



Missouri  
Department of  
Natural Resources

## Use Attainability Analysis

for

WBID 0856 Little Muddy Creek

Submitted by  
SES, Inc.

To  
Missouri Department of Natural Resources  
Water Protection Program

On

October 14, 2008

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet A – Water Body Identification**

**I. Water Body Information** (for water body being surveyed)

Water Body Name (from USGS 7.5' quad): Little Muddy Creek
Missouri Water Body Identification (WBID) Number: 856
8-digit HUC: 10300103
County(ies), Listed Upstream to Downstream: Pettis
Upstream Legal Description (from Table H): T46N R22W Sec 18
Downstream Legal Description (from Table H): T46N R22W Sec 13
Number of sites evaluated: 5
List all site numbers, <u>consecutively upstream to downstream</u> : 1, 2, 4, 3, 5
<b>Include a Site Location Map(s).</b> The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).

**II. Facility Information** (list all permitted discharges to this water body segment)

Facility Name(s) and Permit Number(s): Pettis Co R-XII Sch Dist MO0116891
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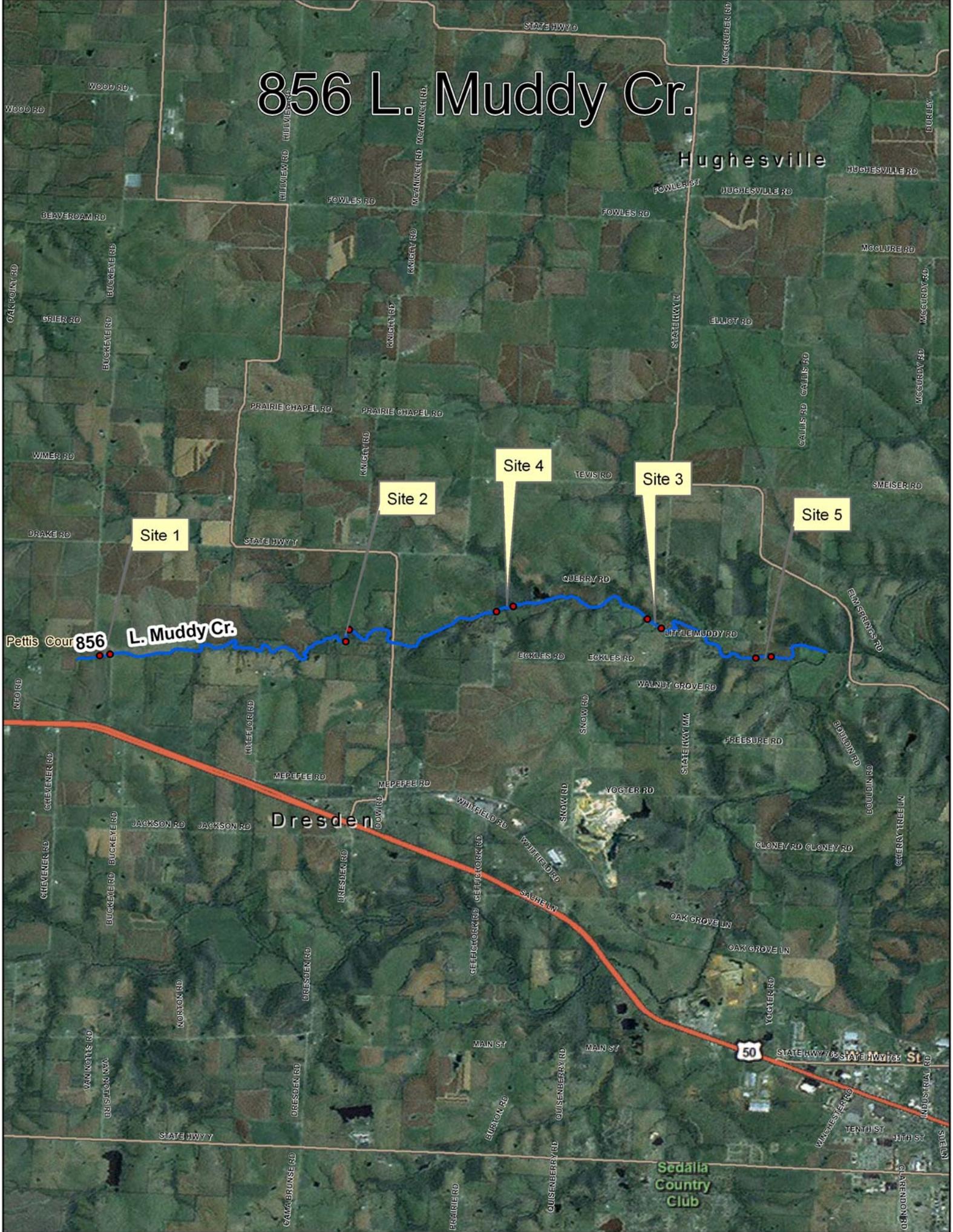
**III. UAA Surveyor** (please **PRINT** legibly)

Name of Surveyor: Bryan Deimeke	Telephone Number: 913-307-0046
Organization/Employer: SES, Inc.	

**Please verify that you have completed all sections of all data sheets, checked all applicable boxes, provided a map (that includes all requirements listed in the *Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol*) and that this form is complete.**

**Signed:** Bryan Deimeke **Date:** 9.22.08

# 856 L. Muddy Cr.



Hughesville

Dresden

Sedalia Country Club

Site 1

Site 2

Site 4

Site 3

Site 5

Pettis Cour 856 L. Muddy Cr.

50

765

WBID # 856

Site # 1

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

<b>Date &amp; Time:</b> 9/18/08      18:30	Location Description (e.g., road crossing): Buckeye Rd.
<b>Stream Name:</b> L. Muddy Cr.	
Current Weather Conditions: clear	Facility Name(s): Pettis Co R-XII Sch Dist
Weather Conditions for Past 10 days: 5.53 in	Permit Number(s): MO0116891
Official Drought Conditions at time of this survey (search DNR home page for “drought”): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0467361	Northing (UTM Y): 4291450	Horizontal Accuracy: (EPE / FOM / PDOP)    5 Meters
Site 11	Easting (UTM X): 0467490	Northing (UTM Y): 4291469	Horizontal Accuracy: (EPE / FOM / PDOP)    5 Meters

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
39	Upstream	40	Downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed\*:** (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 2 of 3)

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in “Photos” section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

**Substrate\*:** (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	% Silt	100% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

None

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Site # 1

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 3 of 3)

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

Did not get DO reading as meter was not working properly.

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Printed Names of Personnel Collecting Data: Bryan Deimeke and David Bender

Surveyor's Signature: Bryan Deimeke

Date of Survey: 9/18/2008

Organization: SES, Inc.

Position: Field Team Leader

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Stream Name: <u>L. Muddy Cr.</u> Waterbody ID: <u>856</u> Site #: <u>1</u>  Estimated Channel Incision: <u>2</u> (m) (height between low bank width and water)  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0467361</u> UTM Y: <u>4291450</u> +/- <u>5</u> (meters) <b>11</b> UTM X: <u>0467490</u> UTM Y: <u>4291469</u> +/- <u>5</u> (meters)  Average Stream Width: <u>1</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)      (20x average stream width)  Field Staff: <u>Bryan Deimeke and David Bender</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/18/2008</u> Time: <u>18:30</u>  Dissolved Oxygen: <u>N/A</u> (mg/L)  Dissolved Oxygen: _____ (% sat)  Specific Cond: _____ (µS/cm)  Water Temperature: <u>N/A</u> (°C)
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#### Transect Cross-Section

Station		01		02		03		04		05		06		07		08		09		10		11	
		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<b>1</b>	0.10	0.15	0.20	0.05	0.20	0.05	0.10	0.05	0.20	0.10	0.30	0.20	0.30	0.10	0.40	0.30	0.30	0.10	0.20	0.10	0.40	0.30
	<b>2</b>	0.20	0.30	0.40	0.15	0.40	0.15	0.20	0.25	0.40	0.20	0.60	0.40	0.60	0.20	0.80	0.45	0.60	0.30	0.40	0.15	0.80	0.60
	<b>3</b>	0.30	0.35	0.60	0.30	0.60	0.20	0.30	0.40	0.60	0.30	0.90	0.70	0.90	0.40	1.20	0.75	0.90	0.45	0.60	0.40	1.20	0.70
	<b>4</b>	0.40	0.50	0.80	0.35	0.80	0.35	0.40	0.50	0.80	0.45	1.20	0.85	1.20	0.45	1.60	1.00	1.20	0.70	0.80	0.50	1.60	0.75
	<b>5</b>	0.50	0.55	1.00	0.60	1.00	0.45	0.50	0.50	1.00	0.45	1.50	0.90	1.50	0.60	2.00	0.95	1.50	0.75	1.00	0.60	2.00	0.75
	<b>6</b>	0.60	0.55	1.20	0.50	1.20	0.35	0.60	0.45	1.20	0.50	1.80	0.75	1.80	0.55	2.40	1.00	1.80	0.75	1.20	0.65	2.40	0.75
	<b>7</b>	0.70	0.45	1.40	0.45	1.40	0.25	0.70	0.35	1.40	0.45	2.10	0.65	2.10	0.30	2.80	0.65	2.10	0.60	1.40	0.60	2.80	0.55
	<b>8</b>	0.80	0.40	1.60	0.35	1.60	0.15	0.80	0.30	1.60	0.35	2.40	0.50	2.40	0.20	3.20	0.45	2.40	0.40	1.60	0.50	3.20	0.40
	<b>9</b>	0.90	0.30	1.80	0.30	1.80	0.15	0.90	0.20	1.80	0.20	2.70	0.40	2.70	0.20	3.60	0.15	2.70	0.15	1.80	0.25	3.60	0.10
<b>Right Bank</b>		1.00	0.00	2.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	3.00	0.00	3.00	0.00	4.00	0.00	3.00	0.00	2.00	0.00	4.00	0.00
<b>Feature Type</b>		run		run		run		run		run		pool											

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width  
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.  
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)  
 Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)  
 All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Bryan Deimeke      Date: 9/18/2008



WBID # 856

Site # 2

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

<b>Date &amp; Time:</b> 9/19/08      9:00	Location Description (e.g., road crossing): Just South of Ritchie Rd.
<b>Stream Name:</b> L. Muddy Cr.	
Current Weather Conditions: Clear	Facility Name(s): Pettis Co R-XII Sch Dist
Weather Conditions for Past 10 days: 5.53 in	Permit Number(s): MO0116891
Official Drought Conditions at time of this survey (search DNR home page for “drought”): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0470343	Northing (UTM Y): 4291654	Horizontal Accuracy: (EPE / FOM / PDOP)    5 Meters
Site 11	Easting (UTM X): 0470386	Northing (UTM Y): 4291841	Horizontal Accuracy: (EPE / FOM / PDOP)    6 Meters

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
41	Upstream	42	Downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed\*:** (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 2 of 3)

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

**Substrate\*:** (These values should add up to 100%.)

% Cobble	40% Gravel	40% Sand	% Silt	20% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

None

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 3 of 3)

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

Did not get DO reading as meter was not working properly.  
 Moved site because could not get permission

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Printed Names of Personnel Collecting Data: Bryan Deimeke and David Bender

Surveyor's Signature: Bryan Deimeke

Date of Survey: 9/19/2008

Organization: SES, Inc.

Position: Field Team Leader

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Stream Name: <u>L. Muddy Cr.</u> Waterbody ID: <u>856</u> Site #: <u>2</u> Estimated Channel Incision: <u>3</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0470343</u> UTM Y: <u>4291654</u> +/- <u>5</u> (meters) <b>11</b> UTM X: <u>0470386</u> UTM Y: <u>4291841</u> +/- <u>6</u> (meters) Average Stream Width: <u>7</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)      (20x average stream width) Field Staff: <u>Bryan Deimeke and David Bender</u>	<b>Dissolved Oxygen</b>
	Date: <u>9/19/2008</u> Time: <u>9:00</u>
	Dissolved Oxygen: <u>N/A</u> (mg/L)
	Dissolved Oxygen: _____ (% sat)
	Specific Cond: _____ (µS/cm)
	Water Temperature: <u>N/A</u> (°C)

#### Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1		0.60	0.05	0.60	0.05	0.50	0.05	0.80	0.10	0.50	0.10	0.40	0.10	0.70	0.10	0.80	0.10	0.70	0.20	0.70	0.15	0.70	0.10
2		1.20	0.35	1.20	0.25	1.00	0.15	1.60	0.30	1.00	0.30	0.80	0.30	1.40	0.35	1.60	0.40	1.40	0.40	1.40	0.40	1.40	0.40
3		1.80	0.60	1.80	0.35	1.50	0.25	2.40	0.55	1.50	0.55	1.20	0.45	2.10	0.65	2.40	0.65	2.10	0.80	2.10	0.80	2.10	0.50
4		2.40	0.45	2.40	0.40	2.00	0.45	3.20	0.80	2.00	0.80	1.60	0.45	2.80	0.60	3.20	0.60	2.80	1.00	2.80	1.00	2.80	0.55
5		3.00	0.30	3.00	0.45	2.50	0.50	4.00	0.75	2.50	0.65	2.00	0.25	3.50	0.50	4.00	0.80	3.50	1.00	3.50	0.90	3.50	0.50
6		3.60	0.20	3.60	0.40	3.00	0.45	4.80	0.40	3.00	0.40	2.40	0.25	4.20	0.20	4.80	0.75	4.20	1.00	4.20	0.95	4.20	0.40
7		4.20	0.10	4.20	0.30	3.50	0.30	5.60	0.30	3.50	0.15	2.80	0.10	4.90	0.25	5.60	0.75	4.90	0.95	4.90	0.50	4.90	0.30
8		4.80	0.10	4.80	0.25	4.00	0.25	6.40	0.30	4.00	0.10	3.20	0.05	5.60	0.40	6.40	0.60	5.60	0.75	5.60	0.30	5.60	0.35
9		5.40	0.10	5.40	0.10	4.50	0.10	7.20	0.20	4.50	0.05	3.60	0.01	6.30	0.10	7.20	0.20	6.30	0.25	6.30	0.10	6.30	0.15
<b>Right Bank</b>		6.00	0.00	6.00	0.00	5.00	0.00	8.00	0.00	5.00	0.00	4.00	0.00	7.00	0.00	8.00	0.00	7.00	0.00	7.00	0.00	7.00	0.00
<b>Feature Type</b>		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Bryan Deimeke      Date: 9/19/2008



WBID # 856

Site # 3

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

<b>Date &amp; Time:</b> 9/19/08 10:50	Location Description (e.g., road crossing): North of Eckles Rd.
<b>Stream Name:</b> L. Muddy Cr.	
Current Weather Conditions: Clear	Facility Name(s): Pettis Co R-XII Sch Dist
Weather Conditions for Past 10 days: 5.53 in	Permit Number(s): MO0116891
Official Drought Conditions at time of this survey (search DNR home page for “drought”): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0472171	Northing (UTM Y): 4292114	Horizontal Accuracy: (EPE / FOM / PDOP) 4 Meters
Site 11	Easting (UTM X): 0472347	Northing (UTM Y): 4292194	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
45	Downstream	46	Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed\*:** (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 2 of 3)

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in “Photos” section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

**Substrate\*:** (These values should add up to 100%.)

% Cobble	25% Gravel	% Sand	% Silt	% Mud/Clay	75% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

Algae growth on 25% of substrate

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Site # 3

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 3 of 3)

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

Did not get DO reading as meter was not working properly.  
 Moved site because could not get landowner permission

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Printed Names of Personnel Collecting Data: Bryan Deimeke and David Bender

Surveyor's Signature: Bryan Deimeke

Date of Survey: 9/19/2008

Organization: SES, Inc.

Position: Field Team Leader

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Stream Name: <u>L. Muddy Cr.</u> Waterbody ID: <u>856</u> Site #: <u>3</u>  Estimated Channel Incision: <u>2</u> (m) (height between low bank width and water)  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0472171</u> UTM Y: <u>4292114</u> +/- <u>4</u> (meters) <b>11</b> UTM X: <u>0472374</u> UTM Y: <u>4292194</u> +/- <u>5</u> (meters)  Average Stream Width: <u>5</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)      (20x average stream width)  Field Staff: <u>Bryan Deimeke and David Bender</u>	<b>Dissolved Oxygen</b>
	Date: <u>9/19/2008</u> Time: <u>10:50</u>
	Dissolved Oxygen: <u>N/A</u> (mg/L)
	Dissolved Oxygen: _____ (% sat)
	Specific Cond: _____ (µS/cm)
	Water Temperature: <u>N/A</u> (°C)

#### Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.40	0.01	0.20	0.05	0.50	0.05	0.80	0.10	0.80	0.10	0.80	0.10	0.80	0.15	0.20	0.01	0.40	0.05	0.40	0.05	0.50	0.01
	2	0.80	0.05	0.40	0.10	1.00	0.15	1.60	0.65	1.60	0.45	1.60	0.50	1.60	0.80	0.40	0.05	0.80	0.15	0.80	0.10	1.00	0.30
	3	1.20	0.15	0.60	0.05	1.50	0.30	2.40	0.65	2.40	0.80	2.40	0.55	2.40	1.00	0.60	0.05	1.20	0.25	1.20	0.20	1.50	0.40
	4	1.60	0.10	0.80	0.10	2.00	0.25	3.20	0.50	3.20	1.00	3.20	1.00	3.20	1.00	0.80	0.05	1.60	0.20	1.60	0.15	2.00	0.40
	5	2.00	0.10	1.00	0.10	2.50	0.15	4.00	0.50	4.00	0.95	4.00	1.00	4.00	1.00	1.00	0.05	2.00	0.20	2.00	0.20	2.50	0.35
	6	2.40	0.10	1.20	0.15	3.00	0.10	4.80	0.40	4.80	0.85	4.80	0.95	4.80	1.00	1.20	0.05	2.40	0.20	2.40	0.20	3.00	0.35
	7	2.80	0.05	1.40	0.15	3.50	0.10	5.60	0.35	5.60	0.80	5.60	0.90	5.60	0.95	1.40	0.05	2.80	0.20	2.80	0.10	3.50	0.35
	8	3.20	0.05	1.60	0.05	4.00	0.10	6.40	0.25	6.40	0.75	6.40	0.70	6.40	0.90	1.60	0.05	3.20	0.10	3.20	0.10	4.00	0.30
	9	3.60	0.01	1.80	0.10	4.50	0.01	7.20	0.10	7.20	0.20	7.20	0.20	7.20	0.75	1.80	0.01	3.60	0.05	3.60	0.05	4.50	0.20
<b>Right Bank</b>		4.00	0.00	2.00	0.00	5.00	0.00	8.00	0.00	8.00	0.00	8.00	0.00	8.00	0.00	2.00	0.00	4.00	0.00	4.00	0.00	5.00	0.00
<b>Feature Type</b>		pool		run		pool		riffle		run		run		pool									

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Bryan Deimeke      Date: 9/19/2008



WBID # 856

Site # 4

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

<b>Date &amp; Time:</b> 9/19/08      10:00	Location Description (e.g., road crossing): Walnut Grove Rd.
<b>Stream Name:</b> L. Muddy Cr.	
Current Weather Conditions: Clear	Facility Name(s): Pettis Co R-XII Sch Dist
Weather Conditions for Past 10 days: 5.53 in	Permit Number(s): MO0116891
Official Drought Conditions at time of this survey (search DNR home page for “drought”): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0474001	Northing (UTM Y): 4291994	Horizontal Accuracy: (EPE / FOM / PDOP)    5 Meters
Site 11	Easting (UTM X): 0474166	Northing (UTM Y): 4291850	Horizontal Accuracy: (EPE / FOM / PDOP)    4 Meters

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
43	Upstream	44	Downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed\*:** (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 2 of 3)

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in “Photos” section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

**Substrate\*:** (These values should add up to 100%.)

% Cobble	75% Gravel	20% Sand	% Silt	5% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

None

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Site # 4

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 3 of 3)

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

Did not get DO reading as meter was not working properly.

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Printed Names of Personnel Collecting Data: Bryan Deimeke and David Bender

Surveyor's Signature: Bryan Deimeke

Date of Survey: 9/19/2008

Organization: SES, Inc.

Position: Field Team Leader

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Stream Name: <u>L. Muddy Cr.</u> Waterbody ID: <u>856</u> Site #: <u>4</u> Estimated Channel Incision: <u>3</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0474001</u> UTM Y: <u>4291994</u> +/- <u>5</u> (meters) <b>11</b> UTM X: <u>0474166</u> UTM Y: <u>4291850</u> +/- <u>4</u> (meters) Average Stream Width: <u>7</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)      (20x average stream width) Field Staff: <u>Bryan Deimeke and David Bender</u>	<b>Dissolved Oxygen</b> Date: <u>9/19/2008</u> Time: <u>10:00</u> Dissolved Oxygen: <u>N/A</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>N/A</u> (°C)
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#### Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.60	0.25	0.60	0.15	0.60	0.15	0.50	0.05	0.70	0.10	0.70	0.15	0.80	0.05	0.70	0.20	0.80	0.05	0.80	0.20	0.80	0.10
2	1.20	0.65	1.20	0.75	1.20	0.50	1.00	0.30	1.40	0.55	1.40	0.70	1.60	0.40	1.40	0.70	1.60	0.65	1.60	0.80	1.60	0.60
3	1.80	0.85	1.80	0.70	1.80	0.55	1.50	0.45	2.10	0.70	2.10	1.00	2.40	0.75	2.10	0.65	2.40	0.45	2.40	0.60	2.40	0.85
4	2.40	0.80	2.40	0.70	2.40	0.55	2.00	0.60	2.80	0.90	2.80	1.00	3.20	1.00	2.80	0.65	3.20	0.40	3.20	0.65	3.20	0.85
5	3.00	0.70	3.00	0.65	3.00	0.60	2.50	0.60	3.50	1.00	3.50	1.00	4.00	1.00	3.50	0.55	4.00	0.60	4.00	0.80	4.00	0.95
6	3.60	0.60	3.60	0.60	3.60	0.65	3.00	0.50	4.20	1.00	4.20	1.00	4.80	0.80	4.20	0.70	4.80	0.80	4.80	0.70	4.80	1.00
7	4.20	0.55	4.20	0.50	4.20	0.65	3.50	0.50	4.90	1.00	4.90	1.00	5.60	0.80	4.90	0.60	5.60	1.00	5.60	0.20	5.60	0.80
8	4.80	0.45	4.80	0.50	4.80	0.55	4.00	0.35	5.60	0.50	5.60	1.00	6.40	0.70	5.60	0.40	6.40	0.60	6.40	0.15	6.40	0.30
9	5.40	0.15	5.40	0.10	5.40	0.45	4.50	0.30	6.30	0.10	6.30	1.00	7.20	0.15	6.30	0.15	7.20	0.10	7.20	0.05	7.20	0.15
<b>Right Bank</b>	6.00	0.00	6.00	0.00	6.00	0.00	5.00	0.00	7.00	0.00	7.00	0.00	8.00	0.00	7.00	0.00	8.00	0.00	8.00	0.00	8.00	0.00
<b>Feature Type</b> <small>(riffle, run, or pool)</small>	pool																					

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width  
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.  
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)  
 Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)  
 All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Bryan Deimeke      Date: 9/19/2008



WBID # 856

Site # 5

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

<b>Date &amp; Time:</b> 9/19/08      12:10	Location Description (e.g., road crossing): South of Little Muddy Rd.
<b>Stream Name:</b> L. Muddy Cr.	
Current Weather Conditions: Clear	Facility Name(s): Pettis Co R-XII Sch Dist
Weather Conditions for Past 10 days: 5.53 in	Permit Number(s): MO0116891
Official Drought Conditions at time of this survey (search DNR home page for “drought”): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0475309	Northing (UTM Y): 4291381	Horizontal Accuracy: (EPE / FOM / PDOP)    5 Meters
Site 11	Easting (UTM X): 0475496	Northing (UTM Y): 4291399	Horizontal Accuracy: (EPE / FOM / PDOP)    5 Meters

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
47	Downstream	48	ATV Tracks	49	Upstream
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed\*:** (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization** (Page 2 of 3)

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in “Photos” section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input checked="" type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input type="checkbox"/> None of the above	Comments / Other:			

**Substrate\*:** (These values should add up to 100%.)

% Cobble	95% Gravel	% Sand	% Silt	5% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

None
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**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Site # 5

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet B – Site Characterization (Page 3 of 3)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

Did not get DO reading as meter was not working properly.

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Printed Names of Personnel Collecting Data: Bryan Deimeke and David Bender

Surveyor's Signature: Bryan Deimeke

Date of Survey: 9/19/2008

Organization: SES, Inc.

Position: Field Team Leader

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Stream Name: <u>L. Muddy Cr.</u> Waterbody ID: <u>856</u> Site #: <u>5</u>  Estimated Channel Incision: <u>4</u> (m) (height between low bank width and water)  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0475309</u> UTM Y: <u>4291381</u> +/- <u>5</u> (meters) <b>11</b> UTM X: <u>0475496</u> UTM Y: <u>4291399</u> +/- <u>5</u> (meters)  Average Stream Width: <u>7</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)      (20x average stream width)  Field Staff: <u>Bryan Deimeke and David Bender</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/19/2008</u> Time: <u>12:10</u>  Dissolved Oxygen: <u>N/A</u> (mg/L)  Dissolved Oxygen: _____ (% sat)  Specific Cond: _____ (µS/cm)  Water Temperature: <u>N/A</u> (°C)
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#### Transect Cross-Section

Station		01		02		03		04		05		06		07		08		09		10		11	
		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<b>1</b>	0.80	0.01	0.70	0.01	0.30	0.01	0.80	0.05	0.80	0.05	0.70	0.01	0.80	0.20	0.90	0.10	0.40	0.10	0.50	0.15	0.70	0.05
	<b>2</b>	1.60	0.10	1.40	0.15	0.60	0.05	1.60	0.20	1.60	0.30	1.40	0.25	1.60	0.50	1.80	0.45	0.80	0.30	1.00	0.85	1.40	0.20
	<b>3</b>	2.40	0.05	2.10	0.25	0.90	0.10	2.40	0.35	2.40	0.40	2.10	0.50	2.40	0.85	2.70	0.50	1.20	0.40	1.50	1.00	2.10	0.45
	<b>4</b>	3.20	0.05	2.80	0.35	1.20	0.10	3.20	0.40	3.20	0.70	2.80	0.60	3.20	1.00	3.60	0.65	1.60	0.75	2.00	1.00	2.80	0.60
	<b>5</b>	4.00	0.10	3.50	0.35	1.50	0.20	4.00	0.40	4.00	0.95	3.50	0.60	4.00	1.00	4.50	0.95	2.00	0.70	2.50	1.00	3.50	0.75
	<b>6</b>	4.80	0.10	4.20	0.45	1.80	0.15	4.80	0.35	4.80	0.95	4.20	0.55	4.80	1.00	5.40	1.00	2.40	0.50	3.00	1.00	4.20	0.70
	<b>7</b>	5.60	0.15	4.90	0.45	2.10	0.10	5.60	0.35	5.60	1.00	4.90	0.55	5.60	1.00	6.30	0.70	2.80	0.30	3.50	0.65	4.90	0.55
	<b>8</b>	6.40	0.25	5.60	0.30	2.40	0.10	6.40	0.30	6.40	1.00	5.60	0.50	6.40	1.00	7.20	0.55	3.20	0.15	4.00	0.25	5.60	0.45
	<b>9</b>	7.20	0.20	6.30	0.05	2.70	0.05	7.20	0.15	7.20	1.00	6.30	0.15	7.20	1.00	8.10	0.10	3.60	0.05	4.50	0.05	6.30	0.20
<b>Right Bank</b>		8.00	0.00	7.00	0.00	3.00	0.00	8.00	0.00	8.00	0.00	7.00	0.00	8.00	0.00	9.00	0.00	4.00	0.00	5.00	0.00	7.00	0.00
<b>Feature Type</b>		rifle		pool		rifle		pool		run		run		pool									

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Bryan Deimeke      Date: 9/19/2008

