



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 3690 Little Horseshoe 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 Horseshoe Creek
Missouri Water Body Identification (WBID) Number: 3690
8-digit HUC: 10300101
County(ies), Listed Upstream to Downstream: Lafayette, Jackson
Upstream Legal Description (from Table H): T48N R29W Section 2
Downstream Legal Description (from Table H): T49N R29W Section 28
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): I-70 Mobile City MO0056111
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III. UAA Surveyor (please **PRINT** legibly)

Name of Surveyor: Gilisa Gould	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: Gilisa Gould **Date:** 9.22.08

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: 9.16.08 13:05	Location Description (e.g., road crossing):
Stream Name: L. Horseshoe Cr.	CR 454
Current Weather Conditions: clear	Facility Name(s): I-70 Mobile City
Weather Conditions for Past 10 days: 7.80 cm	Permit Number(s): MO 0056111
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): 0405994	Northing (UTM Y): 4316726	Horizontal Accuracy: (EPE / FOM / PDOP) 6 Meters
Site 11	Easting (UTM X): 0406075	Northing (UTM Y): 4316904	Horizontal Accuracy: (EPE / FOM / PDOP) 7 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
6	Cattle crossing				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
7	Upstream and log jam				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
8	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.)				

Site # 1

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 checked="" type="checkbox"/> Other:
Comments: Electric Substation				

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

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

% Cobble	20% Gravel	30% Sand	10% Silt	10% Mud/Clay	30% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Algae on 15% 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 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.

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.)

Log Jam is at Transect 10.

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

Printed Names of Personnel Collecting Data: Gilisa Gould and Bryan Deimeke

Surveyor’s Signature: Gilisa Gould Date of Survey: 9.16.08

Organization: SES, Inc. Position: Field Team Leader



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: 9.16.08 11:25	Location Description (e.g., road crossing):
Stream Name: L. Horseshoe Cr.	Old Hwy 40/Outer Road
Current Weather Conditions: clear	Facility Name(s): I-70 Mobile City
Weather Conditions for Past 10 days: 7.80 cm	Permit Number(s): MO 0056111
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): 0404837	Northing (UTM Y): 4318635	Horizontal Accuracy: (EPE / FOM / PDOP) 6 Meters
Site 11	Easting (UTM X): 0404712	Northing (UTM Y): 4318738	Horizontal Accuracy: (EPE / FOM / PDOP) 9 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
4	downstream				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
5	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%.)

40% Cobble	40% 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 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 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:

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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: Gilisa Gould and Bryan Deimeke

Surveyor's Signature: Gilisa Gould Date of Survey: 9.16.08

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. Horseshoe Cr. </u> Waterbody ID: <u> 3690 </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) 01 UTM X: <u> 0404837 </u> UTM Y: <u> 4318635 </u> +/- <u> 6 </u> (meters) 11 UTM X: <u> 0404712 </u> UTM Y: <u> 4318738 </u> +/- <u> 9 </u> (meters) Average Stream Width: <u> 3 </u> (meters) Length of Survey Segment: <u> 150 </u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u> Gilisa Gould and Bryan Deimeke </u>	Dissolved Oxygen
	Date: <u> 9.16.08 </u> Time: <u> 11:25 </u>
	Dissolved Oxygen: <u> 9.8 </u> (mg/L)
	Dissolved Oxygen: <u> </u> (% sat)
	Specific Cond: <u> </u> (µS/cm)
	Water Temperature: <u> 14.5 </u> (°C)

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	0.50	0.05	0.50	0.15	0.40	0.15	0.40	0.40	0.40	0.10	0.30	0.05	0.30	0.05	0.20	0.15	0.20	0.05	0.20	0.10	0.30	0.10
	2	1.00	0.15	1.00	0.25	0.80	0.15	0.80	0.50	0.80	0.10	0.60	0.10	0.60	0.10	0.40	0.15	0.40	0.15	0.40	0.15	0.60	0.10
	3	1.50	0.20	1.50	0.25	1.20	0.25	1.20	0.60	1.20	0.05	0.90	0.10	0.90	0.10	0.60	0.20	0.60	0.10	0.60	0.15	0.90	0.10
	4	2.00	0.25	2.00	0.20	1.60	0.30	1.60	0.60	1.60	0.05	1.20	0.20	1.20	0.10	0.80	0.15	0.80	0.10	0.80	0.15	1.20	0.15
	5	2.50	0.25	2.50	0.20	2.00	0.25	2.00	0.40	2.00	0.00	1.50	0.25	1.50	0.10	1.00	0.10	1.00	0.05	1.00	0.15	1.50	0.15
	6	3.00	0.40	3.00	0.15	2.40	0.20	2.40	0.35	2.40	0.01	1.80	0.20	1.80	0.10	1.20	0.10	1.20	0.05	1.20	0.15	1.80	0.15
	7	3.50	0.40	3.50	0.15	2.80	0.20	2.80	0.25	2.80	0.01	2.10	0.15	2.10	0.10	1.40	0.10	1.40	0.10	1.40	0.15	2.10	0.15
	8	4.00	0.30	4.00	0.10	3.20	0.15	3.20	0.20	3.20	0.00	2.40	0.15	2.40	0.10	1.60	0.05	1.60	0.10	1.60	0.20	2.40	0.10
	9	4.50	0.20	4.50	0.15	3.60	0.10	3.60	0.50	3.60	0.01	2.70	0.15	2.70	0.10	1.80	0.01	1.80	0.10	1.80	0.10	2.70	0.05
Right Bank		5.00	0.00	5.00	0.00	4.00	0.00	4.00	0.00	4.00	0.00	3.00	0.00	3.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	3.00	0.00
Feature Type		run		run		run		pool		riffle		run		riffle		run		riffle		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.

Surveyor's Signature: Gilisa Gould Date: 9.22.08



09/16/2008



09/16/2008

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: 9.16.08 10:15	Location Description (e.g., road crossing):
Stream Name: Little Horseshoe Creek	Gillespie Road
Current Weather Conditions: clear	Facility Name(s): I-70 Mobile City
Weather Conditions for Past 10 days: 7.80 cm	Permit Number(s): MO 0056111
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): 0403780	Northing (UTM Y): 4320780	Horizontal Accuracy: (EPE / FOM / PDOP)	3 Meters
Site 11	Easting (UTM X): 0403692	Northing (UTM Y): 4320923	Horizontal Accuracy: (EPE / FOM / PDOP)	7 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1	upstream				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2	Log jam				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3	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 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 checked="" 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 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.)

Log Jam is at Transect 8.

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

Printed Names of Personnel Collecting Data: Gilisa Gould and Bryan Deimeke

Surveyor's Signature: Gilisa Gould

Date of Survey: 9.16.08

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. Horseshoe Cr.</u> Waterbody ID: <u>3690</u> Site #: <u>3</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) 01 UTM X: <u>0403780</u> UTM Y: <u>4320780</u> +/- <u>3</u> (meters) 11 UTM X: <u>0403692</u> UTM Y: <u>4320923</u> +/- <u>7</u> (meters) Average Stream Width: <u>2</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Bryan Deimeke</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9.16.08</u> Time: <u>10:15</u> Dissolved Oxygen: <u>10.2</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>14.3</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	0.30	0.05	0.20	0.05	0.40	0.05	0.30	0.05	0.20	0.05	0.30	0.10	0.50	0.10	0.40	0.10	0.20	0.05	0.20	0.05	0.20	0.15
	2	0.60	0.10	0.40	0.15	0.80	0.10	0.60	0.20	0.40	0.25	0.60	0.20	1.00	0.25	0.80	0.30	0.40	0.10	0.40	0.10	0.40	0.20
	3	0.90	0.20	0.60	0.25	1.20	0.20	0.90	0.30	0.60	0.40	0.90	0.30	1.50	0.50	1.20	0.10	0.60	0.25	0.60	0.20	0.60	0.20
	4	1.20	0.25	0.80	0.25	1.60	0.40	1.20	0.25	0.80	0.40	1.20	0.35	2.00	0.70	1.60	0.00	0.80	0.25	0.80	0.20	0.80	0.20
	5	1.50	0.25	1.00	0.30	2.00	0.45	1.50	0.30	1.00	0.35	1.50	0.40	2.50	0.65	2.00	0.15	1.00	0.20	1.00	0.20	1.00	0.25
	6	1.80	0.25	1.20	0.25	2.40	0.45	1.80	0.25	1.20	0.20	1.80	0.40	3.00	0.50	2.40	0.20	1.20	0.20	1.20	0.25	1.20	0.20
	7	2.10	0.20	1.40	0.15	2.80	0.40	2.10	0.20	1.40	0.15	2.10	0.25	3.50	0.30	2.80	0.00	1.40	0.15	1.40	0.20	1.40	0.15
	8	2.40	0.10	1.60	0.10	3.20	0.25	2.40	0.10	1.60	0.10	2.40	0.10	4.00	0.00	3.20	0.20	1.60	0.10	1.60	0.15	1.60	0.10
	9	2.70	0.05	1.80	0.05	3.60	0.10	2.70	0.05	1.80	0.05	2.70	0.05	4.50	0.05	3.60	0.15	1.80	0.05	1.80	0.05	1.80	0.05
Right Bank		3.00	0.00	2.00	0.00	4.00	0.00	3.00	0.00	2.00	0.00	3.00	0.00	5.00	0.00	4.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
Feature Type <small>(riffle, run, or pool)</small>		run		run		pool		run		run		run		run		pool		run		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.

Surveyor's Signature: Gilisa Gould Date: 9.22.08

