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ENVIRONMENTAL

Ms. Laura Alvey
Remediation Division
Montana Department of Environmental Quality
P.O. Box 200901
Helena, Montana 59620

Subject:
Natural Attenuation Monitoring Fall 2011 Report
Silvertip Pipeline Incident
Laurel, Montana

Date:
December 16, 2011

Contact:
Scott Davies

Phone:
919.415.2254

Email:
Scott.Davies
@arcadis-us.com

Our ref:
B0085904.1103

Dear Ms. Alvey:

This Natural Attenuation Monitoring (NAM) Report has been prepared for ExxonMobil Environmental Services Company (EMES) on behalf of ExxonMobil Pipeline Company (EMPCo) and describes the methods and results of NAM activities conducted from October 24 to November 2, 2011. This report fulfills the requirements of the NAM Work Plan submitted to the Montana Department of Environmental Quality (MDEQ) on October 12, 2011 pursuant to the draft Administrative Order on Consent (AOC), Attachment A, Item 7 for the EMPCo Silvertip Pipeline Incident that occurred near Laurel, Montana. Specifically, the NAM program was developed to monitor and document degradation of residual crude oil left in place on vegetation and debris.

The location of the Silvertip Pipeline is presented on a portion of the U.S. Geological Survey (USGS) 7.5 minute topographic map for Laurel and Mossmain, Montana, presented as Figure 1.

Background

On July 1, 2011 there was a release of crude oil from the Silvertip Pipeline located near Laurel, Montana. EMPCo activated its Emergency Response Plan and provided a rapid and comprehensive cleanup response to the incident. As part of the assessment and cleanup process, incident-specific Approved Treatment Methods (ATMs) and location-specific Compiled Treatment Recommendations (CTRs) were developed. The CTRs were subsequently implemented to clean up affected areas. In some instances where leaving residual oil in place to naturally attenuate was determined to be the more ecologically sensitive option, monitored natural attenuation was chosen as the treatment method over active treatment for the

affected area. The draft MDEQ AOC scope of work included a requirement to implement the above-referenced NAM program to document natural attenuation of residual oil over time.

Purpose and Objectives

This NAM event is the first of three planned monitoring events as specified in the NAM Work Plan. The purpose of the NAM program is to observe and document the degradation over time of residual oil that was present in River Divisions A, B, and C after the cleanup effort. Monitoring of these locations will occur over three events: this initial monitoring event in Fall 2011 and two follow-up monitoring events in the Spring and Fall of 2012. This report presents the findings of the Fall 2011 NAM event.

Monitoring Location Selection

Monitoring locations were selected throughout Divisions A, B, and C where residual oil was left on vegetation to naturally attenuate. In Division C, locations were selected between C01 and C55, consistent with Shoreline Cleanup Assessment Technique (SCAT) survey findings of no actionable oil beyond river segment C55.

CTRs were reviewed to identify locations with an ATM of #7 (Natural Attenuation). Additional locations were selected based on SCAT oiling conditions, access restrictions, potential river conditions during future monitoring events, and varying vegetative and location setting types.

NAM Monitoring Methodology

Forty-five monitoring locations, 15 each in Divisions A, B, and C, were chosen to include a variety of vegetation and location setting types in the area. Locations that had residual oiling conditions included the following vegetation types: leaves, bark, stems, willows, and grasses, in one or more of the following location setting types: debris piles, rip-rap, closed canopy areas, open canopy areas, high energy river/cobbles and grassy fields.

The Fall 2011 NAM event included the following activities:

1. Pre-planning and identification of NAM locations based on current knowledge of site conditions.

2. Field identification/confirmation of NAM locations where residual oiling conditions meet the standards described in AOC Attachment A, Item 7.

3. Flagging of each location, logging of the GPS coordinates, and documenting field conditions.

4. Taking a representative digital still image of the location from approximately 4 feet above the ground (unless otherwise noted) facing a specified direction in degrees as logged into the GPS and noted on the field forms.

5. Completion of a NAM Field Form that records the GPS coordinates, direction in degrees of the photo taken, a sketch of the area, and current residual oiling conditions.

6. Preparation of this letter report for submittal to the MDEQ.

Summary of NAM Locations

The attached Table 1 summarizes the 45 NAM locations and includes river segment, date of monitoring, location setting type, and vegetation type. Complete details of each monitoring location are included on the NAM forms in Attachment A. Figures 2 through 4 illustrate the NAM locations. Attachment B includes photo-documentation of the selected locations.

The 45 locations selected for monitoring included a variety of vegetation types (leaves, bark, stems, willows, logs, and grasses) and location setting types (open/closed canopy, grassy fields, high energy river/cobbles and debris piles). There was no oiled vegetation located within the boundaries of rip-rap areas.

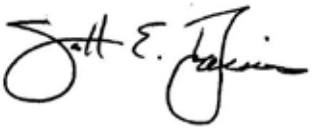
The remaining NAM events are scheduled for June and October, 2012, and will be completed as specified in the NAM Work Plan.

Recommendations

EMES recommends monitoring Yellowstone River conditions throughout the Spring of 2012 to identify best time to conduct the next NAM event. Ideally the Spring 2012 river water levels should be similar to those during the October 2011 event so that all monitoring locations are accessible for follow-up monitoring.

Sincerely,

ARCADIS G&M of North Carolina, Inc.



Scott Davies
Principal Geologist

Copies:
Tom Henson, ExxonMobil Environmental Services
Brian Magruder, ExxonMobil Pipeline Company

Attachments:
Table 1 – NAM Location Setting Type and Vegetation Type Summary
Figure 1 – Site Location Map
Figure 2 – NAM Locations - Division A
Figure 3 – NAM Locations - Division B
Figure 4 – NAM Locations - Division C
Attachment A – NAM Forms
Attachment B – Photo Log

Table 1

Table 1
NAM Location Setting and Vegetation Type Summary
Silvertip Pipeline Incident
Laurel, Montana

		Location Setting Type					Vegetation Type					
NAM Location ID	Date	Open Canopy	Closed Canopy	Grassy Field	Debris Pile	Other: High Energy River/Cobbles	Leaves	Bark	Stems	Willows	Logs	Grasses
A02-RB-1	10/27/11		X					X				
A07-LB-1	10/28/11	X						X				
A07-RB-1	10/27/11	X		X								X
A12-RB-1	10/28/11	X		X						X		
A13-LB-1	10/28/11		X								X	
A14-LB-1	10/28/11		X					X				
A14-RB-1	10/27/11	X										X
A19-RB-1	10/27/11	X						X				
A22-IS-1	10/28/11	X						X				
A24-RB-1	10/27/11	X			X						X	
A26-IS-1	10/28/11	X								X		
A28-LB-1	10/27/11		X				X		X			X
A28-RB-1	10/24/11		X					X				
A28-RB-2	10/24/11	X						X				
A29-IS-1	10/27/11	X				X					X	
B04-LB-1	10/26/11		X					X	X			X
B08-LB-1	10/26/11		X					X		X		
B10-LB-1	10/26/11	X				X					X	
B12-LB-1	10/26/11		X					X				
B14-LB-1	10/26/11	X				X		X				X
B17-RB-1	10/25/11		X					X				
B27-RB-1	10/25/11		X					X				
B30-LB-1	10/24/11	X				X		X	X			
B31-LB-1	10/24/11	X		X								X
B34-LB-1	10/25/11	X				X		X	X			
B35-IS-1	10/25/11	X				X		X				
B43-IS-1	10/25/11	X								X		
B45-RB-1	10/25/11	X										X
B46-RB-1	10/25/11	X			X		X	X	X			
B47-RB-1	10/25/11	X						X				
C03-LB-1	10/26/11		X				X	X	X			
C05-RB-1	11/2/11	X					X		X			
C08-LB-1	10/31/11	X						X	X			
C09-LB-1	10/31/11	X										X
C11-LB-1	11/1/11		X						X		X	
C23-RB-1	10/31/11	X					X	X	X			
C25-LB-1	11/1/11	X				X				X		
C27-LB-1	11/2/11	X										X
C34-RB-1	10/31/11	X		X								X
C36-RB-1	10/31/11	X						X	X			
C44-RB-1	11/2/11		X					X	X			X
C45-RB-1	11/1/11	X				X				X		
C50-LB-1	11/1/11	X		X			X	X	X			
C50-RB-1	10/31/11	X			X		X					X
C54-RB-1	10/31/11		X					X				

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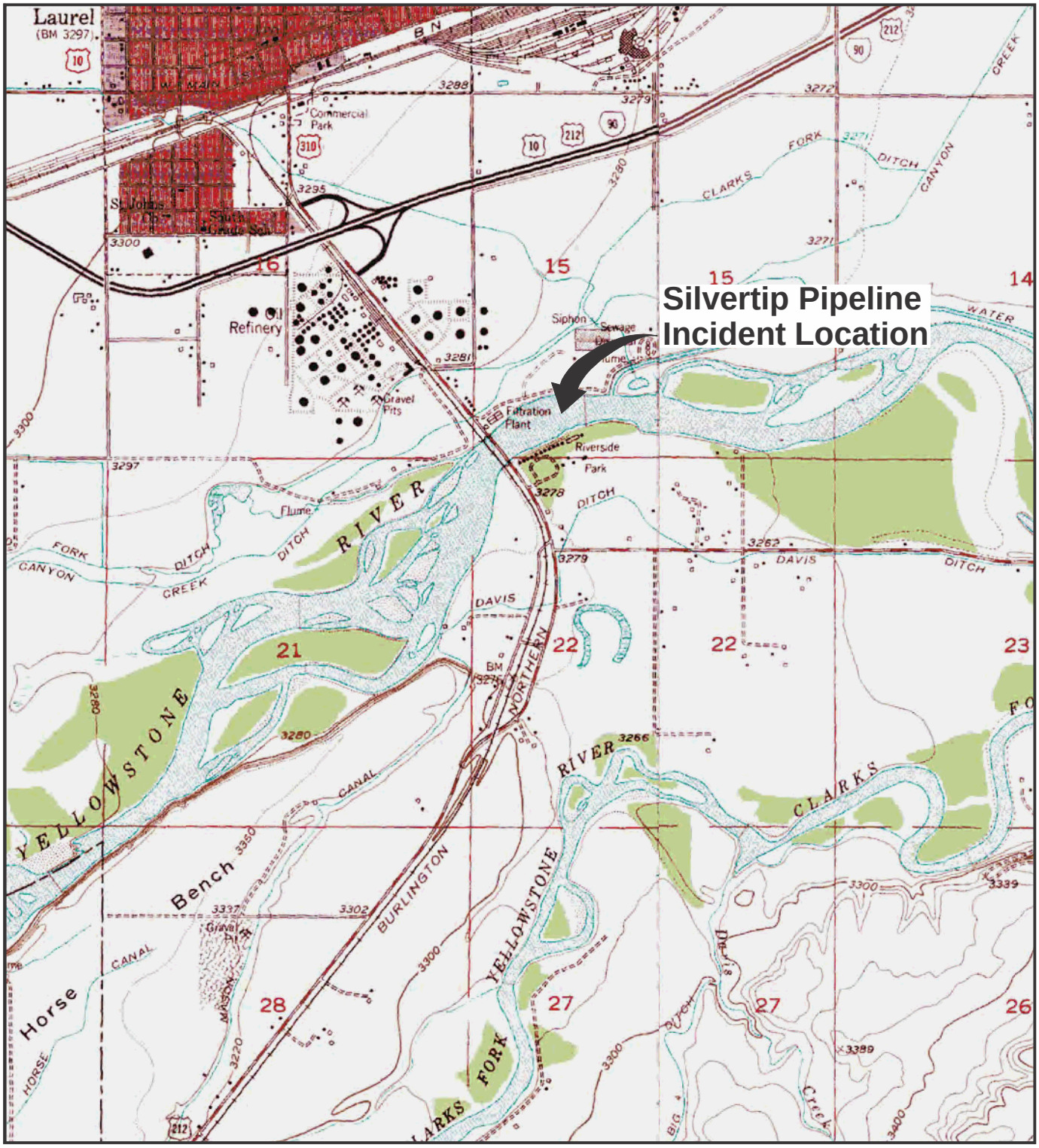
Figures



REFERENCE: BASE MAP USGS 7.5 MIN. QUAD., LAUREL, AND MOSSMAIN MONT, 1956, PHOTOREVISED 1969.

2000' 0 2000'

Approximate Scale: 1" = 2000'

SILVERTIP PIPELINE INCIDENT - LAUREL, MONTANA

NATURAL ATTENUATION MONITORING
FALL 2011 SUMMARY REPORT

SITE LOCATION MAP

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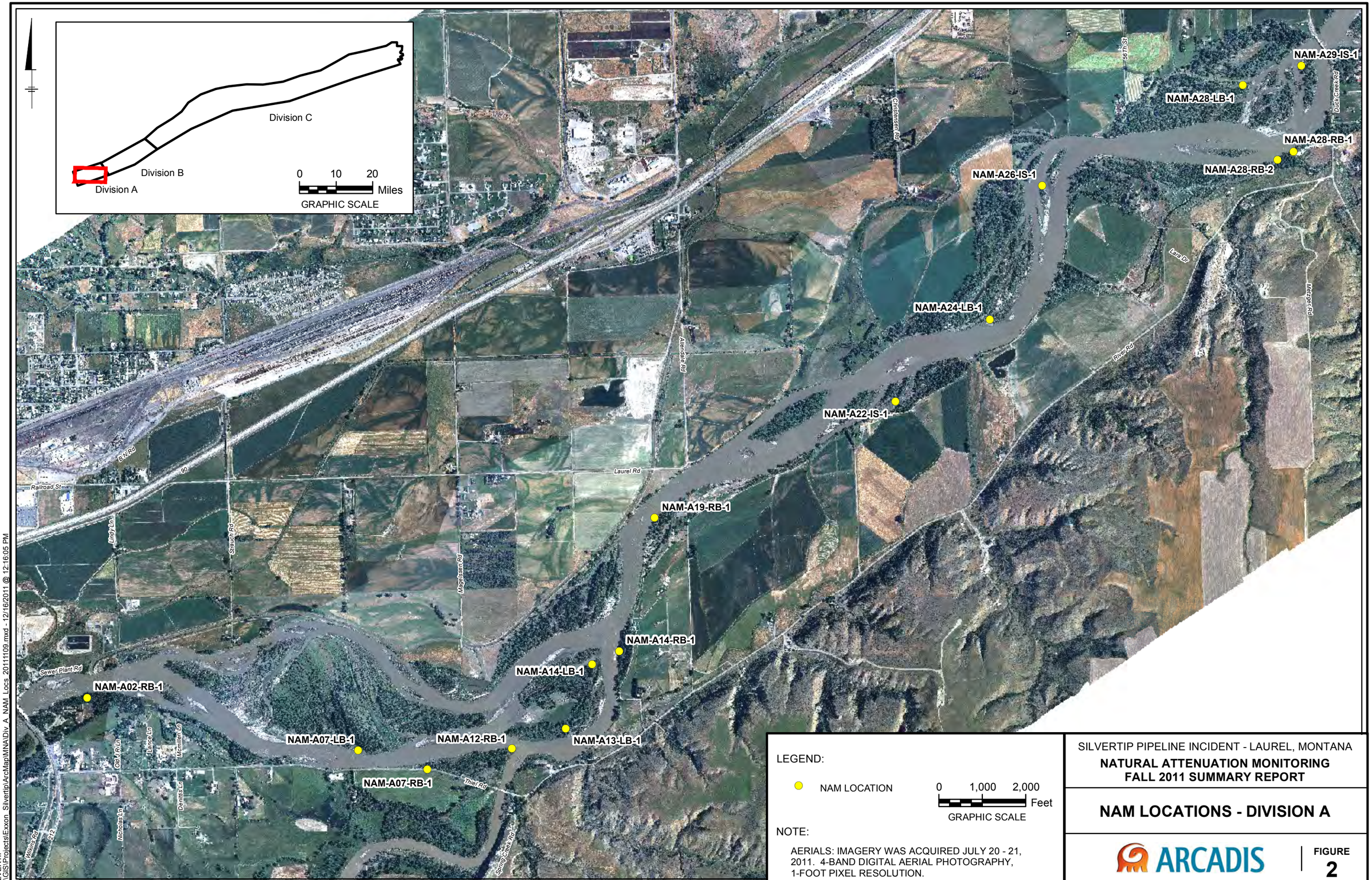
FIGURE
1

10/12/2011 SYRACUSE, NY-ENV/CAD-141, DJHOWES, LPOSENAUER
B0085883/1103/00003/CDR/85883N02.CDR



LEGEND:

NAM LOCATION

0 1,000 2,000 Feet
GRAPHIC SCALE

NOTE:

AERIALS: IMAGERY WAS ACQUIRED JULY 20 - 21, 2011. 4-BAND DIGITAL AERIAL PHOTOGRAPHY, 1-FOOT PIXEL RESOLUTION.

SILVERTIP PIPELINE INCIDENT - LAUREL, MONTANA

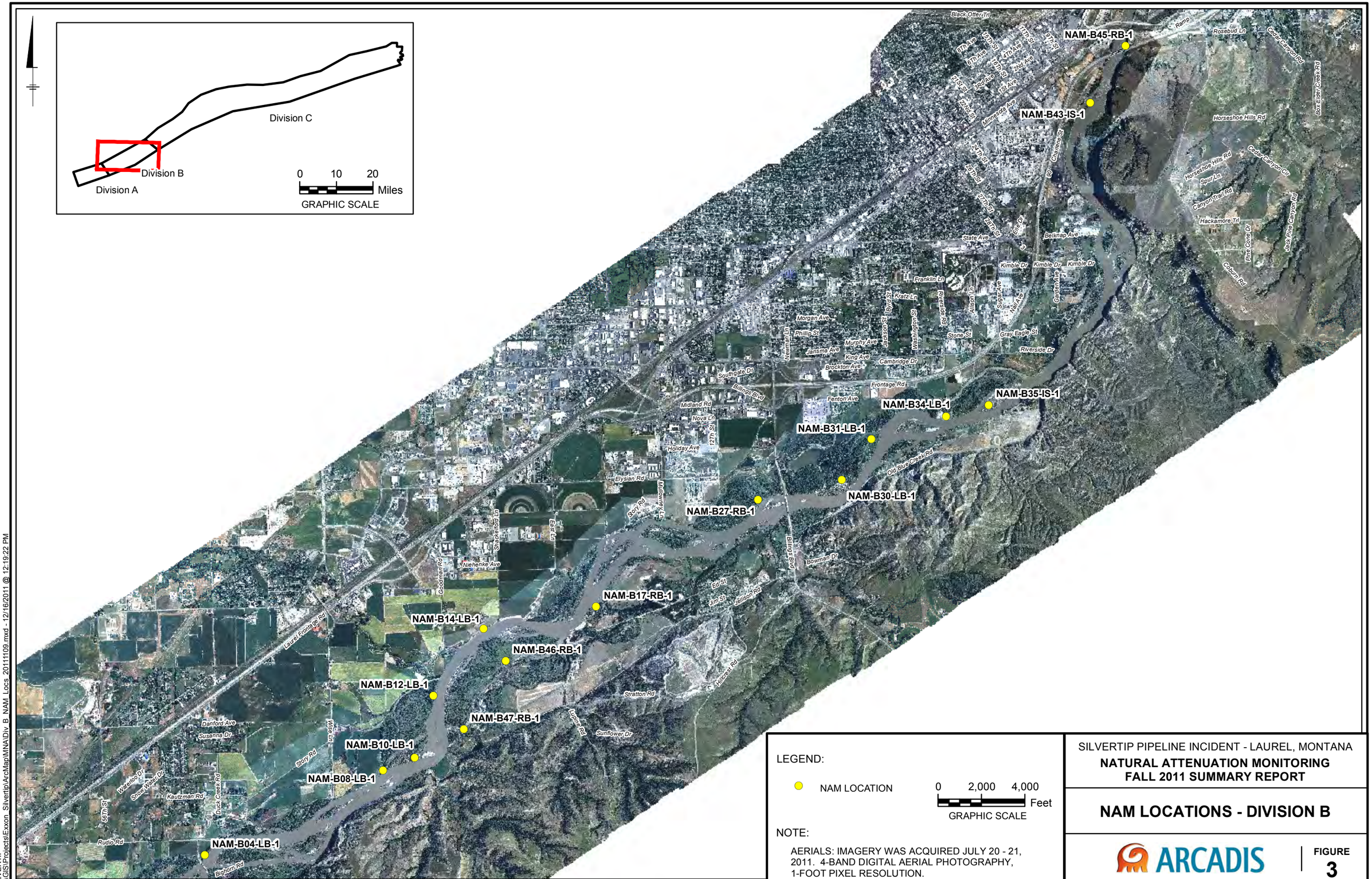
NATURAL ATTENUATION MONITORING FALL 2011 SUMMARY REPORT

NAM LOCATIONS - DIVISION A

ARCADIS

FIGURE 2

CITY: MPLS DIV/GROUP: IM DB: MG LD: EL
SILVERTIP
G:\GIS\Projects\Exxon_Silvertip\ArcMap\MNA\Div_A_NAM_Locs_20111109.mxd - 12/16/2011 @ 12:16:05 PM



LEGEND:

NAM LOCATION

0 2,000 4,000 Feet
GRAPHIC SCALE

NOTE:

AERIALS: IMAGERY WAS ACQUIRED JULY 20 - 21, 2011. 4-BAND DIGITAL AERIAL PHOTOGRAPHY, 1-FOOT PIXEL RESOLUTION.

SILVERTIP PIPELINE INCIDENT - LAUREL, MONTANA

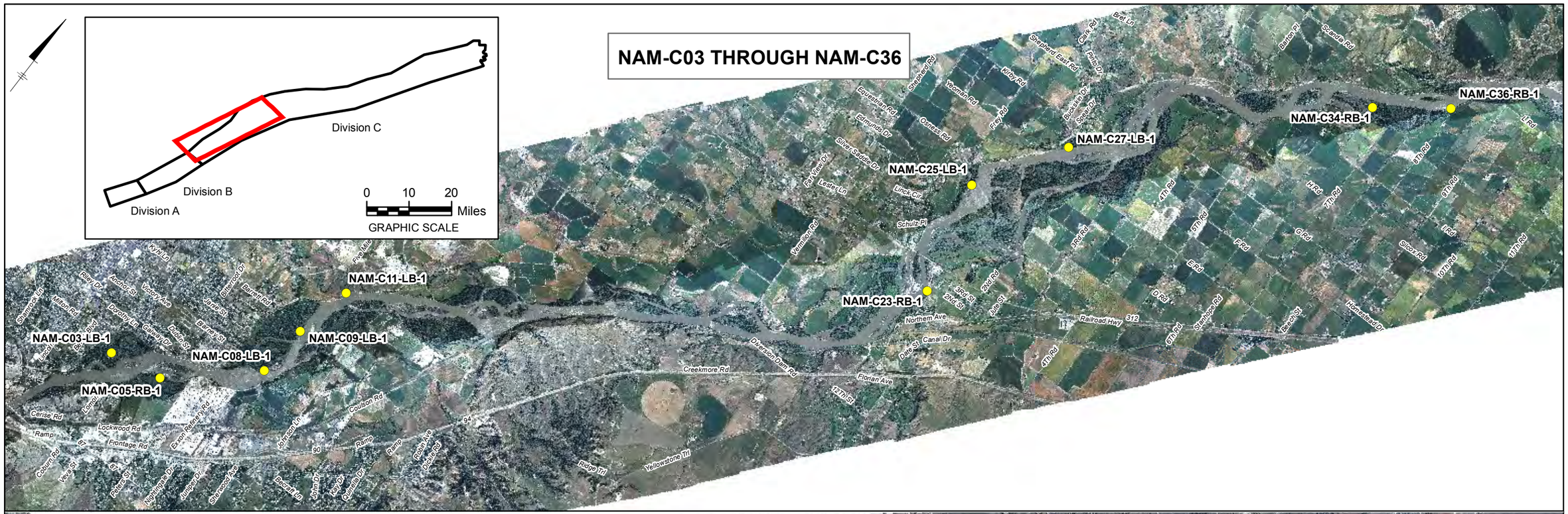
NATURAL ATTENUATION MONITORING FALL 2011 SUMMARY REPORT

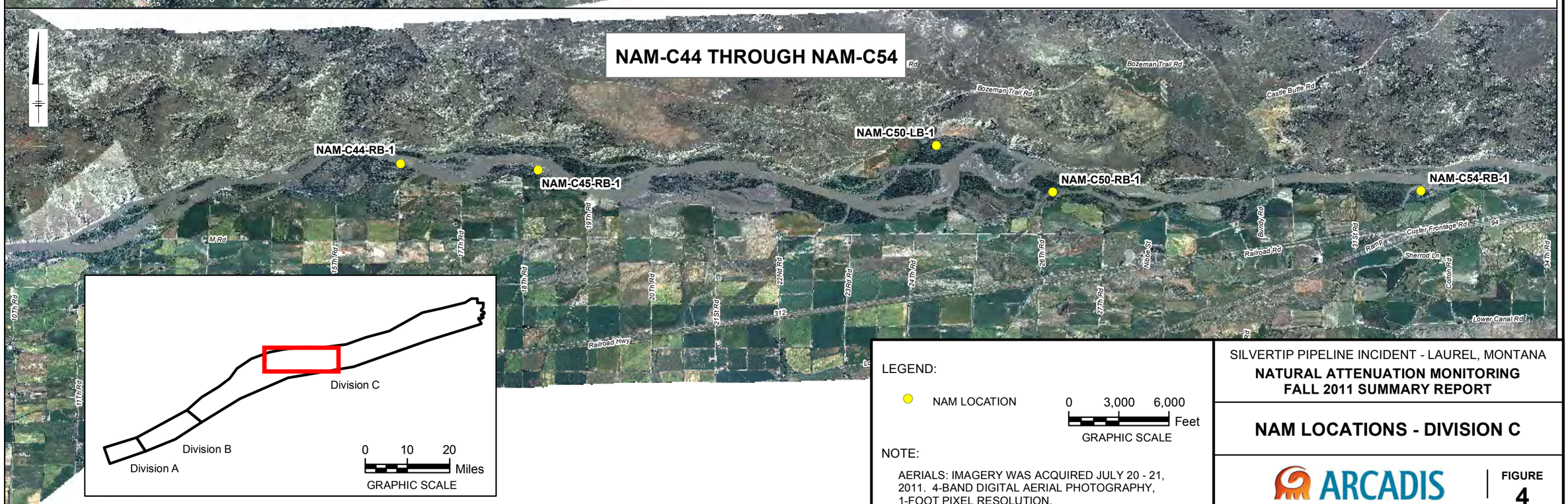
NAM LOCATIONS - DIVISION B

ARCADIS

FIGURE 3

CITY: MPLS DIV/GROUP: IM DB: MG LD: EL
SILVERTIP
G:\GIS\Projects\Exxon_Silvertip\ArcMap\MNA\Div_B_NAM_Locs_20111109.mxd - 12/16/2011 @ 12:19:22 PM





LEGEND:

NAM LOCATION

0 3,000 6,000
Feet
GRAPHIC SCALE

NOTE:

AERIALS: IMAGERY WAS ACQUIRED JULY 20 - 21, 2011. 4-BAND DIGITAL AERIAL PHOTOGRAPHY, 1-FOOT PIXEL RESOLUTION.

SILVERTIP PIPELINE INCIDENT - LAUREL, MONTANA

NATURAL ATTENUATION MONITORING FALL 2011 SUMMARY REPORT

NAM LOCATIONS - DIVISION C

ARCADIS

FIGURE 4

CITY: MPLS DIV/GROUP: IM DB: MG LD: EL
SILVERTIP
G:\GIS\Projects\Exxon_Silvertip\ArcMap\MNA\Div_C_NAM_Locs_20111109.mxd - 12/16/2011 @ 12:20:56 PM

Attachment A

NAM Forms

NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-A28-RB-1 Division: A	10/24/11	1248	Fall 2011
River Segment: 28 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunn	ARCADIS	
	Kirk Schwerin	ARCADIS	Kirk Schwer

3 LOCATION

GPS: LATITUDE 45 deg. 41.13.2435 min. LONGITUDE 108 deg. 58.37.2109 min. Datum: _____

UNIT USED: 600XM -34

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

Vegetation: Open Canopy ____ Closed Canopy X Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stems ____ willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

Photo Number: 101-0005 Direction Photo Taken: 213°

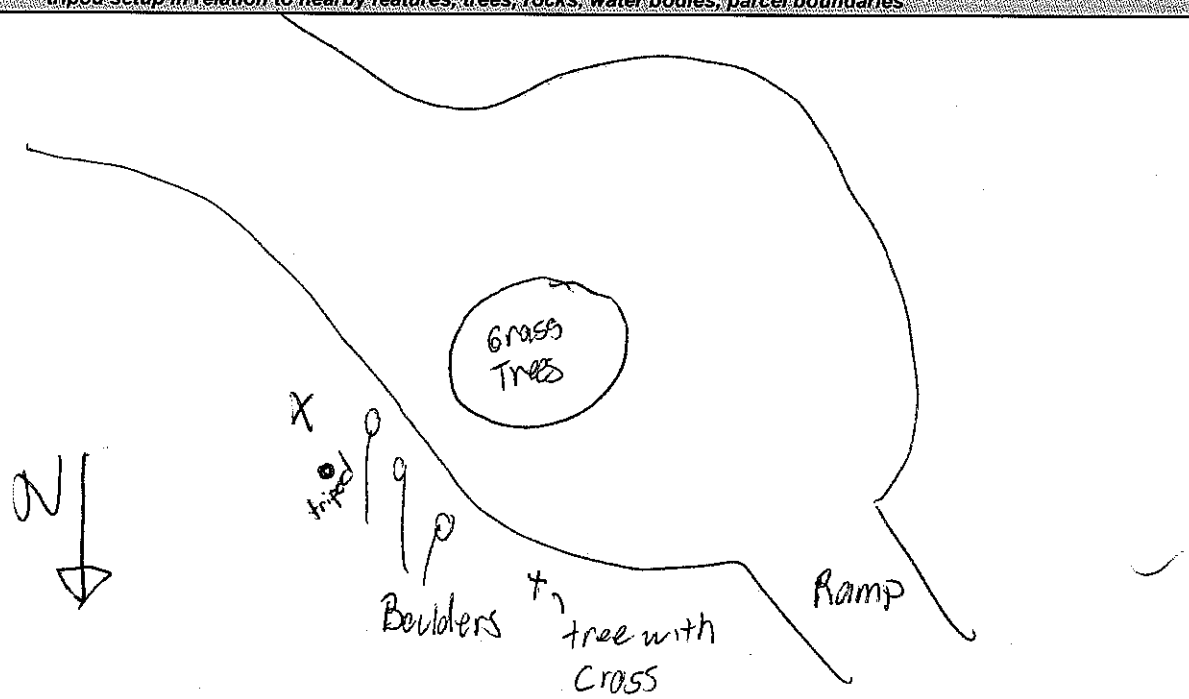
Height above ground (inches): 48"

6 COMMENTS

Photo Id in Trimble labeled as 0004

Duck creek boat ramp

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-A28-RB-2	10-24-11	1305	Fall 2011
Division: A			
River Segment: 28 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		

3 LOCATION

GPS: LATITUDE 45° 41' deg. 41', 11.4990 min. LONGITUDE 108° deg. 38' 42.5910 min. Datum: _____

UNIT USED: GPS XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE *write "COAT" or "STAIN" as appropriate*

leaves ____ bark X stain stems ____ willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

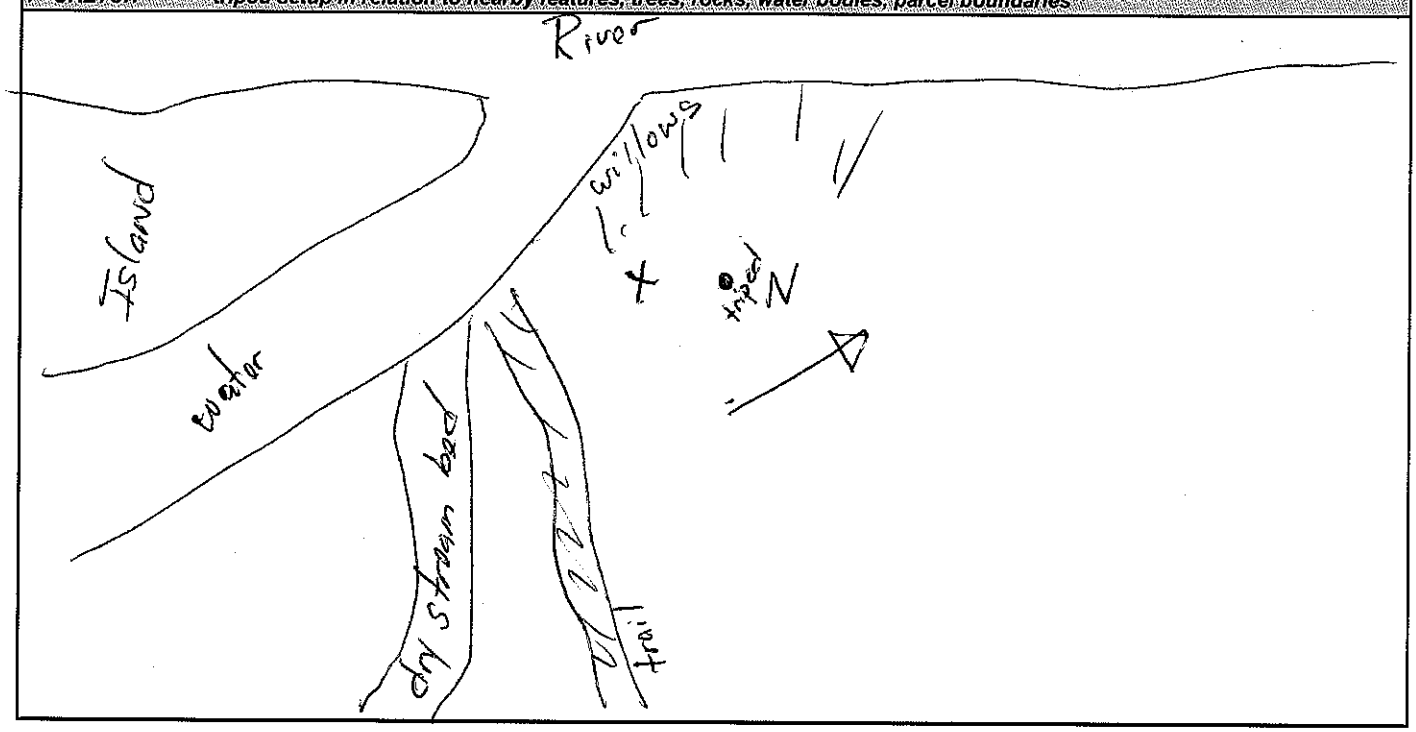
Photo Number: 101-00016 Direction Photo Taken: 230°

Height above ground (inches): 4'

6 COMMENTS

15' North of trail
50' Before bank/end of trail
Duck creek boat ramp

7 SKETCH *tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries*



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B31-LB-1 Division: B	10-24-11	1400	Fall 2011
River Segment: 31 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM # Name	Company	Signature
Eric Lonin	Arcadis	
Kirk Schweim		

3 LOCATION

GPS: LATITUDE 45 deg. 44'41.7380 min. LONGITUDE 108 deg. 31'05.3999 min. Datum: _____

UNIT USED: Geo XH 3H

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field X Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate.

leaves ____ bark ____ stems ____ willows ____

logs ____ grasses X stain Other: ____

5 PHOTOGRAPH

Photo Number: 101-0008, 0009 Direction Photo Taken: 100°

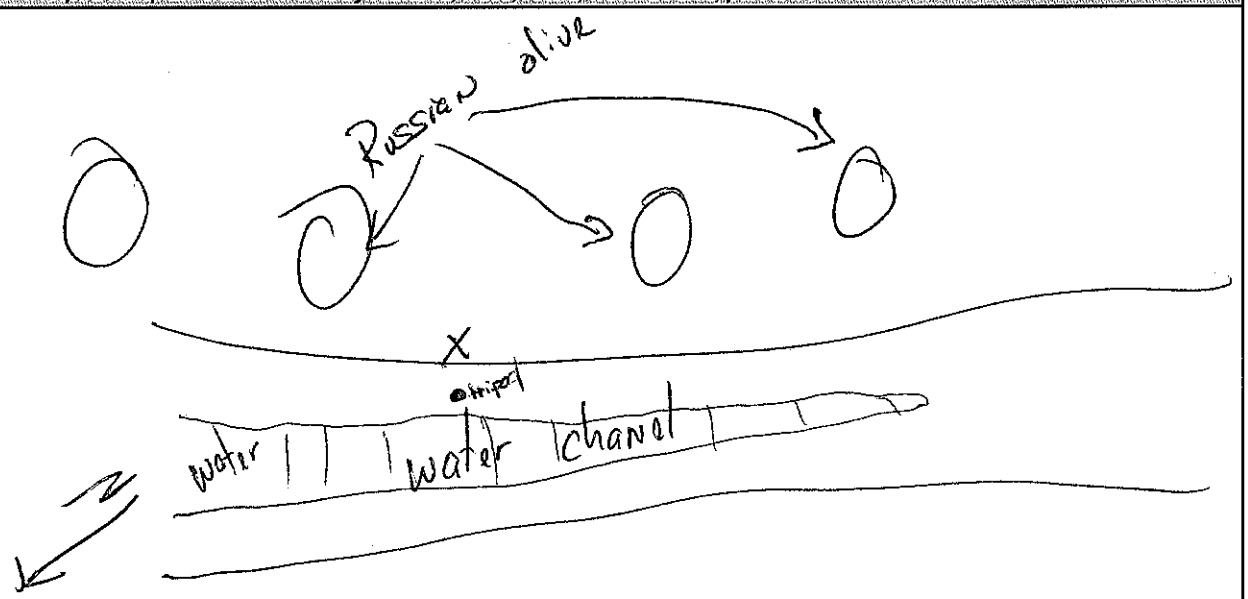
Height above ground (inches): 41"

6 COMMENTS

location is on edge of bank, currently 15' from water

River front Park off Billings Ave.

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B30-LB-1	10-24-11	1430	Fall 2011
Division: B			
River Segment: 30 (Left Bank / Right Bank / Island)	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schwein		Kirk Schwein

3 LOCATION

GPS: LATITUDE 45° deg. 44'23.4605 min. LONGITUDE 108 deg. 31'25.4222 min. Datum: _____

UNIT USED: Geo XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other High Energy / cobbles

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stain stems X willows ____

logs ____ grasses ____ Other: ~~[illegible]~~

5 PHOTOGRAPH

Photo Number: 100-0010 Direction Photo Taken: 001°

Height above ground (inches):

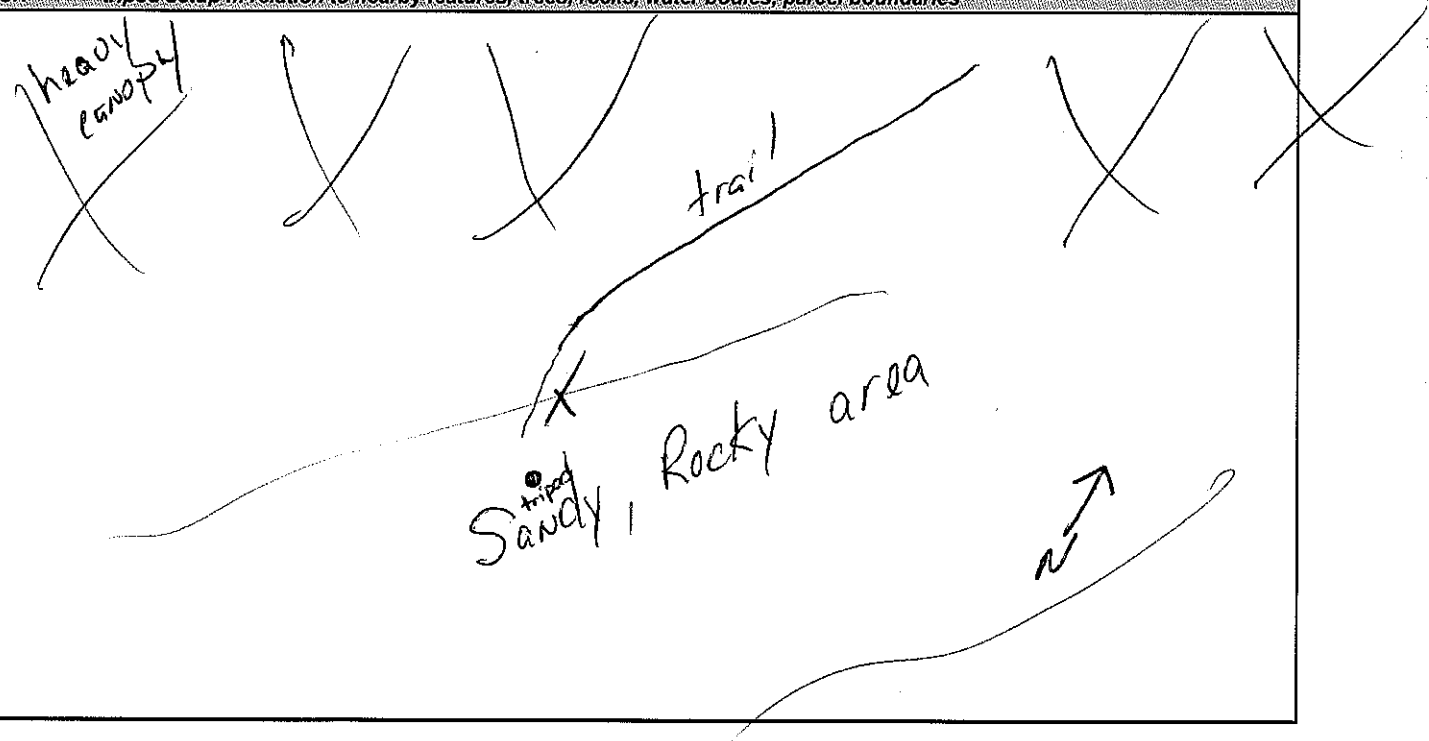
6 COMMENTS

High energy area

Approx. 50' from where trail comes out of thick cover

River front park off Billings Ave.

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B45-RB-1	10-25-11	0917	Fall 2011
Division: B			
River Segment: 45	Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		

3 LOCATION

GPS: LATITUDE 45 deg. 47'36.3978 min. LONGITUDE 108 deg. 28'12.2378 min. Datum: _____

UNIT USED: Loco RH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows ____

logs ____ grasses X stain Other: ____

5 PHOTOGRAPH

Photo Number: 101-0016	Direction Photo Taken:
Height above ground (inches): 4'	095°

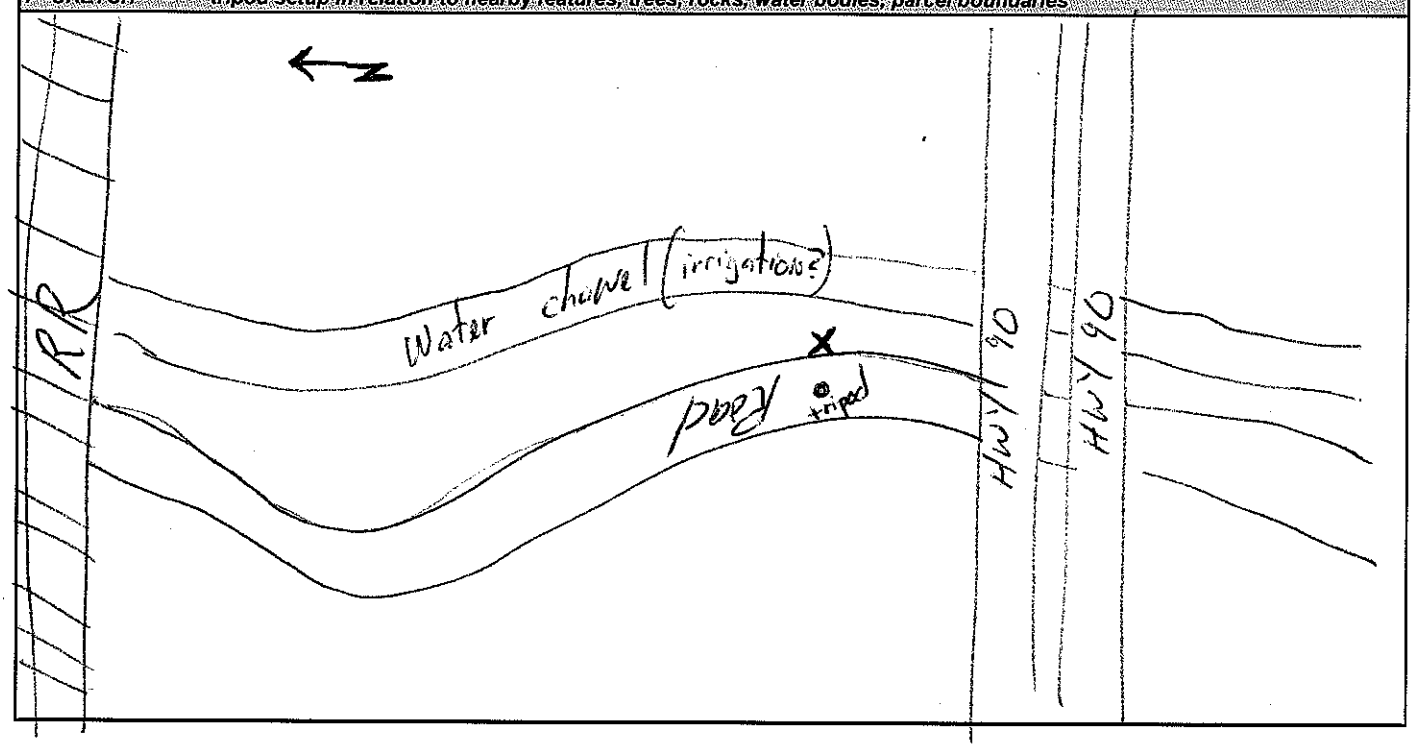
6 COMMENTS

75' to 100' North of Hwy bridge

Between dirt road and water channel (irrigation?)

Lockwood boat ramp

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B34-LB-1	10-25-11	1030	Fall 2011
Division: B			
River Segment: 34	(Left Bank) / Right Bank / Island / (Sun) / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	[signature]
	Kirk Schweim		[signature]

3 LOCATION

GPS: LATITUDE 45 deg. 44'51.0970 min. LONGITUDE 108 deg. 30'16.4437 min. Datum: _____

UNIT USED: GPS XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other High Energy/cobbles

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X Stain stems X willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

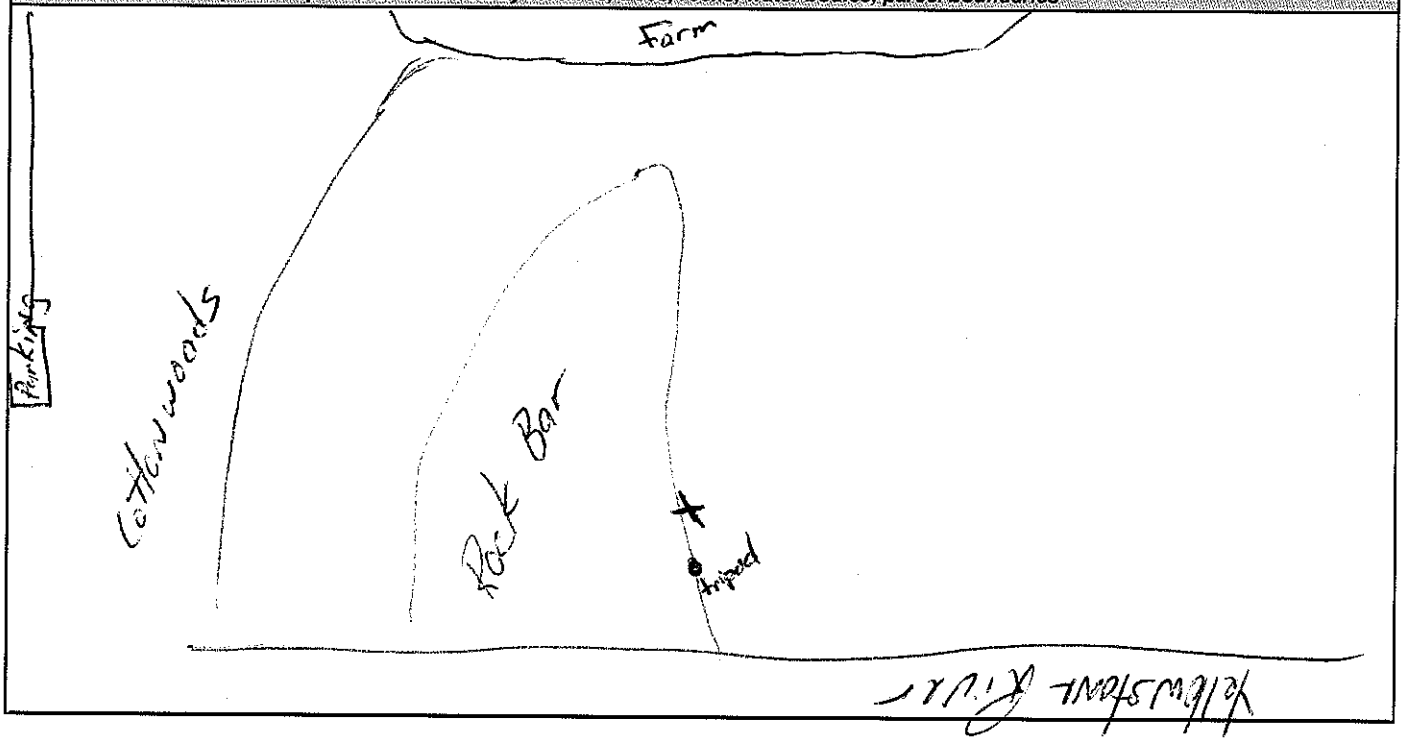
Photo Number: 101-0019 Direction Photo Taken: 068°

Height above ground (inches): 4'

6 COMMENTS

High energy area
100' from Yellowstone River
* Washington St. Park entrance - frontage rd.

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM B-35-15-1	10-25-11	1100	Fall 2011
Division: B			
River Segment: 35	Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schwein		

3 LOCATION

GPS: LATITUDE 45 deg. 44' 55.5485 min. LONGITUDE 108 deg. 29' 48.6989 min. Datum: _____

UNIT USED: 1200 XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other Cobbles/High Energy

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stain stems ____ willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

Photo Number: 101-021 Direction Photo Taken: 045°

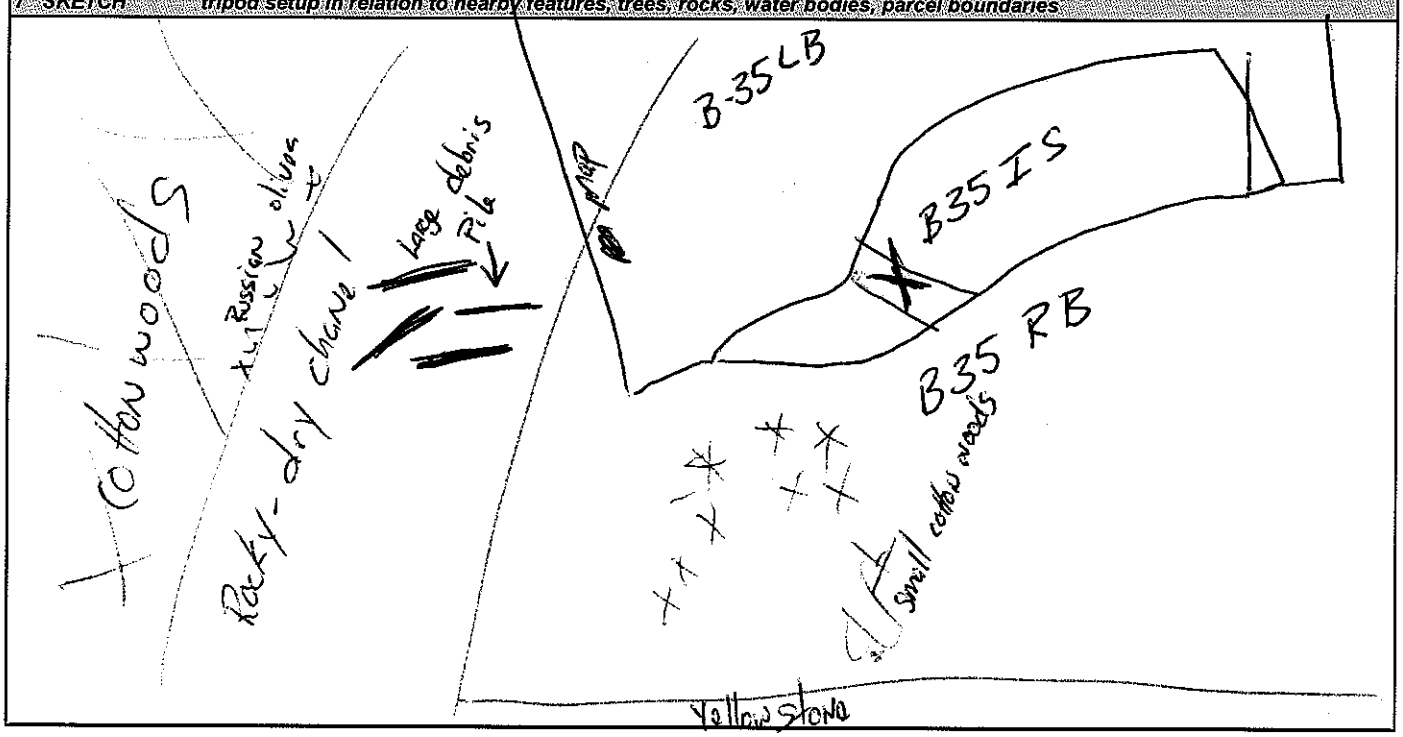
Height above ground (inches): 4'

6 COMMENTS

High energy area

Access through Washington St. Park - frontage road

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B27-RB-1	10-25-11	1315	Fall 2011
Division: B			
River Segment: 27 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schwein		

3 LOCATION

GPS: LATITUDE 45 deg. 44' 15.9108 min. LONGITUDE 108 deg 32' 20.2297 min. Datum: _____

UNIT USED: GPS XH 34

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

Vegetation: Open Canopy ____ Closed Canopy X Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X Stain stems ____ willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

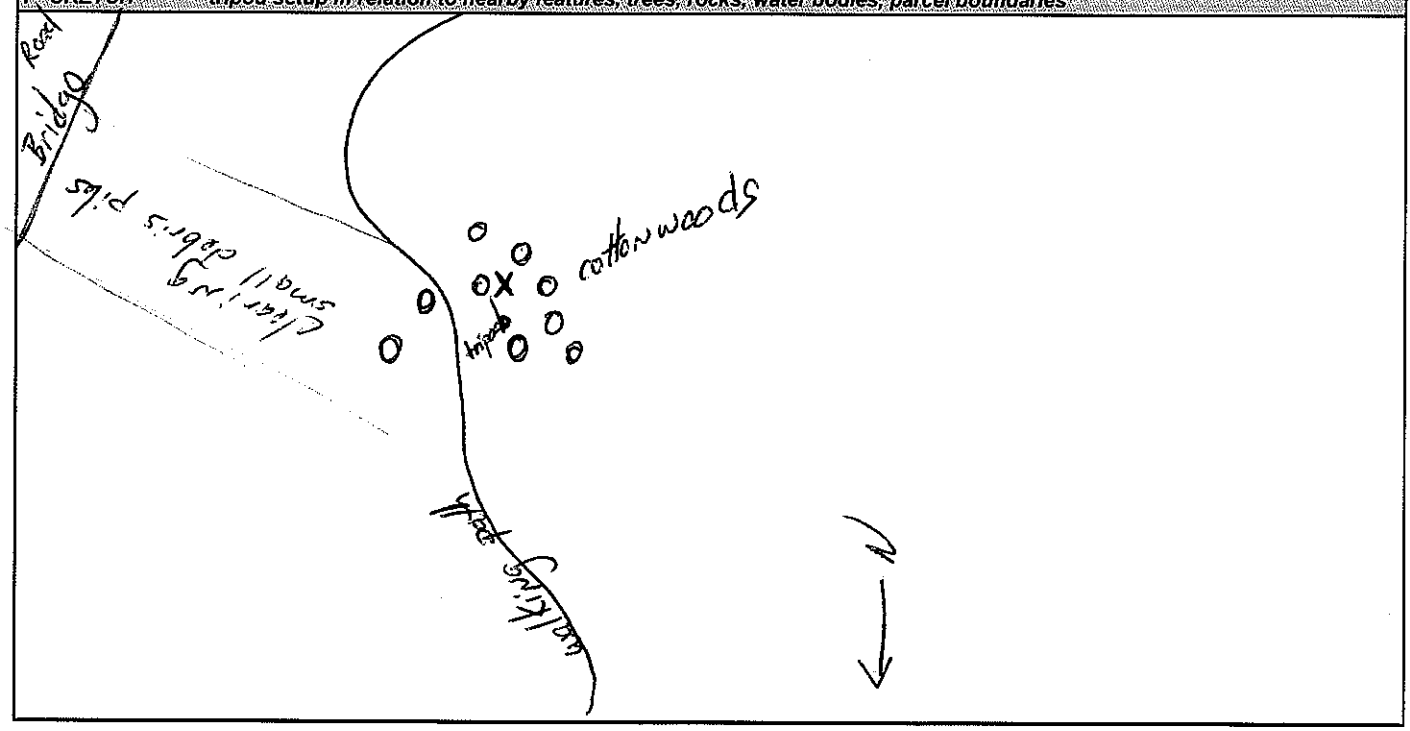
Photo Number: 101-024 Direction Photo Taken: 109°

Height above ground (inches): 4'

6 COMMENTS

Ring stains on cottonwoods
Removed stake after Pictures
15' off of main walking trail
Atm-sanded trees
Norms Island
cross foot bridge take trail to left

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B17-RB-1	10-25-11	1410	Fall 2011
Division: B			
River Segment: 17 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		

3 LOCATION

GPS: LATITUDE 45 deg. 43' 29.5952 min. LONGITUDE 108 deg. 34' 07.3102 min. Datum: _____

UNIT USED: Geo XH 34

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

Vegetation: Open Canopy_____ Closed Canopy X Rip-rap_____ Grassy field_____ Debris Pile_____ Other_____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves_____ bark X stain stems _____ willows_____

logs_____ grasses _____ Other:_____

5 PHOTOGRAPH

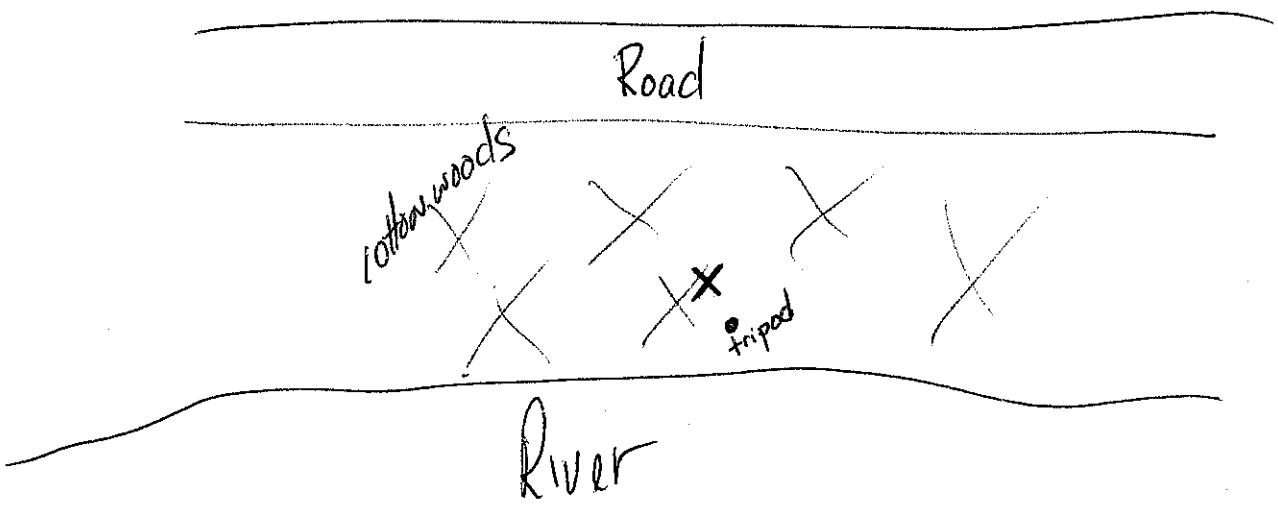
Photo Number: 101-033	Direction Photo Taken:
Height above ground (inches): 4'	170°

6 COMMENTS

150' from Road towards River

Billings flying service - near boat ramp

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B47-RB-1	10-25-11	1445	Fall 2011
Division: B			
River Segment: 47 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ___ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweir		

3 LOCATION

GPS: LATITUDE 45 deg. 42' 35.7287 min. LONGITUDE 108 deg. 35' 35.6849 min. Datum: _____

UNIT USED: Garmin 78H 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X Stain stems ____ willows ____

logs ____ grasses ____ Other: ____

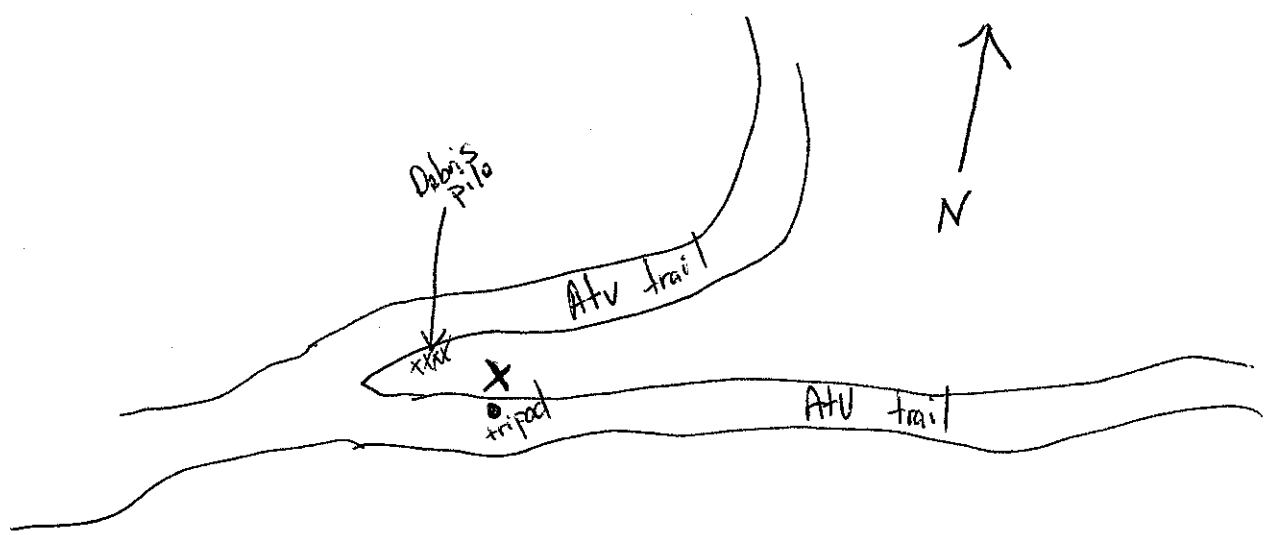
5 PHOTOGRAPH

Photo Number: 101-036	Direction Photo Taken:
Height above ground (inches): 4'	312°

6 COMMENTS

Stained trees 2" and 1" dia.
Cottonwoods
3' feet off trail
- Park at private gate @ end of Jellison road. Trail head

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B46-RB-1..	10-25-11	1525	Fall 2011
Division: B			
River Segment: 46 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ___ deg C

2 TEAM # Name	Company	Signature
Eric Lunin	Arcadis	
Kirk Schweir		Kirk Schweir

3 LOCATION

GPS: LATITUDE 45 deg. 43'06.3011 min. LONGITUDE 108 deg. 35'07.1006 min. Datum: _____

UNIT USED: 600 XH 34

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

Vegetation: Open Canopy X Closed Canopy ___ Rip-rap ___ Grassy field ___ Debris Pile X Other ___

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves X bark X stain stems X willows ___

logs ___ grasses ___ Other: Various debris caught in log pile

5 PHOTOGRAPH

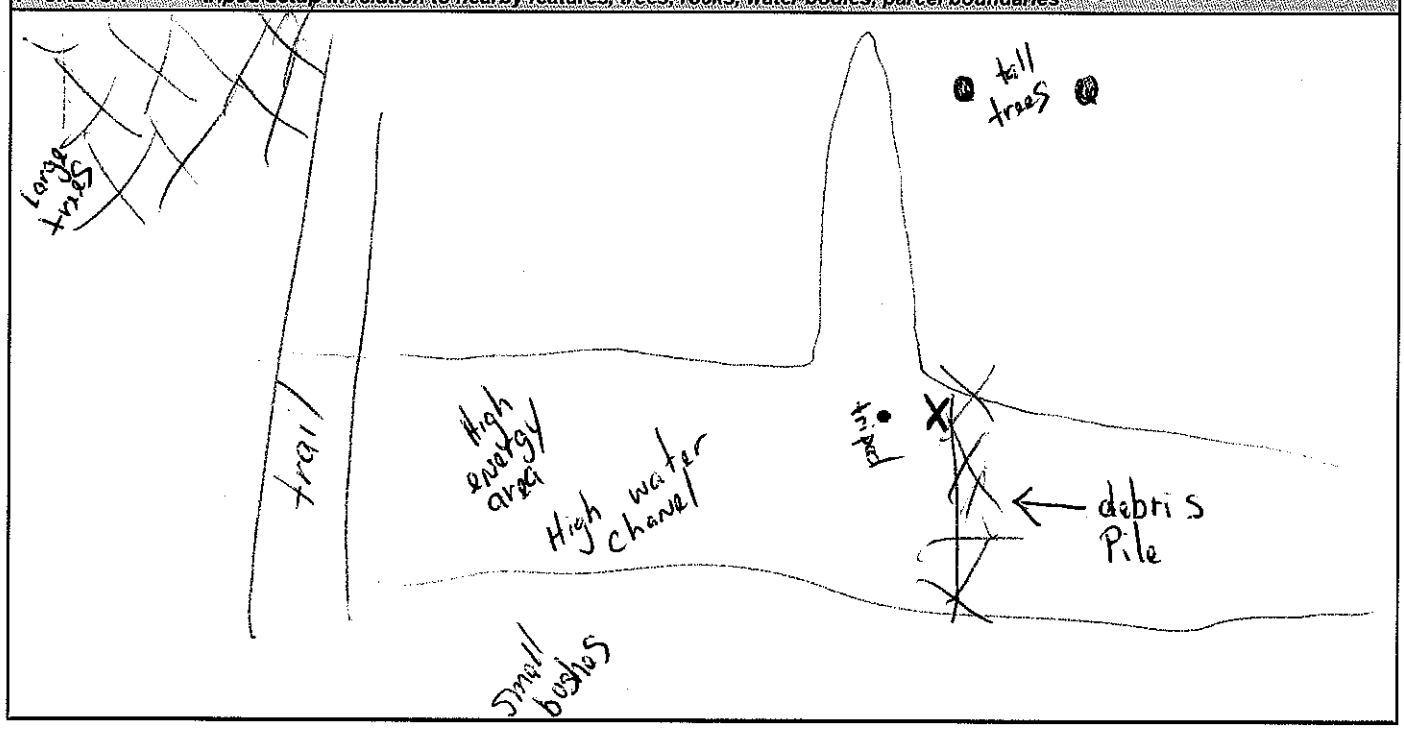
Photo Number: 101-037 Direction Photo Taken: 060°

Height above ground (inches): 4'

6 COMMENTS

Park @ end of Jellison Rd. Trail head at Private gate

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B43-IS-1	10-25-11	1655	Fall 2011
Division: B			
River Segment: 43 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schwaim		Kirk Schwaim

3 LOCATION

GPS: LATITUDE 45 deg 47'11.1047 min. LONGITUDE 108 deg 28'36.2115 min. Datum: _____

UNIT USED: Geo XH 3d

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE *write "COAT" or "STAIN" as appropriate*

leaves ____ bark ____ stems ____ willows X

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

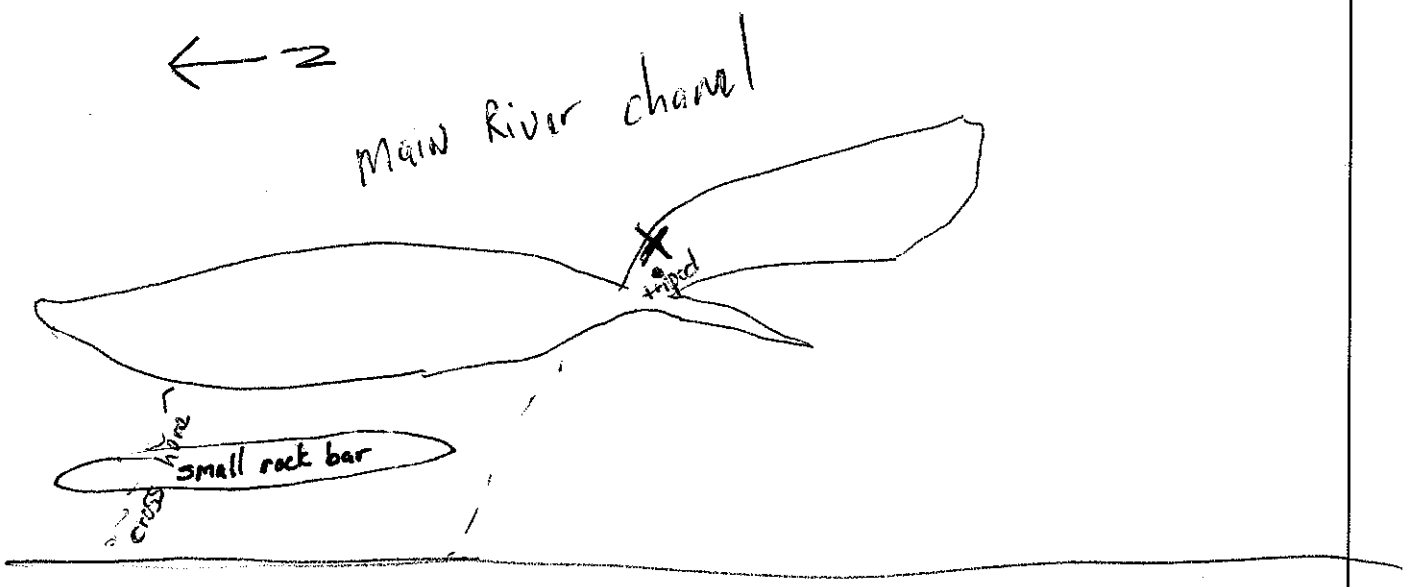
Photo Number: 101-039 Direction Photo Taken: 170°

Height above ground (inches): 4'

6 COMMENTS

oil stains on small willow,
Enter through Billings city park near power plant
Wear knee boots to access Island

7 SKETCH *tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries*



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B14-LB-1	10-26-11	1000	Fall 2011
Division: B			
River Segment: 14	Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ___ deg C

2 TEAM # Name	Company	Signature
Eric Lunin	Arcadis	
Kirk Schweim		

3 LOCATION

GPS: LATITUDE 45 deg. 43' 21.0367 min. LONGITUDE 108 deg. 35' 20.9999 min. Datum: _____

UNIT USED: GPS KH 34

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

Vegetation: Open Canopy X Closed Canopy ___ Rip-rap ___ Grassy field ___ Debris Pile ___ Other High Energy/Cobbles

4B OILED VEGETATION TYPE *write "COAT" or "STAIN" as appropriate*

leaves ___ bark X stems ___ willows ___

logs ___ grasses X Other: ___

5 PHOTOGRAPH

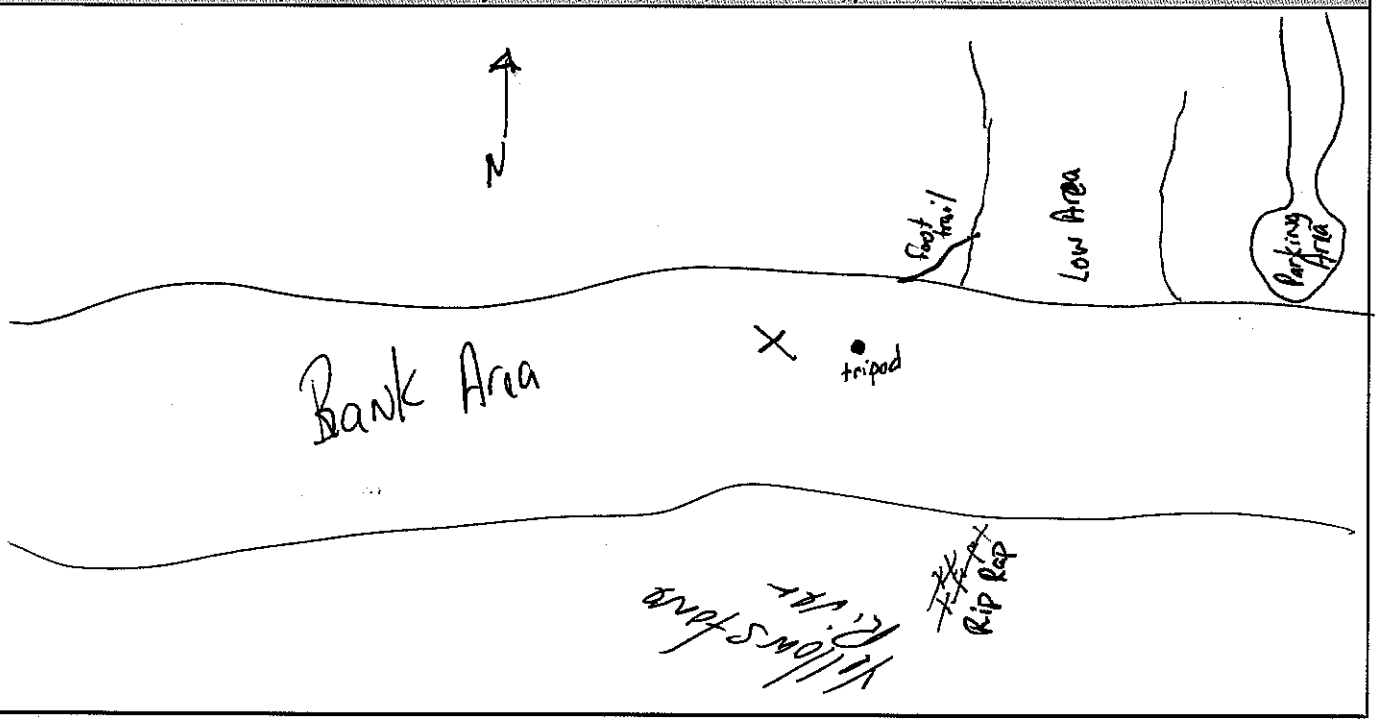
Photo Number: 101-041 Direction Photo Taken: 260°

Height above ground (inches): 4'

6 COMMENTS

frontage road to Goodman Rd., whitetail Ln.

7 SKETCH *tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries*



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B10-LB-1	10-26-11	1110	Fall 2011
Division: B			
River Segment: 10 (Left Bank / Right Bank / Island)	(Sun / Clouds / Fog / Rain / Snow / Windy / Calm)		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schwarm		

3 LOCATION

GPS: LATITUDE 45 deg. 42' 23.5343 min. LONGITUDE 108 deg 36' 08.1347 min. Datum: _____

UNIT USED: GPS XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other High Energy/cobbles

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows ____

logs X grasses ____ Other: ____

5 PHOTOGRAPH

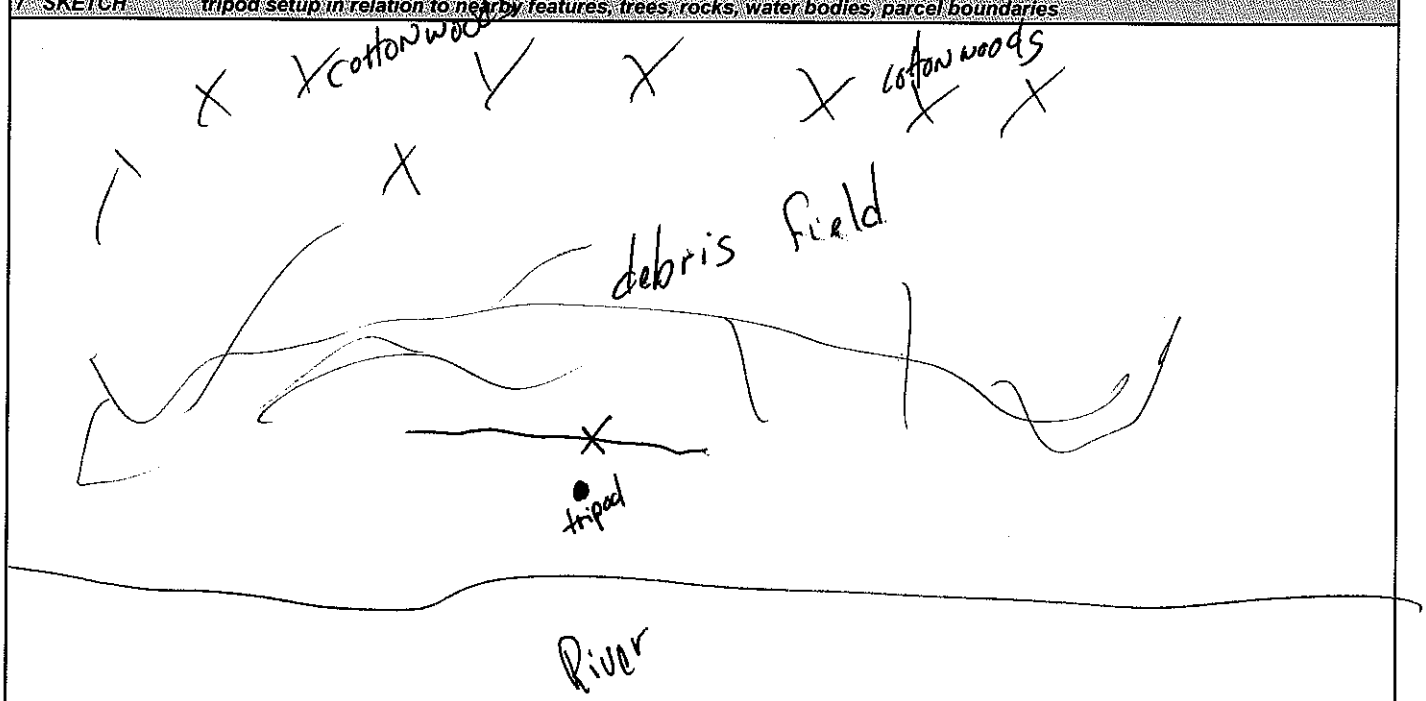
Photo Number: 101-043 | Direction Photo Taken: 335°

Height above ground (inches): ~~4'~~ 2'

6 COMMENTS

150' from river
12" dia log - 18" long stain approx 2' from ground level
Stain on log facing river
High energy area
End of Goodman Rd. foot bridge

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B08-LB-1	10-26-11	1130	Fall 2011
Division: B			
River Segment: 08	Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - ___ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schwein		Kirk Schwein

3 LOCATION

GPS: LATITUDE 45 deg. 42' 17.9532 min. LONGITUDE 108 deg 36' 28.9440 min. Datum: _____

UNIT USED: GARMIN 39

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

Vegetation: Open Canopy ____ Closed Canopy X Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stems ____ willows X

logs ____ grasses ____ Other: ____

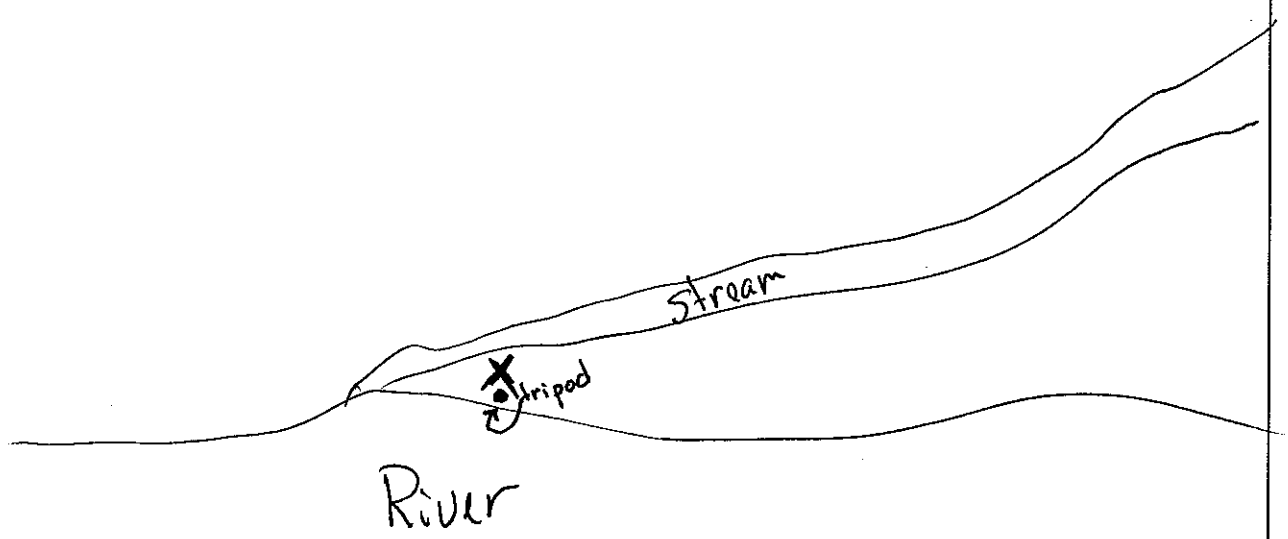
5 PHOTOGRAPH

Photo Number: 101-045	Direction Photo Taken:
Height above ground (inches): 2'	316°

6 COMMENTS

On willows <1" in Dia
20' from River bank
Small debris pile against willow trees
End of Goodman Rd. foot bridge

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B12-LB-1	10-26-11	1215	Fall 2011
Division: B			
River Segment: 12	Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	[signature]
	Kirk Schweir		Kirk Schweir

3 LOCATION

GPS: LATITUDE 45 deg. 42'51.3447 min. LONGITUDE 108 deg 34'54.6900 min. Datum: _____

UNIT USED: 600 XH 34

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

Vegetation: Open Canopy ____ Closed Canopy X Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stems ____ willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

Photo Number: 101-047	Direction Photo Taken:
Height above ground (inches): 41	252°

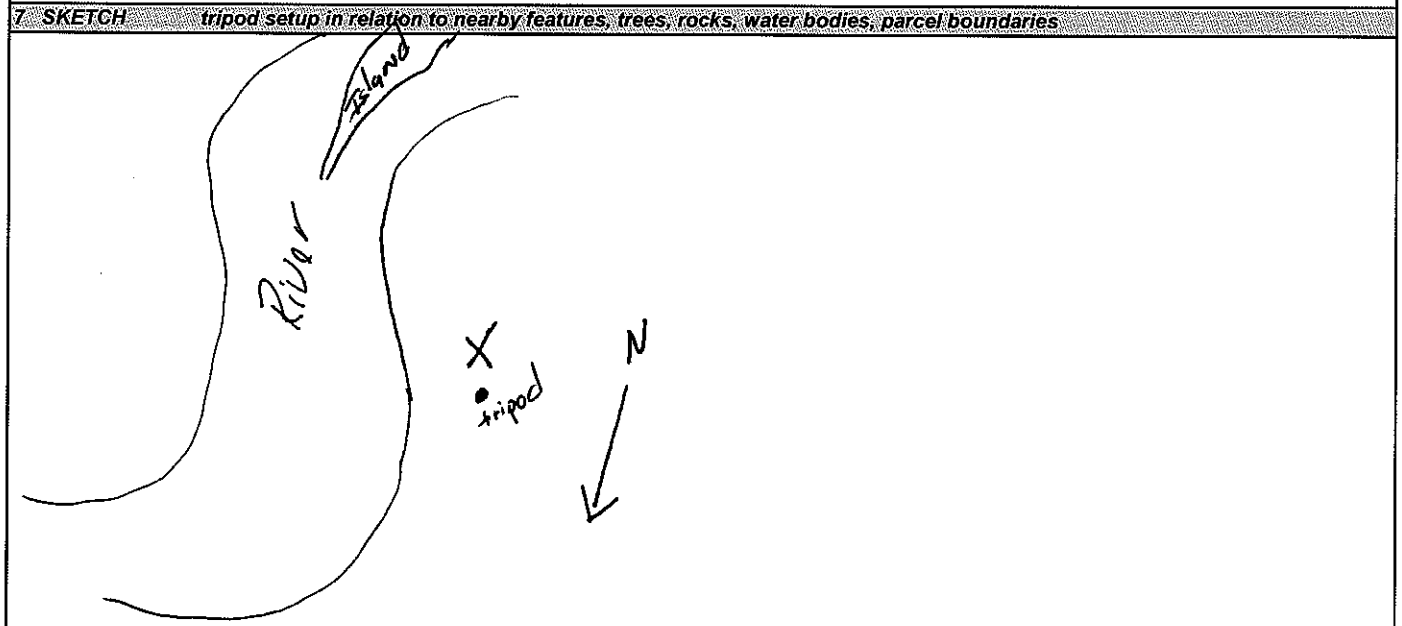
6 COMMENTS

30' from River

Large Cottonwoods

End of Goodman Rd. foot bridge

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-B04-LB-1	10-26-11	1345	Fall 2011
Division: B			
River Segment: 04	Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schwoim		

3 LOCATION

GPS: LATITUDE 45 deg. 41' 42.1647 min. LONGITUDE 108 deg. 38' 26.4302 min. Datum: _____

UNIT USED: Geo XH 34

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

Vegetation: Open Canopy ____ Closed Canopy X Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stems X willows ____

logs ____ grasses X Other: ____

5 PHOTOGRAPH

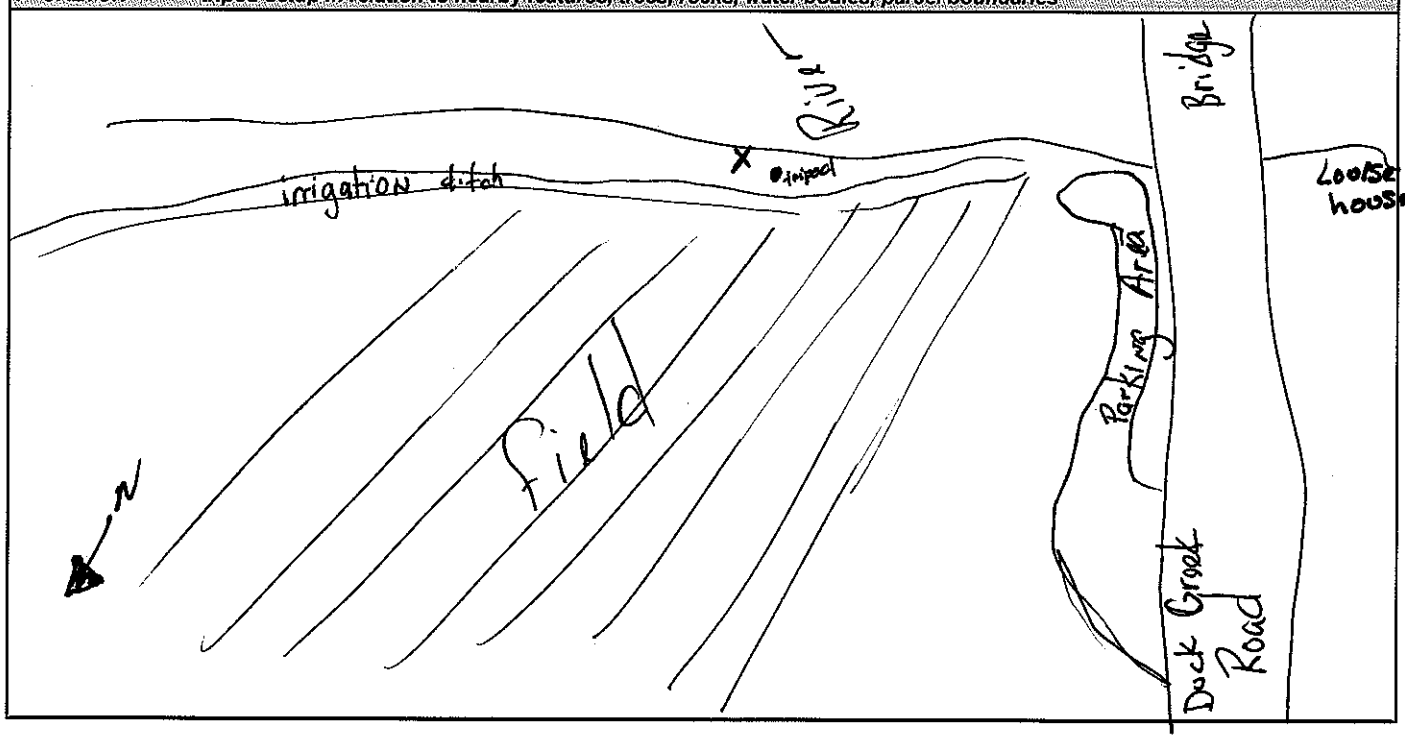
Photo Number: 101-049 Direction Photo Taken: 060°

Height above ground (inches): 4'

6 COMMENTS

Between field and River bank
x2 Ribbons placed on willow tree on edge of tree and field line
250' from entrance through fence

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM - C03-LB-1	10-26-11	1601	Fall 2011
Division: C			
River Segment: 03	Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - ___ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		Kirk Schweim

3 LOCATION

GPS: LATITUDE 45 deg. 48'47.6138 min. LONGITUDE 108 deg. 27'29.5222 min. Datum: _____

UNIT USED: GPS XH34

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

Vegetation: Open Canopy_____ Closed Canopy X Rip-rap_____ Grassy field_____ Debris Pile_____ Other_____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves X bark X stems X willows _____

logs_____ grasses _____ Other: _____

5 PHOTOGRAPH

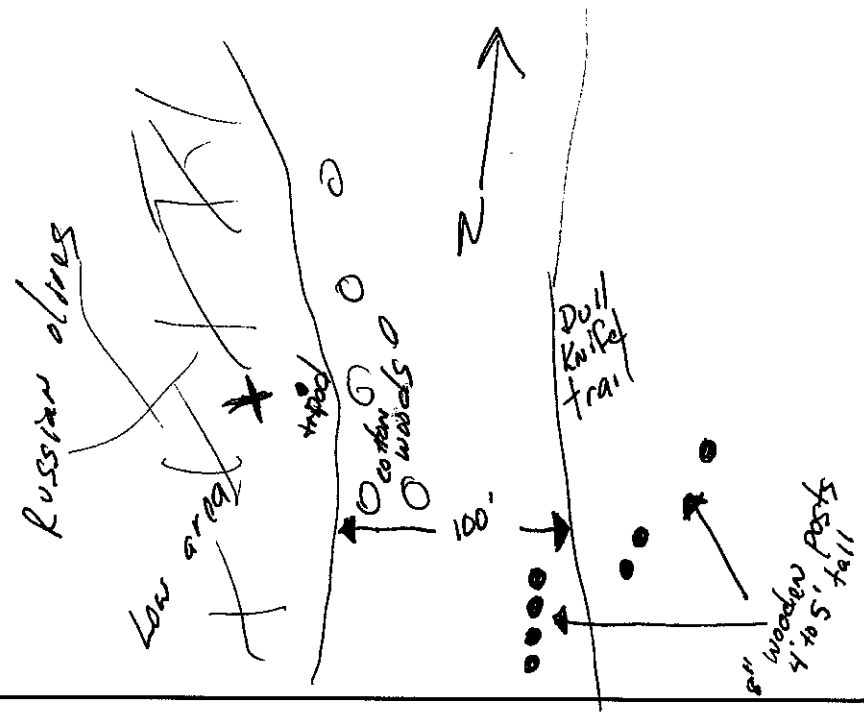
Photo Number: 101-051	Direction Photo Taken:
Height above ground (inches): 2'	300°

6 COMMENTS

Stain on Russian Olive trees

Two moons park 87/312 to Lake Elmo Ln.

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM - A28 - LB - 1 Division: A	10-27-11	0920	Fall 2011
River Segment: 28 (Left Bank / Right Bank / Island)	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		

3 LOCATION

GPS: LATITUDE 45 deg. 41' 28.6790 min. LONGITUDE 108 deg. 38' 53.1774 min. Datum: _____

UNIT USED: GEO XH34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves X bark ____ stems X willows ____

logs ____ grasses X Other: ____

5 PHOTOGRAPH

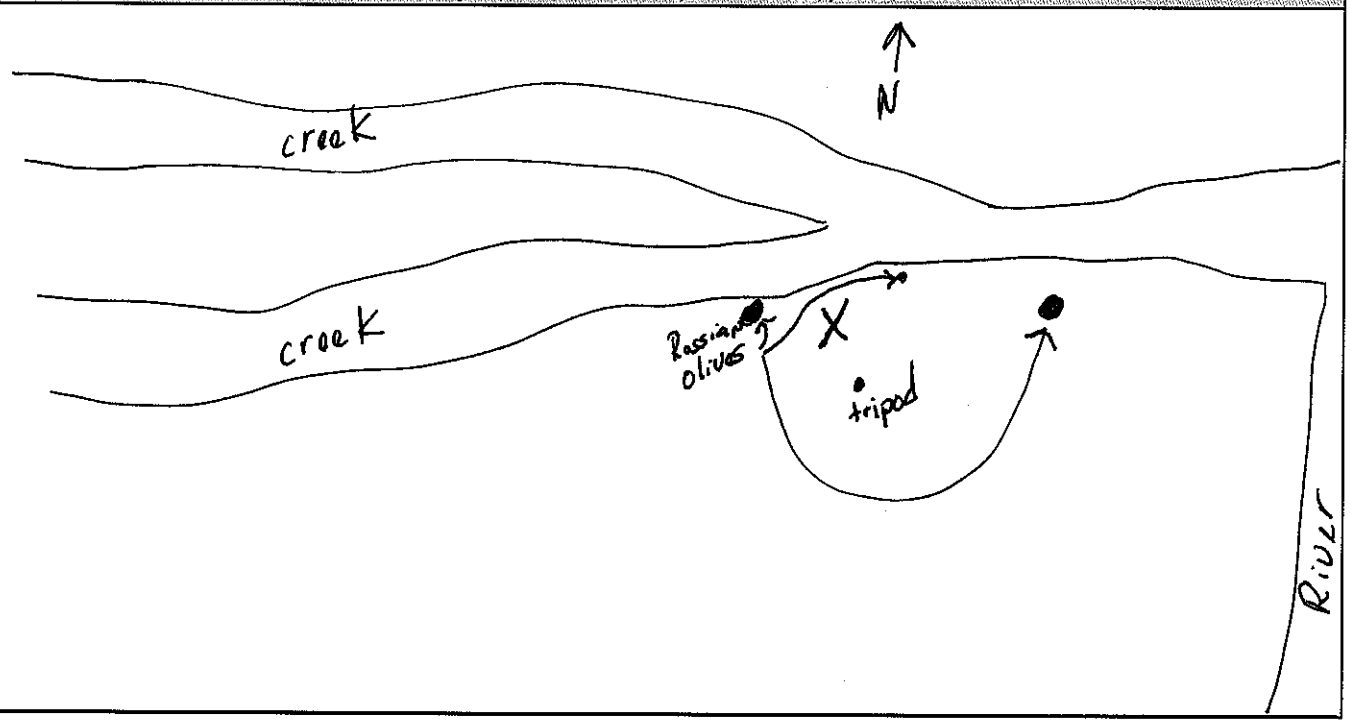
Photo Number: 101-0055 Direction Photo Taken: 316°

Height above ground (inches): 4'

6 COMMENTS

Near Russian Olives and large log
10' South of creek Bank
Accessed through Louise mckelvie's property - better to access at end of S 56th St. W

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM- A29-IS- 1	10-27-11	0935	Fall 2011
Division: A			
River Segment: 29	Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		Kirk Schw

3 LOCATION

GPS: LATITUDE 45 deg. 41' 32.7972 min. LONGITUDE 108 deg. 38' 33.9611 min. Datum: _____

UNIT USED: Geo XH 3d

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile X Other High Energy/cobbles

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows ____

logs X grasses ____ Other: ____

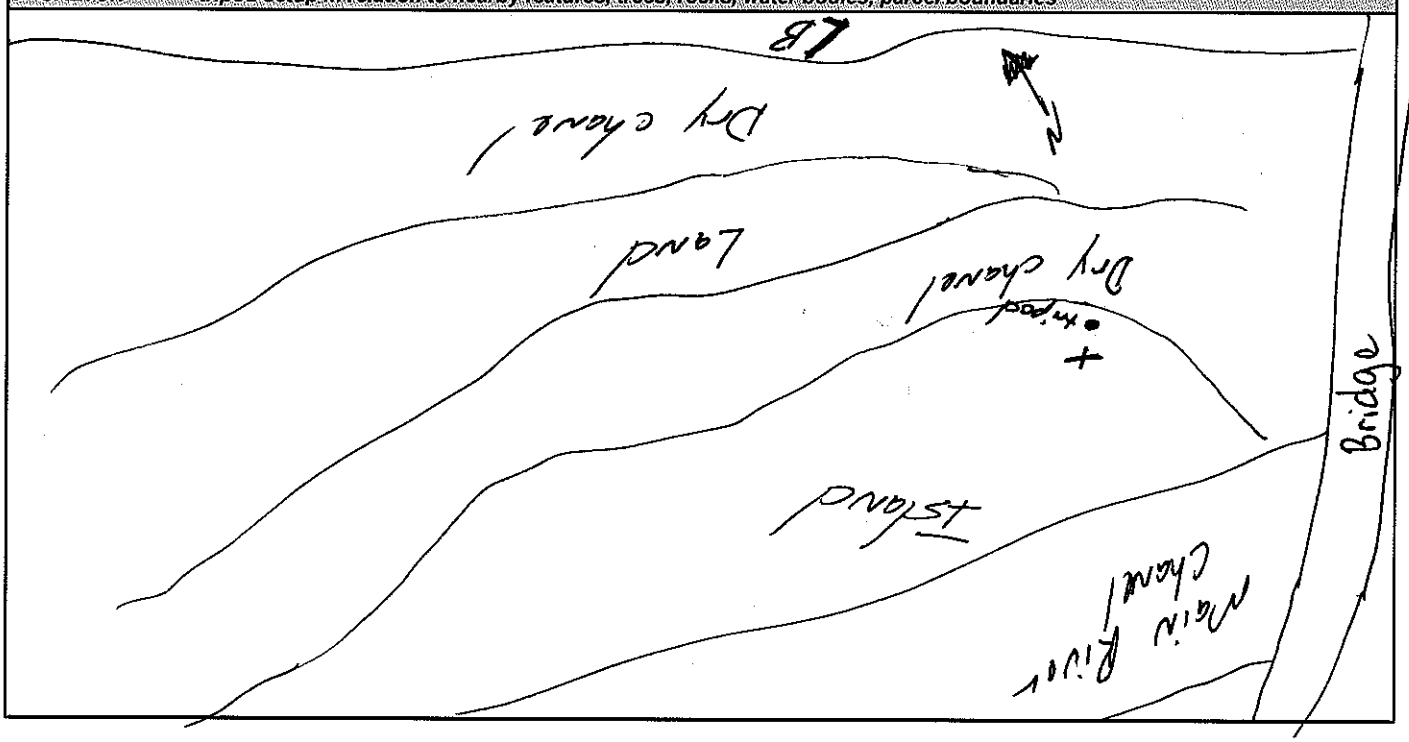
5 PHOTOGRAPH

Photo Number: 101-0057	Direction Photo Taken:
Height above ground (inches): 4'	167°

6 COMMENTS

Access through Louise Mekelvie - behind house.

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-A19-RB-1	10-27-11	1025	Fall 2011
Division: A			
River Segment: 19	Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ___ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schwein		Kirk Schwein

3 LOCATION

GPS: LATITUDE 45 deg. 39'54.3889 min. LONGITUDE 108 deg. 42' 07.9823 min. Datum: _____

UNIT USED: Geo XH 3.4

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stems ____ willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

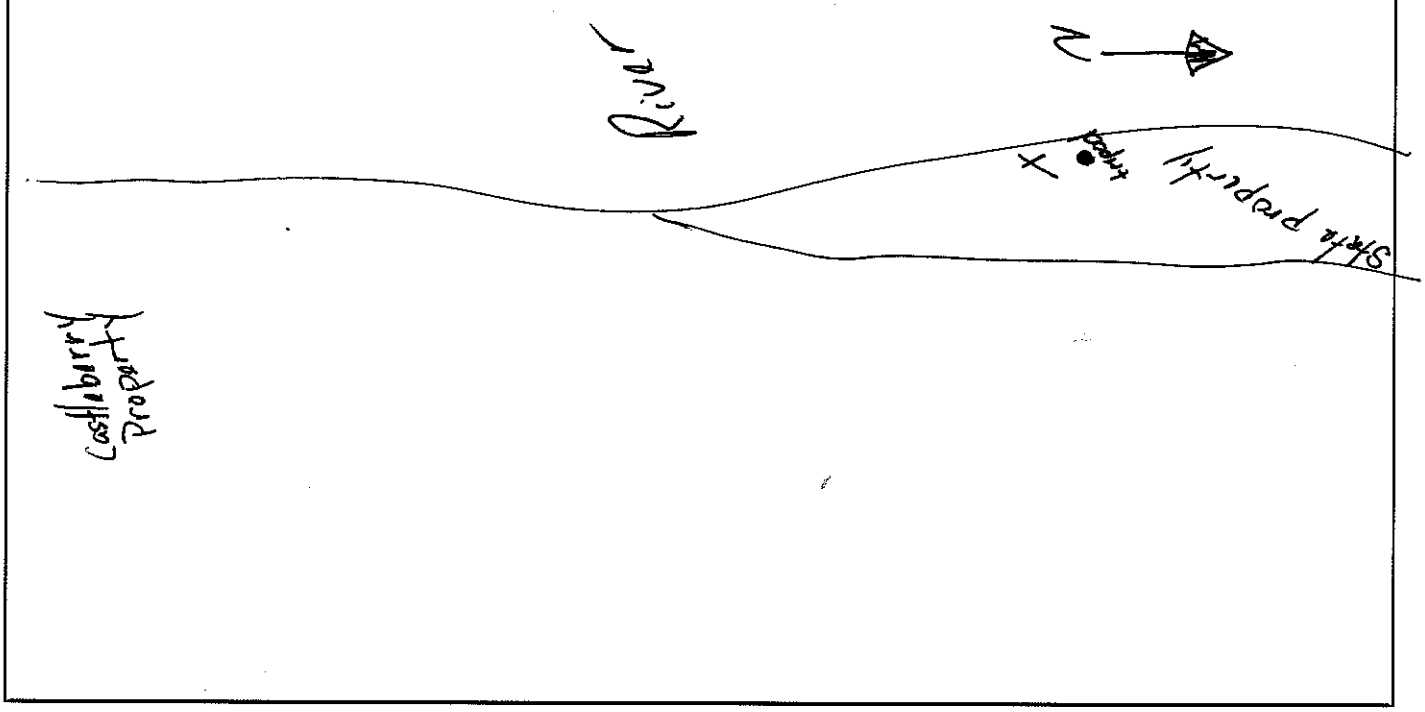
Photo Number: 101-0059 Direction Photo Taken: 180°

Height above ground (inches): 4'

6 COMMENTS

Near debris pile
Thiel Rd., North river rd.
Castleberry (property owner) light blue house

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-A07-RB-1	10-27-11	1055	Fall 2011
Division: A			
River Segment: 07 Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm			Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweir		Kirk Schweir

3 LOCATION

GPS: LATITUDE 45 deg. 38' 58.7479 min. LONGITUDE 108 deg. 43' 23.9378 min. Datum: _____

UNIT USED: 600 XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field X Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows ____

logs ____ grasses X Other: ____

5 PHOTOGRAPH

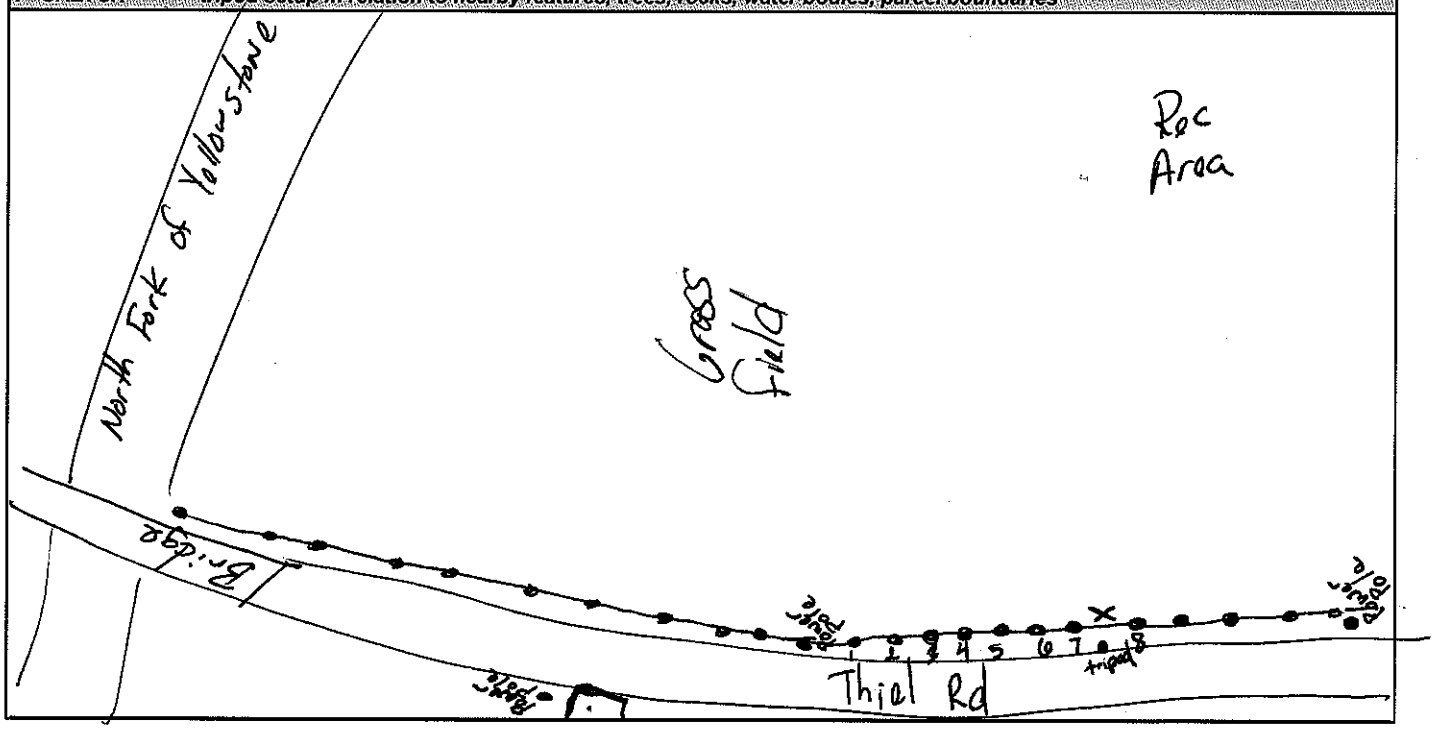
Photo Number: 101-0062 Direction Photo Taken: 190°

Height above ground (inches): 4'

6 COMMENTS

Just inside fence
between fence post 7 and 8
Thiel Rd. BLM land

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-A02-RB-1 Division: A	10-27-11	1305	Fall 2011
River Segment: 02 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM # Name	Company	Signature
Eric Lunin	Arcadis	
Kirk Schweim		Kirk Schweim

3 LOCATION

GPS: LATITUDE 45 deg. 39' 17.2123 min. LONGITUDE 108 deg. 45' 13.7049 min. Datum: _____

UNIT USED: Geo XH 3H

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

Vegetation: Open Canopy ____ Closed Canopy X Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stems ____ willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

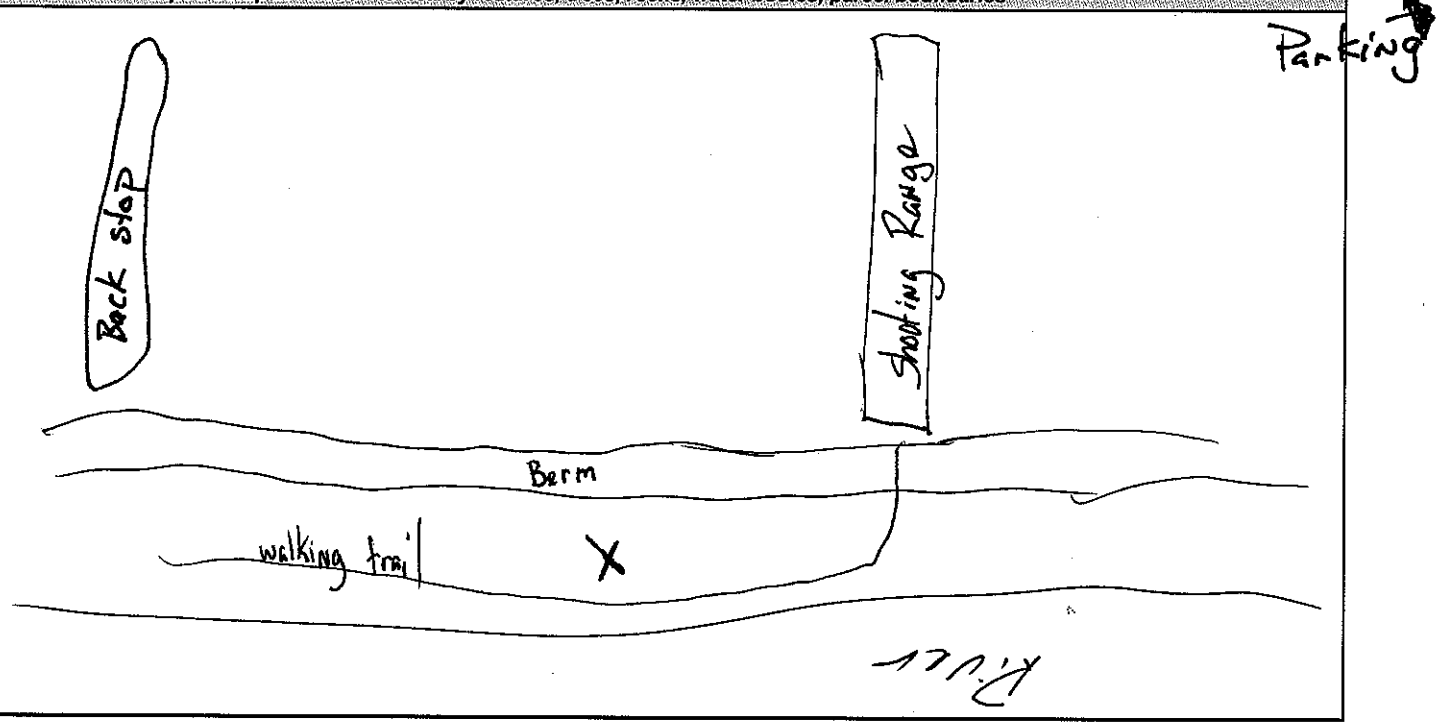
Photo Number: 101-0065 Direction Photo Taken: 162°

Height above ground (inches): 4'

6 COMMENTS

15' south of trail
City of Laurel park

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-A14-RB-1	10-27-11	1445	Fall 2011
Division: A			
River Segment: 19 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		Kirk Schweim

3 LOCATION

GPS: LATITUDE 45 deg. 39' 24.3668 min. LONGITUDE 108 deg. 42' 20.6825 min. Datum: _____

UNIT USED: 600 A# 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows ____

logs ____ grasses X Other: ____

5 PHOTOGRAPH

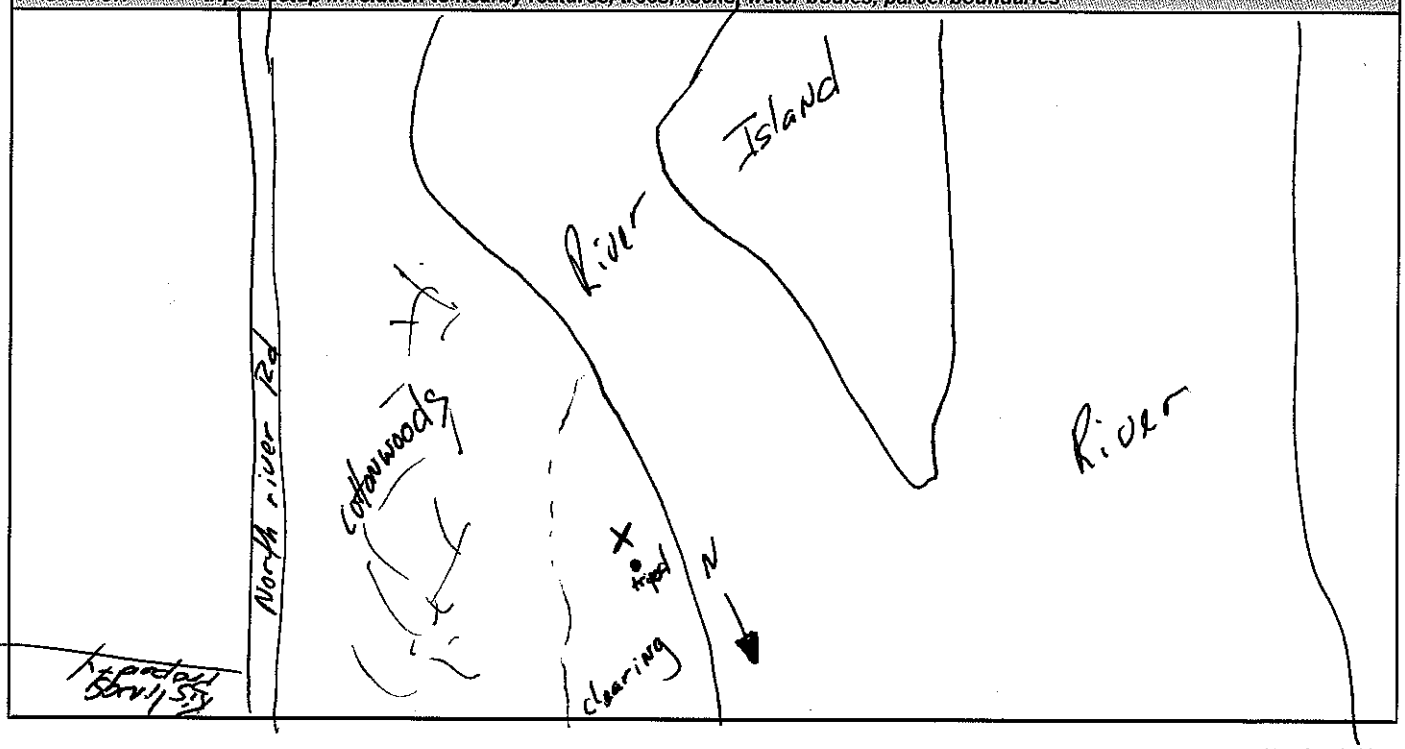
Photo Number: 101-0016	Direction Photo Taken:
Height above ground (inches): 4'	140°

6 COMMENTS

15' from river bank

Thiel Road, North river rd.

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



Ver. 31 July 2011

NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-A24-LB-1	10-27-11	1535	Fall 2011
Division: A			
River Segment: 24	Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schwein		Kirk Schwein

3 LOCATION

GPS: LATITUDE 45 deg. 40' 37.1304 min. LONGITUDE 108 deg. 40' 17.5063 min. Datum: _____

UNIT USED: Geo XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile X Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows ____

logs X grasses ____ Other: ____

5 PHOTOGRAPH

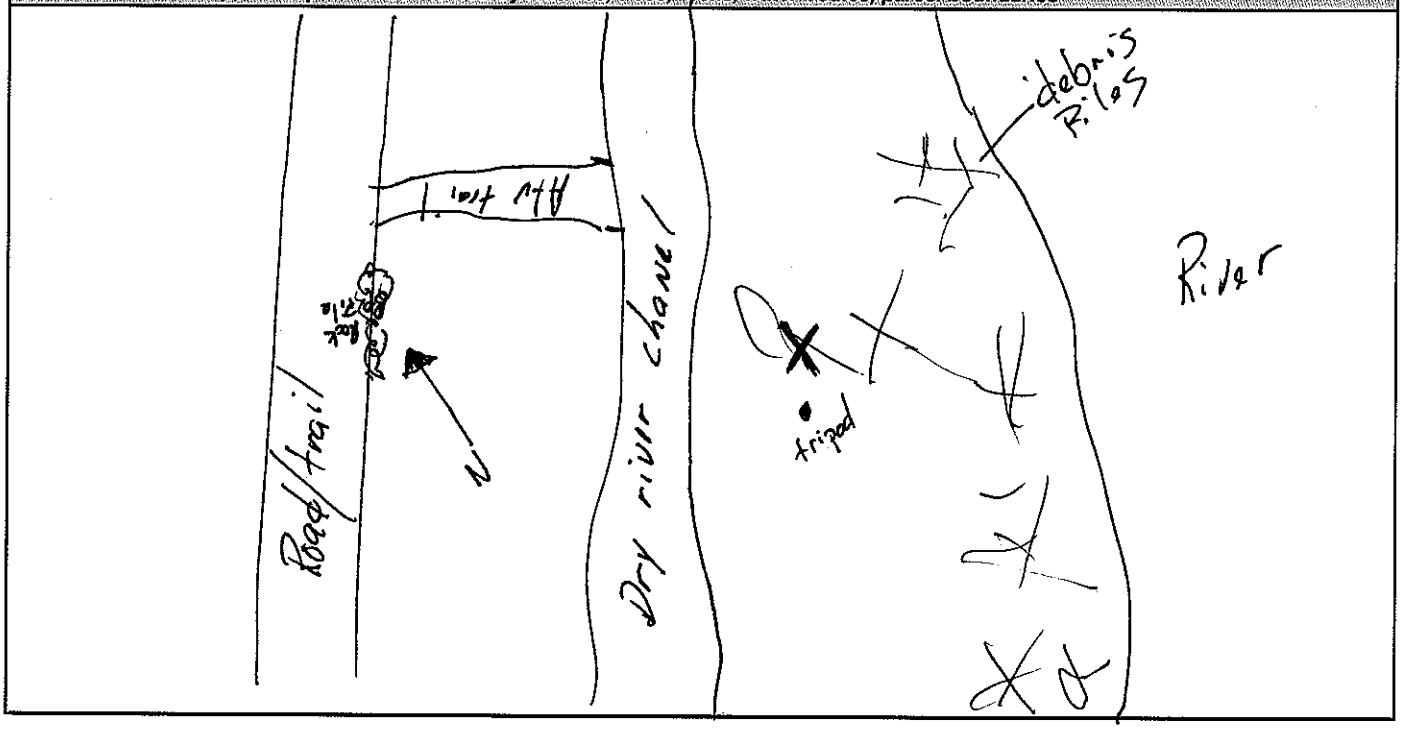
Photo Number: 101-0068 Direction Photo Taken: 070°

Height above ground (inches): 4'

6 COMMENTS

Christensen farm

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-A07-LB-1 Division: A	10-28-11	0905	Fall 2011
River Segment: 07	Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		

3 LOCATION

GPS: LATITUDE 45 deg. 39' 03.5060 min. LONGITUDE 108 deg. 43' 46.1501 min. Datum: _____

UNIT USED: Geo XH 3H

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stems ____ willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

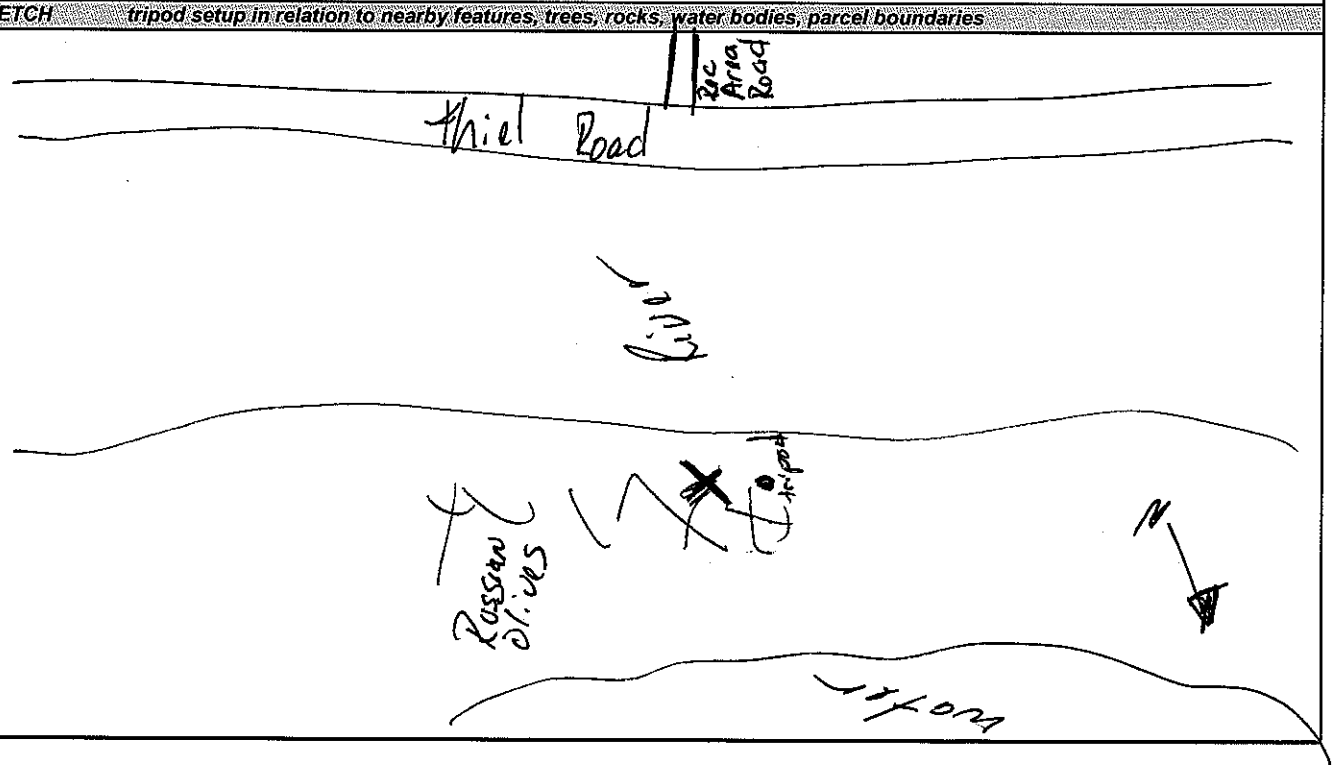
Photo Number: 101-0063 Direction Photo Taken: 065°

Height above ground (inches): 4'

6 COMMENTS

Russian Olive tree 10' from River bank
Directly across river from Rec. area access road
Boat ops
Near Thiel Rd. boat ramp

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-A12-RB-1	10-28-11	0920	Fall 2011
Division: A			
River Segment: 12 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ___ deg C

2 TEAM # Name	Company	Signature
Eric Lunin	Arcadis	
Kirk Schuller		Kirk Schuller

3 LOCATION

GPS: LATITUDE 45 deg. 39'02.9457 min. LONGITUDE 108 deg. 42'56.4011 min. Datum: _____

UNIT USED: Geo XH 3.4

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field X Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows X

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

Photo Number: 101-0075 Direction Photo Taken: 280°

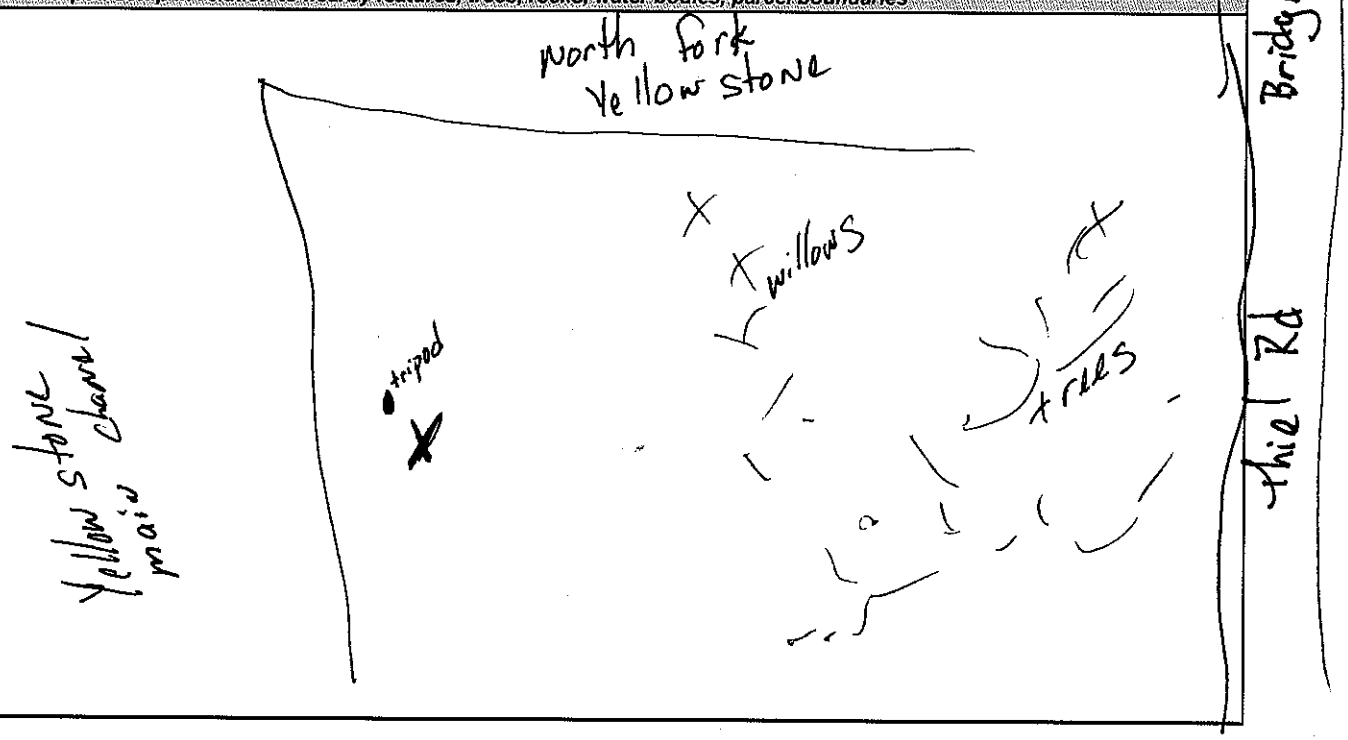
Height above ground (inches): 4'

6 COMMENTS

small willow approx 3' tall

Boat ops - couldn't access by land no access

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-A13-LB-1 Division: A	10-28-11	0950	Fall 2011
River Segment: 13	Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Wind / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schwein		

3 LOCATION

GPS: LATITUDE 45 deg. 39' 06.8507 min. LONGITUDE 108 deg. 42' 38.4459 min. Datum: _____

UNIT USED: Geo XH 34

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

Vegetation: Open Canopy ____ Closed Canopy X Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows ____

logs X grasses ____ Other: ____

5 PHOTOGRAPH

Photo Number: 101-0077	Direction Photo Taken:
Height above ground (inches): 4'	351°

6 COMMENTS

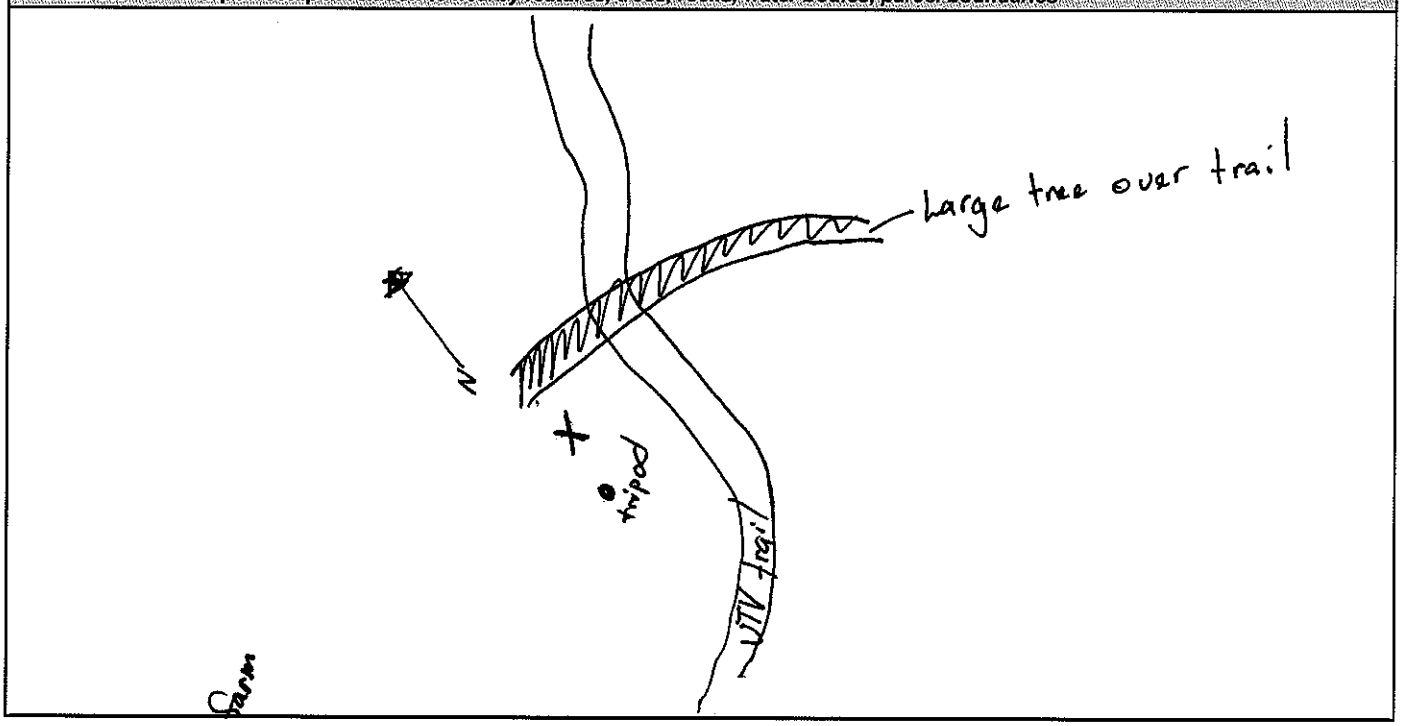
10' feet north of trail

stain on dead limb near cottonwoods

Boat ops

Island

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-A14-LB-1 Division: A	10-28-11	1010	Fall 2011
River Segment: 14 (Left Bank / Right Bank / Island)	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM # Name	Company	Signature
Eric Lunin	Arcadis	
Kirk Schwein		Kirk Schwein

3 LOCATION

GPS: LATITUDE 45 deg. 39'21.6542 min. LONGITUDE 108 deg. 42'29.5895 min. Datum: _____

UNIT USED: GPS XH 34

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

Vegetation: Open Canopy ____ Closed Canopy X Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stems ____ willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

Photo Number: 101-0079 Direction Photo Taken: 165° 195°

Height above ground (inches): 4'

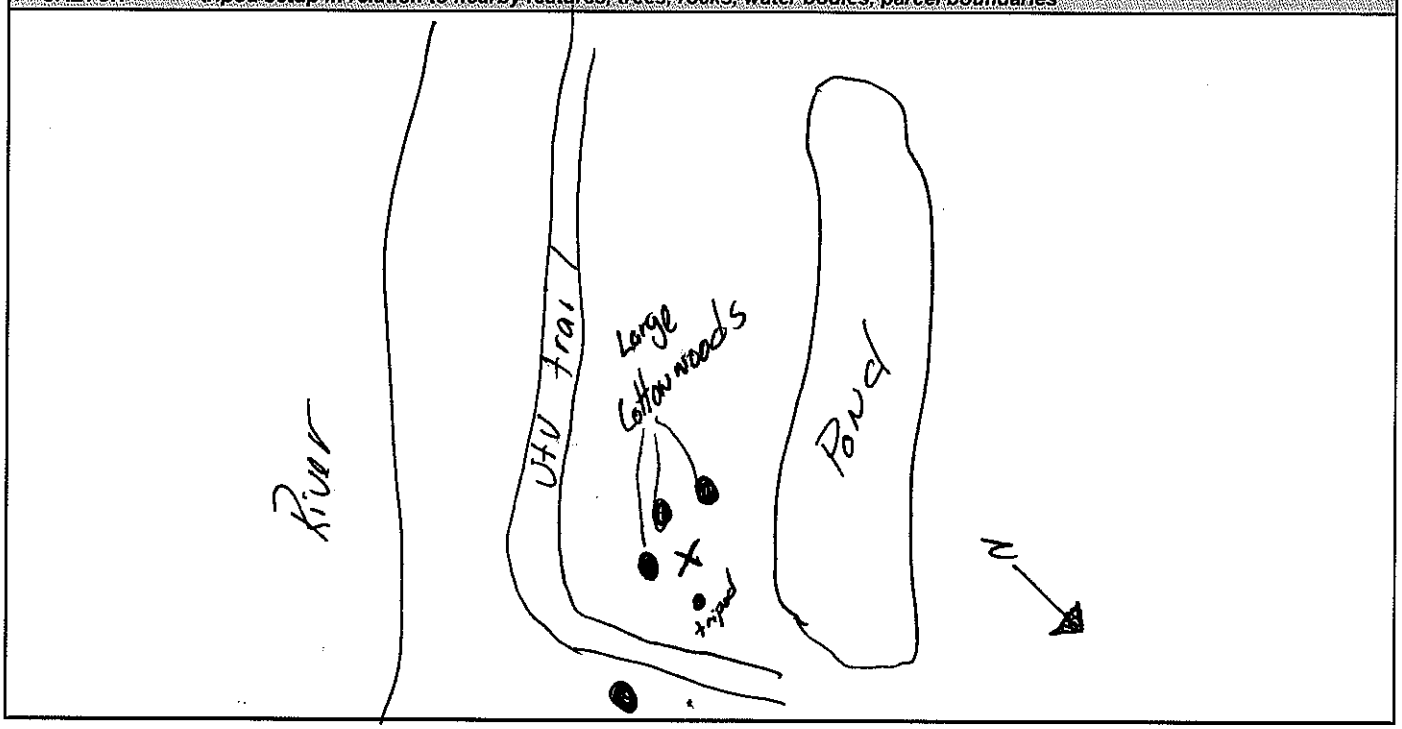
6 COMMENTS

light stains on large Cottonwoods

Boat ops

Island

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAm-A22-IS-1	10-28-11	1355	Fall 2011
Division: A			
River Segment: 22	Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		Kirk Schweim

3 LOCATION

GPS: LATITUDE 45 deg. 40'19.1492 min. LONGITUDE 108 deg. 40' 48.7990 min. Datum: _____

UNIT USED: Geo XT 34

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

Vegetation: Open Canopy X Closed Canopy _____ Rip-rap _____ Grassy field _____ Debris Pile _____ Other _____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves _____ bark X stems _____ willows _____

logs _____ grasses _____ Other: _____

5 PHOTOGRAPH

Photo Number: 101-0081 Direction Photo Taken: 285°

Height above ground (inches): 4'

6 COMMENTS

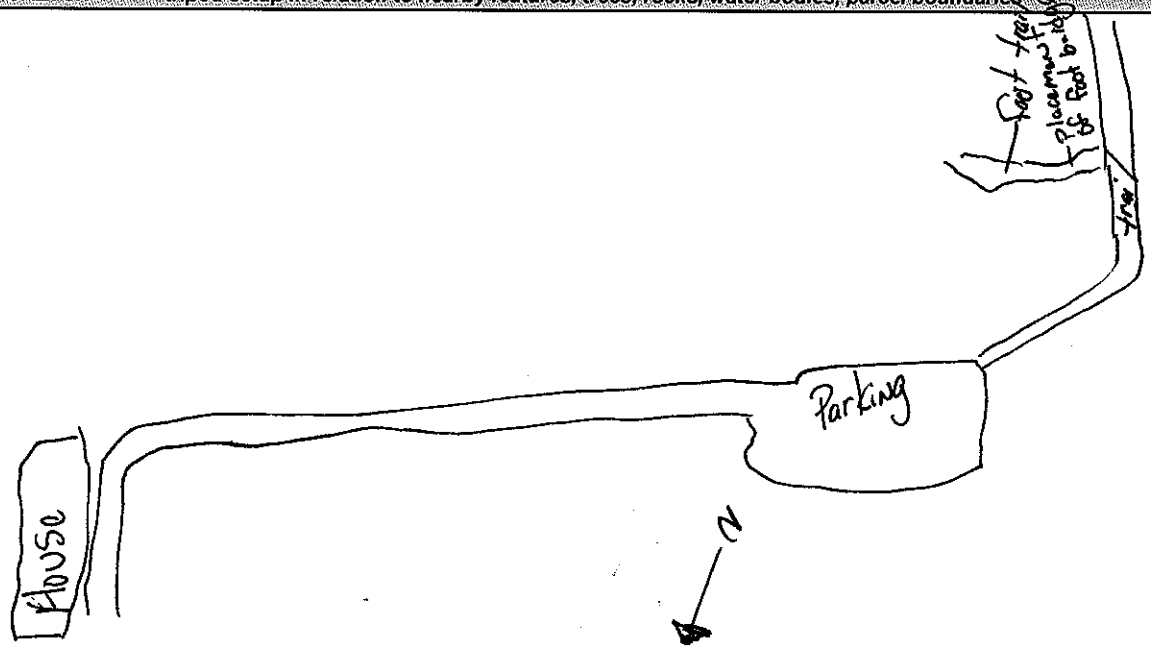
Oil stains on small cottonwoods

High energy area

10' off of trail used during clean up activities

Ruth A Terry - Cancer dr.

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-A26-IS-T	10-28-11	1430	Fall 2011
Division: A			
River Segment: 26 Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm			Air Temp + / - ___ deg C

2 TEAM # Name	Company	Signature
Eric Lunin	Arcadis	
Kirk Schwerm		Kirk Schwerm

3 LOCATION

GPS: LATITUDE 45 deg. 41' 07.1405 min. LONGITUDE 108 deg. 39' 59.2134 min. Datum: _____

UNIT USED: GPS XH 34

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

Vegetation: Open Canopy X Closed Canopy ___ Rip-rap ___ Grassy field ___ Debris Pile ___ Other ___

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ___ bark ___ stems ___ willows X

logs ___ grasses ___ Other: ___

5 PHOTOGRAPH

Photo Number: 101-0084 Direction Photo Taken: 178°

Height above ground (inches): 4'

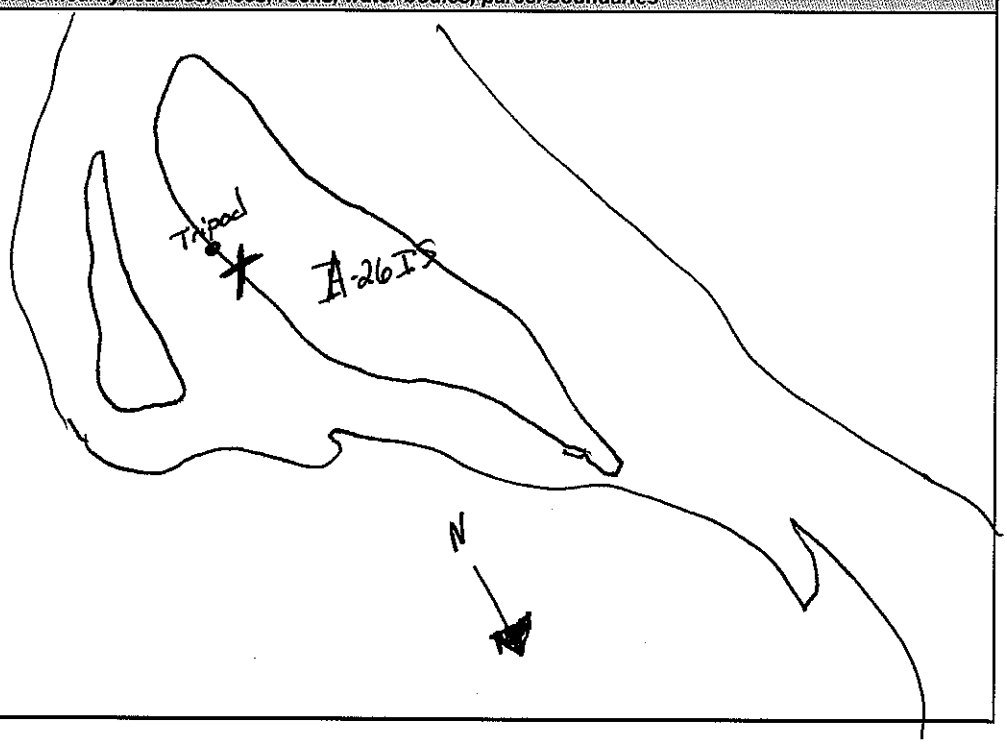
6 COMMENTS

Small willow trees

Access through Christenson farm

May be boat ops if water is higher than presently

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C09-LB-1	10-31-11	0910	Fall 2011
Division: C			
River Segment: 09	Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lupin	Arcadis	
	Kirk Schwlim		Kirk Schwlim

3 LOCATION

GPS: LATITUDE 45 deg. 50' 03.3200 min. LONGITUDE 108 deg. 25' 31.4038 min. Datum: _____

UNIT USED: Garmin XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows ____

logs ____ grasses X Other: ____

5 PHOTOGRAPH

Photo Number: 101-0090 Direction Photo Taken: 065°

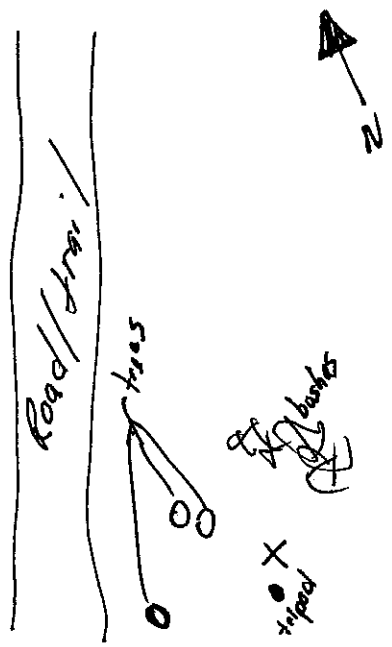
Height above ground (inches): 4'

6 COMMENTS

30' North of road - 20' from river bank

Tom Koelzer
matt Koelzer
end of Barrett rd.

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C08-LB-1	10-31-11	1000	Fall 2011
Division: C			
River Segment: 08	Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - ____ deg C

2 TEAM # Name	Company	Signature
Eric Lunin	Arcadis	
Kirk Schwein		Kirk Schwein

3 LOCATION

GPS: LATITUDE 45 deg. 49' 32.0797 min. LONGITUDE 108 deg. 25' 36.4009 min. Datum: _____

UNIT USED: Geo XH 3d

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stems X willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

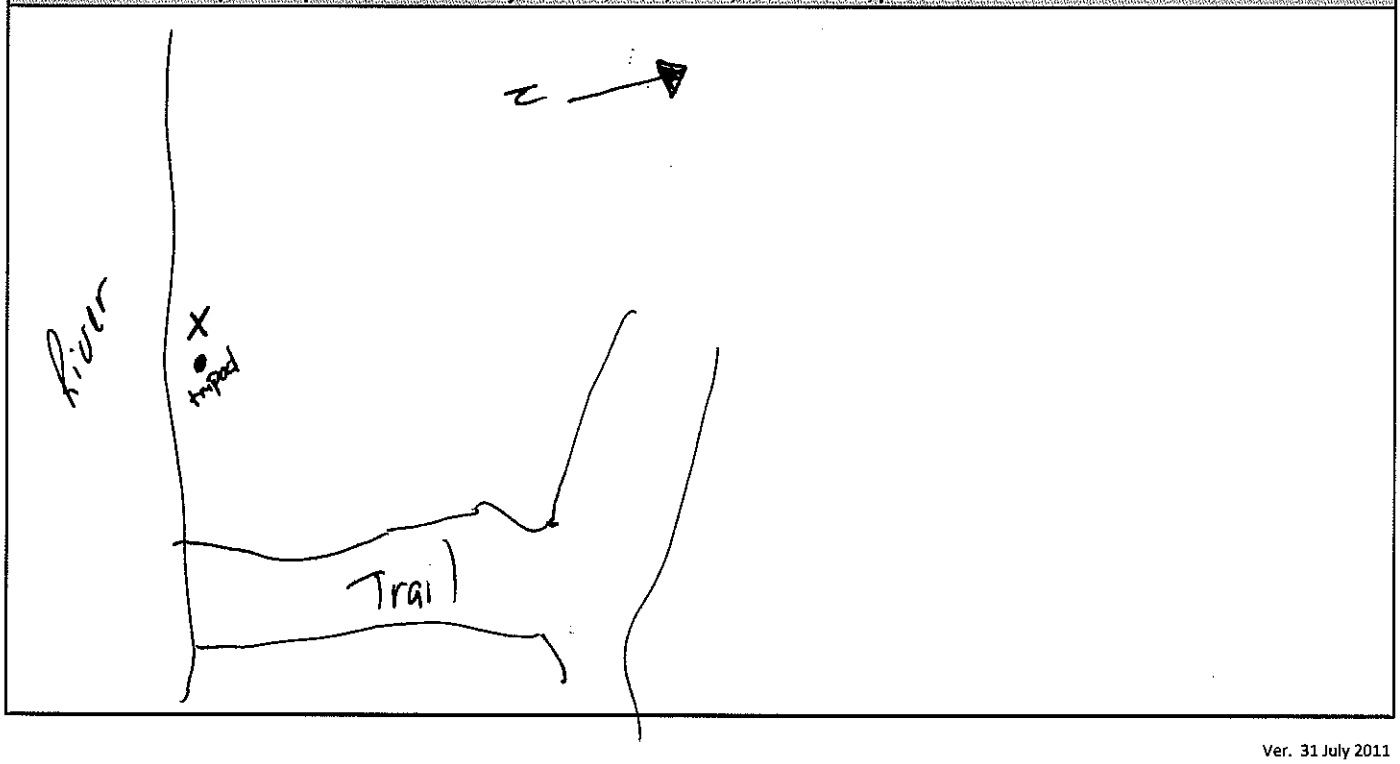
Photo Number: 101-0092 Direction Photo Taken: 270°

Height above ground (inches): 4'

6 COMMENTS

Stains on Russian Olive tree
30' from water
40' from trail
Accessed from C09

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C23-RB-1	10-31-11	1100	Fall 2011
Division: C			
River Segment: 23	Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - ___ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	[signature]
	Kirk Schweir		Kirk Schweir

3 LOCATION

GPS: LATITUDE 45 deg. 53'58.8620 min. LONGITUDE 108 deg. 18'42.5828 min. Datum: _____

UNIT USED: Geo XH34

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

Vegetation: Open Canopy X Closed Canopy ___ Rip-rap ___ Grassy field ___ Debris Pile ___ Other ___

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves X bark X stems X willows ___

logs ___ grasses ___ Other: ___

5 PHOTOGRAPH

Photo Number: 101-0094 Direction Photo Taken: 242°

Height above ground (inches): 4

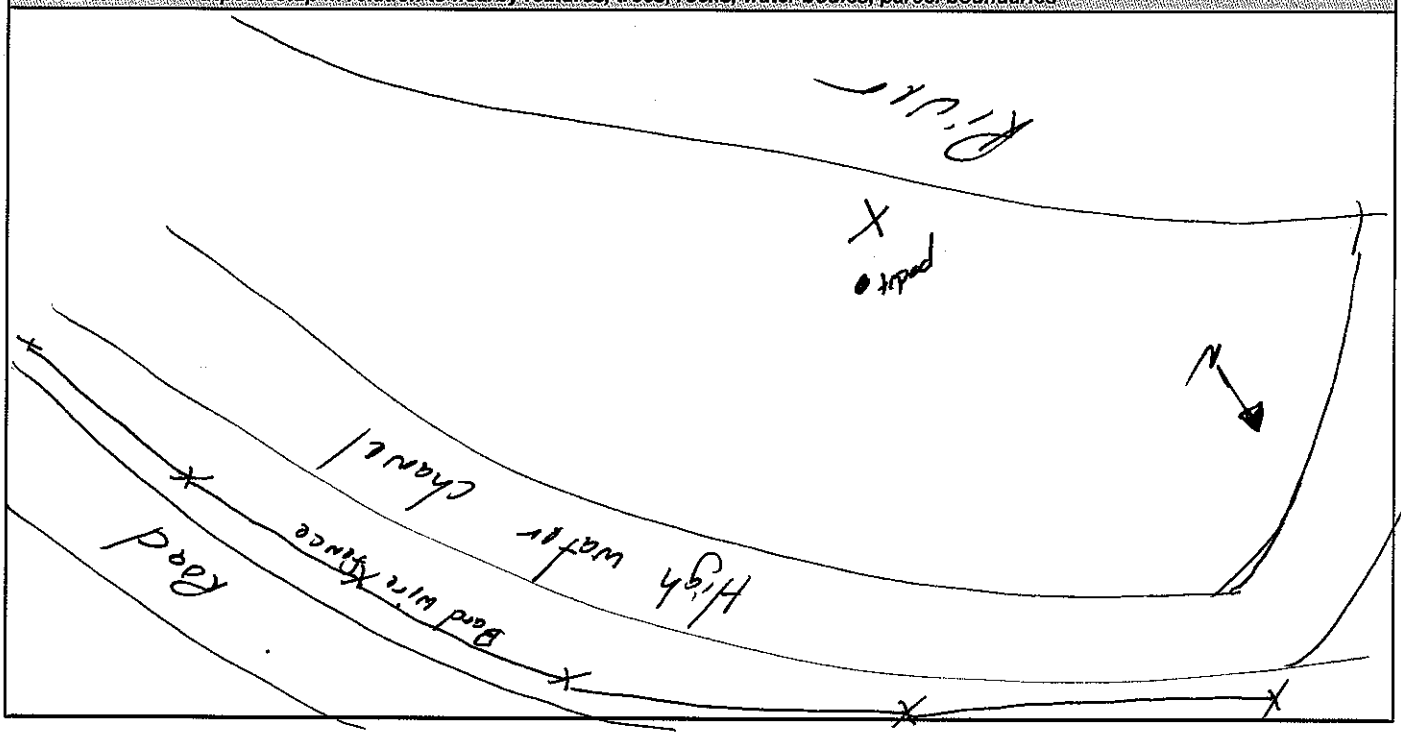
6 COMMENTS

14" above stake - stains observed

Huntley - Nahmis Rd

North of Cowboy Restaurant

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



Parkhere

Ver. 31 July 2011

NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C34-RB-1	10-31-11	1145	Fall 2011
Division: C			
River Segment: 34 Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm			Air Temp + / - ____ deg C

2 TEAM # Name	Company	Signature
Eric Lunin	Arcadis	
Kirk Schwlin		Kirk Schwlin

3 LOCATION

GPS: LATITUDE 45 deg. 57' 59.6879" min. LONGITUDE 108 deg. 15' 07.8176" min. Datum: _____

UNIT USED: Geo XH 3.4

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field X Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows ____

logs ____ grasses X Other: ____

5 PHOTOGRAPH

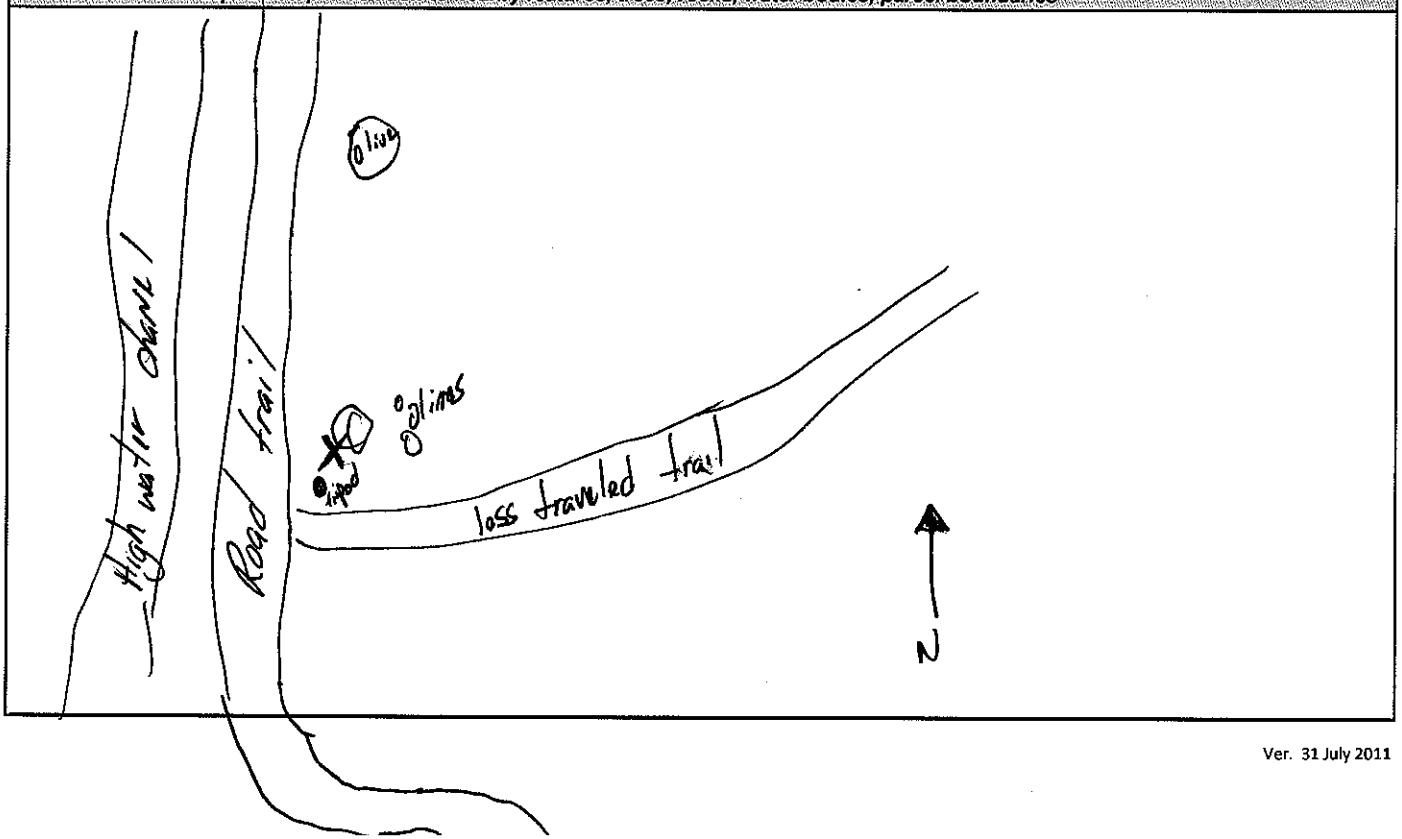
Photo Number: 101-0096 Direction Photo Taken: 360/0

Height above ground (inches): 4'

6 COMMENTS

10' from Road/Trail
Near Russian olive trees
edge of open grass field
stay right on trails after first left in woods
N 7th rd all the way to end - fence is locked

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C36-RB-1	10-31-11	1240	Fall 2011
Division: C			
River Segment: 36 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		Kirk Schweim

3 LOCATION

GPS: LATITUDE 45 deg 58' 26.3688 min. LONGITUDE 108 deg. 14' 13.7136 min. Datum: _____

UNIT USED: 200 XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stems X willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

Photo Number: 101-0099 Direction Photo Taken: 030°

Height above ground (inches): 4'

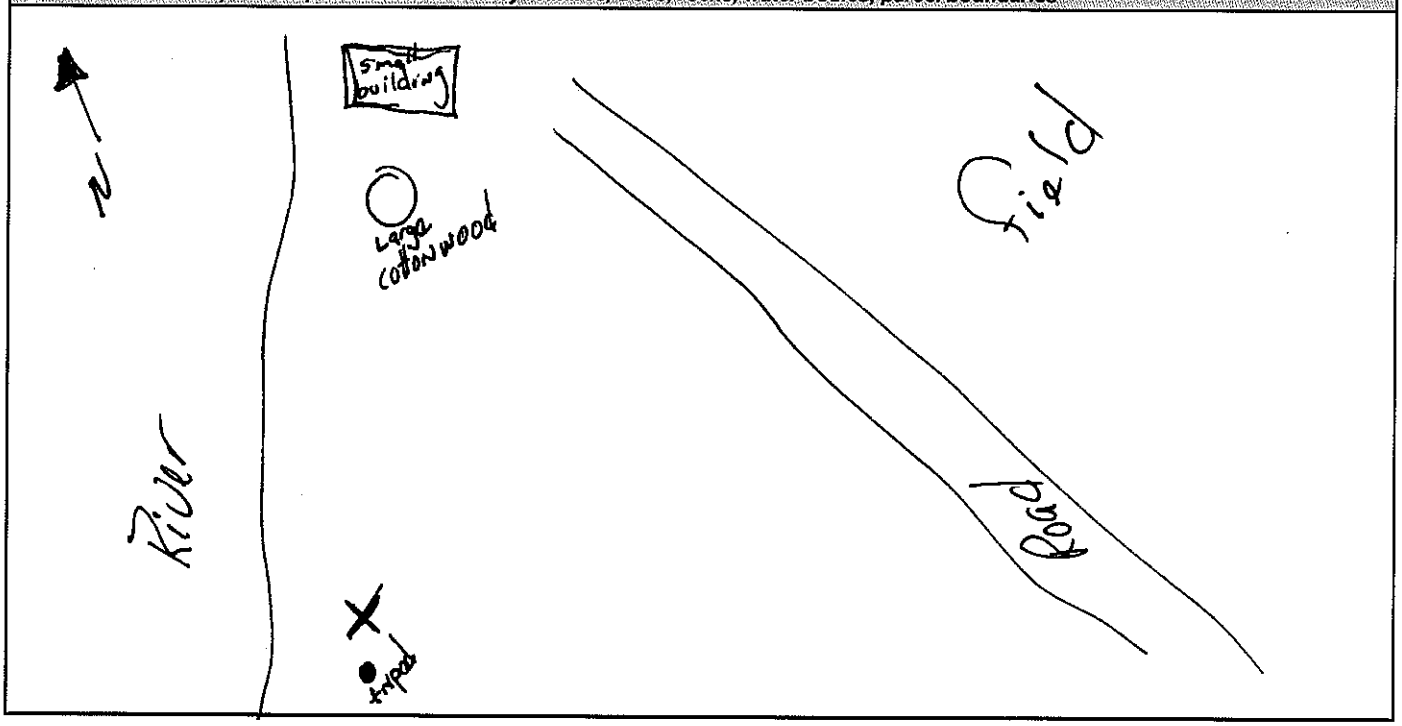
6 COMMENTS

UP stream approx 500' from small structure

20' from river bank

End of N 8th rd.

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C50-RB-1	10-31-11	1450	Fall 2011
Division: C			
River Segment: 50	Left Bank / Right Bank / Island / Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ___ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	[signature]
	Kirk Schweim		Kirk Schweim

3 LOCATION

GPS: LATITUDE 45 deg 59'41.8224 min. LONGITUDE 108 deg 02'44.8949 min. Datum: _____

UNIT USED: 600 XH 34

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

Vegetation: Open Canopy X Closed Canopy ___ Rip-rap ___ Grassy field ___ Debris Pile X Other ___

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves X bark ___ stems ___ willows ___

logs ___ grasses X Other: ___

5 PHOTOGRAPH

Photo Number: 101-0101	Direction Photo Taken:
Height above ground (inches): 4'	328°

6 COMMENTS

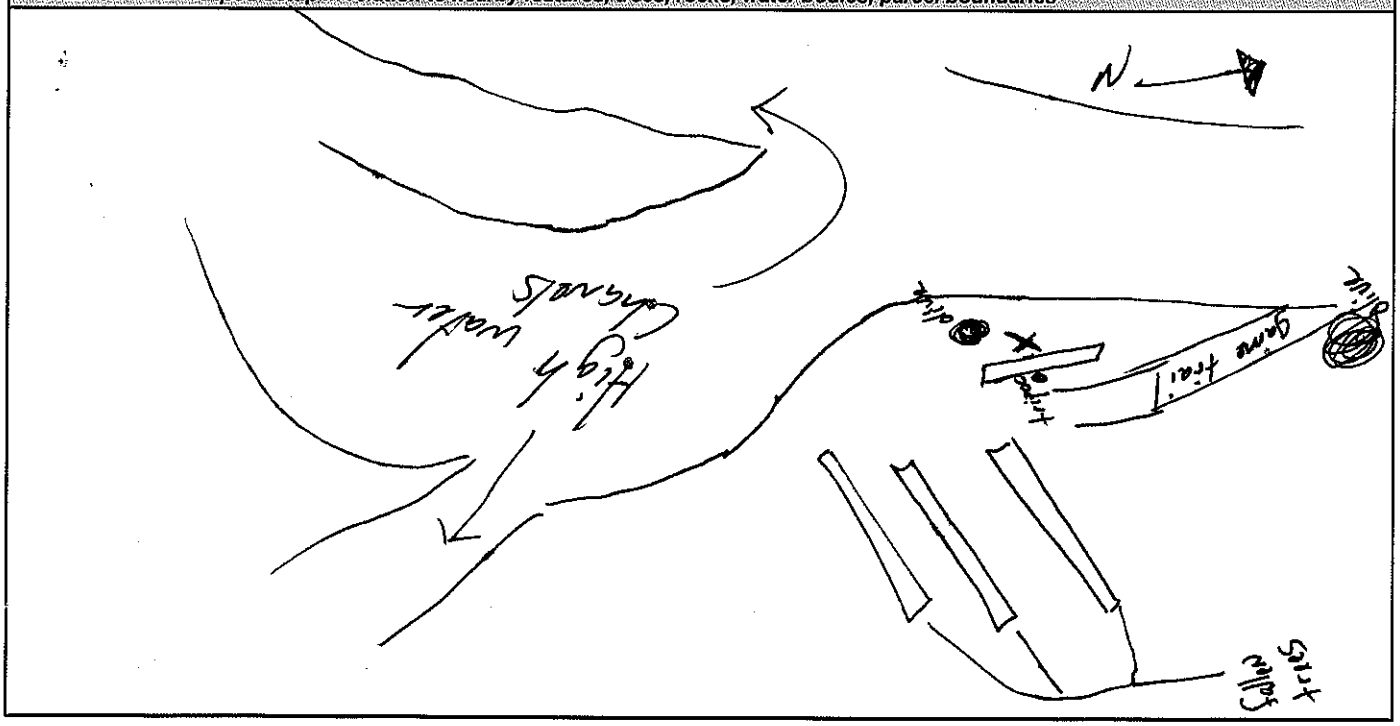
10' from high water chanel bank

~~cross @ Bundy Bridge~~

~~Montana wildlife area~~

End of N25th st

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C54-RB-1	10-31-11	1600	Fall 2011
Division: C			
River Segment: 54 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		Kirk Schweim

3 LOCATION

GPS: LATITUDE 45 deg. 59' 42.5960" min. LONGITUDE 107 deg. 59' 06.9321" min. Datum: _____

UNIT USED: 600 XH 31

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

Vegetation: Open Canopy ____ Closed Canopy X Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stems ____ willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

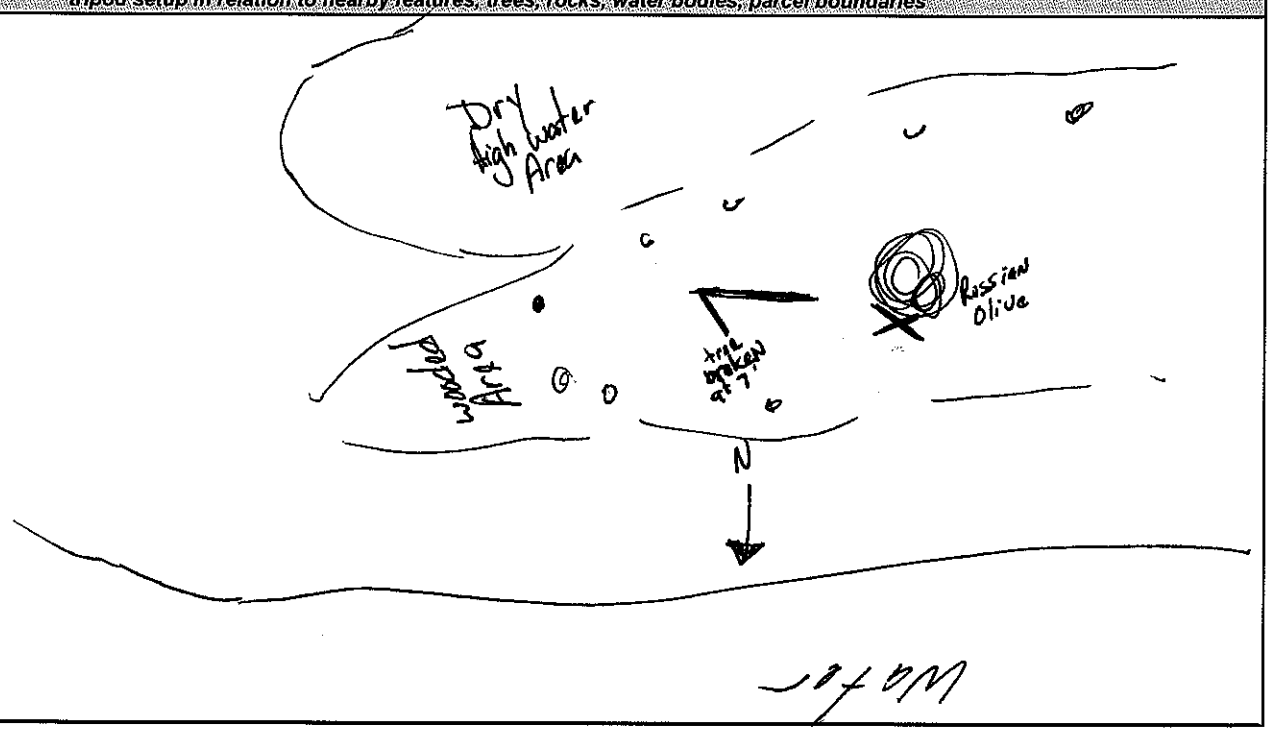
Photo Number: 101-0103 Direction Photo Taken: 165°

Height above ground (inches): 4'

6 COMMENTS

Russian Olive
Very light stain
BLM land
First RR crossing north of Pompey exit Costard frontage Rd
cross foot bridge over ditch

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C11-LB-1	11-1-11	0950	Fall 2011
Division: C			
River Segment: 11 Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweiss		

3 LOCATION

GPS: LATITUDE 45 deg. 50' 37.2852 min. LONGITUDE 108 deg. 25' 18.7056 min. Datum: _____

UNIT USED: Geo XH 34

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

Vegetation: Open Canopy ____ Closed Canopy X Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems X willows ____

logs X grasses ____ Other: ____

5 PHOTOGRAPH

Photo Number: 101-0106 Direction Photo Taken: 353°

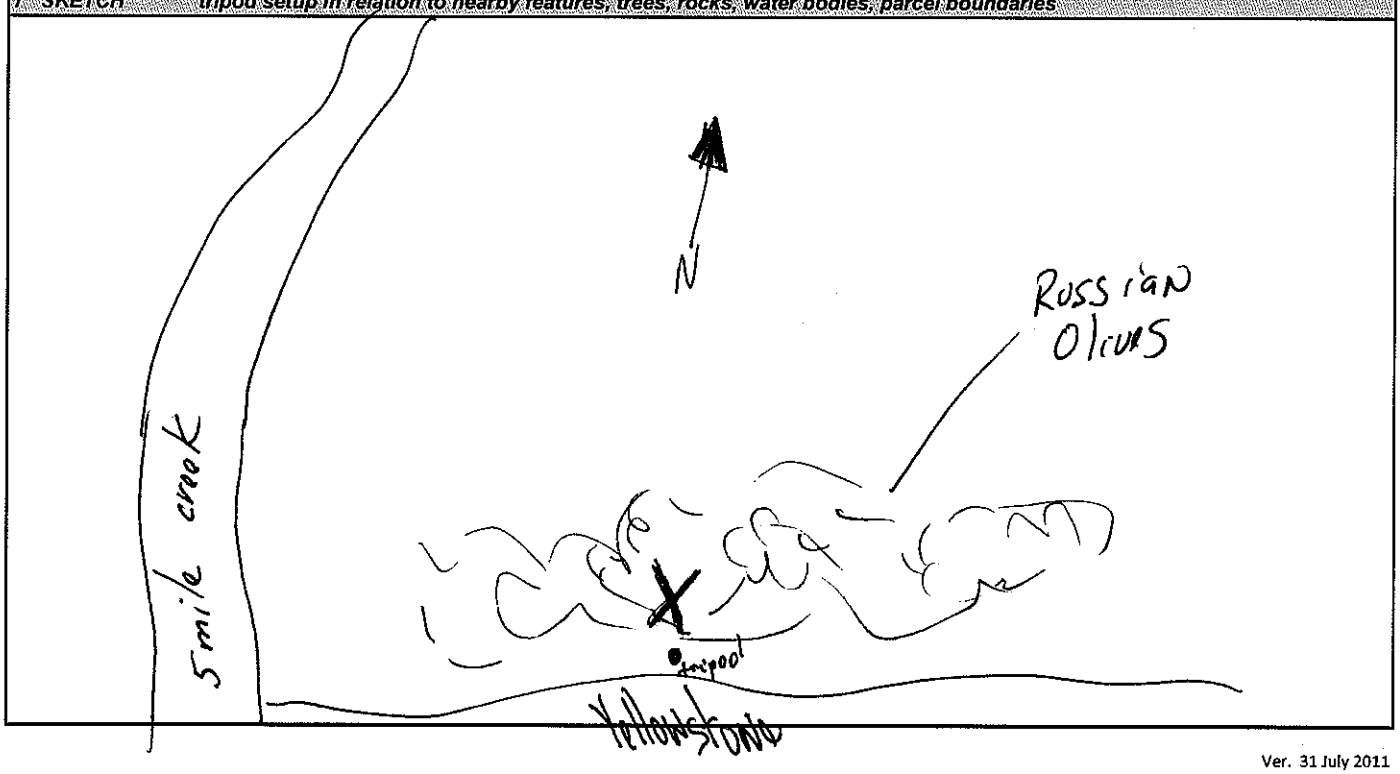
Height above ground (inches): 2'

6 COMMENTS

Under large Russian Olive tree
approx 50' from river
approx 100' downstream of Yellowstone

Yellowstone Parks asc.
5 mile creek rd. park by fence/gate by road

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C25-LB-1	11-1-11	1115	Fall 2011
Division: C			
River Segment: 25 (Left Bank / Right Bank / Island)	(Sun / Clouds / Fog / Rain / Snow / Windy / Calm)		Air Temp + / - ____ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		Kirk Schweim

3 LOCATION

GPS: LATITUDE 45 deg. 55' 04.6351 min. LONGITUDE 108 deg. 19' 04.2389 min. Datum: _____

UNIT USED: 600 XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other High Energy / Cobbles

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows X

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

Photo Number: 101-0107 Direction Photo Taken: 230°

Height above ground (inches): 41

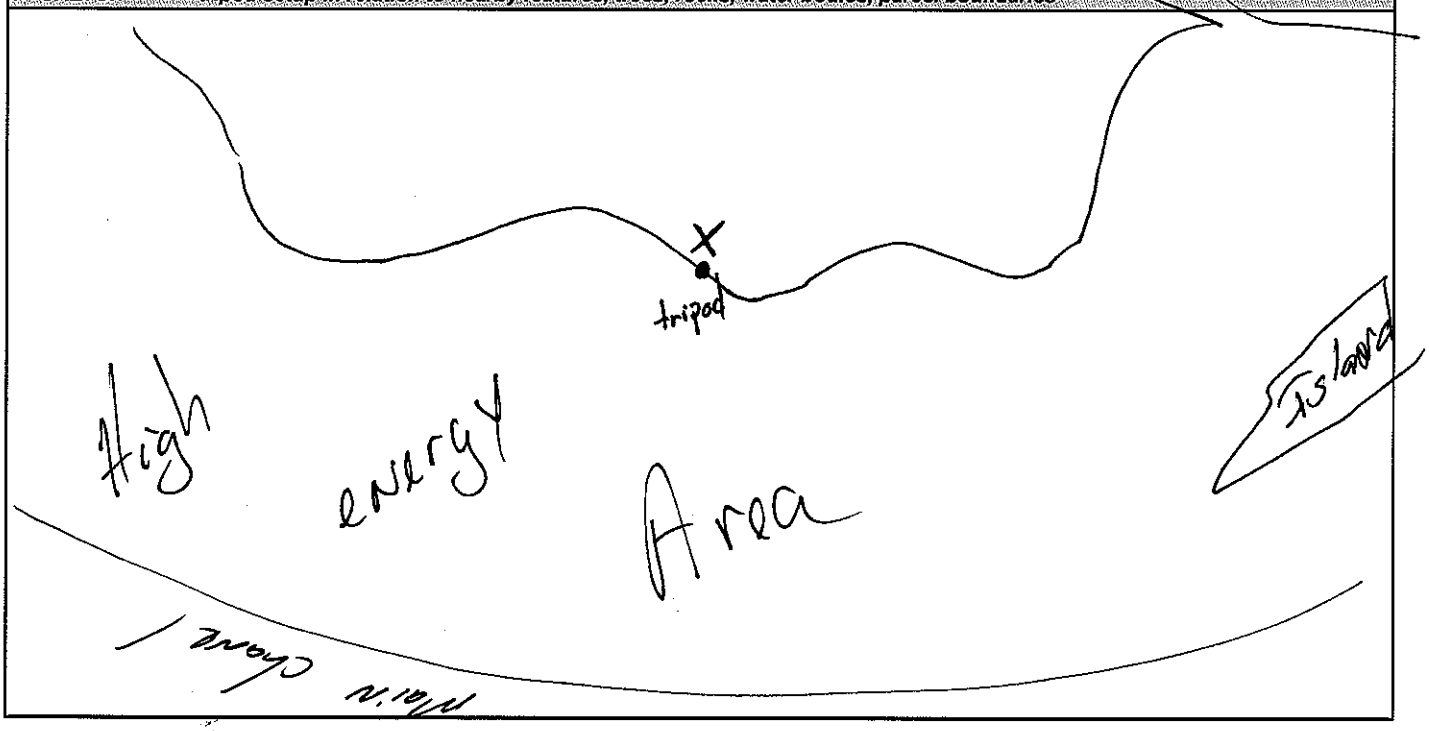
6 COMMENTS

Near high water bank edge approx 10'

Frey Rd.

Enter through pasture - 3 big black bulls

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C50-LB-1	11-1-11	1520	Fall 2011
Division: C			
River Segment: 50 (Left Bank / Right Bank / Island)	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ____ deg C

2 TEAM # Name	Company	Signature
Eric Lunin	Arcadis	
Kirk Schweim		

3 LOCATION

GPS: LATITUDE 46 deg. 00' 09.4860 min. LONGITUDE 108 deg. 03' 53.5645 min. Datum: _____

UNIT USED: Geo XH 3d

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field X Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves X bark X stems X willows ____

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

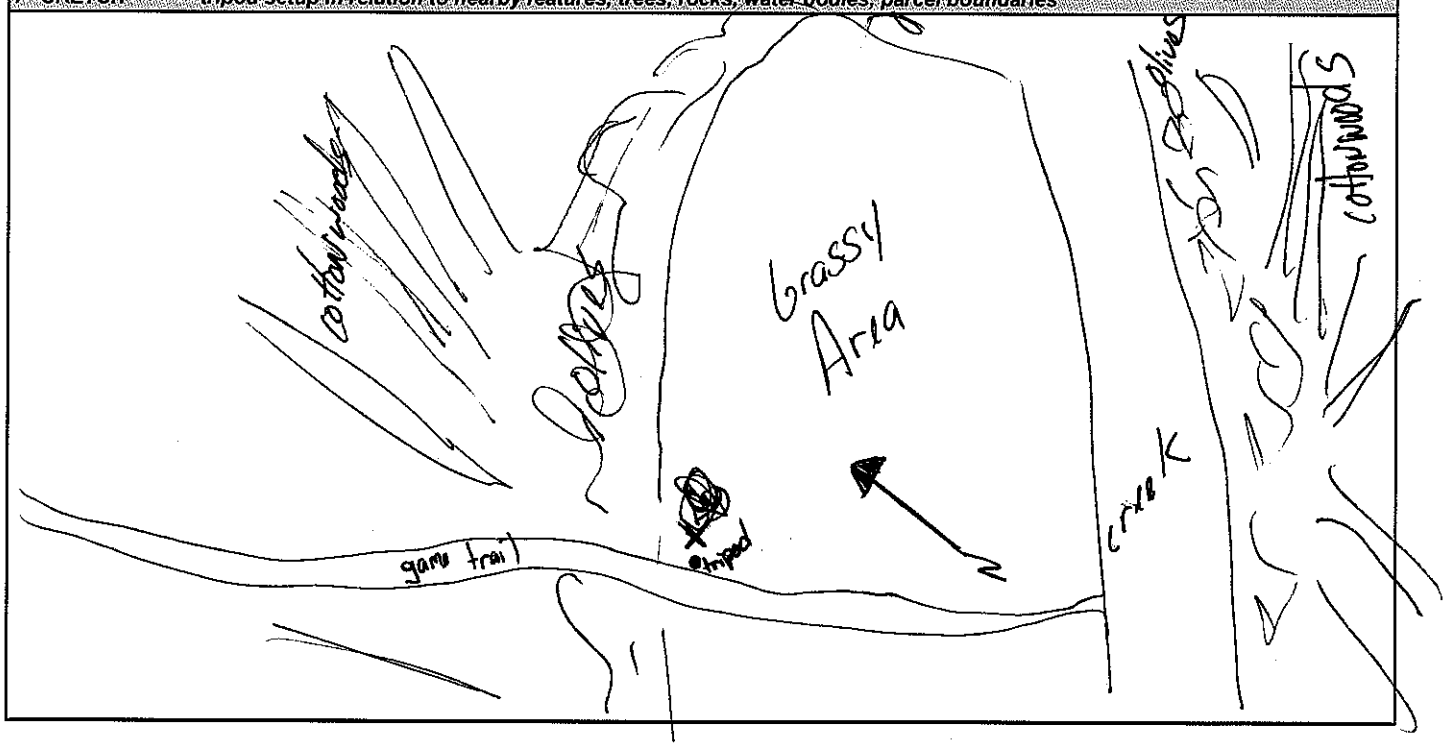
Photo Number: 101-0109 Direction Photo Taken: 060°

Height above ground (inches): 4'

6 COMMENTS

Single Russian Olive tree in grassy area
50' from creek
Just off game trail
1500' from field
Bundy Road - Montana wildlife area - first parking area

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



Ver. 31 July 2011

NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C45-RB-1	11-1-11	1635	Fall 2011
Division: C			
River Segment: 45	Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - ___ deg C

2 TEAM #	Name	Company	Signature
	Eric Lynn	Arcadis	
	Kirk Schweim		

3 LOCATION

GPS: LATITUDE 45 deg. 59' 54.9908 min. LONGITUDE 108 deg. 07' 48.8806 min. Datum: _____

UNIT USED: GPS XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other High Energy / Cobbles

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows X

logs ____ grasses ____ Other: ____

5 PHOTOGRAPH

Photo Number: 101-0113 Direction Photo Taken: 147

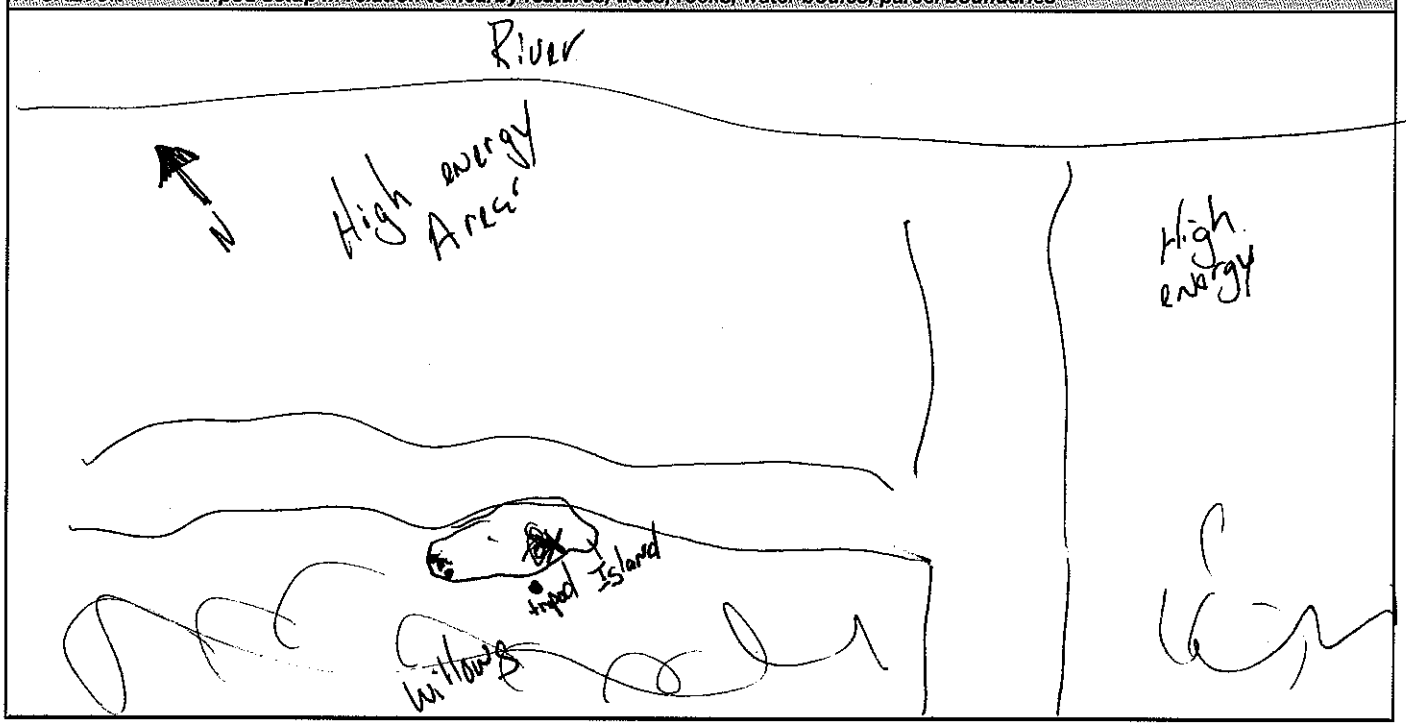
Height above ground (inches): 4'

6 COMMENTS

Stain is 2' above stake on willow branch

N 18th Rd - end of Boat access

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C05-RB-1	0940 11-2-11	0940	Fall 2011
Division: C			
River Segment: 05	Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - ___ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schweim		Kirk Schweim

3 LOCATION

GPS: LATITUDE 45 deg 48' 52.430" min. LONGITUDE 108 deg 26' 43.838" min. Datum: _____

UNIT USED: GPS XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves X bark ____ stems X willows ____

logs ____ grasses ____ Other: ____

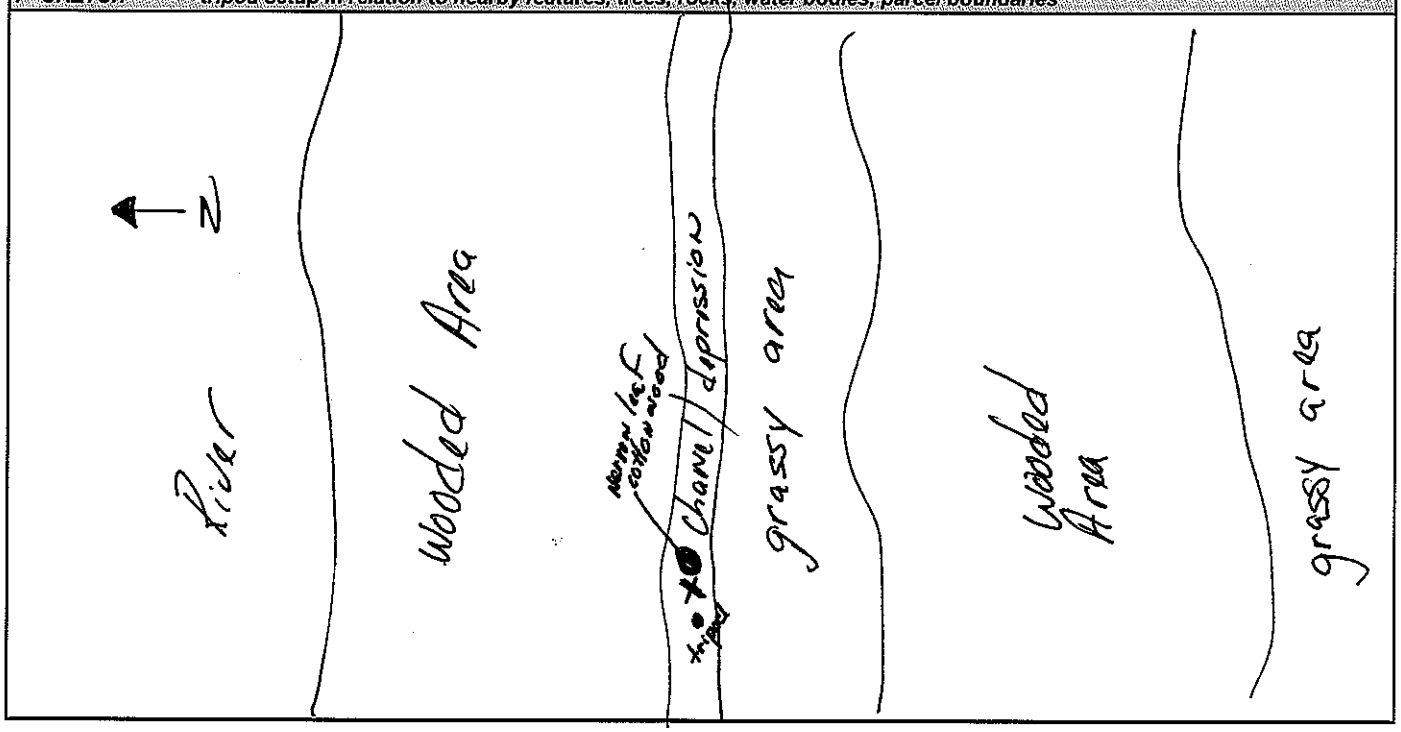
5 PHOTOGRAPH

Photo Number: 101-0115	Direction Photo Taken:
Height above ground (inches): 4'	100

6 COMMENTS

Stains are 3' above ground surface
Narrow leaf cottonwood
Lockwood Rd. to Klenck rd.

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C27-LB-1 Division: C	11-2-11	1155	Fall 2011
River Segment: 27	Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - ___ deg C

2 TEAM # Name	Company	Signature
Eric Lunin Kirk Schweim	Arcadis	Kirk Schweim

3 LOCATION

GPS: LATITUDE 45 deg. 55'56.0069 min. LONGITUDE 108 deg. 18'16.5436 min. Datum: _____

UNIT USED: Geo XH 34

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

Vegetation: Open Canopy X Closed Canopy ____ Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark ____ stems ____ willows ____

logs ____ grasses X Other: ____

5 PHOTOGRAPH

Photo Number: 101-0121 Direction Photo Taken: 180°

Height above ground (inches): 4'

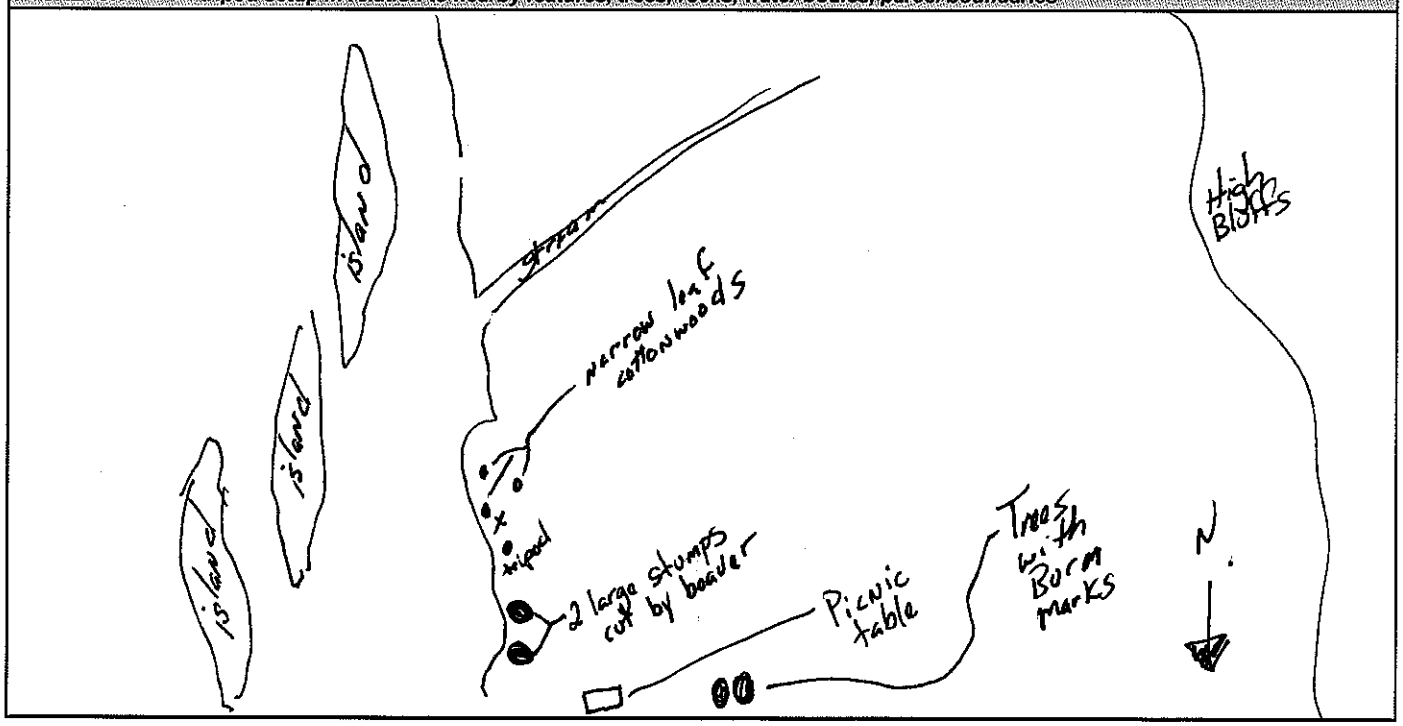
6 COMMENTS

3' from river bank - 15' from water

Near 3 narrow leaf cottonwoods approx 18' tall

grasses on left side of stake are stained

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



NAM FORM **Silvertip Pipeline Incident** Page _____ of _____

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Season/Year:
Location ID: NAM-C44-RB-1	11-2-11	1430	Fall 2011
Division: C			
River Segment: 44	Left Bank / Right Bank / Island	Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - ___ deg C

2 TEAM #	Name	Company	Signature
	Eric Lunin	Arcadis	
	Kirk Schwein		Kirk Schwein

3 LOCATION

GPS: LATITUDE 45 deg. 59'58.8847 min LONGITUDE 108 deg. 09'10.2121 min. Datum: _____

UNIT USED: Geo XH 3d

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

Vegetation: Open Canopy ____ Closed Canopy X Rip-rap ____ Grassy field ____ Debris Pile ____ Other ____

4B OILED VEGETATION TYPE write "COAT" or "STAIN" as appropriate

leaves ____ bark X stems X willows ____

logs ____ grasses X Other: ____

5 PHOTOGRAPH

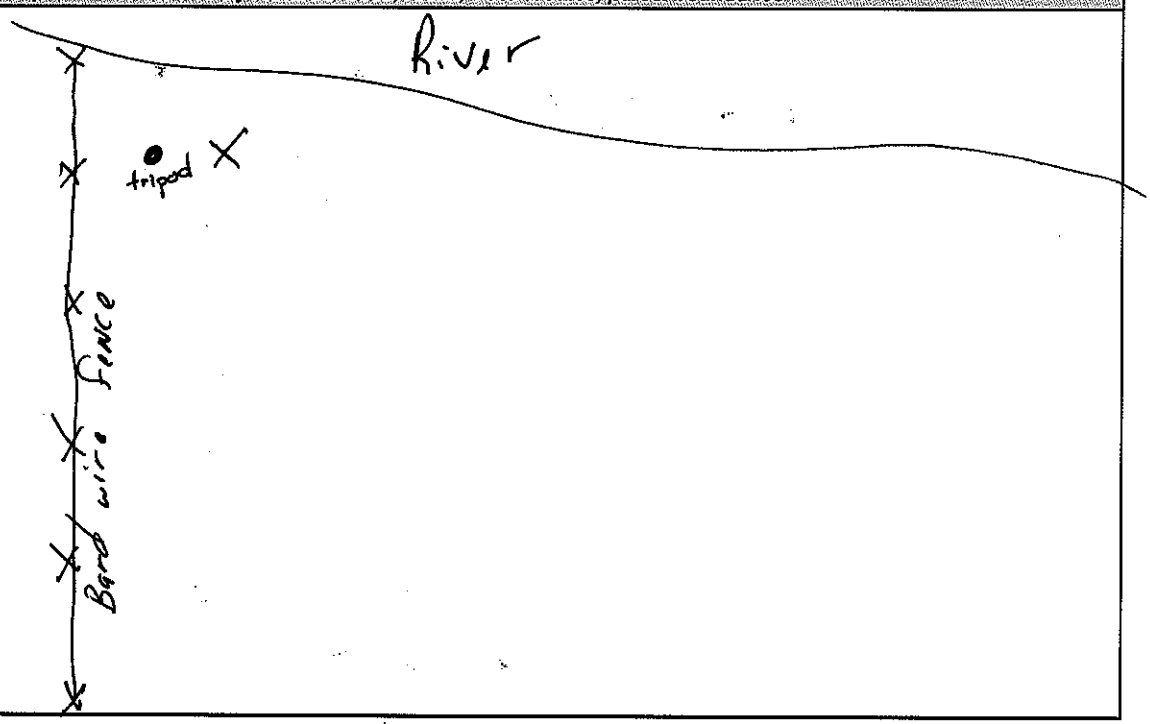
Photo Number: ~~101~~ IMG-0125 Direction Photo Taken: 102

Height above ground (inches): 4'

6 COMMENTS

15' from water
20' from fence
Better to access through Robertson property
End of N 6th St

7 SKETCH tripod setup in relation to nearby features, trees, rocks, water bodies, parcel boundaries



Attachment B

Photo Log

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A02-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A07-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A07-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A12-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A13-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A14-LB-1

ARCADIS

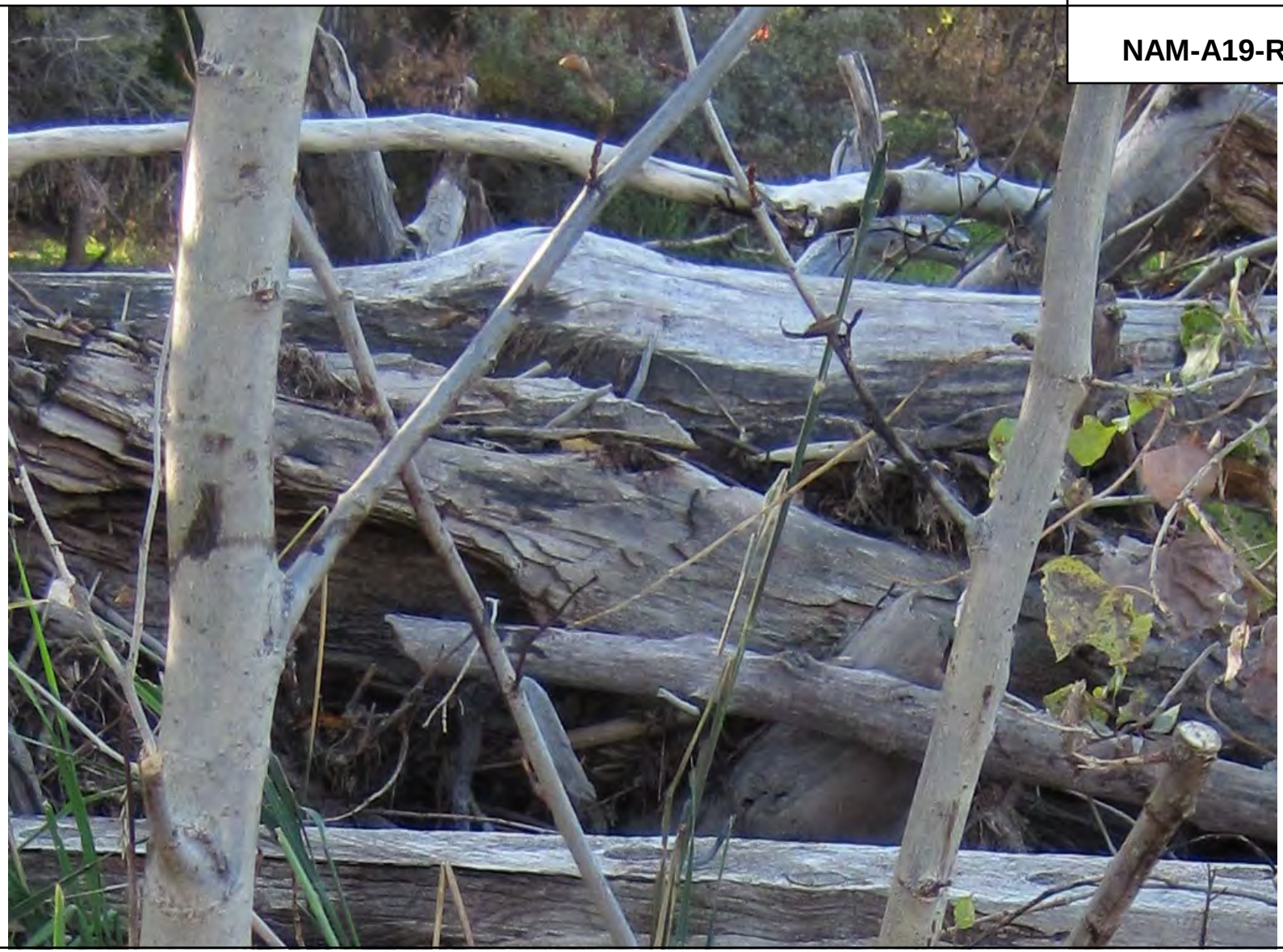
Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A14-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A19-RB-1



ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A22-IS-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A24-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A26-IS-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A28-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A28-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A28-RB-2

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-A29-IS-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-B04-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-B08-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-B10-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-B12-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-B14-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-B17-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-B27-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-B30-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-B31-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-B34-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-B35-IS-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-B43-IS-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
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ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
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ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
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ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C03-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C05-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C08-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C09-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C11-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C23-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C25-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C27-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C34-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C36-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C44-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C45-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C50-LB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C50-RB-1

ARCADIS

Silvertip Incident
Laurel, Montana

LOCATION ID
NAM-C54-RB-1