ARCADIS
Infrastructure · Water · Environment · Buildings

Imagine the result

**ExxonMobil Pipeline Company**

# SCAT Area Transition Report for C29

Silvertip Pipeline Incident
Laurel, Montana

October 25, 2011

# SCAT Area Transition Report for C29

Silvertip Pipeline Incident
Laurel, Montana

Prepared for:
ExxonMobil Pipeline Company

Prepared by:
ARCADIS G&M of North Carolina, Inc.
11000 Regency Parkway
West Tower, Suite 205
Cary, North Carolina 27518-8518
Tel 919.469.1952
Fax 919.469.5676

Our Ref.:
B0085883.1103

Date:
October 25, 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.*

ARCADIS

# Table of Contents


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

1.1 Land Ownership and Access Issues 1

1.2 Cultural, Historic, and Natural Resource Constraints 1

1.3 Summary of Environmental Sampling 1

1.4 Summary of Initial SCAT Surveys 2

1.5 Applicable Compiled Treatment Recommendations 2

1.6 Oil Removal Activities 2

1.7 Pre-Inspection Survey Transmittal 2

1.8 Post-Inspection Survey Transmittal 2

1.9 Summary of Final SCAT Surveys 3

1.10 SCAT Area Conclusions 3

**2. Transition Sign-Off Form** **4**

**Tables**

Table 1 Environmental Sampling Summary 2

**Figures**

Figure 1 Aerial Map with Parcel Boundaries

Figure 2 Wildlife Resources

Figure 3 Sample Location Map

Figure 4 Maximum SCAT Observations

Figure 5 Final SCAT Observations

**Appendices**

A Sample Detection Summary

B Initial SCAT Survey Forms and Sketches

C Pre-Inspection Survey Transmittal

D Post-Inspection Survey Transmittal

E Final SCAT Survey Forms and Sketches

F Completed SCAT Segment Sign-Off Forms

## 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 C29, 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 C29. 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 C29, 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 C29 is 54.5. There were no access issues for this area.

### 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 C29 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 C29.

### 1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area C29. 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 C29 are provided on Figure 3.

**Table 1 Environmental Sampling Summary**

| Agency | Sample Num | Date | Matrix | Location | Latitude | Longitude |
|---|---|---|---|---|---|---|
| CTEH | SHMT0715DW101 | 7/15/2011 | Water_Drinking | SHMT_371_DW101 | 45.939116 | -108.302957 |
| CTEH | SHMT0719DW101 | 7/19/2011 | Water_Drinking | SHMT_385_DW101 | 45.940053 | -108.302651 |

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 detections reported.

### 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 C29 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area C29.

### 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. 50, CTR No. 60, and CTR No. 61).

### 1.6 Oil Removal Activities

Oil removal activities were conducted within Area C29, 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 C29 following completion of oil removal activities. The SCAT team performed final surveys of the right and left banks along with the island within SCAT Area C29 to confirm the agreed-upon cleanup endpoints identified in the applicable CTRs had been achieved. The final SCAT survey documentation is presented in Appendix E.

### 1.10 SCAT Area Conclusions

Based on the final SCAT surveys performed on the right and left banks and island within Area C29, no further treatment is recommended for these segments. SCAT Segment Sign-Off Forms are included as Appendix F.

**2. Transition Sign-Off Form**

# SCAT Area Transition Report for C29

## Prepared for:

## Unified Command

_____

Date

_____

Unified Command – RP

# SCAT Area Transition Report for C29

**Prepared for:**

**Unified Command**

_____

Date

_____

Unified Command – FOSC

# SCAT Area Transition Report for C29

**Prepared for:**

**Unified Command**

_____

Date

_____

Unified Command – MDEQ

# Silvertip Pipeline Incident
## Area Transition Report Map - Parcels
### Segment - C29

9/27/2011

1:7,000

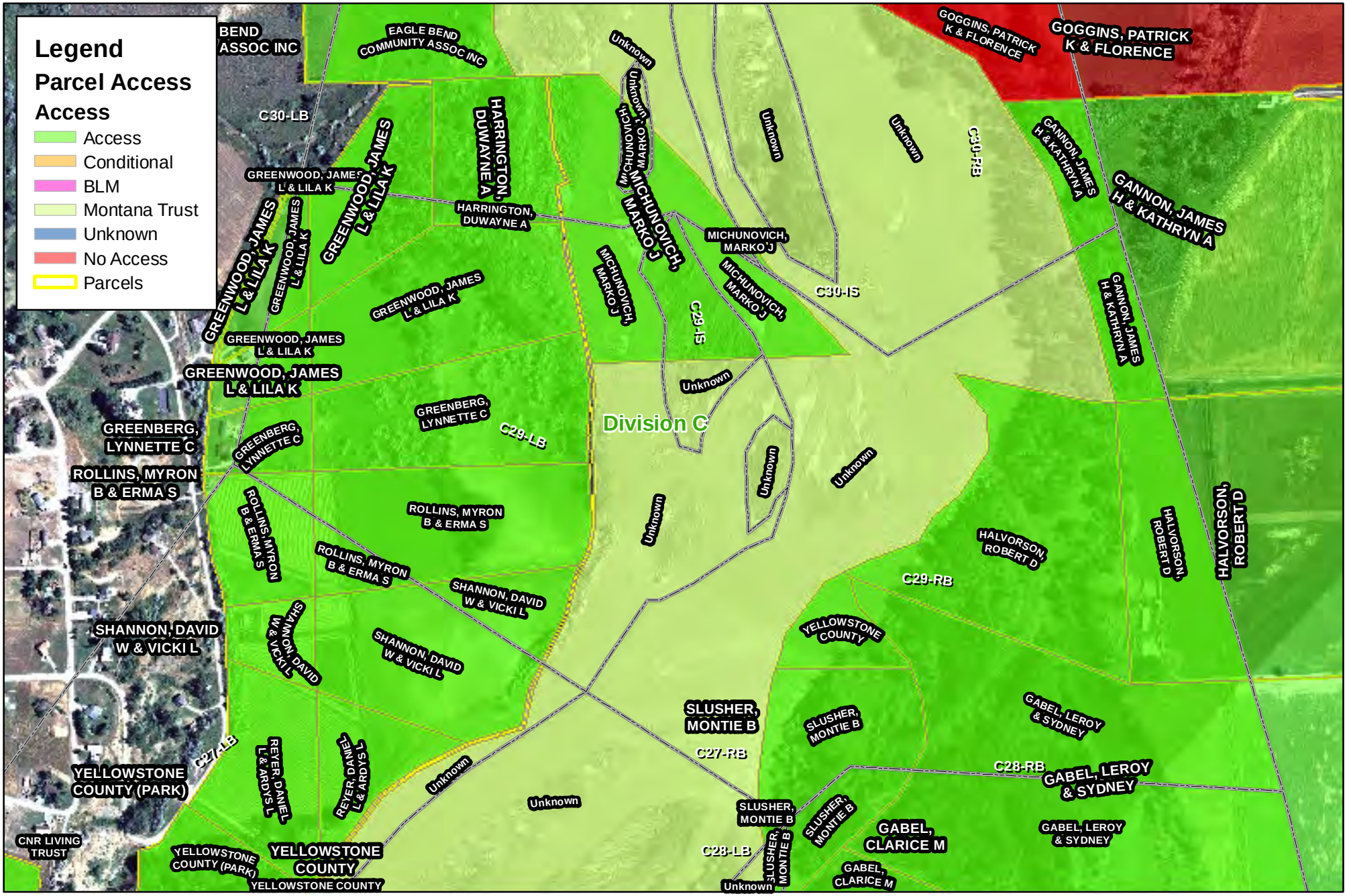



Figure 1

Date: 9/27/2011 Time: 5:06:07 PM

Path: P:\GIS\MXD's\Area_Transition_Figures\A1-Fig1-Parcels.mxd

ExxonMobil Pipeline

N

1:9,600

# Silvertip Pipeline Incident
## SCAT Area Transition Report Map
### Area - C29

9/26/2011

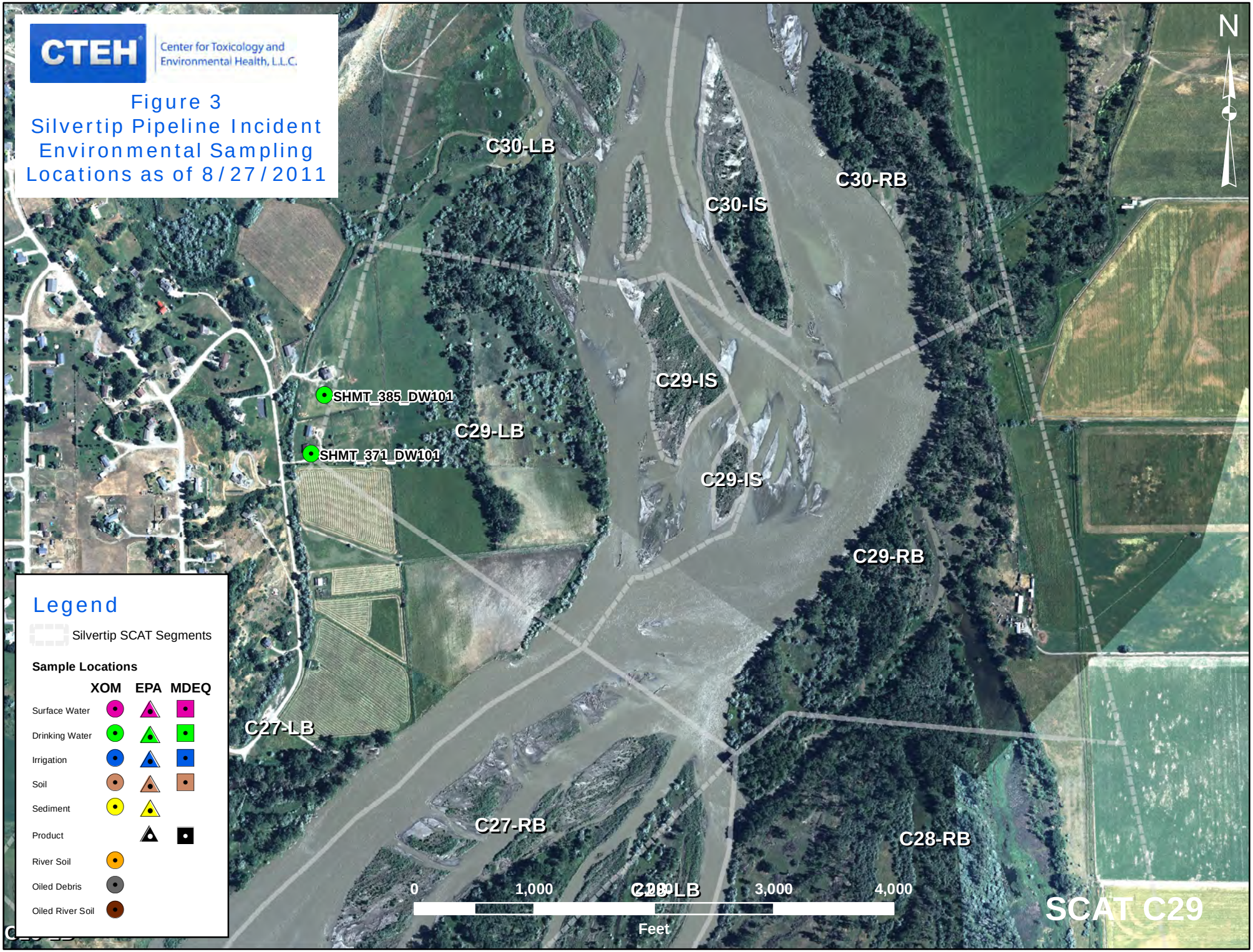
The Response Group

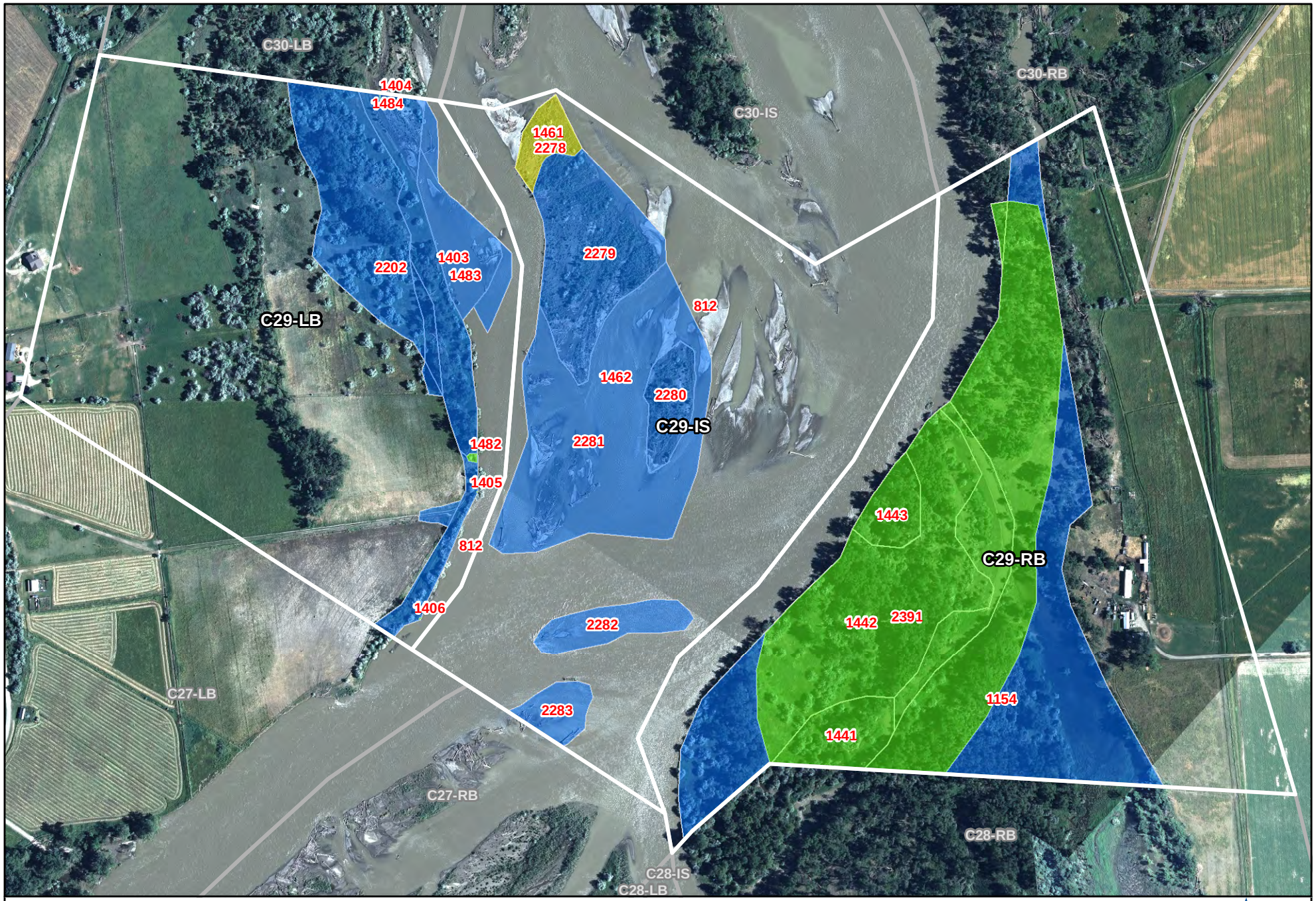
Path: P:\GIS\MXD's\Wildlife\ATR Maps - Figure 2\ATR Map_Div.C_Fig2_09262011.mxd

0 1,000 2,000 4,000 Feet

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

Date: 9/26/2011 Time: 4:41:20 PM


CTEH
Center for Toxicology and Environmental Health, L.L.C.
Figure 3
Silvertip Pipeline Incident
Environmental Sampling
Locations as of 8/27/2011
N
C30-LB
C30-RB
C30-IS
C29-IS
SHMT_385_DW101
C29-LB
SHMT_371_DW101
C29-IS
C29-RB
C27-LB
C27-RB
C28-RB
C28-LB
Legend
Silvertip SCAT Segments
Sample Locations
XOM EPA MDEQ
Surface Water
Drinking Water
Irrigation
Soil
Sediment
Product
River Soil
Oiled Debris
Oiled River Soil
0 1,000 3,000 4,000
Feet
SCAT C29




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

375 0 375 750
Feet

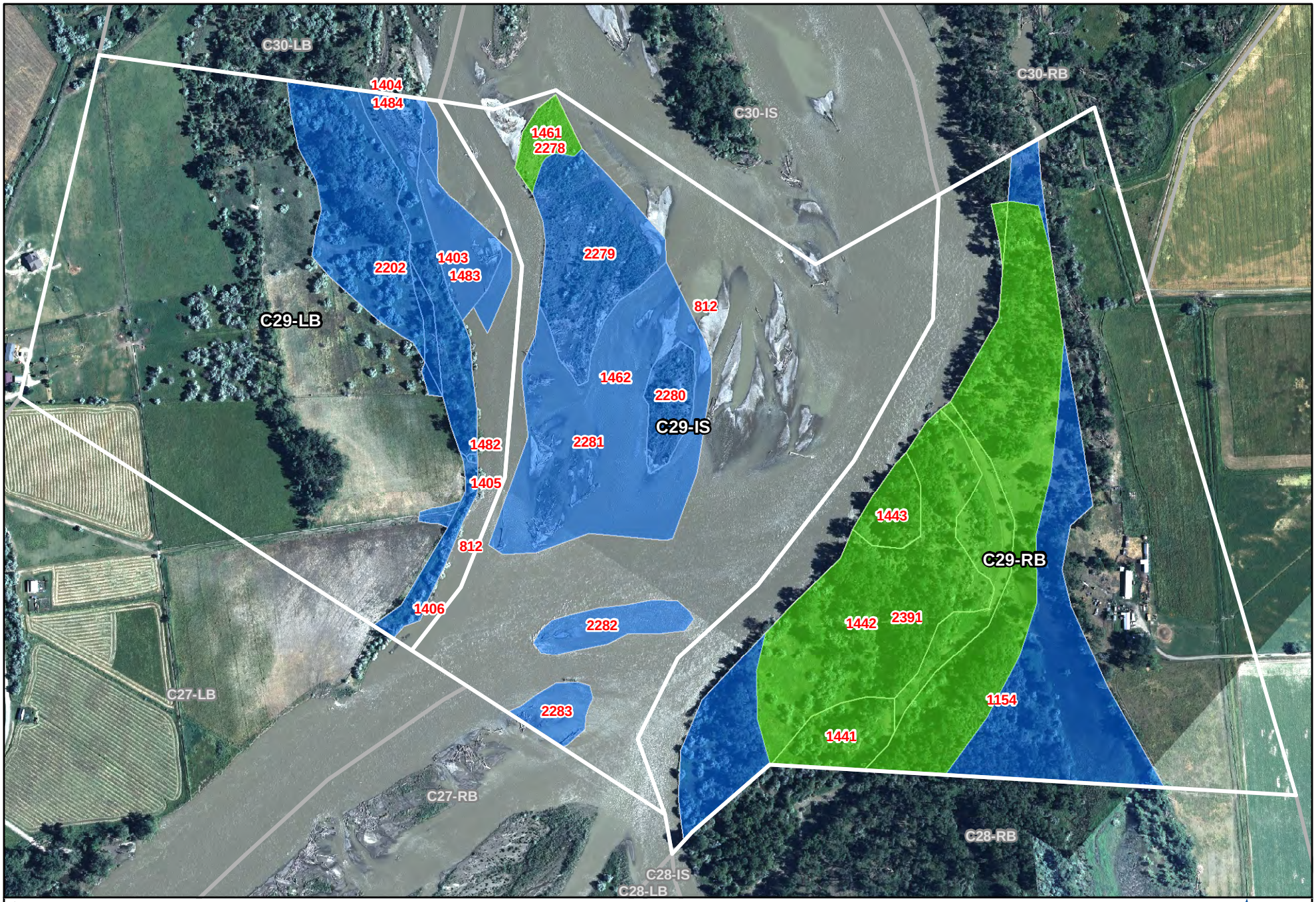
# Figure 4 - Maximum SCAT Observations For SCAT Area: C29

POLARIS APPLIED SCIENCES, INC.

Aerial Photography Dated July 20, 2011

O:\GIS\SCAT Mapping\Maps\Area Transition Reports MXD\ATR Fig 4 - Max_SCAT_Observations_DataPages.mxd

Printed: 10/18/2011 1:52:26 PM




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: C29**

POLARIS APPLIED SCIENCES, INC.

Aerial Photography Dated July 20, 2011

O:\GIS\SCAT Mapping\Maps\Area Transition Reports MXD\ATR Fig 5 - Final_SCAT_Observations_DataPages.mxd

Printed: 10/18/2011 1:51:25 PM

# Appendix A

Sample Detection Summary

CTEH

# Detections in Samples Collected in SCAT Area C29

Printed 9/27/2011

NA - Not Available

**Detected Above Screening Level**

| Sample Num | Date | Sample Type | Matrix | Analytical Method | Analyte | Detected | Result | Screening Level | Result Qualifier | Lab Result Qualifier | Units | Above? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

No Detections Reported

# Appendix B

Initial SCAT Survey Forms and Sketches

DBS

**RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident** Page 1 of 1

| 1 GENERAL INFORMATION | Date (dd/mm/yy) | Time (24h): std / daylight | Water Level |
|---|---|---|---|
| Segment/Reach ID: C20 Left Bank / Right Bank / Island | 08/03/2011 | 0925 hrs to 1030 hrs | low - mean - bankfull - overbank |
| Operations Division: C | | | falling - steady – rising |
| Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____ | Sun / Clouds / Fog / Rain / Snow / Windy / Calm | | Air Temp + / - 32 deg C |

| 2 SURVEY TEAM # 3 | Name | Organization | Signature |
|---|---|---|---|
| | MIKE DIRKS | CARDNO ENTRIX | |
| | MATT KENT | MT DEQ | |
| | JOHN DAVIS | USCG | |

**3 SEGMENT** Total Segment/Reach Length _____ 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 (RESTRICTED)

Sediment Bank: Clay/Mud_____ Sand_____ Mixed X Pebble/Cobble_____ Boulder_____ Peat/Organic_____ | Vegetated Bank: S | Wooded Upland: P

Sediment Flat: Clay/Mud_____ Sand_____ Mixed/Coarse X | Other: _____ | If snow and ice use Winter River SOS

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

Cliff or Bluff: ___ Est Height ____m | canyon____ manmade____ meander ____ confined or leveed ____ | Substrate Type: mixed

Sloped: ___ (>5°)(15°)(30°) | straight____ braided X oxbow____ flood plain valley____ | Forested / Vegetated / Bare

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

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

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

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

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

Debris: Y / (N) oiled Y / (N) amount ___ bags or ___ trucks | access restrictions

Oiled trees/shrubs Y / (N) | River Current strong Y / (N) | Other Features: SLEWS & THICK MUD, SLOW WATER CHANNELS

**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 | (X) | 800 | 100 | 0 | | | | | | | | | | | | | 0 | VEGETATION |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |

1154

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

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

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

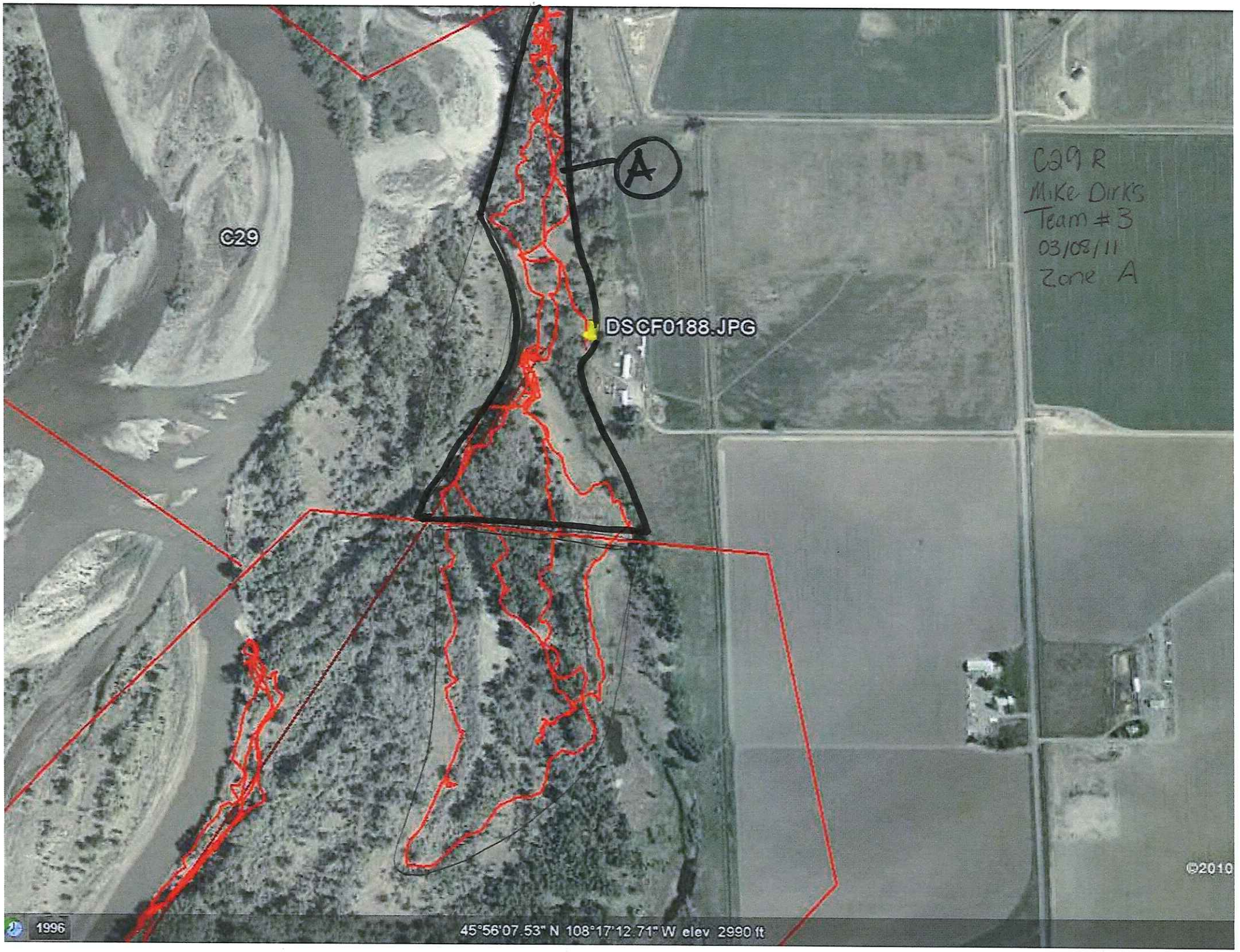
Overbank Survey Required Y / (N) Overbank Survey Completed (Y) N Shoreline Survey Completed Y / (N)

ZONE A: NO OILING OBSERVED

RECOMMENDATIONS: NO TREATMENT NECESSARY. SHORELINE SURVEY CAN BE COMPLETED VIA BOAT ACCESS, OR AT LOW WATER LEVELS.

05/03/11 OK MOD 2011

Sketch Yes / No Photos (Yes) / No Frames _____ Photographer MIKE DIRKS/MATT KENT


C29
A
DSCF0188.JPG
C29 R
Mike Dirks
Team #3
03/08/11
Zone A
©2010
1996
45°56'07.53" N 108°17'12.71" W elev 2990 ft

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: C29 Left Bank / Right Bank / Island | 11/08/11 | 13:00 hrs to 14:30 hrs | low - mean - bankfull - overbank |
| Operations Division: | | | falling - steady – rising |
| Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____ | Sun / Clouds / Fog / Rain / Snow / Windy / Calm | | Air Temp + / - ___ deg C |

| 2 SURVEY TEAM # 5 | Name | Organization | Signature |
|---|---|---|---|
| | LISA GERENCHER | Cardno ENTRIX | Lisa M. Gerencher |
| | BETSY HOVDA | DEQ | Betsy Hovda |
| | RON LYNN | USCG | |
| | MATT DELONG | HOT SHOT CLEANUP CREW | Matthew Delong |
| | | | |
| | | | |
| | | | |

**3 SEGMENT** Total Segment/Reach Length 645 m Segment/Reach Length Surveyed 560 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: 3 | Wooded Upland: 9

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: grass

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 1–10 m 10–100 m >100m 160m | est. water depth : <1 m 1-3 m 3-10 m >10 m ____ m

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

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

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

Debris: Y / N oiled Y / N amount <1 bags or _____ trucks | access restrictions OWNER LAND ACCESS ISSUES ON WESTERN BANK

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

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

| OIL ZONE ID | RIVER BANK ZONE | | | | OIL COVER | | | OIL THICKNESS | | | | | OIL CHARACTER | | | | | | | | SUBST. TYPE(S) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Length | Width | Distrib. | | | | | | | | | | | | | | |
| | MS | LB | UB | OB | m | m | % | TO | CV | CT | ST | FL | FR | MS | TB | PT | TC | SR | AP | NO | |
| 1441 A | | | | X | 4 | 4 | <1 | | | | X | | | | | | | X | | | grass, debris |
| 1442 B | | | X | (X) | 560 | 210 | | | | | | | | | | | | | | X | |
| 1443 C | | | | X | 3 | 3 | <1 | | | | X | | | | | | | X | | | grass |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |

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

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

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

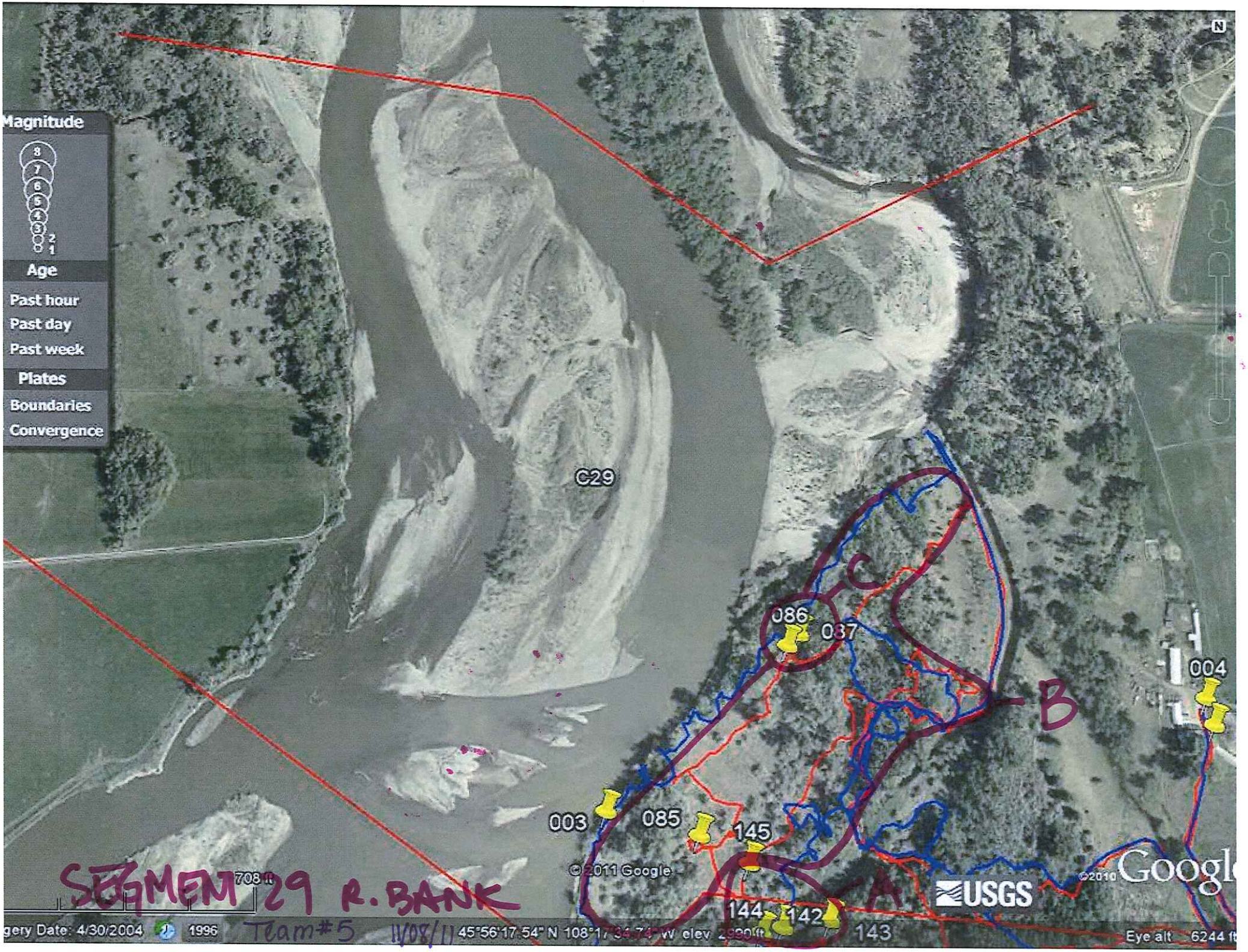
Overbank Survey Required Y / N Overbank Survey Completed Y / N Shoreline Survey Completed Y / N

Zone A - Sporatic oiling on grass & vegetation. No treatment required; natural attenuation. NFT

Zone B - no oiling observed. No treatment required

Zone C - Sporatic oiling (staining) on grass. No treatment required; natural attenuation

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


Magnitude
8
7
6
5
4
3
2
1
Age
Past hour
Past day
Past week
Plates
Boundaries
Convergence
C29
086
087
004
003
085
145
144
142
143
C
B
A
© 2011 Google
USGS
©2010 Google
708 ft
gery Date: 4/30/2004
1996
45°56'17.54" N 108°17'34.74" W elev 2990 ft
Eye alt 6244 ft
SEGMENT 29 R. BANK
Team#5
11/08/11

DB/G/S

# RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident



| 1 GENERAL INFORMATION | Date (dd/mm/yy) | Time (24h): std / daylight | Water Level |
|---|---|---|---|
| Segment/Reach ID: C 29 Left Bank / Right Bank / Island | 26/07/11 | 1242 hrs to 1243 hrs | low - mean - bankfull - overbank |
| Operations Division: | | | falling / steady – rising |
| Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____ | Sun / Clouds / Fog / Rain / Snow / Windy / Calm | | Air Temp + / - 28 deg C |

| 2 SURVEY TEAM # 1 | Name | Organization | Signature |
|---|---|---|---|
| Pete Lee | PBL | Polaris | 225.892.6459 |
| John Beach | JBB | US EPA | 415.972.3347 |
| Larry Alheim | | MT DEQ | 406.461.7516 |

**3 SEGMENT** Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 871 m

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

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

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

Bedrock: Cliff/Ramp____ Shelf____ | Manmade: Solid___ Permeable___ (type)____ | Wetland: Swamp____ Bog/Fen____ Marsh____

Sediment Bank: Clay/Mud____ Sand____ Mixed____ Pebble/Cobble____ Boulder____ Peat/Organic____ | Vegetated Bank: P | Wooded Upland: ____

Sediment Flat: Clay/Mud____ Sand____ Mixed/Coarse____ | Other: ____ | If snow and ice use Winter River SOS

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

Cliff or Bluff: ____ Est Height ____ m | canyon____ manmade____ meander ____ confined or leveed ____ | Substrate Type: mixed

Sloped: ___ (>5°)(15°)(30°) | straight____ braided P oxbow____ flood plain valley S | Forested / Vegetated / Bare

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

est. width: <1m 1–10 m (10–100 m) >100m ~~160m~~ 60 | est. water depth: <1 m (1-3 m) 3-10 m >10 m ____ m

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

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

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

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

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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Length | Width | Distrib. | | | | | | | | | | | | | | |
| | MS | LB | UB | OB | m | m | % | TO | CV | CT | ST | FL | FR | MS | TB | PT | TC | SR | AP | NO | |
| 812 A | | | | X | 871 | 1 | | | | | | | | | | | | | | X | Grass, 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 | OILED ZONE | SUBSURFACE OIL CHARACTER | | | | | | | WATER TABLE | SHEEN COLOUR | CLEAN BELOW | SUBST. TYPE(S) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MS | LB | UB | OB | cm | cm-cm | SAP | OP | PP | OR | OF | TR | NO | cm | B, R, S, N | Yes / No | |
| | | | | | | | | | | | | | | | | | |

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

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

Oil height:: NO

Treatment recommendations:

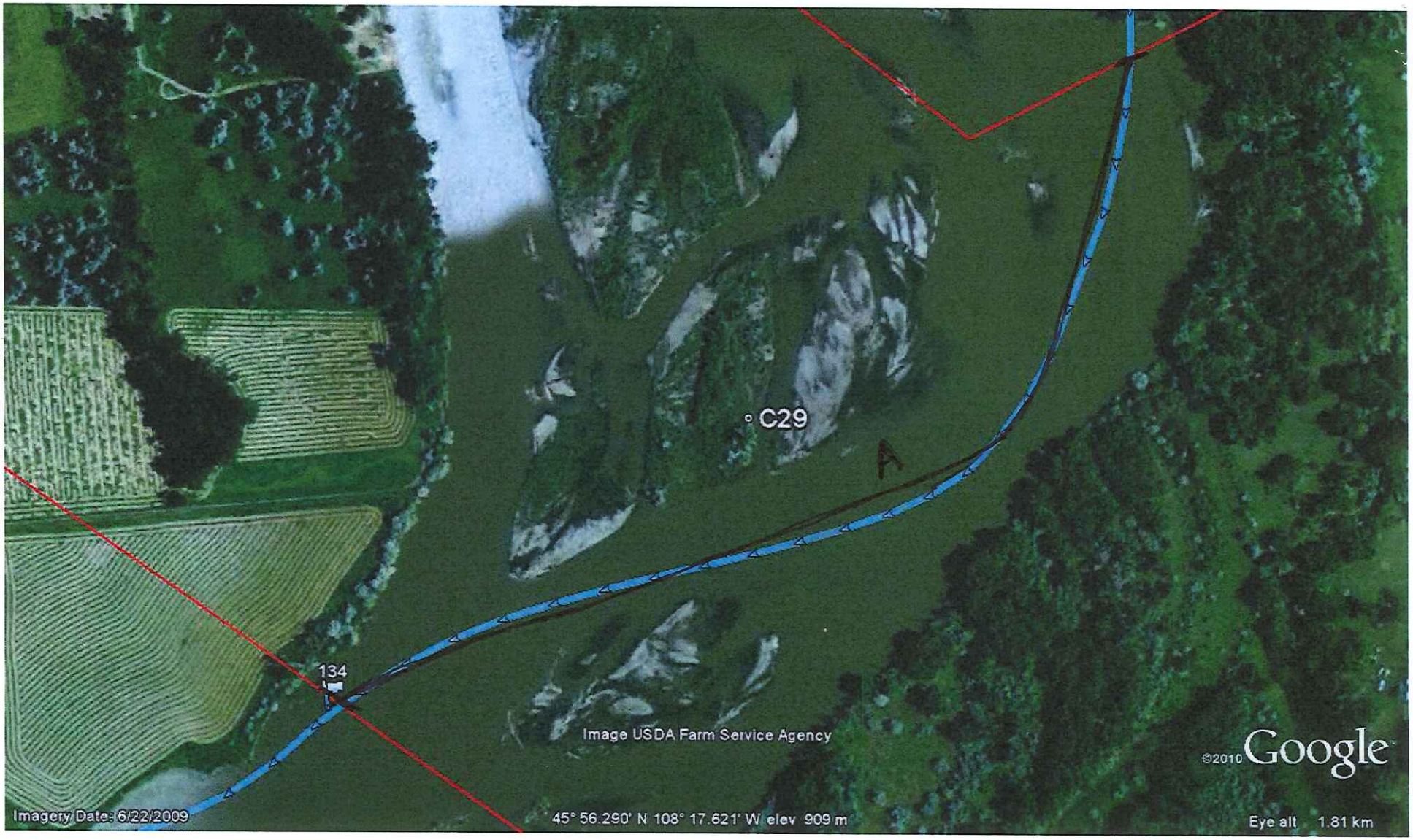
Zone A : No oil observed; no treatment required.

Zone _____ : ~~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 _____

A = 543 + 328


C29
A
134
Image USDA Farm Service Agency
©2010 Google
Imagery Date: 6/22/2009
45° 56.290' N 108° 17.621' W elev 909 m
Eye alt 1.81 km

DB/G

**RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident** Page 1 of 1

| 1 GENERAL INFORMATION | Date (dd/mm/yy) | Time (24h): std / daylight | Water Level |
|---|---|---|---|
| Segment/Reach ID: C29 Left Bank / Right Bank / Island | | | low - mean - bankfull - overbank |
| Operations Division: C | 10/08/11 | 11:00 hrs to 13:15 hrs | falling - steady – rising |
| Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____ | | Sun / Clouds / Fog / Rain / Snow / Windy / Calm | Air Temp + / - 29° deg C |

| 2 SURVEY TEAM # 5 | Name | Organization | Signature |
|---|---|---|---|
| | Michael Dirks | Cardno ENTRIX | Michael D. Dirks |
| | Ron Lynn | USCG | |
| | Betsy Hovda | MTDEQ | Betsy Hovda |

**3 SEGMENT** Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 667 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_X_ Pebble/Cobble_____ Boulder_____ Peat/Organic_____ | Vegetated Bank: (S) | Wooded Upland: P

Sediment Flat: Clay/Mud_____ Sand_____ Mixed/Coarse_X_ | Other: _____ | If snow and ice use Winter River SOS

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

| | | | | | |
|---|---|---|---|---|---|
| Cliff or Bluff:___Est Height ____m | canyon_____ | manmade_____ | meander ____ | confined or leveed _____ | Substrate Type: Mixed |
| Sloped:___(>5°)(15°)(30°) | straight_____ | braided _X_ | oxbow_____ | flood plain valley_____ | Forested / Vegetated / Bare |

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

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

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

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

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

Debris: Y / N oiled Y / N amount N/A bags or N/A trucks — access restrictions – must cross pasture by foot for shoreline 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Length | Width | Distrib. | | | | | | | | | | | | | | |
| | MS | LB | UB | OB | m | m | % | TO | CV | CT | ST | FL | FR | MS | TB | PT | TC | SR | AP | NO | |
| 1403 (A) | | X | P | X | 645 | 105 | 0 | | | | | | | | | | | | | X | Mixed, vegetated bank, woodland |
| 1404 B | | P | | | 18 | 1 | <1% | | | | X | | X | | | | | | | | Mixed, vegetated bank, woodland |
| 1406 C | | | P | | 2 | 1 | <1% | | | | X | | X | | | | | | | | Mixed, vegetated bank, woodland |
| 1406 D | | | P | | 2 | 1 | <1% | | | | X | | X | | | | | | | | Mixed, vegetated bank, woodland |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |

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

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

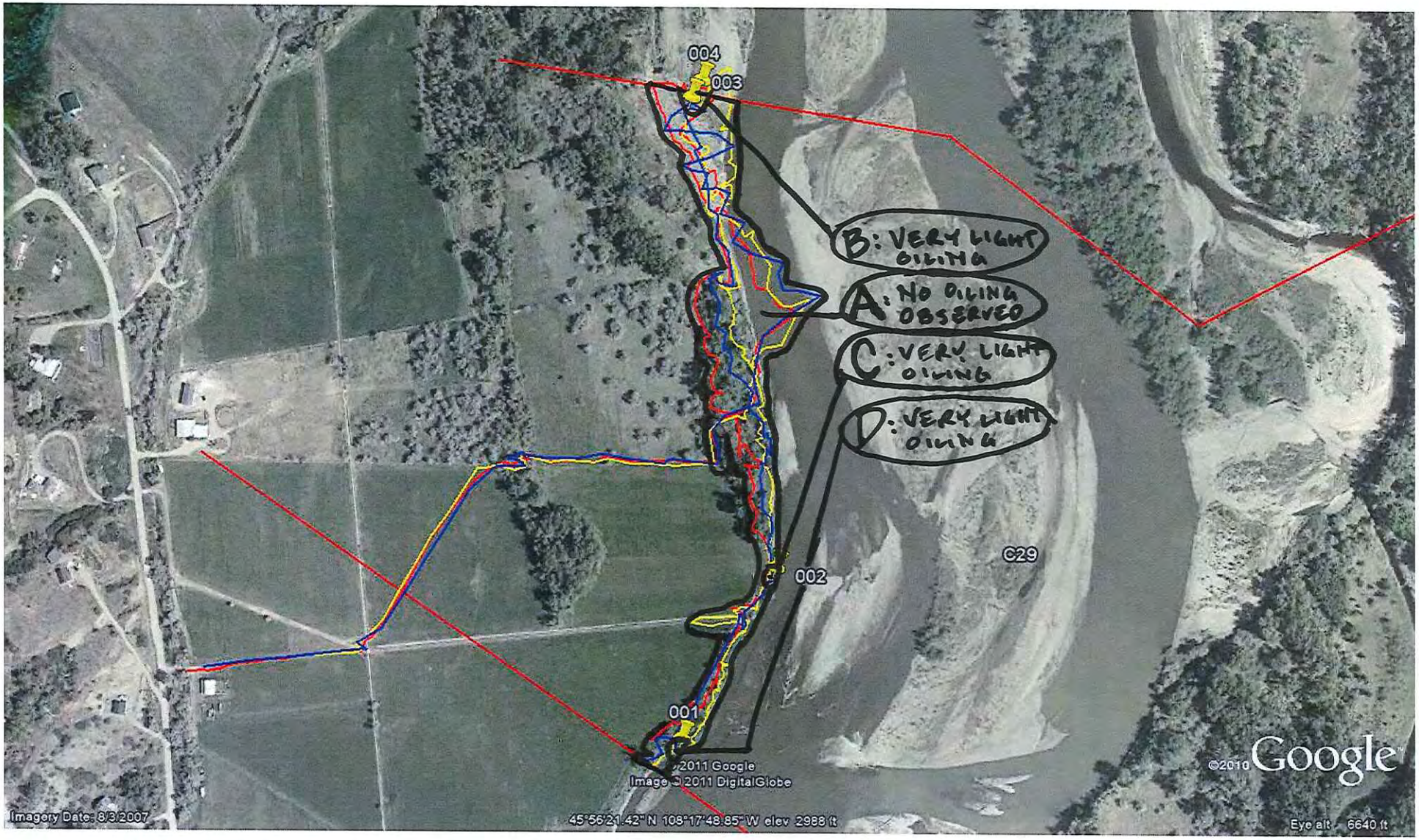
**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Zone A: No oiling observed, no further treatment recommended.

Zones B, C & D: Very light oiling, trace, <1% from 0.3 m – 1.0m above prairie grass stems and wild rose. Loose wood debris found with 5cmx10cm stain in zone B. No further treatment recommended.

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




C29LB

08.10.2011
SCAT TEAM 5

DB/G

**RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident** Page 1 of 2

| 1 GENERAL INFORMATION | Date (dd/mm/yy) | Time (24h): std / daylight | Water Level |
|---|---|---|---|
| Segment/Reach ID: C29 (Left Bank) Right Bank / Island | 12/08/11 | 0856 hrs to ~~1525~~ 0926 hrs | low - mean - (bankfull) - overbank |
| Operations Division: C | | | falling - (steady) – rising |
| Survey by: (Foot) / ATV / Boat / Helicopter / Overlook / _____ | | (Sun) / Clouds / Fog / Rain / Snow / Windy / (Calm) | Air Temp + / - -28 deg C |

| 2 SURVEY TEAM # 4 | Name | Organization | Signature |
|---|---|---|---|
| | Nathan Hammond | Cardno Entrix | |
| | Damien Korte | Cardno Entrix | |
| | John Hunziker | FWP | |
| | Lance Richman | EPA | |
| | Merle Gauvreau | Polaris | |

**3 SEGMENT** Total Segment/Reach Length 612 m Segment/Reach Length Surveyed 427 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: Mixed

Sloped:___(>5°)(15°)(30°) | straight____ braided X oxbow____ flood plain valley____ | Forested / (Vegetated) / Bare

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

est. width : <1m 1–10 m (10–100 m) >100m | est. water depth : <1 m (1-3 m) 3-10 m >10 m ____ m

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

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

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

Debris: (Y) N oiled (Y) N amount 1 bags or _____ trucks | access restrictions Agriculture land

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 | |
| 1482 A | | | X | | 8 | 8 | <1 | | | P | S | | X | | | | | | | | Debris |
| 1483 B | | | X | | 419 | 25 | | | | | | | | | | | | | | ✓ | |
| 1484 C | | | X | | 1 | 1 | <1 | | | P | S | | X | | | | | | | | Veg-Tree |

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

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

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

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

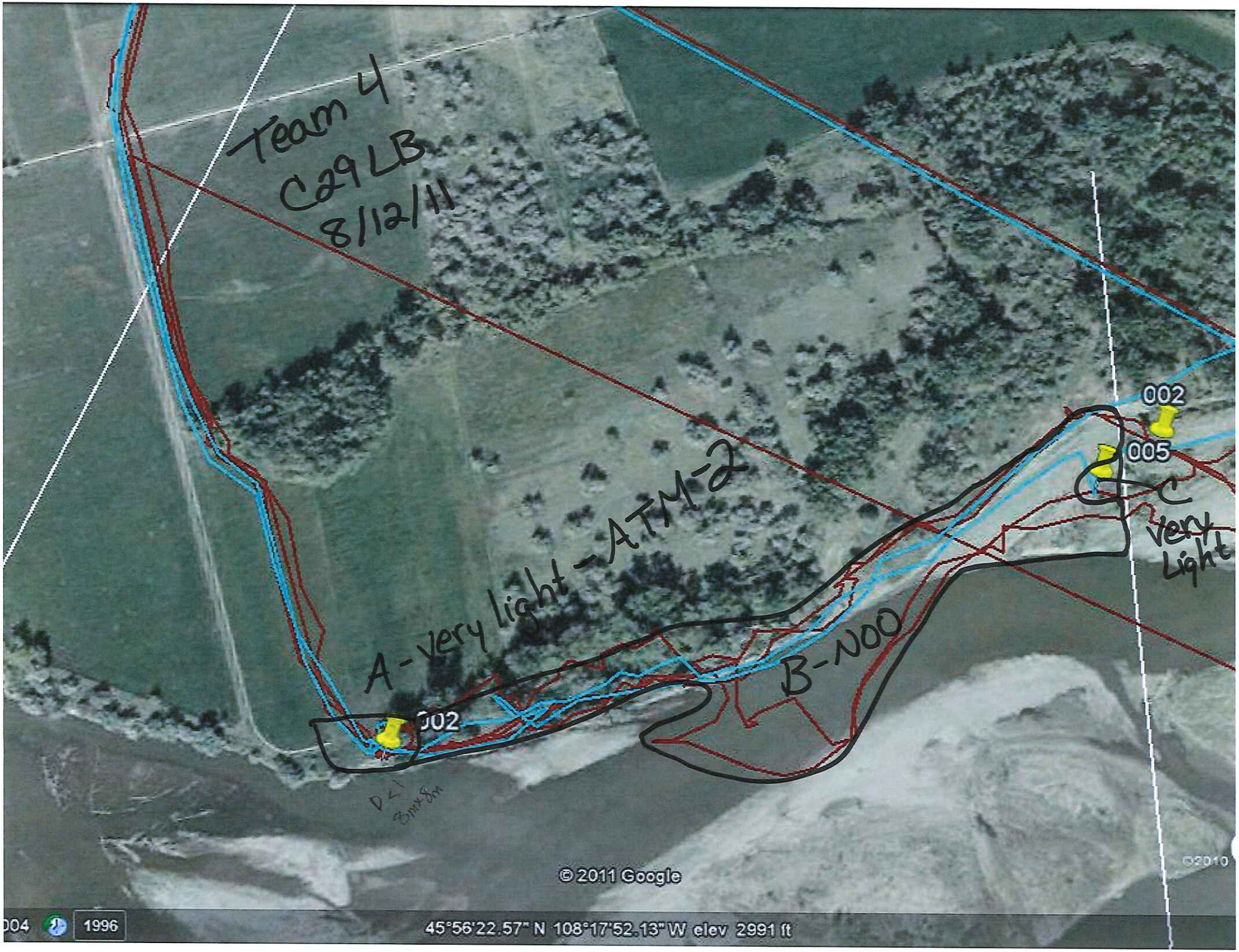
Zone A - Due to proximity to Horse grazing area and uncertainty as to whether or not area is utilized as agriculture - recommend use of ATM #2; removal of small oiled debris.

Zone B - NOO

Zone C - NFT => natural attenuation

Sketch (Yes) / No Photos (Yes) / No Frames/Photographer: [signature]

Ver. 31 July 2011


Team 4
C29LB
8/12/11
A - very light - ATM-2
B - NOO
C
very Light
002
005
002
D < 1
8m x 8m
© 2011 Google
©2010
004
1996
45°56'22.57" N 108°17'52.13" W elev 2991 ft

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: C29 Left Bank / Right Bank / Island | 12/08/11 | | low - mean - bankfull - overbank |
| Operations Division: C | | 1205 hrs to 1318 hrs | falling - steady – rising |
| Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____ | | Sun / Clouds / Fog / Rain / Snow / Windy / Calm | Air Temp + / - 30 deg C |

| 2 SURVEY TEAM # 1,2 | Name | Organization | Signature |
|---|---|---|---|
| | Joe Busalacchi | Cardno Entrix | |
| | John Davis | USCG | |
| | Jessica Ross | DEQ | |
| | Adam Bausch | Cardno Entrix | |
| | Larkin Chandler | Cultural Resources | |
| | Jack Smith | USCG | |
| | Tom Bovington | DEQ | |

**3 SEGMENT** Total Segment/Reach Length 660 m Segment/Reach Length Surveyed 566 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 X | Other: _____ | If snow and ice use Winter River SOS

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

Cliff or Bluff: ___ Est Height ____m | canyon____ manmade____ meander P confined or leveed ____ | Substrate Type: Mixed

Sloped: ___ (>5°)(15°)(30°) | straight X braided X 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 460m | est. water depth : <1 m 1-3 m 3-10 m >10 m ____ m

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

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

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

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

Oiled trees/shrubs Y N willows | River Current strong Y N | Other Features: Island w/ very limited 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 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 | |
| 1461 A | | | | X | 116 | 95 | 1-10 | | | X | X | | | | | | X | | | | very fine sand |
| 1462 B | | | | X | 450 | 320 | | | | | | | | | | | | | | 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 | OILED ZONE | SUBSURFACE OIL CHARACTER | | | | | | | WATER TABLE | SHEEN COLOUR | CLEAN BELOW | SUBST. TYPE(S) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MS | LB | UB | OB | cm | cm-cm | SAP | OP | PP | OR | OF | TR | NO | cm | B, R, S, N | Yes / No | |
| | | | | | | | | | | | | | | | | | |

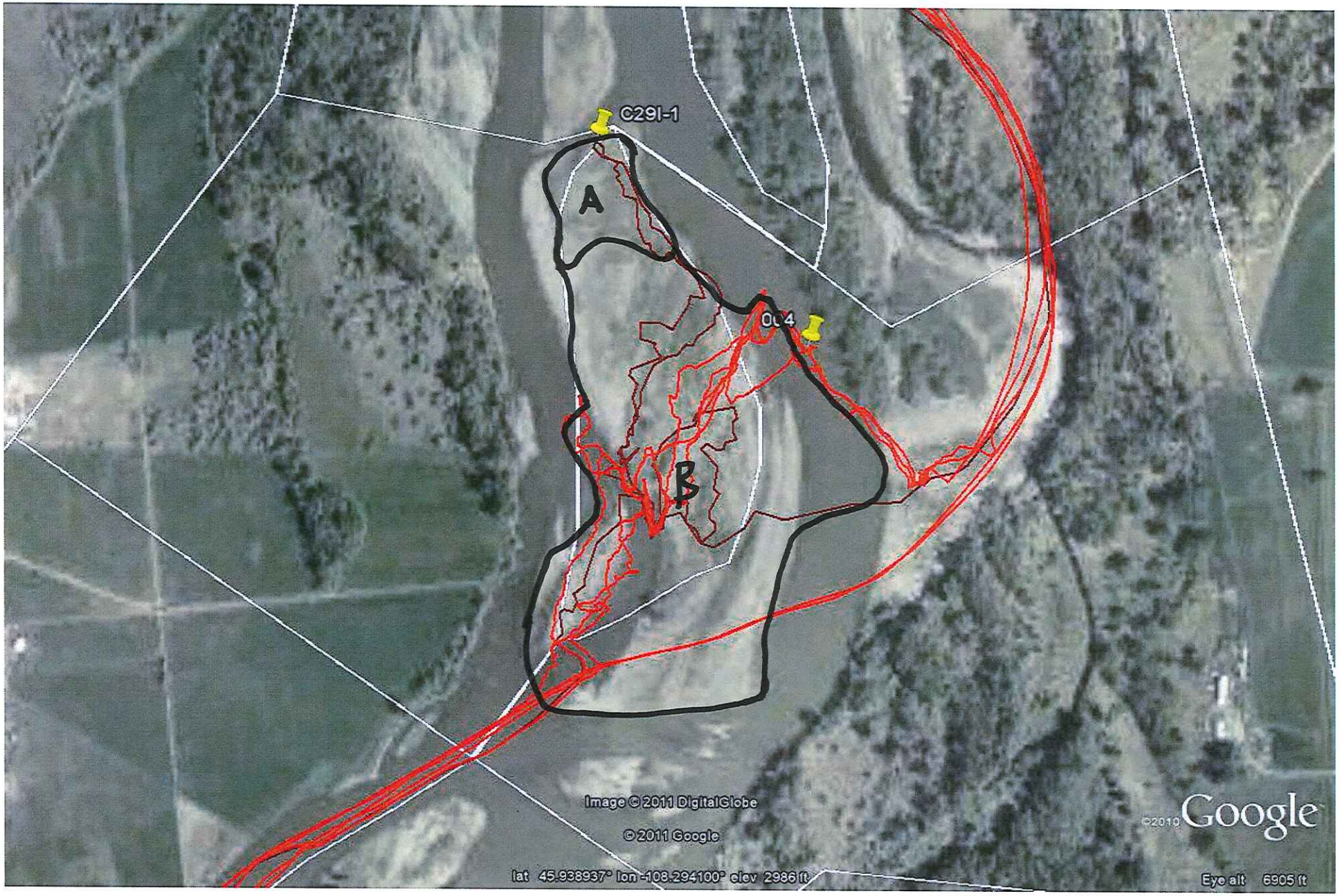
**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Zone A - down stream portion of Island had <10% [Coat / Stain] on willows recommended Natural Attenuation Light

Zone B - NOO

Sketch Yes / No Photos Yes / No Frames_____ Photographer_____




C29I
Teams 1 & 2
12/08/11

ARCADIS

## Appendix C

Pre-Inspection Survey Transmittal

ARCADIS

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

ARCADIS

## Appendix D

Post-Inspection Survey Transmittal

ARCADIS

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

ARCADIS

# Appendix E

Final SCAT Survey Forms and Sketches

DB/G

# RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of

| 1 GENERAL INFORMATION | Date (dd/mm/yy) | Time (24h): std / daylight | Water Level |
|---|---|---|---|
| Segment/Reach ID: C 29 Left Bank / (Right Bank) / Island | 25/09/11 | 0930 hrs to 1230 hrs | low - mean - bankfull - overbank |
| Operations Division: C | | | falling - steady – rising |
| Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____ | Sun / Clouds / Fog / Rain / Snow / Windy / Calm | | Air Temp + / - 32 deg C |

| 2 SURVEY TEAM # 3 | Name | Organization | Signature |
|---|---|---|---|
| | Pete Lee | Polaris | PBLee |
| | Jeffrey Frank Herrick | MTDEQ | |
| | | | |
| | | | |
| | | | |
| | | | |

**3 SEGMENT** Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 630 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 P oxbow_____ flood plain valley X | Forested / Vegetated / Bare

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

est. width : < 1m 1–10 m (10–100 m) >100m m | est. water depth : <1 m (1-3 m) >10 m _____ m

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

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

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

Debris (Y) / N oiled (Y) / N amount ____ bags or ____ trucks | Access restrictions:

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

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

| OIL ZONE ID | RIVER BANK ZONE | | | | OIL COVER | | | OIL THICKNESS | | | | | OIL CHARACTER | | | | | | | | SUBST. TYPE(S) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MS | LB | UB | OB | Length m | Width m | Distrib. % | TO | CV | CT | ST | FL | FR | MS | TB | PT | TC | SR | AP | NO | |
| A | | | | X | 630 | 250 | 21 | | | S | P | | | | | | X | | | | Grass, trees, debris |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |

2391

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

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

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

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

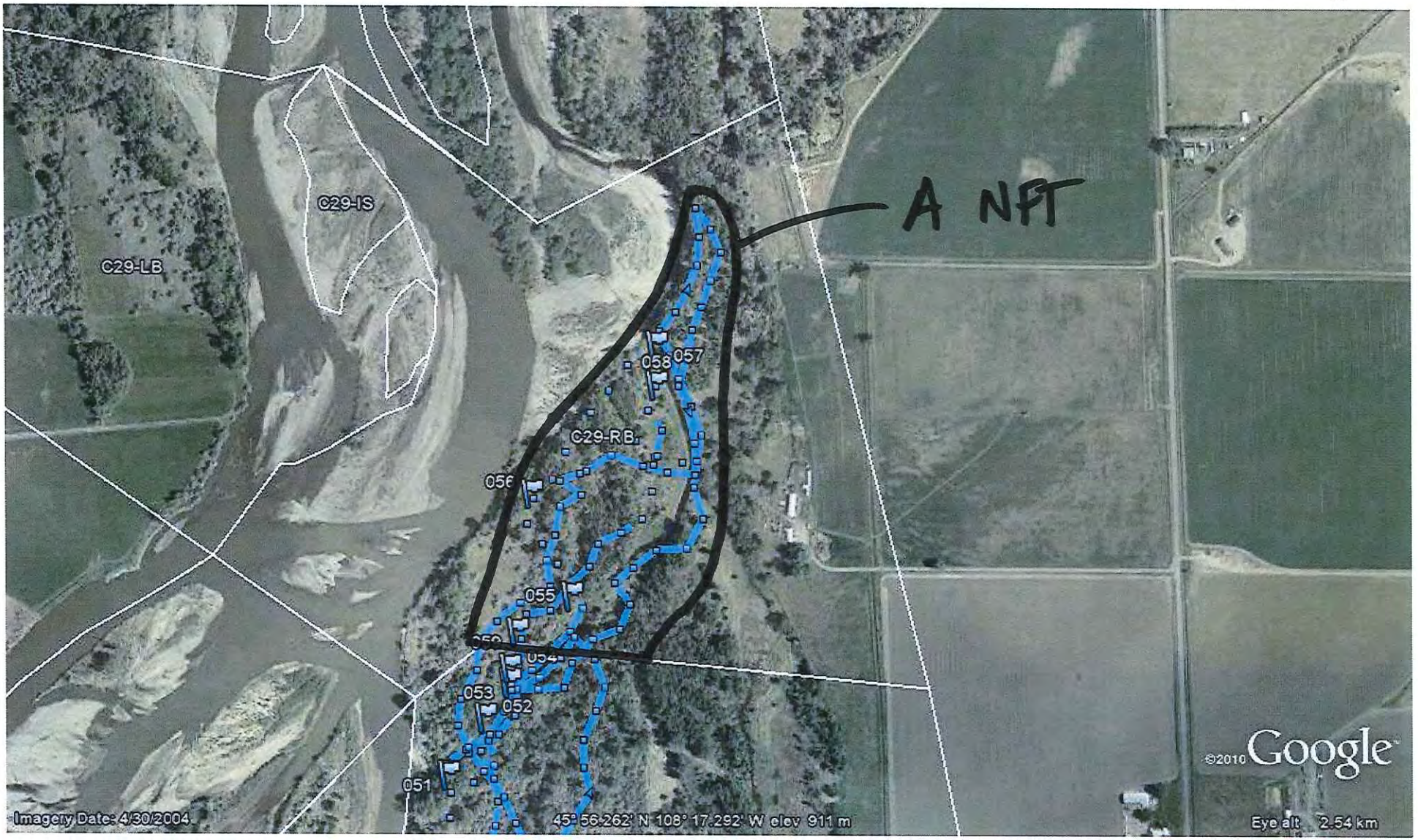
Oil height:

**Treatment recommendations:**

Zone A : Treated by Hot Shot Ops crew; removed oil-coated

Zone : woody debris and shrubs; No Further Treatment (NFT)

Sketch Yes / No Photos Yes / No Frames_____ Photographer_____




C29 RB FILL-IN
T3 9/25/11

DB / G

**RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident** Page 1 of 2

| 1 GENERAL INFORMATION | Date (dd/mm/yy) | Time (24h): std / daylight | Water Level |
|---|---|---|---|
| Segment/Reach ID: C29 (Left Bank / Right Bank / Island) | 08/09/11 | 0945 hrs to 1315 hrs | low - mean - bankfull - overbank |
| Operations Division: C | | | falling - steady – rising |
| Survey by: (Foot / ATV / Boat / Helicopter / Overlook / _____) | | (Sun) (Clouds) / Fog / Rain / Snow / Windy / (Calm) | Air Temp + / - 27 deg C |

| 2 SURVEY TEAM #5+6 | Name | Organization | Signature |
|---|---|---|---|
| | Nathan Hammond | Cardno Entrix | Nathan Hammond |
| | Damien Korte | Cardno Entrix | |
| | Betsy Horda | DEC | Betsy Horda |

**3 SEGMENT** Total Segment/Reach Length 600 m Segment/Reach Length Surveyed 600 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____ | Forested / (Vegetated) / Bare

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

est. width : < 1m 1–10 m (10–100 m) >100m | est. water depth : <1 m (1-3 m) 3-10 m >10 m ____ m

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

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

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

Debris: (Y) N oiled (Y) / N amount <1 bags or ____ trucks | access restrictions

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

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

| OIL ZONE ID | RIVER BANK ZONE | | | | OIL COVER | | | OIL THICKNESS | | | | | OIL CHARACTER | | | | | | | | SUBST. TYPE(S) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MS | LB | UB | OB | Length m | Width m | Distrib. % | TO | CV | CT | ST | FL | FR | MS | TB | PT | TC | SR | AP | NO | |
| 2202 A | | | | X | 600 | 30 | 5 | | | | | | | | | | | | | ✓ | Grass/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 | OILED ZONE | SUBSURFACE OIL CHARACTER | | | | | | | WATER TABLE | SHEEN COLOUR | CLEAN BELOW | SUBST. TYPE(S) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MS | LB | UB | OB | cm | cm-cm | SAP | OP | PP | OR | OF | TR | NO | cm | B, R, S, N | Yes / No | |
| | | | | | | | | | | | | | | | | | |

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

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

Zone A - NOO

Re-SCAT

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

9/8/2011
9/8/2011
2011
Team 5+6
C29LB
9/8/11
C29-LB
ZONE A - NOO
C29-IS
Image USDA Farm Service Agency
©2010
© 2011 Google
1996
45°56'21.42" N 108°17'49.88" W elev 2989 ft

D/6

**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: C-29 Left Bank / Right Bank / Island | 13/09/11 | 1030 hrs to 1400 hrs | low - mean - bankfull - overbank |
| Operations Division: | | | falling - steady – rising |
| Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____ | Sun / Clouds / Fog / Rain / Snow / Windy / Calm | | Air Temp + / - 21 deg C |

| 2 SURVEY TEAM # 1 | Name | Organization | Signature |
|---|---|---|---|
| | Todd Farrar | Polaris | |
| | Sheila McAfee | DNRC | |
| | Jeffrey Herrick | DEQ | |

**3 SEGMENT** Total Segment/Reach Length 1127 m Segment/Reach Length Surveyed 1127 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: P | Wooded Upland: ____

Sediment Flat: Clay/Mud____ Sand____ Mixed/Coarse____ | Other: ____ | If snow and ice use Winter River SOS

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

Cliff or Bluff: ____ Est Height ____ m | canyon____ manmade____ meander ____ confined or leveed ____ | Substrate Type: Silt

Sloped: ____ (>5°)(15°)(30°) | straight____ braided P oxbow____ flood plain valley____ | Forested / Vegetated / Bare

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

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

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

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

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

Debris Y / N oiled Y / N amount ____ bags or ____ trucks | access restrictions Island 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 MS | LB | UB | OB | OIL COVER Length m | Width m | Distrib. % | OIL THICKNESS TO | CV | CT | ST | FL | OIL CHARACTER FR | MS | TB | PT | TC | SR | AP | NO | SUBST. TYPE(S) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2278 | A | | | | X | 55 | 82 | 0.01 | | | S | P | | | | | | P | | | | WV |
| 2279 | B | | | | X | 260 | 126 | | | | | | | | | | | | | | X | |
| 2280 | C | | | | X | 160 | 60 | | | | | | | | | | | | | | X | |
| 2281 | D | | | X | | 345 | 130 | | | | | | | | | | | | | | X | |
| 2282 | E | | | X | | 230 | 65 | | | | | | | | | | | | | | X | |
| 2283 | F | | | X | | 77 | 70 | | | | | | | | | | | | | | 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 MS | LB | UB | OB | MAX. PIT DEPTH cm | OILED ZONE cm-cm | SUBSURFACE OIL CHARACTER SAP | OP | PP | OR | OF | TR | NO | WATER TABLE cm | SHEEN COLOUR B, R, S, N | CLEAN BELOW Yes / No | SUBST. TYPE(S) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |

**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

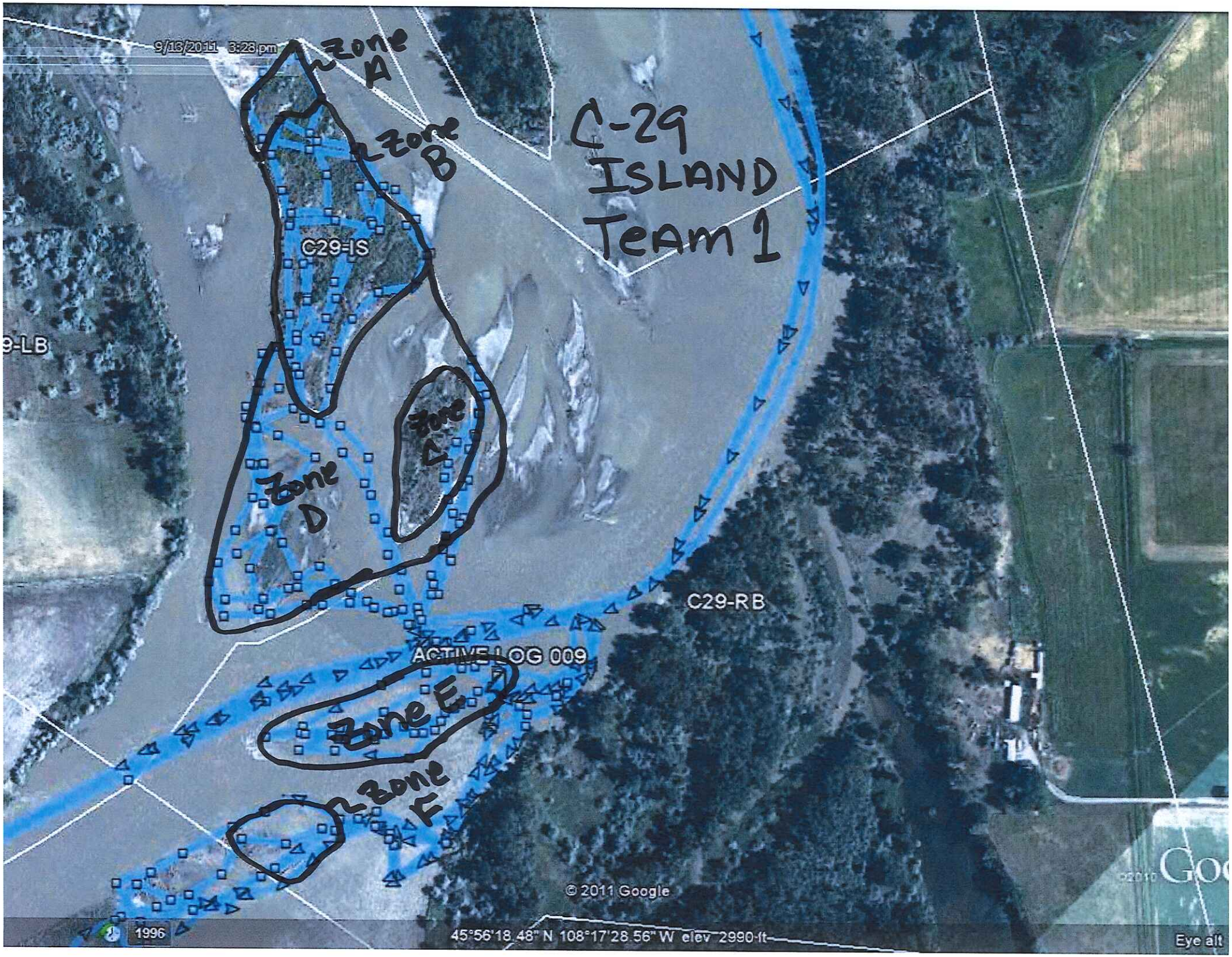
Zones A, B, C, & D Are all part of one Emerging Island

Zone E is an emerging Island

Zone F is an Emerging Island That is connected to C-27

Zones A & B were Re-SCAT, and Zone A had a little stained vegetation. The HOT shot Team Removed or Treated All oil - No Further Treatment (NFT) - The rest of the Zones (NOO) No Oil Observed

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


9/16/2011 3:28 pm
Zone A
Zone B
C-29 ISLAND Team 1
C29-IS
9-LB
Zone C
Zone D
C29-RB
ACTIVE LOG 009
Zone E
Zone F
© 2011 Google
1996
45°56'18.48" N 108°17'28.56" W elev 2990 ft
Eye alt

# Appendix F

Completed SCAT Segment Sign-Off Forms

# SCAT Segment Operations Completion Sign-Off Sheet

## Silvertip Pipeline Release

Segment C29 RB

Date of Survey 9/25/11

Dates of Initial SCAT Assessments 03 Aug 2011 GS
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 50

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

Segment Assessment Complete[1] ☐

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).*

| Sign Name | Print Name/ Affiliation | Date |
|---|---|---|
| | No Federal Rep Present | |

**Federal Representative (EPA/USCG)**

| Sign Name | Print Name/ Affiliation | Date |
|---|---|---|
| Jeffrey Frank Herrick | Jeffrey Frank Herrick / MT DEQ | 25 Sept. 2011 |

**State Representative (DEQ/FWP)**

| Sign Name | Print Name/ Affiliation | Date |
|---|---|---|
| PB Lee | Pete Lee / Polaris | 9/25/11 |

**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 C29 LB  Date of Survey 9/8/11

Dates of Initial SCAT Assessments 26JUL11 (IV)
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment _____

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

Segment Assessment Complete[1] ☒

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).*

| Sign Name | Print Name/ Affiliation | Date |
|---|---|---|
| | No federal rep | |

**Federal Representative (EPA/USCG)**

| Sign Name | Print Name/ Affiliation | Date |
|---|---|---|
| Betsy Hovda | Betsy Hovda DEQ | 9/8/11 |

**State Representative (DEQ/FWP)**

| Sign Name | Print Name/ Affiliation | Date |
|---|---|---|
| | Damien Korte / Cardno Entrix | 9/8/11 |

**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 C-29 Island Date of Survey Sept. 13, 2011

Dates of Initial SCAT Assessments 12 Aug 2011 (13)
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 61

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

Segment Assessment Complete[1] ☑

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] No federal rep. [date]
Sign Name Print Name/ Affiliation Date
**Federal Representative (EPA/USCG)**

[signature] [signature] 13 Sept. 2011
Sign Name Print Name/ Affiliation Date
**State Representative (DEC/FWP)**

[signature] Todd Farrar / Polaris 9/13/11
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.