

**ExxonMobil Pipeline Company**

**SCAT Area Transition Report  
for C23**

Silvertip Pipeline Incident  
Laurel, Montana

October 21, 2011



## **SCAT Area Transition Report for C23**

Silvertip Pipeline Incident  
Laurel, Montana

Prepared for:  
ExxonMobil Pipeline Company

Prepared by:  
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Our Ref.:  
B0085883.1103

Date:  
October 21, 2011

*The observations described in this Report were made exclusively under the conditions at the time and subject to the limitations stated therein. It is understood by Client that ARCADIS has relied on the accuracy of documents, oral information, and other material and information provided by sources documented in this report, including but not limited to information provided by Client and Client's other contractors. ARCADIS has not independently verified any such information. The conclusions presented in the Report are based solely upon the observations and representations made by others.*

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## **1. Executive Summary of Oil Removal Activities**

This Shoreline Cleanup Assessment Technique (SCAT) Area Transition Report provides a summary of the SCAT surveys conducted to determine the extent of oiling along the riverbanks and floodplain within SCAT Area C23, 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 C23. 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 C23, 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 C23 is 129.1. There were access issues for the 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 limited inspections of Area C23 due to the low level of oiling in Division C. No oiled wildlife was observed or recovered. No Wildlife Priority Cleanup Areas were identified. No active migratory bird nests were identified in Area C23.

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

Table 1 (below) summarizes samples collected within Area C23. 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 C23 are provided on Figure 3.

**Table 1 Environmental Sampling Summary**

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
CTEH	HUMT082450101	8/24/2011	Soil_Surface	HUMT_423_SO101	45.903043	-108.315257
CTEH	HUMT082450102	8/24/2011	Soil_Surface	HUMT_423_SO102	45.903333	-108.315872
CTEH	HUMT082450103	8/24/2011	Soil_Surface	HUMT_423_SO103	45.902409	-108.313747
CTEH	HUMT082450104	8/24/2011	Soil_Surface	HUMT_423_SO104	45.902075	-108.313466
CTEH	HUMT082450105	8/24/2011	Soil_Surface	HUMT_423_SO105	45.901774	-108.313067
CTEH	HUMT082450BK106	8/24/2011	Soil_Surface	HUMT_423_SO106	45.902888	-108.315516
CTEH	LAMT0711DW102	7/11/2011	Water_Drinking	LAMT_347_DW102	45.902913	-108.314934

Appendix A contains a summary of sample results with detections for this sample set. Detections with a result above the screening level are highlighted; for this set, there was one exceedance for 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 C23 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area C23.

#### 1.5 Applicable Compiled Treatment Recommendations

The SCAT team developed compiled treatment recommendations (CTRs) providing approved treatment methods (ATMs) for each oiling zone identified during the initial SCAT surveys ([CTR No. 60](#)).

#### 1.6 Oil Removal Activities

Oil removal activities were conducted within Area C23 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**

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 C23 following completion of oil removal activities. The SCAT team performed final surveys of the left and right banks within SCAT Area C23 to confirm the agreed-upon cleanup endpoints identified in the applicable CTRs had been achieved. The final SCAT survey documentation is presented in Appendix E.

### **1.10 SCAT Area Conclusions**

Based on the final SCAT surveys performed on the left and right banks within Area C23, no further treatment is recommended for these segments. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition  
Report for C23**

Silvertip Pipeline Incident  
Laurel, Montana

**2. Transition Sign-Off Form**

**SCAT Area Transition Report for C23**

**Prepared for:**

**Unified Command**

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Date

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Unified Command – RP



**SCAT Area Transition  
Report for C23**

Silvertip Pipeline Incident  
Laurel, Montana

**SCAT Area Transition Report for C23**

**Prepared for:**

**Unified Command**

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Date

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Unified Command – FOSC



**SCAT Area Transition  
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Silvertip Pipeline Incident  
Laurel, Montana

**SCAT Area Transition Report for C23**

**Prepared for:**

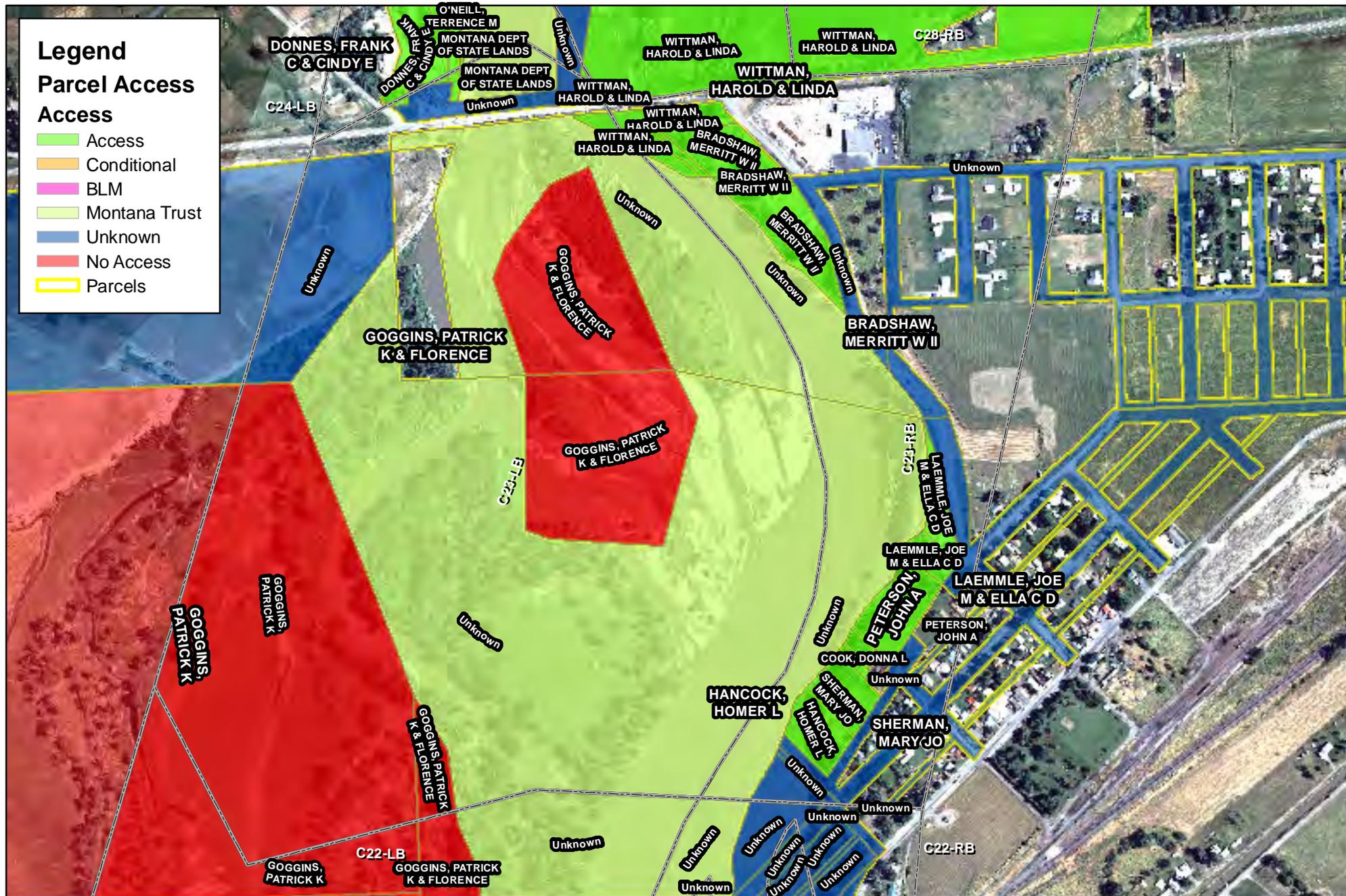
**Unified Command**

---

Date

---

Unified Command – MDEQ



**Legend**

**Parcel Access**

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

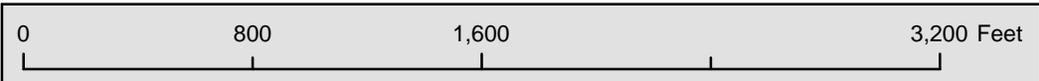
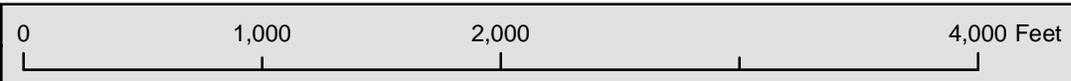
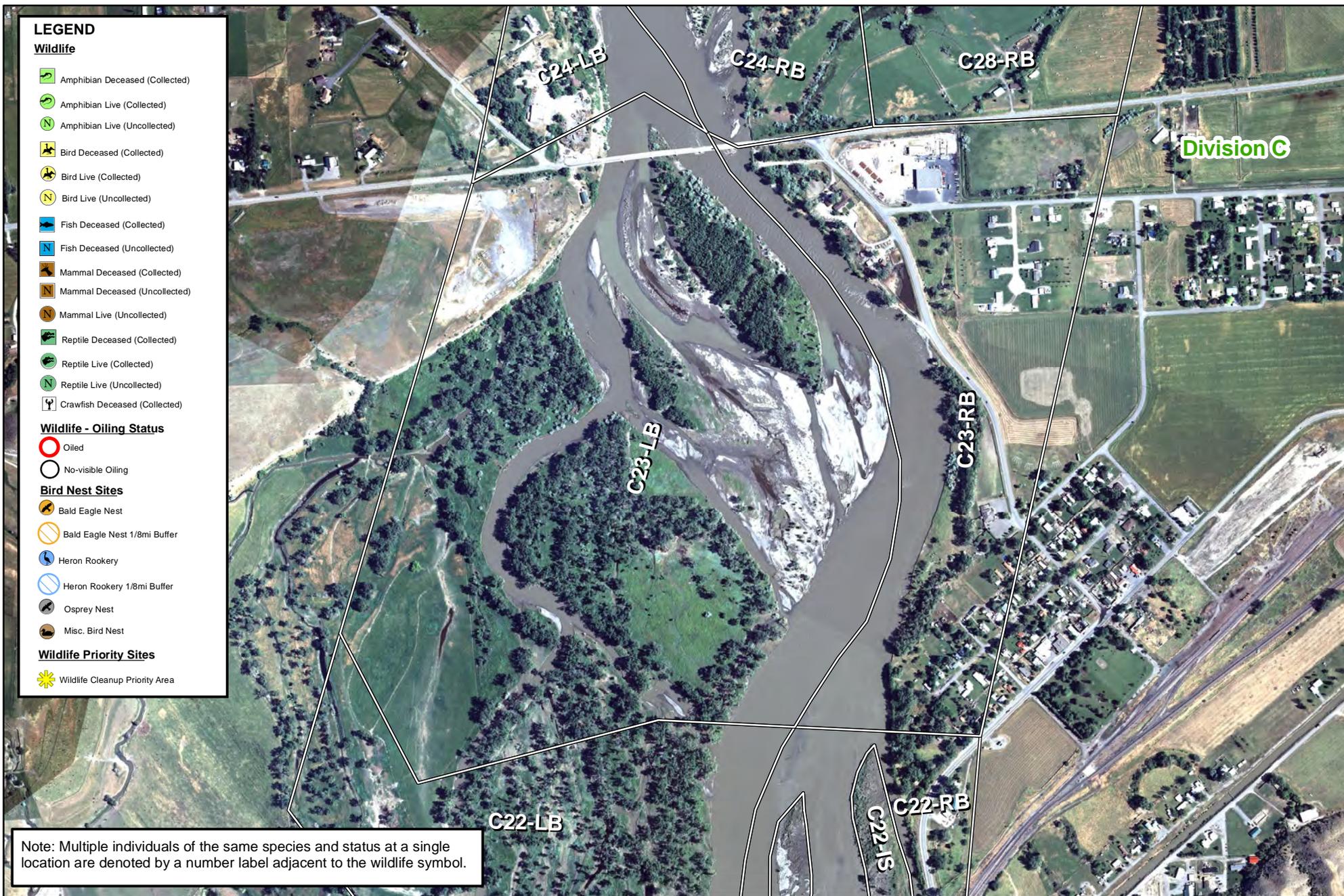


Figure 1

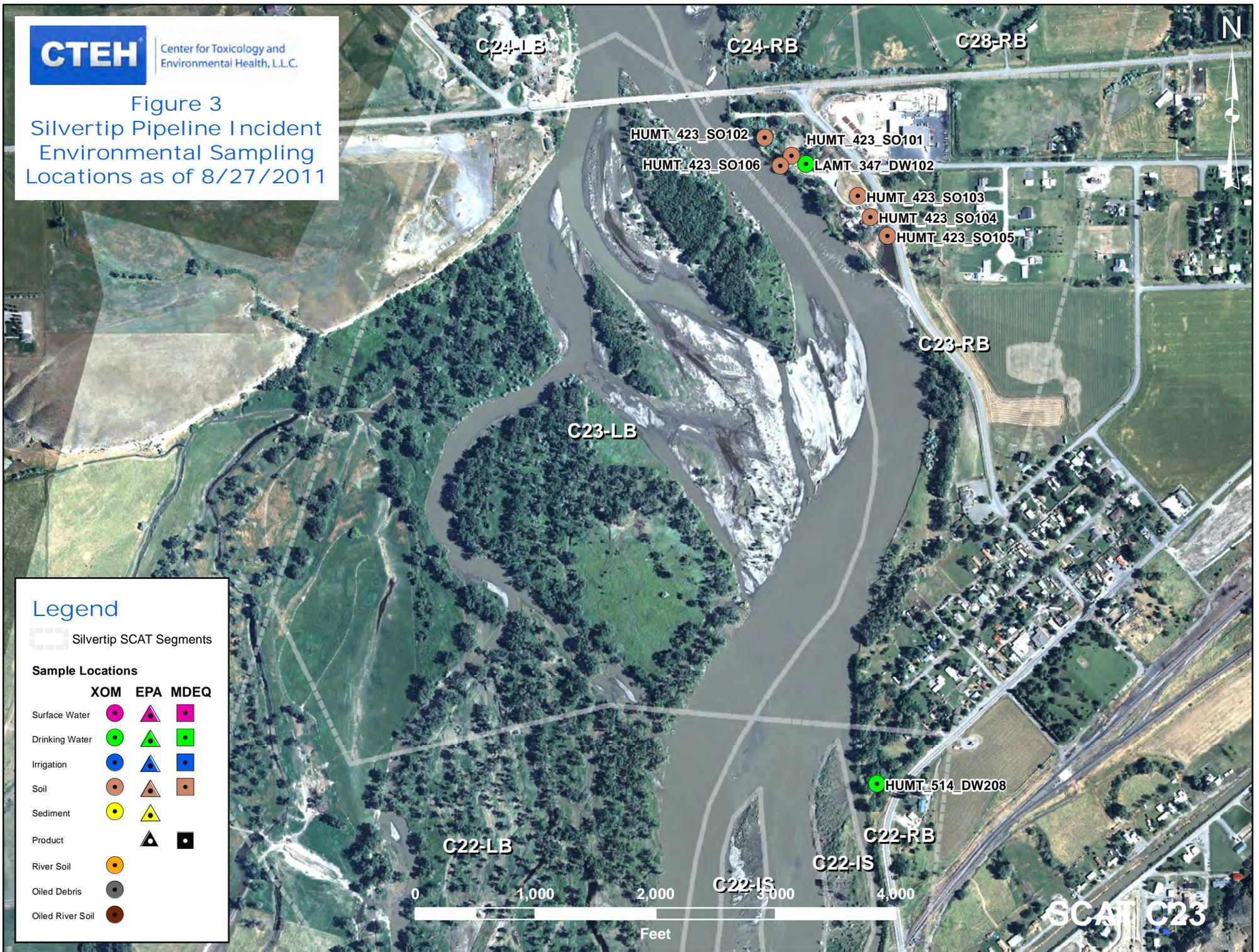


**Figure 2**  
**Wildlife Resources**



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

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



C24-LB

C24-RB

C28-RB

N

HUMT\_423\_SO102

HUMT\_423\_SO101

HUMT\_423\_SO106

LAMT\_347\_DW102

HUMT\_423\_SO103

HUMT\_423\_SO104

HUMT\_423\_SO105

C23-RB

C23-LB

HUMT\_514\_DW208

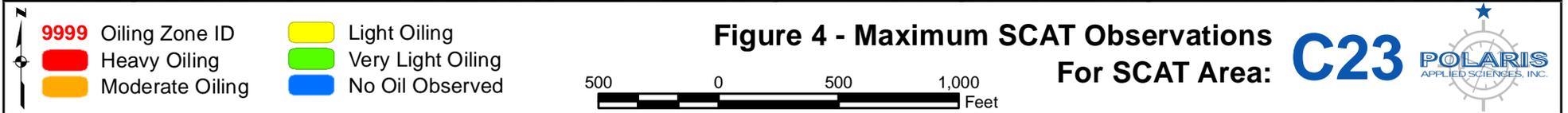
C22-LB

C22-RB

C22-IS

C22-IS

SCAT C23





- 9999 Oiling Zone ID
- Heavy Oiling
- Moderate Oiling

- Light Oiling
- Very Light Oiling
- No Oil Observed



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





## **Appendix A**

Sample Detection Summary



## Detections in Samples Collected in SCAT Area C23

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
HUMT0824SO101	08/24/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	18.6	40	J-	mg/kg	no
HUMT0824SO101	08/24/2011	Field	Soil_Surface	EPA 6010	Barium	Y	136	820	J-	mg/kg	no
HUMT0824SO101	08/24/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	1	3.8	J-	mg/kg	no
HUMT0824SO101	08/24/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	17.3	280	J-	mg/kg	no
HUMT0824SO101	08/24/2011	Field	Soil_Surface	EPA 6010	Lead	Y	12	400	J-	mg/kg	no
HUMT0824SO101	08/24/2011	Field	Soil_Surface	EPA 7471	Mercury	Y	0.021	1		mg/kg	no
HUMT0824SO101	08/24/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	17	150	J-	mg/kg	no
HUMT0824SO101	08/24/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	33.3	39	J-	mg/kg	no
HUMT0824SO102	08/24/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	14.4	40	J-	mg/kg	no
HUMT0824SO102	08/24/2011	Field	Soil_Surface	EPA 6010	Barium	Y	117	820	J-	mg/kg	no
HUMT0824SO102	08/24/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.77	3.8	J-	mg/kg	no
HUMT0824SO102	08/24/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	15.2	280	J-	mg/kg	no
HUMT0824SO102	08/24/2011	Field	Soil_Surface	EPA 6010	Lead	Y	11.4	400	J-	mg/kg	no
HUMT0824SO102	08/24/2011	Field	Soil_Surface	EPA 7471	Mercury	Y	0.024	1		mg/kg	no
HUMT0824SO102	08/24/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	14.4	150	J-	mg/kg	no
HUMT0824SO102	08/24/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	28.3	39	J-	mg/kg	no
HUMT0824SO103	08/24/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	14.1	40	J-	mg/kg	no
HUMT0824SO103	08/24/2011	Field	Soil_Surface	EPA 6010	Barium	Y	122	820	J-	mg/kg	no
HUMT0824SO103	08/24/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.79	3.8	J-	mg/kg	no
HUMT0824SO103	08/24/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	15.6	280	J-	mg/kg	no
HUMT0824SO103	08/24/2011	Field	Soil_Surface	EPA 6010	Lead	Y	9.6	400	J-	mg/kg	no
HUMT0824SO103	08/24/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	14.1	150	J-	mg/kg	no
HUMT0824SO103	08/24/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	25.4	39	J-	mg/kg	no
HUMT0824SO104	08/24/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	13.2	40	J-	mg/kg	no
HUMT0824SO104	08/24/2011	Field	Soil_Surface	EPA 6010	Barium	Y	105	820	J-	mg/kg	no
HUMT0824SO104	08/24/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.75	3.8	J-	mg/kg	no
HUMT0824SO104	08/24/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	14.3	280	J-	mg/kg	no
HUMT0824SO104	08/24/2011	Field	Soil_Surface	EPA 6010	Lead	Y	9.4	400	J-	mg/kg	no
HUMT0824SO104	08/24/2011	Field	Soil_Surface	EPA 7471	Mercury	Y	0.036	1		mg/kg	no
HUMT0824SO104	08/24/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	14.6	150	J-	mg/kg	no
HUMT0824SO104	08/24/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	23.5	39	J-	mg/kg	no



## Detections in Samples Collected in SCAT Area C23

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
HUMT0824SO105	08/24/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	27.2	40	J-	mg/kg	no
HUMT0824SO105	08/24/2011	Field	Soil_Surface	EPA 6010	Barium	Y	211	820	J-	mg/kg	no
HUMT0824SO105	08/24/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	1.5	3.8	J-	mg/kg	no
HUMT0824SO105	08/24/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	27.6	280	J-	mg/kg	no
HUMT0824SO105	08/24/2011	Field	Soil_Surface	EPA 6010	Lead	Y	15.2	400	J-	mg/kg	no
HUMT0824SO105	08/24/2011	Field	Soil_Surface	EPA 7471	Mercury	Y	0.045	1		mg/kg	no
HUMT0824SO105	08/24/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	25.8	150	J-	mg/kg	no
HUMT0824SO105	08/24/2011	Field	Soil_Surface	MADEP VPH	Toluene	Y	0.13	10		mg/kg	no
HUMT0824SO105	08/24/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	47.3	39	J-	mg/kg	YES
HUMT0824SOBKG106	08/24/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	8	40	J-	mg/kg	no
HUMT0824SOBKG106	08/24/2011	Field	Soil_Surface	EPA 6010	Barium	Y	94.6	820	J-	mg/kg	no
HUMT0824SOBKG106	08/24/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.57	3.8	J-	mg/kg	no
HUMT0824SOBKG106	08/24/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	10.7	280	J-	mg/kg	no
HUMT0824SOBKG106	08/24/2011	Field	Soil_Surface	EPA 8270 by SIM	Chrysene	Y	13.3	20000		ug/kg	no
HUMT0824SOBKG106	08/24/2011	Field	Soil_Surface	EPA 6010	Lead	Y	10.3	400	J-	mg/kg	no
HUMT0824SOBKG106	08/24/2011	Field	Soil_Surface	EPA 7471	Mercury	Y	0.022	1		mg/kg	no
HUMT0824SOBKG106	08/24/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	9	150	J-	mg/kg	no
HUMT0824SOBKG106	08/24/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	17.7	39	J-	mg/kg	no



## **Appendix B**

Initial SCAT Survey Forms and  
Sketches

DB16

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>C23</u>	<input checked="" type="radio"/> Left Bank / <input type="radio"/> Right Bank / <input type="radio"/> Island	<u>27/07/11</u>	<u>9:10</u> hrs to <u>9:13</u> hrs	low - mean - <u>bankfull</u> overbank
Operations Division: <u>C</u>				<u>falling</u> steady - rising
Survey by: <u>Foot / ATV / <input checked="" type="radio"/> Boat / <input type="radio"/> Helicopter / <input type="radio"/> Overlook /</u>		<u>Sun</u> Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>30</u> deg C

<b>2 SURVEY TEAM # <u>1</u></b>	Name	Organization	Signature
	<u>Chuck Pons</u>	<u>Centrus ENTRIX</u>	<u>[Signature]</u>
	<u>Jay Watson</u>	<u>MEWP</u>	
	<u>Ernie McKenzie</u>	<u>WDLM</u>	

**3 SEGMENT** Total Segment/Reach Length 1115 m Segment/Reach Length Surveyed 1115 m

Start GPS: LATITUDE 45 deg. 54'13.95 min. LONGITUDE 108 deg. 19'08.14 min. Datum: wgs84

End GPS: LATITUDE 45 deg. 53'38.9 min. LONGITUDE 108 deg. 19'01.87 min.

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

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

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

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

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

Cliff or Bluff:        Est Height        m canyon        manmade        meander        confined or leveed        Substrate Type: Sand/Veg

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        1-10 m        10-100 m  100m 160m 110 est. water depth: <1 m        1-3 m  3-10 m        >10 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: Y /  N oiled Y / N amount        bags or        trucks access restrictions       

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

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

1046  
1047  
1048  
1049  
1050

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>y</u>	<u>170</u>	<u>2</u>	<u>60</u>			<u>S</u>	<u>P</u>		<u>x</u>									<u>Vg / Sed</u>
B			<u>x</u>	<u>x</u>	<u>210</u>	<u>2</u>	<u>0</u>													<u>x</u>		<u>Vg / Sed</u>
C			<u>x</u>	<u>x</u>	<u>210</u>	<u>2</u>	<u>60</u>			<u>S</u>	<u>P</u>		<u>y</u>									<u>Vg / Sed</u>
D			<u>x</u>	<u>x</u>	<u>390</u>	<u>2</u>	<u>0</u>													<u>x</u>		<u>Vg / Sed</u>
E			<u>x</u>	<u>x</u>	<u>165</u>	<u>2</u>	<u>60</u>			<u>S</u>	<u>P</u>		<u>x</u>									<u>Vg / Sa</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				

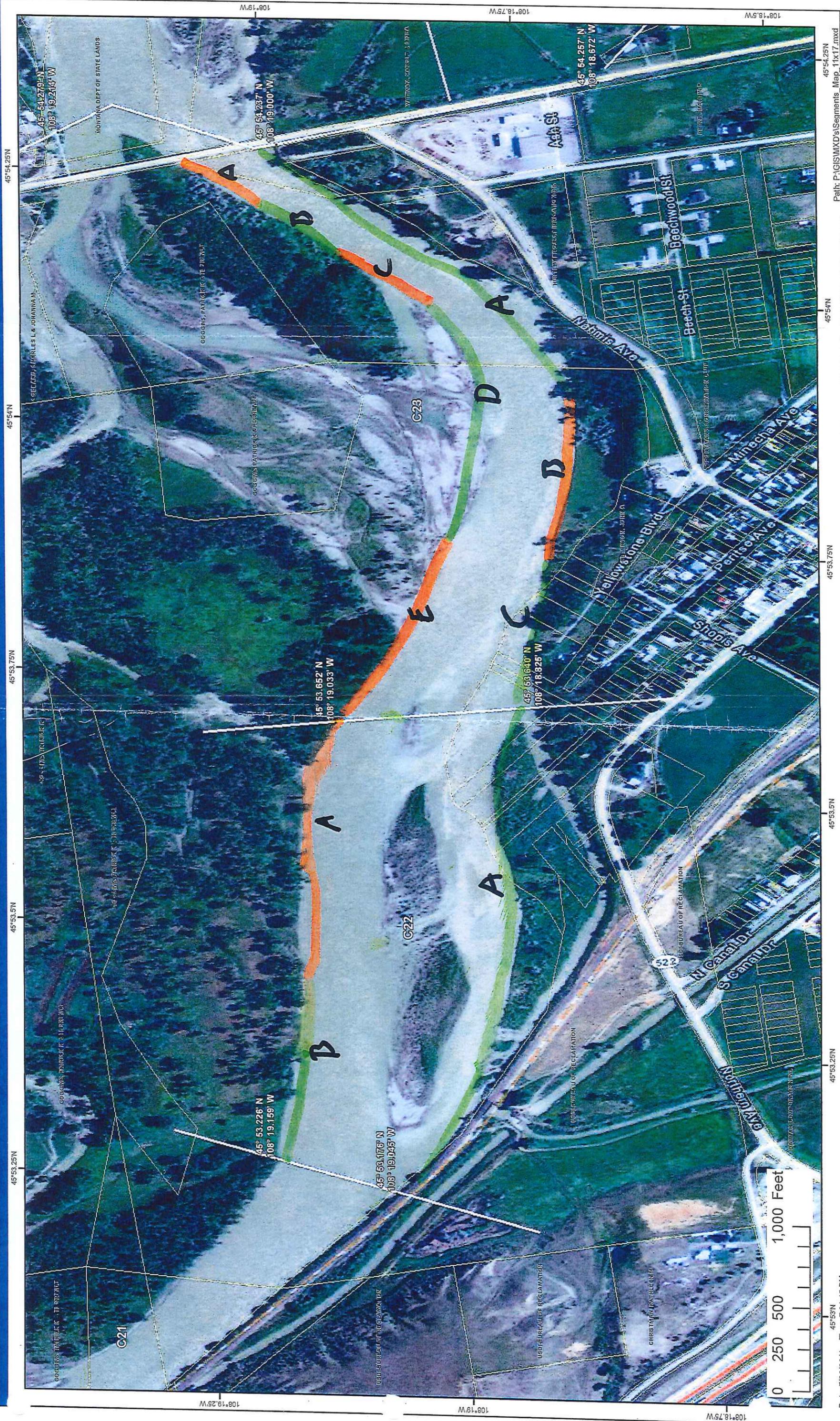
**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Zones A, C, and E are bounded stem and coast vegetation primarily grasses. Grasses. Vg should be cut and or trimmed as where applicable and removed.



**SILVERTIP PIPELINE INCIDENT**  
Yellowstone River  
Map 36





30 pm  
2 pm



C2

ZONE A

ZONE B

ZONE C

ZONE D

ZONE E

C23

Y

Image © 2011 DigitalGlobe

© 2011 Google

45°53'59.60" N 108°18'59.71" W elev 3011 ft

2004 1996

C23I - Zones A,B,C,D & E - Team 2 - 03/08/11

© 2010

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page \_\_\_\_\_ of \_\_\_\_\_

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 24/09/11	Time (24h): std / daylight 1300 hrs to 1530 hrs	Water Level low + mean - bankfull - overbank falling - steady - rising
Segment/Reach ID: C23 (Left Bank) / Right Bank / Island		Operations Division:		
Survey by: (Foot) / ATV / Boat / Helicopter / Overlook / _____		(Sun) / Clouds / Fog / Rain / Snow / Windy / Calm		
Air Temp +/- 32 deg C				

2 SURVEY TEAM # 2+3	Name	Organization	Signature
	Merlo Gauvreau	Polaris	See attached
	Pete Lee	Polaris	
	Bruce Kvam	Polaris	
	Jeffrey Frank Hurrick	MTDEQ	
	Bob Roll	MTDEQ	

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

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

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

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

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

Sediment Bank: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed  Pebble/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: 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 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 160m est. water depth: <1m 1-3m 3-10m >10m \_\_\_\_\_ m

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

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

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

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

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

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

2423

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	375	200	<1			5	P							X				Grass, trees, debris

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

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

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

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

Zone A: No further treatment (NFT)

Treated by Ops hot shot crew.

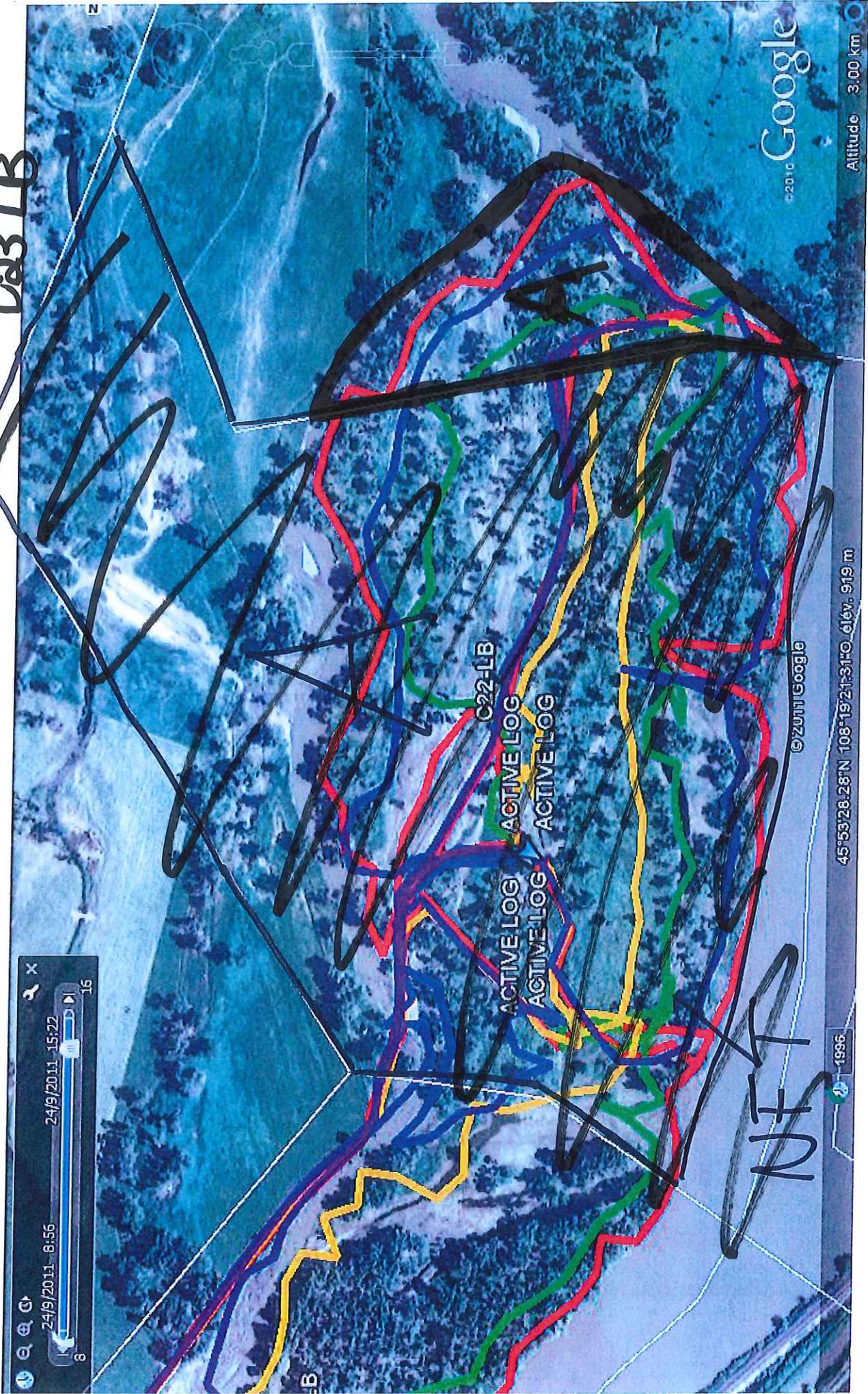
(Zone was covered by survey performed on C22-LB 24-Sep-2011. Spoke with team lead, who confirmed that oiling conditions were similar in both segments.)

Andrew Milnes

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

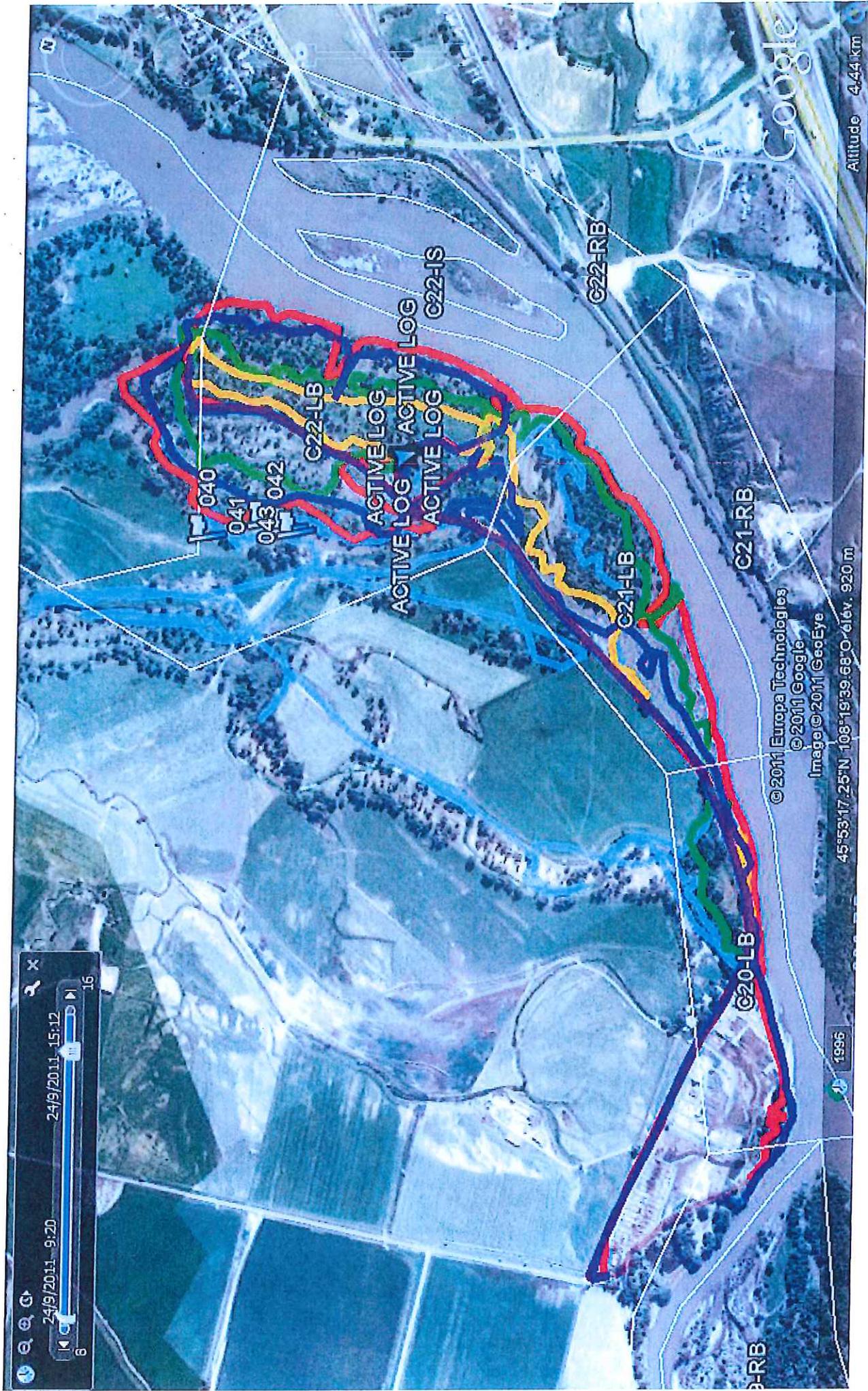
24/09/2011 Team # 2-3

~~C22-LB~~  
C23-LB



Pg 2 of 2

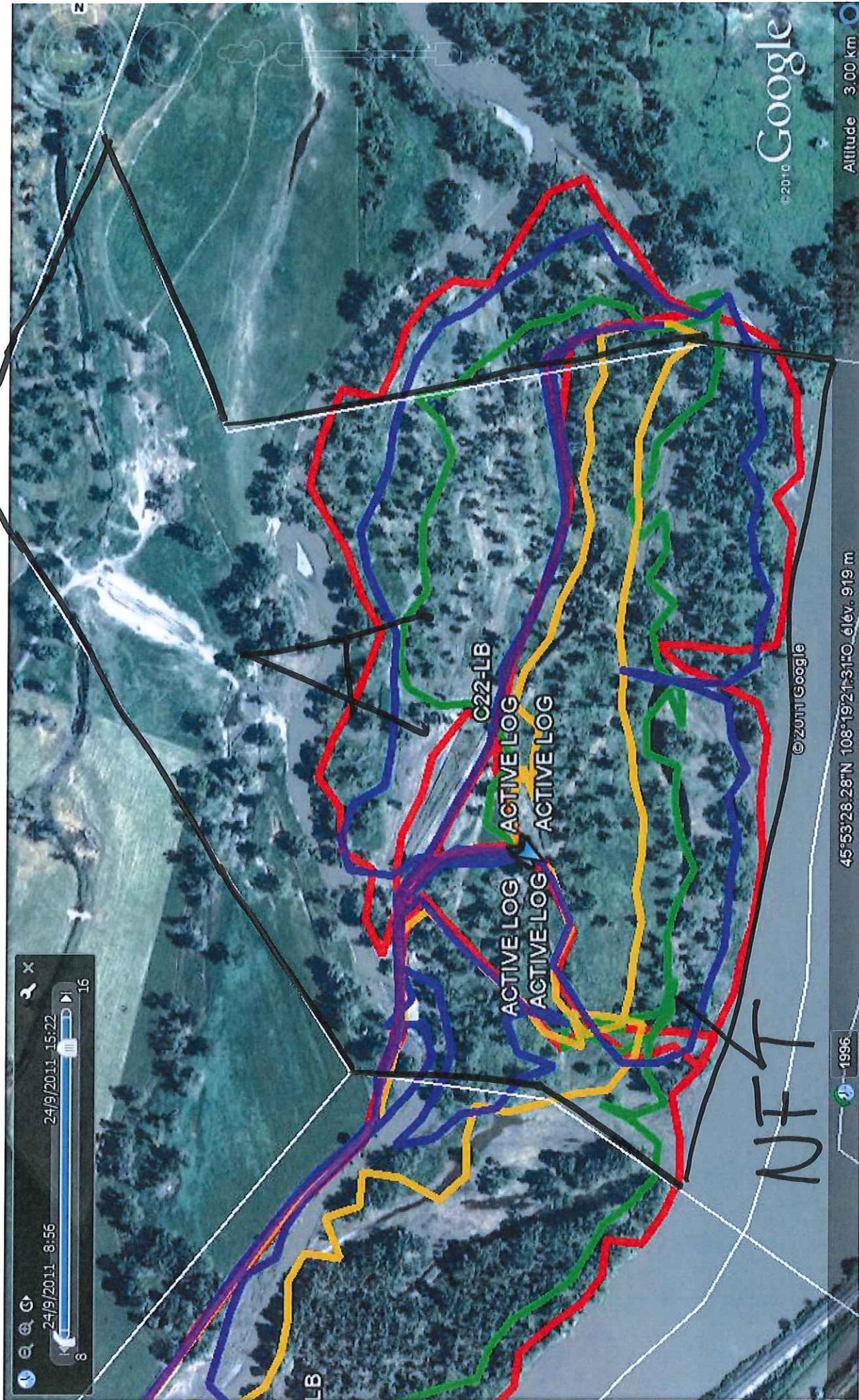
24/07/2011 Team # 2-3 C23-LB Map in





24/09/2011 Team # 2-3

C22-LB



NFT

Pg 2 of 2

DB/GIS

**RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident**

Page 1 of 1

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) <u>26/07/11</u>	Time (24h): std / daylight <u>13:00</u> hrs to <u>15:30</u> hrs	<b>Water Level</b> low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: <u>(23)</u> Left Bank (Right Bank) Island		Operations Division: <u>SCAT</u>		
Survey by: <u>(Foot)</u> / ATV / Boat / Helicopter / Overlook / _____		<u>(Sun)</u> Clouds / Fog / Rain / Snow / Windy / Calm		
Air Temp +/- <u>30</u> deg C				

<b>2 SURVEY TEAM # <u>4</u></b>	Name	Organization	Signature
	<u>John Marinsek</u>	<u>Ordnance ENTRY</u>	<u>[Signature]</u>
	<u>Ken Prazak</u>	<u>MT FWP</u>	<u>[Signature]</u>
	<u>Jance Witul</u>	<u>US EPA</u>	<u>[Signature]</u>

<b>3 SEGMENT</b>	Total Segment/Reach Length <u>1017</u> m	Segment/Reach Length Surveyed <u>1017</u> m
Start GPS: LATITUDE <u>45</u> deg. <u>54.235</u> min.	LONGITUDE <u>108</u> deg. <u>19.019</u> min.	Datum: <u>WGS84</u>
End GPS: LATITUDE <u>45</u> deg. <u>53.637</u> min.	LONGITUDE <u>108</u> deg. <u>18.846</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 <u>P</u> Sand _____ Mixed _____ Pebble/Cobble <u>S</u> Boulder _____ Peal/Organic _____	Vegetated Bank: <u>P</u>		Wooded Upland: <u>S</u>
Sediment Flat: Clay/Mud <u>P</u> 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 <u>P</u> confined or leveed _____	Substrate Type: <u>veg</u>	
Sloped: <u>(&gt;5°)</u> (15°) (30°)	straight _____ braided <u>S</u> oxbow _____ flood plain valley _____	Forested / <u>Vegetated</u> / Bare	

<b>4C RIVER CHANNEL CHARACTER</b> circle or select as appropriate			
est. width: <1m 1-10m 10-100m <u>&gt;100m</u> 160m	est. water depth: <1m <u>(1-3m)</u> 3-10m >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 / <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</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		
Oiled trees/shrubs <u>Y</u> / <u>N</u> River Current strong <u>Y</u> / <u>N</u>	Other Features:		

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

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER					SUBST. TYPE(S)				
					Length	Width	Distrib.	OIL THICKNESS					OIL CHARACTER									
	MS	LB	UB	OB	m	m	%	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	NO	
<u>784</u> <u>785</u> A			<u>S</u>	<u>P</u>	<u>690</u>	<u>90</u>	<u>5</u>			<u>S</u>	<u>P</u>						<u>P</u>					<u>veg</u>
B				<u>P</u>	<u>1017</u>	<u>100</u>	<u>0</u>														<u>NOO</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	OILED ZONE	SUBSURFACE OIL CHARACTER								WATER TABLE	SHEEN COLOUR	CLEAN BELOW	SUBST. TYPE(S)				
							SAP	OP	PP	OR	OF	TR	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 - Recommend removal (cut + bag) of visible oil behind "Croakers" establishment. All other areas Recommend natural attenuation.

Zone B - No oil

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

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page        of       

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>C23</u>	Left Bank / <u>Right Bank</u> / Island	<u>27/07/11</u>	<u>1146</u> hrs to <u>1141</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>C</u>				falling - steady - rising
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook /	<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm			Air Temp +/- <u>30</u> deg C

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

**3 SEGMENT** Total Segment/Reach Length 1115 m Segment/Reach Length Surveyed 1115 m

Start GPS: LATITUDE 45 deg. 54'14.5 min. LONGITUDE 108 deg. 15'04.15 min. Datum: WGS87

End GPS: LATITUDE 45 deg. 53'38.79 min. LONGITUDE 108 deg. 18'54.78 min.

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

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

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

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

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

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

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

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

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

shoal(s) present [X] / N point bar present [X] / 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 [X] / N Access: Direct from backshore [X] / N Alongshore from next segment [X] / N

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

Oiled trees/shrubs [X] / 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

1043  
1043  
1044

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS								OIL CHARACTER								SUBST. TYPE(S)
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP	NO				
<u>A</u>			<u>X</u>	<u>X</u>	<u>765</u>	<u>2</u>	<u>0</u>				<u>[X]</u>									<u>X</u>	<u>Sand/veg</u>			
<u>B</u>			<u>X</u>	<u>X</u>	<u>190</u>	<u>2</u>	<u>60</u>			<u>S</u>	<u>P</u>		<u>[X]</u>											
<u>C</u>			<u>X</u>	<u>X</u>	<u>160</u>	<u>2</u>	<u>0</u>													<u>X</u>				

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

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

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

Overbank Survey Required [X] / N Overbank Survey Completed Y / N Shoreline Survey Completed [X] / N

Zone B has stand + cool veg (primarily grass)

Cut and/or trim veg @ and remove.

Sketch [X] / No Photos [X] / No Frames \_\_\_\_\_ Photographer \_\_\_\_\_



# SILVERTIP PIPELINE INCIDENT Yellowstone River

Map 36



DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 03/08/11	Time (24h): std / daylight 1000 hrs to 1100 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: C <u>23</u> Left Bank / <u>Right Bank</u> / Island				
Operations Division:				
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 # 2</b>	Name	Organization	Signature
Pete Lee		Polaris	<i>Pete Lee</i>
Jack Smith		USCG	<i>Jack Smith</i>
Steve Opp		MT DEQ	<i>Steve Opp</i>
Adam Bausch		Cardno Entrix	<i>Adam Bausch</i>

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 570 m

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

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

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

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

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

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

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

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

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

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

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

shoal(s) present Y/N 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: Private Landowners

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

1147  
1148

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	570	90	21			X	X		X									Grass, trees, debris
B				X	200	20	5			X	X		X									Trees

**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: 90 cm

**Treatment recommendations:**

Zone A : No oil observed, no treatment required; very light categorization

Zone B : Cut & remove oil coated vegetation smaller than 1" diameter. ~~Remove debris smaller than 4" diameter.~~ Wipe larger oil coated vegetation.

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

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



C23-R

Pete Lee  
Team #2  
~~03/08/11~~

Zones A + B



## **Appendix C**

Pre-Inspection Survey Transmittal

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



## **Appendix D**

Post-Inspection Survey Transmittal

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



## **Appendix E**

Final SCAT Survey Forms and  
Sketches

DB/16

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 10/09/11	Time (24h): std / daylight 12:20 hrs to 13:35 hrs	<b>Water Level</b> low - MEAN - bankfull - overbank falling - STEADY - rising
Segment/Reach ID: <u>C 23</u> <u>Left Bank</u> / Right Bank / Island				
Operations Division:		Air Temp + / - <u>24</u> deg C		
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		

<b>2 SURVEY TEAM # 1</b>	name	organization	contact phone number
	Tom Freeman	Polaris Applied Sciences	<i>Tom Freeman</i>
	Sheila McAtee	DNR	<i>Sheila McAtee</i>

**3 SEGMENT** Total Segment/Reach Length 1400 m Segment/Reach Length Surveyed 1400 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 X Mixed  Pebble/Cobble  Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: Yes \_\_\_\_\_ Wooded Upland: \_\_\_\_\_

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

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

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

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

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

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

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

Oiled trees/shrubs Y / N River Current strong  / N Other Features: Goggins Landowner Restriction.

**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 m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO	
A				<input checked="" type="checkbox"/>	660	80	—														X	Veg/Debris
B				<input checked="" type="checkbox"/>	740	50	<1				X						X					Veg/Debris

2251  
2252

**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: NOO = NFT

Zone B: Removed 1/4 bag w/ Hot Shots. Now NFT following treatment.

Note: Re SCAT of area formerly identified as needing treatment.

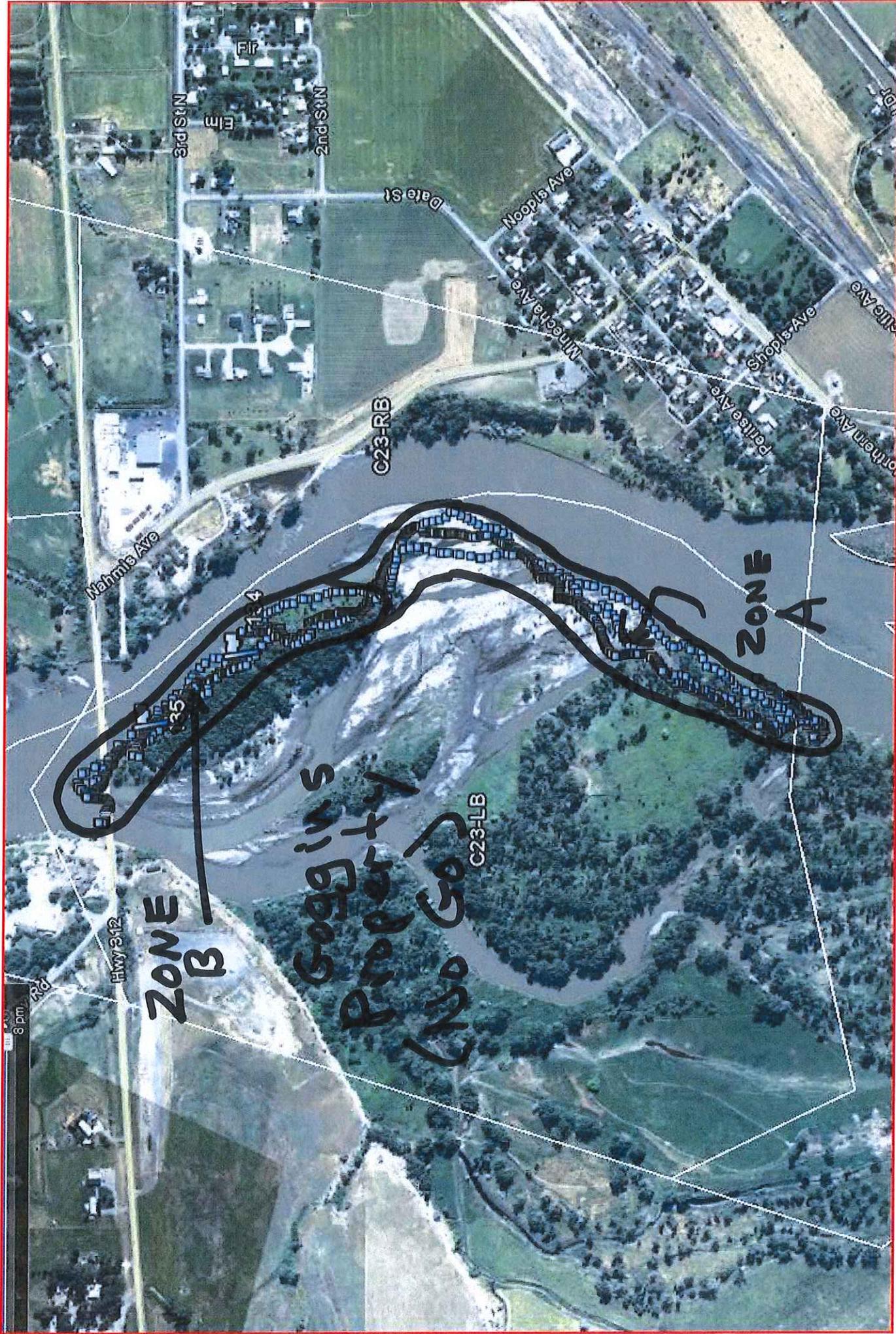
(for ALL sub-segments record: sub-segment ID, length, length surveyed, and GPS start/end fixes)

Sketoc Yes/No Photos Yes/No (Roll # \_\_\_\_\_) Frames \_\_\_\_\_ Video Tape Yes/No (tape # \_\_\_\_\_)

C-23 LB

SCAT TEAM #1

SEPT 10, 2011



RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

DB/6

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) <u>26/09/11</u>	Time (24h): std / daylight <u>1230</u> hrs to <u>1530</u> hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: <u>C23</u> (Left Bank / Right Bank / Island)				
Operations Division: <u>C</u>				
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>30</u> deg C

2 SURVEY TEAM #	Name	Organization	Signature
	<u>TODD FARRAR</u>	<u>POLARIS</u>	<u>Todd Farrar</u>
	<u>MATTHEW KENT</u>	<u>MT DEQ</u>	<u>Matthew Kent</u>
	<u>LAUREN GLUSHIK</u>	<u>POLARIS</u>	<u>Lauren Glushik</u>

**3 SEGMENT** Total Segment/Reach Length 1070 m Segment/Reach Length Surveyed 1070 m

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

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

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

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

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

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

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

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

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 40-100m >100m 160m est. water depth: <1m 1-3m 3-10m >10m \_\_\_\_\_ m

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

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

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

Debris Y / N oiled Y / N amount 3 bags or \_\_\_\_\_ trucks access restrictions BOAT ACCESS

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

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

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER							SUBST. TYPE(S)	
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO
A				<u>X</u>	<u>1070</u>	<u>806</u>	<u>L1</u>			<u>S</u>	<u>P</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				

**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

Sporadic stain and coat on vegetation and debris.  
Hot shot crew removed/treated oiled material.  
No further treatment required (NFT)

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

TEAM 7  
Sept. 26, 2011  
C23 LB

ACTIVE LOG 003  
26-SEP-11 03:22:18 PM

ZONE  
MFT



013/6

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page \_\_\_\_\_ of \_\_\_\_\_

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 07/09/11	Time (24h): std / daylight 1044 hrs to 1154 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: C23	Left Bank / <u>Right Bank</u> / Island			
Operations Division: C				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- 33 deg C

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

**3 SEGMENT** Total Segment/Reach Length 1,092 m Segment/Reach Length Surveyed 616 m

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

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

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

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

Sediment Bank: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed  Pebble/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: 5 Wooded Upland: 2

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

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

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

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

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

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

shoal(s) present  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	Width	Distrib.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO		
					m	m	%																
A					<u>516</u>	<u>90</u>	<u>&lt;1</u>				<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>					<i>woody vegetation</i>	

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

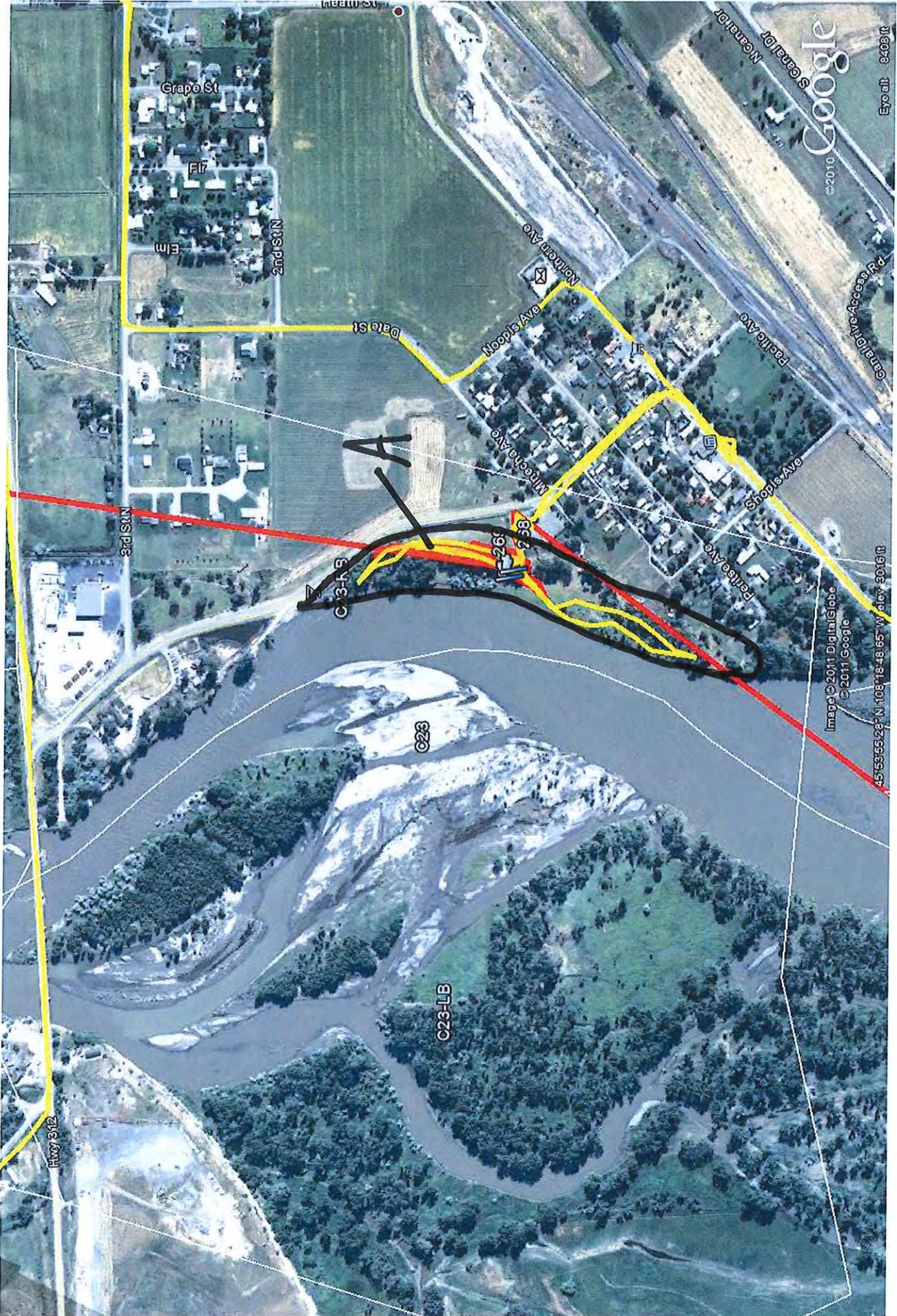
TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER					WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)		
	MS	LB	UB	OB			SAP	OP	PP	OR	OF					TR	NO

**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 - Some Non-transferable surface stain remain on grass and woody vegetation  
No Further Treatment Recommended  
Ops Crew removed 3 bags of oil coated woody vegetation and debris during ReSCAT*

Sketch  Y /  N Photos  Y /  N Frames \_\_\_\_\_ Photographer \_\_\_\_\_



C23RB  
Team # 3  
07/09/11

A-NFT



## **Appendix F**

Completed SCAT Segment Sign-Off  
Forms

# SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

## SILVERTIP PIPELINE RELEASE

Segment C-23 LB Date of Survey Sept 10, 2011

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

CTR(s) Associated with SCAT Segment CTR # 60

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

Segment Assessment Complete<sup>1</sup>

Partial Segment Assessment

*The undersigned are in agreement that the above segment or partial segment meets the Approved Treatment Methods Target Endpoints.*

This Segment is Conditionally Approved   
(See attached Post Inspection Survey Transmittal (POST))

*The undersigned are in agreement that the above segment meets the Approved Treatment Methods Target Endpoints conditional upon completion of the treatment identified in the attached Post Inspection Survey Transmittal (POST).*

No federal rep.

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

Sheila McAtee Sheila McAtee/DVRC 9/10/11  
Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_  
**State Representative (DEQ/FWP)**

Tom Freeman Tom Freeman/Polaris Sept 10, 2011  
Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_  
**RP Representative (SCAT RP Representative)**

Once all applicable SCAT Segments (i.e. LB, RB, and IS) within a particular SCAT Area (i.e. A21) have been successfully signed-off during a formal SCAT Assessment, the SCAT Area will achieve the Response Endpoints and an Area Transition Report will be completed and submitted to EPA and DEQ.

<sup>1</sup> A Segment Sign-Off Assessment is considered complete when all accessible lands that have not already been signed-off by a claims liaison have been surveyed. If any previous SCAT Assessments were conducted, all lands that were originally recommended for treatment must be re-surveyed in the Sign-Off Assessment. If the conducted survey does not meet these conditions it is considered a Partial Assessment. Multiple Partial Assessments that meet the conditions of a Complete Assessment may together constitute a Complete Sign-Off Assessment.

# SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

## SILVERTIP PIPELINE RELEASE

Segment C23 LB

Date of Survey Sept. 26, 2011

Dates of Initial SCAT Assessments

10 Sep 11  
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment

600

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)**

Matthew Kent MATTHEW KENT / DEQ 9/27/2011  
Sign Name Print Name/ Affiliation Date  
**State Representative (DEQ/FWP)**

Josh Farrar Josh Farrar / Polaris 9/26/2011  
Sign Name Print Name/ Affiliation Date  
**RP Representative (SCAT RP Representative)**

Once all applicable SCAT Segments (i.e. LB, RB, and IS) within a particular SCAT Area (i.e. A21) have been successfully signed-off during a formal SCAT Assessment, the SCAT Area will achieve the Response Endpoints and an Area Transition Report will be completed and submitted to EPA and DEQ.

<sup>1</sup> A Segment Sign-Off Assessment is considered complete when all accessible lands that have not already been signed-off by a claims liaison have been surveyed. If any previous SCAT Assessments were conducted, all lands that were originally recommended for treatment must be re-surveyed in the Sign-Off Assessment. If the conducted survey does not meet these conditions it is considered a Partial Assessment. Multiple Partial Assessments that meet the conditions of a Complete Assessment may together constitute a Complete Sign-Off Assessment.

# SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

## SILVERTIP PIPELINE RELEASE

Segment C23RB Date of Survey Sept 7 2011

Dates of Initial SCAT Assessments 26 JUL 11 (ED)  
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment N/A

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

Segment Assessment Complete<sup>1</sup>   
Partial Segment Assessment

*The undersigned are in agreement that the above segment or partial segment meets the Approved Treatment Methods Target Endpoints.*

This Segment is Conditionally Approved   
(See attached Post Inspection Survey Transmittal (POST))

*The undersigned are in agreement that the above segment meets the Approved Treatment Methods Target Endpoints conditional upon completion of the treatment identified in the attached Post Inspection Survey Transmittal (POST).*

[Signature] Michael Shannon / USCG 9/8/11  
Sign Name Print Name/ Affiliation Date  
**Federal Representative (EPA/USCG)**

[Signature] JAY WATSON FWP 9/7/11  
Sign Name Print Name/ Affiliation Date  
**State Representative (DEQ/FWP)**

[Signature] Adam Bausch / Cadmus 9/7/2011  
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.