



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 2591 West Fork Spring River

Submitted by
Olsson Associates

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): W. Fk. Spring Rd.
Missouri Water Body Identification (WBID) Number: 2591
8-digit HUC: 11010010
County(ies), Listed Upstream to Downstream: Howell
Upstream Legal Description (from Table H): 10, 22N, 9W
Downstream Legal Description (from Table H): 31, 22N, 9W
Number of sites evaluated: 5
List all site numbers, <u>consecutively upstream to downstream</u> : 1, 2, 3, 4, 5
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).

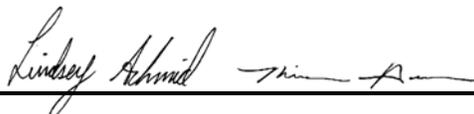
II. Facility Information (list all permitted discharges to this water body segment)

Facility Name(s) and Permit Number(s): South Fork R-VII Elementary MO-0126535

III. UAA Surveyor (please **PRINT** legibly)

Name of Surveyor: L. Schmid / M. Hamer	Telephone Number (417)890-8802
Organization/Employer: Olsson Associates	

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:  **Date:** 8-6-08

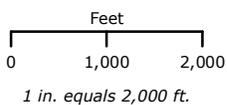


Joins to: W. Fk. Spring R. 2/2

**MISSOURI RECREATIONAL
USE ATTAINABILITY ANALYSIS**

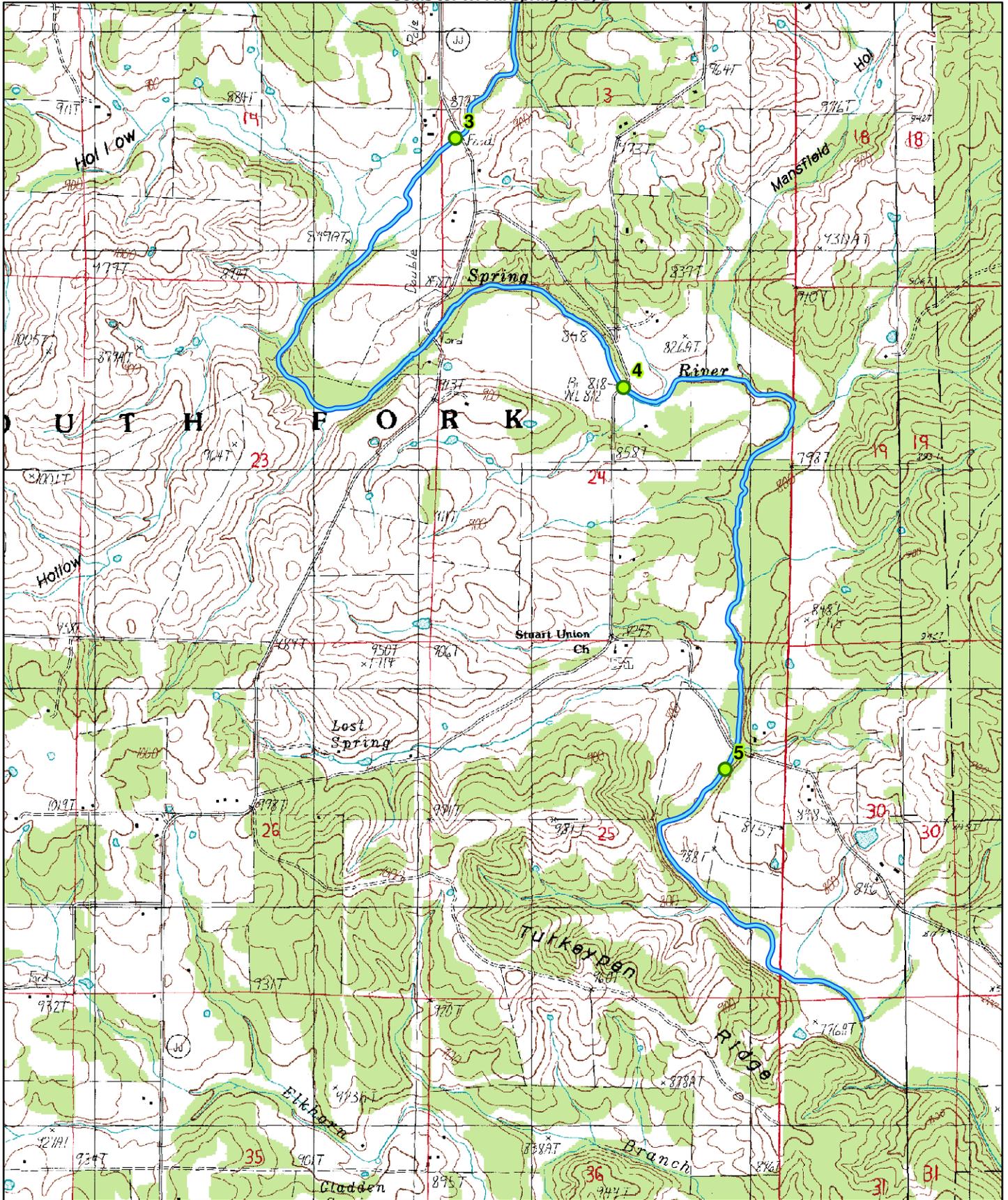
Stream: W. Fk. Spring R.
WBID: 2591

Map Sheet: 1/2
County: Howell

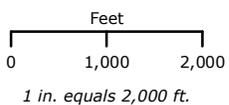


Project No. 008-1298

Joins to: W. Fk. Spring R. 1/2



MISSOURI RECREATIONAL USE ATTAINABILITY ANALYSIS



Stream: W. Fk. Spring R.
WBID: 2591

Map Sheet: 2/2
County: Howell



Project No. 008-1298

WBID # 2591

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: 8-06-08 10:20 a.m.	Location Description (e.g., road crossing):
Stream Name: W. Fk. Spring Rd.	Low water bridge, County Rd. 7400
Current Weather Conditions: Clear	Facility Name(s): South Fork R-VII Elementary
Weather Conditions for Past 10 days: .48" @ West Plains	Permit Number(s): MO-0126535
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): 595711	Northing (UTM Y): 4049957	Horizontal Accuracy: (EPE / FOM / PDOP) 80 ft. Meters
Site 11	Easting (UTM X): 595835	Northing (UTM Y): 4049918	Horizontal Accuracy: (EPE / FOM / PDOP) 184 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2591-1-A	Upstream looking down	2591-1-B	Bridge	2591-1-C	Downstream looking up
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 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 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 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%.)

% Cobble	80% Gravel	20% Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

No algae at bridge; lots downstream Dense vegetation; overgrown!

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 @ bridge	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: Murky downstream
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 checked="" type="checkbox"/> Foam minimal	<input 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: L. Schmid / M. Hamer

Surveyor's Signature:  Date of Survey: 8-06-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>W. Fk. Spring River</u> Waterbody ID: <u>2591</u> Site #: <u>1</u> Estimated Channel Incision: <u>0.65</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>595711</u> UTM Y: <u>4049957</u> +/- <u>80</u> ft. (meters) 11 UTM X: <u>595835</u> UTM Y: <u>4049918</u> +/- <u>184</u> ft. (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>L. Schmid / M. Hamer</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>8/6/2008</u> Time: <u>10:30 a.m.</u> Dissolved Oxygen: <u>4.77</u> (mg/L) Dissolved Oxygen: <u>62.2</u> (% sat) Specific Cond: <u>374</u> (µS/cm) Water Temperature: <u>26.8</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	0.28	0.05	0.45	0.05	0.33	0.07	0.55	0.05	0.58	0.10	0.75	0.17	0.70	0.34	0.60	0.16	0.90	0.05	0.60	0.43	0.90	0.53
2	0.56	0.06	0.90	0.11	0.66	0.11	1.10	0.11	1.16	0.05	1.50	0.14	1.40	0.37	1.20	0.16	1.80	0.05	1.20	0.41	1.80	0.69
3	0.84	0.09	1.35	0.10	0.99	0.14	1.65	0.16	1.74	0.05	2.25	0.15	2.10	0.30	1.80	0.08	2.70	0.05	1.80	0.39	2.70	0.74
4	1.12	0.11	1.80	0.09	1.32	0.12	2.20	0.23	2.32	0.00	3.00	0.12	2.80	0.26	2.40	0.05	3.60	0.05	2.40	0.34	3.60	0.58
5	1.40	0.10	2.25	0.19	1.65	0.12	2.75	0.17	2.90	0.00	3.75	0.05	3.50	0.28	3.00	0.05	4.50	0.05	3.00	0.34	4.50	0.49
6	1.68	0.12	2.70	0.17	1.98	0.09	3.30	0.15	3.48	0.05	4.50	0.11	4.20	0.21	3.60	0.08	5.40	0.05	3.60	0.24	5.40	0.51
7	1.96	0.14	3.15	0.36	2.31	0.06	3.85	0.18	4.06	0.05	5.25	0.19	4.90	0.10	4.20	0.05	6.30	0.05	4.20	0.21	6.30	0.39
8	2.24	0.21	3.60	0.34	2.64	0.08	4.40	0.10	4.64	0.05	6.00	0.19	5.60	0.18	4.80	0.05	7.20	0.05	4.80	0.15	7.20	0.38
9	2.52	0.26	4.05	0.23	2.97	0.10	4.95	0.08	5.22	0.08	6.75	0.38	6.30	0.23	5.40	0.05	8.10	0.05	5.40	0.15	8.10	0.30
Right Bank	2.80	0.00	4.50	0.00	3.30	0.00	5.50	0.00	5.80	0.00	7.50	0.00	7.00	0.00	6.00	0.00	9.00	0.00	6.00	0.00	9.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	Pool		Pool		Run		Pool		Riffle		Run		Run		Run		Run		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.

MAXIMUM 0.74

MEDIAN 0.11

Surveyor's Signature:

Date: 8-06-08

WBID # 2591

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: 8-06-08 11:50 a.m.	Location Description (e.g., road crossing): Bridge, JJ Highway
Stream Name: W. Fk. Spring Rd.	
Current Weather Conditions: Clear	Facility Name(s): South Fork R-VII Elementary
Weather Conditions for Past 10 days: .48" @ West Plains	Permit Number(s): MO-0126535
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): 598581	Northing (UTM Y): 4049351	Horizontal Accuracy: (EPE / FOM / PDOP) 36 ft. Meters
Site 11	Easting (UTM X): 598664	Northing (UTM Y): 4049247	Horizontal Accuracy: (EPE / FOM / PDOP) 70 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2591-2-A	Upstream looking down	2591-2-B	Bridge	2591-2-C	Downstream looking up
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.)				

Site # 2

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 type="checkbox"/> Fence	<input 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%.)

% Cobble	70% Gravel	20% Sand	10% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Brown Algae on rocks
Dense plants in shallow areas

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 type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: Murky
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 checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input 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 # 2

Field Data Sheets for Recreational Use Stream Surveys

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

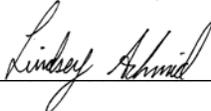
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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: L. Schmid / M. Hamer

Surveyor's Signature:   Date of Survey: 8-06-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>W. Fk. Spring River</u> Waterbody ID: <u>2591</u> Site #: <u>2</u> Estimated Channel Incision: <u>0.2</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>598581</u> UTM Y: <u>4049351</u> +/- <u>36</u> ft. (meters) 11 UTM X: <u>598664</u> UTM Y: <u>4049247</u> +/- <u>70</u> ft. (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>L. Schmid / M. Hamer</u>	Dissolved Oxygen Date: <u>8/6/2008</u> Time: <u>11:50 a.m.</u> Dissolved Oxygen: <u>4.46</u> (mg/L) Dissolved Oxygen: <u>65.2</u> (% sat) Specific Cond: <u>391</u> (µS/cm) Water Temperature: <u>30.3</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	0.62	0.05	0.45	0.05	0.22	0.05	0.24	0.05	0.45	0.05	0.39	0.05	0.45	0.11	0.44	0.32	0.70	0.34	0.80	0.15	0.50	0.05
2	1.24	0.05	0.90	0.05	0.44	0.05	0.48	0.05	0.90	0.05	0.78	0.05	0.90	0.13	0.88	0.31	1.40	0.61	1.60	0.16	1.00	0.11
3	1.86	0.07	1.35	0.05	0.66	0.05	0.72	0.06	1.35	0.00	1.17	0.05	1.35	0.16	1.32	0.22	2.10	0.67	2.40	0.53	1.50	0.22
4	2.48	0.18	1.80	0.05	0.88	0.05	0.96	0.08	1.80	0.05	1.56	0.05	1.80	0.16	1.76	0.10	2.80	0.59	3.20	0.60	2.00	0.30
5	3.10	0.16	2.25	0.05	1.10	0.05	1.20	0.06	2.25	0.05	1.95	0.05	2.25	0.16	2.20	0.10	3.50	0.57	4.00	0.64	2.50	0.32
6	3.72	0.10	2.70	0.05	1.32	0.05	1.44	0.05	2.70	0.05	2.34	0.05	2.70	0.11	2.64	0.08	4.20	0.52	4.80	0.64	3.00	0.30
7	4.34	0.05	3.15	0.05	1.54	0.05	1.68	0.05	3.15	0.06	2.73	0.05	3.15	0.10	3.08	0.11	4.90	0.53	5.60	0.71	3.50	0.23
8	4.96	0.12	3.60	0.05	1.76	0.05	1.92	0.05	3.60	0.05	3.12	0.05	3.60	0.09	3.52	0.13	5.60	0.43	6.40	0.58	4.00	0.06
9	5.58	0.09	4.05	0.05	1.98	0.05	2.16	0.05	4.05	0.05	3.51	0.05	4.05	0.05	3.96	0.09	6.30	0.31	7.20	0.27	4.50	0.11
Right Bank	6.20	0.00	4.50	0.00	2.20	0.00	2.40	0.00	4.50	0.00	3.90	0.00	4.50	0.00	4.40	0.00	7.00	0.00	8.00	0.00	5.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	Run		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 0.71

MEDIAN 0.06

Surveyor's Signature:

Date: 8/6/2008

WBID # 2591

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: 8-06-08	Location Description (e.g., road crossing):
Stream Name: W. Fk. Spring Rd.	Bridge, JJ Highway
Current Weather Conditions: Partial Cloudy	Facility Name(s): South Fork R-VII Elementary
Weather Conditions for Past 10 days: .48" @ West Plains	Permit Number(s): MO-0126535
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): 598619	Northing (UTM Y): 4047712	Horizontal Accuracy: (EPE / FOM / PDOP) 44 ft. Meters
Site 11	Easting (UTM X): 598505	Northing (UTM Y): 4047582	Horizontal Accuracy: (EPE / FOM / PDOP) 60 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2591-3-A	Upstream looking down	2591-3-B	Bridge	2591-3-C	Human/Cow Path
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2591-3-D	Downstream looking up				
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.)				

Site # 3**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 checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: Fence across stream at bridge				

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

<input checked="" type="checkbox"/> Roads	<input checked="" 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: Livestock watering above segment. Footprints and feces in segment.			

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

% Cobble	70% Gravel	20% Sand	% Silt	10% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Brn. Algae on rocks

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other Murky brown
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 checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input 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.)

Land owner claimed that there was a “diving board” on the waterway near the property at a usual swimming hole, but this area could not be found and was possibly destroyed by recent flood waters. Interview attached.

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

Printed Names of Personnel Collecting Data: L. Schmid / M. Hamer

Surveyor’s Signature:  Date of Survey: 8-06-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>W. Fk. Spring R.</u> Waterbody ID: <u>2591</u> Site #: <u>3</u> Estimated Channel Incision: <u>0.3</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>598619</u> UTM Y: <u>4047712</u> +/- <u>44 ft.</u> (meters) 11 UTM X: <u>598505</u> UTM Y: <u>4047582</u> +/- <u>60 ft.</u> (meters) Average Stream Width: <u>10.5</u> (meters) Length of Survey Segment: <u>210</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>L. Schmid / M. Hamer</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>8/6/2008</u> Time: <u>1:15 p.m.</u> Dissolved Oxygen: <u>8.95</u> (mg/L) Dissolved Oxygen: <u>118.2</u> (% sat) Specific Cond: <u>357</u> (µS/cm) Water Temperature: <u>30.3</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	0.06	0.92	0.12	1.30	0.19	1.15	0.11	1.45	0.44	1.45	0.18	1.30	0.20	1.20	<.05	1.35	<.05	1.10	<.05	1.30	0.00
2	1.00	0.12	1.84	0.23	2.60	0.21	2.30	0.21	2.90	0.47	2.90	0.22	2.60	0.41	2.40	0.08	2.70	0.10	2.20	<.05	2.60	0.00
3	1.50	0.12	2.76	0.24	3.90	0.26	3.45	0.34	4.35	0.42	4.35	0.29	3.90	0.44	3.60	0.15	4.05	0.13	3.30	0.10	3.90	0.00
4	2.00	0.10	3.68	0.27	5.20	0.14	4.60	0.36	5.80	0.46	5.80	0.34	5.20	0.44	4.80	0.38	5.40	0.26	4.40	0.16	5.20	0.00
5	2.50	0.10	4.60	0.09	6.50	0.10	5.75	0.32	7.25	0.48	7.25	0.36	6.50	0.37	6.00	0.45	6.75	0.39	5.50	0.06	6.50	0.00
6	3.00	0.08	5.52	0.07	7.80	0.08	6.90	0.28	8.70	0.41	8.70	0.33	7.80	0.41	7.20	0.40	8.10	0.34	6.60	0.12	7.80	0.00
7	3.50	0.09	6.44	0.25	9.10	0.15	8.05	0.34	10.15	0.37	10.15	0.29	9.10	0.43	8.40	0.55	9.45	0.41	7.70	0.12	9.10	0.00
8	4.00	0.08	7.36	0.27	10.40	0.27	9.20	0.35	11.60	0.41	11.60	0.35	10.40	0.43	9.60	0.53	10.80	0.39	8.80	0.11	10.40	0.00
9	4.50	<.05	8.28	0.20	11.70	0.29	10.35	0.38	13.05	0.30	13.05	0.30	11.70	0.29	10.80	0.22	12.15	0.46	9.90	<.05	11.70	0.00
Right Bank	5.00	0.00	9.20	0.00	13.00	0.00	11.50	0.00	14.50	0.00	14.50	0.00	13.00	0.00	12.00	0.00	13.50	0.00	11.00	0.00	13.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	Run		Pool		Run		Dry		Dry													

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:



Date: 8-6-08

WBID # 2591

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)

Date & Time: 8-06-08 4:15 p.m.	Location Description (e.g., road crossing): Bridge @ County Rd. 8110
Stream Name: W. Fk. Spring R.	
Current Weather Conditions: Partial cloudy	Facility Name(s): South Fork R-VII Elementary
Weather Conditions for Past 10 days: .48" @ West Plains	Permit Number(s): MO-0126535
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): 599406	Northing (UTM Y): 4046580	Horizontal Accuracy: (EPE / FOM / PDOP) 37 ft. Meters
Site 11	Easting (UTM X): 599701	Northing (UTM Y): 4046623	Horizontal Accuracy: (EPE / FOM / PDOP) 50 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2591-4-A	Upstream looking down	2591-4-B	Bridge	2591-4-C	Dam
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2591-4-D	Downstream looking up				
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.)				

Site # 4

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 checked="" 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: Fence to prevent access from road				

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%.)

% Cobble	60% Gravel	20% Sand	10% Silt	10% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Brown algae on rocks. Some floating green algae. At least 40% of water covered by lily pads. Short, dense plant vegetation covering much of downstream run.
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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 type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum min.	<input type="checkbox"/> Foam	<input 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.)

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

Printed Names of Personnel Collecting Data: L. Schmid / M. Hamer

Surveyor's Signature:  Date of Survey: 8-06-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

Stream Name: <u>W. Fk. Spring R.</u> Waterbody ID: <u>2591</u> Site #: <u>4</u> Estimated Channel Incision: <u>0.2</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (E EPE) 01 UTM X: <u>599406</u> UTM Y: <u>599701</u> +/- <u>37 FT.</u> (meters) 11 UTM X: <u>599701</u> UTM Y: <u>4046623</u> +/- <u>50 FT.</u> (meters) Average Stream Width: <u>17</u> (meters) Length of Survey Segment: <u>340</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>I. Schmid / M. Hamer</u>	Dissolved Oxygen Date: <u>8/6/2008</u> Time: <u>4:15 p.m.</u> Dissolved Oxygen: <u>8.47</u> (mg/L) Dissolved Oxygen: <u>118.4</u> (% sat) Specific Cond: <u>424</u> (µS/cm) Water Temperature: <u>30.5</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	1.92	0.39	2.50	0.29	2.40	0.30	2.60	0.22	2.30	0.05	2.50	0.05	1.55	0.05	1.10	0.05	0.75	0.05	1.00	0.24	0.77	0.16
2	3.84	0.41	5.00	0.33	4.80	0.50	5.20	0.30	4.60	0.13	5.00	0.10	3.10	0.05	2.20	0.13	1.50	0.05	2.00	0.53	1.54	0.29
3	5.76	0.30	7.50	0.39	7.20	0.71	7.80	0.49	6.90	0.30	7.50	0.25	4.65	0.06	3.30	0.25	2.25	0.05	3.00	0.66	2.31	0.44
4	7.68	0.45	9.00	0.41	9.60	0.81	10.40	0.59	9.20	0.53	9.00	0.37	6.20	0.26	4.40	0.29	3.00	0.05	4.00	0.88	3.08	0.43
5	9.60	0.34	11.50	0.00	12.00	0.86	13.00	0.62	11.50	0.58	11.50	0.57	7.75	0.35	5.50	0.42	3.75	0.05	5.00	0.64	3.85	0.28
6	11.52	0.05	14.00	0.14	14.40	0.65	15.60	0.65	13.80	0.56	14.00	0.81	9.30	0.37	6.60	0.54	4.50	0.05	6.00	0.47	4.62	0.36
7	13.44	0.11	17.50	0.25	16.80	0.69	18.20	0.70	16.10	0.78	17.50	0.88	10.85	0.44	7.70	0.62	5.25	0.05	7.00	0.32	5.39	0.16
8	15.36	0.32	20.00	0.37	19.20	0.50	20.80	0.61	18.40	0.87	20.00	0.53	12.40	0.43	8.80	0.82	6.00	0.05	8.00	0.27	6.16	0.14
9	17.28	0.30	22.50	0.46	21.60	0.54	22.40	0.30	20.70	0.44	22.50	0.41	13.95	0.47	9.90	0.65	6.75	0.05	9.00	0.15	6.93	0.05
Right Bank	19.20	0.00	25.00	0.00	24.00	0.00	26.00	0.00	23.00	0.00	25.00	0.00	15.50	0.00	11.00	0.00	7.50	0.00	10.00	0.00	7.70	0.00
Feature Type <small>(riffle, run, or pool)</small>	Run		Riffle		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.

MAXIMUM 0.88
 MEDIAN 0.37

Surveyor's Signature:



Date: 8/6/2008

WBID # 2591

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)

Date & Time: 8-25-08	Location Description (e.g., road crossing):
Stream Name: W. Fk. Spring R.	Road crossing CR 9720
Current Weather Conditions: Clear and warm	Facility Name(s): South Fork R-VII Elementary
Weather Conditions for Past 10 days: .48" @ West Plains	Permit Number(s):MO-0126535
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): 599921	Northing (UTM Y): 4044931	Horizontal Accuracy: (EPE / FOM / PDOP)	185 ft. Meters
Site 11	Easting (UTM X): 599833	Northing (UTM Y): 4044773	Horizontal Accuracy: (EPE / FOM / PDOP)	59 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2591-5-A	Upstream looking down	2591-5-B	Bridge	2591-5-C	Pool
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2591-5-D	Downstream looking up				
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.)				

Site # 5

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 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%.)

% Cobble	70% Gravel	20% Sand	% Silt	% Mud/Clay	10% Bedrock

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Lots of creek plants, slick algae on rocks 80%.

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 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)
Pool	90	12.8	25	0.60	>1

Comments: (Please record any additional comments here.)

Difficult to get down to from road crossing due to thick brush and sharp drop.

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

Printed Names of Personnel Collecting Data: L. Schmid / M. Hamer

Surveyor's Signature:  Date of Survey: 8-25-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>W. Fk. Spring R.</u> Waterbody ID: <u>2591</u> Site #: <u>5</u> Estimated Channel Incision: <u>0.3</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (E EPE) 01 UTM X: <u>599921</u> UTM Y: <u>4044931</u> +/- <u>185 ft.</u> (meters) 11 UTM X: <u>599833</u> UTM Y: <u>4044773</u> +/- <u>59 ft/</u> (meters) Average Stream Width: <u>7.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>L. Schmid / M. Hamer</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>8/25/2008</u> Time: <u>2:20 p.m.</u> Dissolved Oxygen: <u>7.58</u> (mg/L) Dissolved Oxygen: <u>88.6</u> (% sat) Specific Cond: <u>448</u> (µS/cm) Water Temperature: <u>23.1</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	0.60	0.05	0.46	0.26	0.59	0.06	0.59	0.06	0.54	0.10	1.29	0.09	1.28	0.67	1.21	0.19	0.58	0.39	0.34	0.13	1.12	>.05
2	1.20	0.05	0.92	0.27	1.18	0.18	1.18	0.11	1.08	0.31	2.58	0.14	2.56	0.67	2.42	0.22	1.16	0.46	0.68	0.20	2.24	0.05
3	1.80	0.13	1.38	0.37	1.77	0.20	1.77	0.12	1.62	0.30	3.87	0.74	3.84	0.78	3.63	0.34	1.74	0.49	1.02	0.21	3.36	0.06
4	2.40	0.18	1.84	0.39	2.36	0.18	2.36	0.07	2.16	0.29	5.16	0.75	5.12	1.00	4.84	0.26	2.32	0.54	1.36	0.15	4.48	0.10
5	3.00	0.21	2.30	0.34	2.95	0.05	2.95	0.05	2.70	0.23	6.45	0.55	6.40	0.92	6.05	0.27	2.90	0.56	1.70	0.13	5.60	0.10
6	3.60	0.22	2.76	0.24	3.54	0.05	3.54	0.08	3.24	0.21	7.74	0.38	7.68	1.00	7.26	0.28	3.48	0.42	2.04	0.07	6.72	>.05
7	4.20	0.28	3.22	0.21	4.13	0.11	4.13	0.07	3.78	0.24	9.03	0.38	8.96	1.00	8.47	0.20	4.06	0.42	2.38	0.07	7.84	0.09
8	4.80	0.43	3.68	0.20	4.72	0.08	4.72	0.05	4.32	0.18	10.32	0.36	10.24	1.00	9.68	0.24	4.64	0.39	2.72	0.05	8.96	0.14
9	5.40	0.44	4.14	0.09	5.31	0.05	5.31	0.05	4.86	0.11	11.61	0.33	11.52	0.56	10.89	0.25	5.22	0.30	3.06	0.06	10.08	0.12
Right Bank	6.00	0.00	4.60	0.00	5.90	0.00	5.90	0.00	5.40	0.00	12.90	0.00	12.80	0.00	12.10	0.00	5.80	0.00	3.40	0.00	11.20	0.00
Feature Type	Run		Run		Run		Riffle		Run		Run		Pool		Run		run		Run		Riffle	

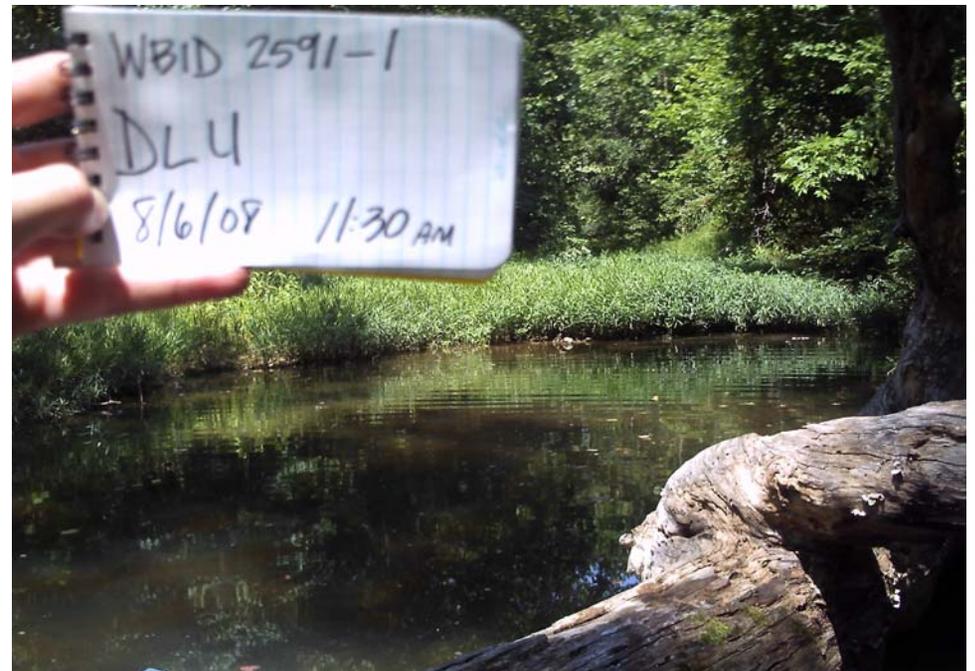
Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced 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

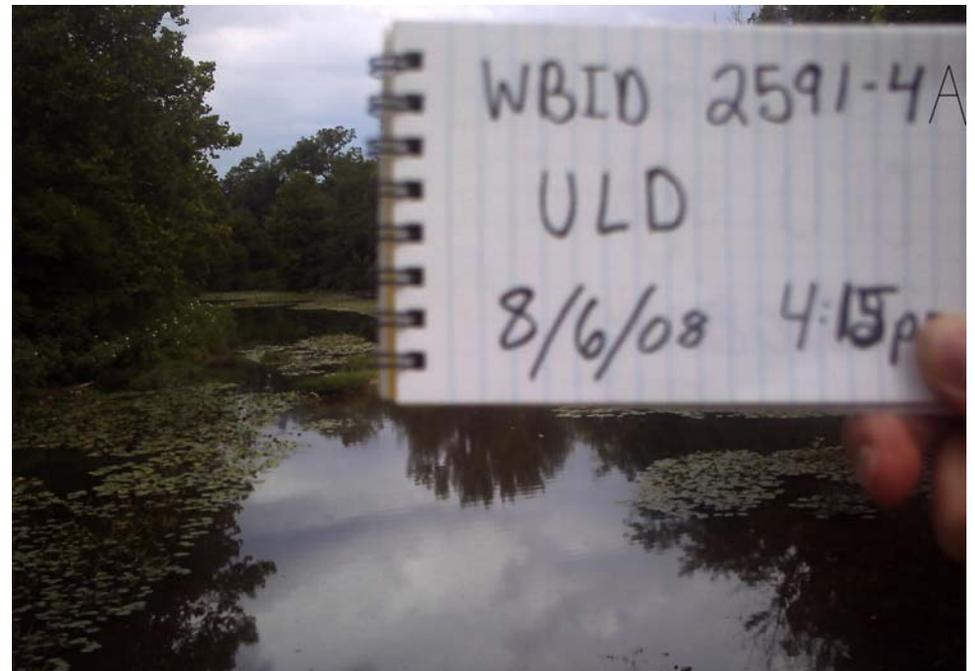
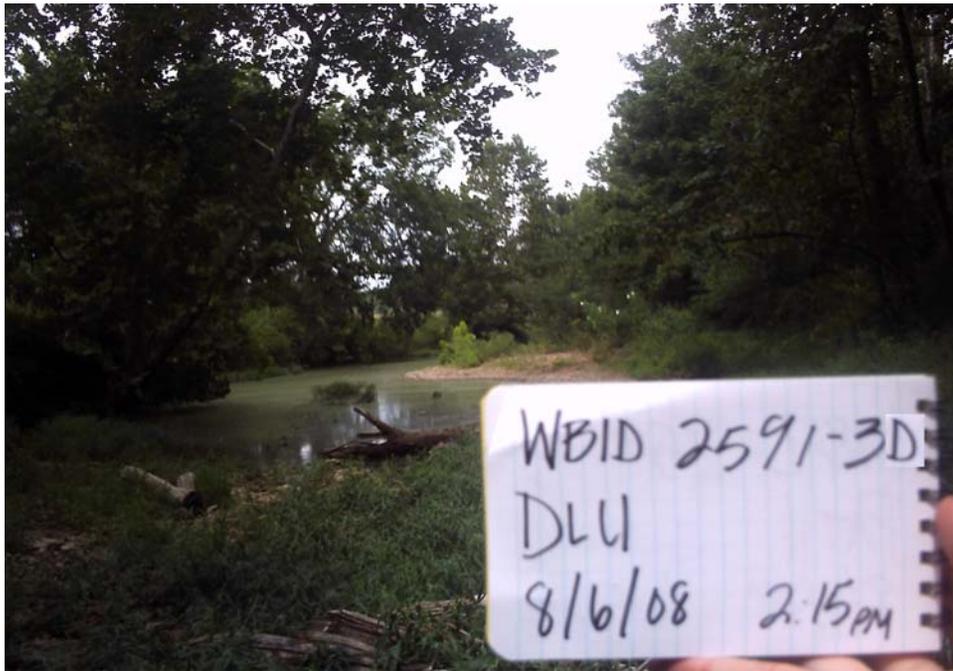
MEDIAN 0.20

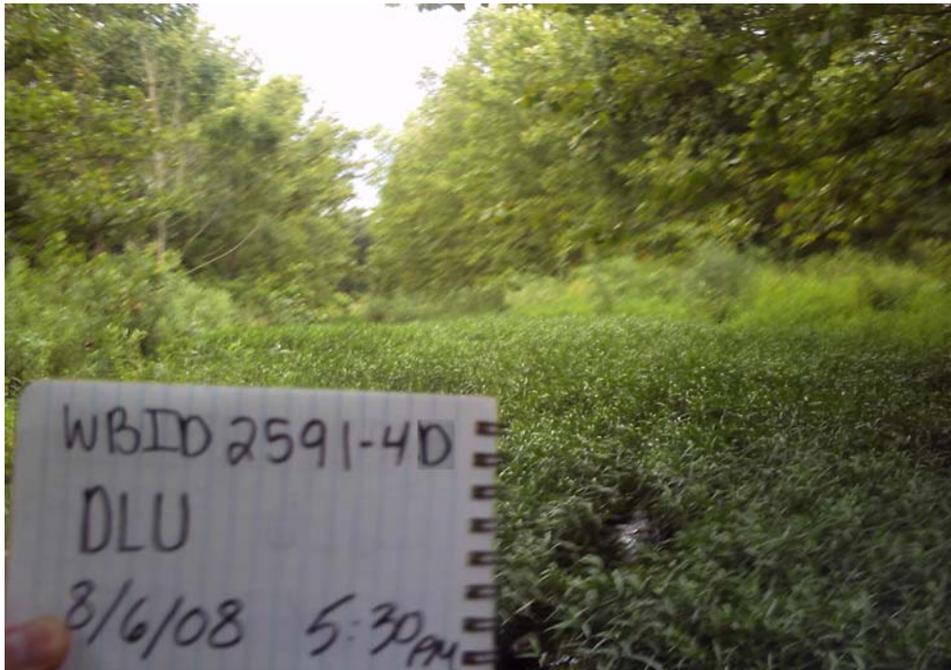
Surveyor's Signature:

Date: 8/25/2008











Field Data Sheets for Recreational Use Stream Surveys

Data Sheet D – Recreational Use Interview

(must be completed for each interview)

I. Introduction

Stream Name and WBID: W. Fk. Spring R. WBID#2591-3

Date & Time (include AM or PM): 8-06-08 1:10 p.m.

Interviewed: In person By phone By mail

(NOTE: If you are an Interviewee filling out this form to mail back to DNR, proceed to Question #1.)

Interviewee selected because (e.g., house next to stream; standing by stream, etc.) House next to stream

Interviewer introduction to Interviewee: “My name is _____, I work for ____(name of your employer)____, and I am collecting information on how people use ____(name of the stream)____.”

ASK:

1.) Are you willing to respond to a survey about this stream? (It will just take a few minutes.)

Yes No If yes, list contact information for the interviewee below:

Legal name: Declined to give, homeowner next to stream (on Hwy JJ)

Current mailing address: _____

Daytime phone number) _____

E-mail address (optional): _____

2.a.) Do you live in this area? Yes No

If yes, how many years? _____

2.b.) If you don't live in this area, are you still familiar with this stream? Yes No

If yes, how many years? _____

If no, thank the individual for taking the time to talk to you and conclude the interview.

3.) Are you familiar with this particular stretch of the stream? (show them the map, pointing out local landmarks such as roads, bridges, property lines) Yes No

If yes, proceed to “II. Personal Use?”.

If no, proceed to Section V.

II. Personal Use?

1.) Have you or your family personally used the stream for recreation since November 28, 1975? Yes No

If yes, proceed to #3.

If no, proceed to, and complete #2.

2.a.) If no, list reasons stream not used. _____

b.) From here proceed to “III. Witnessed Use?”.

3.) How do you use the stream?

Whole Body Contact Recreation (WBCR)			
<input checked="" type="checkbox"/> Swimming	<input type="checkbox"/> Tubing	<input type="checkbox"/> Snorkeling/Skin Diving	<input type="checkbox"/> Water Skiing

If Interviewee (or family) used the stream for WBCR since Nov. 28, 1975, ask:

4.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)?
Occasionally during the summer when it is higher.

4.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). At bridge & downstream from segment at "diving board"

Secondary Contact Recreation (SCR)				
<input checked="" type="checkbox"/> Fishing	<input checked="" type="checkbox"/> Wading	<input type="checkbox"/> Boating	<input type="checkbox"/> Trapping	<input type="checkbox"/> Other:

If Interviewee (or family) used the stream for SCR since Nov. 28, 1975, ask:

4.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)?
Occasionally during the summer

4.d.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). Wherever pools are.

4.e.) Which of these times and places (if any) did children wade or play? Witnessed other families with children every summer, near bridge in adequate water

III. Witnessed Use?

- Have you observed others using this stream for recreation since Nov. 28, 1975?
 Yes No
 If yes, proceed to #2.
 If no, proceed to, "IV. Anecdotal Use?".
- What kinds of uses have you witnessed?

Whole Body Contact Recreation (WBCR)			
<input checked="" type="checkbox"/> Swimming	<input type="checkbox"/> Tubing	<input type="checkbox"/> Snorkeling/Skin Diving	<input type="checkbox"/> Water Skiing

If Interviewee witnessed WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____
 Often see or hear children playing during the summer.

2.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

In pool under bridge. _____

Secondary Contact Recreation (SCR)				
<input checked="" type="checkbox"/> Fishing	<input checked="" type="checkbox"/> Wading	<input type="checkbox"/> Boating	<input type="checkbox"/> Trapping	<input type="checkbox"/> Other:

If Interviewee witnessed SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____
 Occasionally during the summer, fishing when water is flowing.

2.d.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). Along property line.

2.e.) Which of these times and places (if any) did you specifically witness children wading or playing? _____

IV. Anecdotal Use?

1.) Have you heard about anyone using this stream since Nov. 28, 1975 for recreation – not seen or done yourself, but just heard about it? Yes No

If yes, proceed to #2.

If no, thank the individual for taking the time to talk to you and conclude the interview.

2.) What kind of uses have you heard about?

Whole Body Contact Recreation (WBCR)			
<input type="checkbox"/> Swimming	<input type="checkbox"/> Tubing	<input type="checkbox"/> Snorkeling/Skin Diving	<input type="checkbox"/> Water Skiing

If Interviewee heard of WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

Secondary Contact Recreation (SCR)

Fishing Wading Boating Trapping Other: _____

If Interviewee heard of SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.d.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

2.e.) Which of these times and places (if any) did you hear specifically of children wading or playing? _____

V. Others to Contact?

Can you recommend someone else we could contact that knows the stream? Yes No

If yes, that person's contact info (name, address, phone, directions?) _____

If no, thank the individual for taking the time to talk to you and conclude the interview.

VI. Additional Comments

From the Interviewee: _____

From the Interviewer: _____

WBID # 2591.

Name of Person Interviewed _____

Site # 3

Date of Interview 8-06-08

VII. Information on Interviewer

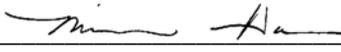
Has interviewer been trained by Missouri DNR to conduct UAA Interviews?

Yes No

If yes, how? (check all that apply):

Pre-Assessment Meeting Workshop On-line training seminar

Other. If "Other," list: _____

Interviewer's Signature: 

Interviewer's Name, Printed: Micah Hamer

Employer (where applicable): Olsson Associates

Interviewer's Phone No.: (417)543-0377 E-mail: Micah.Hamer@gmail.com