Y	11.1	40		mg/kg	no
BIMT0825SO510	08/25/2011	Field	Soil_River	EPA 6010	Barium	Y	177	820		mg/kg	no
BIMT0825SO510	08/25/2011	Field	Soil_River	EPA 6010	Cadmium	Y	0.36	3.8		mg/kg	no
BIMT0825SO510	08/25/2011	Field	Soil_River	EPA 6010	Chromium	Y	30.5	280		mg/kg	no
BIMT0825SO510	08/25/2011	Field	Soil_River	EPA 6010	Lead	Y	25.5	400		mg/kg	no
BIMT0825SO510	08/25/2011	Field	Soil_River	EPA 9060	Mean Total Organic Carbon	Y	21900	NA		mg/kg	no
BIMT0825SO510	08/25/2011	Field	Soil_River	EPA 7471	Mercury	Y	0.027	1		mg/kg	no
BIMT0825SO510	08/25/2011	Field	Soil_River	EPA 6010	Nickel	Y	24.1	150		mg/kg	no
BIMT0825SO510	08/25/2011	Field	Soil_River	EPA 9060	RSD%	Y	15.9	NA		%	no
BIMT0825SO510	08/25/2011	Field	Soil_River	EPA 6010	Selenium	Y	3.6	2.6		mg/kg	YES
BIMT0825SO510	08/25/2011	Field	Soil_River	MADEP EPH	Total Extractable Hydrocarbons	Y	53	200		mg/kg	no
BIMT0825SO510	08/25/2011	Field	Soil_River	MADEP EPH	Total Extractable Hydrocarbons	Y	203	200		mg/kg	YES
BIMT0825SO510	08/25/2011	Field	Soil_River	EPA 9060	Total Organic Carbon	Y	27000	NA		mg/kg	no
BIMT0825SO510	08/25/2011	Field	Soil_River	EPA 6010	Vanadium	Y	52.8	39		mg/kg	YES
BIMT0826SO501	08/26/2011	Field	Soil_River	EPA 6010	Arsenic	Y	15.6	40		mg/kg	no
BIMT0826SO501	08/26/2011	Field	Soil_River	EPA 6010	Barium	Y	201	820		mg/kg	no



Detections in Samples Collected in SCAT Area A12

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
BIMT0826SO501	08/26/2011	Field	Soil_River	EPA 6010	Cadmium	Y	0.36	3.8		mg/kg	no
BIMT0826SO501	08/26/2011	Field	Soil_River	EPA 6010	Chromium	Y	33.1	280		mg/kg	no
BIMT0826SO501	08/26/2011	Field	Soil_River	EPA 6010	Lead	Y	28.2	400		mg/kg	no
BIMT0826SO501	08/26/2011	Field	Soil_River	EPA 9060	Mean Total Organic Carbon	Y	12900	NA		mg/kg	no
BIMT0826SO501	08/26/2011	Field	Soil_River	EPA 7471	Mercury	Y	0.035	1		mg/kg	no
BIMT0826SO501	08/26/2011	Field	Soil_River	EPA 6010	Nickel	Y	26.1	150		mg/kg	no
BIMT0826SO501	08/26/2011	Field	Soil_River	EPA 9060	RSD%	Y	9.1	NA		%	no
BIMT0826SO501	08/26/2011	Field	Soil_River	EPA 6010	Selenium	Y	3.1	2.6		mg/kg	YES
BIMT0826SO501	08/26/2011	Field	Soil_River	EPA 9060	Total Organic Carbon	Y	14300	NA		mg/kg	no
BIMT0826SO501	08/26/2011	Field	Soil_River	EPA 6010	Vanadium	Y	54.3	39		mg/kg	YES
BIMT0826SO502	08/26/2011	Field	Soil_River	EPA 6010	Arsenic	Y	14.5	40		mg/kg	no
BIMT0826SO502	08/26/2011	Field	Soil_River	EPA 6010	Barium	Y	199	820		mg/kg	no
BIMT0826SO502	08/26/2011	Field	Soil_River	EPA 6010	Cadmium	Y	0.34	3.8		mg/kg	no
BIMT0826SO502	08/26/2011	Field	Soil_River	EPA 6010	Chromium	Y	32.9	280		mg/kg	no
BIMT0826SO502	08/26/2011	Field	Soil_River	EPA 6010	Lead	Y	27.2	400		mg/kg	no
BIMT0826SO502	08/26/2011	Field	Soil_River	EPA 9060	Mean Total Organic Carbon	Y	13400	NA		mg/kg	no
BIMT0826SO502	08/26/2011	Field	Soil_River	EPA 7471	Mercury	Y	0.03	1		mg/kg	no
BIMT0826SO502	08/26/2011	Field	Soil_River	EPA 6010	Nickel	Y	24.1	150		mg/kg	no
BIMT0826SO502	08/26/2011	Field	Soil_River	EPA 9060	RSD%	Y	1.9	NA		%	no
BIMT0826SO502	08/26/2011	Field	Soil_River	EPA 6010	Selenium	Y	4.6	2.6		mg/kg	YES
BIMT0826SO502	08/26/2011	Field	Soil_River	MADEP EPH	Total Extractable Hydrocarbons	Y	79.5	200		mg/kg	no
BIMT0826SO502	08/26/2011	Field	Soil_River	EPA 9060	Total Organic Carbon	Y	13600	NA		mg/kg	no
BIMT0826SO502	08/26/2011	Field	Soil_River	EPA 6010	Vanadium	Y	54.7	39		mg/kg	YES
BIMT0826SO503	08/26/2011	Field	Soil_River	EPA 6010	Arsenic	Y	11.8	40		mg/kg	no
BIMT0826SO503	08/26/2011	Field	Soil_River	EPA 6010	Barium	Y	168	820		mg/kg	no
BIMT0826SO503	08/26/2011	Field	Soil_River	EPA 6010	Cadmium	Y	0.25	3.8		mg/kg	no
BIMT0826SO503	08/26/2011	Field	Soil_River	EPA 6010	Chromium	Y	29.9	280		mg/kg	no
BIMT0826SO503	08/26/2011	Field	Soil_River	EPA 6010	Lead	Y	23.8	400		mg/kg	no
BIMT0826SO503	08/26/2011	Field	Soil_River	EPA 9060	Mean Total Organic Carbon	Y	7650	NA		mg/kg	no
BIMT0826SO503	08/26/2011	Field	Soil_River	EPA 7471	Mercury	Y	0.057	1		mg/kg	no
BIMT0826SO503	08/26/2011	Field	Soil_River	EPA 6010	Nickel	Y	20.5	150		mg/kg	no



Detections in Samples Collected in SCAT Area A12

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
BIMT0826SO503	08/26/2011	Field	Soil_River	EPA 9060	RSD%	Y	7.8	NA		%	no
BIMT0826SO503	08/26/2011	Field	Soil_River	EPA 6010	Selenium	Y	3.6	2.6		mg/kg	YES
BIMT0826SO503	08/26/2011	Field	Soil_River	EPA 9060	Total Organic Carbon	Y	8340	NA		mg/kg	no
BIMT0826SO503	08/26/2011	Field	Soil_River	EPA 6010	Vanadium	Y	49.5	39		mg/kg	YES
BIMT0826SO504	08/26/2011	Field	Soil_River	EPA 6010	Arsenic	Y	12.4	40		mg/kg	no
BIMT0826SO504	08/26/2011	Field	Soil_River	EPA 6010	Barium	Y	167	820		mg/kg	no
BIMT0826SO504	08/26/2011	Field	Soil_River	EPA 6010	Cadmium	Y	0.28	3.8		mg/kg	no
BIMT0826SO504	08/26/2011	Field	Soil_River	EPA 6010	Chromium	Y	29.9	280		mg/kg	no
BIMT0826SO504	08/26/2011	Field	Soil_River	EPA 6010	Lead	Y	22.6	400		mg/kg	no
BIMT0826SO504	08/26/2011	Field	Soil_River	EPA 9060	Mean Total Organic Carbon	Y	10500	NA		mg/kg	no
BIMT0826SO504	08/26/2011	Field	Soil_River	EPA 7471	Mercury	Y	0.025	1		mg/kg	no
BIMT0826SO504	08/26/2011	Field	Soil_River	EPA 6010	Nickel	Y	20.8	150		mg/kg	no
BIMT0826SO504	08/26/2011	Field	Soil_River	EPA 9060	RSD%	Y	10.6	NA		%	no
BIMT0826SO504	08/26/2011	Field	Soil_River	EPA 6010	Selenium	Y	2.8	2.6		mg/kg	YES
BIMT0826SO504	08/26/2011	Field	Soil_River	MADEP EPH	Total Extractable Hydrocarbons	Y	199	200		mg/kg	no
BIMT0826SO504	08/26/2011	Field	Soil_River	EPA 9060	Total Organic Carbon	Y	12100	NA		mg/kg	no
BIMT0826SO504	08/26/2011	Field	Soil_River	EPA 6010	Vanadium	Y	49.1	39		mg/kg	YES
BIMT0826SO505	08/26/2011	Field	Soil_River	EPA 6010	Arsenic	Y	13.9	40		mg/kg	no
BIMT0826SO505	08/26/2011	Field	Soil_River	EPA 6010	Barium	Y	180	820		mg/kg	no
BIMT0826SO505	08/26/2011	Field	Soil_River	EPA 6010	Cadmium	Y	0.31	3.8		mg/kg	no
BIMT0826SO505	08/26/2011	Field	Soil_River	EPA 6010	Chromium	Y	32	280		mg/kg	no
BIMT0826SO505	08/26/2011	Field	Soil_River	EPA 6010	Lead	Y	25.6	400		mg/kg	no
BIMT0826SO505	08/26/2011	Field	Soil_River	EPA 9060	Mean Total Organic Carbon	Y	7460	NA		mg/kg	no
BIMT0826SO505	08/26/2011	Field	Soil_River	EPA 7471	Mercury	Y	0.029	1		mg/kg	no
BIMT0826SO505	08/26/2011	Field	Soil_River	EPA 6010	Nickel	Y	22.4	150		mg/kg	no
BIMT0826SO505	08/26/2011	Field	Soil_River	EPA 9060	RSD%	Y	12.1	NA		%	no
BIMT0826SO505	08/26/2011	Field	Soil_River	EPA 6010	Selenium	Y	4.1	2.6		mg/kg	YES
BIMT0826SO505	08/26/2011	Field	Soil_River	EPA 9060	Total Organic Carbon	Y	8280	NA		mg/kg	no
BIMT0826SO505	08/26/2011	Field	Soil_River	EPA 6010	Vanadium	Y	52.4	39		mg/kg	YES
LAMT0724SW507	07/24/2011	Field	Water_Surface	EPA 6020	Arsenic	Y	0.7	10		ug/L	no
LAMT0724SW507	07/24/2011	Field	Water_Surface	EPA 6020	Barium	Y	50.8	1000		ug/L	no



Detections in Samples Collected in SCAT Area A12

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
LAMT0724SW507	07/24/2011	Field	Water_Surface	EPA 6020	Calcium	Y	25700	NA		ug/L	no
LAMT0724SW507	07/24/2011	Field	Water_Surface	EPA 6020	Chromium	Y	2.1	100		ug/L	no
LAMT0724SW507	07/24/2011	Field	Water_Surface	EPA 6020	Lead	Y	1.6	15		ug/L	no
LAMT0724SW507	07/24/2011	Field	Water_Surface	EPA 6020	Magnesium	Y	7910	NA		ug/L	no
LAMT0724SW507	07/24/2011	Field	Water_Surface	EPA 1631E	Mercury	Y	0.00000401	0.00005		mg/L	no
LAMT0724SW507	07/24/2011	Field	Water_Surface	EPA 6020	Nickel	Y	3.6	100		ug/L	no
LAMT0724SW507	07/24/2011	Field	Water_Surface	EPA 6020	Potassium	Y	1380	NA		ug/L	no
LAMT0724SW507	07/24/2011	Field	Water_Surface	EPA 6020	Sodium	Y	10400	NA		ug/L	no
LAMT0724SW507	07/24/2011	Field	Water_Surface	SM 2540D	Total Suspended Solids	Y	134	NA		mg/L	no
LAMT0724SW507	07/24/2011	Field	Water_Surface	EPA 6020	Vanadium	Y	5.8	180		ug/L	no
LAMT0823SO606	08/23/2011	Field	Soil_River	EPA 6010	Arsenic	Y	17.4	40		mg/kg	no
LAMT0823SO606	08/23/2011	Field	Soil_River	EPA 6010	Barium	Y	118	820		mg/kg	no
LAMT0823SO606	08/23/2011	Field	Soil_River	EPA 6010	Cadmium	Y	1	3.8		mg/kg	no
LAMT0823SO606	08/23/2011	Field	Soil_River	EPA 6010	Chromium	Y	20	280		mg/kg	no
LAMT0823SO606	08/23/2011	Field	Soil_River	EPA 6010	Lead	Y	8.3	400		mg/kg	no
LAMT0823SO606	08/23/2011	Field	Soil_River	EPA 9060	Mean Total Organic Carbon	Y	14600	NA		mg/kg	no
LAMT0823SO606	08/23/2011	Field	Soil_River	EPA 7471	Mercury	Y	0.021	1		mg/kg	no
LAMT0823SO606	08/23/2011	Field	Soil_River	EPA 6010	Nickel	Y	15.9	150		mg/kg	no
LAMT0823SO606	08/23/2011	Field	Soil_River	EPA 9060	RSD%	Y	3.7	NA		%	no
LAMT0823SO606	08/23/2011	Field	Soil_River	EPA 9060	Total Organic Carbon	Y	15200	NA		mg/kg	no
LAMT0823SO606	08/23/2011	Field	Soil_River	EPA 6010	Vanadium	Y	33.4	39		mg/kg	no



Appendix B

Initial SCAT Survey Forms and
Sketches

DB/G/SC

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 11-Jul-2011	Time (24h): std / daylight 1100 hrs to 1101 hrs	Water Level low - mean - bankfull - <u>overbank</u> falling - steady - rising
Segment/Reach ID: A12 <u>Left Bank / Right Bank / Island</u>				
Operations Division: A				
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook / _____		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>29.4</u> deg C

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

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 412 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

145
146
147

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	%	m	m	%																
A			X		75	1	95			X	X		X									Grass, trees, debris
B			X		237	1	100		X	X	X		X									Grass, trees, debris
C			X		100	1	95			X	X		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

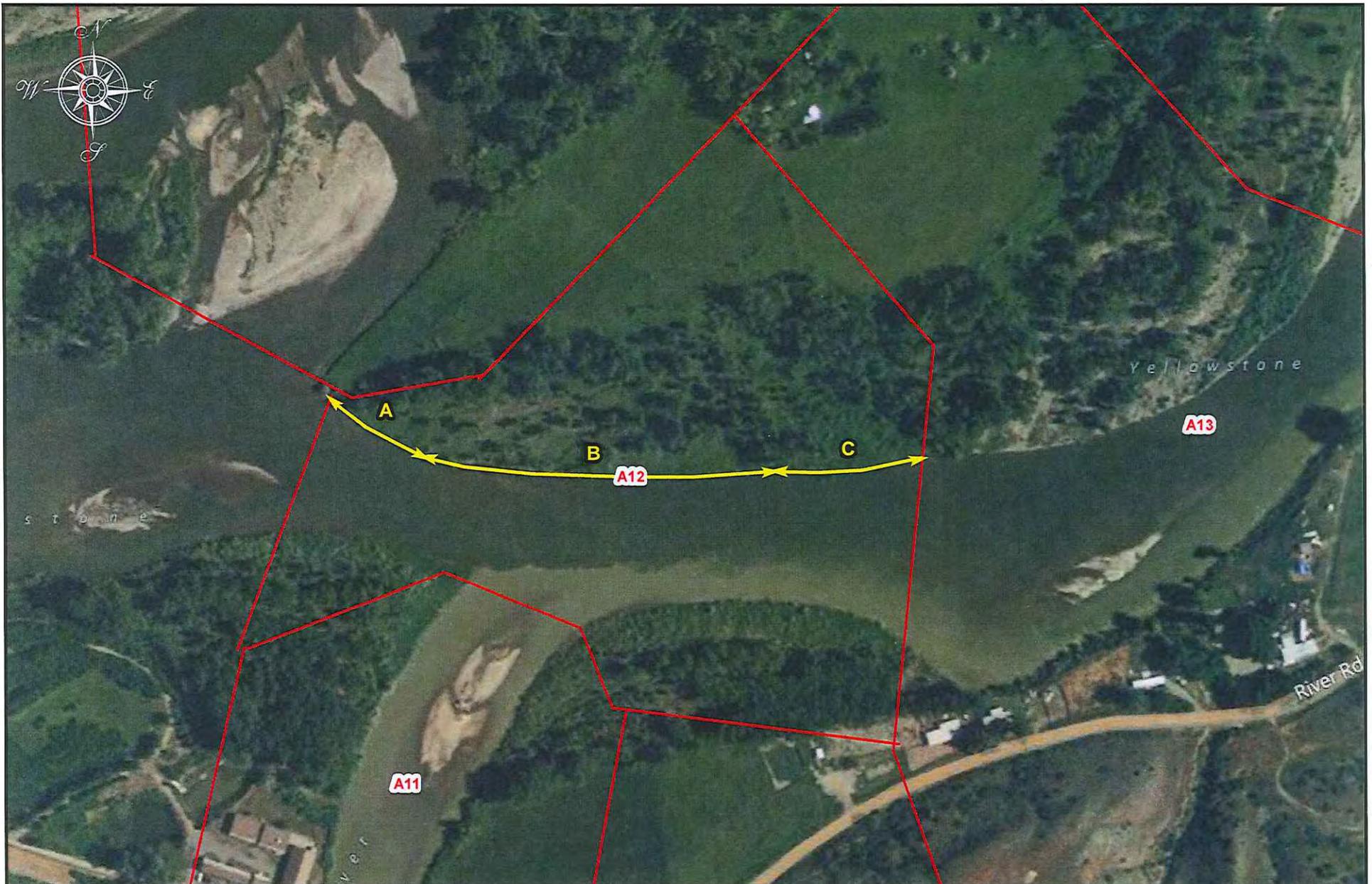
Oiled Band Heights: Zone A - 40cm; Zone B - 1m; Zone C 50cm

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

Cleanup Recommendations: Trim oiled vegetation; wipe large oiled debris; remove small oiled debris; wipe oiled trees;

(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# _____)



SCAT Teams 2 & 4 Survey

Segment A12 Left Bank

11-Jul-2011



Legend

↔ Oil Zones

— Segment Boundaries

DB 10/10

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 13-Jul-2011	Time (24h): std / daylight 0915 hrs to 1025 hrs	Water Level low - mean - bankfull - <u>overbank</u>
Segment/Reach ID: A12 <u>Left Bank / Right Bank / Island</u>				low - mean - bankfull - <u>overbank</u>
Operations Division: A			0915 hrs to 1025 hrs	<u>falling</u> - steady - rising
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>32</u> deg C

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

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 397 m

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

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

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

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate

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 1 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

163

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	340	65	15			X	X		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

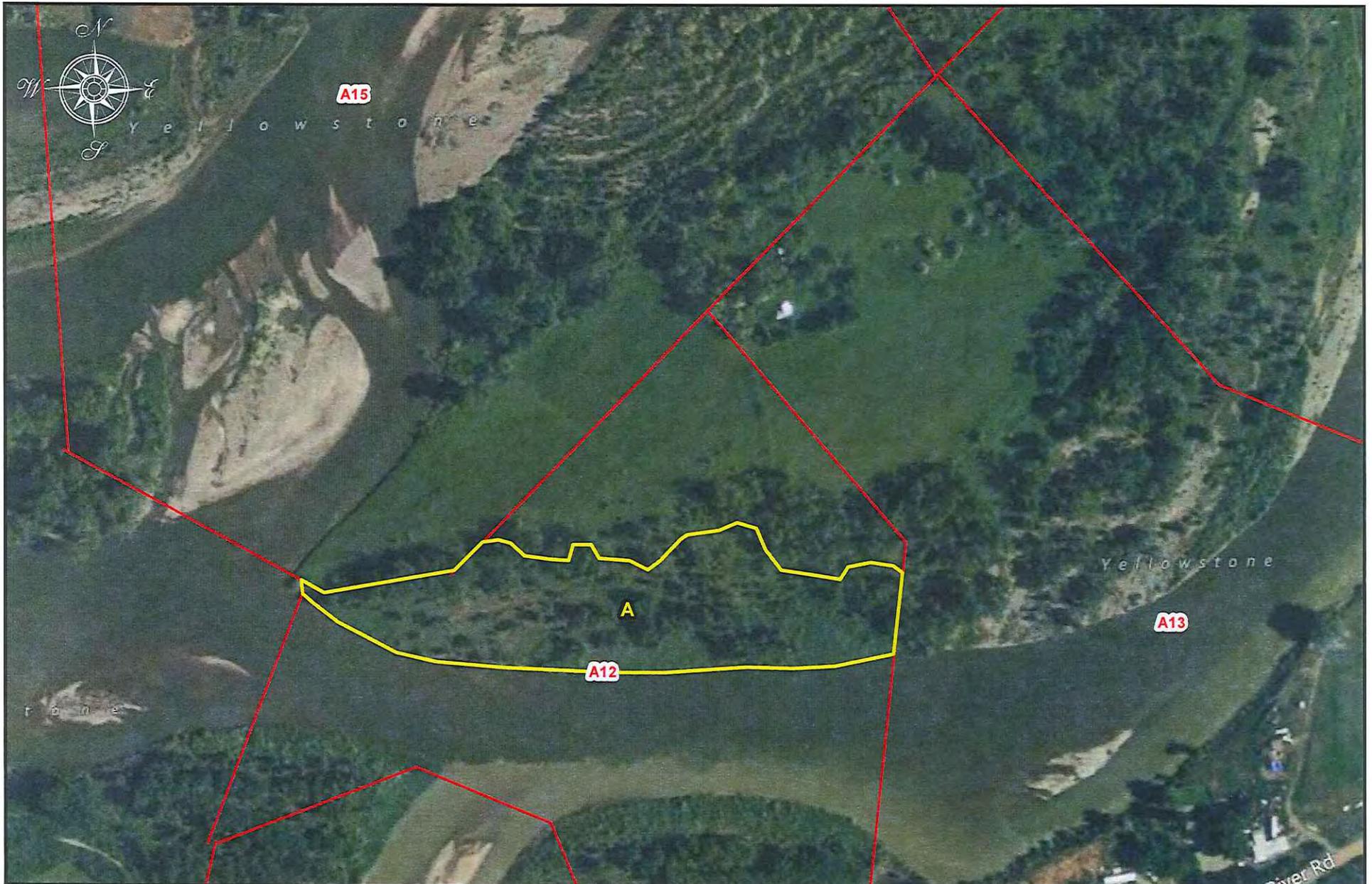
Oiled Band Heights: Zone A - 10cm

Cleanup Recommendations: For substrates with oiling greater than stain, trim oiled vegetation; wipe large oiled debris; remove small oiled debris; wipe oiled trees. No treatment for stained substrates is recommended.

STR to be developed.

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

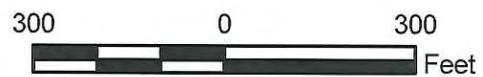
Sketch (Yes) No Photos (Yes) No (Roll # _____) Frames _____ Video Tapes Yes/No (tape # _____)



SCAT Teams 2 & 4 Survey

Segment A12 - Left Bank

13-Jul-2011



Legend

 Oiling Zones

 Segment Boundaries

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 14-Jul-2011	Time (24h): std / daylight 0905 hrs to 0947 hrs	Water Level low - mean - bankfull - <u>overbank</u> <u>falling</u> - steady - rising
Segment/Reach ID: A12 <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>32</u> deg C

2 SURVEY TEAM # 1 & 2	name	organization	contact phone number
Andrew Milanes <u>AWM</u>		Polaris	
Tom Freeman <u>TF</u>		Polaris	
Andrew Johnson <u>AJ</u>		USCG	
Travis Olson <u>TO</u>		USCG	
Aaron Anderson <u>A</u>		MTDEQ	406-841-5049
Darrick Turner <u>DT</u>		MTDEQ	406-444-1504 <u>406-444-1504</u>

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 645 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 10 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

178
179
180

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	315	35	25			X	X		X								Grass, trees, debris
B				X	230	110	25			X	X		X								Grass
C				X	100	100	5			X	X		X								Grass, trees, debris, buildings

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

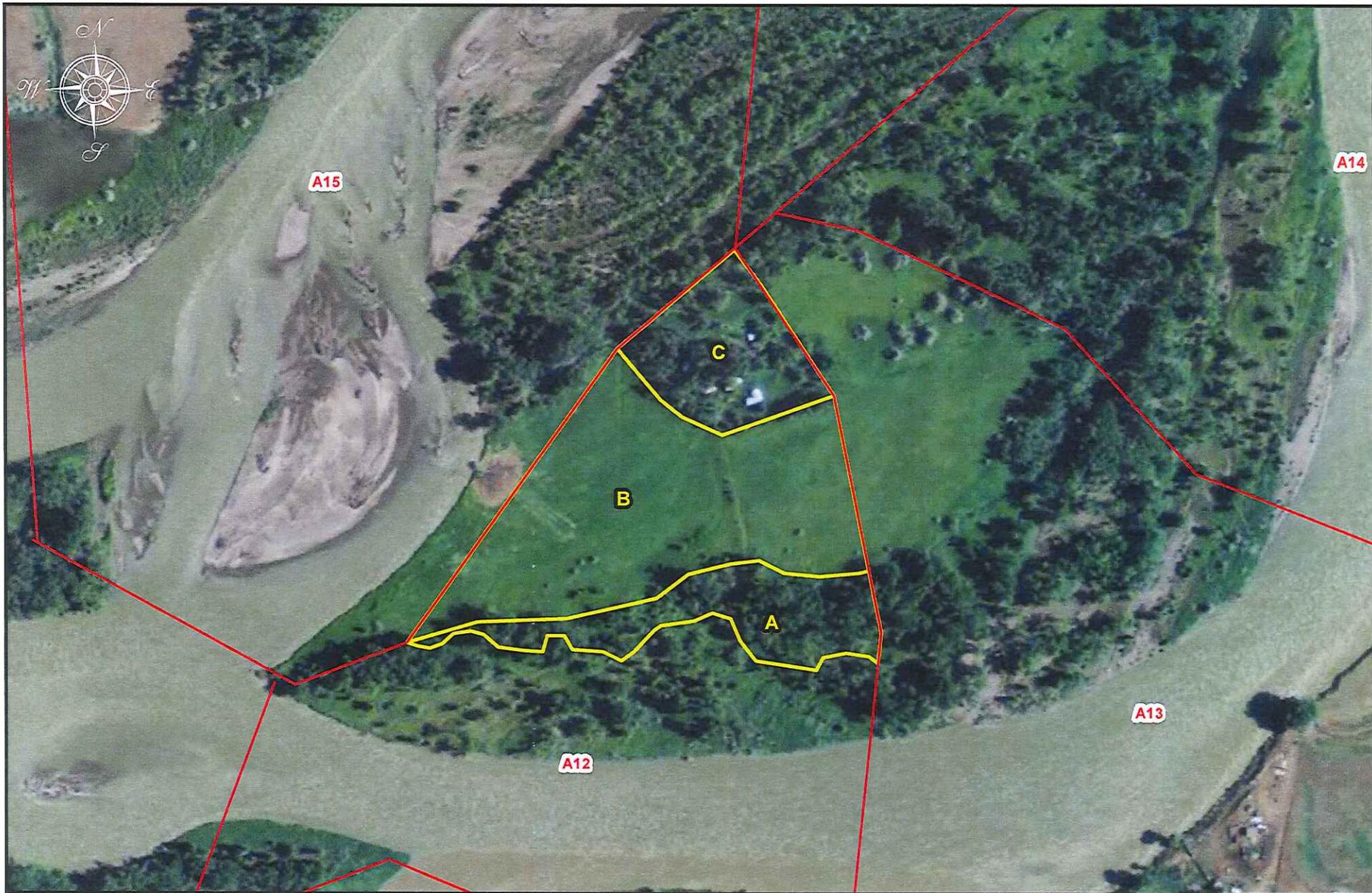
Oiled Band Heights: Zone A - 15cm, Zone B - 10cm; Zone C - 20cm

Cleanup Recommendations: For substrates with oiling greater than stain, trim oiled vegetation; wipe large oiled debris; remove small oiled debris; wipe oiled trees. No treatment for stained substrates is recommended.

STR to be developed.

(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# _____)



SCAT Teams 1 & 2 Survey

Segment A12 - Left Bank

14-Jul-2011



Legend

- Segment Boundaries
- Oiling Zones

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

DB/ G/Sc

1 GENERAL INFORMATION		Date (dd/mm/yy) 11-Jul-2011	Time (24h): std / daylight 1102 hrs to 1103 hrs	Water Level low - mean - bankfull - <u>overbank</u> falling - steady - rising
Segment/Reach ID: A12 Left Bank / <u>Right Bank</u> / Island		Operations Division: A		
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>29.4</u> 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 373 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 _____ 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 0.25 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

70
71
72

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		50	1	95			X	X		X									Grass, trees, debris
B			X		93	1	100		X	X	X		X									Grass, trees, debris
C			X		229	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

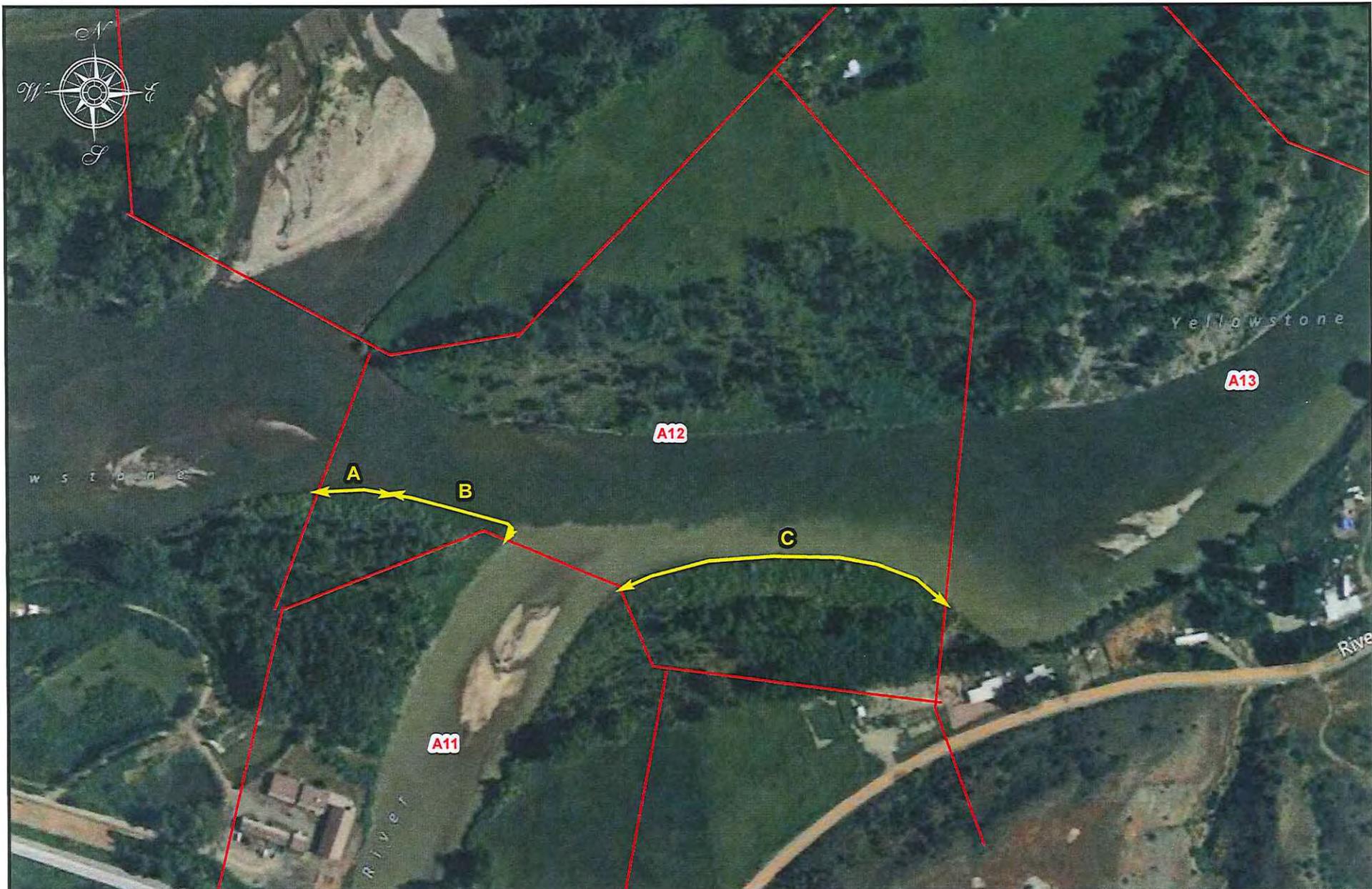
Zone A Oiled Band Height: 50cm; Zone B Oiled Band Height: 1m

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

Cleanup Recommendations: Trim oiled vegetation; wipe large oiled debris; remove small oiled debris; wipe oiled trees;

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

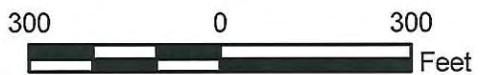
Sketch (Yes/No) Photos (Yes/No (Roll # _____ Frames _____)) Video Tape Yes/No (tape# _____)



SCAT Teams 2 & 4 Survey

Segment A12 Right Bank

11-Jul-2011



Legend

←→ Oil Zones

— Segment Boundaries

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

→ of Clark Fork D13/G

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>A1A12</u> Left Bank / <u>Right Bank</u> / Island		<u>23/07/11</u>	<u>1015</u> hrs to <u>1030</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>A</u>				(falling) steady - rising
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / <u>Calm</u>		Air Temp + / - <u>25</u> deg C

2 SURVEY TEAM # <u>10</u>	Name	Organization	Signature
	<u>Chelsea Murphy</u>	<u>Cardno ENTRIX</u>	<u>[Signature]</u>
	<u>Ron Brown Jr</u>	<u>USCG</u>	<u>[Signature]</u>
	<u>Darrick Turner</u>	<u>MT DEP</u>	<u>[Signature]</u>
	<u>Steve Kennedy</u>	<u>Cardno Entrix</u>	<u>[Signature]</u>

3 SEGMENT Total Segment/Reach Length ~250 m Segment/Reach Length Surveyed ~250 m

Start GPS: LATITUDE 45.64814 deg. min. LONGITUDE 108.716232 deg. min. Datum: WGS 84

End GPS: LATITUDE 45.649537 deg. min. LONGITUDE 108.714215 deg. min.

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

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

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

Sloped 25 (>5°)(15°)(30°) straight braided P oxbow flood plain valley Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 160m est. water depth: <1m 1-3m (6-10m) >10m m

shoal(s) present Y/N point bar present Y/N bar-shoal substrate: silt / sand / grave / 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 Good access on road

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>P</u>	<u>250</u>	<u>20</u>	<u>0</u>														<u>P</u>	<u>mud/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

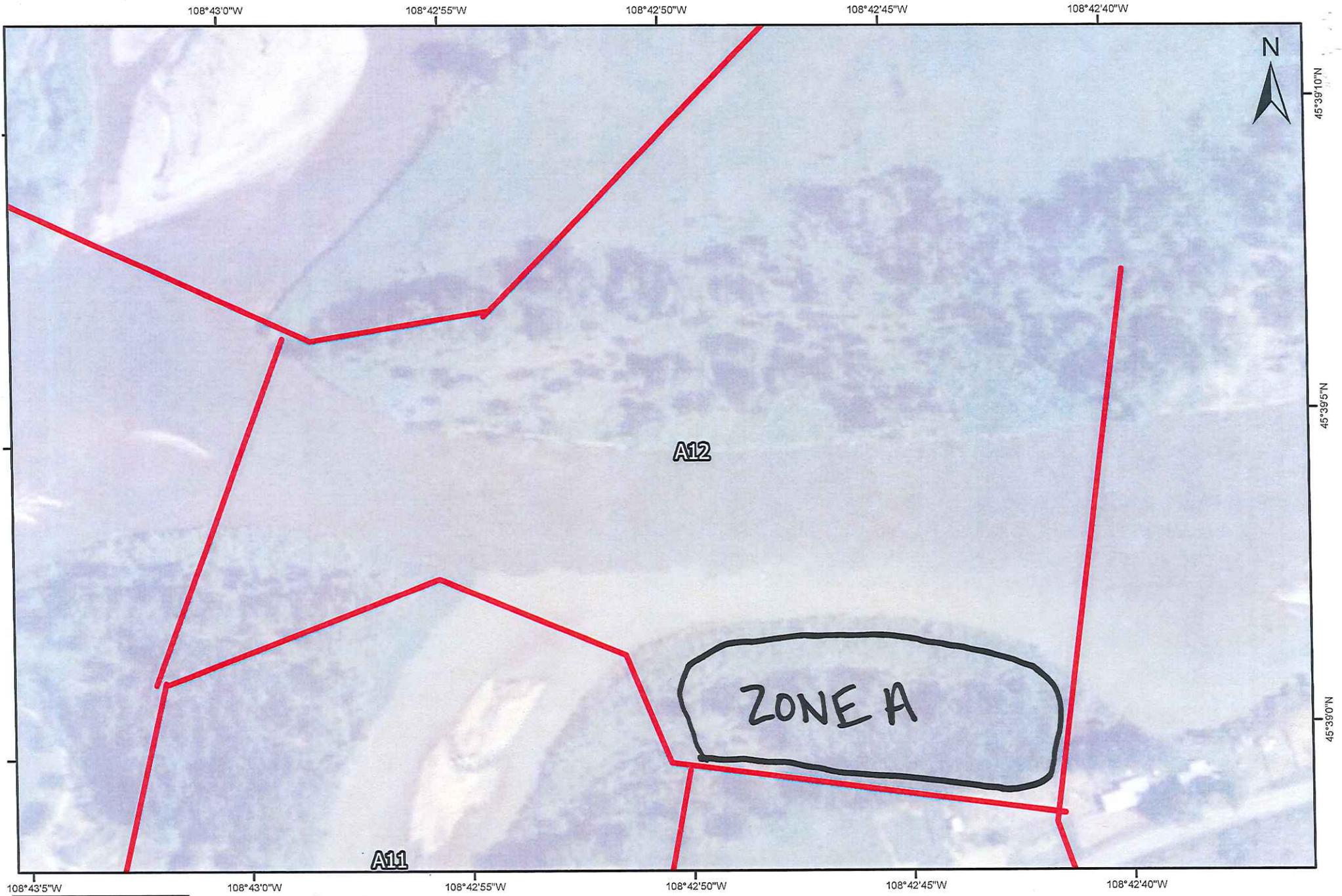
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Zone A recommendation - NOO - In overbank - NFT -
Recommended shoreline SEAT by boat - Just in case

550

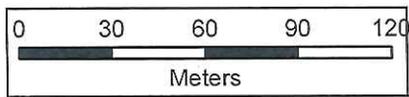
Sketch Yes / No Photos Yes / No Frames Yes / No Photographer [Signature]



A12 - A
(LR/I)??

DATE: 7/23/11
TEAM: #6

COMMENTS: NOO



DB/G/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>A12</u> Left Bank / <u>Right Bank</u> / Island		<u>25/07/11</u>	<u>0830</u> hrs to <u>1230</u> hrs	low - <u>mean</u> - bankfull - overbank
Operations Division: <u>A</u>				falling - steady - rising
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - <u>29</u> deg C	

2 SURVEY TEAM # <u>3</u>	Name	Organization	Signature
	<u>Joe Boyle</u>	<u>Cardno ENTRY</u>	<u>[Signature]</u>
	<u>John Brown</u>	<u>MDEQ</u>	<u>[Signature]</u>
	<u>GARY RILEY</u>	<u>USEPA</u>	<u>[Signature]</u>
	<u>Steve Kennedy</u>	<u>Cardno Entry</u>	<u>[Signature]</u>

3 SEGMENT Total Segment/Reach Length 430 m Segment/Reach Length Surveyed 220 m

Start GPS: LATITUDE 45 deg. 38.983 min. LONGITUDE 108 deg. 42.831 min. Datum: WGS 84

End GPS: LATITUDE 45.6483 deg. 64.983 min. LONGITUDE 108.7112 deg. min.

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

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

Sediment Bank: Clay/Mud S Sand Mixed Pebble/Cobble Boulder Peat/Organic Vegetated Bank: B 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 S confined or leveed

Sloped: (>5°)(15°)(30°) 25° straight braided oxbow flood plain valley

Substrate Type: Mud Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

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

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

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

Debris: Y/N oiled Y/N amount bags or 1 trucks access restrictions dense veg, soft mud

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

761
762

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>S</u>	<u>P</u>	<u>130</u>	<u>50</u>	<u>55</u>			<u>P</u>	<u>S</u>		<u>P</u>									<u>medium</u>
B			<u>S</u>	<u>P</u>	<u>210</u>	<u>80</u>	<u>0</u>														<u>P</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

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: high distribution of oil coated veg with isolated areas of oil coated debris
 recommendations: cut / trim oil coated veg, hand removal of oiled debris

ZONE B: No oil observed
 recommendations: scarf lower bank by boat

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

108°43'0"W

108°42'55"W

108°42'50"W

108°42'45"W

108°42'40"W



45°39'10"N

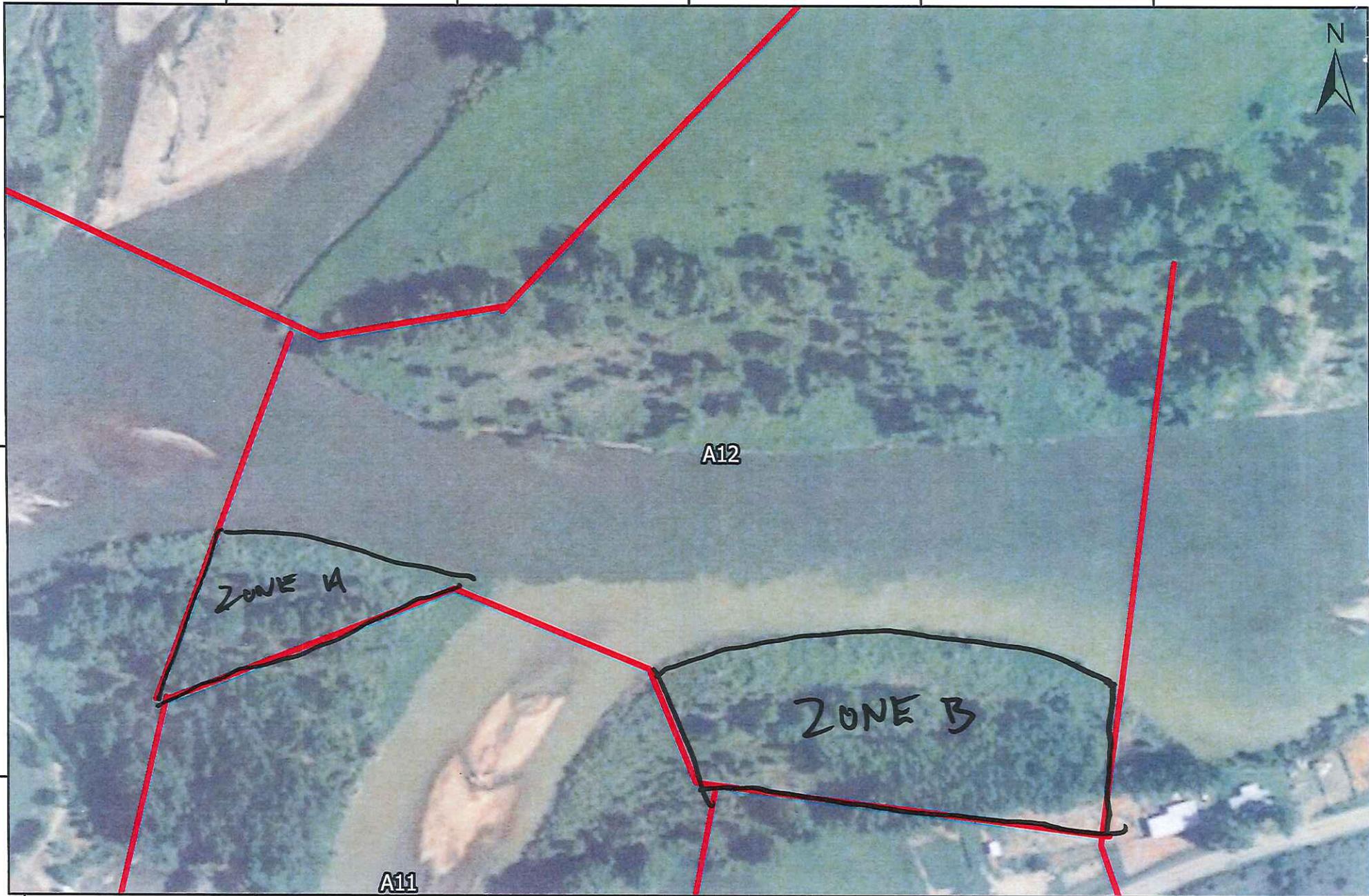
45°39'5"N

45°39'0"N

45°39'10"N

45°39'5"N

45°39'0"N



A12

ZONE A

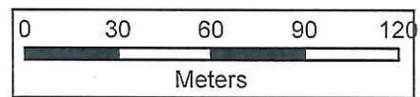
ZONE B

A11

A12 -
(L/R)??

DATE: 07/25/14
TEAM: 3

COMMENTS:



108°43'5"W

108°43'0"W

108°42'55"W

108°42'50"W

108°42'45"W

108°42'40"W



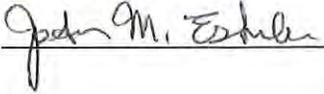
Appendix C

Pre-Inspection Survey Transmittal

SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 20 & 22 August 2011

Segment: section of A12 on Tower Island (CTR 1), not including area marked off for cultural heritage site **A12 LB**

Team: SCAT Liaison	Lauren Glushik-Polaris	Signed: <u></u>
Observer	<u>JoAnn M. Eskelson</u>	Signed: <u></u>
Observer	_____	Signed: _____
Observer	_____	Signed: _____

Segment meets criteria? YES NO

RBOS attached? YES NO

If NO:

Location Sketch attached? YES NO

CTR continue? YES NO – do not continue for the portion of the segment as denoted under this PIST

Comments:

This PIST applies to only the portion of A12 on Tower Island (CTR1).

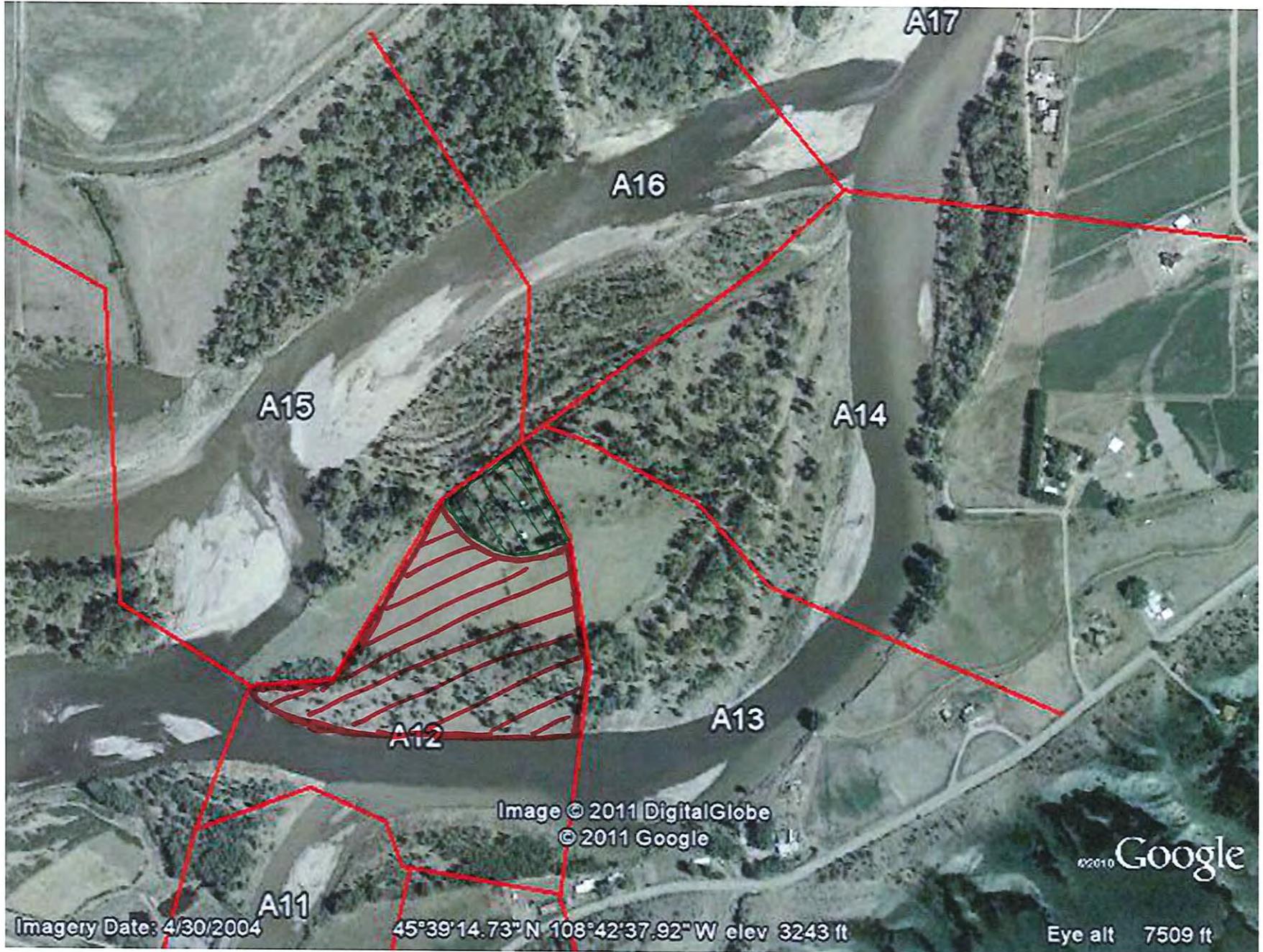
There is an area designated under cultural heritage on the island. A portion of that site is located within segment A12. This area was not included in this PIST. Site-specific treatment recommendations were developed for that area and a cultural representative was on site during work.

There are also several shrub areas marked as restricted for wildlife sensitivities. Crews have not worked these areas. It there are some light transferrable herbaceous and woody vegetation inside these areas.

Some areas of riverbank are undercut and pose a safety risk. These areas were not treated by cleanup crews. A debris pile with light visible oiling is located at the western end of the segment and is partially located in segment A15. This debris pile is not accessible due to access and associated safety issues.

RED = PIST AREA

GREEN = CULTURAL HERITAGE SITE



SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 24 Aug 2011

Segment: A12LB

Team: SCAT Liaison Lauren Glushik-Polaris Signed: [Signature]

Observer Tom Freeman Signed: [Signature]

Observer Herb Wood Signed: [Signature]

Observer Annex Meade Signed: [Signature]
(CH)

Segment meets criteria? YES NO

RBOS attached? YES NO

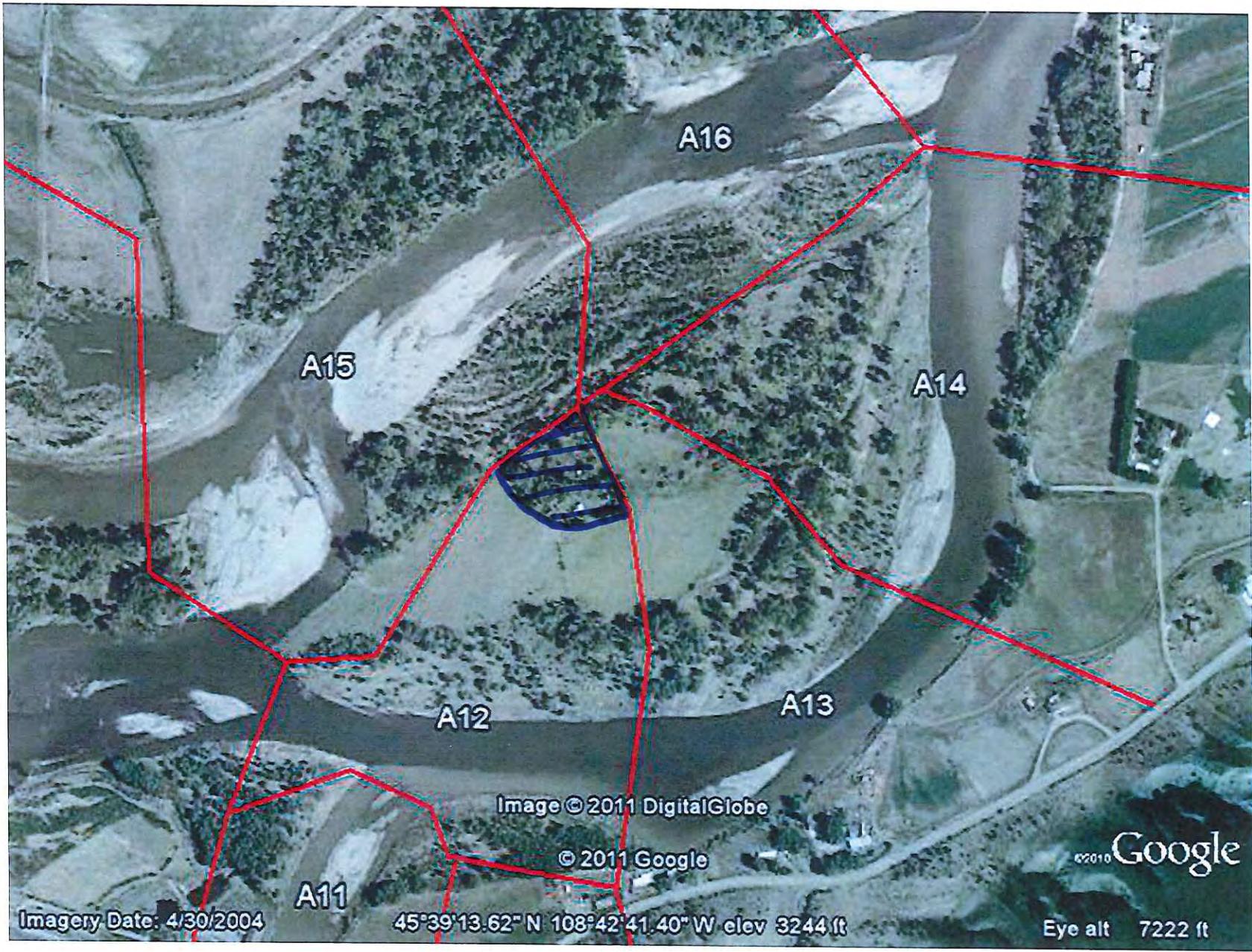
If NO:

Location Sketch attached? YES NO

CTR continue? YES NO

Comments:

This PIST covers the Cultural Heritage site in segment A12LB.
Cultural Heritage representatives accompanied SCAT Ops Liaison for the PIST
and verified the site meets their completion criteria.



A16

A15

A14

A12

A13

Image © 2011 DigitalGlobe

© 2011 Google

© 2010 Google

Imagery Date: 4/30/2004

A11

45°39'13.62" N 108°42'41.40" W elev 3244 ft

Eye alt 7222 ft

Copy given to ops.

SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 8/20/11

Segment: A12 RB

Team: SCAT Liaison Ray McKelvey

Signed: 

Observer Gary Reiter

Signed: 

Observer _____

Signed: _____

Observer _____

Signed: _____

Segment meets criteria? YES ___ NO X

RBOS attached? YES ___ NO X

If NO:

Location Sketch attached? YES ___ NO X

CTR continue? YES X NO ___

Comments: **Segment was pre-inspected for re-scat and did not meet CTR criteria. Area's needing attention were flagged out and shown to the segment supervisor Reed.**

SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 8/22/11

Segment: A12 RB

Team: SCAT Liaison Ray McKelvey Signed: 
Observer _____ Signed: _____
Observer _____ Signed: _____
Observer _____ Signed: _____

Segment meets criteria? YES X NO _____

RBOS attached? YES _____ NO X

If NO:

Location Sketch attached? YES _____ NO X

CTR continue? YES _____ NO X

Comments: **Segment is ready for re-scat.**

1. Property name: Thomas & Evonne Altman
2. Property name: Steven Aaker
3. Property name: College Park LLP



Appendix D

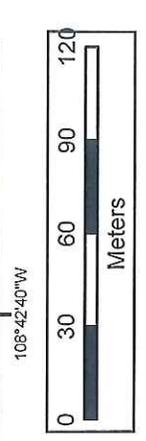
Post-Inspection Survey Transmittal

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



Appendix E

Final SCAT Survey Forms and
Sketches



108°43'0"W 108°42'55"W 108°42'50"W 108°42'45"W 108°42'40"W
45°39'10"N 45°39'5"N 45°39'0"N

A12 - (L-81)??
DATE: 08/24/2011
TEAM: 6
COMMENTS:

DB/6

R

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 26/AUG/2011	Time (24h): std / daylight 09:00 hrs to 09:45 hrs	Water Level low - mean - bankfull - overbank falling - steady - rising
Segment/Reach ID: A12 <u>Left Bank</u> / Right Bank / Island				
Operations Division: A12 LB				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - <u>29</u> deg C	

2 SURVEY TEAM # 3 & 5	name	organization	contact phone number
Merlo Gauvreau	Polaris		
Tom Freeman	Polaris		
Ariel Blanc	Polaris		
Daniel Elefant	Cardno ENTRIX		
Larisa Leonova	EPA		
Rachelle Thompson	EPA		
Donnie McCurry	DEQ		
Darrick Turner	DEQ		
Ernie McKenzie	BLM		

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 713 m

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

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

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

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

Cliff or Bluff: _____ Est Height 2 m canyon _____ manmade _____ meander P confined or leveed _____ Substrate Type: sand/sed

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

shoal(s) present Y (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: ISLAND

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

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

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER							SUBST. TYPE(S)		
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO	
A				X	413	313	<1			X	(X)						X				Veg/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

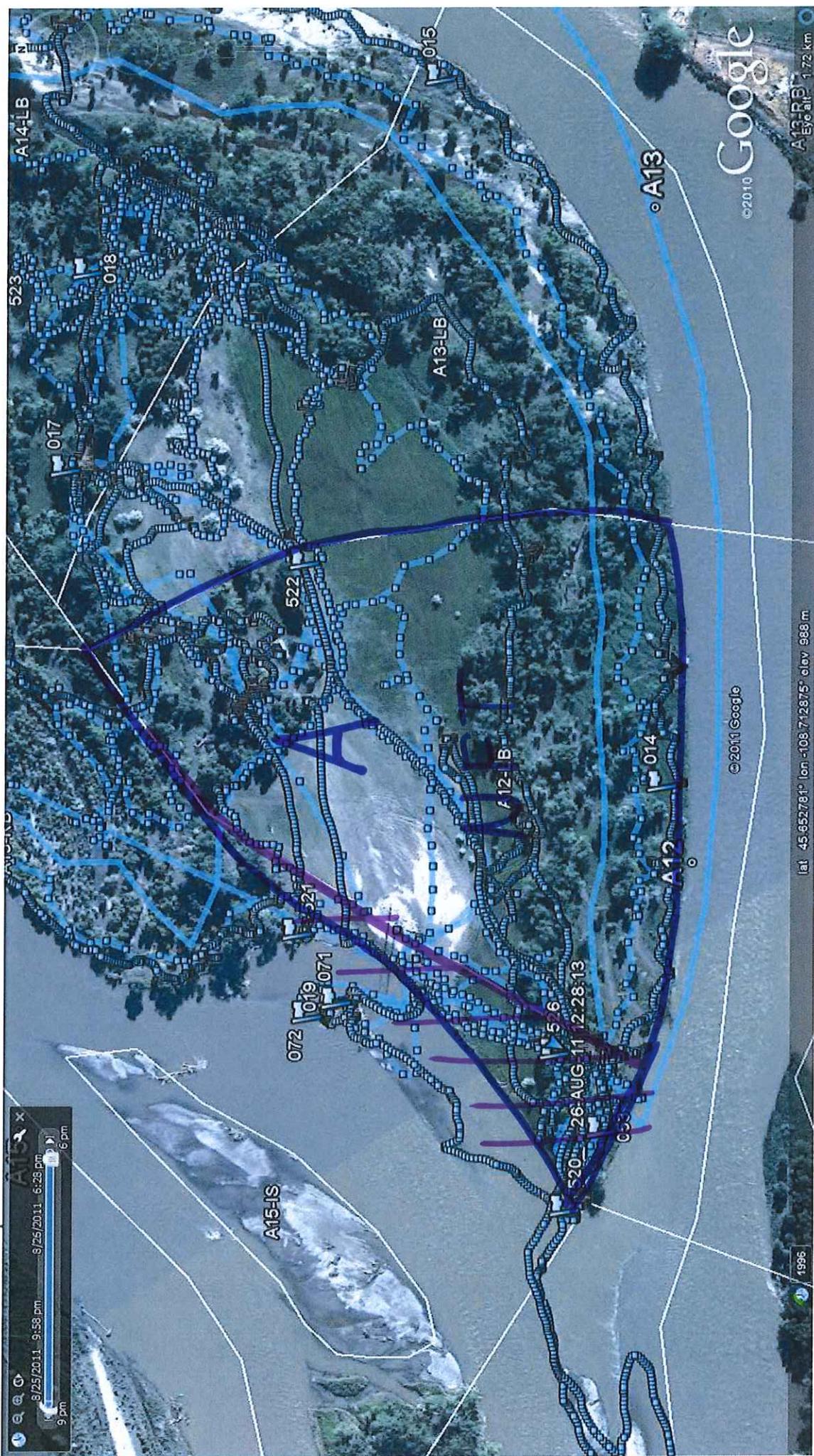
ReSCAT

Zone A: Trace oiled vegetation and natural debris. Hotshot crew accompanied ReSCAT Team. Remaining transferable oil removed during ReSCAT. Segment meets operational endpoints. NFT.

(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# _____)

26 August
A12-LB
Team# 3,5



2/2



Appendix F

Completed SCAT Area Sign-Off
Forms

