



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 2439 West Fork Roark Creek

Submitted by
Olsson Associates

To
Missouri Department of Natural Resources
Water Protection Program

On
June 3, 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. Roark Creek
Missouri Water Body Identification (WBID) Number: 2439
8-digit HUC: 11010003
County(ies), Listed Upstream to Downstream: Stone, Taney
Upstream Legal Description (from Table H): 7, 23N, 21W
Downstream Legal Description (from Table H): 15, 23N, 22W
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)

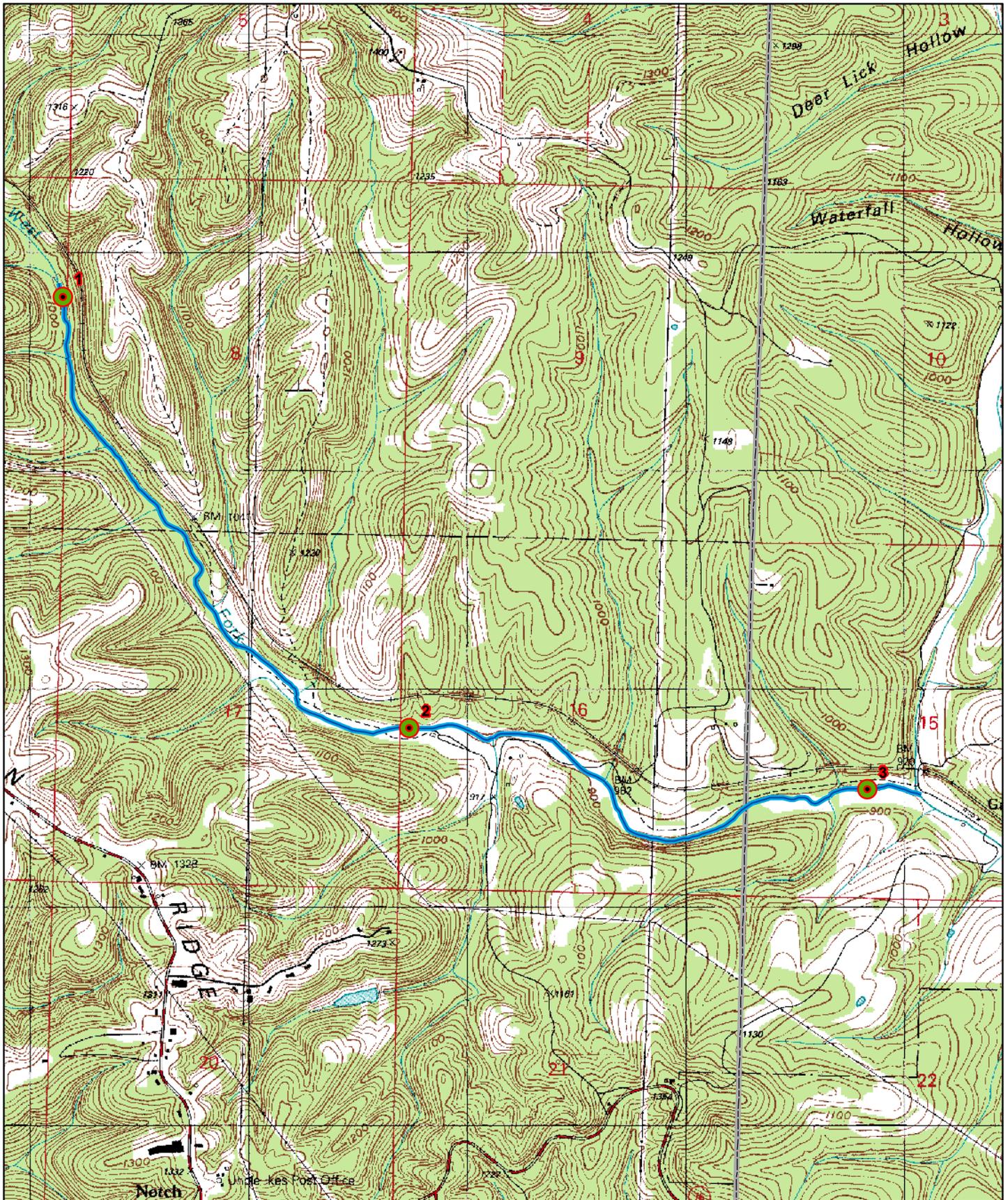
Facility Name(s) and Permit Number(s): Stonebridge Village WWTF MO-0115151

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

Name of Surveyor: Rodney Holland	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.

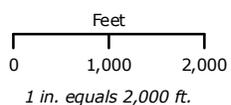
Signed:  Date: 4-16-08



**MISSOURI RECREATIONAL
USE ATTAINABILITY ANALYSIS**

Stream: W. Fk. Roark Cr.
WBID: 2439

Map Sheet: 1/1
County: Taney & Stone



WBID # 2439

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: 4-16-08	10:15 a.m.	Location Description (e.g., road crossing):
Stream Name: W. Fk, Roark Creek		0.14 miles downstream of Wildcat Hollow
Current Weather Conditions: Sunny		Facility Name(s): Stonebridge Village WWTF
Weather Conditions for Past 10 days: 3.47" rain @ Galena		Permit Number(s): MO-0115151
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): 469139	Northing (UTM Y): 4062776	Horizontal Accuracy: (EPE / FOM / PDOP)	32 ft.	Meters
Site 11	Easting (UTM X): 469165	Northing (UTM Y): 4062638	Horizontal Accuracy: (EPE / FOM / PDOP)	93 ft.	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2439-1-A	Upstream looking down				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2439-1-B	Trail				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2439-1-C	Downstream looking up				

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 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 checked="" type="checkbox"/> Other:
Comments: Private Property (Stonebridge)				

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

<input 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 checked="" type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input type="checkbox"/> None of the above	Comments / Other:			

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

% Cobble	60% Gravel	10% Sand	% Silt	% Mud/Clay	30% 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 type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

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

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

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

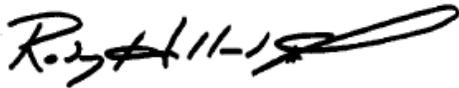
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Rodney Holland, Christopher Parks

Surveyor's Signature:  Date of Survey: 4-16-08

Organization: Olsson Associates Position: Field Supervisor & Field Technician

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>W. Fk. Roark Creek</u> Waterbody ID: <u>2439</u> Site #: <u>1</u> Estimated Channel Incision: <u>0.5</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>469139</u> UTM Y: <u>4062776</u> +/- <u>32</u> ft. (meters) 11 UTM X: <u>469165</u> UTM Y: <u>4062638</u> +/- <u>93</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>Rodney Holland and Christopher Parks</u>	Dissolved Oxygen Date: <u>4/16/2008</u> Time: <u>10:25 a.m.</u> Dissolved Oxygen: <u>11.18</u> (mg/L) Dissolved Oxygen: <u>100.5</u> (% sat) Specific Cond: <u>266</u> (µS/cm) Water Temperature: <u>11.5</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	0.60	0.07	0.48	0.08	0.41	0.17	0.50	0.18	0.72	0.18	0.62	0.05	0.73	0.06	0.54	0.08	0.60	0.19	0.73	0.21	0.69	0.05
	2	1.20	0.16	0.96	0.12	0.82	0.21	1.00	0.21	1.44	0.28	1.24	0.09	1.46	0.08	1.08	0.19	1.20	0.30	1.46	0.20	1.38	0.11
	3	1.80	0.14	1.44	0.13	1.23	0.42	1.50	0.23	2.16	0.42	1.86	0.13	2.19	0.06	1.62	0.17	1.80	0.39	2.19	0.20	2.07	0.13
	4	2.40	0.15	1.92	0.11	1.64	0.41	2.00	0.29	2.88	0.46	2.48	0.19	2.92	0.16	2.16	0.23	2.40	0.42	2.92	0.22	2.76	0.12
	5	3.00	0.11	2.40	0.19	2.05	0.33	2.50	0.22	3.60	0.34	3.10	0.33	3.65	0.18	2.70	0.31	3.00	0.30	0.37	0.31	3.45	0.28
	6	3.60	0.09	2.88	0.14	2.46	0.35	3.00	0.22	4.32	0.41	3.72	0.39	4.38	0.24	3.24	0.09	3.60	0.19	4.38	0.26	4.14	0.11
	7	4.20	0.11	3.36	0.10	2.87	0.29	3.50	0.18	5.04	0.29	4.34	0.35	5.11	0.13	3.78	0.06	4.20	0.22	5.11	0.29	4.83	0.19
	8	4.80	0.13	3.84	0.21	3.28	0.26	4.00	0.15	5.76	0.37	4.96	0.23	5.84	0.11	4.32	0.09	4.80	0.23	5.84	0.33	5.52	0.13
	9	5.40	0.13	4.32	0.23	3.69	0.22	4.50	0.09	6.48	0.32	5.58	0.14	6.57	0.13	4.86	0.05	5.40	0.24	6.57	0.38	6.21	0.10
Right Bank		6.00	0.00	4.80	0.00	4.10	0.00	5.00	0.00	7.20	0.00	6.20	0.00	7.30	0.00	5.40	0.00	6.00	0.00	7.30	0.00	6.90	0.00
Feature Type		riffle		riffle		run		riffle		run		run		riffle		riffle		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 0.46

MEDIAN 0.19

Surveyor's Signature: _____

Date: 4/16/2008

WBID # 2439

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: 4-16-08	11:05 a.m.	Location Description (e.g., road crossing):
Stream Name: W. Fk, Roark Creek		250 meters upstream Golf course Maintenance House
Current Weather Conditions: Sunny		Facility Name(s): Stonebridge Village WWTF
Weather Conditions for Past 10 days: 3.47" rain @ Galena		Permit Number(s): MO-0115151
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): 470638	Northing (UTM Y): 4061029	Horizontal Accuracy: (EPE / FOM / PDOP)	124 ft.	Meters
Site 11	Easting (UTM X): 470810	Northing (UTM Y): 4061031	Horizontal Accuracy: (EPE / FOM / PDOP)	158 ft.	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2439-2-A	Upstream looking down	2439-2-D	Maintenance shed		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2439-2-B	Picnic area				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2439-2-C	Downstream looking up				

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 type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other:
Comments: Private Property (Stonebridge)				

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

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

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

% Cobble	60% Gravel	10% Sand	% Silt	% Mud/Clay	30% 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 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 # 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: Rodney Holland, Christopher Park

Surveyor's Signature:  Date of Survey: 4-16-08

Organization: Olsson Associates Position: Field Supervisor & Field Technician

WBID # 2439

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: 4-16-08	11:55 a.m.	Location Description (e.g., road crossing):
Stream Name: W. Fk, Roark Creek		0.10 miles upstream of Hwy 76 bridge
Current Weather Conditions: Sunny		Facility Name(s): Stonebridge Village WWTF
Weather Conditions for Past 10 days: 3.47" rain @ Galena		Permit Number(s): MO-0115151
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): 472635	Northing (UTM Y): 4060728	Horizontal Accuracy: (EPE / FOM / PDOP) 76 ft. Meters
Site 11	Easting (UTM X): 472763	Northing (UTM Y): 4060757	Horizontal Accuracy: (EPE / FOM / PDOP) 65 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2439-3-A & C	Upstream looking down and bridge				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2439-3-B	Maintenance shed				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2439-3-D	Downstream looking up				

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 type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other:
Comments: Private Property (Stonebridge)				

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: Maintenance shed			

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

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

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Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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

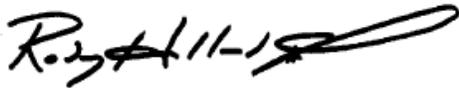
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Rodney Holland, Christopher Parks

Surveyor's Signature:  Date of Survey: 4-16-08

Organization: Olsson Associates Position: Field Supervisor & Field Technician

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>W. Fk. Roark Creek</u> Waterbody ID: <u>2439</u> Site #: <u>2</u> Estimated Channel Incision: <u>0.55</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>470638</u> UTM Y: <u>4061029</u> +/- <u>124</u> ft. (meters) 11 UTM X: <u>470810</u> UTM Y: <u>4061031</u> +/- <u>158</u> ft. (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Rodney Holland and Christopher Parks</u>	Dissolved Oxygen Date: <u>4/16/2008</u> Time: <u>11:10 a.m.</u> Dissolved Oxygen: <u>10.9</u> (mg/L) Dissolved Oxygen: <u>100.1</u> (% sat) Specific Cond: <u>275</u> (µS/cm) Water Temperature: <u>13.1</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	0.66	0.18	0.70	0.14	0.68	0.09	0.71	0.09	0.68	0.15	0.57	0.12	0.53	0.05	0.82	0.39	0.80	0.18	0.89	0.41	0.76	0.29
	2	1.32	0.41	1.40	0.28	1.36	0.09	1.42	0.19	1.36	0.24	1.14	0.14	1.06	0.12	1.64	0.41	1.60	0.21	1.78	0.32	1.52	0.48
	3	1.98	0.42	2.10	0.31	2.04	0.11	2.13	0.27	2.04	0.31	1.71	0.28	1.59	0.15	2.46	0.29	2.40	0.19	2.67	0.36	2.28	0.64
	4	2.64	0.49	2.80	0.33	2.72	0.13	2.84	0.28	2.72	0.30	2.28	0.27	2.12	0.19	3.28	0.29	3.20	0.27	3.56	0.32	3.04	0.75
	5	3.30	0.51	3.50	0.18	3.40	0.15	3.55	0.29	3.40	0.28	2.85	0.29	2.65	0.28	4.10	0.21	4.00	0.22	4.45	0.39	3.80	0.57
	6	3.96	0.47	4.20	0.17	4.08	0.28	4.26	0.28	4.80	0.08	3.42	0.24	3.18	0.32	4.92	0.22	4.80	0.20	5.34	0.43	4.56	0.68
	7	4.62	0.53	4.90	0.14	4.76	0.24	4.97	0.08	4.76	0.05	3.99	0.22	3.71	0.29	5.74	0.29	5.60	0.18	6.23	0.38	5.32	0.59
	8	5.28	0.51	5.60	0.06	5.44	0.18	5.68	0.22	5.44	0.13	4.56	0.09	4.24	0.29	6.56	0.39	6.40	0.20	7.12	0.46	6.08	0.68
	9	5.94	0.49	6.30	0.13	6.12	0.12	6.39	0.12	6.12	0.05	5.13	0.36	4.77	0.21	7.38	0.39	7.20	0.36	8.01	0.39	6.84	0.62
Right Bank		6.60	0.00	7.00	0.00	6.80	0.00	7.10	0.00	6.80	0.00	5.70	0.00	5.30	0.00	8.20	0.00	8.00	0.00	8.90	0.00	7.60	0.00
Feature Type <small>(riffle, run, or pool)</small>		run		riffle		run		run		run		run		riffle		run		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.

MAXIMUM 0.75

MEDIAN 0.28

Surveyor's Signature: _____

Date: 4/16/2008

WBID # 2439

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: 4-16-08	11:55 a.m.	Location Description (e.g., road crossing):
Stream Name: W. Fk, Roark Creek		0.10 miles upstream of Hwy 76 bridge
Current Weather Conditions: Sunny		Facility Name(s): Stonebridge Village WWTF
Weather Conditions for Past 10 days: 3.47" rain @ Galena		Permit Number(s): MO-0115151
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): 472635	Northing (UTM Y): 4060728	Horizontal Accuracy: (EPE / FOM / PDOP) 76 ft. Meters
Site 11	Easting (UTM X): 472763	Northing (UTM Y): 4060757	Horizontal Accuracy: (EPE / FOM / PDOP) 65 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2439-3-A & C	Upstream looking down and bridge				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2439-3-B	Maintenance shed				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2439-3-D	Downstream looking up				

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 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: Private Property (Stonebridge)				

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: Maintenance shed			

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

% Cobble	20% Gravel	10% Sand	% Silt	% Mud/Clay	70% 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 type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

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

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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

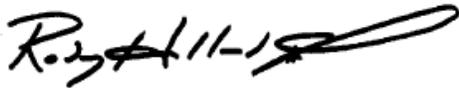
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Rodney Holland, Christopher Parks

Surveyor's Signature:  Date of Survey: 4-16-08

Organization: Olsson Associates Position: Field Supervisor & Field Technician

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>W. Fk. Roark Creek</u> Waterbody ID: <u>2439</u> Site #: <u>3</u> Estimated Channel Incision: <u>0.4</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>472635</u> UTM Y: <u>4060728</u> +/- <u>76</u> ft. (meters) 11 UTM X: <u>472763</u> UTM Y: <u>4060757</u> +/- <u>65</u> ft. (meters) Average Stream Width: <u>9</u> (meters) Length of Survey Segment: <u>180</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Rodney Holland and Christopher Parks</u>	Dissolved Oxygen Date: <u>4/16/2008</u> Time: <u>12:00 p.m.</u> Dissolved Oxygen: <u>11.02</u> (mg/L) Dissolved Oxygen: <u>104.8</u> (% sat) Specific Cond: <u>296</u> (µS/cm) Water Temperature: <u>14.6</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	0.65	0.18	0.70	0.09	0.81	0.16	0.94	0.27	1.10	0.22	0.61	0.21	0.83	0.05	0.88	0.05	0.97	0.13	1.20	0.09	0.94	0.16	
2	1.30	0.21	1.40	0.12	1.62	0.19	1.88	0.28	2.20	0.21	1.22	0.30	1.66	0.05	1.76	0.10	1.94	0.28	2.40	0.12	1.88	0.19	
3	1.95	0.23	2.10	0.15	2.43	0.21	2.82	0.35	3.30	0.29	1.83	0.39	2.49	0.05	2.64	0.05	2.91	0.19	3.60	0.13	2.82	0.31	
4	2.60	0.28	2.80	0.20	3.24	0.28	3.76	0.42	4.40	0.34	2.44	0.58	3.32	0.05	3.52	0.07	3.88	0.11	4.80	0.09	3.76	0.33	
5	3.25	0.41	3.50	0.58	4.05	0.32	4.70	0.41	5.50	0.33	3.05	0.60	4.15	0.09	4.40	0.05	4.85	0.12	6.00	0.13	4.70	0.38	
6	3.90	0.51	4.20	0.51	4.86	0.32	5.64	0.36	6.60	0.43	3.66	0.42	4.98	0.21	5.28	0.08	5.82	0.13	7.20	0.12	5.64	0.28	
7	4.55	0.50	4.90	0.42	5.67	0.39	6.58	0.38	7.70	0.37	4.27	0.31	5.81	0.09	6.16	0.12	6.79	0.19	8.40	0.15	6.58	0.22	
8	5.20	0.42	5.60	0.31	6.48	0.37	7.52	0.41	8.80	0.32	4.88	0.32	6.64	0.10	7.04	0.12	7.76	0.11	9.60	0.18	7.52	0.21	
9	5.85	0.31	6.30	0.21	7.29	0.38	8.46	0.29	9.90	0.35	5.49	0.28	7.47	0.13	7.92	0.21	8.73	0.11	10.80	0.19	8.46	0.12	
Right Bank	6.50	0.00	7.00	0.00	8.10	0.00	9.40	0.00	11.00	0.00	6.10	0.00	8.30	0.00	8.80	0.00	9.70	0.00	12.00	0.00	9.40	0.00	
Feature Type <small>(riffle, run, or pool)</small>	run		riffle		riffle		riffle		riffle		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 0.60

MEDIAN 0.21

Surveyor's Signature: _____

Date: 4/16/2008

