



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0505 Wamsley Creek

Submitted by
BWR

to

Missouri Department of Natural Resources
Water Protection Program

Date received: July 11, 2007

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):	WAMSLEY CREEK
Missouri Water Body Identification (WBID) Number:	0505
8-digit HUC:	10280101
County:	DEKALB
Upstream Legal Description (from Table H):	27, 58N, 30W
Downstream Legal Description (from Table H):	MOUTH
Number of sites evaluated	3
List all sites numbers, listed consequently upstream to downstream:	1, 2, 3

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest.

II. Subsegmentation (fill this section out only in cases where subsegmentation is being proposed)

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates:		Downstream Coordinates:	
UTM X	Y	UTM X	Y
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other	
EPE	± _____ Feet or ± _____ Meters	_____	
PDOP		± _____ Feet or ± _____ Meters	

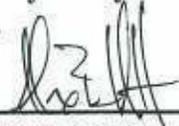
III. Discharger Facility Information (list all permitted dischargers on the stream)

Discharger Facility Name(s):	ROCKWOOD CREEK MH VILLAGE
Discharger Permit Number(s):	MO 123960

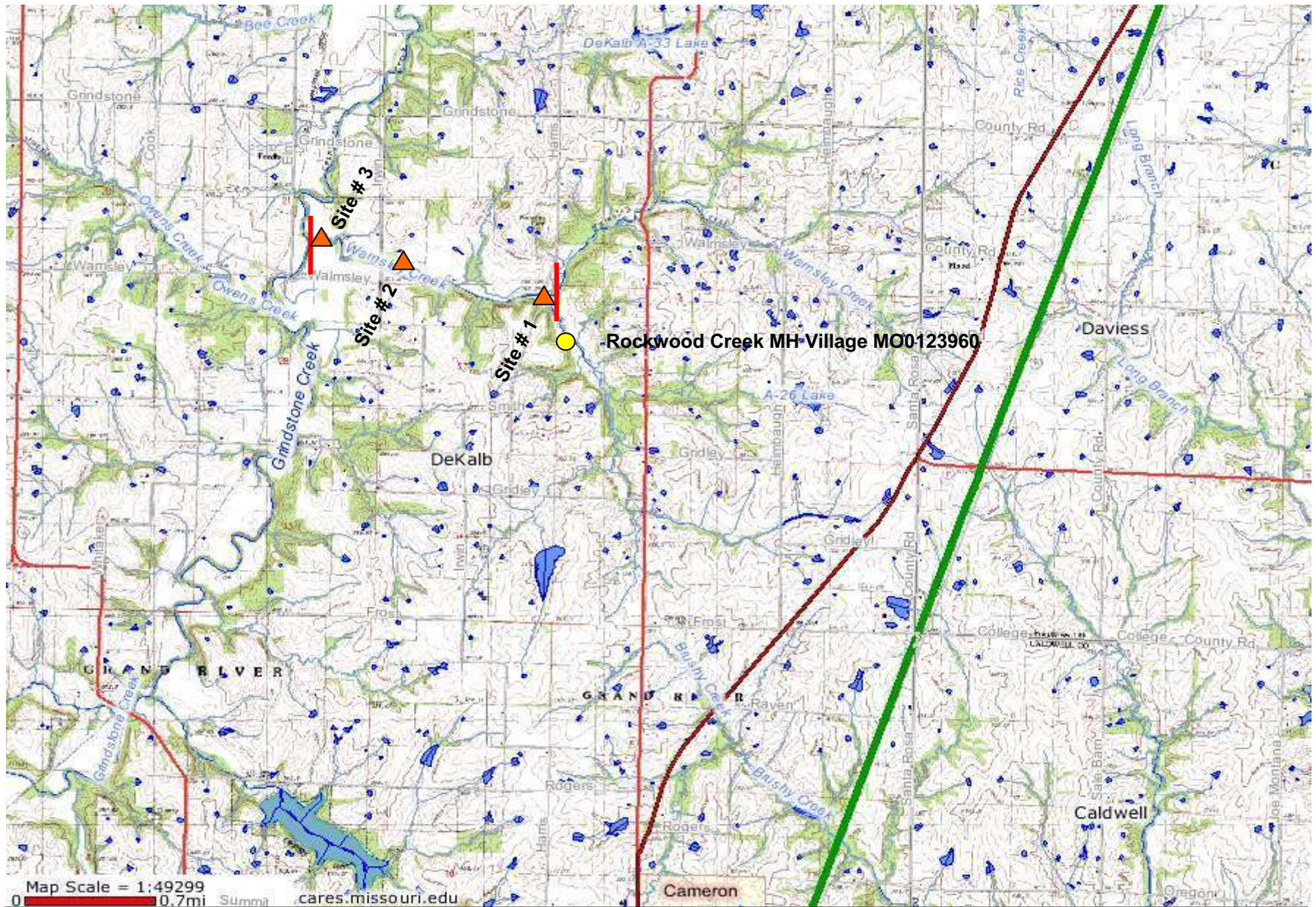
IV. UAA Surveyor (please print legibly)

Name of Surveyor	ALEX BARTLETT	Telephone Number:	816.363.2696
Organization/Employer:	BWR CORP.		
Position:	ENVIRONMENTAL SCIENTIST		

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

Signed: 

Date: 6/14/07



Wamsley Creek WBID #505



WBID# 0505
 Site# 1

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet B - Site Characterization
 (must be completed for each site)

Date & Time: <u>6/14/07 14:30</u>	Site Location Description (e.g., road crossing): <u>UPSTREAM</u> <u>Bridge Crossing @ Harris Rd</u>
Personnel (Data Collectors): <u>Bartlett & Lunt</u>	Facility Name: <u>ROCKWOOD CREEK MH VILLAGE</u>
Current Weather Conditions: <u>Fair 85 F</u>	Permit Number: <u>MO0123960</u>
Weather Conditions for Past 10 days: <u>Rain/Cloudy/Hot</u>	
Drought Conditions?: 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 Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)	
Site GPS Coordinates: UTM X: <u>39.81773</u>	Y: <u>094.24618</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data):	
Global Positioning System (GPS)	
Static Mode	Interpolation
Dynamic Mode (Kinematic)	Topographic Map or DRG
Precise Positioning Service	Aerial Photograph or DOQQ
Signal Averaging	Satellite Imagery
Real Time Differential Processing	Interpolation Other
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	Interpolation Data Quality
FOM ± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____
EPE ± _____ Feet or ± _____ Meters	± _____ Feet or ± _____ Meters
PDOP	

Photos: ERASE PHOTO 1st 2 Wamsley Photo

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>0505-3,4</u>	<u>TRAN. J-K</u>	<u>0505-1,2</u>	<u>TRANS B-A</u>		

Uses Observed*: (Uses actually observed at 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 Data Sheet D- Recreational Use Interview when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

Indications of Human Use*: (attach photos)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	

Comments: Harris Rd

90 CHANNEL FEATURES

* Page Two – Data Sheet B for WBID # 0503: SITE # 1

Run -
Riffle - 10
Pool - 90

Stream Morphology:
Upstream View's Physical Dimensions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

% Cobble	% Gravel	<u>60</u> % Sand	% Silt	% Mud/Clay	<u>40</u> % Bedrock
----------	----------	------------------	--------	------------	---------------------

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

Considerable algal growth 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 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:

Comments: Please attach any additional comments () to this form.

*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 effect another use.

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

Surveyor's Signature: [Signature] Date of Survey: 6/14/07
Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C - Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 0505

Site # 1

Transect	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
Transect A	wetted width	0.1			
	<u>5.0 m</u>	0.2		1	Channel Feature:
				2	Pool
		0.3		3	
	measurements	0.3		4	Dissolved Oxygen:
	<u>0.50 m</u>	0.2		5	
	apart	0.3		6	<u>12.53</u> ppm
		0.3		7	<u>7</u>
		<0.1		8	
		<0.1		9	
Transect B	wetted width	0.2			
	<u>6.7 m</u>	0.4		12	Channel Feature:
		0.3		13	Pool
		0.4		14	
	measurements	0.4		15	Dissolved Oxygen:
	<u>0.67 m</u>	0.5		16	
	apart	0.3		17	<u>12.85</u> ppm
		0.3		18	<u>7</u>
		0.2		19	
		0.1		20	
Transect C	wetted width	0.1			
	<u>6.0 m</u>	0.5		23	Channel Feature:
		0.5		24	Pool
		0.4		25	
	measurements	0.4		26	Dissolved Oxygen:
	<u>0.60 m</u>	0.4			
	apart	0.6			<u>12.10</u> ppm
		0.5			<u>7</u>
		0.2			
		0.1		n	
	<0.1				

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth the middle rank is the median depth.
 If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this U.S. datasheet is true and accurate.

Signed: [Signature] Date: 6/14/07
 Organization: BWR CORP. Position: ENV. SC.

Data Sheet C - Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 0505

Site # -1

Transect	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
D	wetted width	0.1			
	3.5 m	0.5		1	Channel Feature:
		0.6		2	Pool
	measurements	0.5		3	
	0.35 m	0.4		4	Dissolved Oxygen:
	apart	0.4		5	
		0.3		6	14.50 ppm
		0.2		7	
		0.2		8	
		0.1		9	
E	wetted width	< 0.1		10	
	0.5 m	< 0.1		11	
		< 0.1		12	Channel Feature:
	measurements	< 0.1		13	RUN
	0.05 m	< 0.1		14	
	apart	< 0.1		15	Dissolved Oxygen:
		< 0.1		16	
		< 0.1		17	12.80 ppm
		< 0.1		18	
		< 0.1		19	
F	wetted width	0.2		20	
	0.60 m	0.2		21	
		0.5		22	Channel Feature:
	measurements	0.5		23	Pool
	0.100 m	0.5		24	
	apart	0.4		25	Dissolved Oxygen:
		< 0.1		26	
		< 0.1		.	13.12 ppm
		< 0.1		.	
		< 0.1		n	

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth the middle rank is the median depth.
 If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this U. datasheet is true and accurate.

Signed: [Signature] Date: 6/14/07
 Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C - Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 0505

Site # 1

Transect	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
Transect G	wetted width	0.1			
	9.5 m	0.4		1	Channel Feature:
		0.5		2	Pool
	measurements	0.5		3	
	0.85 m	0.4		4	Dissolved Oxygen
	apart	0.4		5	
		0.4		6	12.11 ppm
		0.4		7	7%
		0.2		8	
		0.1		9	
Transect H	wetted width	0.1		10	
	10.0 m	0.6		11	
		0.6		12	Channel Feature:
	measurements	0.4		13	Pool
	1.0 m	0.5		14	
	apart	0.2		15	Dissolved Oxygen:
		0.3		16	
		0.3		17	11.93 ppm
		0.1		18	7%
		0.1		19	
Transect I	wetted width	0.1		20	
	4.0 m	0.1		21	
		0.1		22	Channel Feature:
	measurements	0.1		23	Pool
	0.10 m	0.1		24	
	apart	0.1		25	Dissolved Oxygen
		0.1		26	
		0.1		.	14.87 ppm
		0.1		.	7%
		0.1		n	

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth the middle rank is the median depth.
 If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UA datasheet is true and accurate.

Signed: [Signature] Date: 6/14/07
 Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C - Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 0505 Site # 1

Transect	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
Transect J	wetted width	0.1			
	9.7 m	0.3		1	Channel Feature:
		0.4		2	Pool
	measurements	0.4		3	
	0.97 m	0.4		4	Dissolved Oxygen
	apart	0.5		5	
		0.3		6	11.03 ppm
		0.3		7	
		0.1		8	
		0.1		9	
Transect K	wetted width	0.1		10	
	4.5 m	0.2		11	
		0.3		12	Channel Feature:
	measurements	0.3		13	Pool
	0.43 m	0.6		14	
	apart	0.8		15	Dissolved Oxygen:
		0.8		16	
		0.8		17	11.71 ppm
		0.7		18	
		0.5		19	
Transect	wetted width			20	
	m			21	
				22	
	measurements			23	Channel Feature:
	m			24	
	apart			25	
				26	Dissolved Oxygen
				.	
				.	ppm
				n	

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth the middle rank is the median depth.
 If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UA datasheet is true and accurate.

Signed: [Signature] Date: 6/14/07
 Organization: BWR CORP. Position: ENV. SCI.

WBID# 0505Site# 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>06-14-07 1530</u>	Site Location Description (e.g., road crossing): <u>BRIDGE CROSSING @ IRWIN RD. (UPSTREAM)</u>
Personnel (Data Collectors): <u>Bartlett & Lunt</u>	Facility Name: <u>ROCKWOOD CREEK MH VILLAGE</u>
Current Weather Conditions: <u>CLEAR - 85°</u>	Permit Number: <u>MO # 123968</u>
Weather Conditions for Past 10 days: <u>FAIR</u>	
Drought Conditions?: 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 Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)	
Site GPS Coordinates: UTM X: <u>39.81926</u>	Y: <u>094.25941</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data)	
Global Positioning System (GPS)	Interpolation
Static Mode	Topographic Map or DRG
Dynamic Mode (Kinematic)	Aerial Photograph or DOQQ
Precise Positioning Service	Satellite Imagery
Signal Averaging	Interpolation Other
Real Time Differential Processing	
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	Interpolation Data Quality
FOM ± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters
EPE ± _____ Feet or ± _____ Meters	
PDOP	

Photos:

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>0505-3,4</u>	<u>TRAN J-K</u>	<u>0505-1,2</u>	<u>TRAN B-A</u>		

Uses Observed*: (Uses actually observed at 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 *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

Indications of Human Use*: (attach photos)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	

Comments:

IRWIN RD.

% CHANNEL FEATURE:

RIFFLE: _____

RUN: 50

POOL: 50

* Page Two – Data Sheet B for WBID # 0505 :
Stream Morphology:

Upstream View's Physical Dimensions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

% Cobble	<u>30</u> % Gravel	<u>60</u> % Sand	<u>10</u> % Silt	% Mud/Clay	% Bedrock
----------	--------------------	------------------	------------------	------------	-----------

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

LARGE ALGAL MATS 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 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 checked="" 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	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments () to this form.

*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 effect another use.

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

Surveyor's Signature: [Signature] Date of Survey: 6/14/07

Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 0505

SITE # 2

TA

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1	WETTED WIDTH	0.2		1	CHANNEL FEATURE:
2	<u>2.0</u> m	0.3		2	POOL
3		0.4		3	
4	MEASUREMENTS	0.4		4	DISSOLVED OXYGEN:
5	<u>0.20</u> m	0.3		5	<u>14.19</u> PPM
6	APART	0.2		6	_____ %
7		0.1		7	
8		0.1		8	
9		0.1		9	
10		<0.1		10	

TB

1	WETTED WIDTH	0.1		12	CHANNEL FEATURE:
2	<u>2.5</u> m	0.2		13	POOL
3		0.3		14	
4	MEASUREMENTS	0.2		15	DISSOLVED OXYGEN:
5	<u>0.25</u> m	0.2		16	
6	APART	0.2		17	<u>15.71</u> PPM
7		0.1		18	
8		0.1		19	_____ %
9		<0.1		20	
10		<0.1		21	

TC

1	WETTED WIDTH	0.2		22	CHANNEL FEATURE:
2	<u>3.2</u> m	<0.1		23	POOL
3		0.4		24	
4	MEASUREMENTS	0.6		25	DISSOLVED OXYGEN:
5	<u>0.32</u> m	0.6		26	
6	APART	0.6		.	<u>13.89</u> PPM
7		0.6		.	_____ %
8		0.5		n	
9		0.4			
10		0.3			

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.
 If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 6/14/07

Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 0505 SITE # 2

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TD	1 WETTED WIDTH	0.1		1 CHANNEL	FEATURE :
	2 <u>2.8</u> m	0.2		2 POOL	
	3	0.3		3	
	4 MEASUREMENTS	0.3		4 DISSOLVED OXYGEN:	
	5 <u>0.22</u> m	0.3		5 <u>12.81</u> PPM	
	6 APART	0.3		6	
	7	0.2		7	%
	8	0.1		8	
	9	0.1		9	
	10	<0.1		10	
TE	1 WETTED WIDTH	0.1		12 CHANNEL	FEATURE:
	2 <u>1.0</u> m	0.1		13 RUN	
	3	0.1		14	
	4 MEASUREMENTS	0.1		15 DISSOLVED OXYGEN:	
	5 <u>0.10</u> m	<0.1		16 <u>11.62</u> PPM	
	6 APART	0.1		17	
	7	<0.1		18	%
	8	<0.1		19	
	9	<0.1		20	
	10	<0.1		21	
TF	1 WETTED WIDTH	<0.1		23 CHANNEL	FEATURE:
	2 <u>0.5</u> m	<0.1		24 RUN	
	3	<0.1		25	
	4 MEASUREMENTS	<0.1		26 DISSOLVED OXYGEN:	
	5 <u>0.05</u> m	0.1		. <u>12.61</u> PPM	
	6 APART	0.1		.	
	7	0.1		.	%
	8	<0.1		n	
	9	<0.1			
	10	<0.1			

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 6/14/07

Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID# 0505 SITE# 2

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
T _G	1 WETTED WIDTH	< 0.1		1	CHANNEL FEATURE:
	2 <u>2.0</u> m	< 0.1		2	RUN
	3	0.1		3	
	4 MEASUREMENTS	0.2		4	DISSOLVED OXYGEN:
	5 <u>0.70</u> m	0.1		5	
	6 APART	0.1		6	<u>11.95</u> PPM
	7	< 0.1		7	
	8	< 0.1		8	_____%
	9	< 0.1		9	
	10	< 0.1		10	
T _H	1 WETTED WIDTH	< 0.1		12	CHANNEL FEATURE:
	2 <u>0.30</u> m	< 0.1		13	RUN
	3	< 0.1		14	
	4 MEASUREMENTS	< 0.1		15	DISSOLVED OXYGEN:
	5 <u>0.03</u> m	< 0.1		16	
	6 APART	< 0.1		17	<u>11.15</u> PPM
	7	< 0.1		18	
	8	< 0.1		19	_____%
	9	< 0.1		20	
	10	< 0.1		21	
T _I	1 WETTED WIDTH	< 0.1		23	CHANNEL FEATURE:
	2 <u>4.0</u> m	< 0.1		24	POOL
	3	0.1		25	
	4 MEASUREMENTS	0.1		26	DISSOLVED OXYGEN:
	5 <u>0.40</u> m	0.2		.	
	6 APART	0.2		.	<u>11.42</u> PPM
	7	0.2		.	
	8	0.2		n	_____%
	9	0.2			
	10	0.2			

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 6/14/07

Organization: BWR CORP Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 0505 SITE # 2

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TJ	1 WETTED WIDTH	0.1		1 CHANNEL	FEATURE :
	2 <u>3.2</u> m	0.2		2 POOL	
	3	0.1		3	
	4 MEASUREMENTS	0.1		4 DISSOLVED OXYGEN:	
	5 <u>0.32</u> m	0.2		5 <u>10.98</u>	PPM
	6 APART	0.3		6	
	7	0.2		7	%
	8	0.2		8	
	9	0.2		9	
	10	0.1		10	
TK	1 WETTED WIDTH	<0.1		12 CHANNEL	FEATURE :
	2 <u>2.0</u> m	<0.1		13 RUN	
	3	<0.1		14	
	4 MEASUREMENTS	<0.1		15 DISSOLVED OXYGEN:	
	5 <u>0.20</u> m	<0.1		16	
	6 APART	<0.1		17 <u>10.02</u>	PPM
	7	<0.1		18	
	8	<0.1		19	%
	9	<0.1		20	
	10	<0.1		21	
			22		
			23		
			24		
			25		
			26		
			.		
			.		
			.		
			n		

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.
 If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 6/14/07

Organization: BWR CORP. Position: ENV. SCI.

WBID# 0505Site# 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>06-14-07 1630</u>	Site Location Description (e.g., road crossing): <u>BRIDGE CROSSING @ IRWIN RD. (DOWNSTREAM)</u>
Personnel (Data Collectors): <u>LUNT & BARTLETT</u>	
Current Weather Conditions: <u>R. SUNNY, Fair 65F</u>	Facility Name: <u>ROCKWOOD CREEK MH VILLAGE</u>
Weather Conditions for Past 10 days: <u>Cloudy/Rain/Sunny</u>	Permit Number: <u>MO 0123960</u>
Drought Conditions?: 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 Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)	
Site GPS Coordinates: UTM X: <u>39.82047</u>	Y: <u>094.26428</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data)	
Global Positioning System (GPS)	Interpolation
Static Mode	Topographic Map or DRG
Dynamic Mode (Kinematic)	Aerial Photograph or DOQQ
Precise Positioning Service	Satellite Imagery
Signal Averaging	Interpolation Other
Real Time Differential Processing	
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	Interpolation Data Quality
FOM ± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____
EPE ± _____ Feet or ± _____ Meters	± _____ Feet or ± _____ Meters
PDOP	

Photos:

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>0505-13,14</u>	<u>TRAN J-K</u>	<u>0505 11,12</u>	<u>TRAN B-A</u>		

Uses Observed*: (Uses actually observed at 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 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 *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

Indications of Human Use*: (attach photos)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	

Comments:

IRWIN RD.

* Page Two – Data Sheet B for WBID # 0505 :
Stream Morphology:

% CHANNEL FEATURE:

RIFFLE : _____

RUN : 70

POOL : 30

SITE 3

Upstream View's Physical Dimensions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

% Cobble	<u>20</u> % Gravel	<u>70</u> % Sand	<u>10</u> % Silt	% Mud/Clay	% Bedrock
----------	--------------------	------------------	------------------	------------	-----------

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

LARGE ALGAL MATS IN SHALLOW AREAS. SPARSE AMOUNT OF MACROPHYTES ALONG RIGHT BANK

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 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:

Comments: Please attach any additional comments () to this form.

*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 effect another use.

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

Surveyor's Signature: [Signature] Date of Survey: 6/14/07

Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 0505

SITE # 3

TA

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1 WETTED WIDTH	<0.1		1 CHANNEL	FEATURE:
2 <u>1.0 m</u>	<0.1		2 RUN	
3	<0.1		3	
4 MEASUREMENTS	<0.1		4 DISSOLVED	OXYGEN:
5 <u>0.10 m</u>	<0.1		5 <u>15.77</u>	PPM
6 APART	<0.1		6	%
7	<0.1		7	
8	<0.1		8	
9	<0.1		9	
10	<0.1		10	

TB

1 WETTED WIDTH	0.1		12 CHANNEL	FEATURE:
2 <u>4.3 m</u>	0.3		13 POOL	
3	0.4		14	
4 MEASUREMENTS	0.3		15 DISSOLVED	OXYGEN:
5 <u>0.43 m</u>	0.3		16	
6 APART	0.2		17 <u>14.72</u>	PPM
7	0.2		18	
8	0.2		19	%
9	0.2		20	
10	0.2		21	

TC

1 WETTED WIDTH	0.1		22 CHANNEL	FEATURE:
2 <u>3.5 m</u>	0.3		23 POOL	
3	0.4		24	
4 MEASUREMENTS	0.4		25 DISSOLVED	OXYGEN:
5 <u>0.35 m</u>	0.4		26	
6 APART	0.5		27	PPM
7	0.5		28	%
8	0.4		n	
9	0.1			
10	0.2			

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.
 If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 6/14/07

Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID# 0505 SITE# 3

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TD	1 WETTED WIDTH	0.1		1 CHANNEL	FEATURE :
	2 <u>4.0</u> m	0.2		2 POOL	
	3	0.4		3	
	4 MEASUREMENTS	0.4		4 DISSOLVED OXYGEN:	
	5 <u>0.40</u> m	0.5		5 <u>14.08</u> PPM	
	6 APART	0.5		6	
	7	0.5		7	%
	8	0.4		8	
	9	0.3		9	
	10	0.2		10	
TE	1 WETTED WIDTH	0.1		12 CHANNEL	FEATURE :
	2 <u>4.2</u> m	0.3		13 POOL 80%	
	3	0.4		14 RUN 20%	
	4 MEASUREMENTS	0.4		15 DISSOLVED OXYGEN:	
	5 <u>0.42</u> m	0.3		16 <u>15.88</u> PPM	
	6 APART	0.2		17	
	7	<0.1		18	%
	8	0.1		19	
	9	0.1		20	
	10	0.1		21	
TF	1 WETTED WIDTH	<0.1		23 CHANNEL	FEATURE :
	2 <u>1.0</u> m	<0.1		24 RUN	
	3	<0.1		25	
	4 MEASUREMENTS	<0.1		26 DISSOLVED OXYGEN:	
	5 <u>0.10</u> m	<0.1		. <u>16.01</u> PPM	
	6 APART	<0.1		.	
	7	<0.1		.	%
	8	<0.1		n	
	9	<0.1			
	10	<0.1			

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 6/14/07

Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID# 0506 SITE# 3

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
T _G	1 WETTED WIDTH	<0.1		1 CHANNEL FEATURE:	
	2 <u>1.5</u> m	0.1		2 RUN	
	3	0.1		3	
	4 MEASUREMENTS	0.2		4 DISSOLVED OXYGEN:	
	5 <u>0.15</u> m	0.2		5	
	6 APART	0.2		6 <u>12.41</u> PPM	
	7	<0.1		7	
	8	<0.1		8	%
	9	<0.1		9	
	10	<0.1		10	
T _H	1 WETTED WIDTH	<0.1		12 CHANNEL FEATURE:	
	2 <u>1.3</u> m	<0.1		13 RUN	
	3	<0.1		14	
	4 MEASUREMENTS	<0.1		15 DISSOLVED OXYGEN:	
	5 <u>0.13</u> m	<0.1		16	
	6 APART	<0.1		17 <u>12.88</u> PPM	
	7	<0.1		18	
	8	<0.1		19	%
	9	<0.1		20	
	10	<0.1		21	
T _I	1 WETTED WIDTH	0.1		23 CHANNEL FEATURE:	
	2 <u>1.0</u> m	0.2		24 RUN	
	3	0.2		25	
	4 MEASUREMENTS	0.2		26 DISSOLVED OXYGEN:	
	5 <u>0.10</u> m	0.2		.	
	6 APART	0.2		. <u>13.54</u> PPM	
	7	0.2		.	
	8	0.1		n	%
	9	0.1			
	10	<0.1			

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alv Dahl Date: 6/14/07

Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID# 0505 SITE# 3

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TJ	1 WETTED WIDTH	<0.1		1 CHANNEL	FEATURE :
	2 <u>0.8</u> M	<0.1		2 RUN	
	3	<0.1		3	
	4 MEASUREMENTS	<0.1		4 DISSOLVED OXYGEN:	
	5 <u>0.08</u> M	<0.1		5 <u>14.35</u> PPM	
	6 APART	<0.1		6	
	7	<0.1		7	%
	8	<0.1		8	
	9	<0.1		9	
	10	<0.1		10	
TK	11			11	
	12 WETTED WIDTH	<0.1		12 CHANNEL	FEATURE :
	13 <u>1.5</u> M	<0.1		13 RUN	
	14	0.1		14	
	15 MEASUREMENTS	0.1		15 DISSOLVED OXYGEN:	
	16 <u>0.15</u> M	0.1		16	
	17 APART	0.1		17 <u>17.67</u> PPM	
	18	0.1		18	
	19	0.1		19	%
	20	<0.1		20	
21	0.1		21		
			22		
			23		
			24		
			25		
			26		
			.		
			.		
			.		
			n		

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 6/14/07

Organization: BWR CORP. Position: ENV. SCI.



Downstream (Site 1) of Wamsley Creek



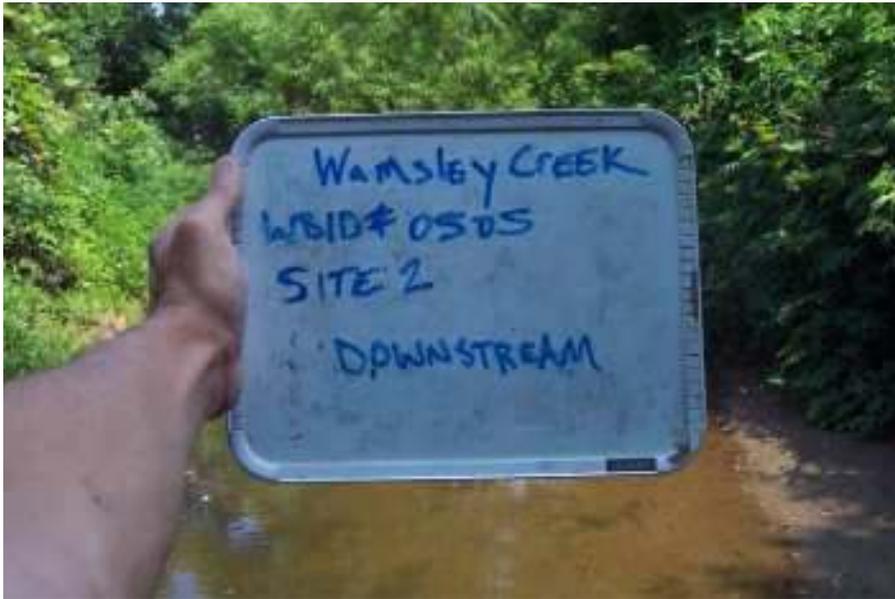
Downstream (Site 1) of Wamsley Creek



Upstream (Site 1) of Wamsley Creek



Upstream (Site 1) of Wamsley Creek



Downstream (Site 2) of Wamsley Creek



Downstream (Site 2) of Wamsley Creek



Upstream (Site 2) of Wamsley Creek

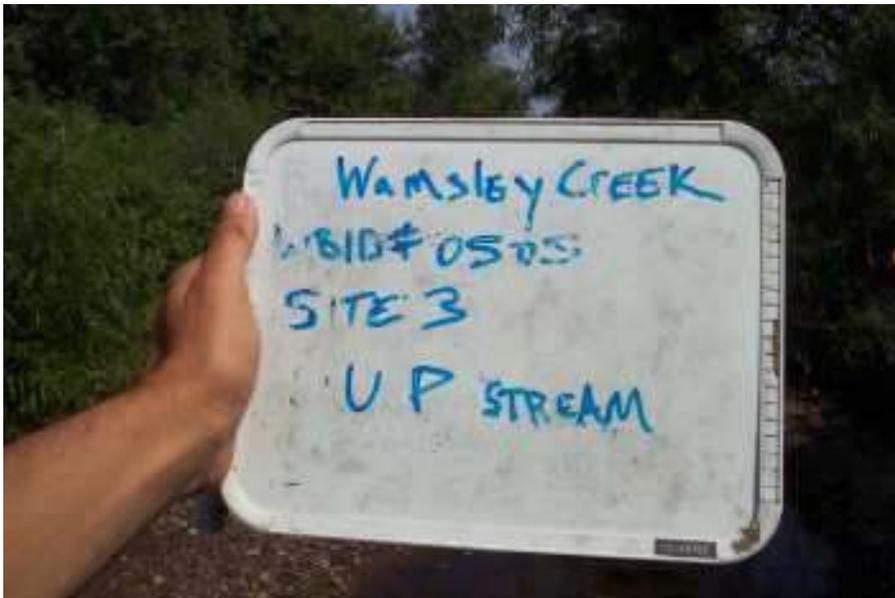


Upstream (Site 2) of Wamsley Creek



Downstream (Site 3) of Wamsley Creek

Downstream picture (Site 3) of Wamsley Creek missing due to camera malfunction.



Upstream (Site 3) of Wamsley Creek



Upstream (Site 3) of Wamsley Creek