



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0198 Camp Branch

Submitted by
SES, Inc.

To
Missouri Department of Natural Resources
Water Protection Program

On
November 4, 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): Camp Br.
Missouri Water Body Identification (WBID) Number: 198
8-digit HUC: 7110008
County(ies), Listed Upstream to Downstream: Warren
Upstream Legal Description (from Table H): T48N, R3W, Sec. 22
Downstream Legal Description (from Table H): T48N, R3W, Sec. 3
Number of sites evaluated: 3
List all site numbers, <u>consecutively upstream to downstream</u> : 1, 2, 3
Include a Site Location Map(s). 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): Flying J Travel Plaza MO0107816

III. UAA Surveyor (please PRINT legibly)

Name of Surveyor: David Bender	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: David Bender Date: 9-22-08

WBID # 198

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)

Date & Time: 9/22/2008	14:46	Location Description (e.g., road crossing):
Stream Name: Camp Br.		Powerline Road
Current Weather Conditions: clear		Facility Name(s): Flying J Travel Plaza
Weather Conditions for Past 10 days: no precipitation		Permit Number(s): MO0107816
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): 0653453	Northing (UTM Y): 4307724	Horizontal Accuracy: (EPE / FOM / PDOP) 2 Meters
Site 11	Easting (UTM X): 0653315	Northing (UTM Y): 4307855	Horizontal Accuracy: (EPE / FOM / PDOP) 4 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
109	downstream				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
110	upstream				
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%.)

10% Cobble	50% Gravel	10% Sand	% Silt	10% Mud/Clay	20% 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 checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input 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.)

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

Printed Names of Personnel Collecting Data: David Bender, Chris Schuler

Surveyor's Signature: David Bender Date of Survey: 9/22/2008

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Camp Br.</u> Waterbody ID: <u>198</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) 01 UTM X: <u>0653453</u> UTM Y: <u>4307724</u> +/- <u>2</u> (meters) 11 UTM X: <u>0653315</u> UTM Y: <u>4307855</u> +/- <u>4</u> (meters) Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>David Bender, Chris Schuler</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/22/2008</u> Time: <u>14:46</u> Dissolved Oxygen: <u>8.6</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>20.6</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)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1	0.10	0.01	0.60	0.05	0.70	0.40	0.60	0.01	0.50	0.05	0.60	0.10	0.60	0.10	0.60	0.15	0.40	0.10	0.40	0.05	0.50	0.15
	2	0.20	0.01	1.20	0.05	1.40	0.65	1.20	0.01	1.00	0.05	1.20	0.25	1.20	0.25	1.20	0.40	0.80	0.20	0.80	0.10	1.00	0.15
	3	0.30	0.05	1.80	0.05	2.10	0.65	1.80	0.05	1.50	0.05	1.80	0.40	1.80	0.55	1.80	0.65	1.20	0.40	1.20	0.15	1.50	0.15
	4	0.40	0.05	2.40	0.01	2.80	0.55	2.40	0.05	2.00	0.05	2.40	0.60	2.40	0.80	2.40	0.65	1.60	0.65	1.60	0.15	2.00	0.05
	5	0.50	0.05	3.00	0.25	3.50	0.50	3.00	0.05	2.50	0.05	3.00	0.75	3.00	0.70	3.00	0.65	2.00	0.90	2.00	0.20	2.50	0.10
	6	0.60	0.01	3.60	0.50	4.20	0.50	3.60	0.05	3.00	0.05	3.60	0.65	3.60	0.75	3.60	0.55	2.40	1.00	2.40	0.25	3.00	0.10
	7	0.70	0.01	4.20	0.55	4.90	0.45	4.20	0.10	3.50	0.10	4.20	0.70	4.20	0.70	4.20	0.40	2.80	1.00	2.80	0.15	3.50	0.15
	8	0.80	0.05	4.80	0.55	5.60	0.55	4.80	0.05	4.00	0.10	4.80	0.70	4.80	0.70	4.80	0.25	3.20	0.75	3.20	0.10	4.00	0.15
	9	0.90	0.05	5.40	0.15	6.30	0.15	5.40	0.05	4.50	0.05	5.40	0.45	5.40	0.30	5.40	0.10	3.60	0.55	3.60	0.05	4.50	0.05
Right Bank		1.00	0.00	6.00	0.00	7.00	0.00	6.00	0.00	5.00	0.00	6.00	0.00	6.00	0.00	6.00	0.00	4.00	0.00	4.00	0.00	5.00	0.00
Feature Type <small>(riffle, run, or pool)</small>		rifle		pool		pool		run		rifle		pool		pool		pool		pool		run		run	

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.

MAXIMUM 1.00

 MEDIAN 0.15

Surveyor's Signature: David Bender Date: 9/22/2008

WBID # 198

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)

Date & Time: 9/22/2008	15:25	Location Description (e.g., road crossing):
Stream Name: Camp Br.		Stock Pile Road
Current Weather Conditions: clear		Facility Name(s): Flying J Travel Plaza
Weather Conditions for Past 10 days: no precipitation		Permit Number(s): MO0107816
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): 0652987	Northing (UTM Y): 4310378	Horizontal Accuracy: (EPE / FOM / PDOP) 7 Meters
Site 11	Easting (UTM X): 0653045	Northing (UTM Y): 4310561	Horizontal Accuracy: (EPE / FOM / PDOP) 9 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
111	downstream				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
112	Road crossing				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
113	downstream				

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 checked="" type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

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

<input checked="" 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 type="checkbox"/> None of the above	Comments / Other:			

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

10% Cobble	30% Gravel	10% Sand	% Silt	% Mud/Clay	50% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Algae on bedrock

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 type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input 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.)

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

Printed Names of Personnel Collecting Data: David Bender, Chris Schuler

Surveyor's Signature: David Bender Date of Survey: 9/22/2008

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Camp Br.</u> Waterbody ID: <u>198</u> Site #: <u>2</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) 01 UTM X: <u>0652987</u> UTM Y: <u>4310378</u> +/- <u>7</u> (meters) 11 UTM X: <u>0653045</u> UTM Y: <u>4310561</u> +/- <u>9</u> (meters) Average Stream Width: <u>4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>David Bender, Chris Schuler</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/22/2008</u> Time: <u>15:25</u> Dissolved Oxygen: <u>7.8</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>22.9</u> (°C)
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		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	0.05	0.50	0.10	0.20	0.10	1.00	0.35	1.20	0.15	0.50	0.10	0.40	0.05	0.50	0.05	1.00	0.10	0.50	0.10	0.40	0.01
	2	0.80	0.20	1.00	0.35	0.40	0.25	2.00	0.25	2.40	0.35	1.00	0.10	0.80	0.05	1.00	0.20	2.00	0.40	1.00	0.20	0.80	0.01
	3	1.20	0.30	1.50	0.45	0.60	0.40	3.00	0.20	3.60	0.65	1.50	0.15	1.20	0.10	1.50	0.20	3.00	0.30	1.50	0.20	1.20	0.05
	4	1.60	0.35	2.00	0.45	0.80	0.40	4.00	0.15	4.80	0.45	2.00	0.15	1.60	0.15	2.00	0.30	4.00	0.25	2.00	0.20	1.60	0.05
	5	2.00	0.35	2.50	0.50	1.00	0.40	5.00	0.30	6.00	0.55	2.50	0.05	2.00	0.20	2.50	0.30	5.00	0.30	2.50	0.20	2.00	0.05
	6	2.40	0.20	3.00	0.45	1.20	0.45	6.00	0.15	7.20	0.35	3.00	0.10	2.40	0.20	3.00	0.25	6.00	0.35	3.00	0.15	2.40	0.05
	7	2.80	0.20	3.50	0.30	1.40	0.45	7.00	0.05	8.40	0.25	3.50	0.20	2.80	0.20	3.50	0.15	7.00	0.45	3.50	0.15	2.80	0.05
	8	3.20	0.15	4.00	0.20	1.60	0.35	8.00	0.25	9.60	0.40	4.00	0.10	3.20	0.15	4.00	0.10	8.00	0.30	4.00	0.05	3.20	0.10
	9	3.60	0.10	4.50	0.10	1.80	0.10	9.00	0.30	10.80	0.10	4.50	0.10	3.60	0.10	4.50	0.05	9.00	0.25	4.50	0.05	3.60	0.05
Right Bank		4.00	0.00	5.00	0.00	2.00	0.00	10.00	0.00	12.00	0.00	5.00	0.00	4.00	0.00	5.00	0.00	10.00	0.00	5.00	0.00	4.00	0.00
Feature Type		run		pool		run		pool		riffle													

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.

MAXIMUM 0.65

MEDIAN 0.20

Surveyor's Signature: David Bender Date: 9/22/2008

WBID # 198

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)

Date & Time: 9/22/2008 16:00	Location Description (e.g., road crossing):
Stream Name: Camp Br.	Pin Oak Church Road
Current Weather Conditions: clear	Facility Name(s): Flying J Travel Plaza
Weather Conditions for Past 10 days: no precipitation	Permit Number(s): MO0107816
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): 0652673	Northing (UTM Y): 4312347	Horizontal Accuracy: (EPE / FOM / PDOP)	6 Meters
Site 11	Easting (UTM X): 0652448	Northing (UTM Y): 4312445	Horizontal Accuracy: (EPE / FOM / PDOP)	5 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
114	upstream				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
115	downstream				
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 checked="" 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%.)

10% Cobble	70% Gravel	20% Sand	% Silt	% 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 checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input 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.)

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

Printed Names of Personnel Collecting Data: David Bender, Chris Schuler

Surveyor's Signature: David Bender Date of Survey: 9/22/2008

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Camp Br.</u> Waterbody ID: <u>198</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) 01 UTM X: <u>0652673</u> UTM Y: <u>4312347</u> +/- <u>6</u> (meters) 11 UTM X: <u>0652498</u> UTM Y: <u>4312445</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>David Bender, Chris Schuler</u>	Dissolved Oxygen Date: <u>9/22/2008</u> Time: <u>16:00</u> Dissolved Oxygen: <u>8.5</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>21.4</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)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.50	0.05	0.40	0.15	0.80	0.35	0.50	0.01	0.30	0.05	0.20	0.10	0.60	0.05	1.00	0.50	0.30	0.10	0.40	0.05	0.20	0.05
2	1.00	0.15	0.80	0.55	1.60	0.45	1.00	0.05	0.60	0.15	0.40	0.25	1.20	0.15	2.00	0.50	0.60	0.25	0.80	0.15	0.40	0.10
3	1.50	0.15	1.20	0.35	2.40	0.45	1.50	0.10	0.90	0.15	0.60	0.40	1.80	0.45	3.00	0.45	0.90	0.40	1.20	0.15	0.60	0.05
4	2.00	0.20	1.60	0.05	3.20	0.30	2.00	0.20	1.20	0.10	0.80	0.55	2.40	0.75	4.00	0.45	1.20	0.45	1.60	0.20	0.80	0.05
5	2.50	0.20	2.00	0.05	4.00	0.30	2.50	0.25	1.50	0.10	1.00	0.60	3.00	1.00	5.00	0.60	1.50	0.45	2.00	0.30	1.00	0.05
6	3.00	0.15	2.40	0.01	4.80	0.40	3.00	0.20	1.80	0.15	1.20	0.50	3.60	1.00	6.00	0.80	1.80	0.35	2.40	0.25	1.20	0.05
7	3.50	0.15	2.80	0.01	5.60	0.40	3.50	0.15	2.10	0.20	1.40	0.45	4.20	0.80	7.00	0.90	2.10	0.15	2.80	0.25	1.40	0.05
8	4.00	0.05	3.20	0.05	6.40	0.40	4.00	0.20	2.40	0.10	1.60	0.40	4.80	0.45	8.00	1.00	2.40	0.05	3.20	0.30	1.60	0.05
9	4.50	0.01	3.60	0.01	7.20	0.10	4.50	0.25	2.70	0.05	1.80	0.15	5.40	0.25	9.00	1.00	2.70	0.05	3.60	0.30	1.80	0.01
Right Bank	5.00	0.00	4.00	0.00	8.00	0.00	5.00	0.00	3.00	0.00	2.00	0.00	6.00	0.00	10.00	0.00	3.00	0.00	4.00	0.00	2.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	run		riffle		pool		pool		run		pool		riffle									

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.

MAXIMUM 1.00

MEDIAN 0.20

Surveyor's Signature: David Bender Date: 9/22/2008

WBID# 0198 Camp Branch



Site# 1 Photo ID# 109, Downstream



Site# 1 Photo ID# 110, Upstream



Site# 2 Photo ID# 113, Downstream



Site# 2 Photo ID# 111, Upstream

WBID# 0198 Camp Branch



Site# 2 Photo ID# 112, "Road Crossing"



Site# 3 Photo ID# 114, Upstream



Site# 3 Photo ID# 115, Downstream