

ExxonMobil Pipeline Company

**SCAT Area Transition Report for
C09**

Silvertip Pipeline Incident
Laurel, Montana

October 27, 2011



SCAT Area Transition Report for C09

Silvertip Pipeline Incident
Laurel, Montana

Prepared for:
ExxonMobil Pipeline Company

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Our Ref.:
B0085883.1103

Date:
October 27, 2011

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

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1. Executive Summary of Oil Removal Activities

This Shoreline Cleanup Assessment Technique (SCAT) Area Transition Report provides a summary of the SCAT surveys conducted to determine the extent of oiling along the riverbanks and floodplain within SCAT Area C09, 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 C09. 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 C09, 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 C09 is 115.2. There were partial access issues for the right bank.

1.2 Cultural, Historic, and Natural Resource Constraints

A historic property or cultural resource has been identified within this area but it will not 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 C09 due to the low level of oiling in Division C. No oiled wildlife was observed or recovered. No Wildlife Priority Cleanup Areas were identified. A portion of a bald eagle (*Haliaeetus leucocephalus*) nesting buffer zone extended into Area C09 and was provided to Operations.

1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area C09. 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 C09 are provided on Figure 3.

Table 1 Environmental Sampling Summary

Area	Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
C09	MDEQ	B11070821-058	7/12/2011	Soil_Surface	ST-JLM-01	45.832490	-108.414240
C09	MDEQ	B11070821-057	7/12/2011	Soil_Surface	ST-JLM-01	45.832490	-108.414240
C09	MDEQ	B11070821-056	7/12/2011	Soil_Surface	ST-JLM-01	45.832490	-108.414240
C09	MDEQ	B11070821-043	7/12/2011	Soil_Surface	ST-JLM-01	45.832490	-108.414240

Appendix A contains a summary of sample results with detections for this sample set. Detections with a result above the screening level are highlighted; for this set, there were no exceedances.

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 C09 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area C09.

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](#) and [CTR No. 61](#)).

1.6 Oil Removal Activities

Oil removal activities were conducted within Area C09 in accordance with the ATMs identified in the CTRs. [Appendix I](#) of the Summary of Assessment and Oil Removal Activities report presents this data including: date range/days worked, average number of people working per day, equipment used, and various types of bags removed: oily debris, personal protective equipment, plastic, trash, super sacks, wood chips, and contaminated wood.

1.7 Pre-Inspection Survey Transmittal

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 C09 following completion of oil removal activities. The SCAT team performed final surveys of the left and right banks within SCAT Area C09 to confirm the agreed-upon cleanup endpoints identified in the applicable CTRs had been achieved. The final SCAT survey documentation is presented in Appendix E.

1.10 SCAT Area Conclusions

Based on the initial SCAT surveys performed on the island within Area C09, no oil was observed for a portion of the island and no treatment was recommended for the remainder of the island. Based on the final SCAT surveys performed on the right and left banks within Area C09, no further treatment is recommended for these segments except as noted in the CTR addendum provided in Appendix G, where the landowner preferred no additional treatment be conducted. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition
Report for C09**

Silvertip Pipeline Incident
Laurel, Montana

2. Transition Sign-Off Form

SCAT Area Transition Report for C09

Prepared for:

Unified Command

Date

Unified Command – RP



**SCAT Area Transition
Report for C09**

Silvertip Pipeline Incident
Laurel, Montana

SCAT Area Transition Report for C09

Prepared for:

Unified Command

Date

Unified Command – FOSC



**SCAT Area Transition
Report for C09**

Silvertip Pipeline Incident
Laurel, Montana

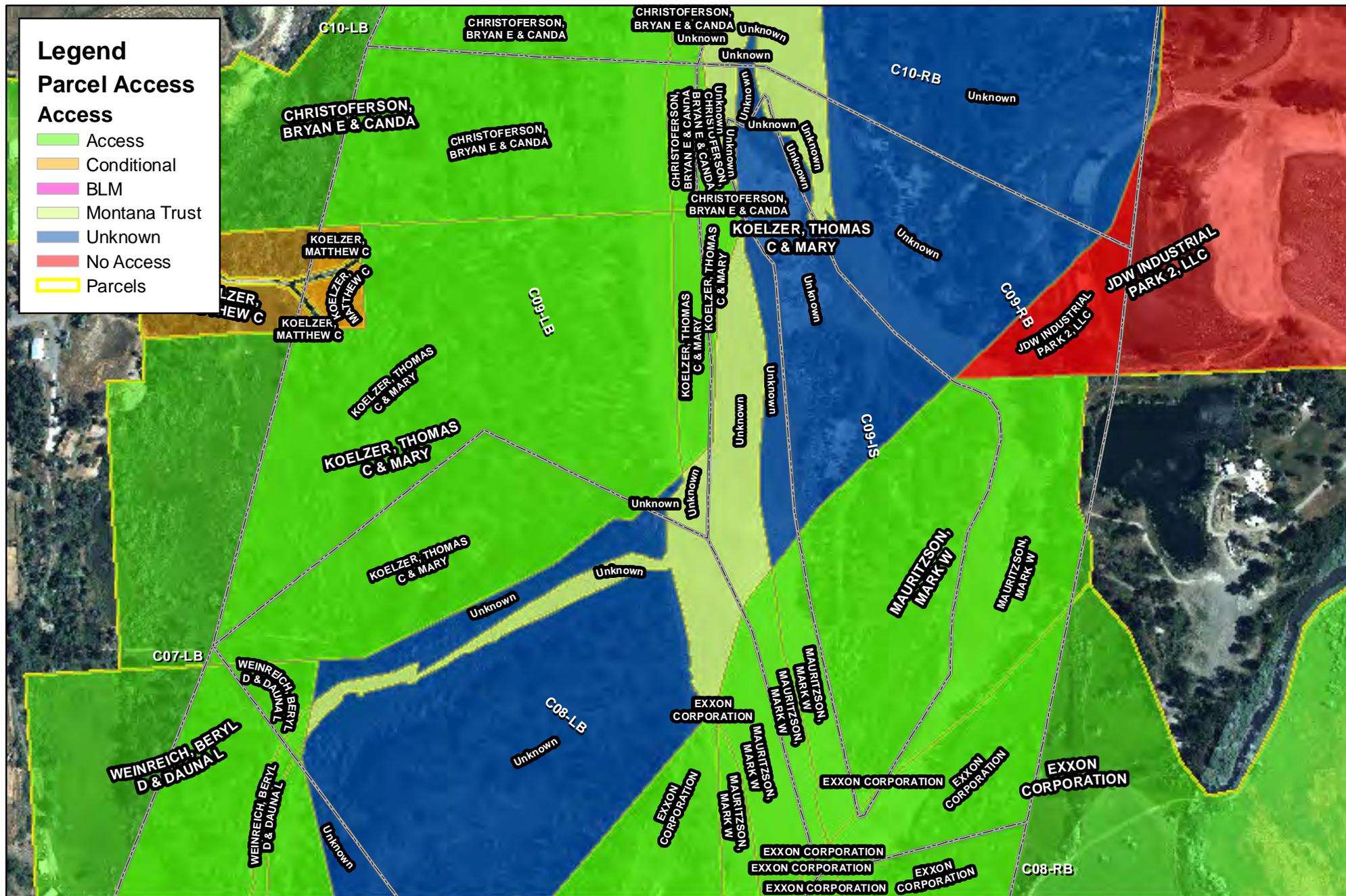
SCAT Area Transition Report for C09

Prepared for:

Unified Command

Date

Unified Command – MDEQ



Legend

Parcel Access

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



Figure 1

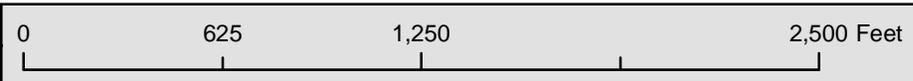
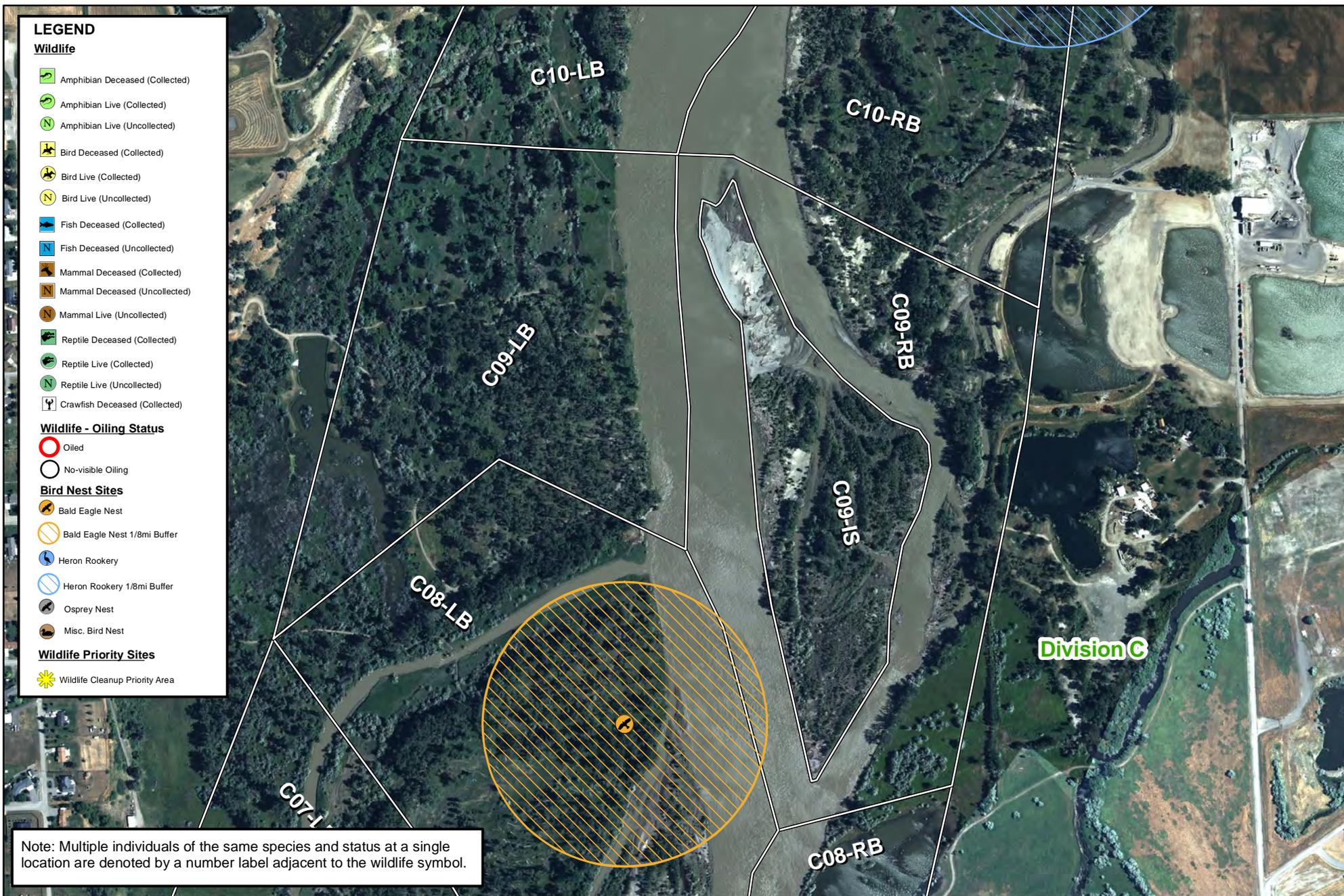
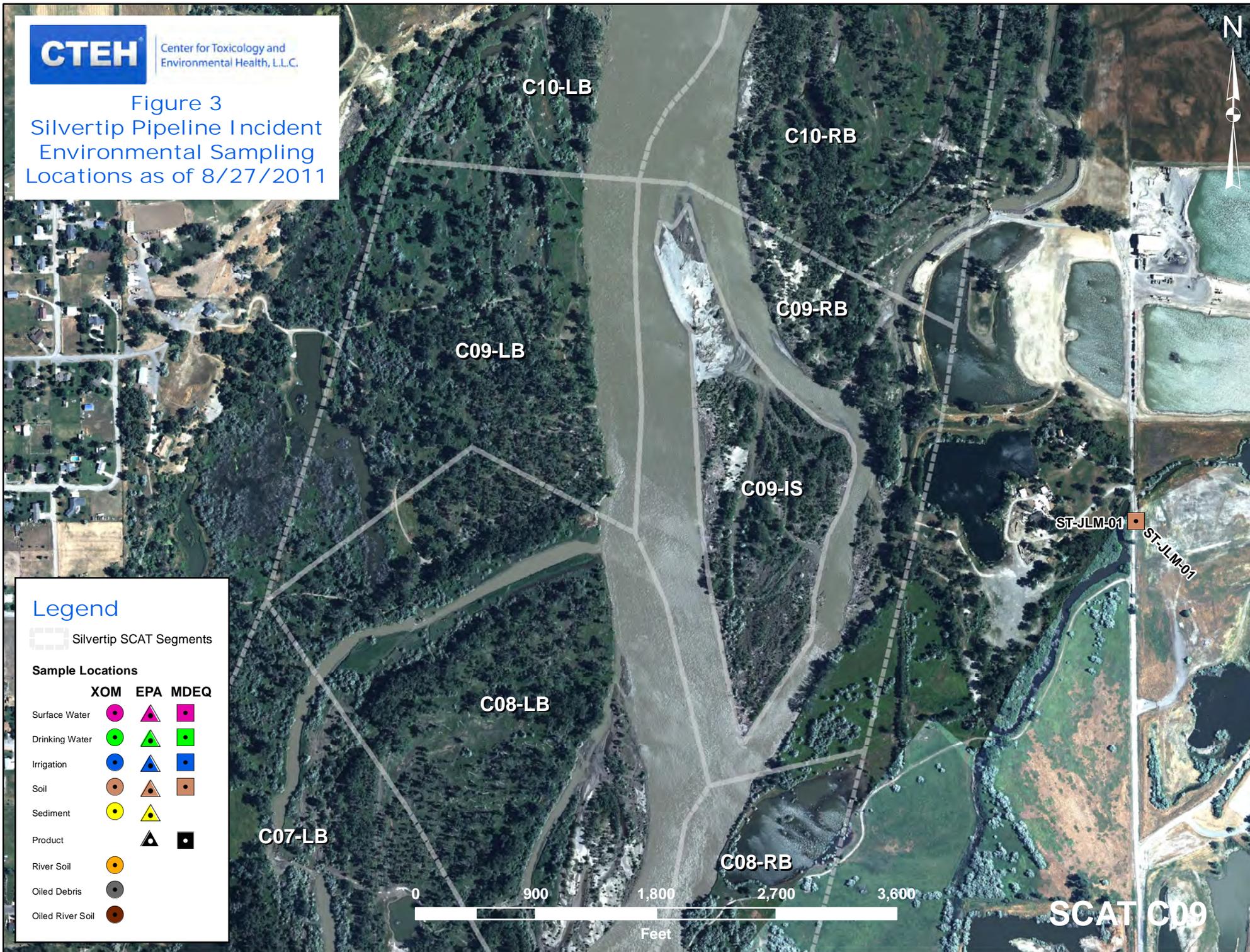


Figure 2
Wildlife Resources



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

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



Legend

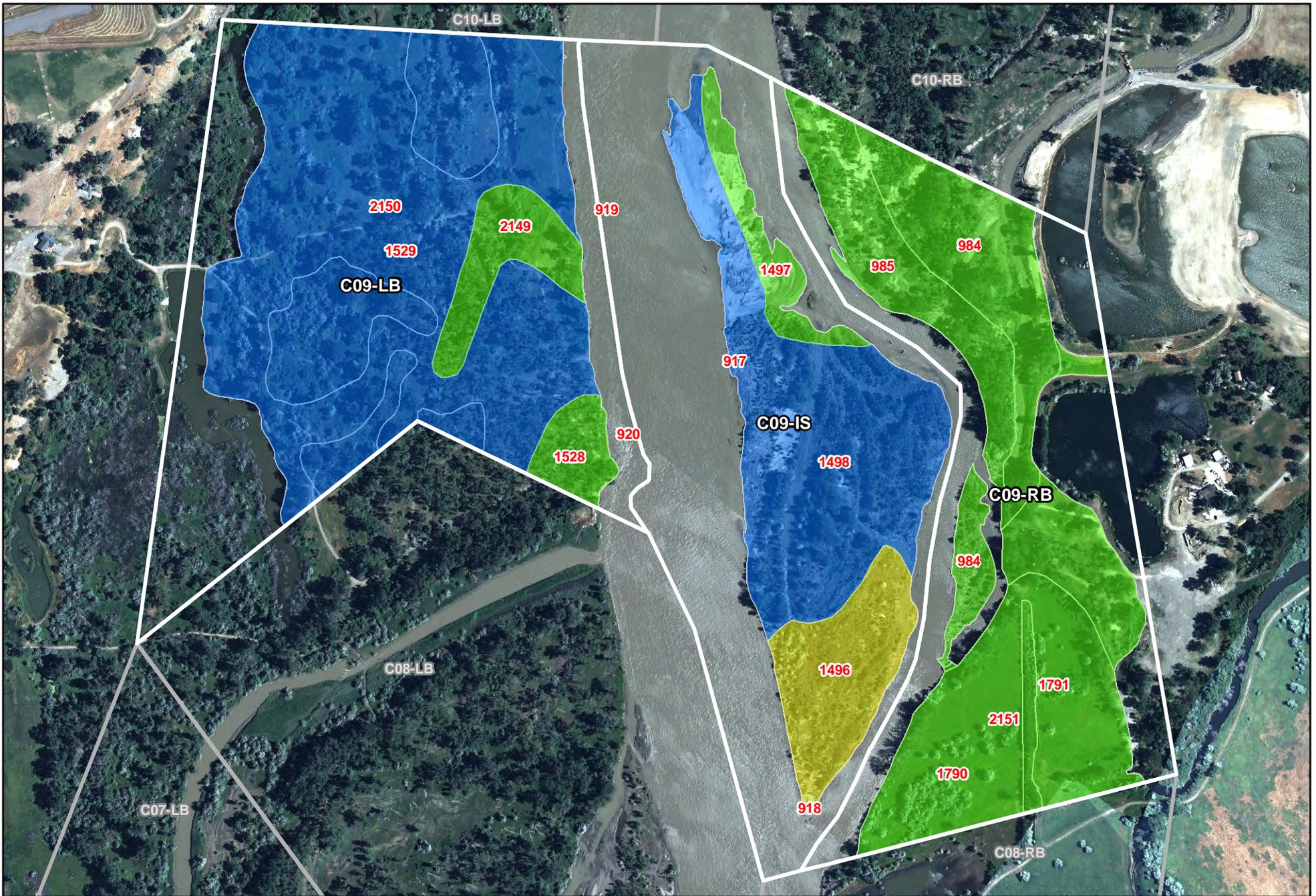
Silvertip SCAT Segments

Sample Locations

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



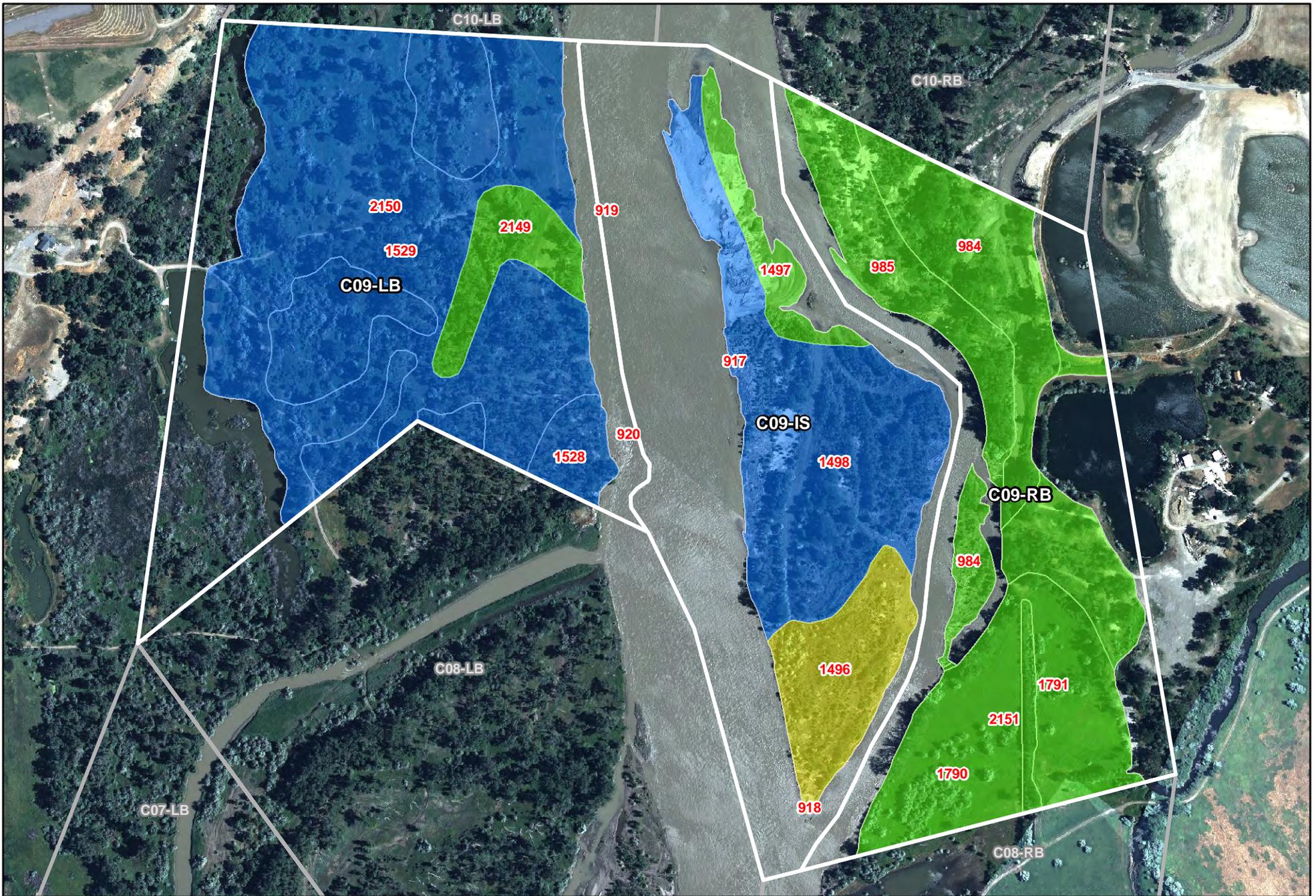
SCAT C09



	9999 Oiling Zone ID	Light Oiling
	Heavy Oiling	Very Light Oiling
	Moderate Oiling	No Oil Observed

Figure 4 - Maximum SCAT Observations For SCAT Area: C09

375 0 375 750
 Feet



- 9999 Oiling Zone ID
- Heavy Oiling
- Moderate Oiling

- Light Oiling
- Very Light Oiling
- No Oil Observed

375 0 375 750
Feet

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





Appendix A

Sample Detection Summary



Detections in Samples Collected in SCAT Area C09

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
B11070821-056		Field	Soil_Surface	8260B	1,2-Dichloroethane-d4	Y	92	NA		%	no
B11070821-056		Field	Soil_Surface	8260B	Dibromofluoromethane	Y	100	NA		%	no
B11070821-056		Field	Soil_Surface	8260B	p-Bromofluorobenzene	Y	96	NA		%	no
B11070821-056		Field	Soil_Surface	8260B	Toluene-d8	Y	109	NA		%	no
B11070821-057		Field	Soil_Surface	8260B	1,2-Dichloroethane-d4	Y	92	NA		%	no
B11070821-057		Field	Soil_Surface	8260B	Dibromofluoromethane	Y	100	NA		%	no
B11070821-057		Field	Soil_Surface	8260B	p-Bromofluorobenzene	Y	98	NA		%	no
B11070821-057		Field	Soil_Surface	8260B	Toluene-d8	Y	113	NA		%	no
B11070821-058		Field	Soil_Surface	8260B	1,2-Dichloroethane-d4	Y	92	NA		%	no
B11070821-058		Field	Soil_Surface	8260B	Dibromofluoromethane	Y	100	NA		%	no
B11070821-058		Field	Soil_Surface	8260B	p-Bromofluorobenzene	Y	99	NA		%	no
B11070821-058		Field	Soil_Surface	8260B	Toluene-d8	Y	112	NA		%	no



Appendix B

Initial SCAT Survey Forms and
Sketches

DB/G/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 30/07/11	Time (24h): std / daylight 0915 hrs to 1220 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: <u>C9</u> Left Bank / <u>Right Bank</u> / Island				
Operations Division:				Air Temp +/- 2.5 deg C
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		

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

3 SEGMENT Total Segment/Reach Length 840 m Segment/Reach Length Surveyed 463 m

Start GPS: LATITUDE 45 deg. 49.974 min. LONGITUDE 108 deg. 25.142 min. Datum: WGS84 End

GPS: LATITUDE 45 deg. 25.552 min. LONGITUDE 108 deg. 25.229 min.

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

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

Sediment Bank: Clay/Mud Sand P Mixed s Pebble/Cobble P 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: Sand/Silt

Sloped: (>5°)(15°)(30°) straight braided P S oxbow S flood plain valley P 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 Need approval to enter from

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

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	463	20	<1		X	(X)	X		(X)									Veg.
B				X	290	80														X		

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

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

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

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

Oil band heights:

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

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

Sketch / No Photos / No Frames _____ Photographer _____



C9 TEAM 3 30 JUL 2011

SCA
9/1/2009

Team #4
C09(RB)
00/22/11

C08E

C09-RB

003

005

004

007

006



A

B

Image USDA Farm Service Agency

© 2011 Google

1996

45°49'52.11" N 108°25'09.61" W elev 3066 ft

©2010

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page _____ of _____

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>C9</u>	<input checked="" type="radio"/> Left Bank / <input type="radio"/> Right Bank / <input type="radio"/> Island	<u>27/07/11</u>	<u>9:38</u> hrs to <u>9:39</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>C</u>				<input checked="" type="radio"/> falling - <input type="radio"/> steady - <input type="radio"/> rising
Survey by: <input checked="" type="radio"/> Foot / <input type="radio"/> ATV / <input type="radio"/> Boat / <input type="radio"/> Helicopter / <input type="radio"/> Overlook / _____	<input checked="" type="radio"/> Sun / <input type="radio"/> Clouds / <input type="radio"/> Fog / <input type="radio"/> Rain / <input type="radio"/> Snow / <input type="radio"/> Windy / <input type="radio"/> Calm			Air Temp +/- <u>30</u> deg C

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

3 SEGMENT Total Segment/Reach Length 530 m Segment/Reach Length Surveyed 530 m

Start GPS: LATITUDE 45 deg. 50°14.72 min. LONGITUDE 108 deg. 25°30.99 min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 49°18.72 min. LONGITUDE 109 deg. 25°29.70 min.

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

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

Cliff or Bluff: _____ Est Height _____ m canyon _____ manmade _____ meander _____ confined or leveed _____ Substrate Type: Gr Vy

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

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

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

5 OPERATIONAL FEATURES

Suitable backshore staging / N Access: Direct from backshore / N Alongshore from next segment / N

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

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

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

919
920

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	X	45	2	60			S	P		X									silt / Vy
B			Y	X	75	2	0														X	silt / Vy

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	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)	
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					NO

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

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

Zone A has stumps and could veg (primarily stress)
Veg needs to be cut and/or treated and removed

Sketch / No Photos / No Frames _____ Photographer _____

DB/GIS

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident COMPLETE SURVEY

1 GENERAL INFORMATION		Date (dd/mm/yy) 13/08/2011	Time (24h): std / daylight 0945 hrs to 1120 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: C9 <u>Left Bank</u> / Right Bank / Island		Operations Division: C		
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>25</u> deg C

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

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 530 m

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

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

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

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

Cliff or Bluff: Est Height _____ m canyon _____ manmade _____ meander _____ confined or leveed X Substrate Type: Silt/mud

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 100 m est. water depth: <1m 1-3 m 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 25 bags or trucks access restrictions: Must have landowner permission

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

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

OIL ZONE	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER						SUBST. TYPE(S)			
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR		AP	NO	
A				X	110	90	<1			P	S						P					Debris
B			S	P	420	<u>100</u> <u>RM</u>	0													X		All

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

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER					WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)	
	MS	LB	UB	OB			SAP	OP	PP	OR	OF					TR
None																

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

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

Oiling in Zones A is primarily Coat on debris in scattered piles. A small crew with an ATV should selectively remove oiled debris from this zone. Natural Attenuation is appropriate for any oil that may remain following the selective treatment.

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

C9^{LB}

Team 3 - 13 August 2011



Zone A = <1% 110m

Zone B = N00 420m

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page _____ of _____

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>C9</u>	Left Bank / Right Bank / Island	<u>27/07/11</u>	<u>1211</u> hrs to <u>1217</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>C</u>				falling - steady - rising
Survey by: <u>Foot / ATV / Boat</u> / Helicopter / Overlook /		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - <u>30</u> deg C

2 SURVEY TEAM #	Name	Organization	Signature
	<u>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 920 m Segment/Reach Length Surveyed 920 m

Start GPS: LATITUDE 45 deg. 50'14.47 min. LONGITUDE 108 deg. 25'29.47 min. Datum: WGS 87

End GPS: LATITUDE 45 deg. 45'43.45 min. LONGITUDE 108 deg. 25'21.87 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 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: S-1

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 / [X] / N oiled Y / N amount _____ bags or _____ trucks access restrictions

Oiled trees/shrubs [X] / N River Current strong [X] / 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>[X]</u>	865	2	0														X	Sand/veg
B			<u>[X]</u>	<u>[X]</u>	55	2	60			S	P			X								Sand/veg

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

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE	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 / [X] / N Shoreline Survey Completed [X] / N

Zone B has strand + coastal veg (primarily grass)
Veg needs to be cut and/or trampled and reseed

Sketch [X] / No Photos [X] / No Frames _____ Photographer _____

DB/GIS

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page _____ of _____

1 GENERAL INFORMATION		Date (dd/mm/yy) 13/08/11	Time (24h): std / daylight 1344 hrs to 1434 hrs	Water Level low - <u>mean</u> - bankfull overbank falling - steady - rising
Segment/Reach ID: C09 Left Bank / Right Bank <u>Island</u>				
Operations Division: C				
Survey by: <u>Foot</u> ATV / Boat / Helicopter / Overlook / _____		<u>Sun</u> Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- 3 2 deg C

2 SURVEY TEAM # 1	Name	Organization	Signature
Joe Busalacchi		Cardno Entrix	
John Davis		USCG	
Donnie McCurry		DEQ	
Adam Bausch		Cardno Entrix	
Merlo Gauvreau		Polaris	

3 SEGMENT Total Segment/Reach Length 950 m Segment/Reach Length Surveyed 1484 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: 5 Wooded Upland: P

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

Debris Y N oiled Y N amount <1 bags or _____ trucks access restrictions _____

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

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

OIL ZONE	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					550	175																
B					85	20																
A				X	365	135	1-10			(X)	X			X								Veg/dubins
B				X	350	25	<1			X	(X)			X								vegs
C				X	769	270																X

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

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

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

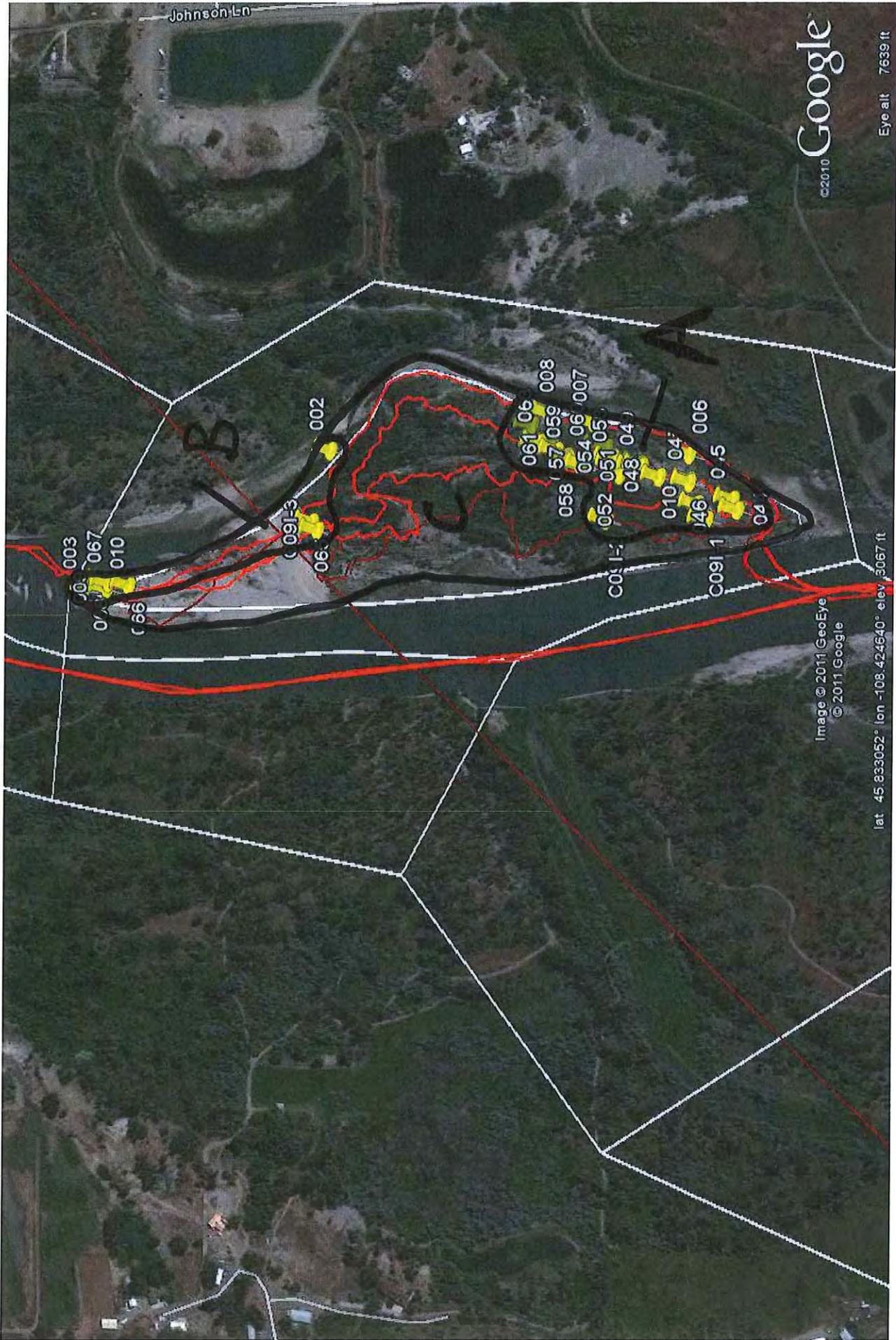
Overbank Survey Required Y N Overbank Survey Completed Y N Shoreline Survey Completed Y N

Zone A - light coat / stain observed sporadically on veg - NTR

Zone B - light sporadic stain on willow - NTR

Zone C - NOO

Sketch Yes No Photos Yes No Frames _____ Photographer _____



C9I
/kam #1
13/08/11

Image © 2011 GeoEye
© 2011 Google

lat: 45.833052° lon: -108.424640° elev: 3067 ft



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

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page _____ of _____

1 GENERAL INFORMATION		Date (dd/mm/yy) 06/09/11	Time (24h): std / daylight 0853 hrs to 1520 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: C09	Left Bank / <u>Right Bank</u> / Island			
Operations Division: C				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - 28 deg C

2 SURVEY TEAM # 3	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 955 m Segment/Reach Length Surveyed 800 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: (P)

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

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

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

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

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

5 OPERATIONAL FEATURES

Suitable backshore staging N Access: Direct from backshore N Alongshore from next segment N

Debris N oiled N amount <1 bags or _____ trucks access restrictions _____

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

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

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER							SUBST. TYPE(S)		
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO	
A			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	800	303	<1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				Vegetation Debris

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

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

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

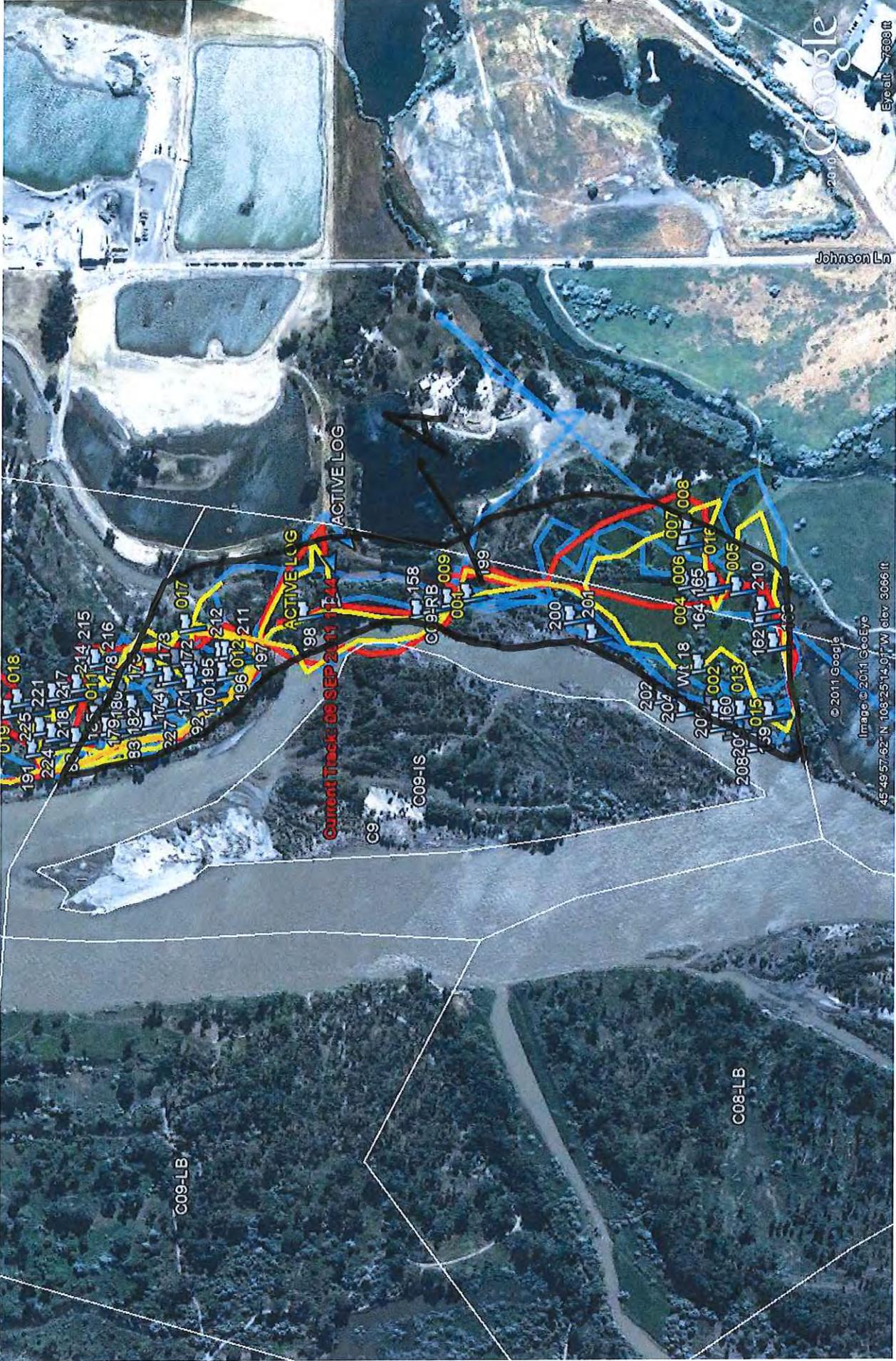
Overbank Survey Required Y / N Overbank Survey Completed Y / N Shoreline Survey Completed Y / N

9/6/11 SCAT Team 3 identified zones of light patchy coat on grass & vegetation in the upstream region. The downstream region had 30+ small debris piles of coat (tar) thick in some spots w/ tar coat observed on vegetation. Ops crew of 9 cleaned up both sections for a duration of ~6 hrs. and removed 30 bags of oiled material.

Zone A - Re Scat Pass

No Further Treatment Required

Sketch No Photos No Frames _____ Photographer _____



Zone A - NFT

**C9RB
Team 3
06/09/11**

DB/G

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: C09	Left Bank / Right Bank / Island		1038- 1455-	low - mean - bankfull - overbank
Operations Division: C		06/09/11	1320 hrs to 1530 hrs	falling - steady - rising
Survey by: Foot / ATV / Boat / Helicopter / Overlook /	Sun / Clouds / Fog / Rain / Snow / Windy / Calm			Air Temp +/- 8.5 ° F

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

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 755 m

Start GPS: LATITUDE _____ deg. _____ min. LONGITUDE _____ deg. _____ min. Datum: WGS84

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

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

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

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

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 10 m canyon _____ manmade _____ meander _____ confined or leveed _____ Substrate Type: soil/sand _____

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

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

Debris: oiled amount 2 bags or _____ trucks access restrictions: _____

Oiled trees/shrubs River Current strong Other Features: _____

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

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER							SUBST. TYPE(S)				
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO			
A		P	S		525	390	1			S	P							P						Sand, shrubs, grass, trees, debris piles
B			P	S	230	140	0																X	Sand, shrubs, grass, trees, debris piles

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

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

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

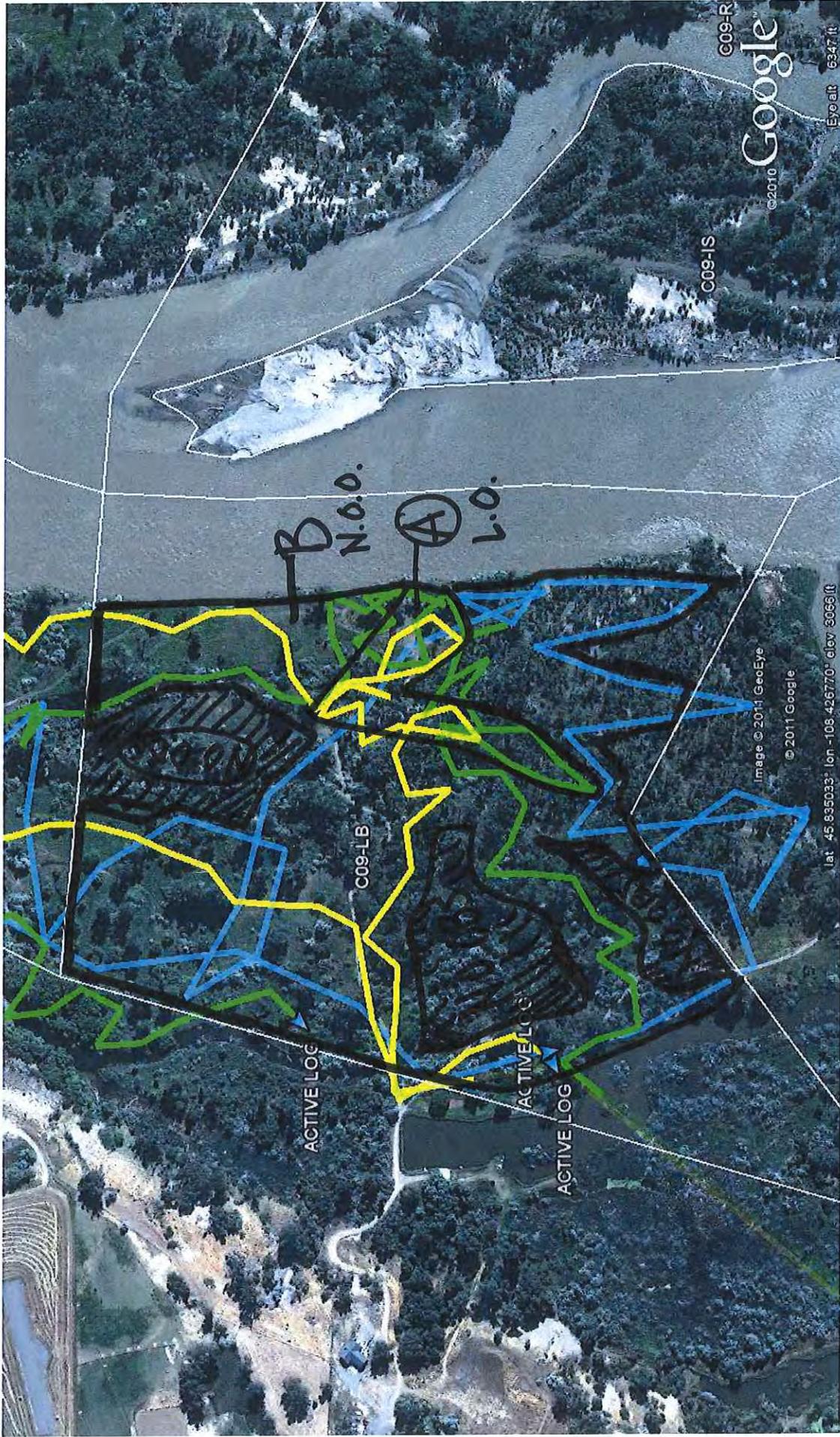
Overbank Survey Required Overbank Survey Completed Shoreline Survey Completed

RESCAT

Zone A: Light treatment by previous teams. Some flags observed from previous SCAT review. Flags were removed. Vegetation with stain and light coat trimmed, debris removed and dust fixative applied to large tree trunks (ATM#1,2 & 9). No further treatment recommended by consensus.

Zones B: No oil observed. Three overbank areas of no observation. No further treatment recommended by consensus.

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



09/06/11 SCAT TEAM 4

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



Appendix F

Completed SCAT Segment Sign-Off
Forms

SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

SILVERTIP PIPELINE RELEASE

Segment CO9 RB Date of Survey Sept. 6, 2011

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

CTR(s) Associated with SCAT Segment NA

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

Segment Assessment Complete¹
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 Skomon / USCG 9/7/11
Sign Name Print Name/ Affiliation Date
Federal Representative (EPA/USCG)

[Signature] JAY WATSON FWP 9/6/11
Sign Name Print Name/ Affiliation Date
State Representative (DEQ/FWP)

[Signature] Adam Bauschi 9/6/11
Sign Name Print Name/ Affiliation Date
RP Representative (SCAT RP Representative)

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

¹ 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 C09 LB Date of Survey 09/06/11

Dates of Initial SCAT Assessments 27 JUL 11 (15)
(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 Complete¹

Partial Segment Assessment

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

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

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

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

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

Michael D. Dirks MIKE DIRKS / Corduro ENTRIX 09/07/11
Sign Name Print Name/ Affiliation Date
RP Representative (SCAT RP Representative)

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

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



Appendix G

CTR Addendum

CTR ADDENDUM

NAME: Exxon Refinery
ADDRESS: 607 Exxon Refinery Road
SEGMENT #: C8-C9 CTR #: N/A

CLAIMS VISIT COMPLETE

CLAIMS ADJUSTER NAME: _____ DATE: _____
CLAIMS ADJUSTER COMMENTS:

SCAT CLAIMS LIAISON VISIT COMPLETE

SCAT CLAIMS LIAISON NAME: Merlo GAUREAU / Damien Korte DATE: 22-08-11
SCAT CLAIMS LIAISON COMMENTS AND/OR INTERFACE WITH LAND OWNER
We met with Steve Marks, Exxon environmentalist, to discuss our SCAT findings. We are recommending ATM 1 for Zone B in C8(RB) and Zone B in C9(RB). Steve Marks prefers that the zones receive no treatment and be used for future oil weathering studies.

OPS COMPLETE

OPS LEAD NAME: _____ DATE: _____
OPS COMMENTS AND/OR INTERFACE WITH LAND OWNER

CROP TILLING / REMOVAL COMPLETE

POC NAME: _____ DATE: _____
POC COMMENTS AND/OR INTERFACE WITH LAND OWNER

FINAL WALKTHROUGH COMPLETE

SCAT CLAIMS LIAISON NAME: _____ DATE: _____
SCAT CLAIMS LIAISON COMMENTS AND/OR INTERFACE WITH LAND OWNER

ADDENDUM COMPLETE

NAME: Merlo GAUREAU, Polaris DATE: 22-08-11