Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0867 Basin Fork

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):	BOSIN FORK
Missouri Water Body Identification (WBID) Number:	867
8-digit HUC: 1030013	County: Pettis
Upstream Legal Description (from Table H):	17, 44N, 23W
Downstream Legal Description(from Table H):	MOUTH
Number of sites evaluated	9
List all sites numbers, listed consequently upstream to downstream:	9, 4, 3, 5, 6, 2, 1, 7, 8

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. Subegmentation (fill this section out only in cases where subesgmentation is being proposed)

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates: UTM X Y		Downstream Coordinates: 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)

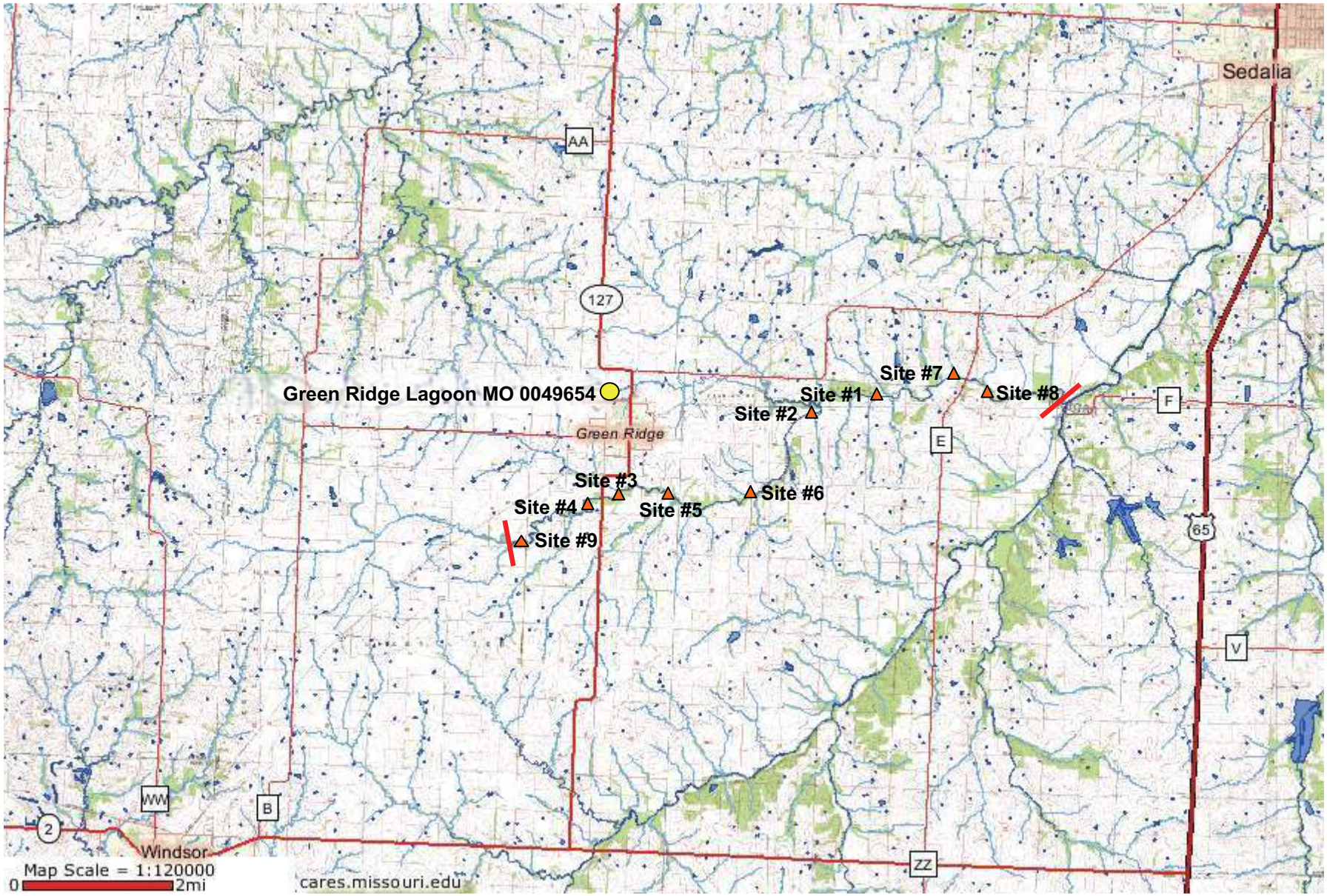
Discharger Facility Name(s):	Green Ridge Lagoon
Discharger Permit Number(s):	MO 0049654

IV. UAA Surveyor (please print legibly)

Name of Surveyor Alan Mitchell	Telephone Number: (816) 363-2696
Organization/Employer: BWR	
Position: Environmental Scientist	

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

Signed: Alan M. Mitchell **Date:** May 20, 2007



BWR

Basin Fork

WBID #867

N

WBID# 867
Site# 1

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

Date & Time: 5/20/07 13:50	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): Alan Mitchell, Sadie Robb	
Current Weather Conditions: Sunny, warm	Facility Name: Green Ridge Lagoon
Weather Conditions for Past 10 days: Sunny, warm	Permit Number: MO 0049654
Drought Conditions?: No drought ☐; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 93.41599°W Y: 38.60729°N

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
47		45		46	upstream supplemented

Uses Observed*: (Uses actually observed at time of survey.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☐ Steep slopes	☒ None of the above	☐ Other:

Comments:

Indications of Human Use*: (attach photos)

☐ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:

Comments:

CW.M. EHE, Inc. 5/20/07

% Channel feature
RUN = 95%
RIFFLE = 0%
POOL = 5%

*** Page Two – Data Sheet B for WBID #** 867 : Site #1

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	0	7.3	100	0.3	0.3
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	0	7.0	100	0.3	0.3
POOL					

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

50 % Cobble	20 % Gravel	30 % Sand	% Silt	% Mud/Clay	% Bedrock

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

lots of macrophytes

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	☑ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☑ None	☐ 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: Jamie Robb [illegible] Date of Survey: 5/20/07

Organization: BWR Position: Field Crew

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

WBID # 867 Site # 1

		Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect A	1	wetted width	0.1			1 Channel Feature:	
	2	7.0 m	0.3			2 RUN	
	3		0.3			3	
	4	measurements	0.3			4 Dissolved Oxygen	
	5	0.7 m	0.4			5	
	6	apart	0.3			6 6.7 ppm	
	7		0.3			7 75 %	
	8		0.2			8 20.9°C	
	9		0.2			9	
	10		0.1			10	
						11	
Transect B	1	wetted width	<0.1			12 Channel Feature:	
	2	4.5 m	0.1			13 RUN	
	3		0.1			14	
	4	measurements	0.1			15 Dissolved Oxygen:	
	5	0.4 m	0.1			16	
	6	apart	0.2			17 6.5 ppm	
	7		0.2			18 74 %	
	8		0.1			19 21.8°C	
	9		0.1			20	
	10		0.1			21	
						22	
Transect C	1	wetted width	<0.1			23 Channel Feature:	
	2	3.0 m	<0.1			24 RUN	
	3		<0.1			25	
	4	measurements	<0.1			26 Dissolved Oxygen	
	5	0.3 m	<0.1			.	
	6	apart	<0.1			. 7.6 ppm	
	7		<0.1			. 90 %	
	8		<0.1			n 23.2°C	
	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: [illegible] **Date:** May 20, 2007

Organization: EAE, Inc. Position: Env. Engr

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

WBID # 867 Site # 1

		Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect D	1	wetted width	0.1			1 Channel Feature:	
	2	3.5 m	0.1			2 POOL	
	3		0.2			3	
	4	measurements	0.2			4 Dissolved Oxygen	
	5	0.3 m	0.2			5	
	6	apart	0.2			6 10.0	ppm
	7		0.2			7 108	%
	8		0.1			8 22.1	°C
	9		0.1			9	
	10		<0.1			10	
						11	
Transect E	1	wetted width	<0.1			12 Channel Feature:	
	2	3.0 m	<0.1			13 RUN	
	3		<0.1			14	
	4	measurements	<0.1			15 Dissolved Oxygen:	
	5	0.3 m	<0.1			16	
	6	apart	<0.1			17 6.6	ppm
	7		<0.1			18 78	%
	8		<0.1			19 23.0	°C
	9		<0.1			20	
	10		<0.1			21	
						22	
Transect F	1	wetted width	<0.1			23 Channel Feature:	
	2	2.0 m	<0.1			24 RUN	
	3		<0.1			25	
	4	measurements	<0.1			26 Dissolved Oxygen	
	5	0.1 m	<0.1			.	
	6	apart	<0.1			. 7.3	ppm
	7		<0.1			. 82	%
	8		<0.1			n 20.7	°C
	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: [illegible] **Date:** May 20, 2007

Organization: EAE, Inc. Position: Eval. Engr

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

WBID # 867 Site # 1

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect G 1	wetted width	<0.1			1 Channel Feature:	
2	8.0 m	<0.1			2 RUN	
3		<0.1			3	
4	measurements	<0.1			4 Dissolved Oxygen	
5	0.8 m	<0.1			5	
6	apart	<0.1			6 6.8	ppm
7		<0.1			7 77	%
8		<0.1			8 20.2°C	
9		<0.1			9	
10		<0.1			10	
					11	
Transect H 1	wetted width	<0.1			12 Channel Feature:	
2	6.5 m	0.1			13 RUN	
3		0.1			14	
4	measurements	0.1			15 Dissolved Oxygen:	
5	m	0.1			16	
6	apart	0.1			17 6.6	ppm
7		<0.1			18 75	%
8		<0.1			19 20.8°C	
9		<0.1			20	
10		<0.1			21	
					22	
Transect I 1	wetted width	0.1			23 Channel Feature:	
2	8.0 m	0.2			24 RUN	
3		0.3			25	
4	measurements	0.4			26 Dissolved Oxygen	
5	0.8 m	0.5			.	
6	apart	0.4			. 5.9	ppm
7		0.3			. 65	%
8		0.3			n 19.2°C	
9		0.2				
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: [illegible] **Date:** May 20, 2007

Organization: EAE, Inc. Position: Env. Engr.

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

WBID # 867 Site # 1

		Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect J	1	wetted width	0.1			1 Channel Feature:	
	2	7.5 m	0.2			2 RUN	
	3		0.3			3	
	4	measurements	0.4			4 Dissolved Oxygen	
	5	0.7 m	0.4			5	
	6	apart	0.3			6 5.5 ppm	
	7		0.3			7 60.0 %	
	8		0.2			8 18.8°C	
	9		0.1			9	
	10		0.1			10	
						11	
Transect K	1	wetted width	<0.1			12 Channel Feature:	
	2	7.0 m	0.1			13 RUN	
	3		0.2			14	
	4	measurements	0.3			15 Dissolved Oxygen:	
	5	0.7 m	0.3			16	
	6	apart	0.3			17 6.5 ppm	
	7		0.3			18 72 %	
	8		0.3			19 20.2°C	
	9		0.2			20	
	10		0.1			21	
						22	
Transect	1	wetted width				23 Channel Feature:	
	2	m				24	
	3					25	
	4	measurements				26 Dissolved Oxygen	
	5	m				.	
	6	apart				. ppm	
	7					. %	
	8					n	
	9						
	10						

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: Jadie Robb **Date:** 5/20/07

Organization: BWR Position: Field Crew

WBID# 867
Site# 2

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

Date & Time: 3:15pm 5/20/2007	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): Sedic Robb Alan Mitchell	
Current Weather Conditions: Clear	Facility Name: Green Ridge Lagoon
Weather Conditions for Past 10 days:	Permit Number: MO0049654

Drought Conditions?: No drought ☑; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 93.36757°W Y: 38.62268°N

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
44		43			

Uses Observed*: (Uses actually observed at time of survey.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☑ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☐ Steep slopes	☑ None of the above	☐ Other:

Comments:

Indications of Human Use*: (attach photos)

☐ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:

Comments: Harvesting wheat

 EAE, Inc. 5/20/07

% Channel Feature
RUN = 40%
RIFFLE = 60%
POOL = 0%

*** Page Two – Data Sheet B for WBID #** 867 : Site #2

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	5	16	100	0.5	0.7

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	0	10	100	0.5	0.7
POOL					

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

60 % Cobble	40 % Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock

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

NONE

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	☑ None	☐ Other:
Surface Deposit:	☑ Oil	☐ Scum	☐ Foam	☐ None	☐ 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: Jadie Robb Date of Survey: 5/20/07

Organization: BWR Position: Field Crew

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

WBID # 867 Site # 2

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect A 1	wetted width	0.2			1 Channel Feature:	
2	15 m	0.3			2 ~~RUN~~	POOL
3		0.4			3	
4	measurements	0.5			4 Dissolved Oxygen	
5	1.5 m	0.5			5	
6	apart	0.5			6 8.1	ppm
7		0.5			7 90	%
8		0.4			8 20.4°C	
9		0.3			9	
10		0.2			10	
					11	
Transect B 1	wetted width	0.1			12 Channel Feature:	
2	14 m	0.3			13 POOL	
3		0.4			14	
4	measurements	0.4			15 Dissolved Oxygen:	
5	1.4 m	0.4			16	
6	apart	0.5			17 7.4	ppm
7		0.5			18 83	%
8		0.5			19 21.5°C	
9		0.4			20	
10		0.1			21	
					22	
Transect C 1	wetted width	0.2			23 Channel Feature:	
2	12.5 m	0.3			24 POOL	
3		0.3			25	
4	measurements	0.3			26 Dissolved Oxygen	
5	m	0.3			.	
6	apart	0.4			. 7.7	ppm
7		0.4			. 85	%
8		0.5			n 20.8°C	
9		0.6				
10		0.5				

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: [illegible] **Date:** May 20, 2007

Organization: EAE, Inc. Position: Eng. Eng.

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

WBID # 867 Site # 2

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect D 1	wetted width	<0.1			1 Channel Feature:	
2	14.5 m	0.1			2 POOL	
3		0.3			3	
4	measurements	0.4			4 Dissolved Oxygen	
5	1.4 m	0.5			5	
6	apart	0.4			6 7.8	ppm
7		0.4			7 88	%
8		0.5			8 21.0 °C	
9		0.2			9	
10		0.1			10	
					11	
Transect E 1	wetted width	<0.1			12 Channel Feature:	
2	14 m	0.1			13 POOL	
3		0.1			14	
4	measurements	0.2			15 Dissolved Oxygen:	
5	m	0.3			16	
6	apart	0.3			17 9.4	ppm
7		0.4			18 114	%
8		0.5			19 23.4 °C	
9		0.5			20	
10		0.2			21	
					22	
Transect F 1	wetted width	<0.1			23 Channel Feature:	
2	14 m	0.1			24 POOL	
3		0.1			25	
4	measurements	0.3			26 Dissolved Oxygen	
5	1.4 m	0.3			.	
6	apart	0.3			. 9.38	ppm
7		0.4			. 105	%
8		0.3			n 21.3 °C	
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:** May 20, 2007

Organization: EAE, Inc. Position: Env. Engr.

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

WBID # 867 Site # 2

		Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect G	1	wetted width	0.2			1 Channel Feature:	
	2	14 m	0.3			2 POOL	
	3		0.3			3	
	4	measurements	0.1			4 Dissolved Oxygen	
	5	1.4 m	0.1			5	
	6	apart	<0.1			6 6.9 ppm	
	7		0.2			7 102 %	
	8		0.1			8 21.4°C	
	9		<0.1			9	
	10		0.1			10	
						11	
Transect H	1	wetted width	0.1			12 Channel Feature:	
	2	6.0 m	0.2			13 RUN	
	3		0.4			14	
	4	measurements	0.4			15 Dissolved Oxygen:	
	5	0.6 m	0.3			16	
	6	apart	0.2			17 10.5 ppm	
	7		0.3			18 124 %	
	8		0.3			19 24.0°C	
	9		0.2			20	
	10		<0.1			21	
						22	
Transect I	1	wetted width	0.3			23 Channel Feature:	
	2	6.0 m	0.4			24 RUN	
	3		0.3			25	
	4	measurements	0.2			26 Dissolved Oxygen	
	5	0.6 m	0.2			.	
	6	apart	0.2			. 6.8 ppm	
	7		0.2			. 78 %	
	8		0.1			n 23.6°C	
	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: Alan D. Mitchell **Date:** May 20, 2007

Organization: EAE, Inc **Position:** Env. Engr

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

WBID # 867 Site # 2

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect J 1	wetted width	0.2			1 Channel Feature:	
2	6.0 m	0.4			2 RUN	
3		0.4			3	
4	measurements	0.4			4 Dissolved Oxygen	
5	0.6 m	0.3			5	
6	apart	0.3			6 9.0	ppm
7		0.2			7 104	%
8		0.2			8 23.0°C	
9		0.1			9	
10		<0.1			10	
					11	
Transect K 1	wetted width	0.1			12 Channel Feature:	
2	5.0 m	0.2			13 RUN	
3		0.2			14	
4	measurements	0.2			15 Dissolved Oxygen:	
5	0.5 m	0.2			16	
6	apart	0.2			17 10.8	ppm
7		0.2			18 128	%
8		0.1			19 24.0°C	
9		0.1			20	
10		0.1			21	
					22	
Transect 1	wetted width				23 Channel Feature:	
2	m				24	
3					25	
4	measurements				26 Dissolved Oxygen	
5	m				.	
6	apart				.	ppm
7					.	%
8					n	
9						
10						

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 UA datasheet is true and accurate.

Signed: Jodie Robb **Date:** 5/20/07

Organization: BWR Position: Field Crew

WBID# 867
Site# 3

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

Date & Time: 2:00 pm 5/20/2007	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): Alan Mitchell, Sadie Robb	
Current Weather Conditions: Sunny, warm	Facility Name: Green Ridge Lagoon
Weather Conditions for Past 10 days: Sunny	Permit Number: MO 0049654

Drought Conditions?: No drought ☑; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 93.350719W Y: 38.627140N

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
41			42		

Uses Observed*: (Uses actually observed at time of survey.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☑ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☐ Steep slopes	☑ None of the above	☐ Other:

Comments:

Indications of Human Use*: (attach photos)

☐ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:

Comments:

% Channel Feature
RUN = 100%
RIFFLE = 0%
POOL = 0%

*** Page Two – Data Sheet B for WBID #** 867 : Site #3

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	15	9	150	0.3	0.4
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	~~0~~	~~13~~			~~4.0~~
POOL	0	13	30	0.5	1.0

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

30 % Cobble	60 % Gravel	% Sand	10 % Silt	% Mud/Clay	% Bedrock

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

Water Primrose

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	☑ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☑ None	☐ 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: Jodie Robb Date of Survey: 5/20/07

Organization: BWR Position: Field crew

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

WBID # 867 Site # 3

		Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect A	1	wetted width	<0.1			1 Channel Feature:	
	2	9.0 m	0.2			2 RUN	
	3		0.2			3	
	4	measurements	0.2			4 Dissolved Oxygen	
	5	0.9 m	0.2			5	
	6	apart	0.2			6 10.1	ppm
	7		0.2			7 116	%
	8		0.2			8 20.7°C	
	9		0.2			9	
	10		0.1			10	
						11	
Transect B	1	wetted width	0.1			12 Channel Feature:	
	2	15 m	0.2			13 ~~POOL~~ RUN	
	3		0.4			14	
	4	measurements	0.4			15 Dissolved Oxygen:	
	5	1.5 m	0.4			16	
	6	apart	0.4			17 9.85	ppm
	7		0.3			18 109	%
	8		0.3			19 20.0°C	
	9		0.2			20	
	10		0.2			21	
						22	
Transect C	1	wetted width	0.1			23 Channel Feature:	
	2	16.0 m	0.5			24 RUN	
	3		0.5			25	
	4	measurements	0.5			26 Dissolved Oxygen	
	5	1.6 m	0.4			.	
	6	apart	0.4			. 9.6	ppm
	7		0.4			. 105	%
	8		0.4			n 19.9°C	
	9		0.4				
	10		0.4				

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:** May 20, 2007

Organization: EAE, Inc. Position: Env. Engr

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

WBID # 867 Site # 3

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect D 1	wetted width	0.5			1 Channel Feature:	
2	15 m	0.6			2 RUN	
3		0.7			3	
4	measurements	0.7			4 Dissolved Oxygen	
5	1.5 m	0.7			5	
6	apart	0.7			6 9.6 ~~±0.3~~ ppm	
7		0.7			7 105 %	
8		0.7			8 19.8°C	
9		0.7			9	
10		0.3			10	
					11	
Transect E 1	wetted width	0.2			12 Channel Feature:	
2	15 m	0.3			13 RUN	
3		0.2			14	
4	measurements	0.3			15 Dissolved Oxygen:	
5	1.5 m	0.3			16	
6	apart	0.3			17 11.0 ppm	
7		0.5			18 120 %	
8		0.6			19 20.7°C	
9		0.6			20	
10		0.4			21	
					22	
Transect F 1	wetted width	<0.1			23 Channel Feature:	
2	15 m	0.1			24 RUN	
3		0.1			25	
4	measurements	0.1			26 Dissolved Oxygen	
5	1.5 m	0.2			.	
6	apart	0.2			. 11.6 ppm	
7		0.2			. 130 %	
8		0.2			n 21.0	
9		0.2				
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:** May 20, 2007

Organization: EAE, Inc. Position: Env. Engr

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

WBID # 867 Site # 3

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect G 1	wetted width	<0.1			1 Channel Feature:	
2	8.0 m	0.1			2 RUN	
3		0.2			3	
4	measurements	0.3			4 Dissolved Oxygen	
5	0.8 m	0.2			5	
6	apart	0.2			6 9.95	ppm
7		0.2			7 112	%
8		0.2			8 21.6°C	
9		0.2			9	
10		0.1			10	
					11	
Transect H 1	wetted width	<0.1			12 Channel Feature:	
2	8.0 m	0.1			13 RUN	
3		0.2			14	
4	measurements	0.2			15 Dissolved Oxygen:	
5	0.8 m	0.3			16	
6	apart	0.4			17 9.5	ppm
7		0.5			18 106	%
8		0.5			19 21.3°C	
9		0.6			20	
10		0.6			21	
					22	
Transect I 1	wetted width	<0.1			23 Channel Feature:	
2	7.0 m	0.1			24 RUN	
3		0.2			25	
4	measurements	0.3			26 Dissolved Oxygen	
5	0.7 m	0.3			.	
6	apart	0.3			. 9.17	ppm
7		0.3			. 103	%
8		0.2			n 21.0°C	
9		0.2				
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: [illegible] **Date:** May 20, 2007

Organization: EAE, Inc Position: Env. Engr

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

WBID # 867 Site # 3

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect J 1	wetted width	<0.1			1 Channel Feature:	
2	12.0 m	0.1			2 RUN	
3		0.1			3	
4	measurements	<0.1			4 Dissolved Oxygen	
5	1.2 m	<0.1			5	
6	apart	<0.1			6 9.4	ppm
7		0.2			7 107	%
8		0.5			8 21.7°C	
9		0.4			9	
10		0.2			10	
					11 mussel shell about 5 inch.	
Transect K 1	wetted width	0.2			12 Channel Feature:	
2	9.0 m	0.5			13 RUN	
3		0.4			14	
4	measurements	0.4			15 Dissolved Oxygen:	
5	0.9 m	0.4			16	
6	apart	0.3			17 7.2	ppm
7		0.2			18 80	%
8		0.1			19 19.0 °C	
9		0.1			20	
10		<0.1			21	
					22	
Transect 1	wetted width				23 Channel Feature:	
2	m				24	
3					25	
4	measurements				26 Dissolved Oxygen	
5	m				.	
6	apart				.	ppm
7					.	%
8					n	
9						
10						

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:** May 20, 2007

Organization: FAE, Inc. Position: Env. Engr.

Basin Fork

WBID# 867
Site# 9

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

Date & Time: 5/25/07 0900	Site Location Description (e.g., road crossing): West of Hwy 127 bridge crossing
Personnel (Data Collectors): K. Snethen / A. Bartlett	
Current Weather Conditions: Cloudy - low 70s	Facility Name: Green Ridge Lagoon
Weather Conditions for Past 10 days:	Permit Number: MO 0049654

Drought Conditions?: No drought ☐; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 38.60591 N Y: 093.42077 W

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
	upstream		downstream		

Uses Observed*: (Uses actually observed at time of survey.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☐ Steep slopes	☒ None of the above	☐ Other:

Comments:

Indications of Human Use*: (attach photos)

☐ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:

Comments:

% CHANNEL FEATURES

RUN - 10
RIFFLE - 0
POOL - 90

*** Page Two – Data Sheet B for WBID #** 867 : SITE # 4
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%.)

60 % Cobble	30 % Gravel	10 % Sand	0 % Silt	0 % Mud/Clay	0 % Bedrock

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

Heavy macrophytes

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☐ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Brown/reddish
Bottom Deposit:	☐ Sludge	☒ Solids	☐ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☐ None	☒ Other: Slight scheen

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: Kerry Luther Date of Survey: 5/25/07

Organization: BWR Position: Env. Scientist

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

WBID # 867 Site # 4

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect A 1	wetted width	<0.1 m			1 Channel Feature: POOL	
2	6.0 m	0.2 m			2	
3		0.3 m			3	
4	measurements	0.2 m			4 Dissolved Oxygen	
5	0.60 m	0.2 m			5	
6	apart	0.1 m			6 4.40 ppm	
7		0.2 m			7 44 %	
8		0.2 m			8	
9		0.1 m			9	
10		<0.1 m			10	
					11	
Transect B 1	wetted width	<0.1 m			12 Channel Feature: POOL	
2	5.5 m	0.1 m			13	
3		0.1 m			14	
4	measurements	0.2 m			15 Dissolved Oxygen:	
5	0.35 m	0.2 m			16	
6	apart	0.2 m			17 4.67 ppm	
7		0.2 m			18 46 %	
8		0.2 m			19	
9		0.1 m			20	
10		<0.1 m			21	
					22	
Transect C 1	wetted width	<0.1 m			23 Channel Feature: POOL	
2	4.0 m	0.2 m			24	
3		0.3 m			25	
4	measurements	0.5 m			26 Dissolved Oxygen	
5	0.40 m	0.5 m			.	
6	apart	0.5 m			. 4.46 ppm	
7		0.4 m			. 44 %	
8		0.3 m			n	
9		0.2 m				
10		0.2m				

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: Kerry Snodhu **Date:** 5/25/07

Organization: BWR Position: Env. Scientist

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

WBID # 867 Site # 4

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect D 1	wetted width	<0.1 m			1 Channel Feature : RUN	
2	1.3 m	0.1 m			2	
3		0.1 m			3	
4	measurements	0.1 m			4 Dissolved Oxygen	
5	0.3 m	0.1 m			5	
6	apart	0.1 m			6 4.72	ppm
7		0.1 m			7 47	%
8		<0.1 m			8	
9		<0.1 m			9	
10		<0.1 m			10	
					11	
Transect E 1	wetted width	0.1 m			12 Channel Feature : POOL	
2	9.7 m	0.4 m			13	
3		0.5 m			14	
4	measurements	0.5 m			15 Dissolved Oxygen:	
5	0.97 m	0.5 m			16	
6	apart	0.4 m			17 3.72	ppm
7		0.4 m			18 37	%
8		0.3 m			19	
9		0.2 m			20	
10		0.1 m			21	
					22	
Transect F 1	wetted width	0.1 m			23 Channel Feature : POOL	
2	9.0 m	0.3 m			24	
3		0.2 m			25	
4	measurements	0.2 m			26 Dissolved Oxygen	
5	0.90 m	0.2 m			.	
6	apart	0.1 m			. 3.38	ppm
7		0.1 m			. 33	%
8		<0.1 m			n	
9		<0.1 m				
10		<0.1 m				

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: Kerry Snether **Date:** 5/25/07

Organization: BWR Position: Env. Scientist

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

WBID # 807 Site # 4

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect G 1	wetted width	0.1 m			1 Channel Feature : POOL	
2	9.9 m	0.4 m			2	
3		0.6 m			3	
4	measurements	0.7 m			4 Dissolved Oxygen	
5	0.99 m	0.7 m			5	
6	apart	0.9 m			6 3.83	ppm
7		0.8 m			7 38	%
8		0.8 m			8	
9		0.6 m			9	
10		0.4 m			10	
					11	
Transect H 1	wetted width	<0.1 m			12 Channel Feature : RUN	
2	7.4 m	0.3 m			13	
3		0.5 m			14	
4	measurements	0.5 m			15 Dissolved Oxygen:	
5	0.74 m	0.3 m			16	
6	apart	0.2 m			17 3.79	ppm
7		0.2 m			18 37	%
8		0.1 m			19	
9		0.1 m			20	
10		<0.1 m			21	
					22	
Transect I 1	wetted width	<0.1 m			23 Channel Feature : RUN	
2	1.8 m	0.1 m			24	
3		0.1 m			25	
4	measurements	0.1 m			26 Dissolved Oxygen	
5	0.18 m	0.1 m			.	
6	apart	0.1 m			. 4.93	ppm
7		0.1 m			. 49	%
8		<0.1 m			n	
9		<0.1 m				
10		<0.1 m				

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: Kerry Snether **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 4

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect J 1	wetted width	<0.1 m			1 Channel Feature: RW	
2	3.9 m	0.1 m			2	
3		0.1 m			3	
4	measurements	0.2 m			4 Dissolved Oxygen	
5	0.39 m	0.3 m			5	
6	apart	0.2 m			6 4.65	ppm
7		0.2 m			7 46	%
8		0.2 m			8	
9		0.1 m			9	
10		<0.1 m			10	
					11	
Transect K 1	wetted width	<0.1 m			12 Channel Feature: RW	
2	3.2 m	0.1 m			13	
3		<0.1 m			14	
4	measurements	<0.1 m			15 Dissolved Oxygen:	
5	0.32 m	<0.1 m			16	
6	apart	0.1 m			17 5.22	ppm
7		0.1 m			18 52	%
8		0.1 m			19	
9		0.1 m			20	
10		<0.1 m			21	
					22	
Transect 1	wetted width				23 Channel Feature:	
2	m				24	
3					25	
4	measurements				26 Dissolved Oxygen	
5	m				.	
6	apart				.	ppm
7					.	%
8					n	
9						
10						

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: Kerry Snethen **Date:** 5/25/07

Organization: BWR Position: Env. Scientist

WBID# 867
Site# 5

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

Date & Time: 5/25/07 1010	Site Location Description (e.g., road crossing): Meyers Rd bridge crossing
Personnel (Data Collectors): K. Snethen/A. Bartlett	
Current Weather Conditions: Cloudy, rainy	Facility Name: Green Ridge Lagoon
Weather Conditions for Past 10 days:	Permit Number: MO 0049654

Drought Conditions?: No drought ☐; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 38.60627 N Y: 093.39753 W

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
	upstream		downstream		

Uses Observed*: (Uses actually observed at time of survey.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☐ Steep slopes	☒ None of the above	☐ Other:

Comments:

Indications of Human Use*: (attach photos)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:

Comments:

% CHANNEL FEATURES

RUN - 10
RIFFLE - 0
POOL - 90

*** Page Two – Data Sheet B for WBID #** 867 : SITE #5
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%.)

60 % Cobble	30 % Gravel	10 % Sand	— % Silt	— % Mud/Clay	— % Bedrock

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

Macrophytes on bank.

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☐ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Clearish brown
Bottom Deposit:	☐ Sludge	☒ Solids	☐ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ 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: Kerry Snethen Date of Survey: 5/25/07

Organization: BWR Position: Env. Scientist

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

WBID # 867 Site # 5

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect A 1	wetted width	0.2 m			1 Channel Feature: POOL	
2	12.1 m	0.7 m			2	
3		>1.0 m			3	
4	measurements	>1.0 m			4 Dissolved Oxygen	
5	1.21 m	>1.0 m			5	
6	apart	>1.0 m			6 7.22	ppm
7		>1.0 m			7 72	%
8		0.5 m			8	
9		0.3 m			9	
10		0.2 m			10	
					11	
Transect B 1	wetted width	0.2 m			12 Channel Feature: POOL	
2	4.7 m	0.4 m			13	
3		0.4 m			14	
4	measurements	0.4 m			15 Dissolved Oxygen:	
5	0.47 m	0.5 m			16	
6	apart	0.4 m			17 7.43	ppm
7		0.3 m			18 74	%
8		0.2 m			19	
9		0.1 m			20	
10		<0.1 m			21	
					22	
Transect C 1	wetted width	0.3 m			23 Channel Feature: POOL	
2	8.4 m	0.3 m			24	
3		0.5 m			25	
4	measurements	0.5 m			26 Dissolved Oxygen	
5	0.84 m	0.5 m			.	
6	apart	0.6 m			. 6.33	ppm
7		0.6 m			. 63	%
8		0.6 m			n	
9		0.5 m				
10		0.4 m				

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 tw 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: Kerry Snethen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 5

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect D 1	wetted width	0.3 m			1 Channel Feature: POOL	
2	8.8 m	0.4 m			2	
3		0.4 m			3	
4	measurements	0.5 m			4 Dissolved Oxygen	
5	0.88 m	0.5 m			5	
6	apart	0.4 m			6 6.18	ppm
7		0.5 m			7 61	%
8		0.6 m			8	
9		0.5 m			9	
10		0.3 m			10	
					11	
Transect E 1	wetted width	0.1 m			12 Channel Feature: POOL	
2	6.6 m	0.3 m			13	
3		0.4 m			14	
4	measurements	0.4 m			15 Dissolved Oxygen:	
5	0.66 m	0.5 m			16	
6	apart	0.5 m			17 5.59	ppm
7		0.6 m			18 55	%
8		0.7 m			19	
9		0.5 m			20	
10		0.3 m			21	
					22	
Transect F 1	wetted width	0.2 m			23 Channel Feature: POOL	
2	6.5 m	0.2 m			24	
3		0.3 m			25	
4	measurements	0.2 m			26 Dissolved Oxygen	
5	0.65 m	0.2 m			.	
6	apart	0.2 m			. 4.64	ppm
7		0.2 m			. 46	%
8		0.1 m			n	
9		0.1 m				
10		<0.1 m				

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 tw 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: Kerry Snethen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 5

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect G 1	wetted width	0.2 m			1 Channel Feature : POOL	
2	8.3 m	0.3 m			2	
3		0.4 m			3	
4	measurements	0.4 m			4 Dissolved Oxygen	
5	0.83 m	0.4 m			5	
6	apart	0.3 m			6 6.35	ppm
7		0.3 m			7 63	%
8		0.2 m			8	
9		0.2 m			9	
10		<0.1 m			10	
					11	
Transect H 1	wetted width	0.1 m			12 Channel Feature : POOL	
2	10.7 m	0.3 m			13	
3		0.4 m			14	
4	measurements	0.4 m			15 Dissolved Oxygen :	
5	1.07 m	0.4 m			16	
6	apart	0.4 m			17 6.05	ppm
7		0.4 m			18 60	%
8		0.3 m			19	
9		0.3 m			20	
10		0.2 m			21	
					22	
Transect I 1	wetted width	0.1 m			23 Channel Feature : POOL	
2	10.4 m	0.2 m			24	
3		0.3 m			25	
4	measurements	0.3 m			26 Dissolved Oxygen	
5	1.04 m	0.4 m			.	
6	apart	0.4 m			. 5.88	ppm
7		0.4 m			. 58	%
8		0.4 m			n	
9		0.3 m				
10		0.2 m				

If there is an odd number of entries find middle rank [(n+1)/2]. The corresponding sorted value depth t 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: Kerry Snethen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 5

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect 1	wetted width	0.2 m			1 Channel Feature : POOL	
2	10.9 m	0.3 m			2	
3		0.3 m			3	
4	measurements	0.5 m			4 Dissolved Oxygen	
5	1.09 m	0.4 m			5	
6	apart	0.4 m			6 5.88	ppm
7		0.4 m			7 58	%
8		0.4m			8	
9		0.3 m			9	
10		<0.1 m			10	
					11	
Transect 2 1	wetted width	0.1 m			12 Channel Feature : POOL	
2	8.3 m	0.1 m			13	
3		0.2 m			14	
4	measurements	0.2 m			15 Dissolved Oxygen :	
5	0.83 m	0.3 m			16	
6	apart	0.3 m			17 4.18	ppm
7		0.3 m			18 41	%
8		0.3 m			19	
9		0.3 m			20	
10		0.2 m			21	
					22	
Transect 3 1	wetted width				23 Channel Feature :	
2	m				24	
3					25	
4	measurements				26 Dissolved Oxygen	
5	m				.	
6	apart				.	
7					. ppm	
8					. %	
9					n	
10						

If there is an odd number of entries find middle rank [(n+1)/2]. The corresponding sorted value depth i 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 twc 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: Kerry Luther **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

WBID# 867
Site# 6

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

Date & Time: 5/25/07 1055	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): K.Snethen/A.Bartlett	Dove Rd bridge crossing
Current Weather Conditions: Cloudy, rainy	Facility Name: Green Ridge Lagoon
Weather Conditions for Past 10 days:	Permit Number: MO 0049164

Drought Conditions?: No drought ☐; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 38.61031 N Y: 093.37465 W

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
	upstream		downstream		

Uses Observed*: (Uses actually observed at time of survey.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☐ Steep slopes	☒ None of the above	☐ Other:

Comments:

Indications of Human Use*: (attach photos)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:

Comments:

% CHANNEL FEATURES

RUN - 10
RIFFLE - 10
POOL - 80

*** Page Two – Data Sheet B for WBID #** 867 : SITE #6
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%.)

60 % Cobble	20 % Gravel	20 % Sand	— % Silt	— % Mud/Clay	— % Bedrock

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

Macrophytes on bank.

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☐ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Clearish brown
Bottom Deposit:	☐ Sludge	☒ Solids	☐ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ 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: Kerry Snothen Date of Survey: 5/25/07

Organization: BWR Position: Env. Scientist

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

WBID # 867 Site # 6

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect A 1	wetted width	0.2 m			1 Channel Feature : POOL	
2	3.90 m	0.1 m			2	
3		<0.1 m			3	
4	measurements	<0.1 m			4 Dissolved Oxygen	
5	0.39 m	<0.1 m			5	
6	apart	<0.1 m			6 8.06	ppm
7		<0.1 m			7 80	%
8		<0.1 m			8	
9		<0.1 m			9	
10		<0.1 m			10	
					11	
Transect B 1	wetted width	0.1 m			12 Channel Feature : POOL	
2	8.1 m	0.3 m			13	
3		0.4 m			14	
4	measurements	0.5 m			15 Dissolved Oxygen :	
5	0.81 m	0.5 m			16	
6	apart	0.4 m			17 6.97	ppm
7		0.3 m			18 69	%
8		0.1 m			19	
9		<0.1 m			20	
10		<0.1 m			21	
					22	
Transect C 1	wetted width	<0.1 m			23 Channel Feature : POOL	
2	9.3 m	0.2 m			24	
3		0.4 m			25	
4	measurements	0.5 m			26 Dissolved Oxygen	
5	0.93 m	0.5 m			.	
6	apart	0.5 m			. 6.95	ppm
7		0.3 m			. 69	%
8		0.2 m			n	
9		0.1 m				
10		<0.1 m				

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 tw 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: Kerry Snethen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 6

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect D 1	wetted width	<0.1 m			1 Channel Feature : POOL	
2	9.2 m	0.3 m			2	
3		0.3 m			3	
4	measurements	0.5 m			4 Dissolved Oxygen	
5	0.92 m	0.6 m			5	
6	apart	0.6 m			6 6.85	ppm
7		0.4 m			7 68	%
8		0.3 m			8	
9		0.3 m			9	
10		0.1 m			10	
					11	
Transect E 1	wetted width	<0.1 m			12 Channel Feature : POOL	
2	6.9 m	0.2 m			13	
3		0.3 m			14	
4	measurements	0.3 m			15 Dissolved Oxygen :	
5	0.69 m	0.3 m			16	
6	apart	0.3 m			17 5.19	ppm
7		0.2 m			18 51	%
8		0.1 m			19	
9		<0.1 m			20	
10		<0.1 m			21	
					22	
Transect F 1	wetted width	0.1 m			23 Channel Feature : POOL	
2	7.2 m	0.3 m			24	
3		0.3 m			25	
4	measurements	0.4 m			26 Dissolved Oxygen	
5	0.72 m	0.4 m			.	
6	apart	0.3 m			. 5.80	ppm
7		0.3 m			. 58	%
8		0.3 m			n	
9		0.2 m				
10		0.1 m				

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 tw 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: Kerry Snethen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 6

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect G 1	wetted width	<0.1 m			1 Channel Feature: POOL	
2	1.4 m	<0.1 m			2	
3		<0.1 m			3	
4	measurements	<0.1 m			4 Dissolved Oxygen	
5	0.14 m	<0.1 m			5	
6	apart	<0.1 m			6 5.89	ppm
7		<0.1 m			7 58	%
8		<0.1 m			8	
9		<0.1 m			9	
10		<0.1 m			10	
Transect H 1	wetted width	0.5 m			11	
2	8.0 m	0.5 m			12 Channel Feature: POOL	
3		0.4 m			13	
4	measurements	0.5 m			14	
5	0.80 m	0.5 m			15 Dissolved Oxygen:	
6	apart	0.5 m			16	
7		0.3 m			17 5.70	ppm
8		0.2 m			18 57	%
9		0.1 m			19	
10		<0.1 m			20	
Transect I 1	wetted width	<0.1 m			21	
2	8.9 m	0.4 m			22	
3		0.4 m			23 Channel Feature: POOL	
4	measurements	0.5 m			24	
5	0.89 m	0.5 m			25	
6	apart	0.5 m			26 Dissolved Oxygen	
7		0.4 m			. 6.90	ppm
8		0.2 m			. 69	%
9		0.1 m			n	
10		<0.1 m				

If there is an odd number of entries find middle rank [(n+1)/2]. The corresponding sorted value depth i 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: Kerry Snothen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 6

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect 1	1 wetted width	<0.1 m			1 Channel Feature: POOL	
	2 4.3 m	<0.1 m			2	
	3	0.1 m			3	
	4 measurements	0.2 m			4 Dissolved Oxygen	
	5 0.43 m	0.2 m			5	
	6 apart	0.2 m			6 7.45	ppm
	7	0.2 m			7 74	%
	8	<0.1 m			8	
	9	<0.1 m			9	
	10	<0.1 m			10	
Transect 2	1 wetted width	<0.1 m			11	
	2 5.3 m	<0.1 m			12 Channel Feature:	
	3	0.2 m			13 RIM	
	4 measurements	0.3 m			14	
	5 0.53 m	0.4 m			15 Dissolved Oxygen:	
	6 apart	0.4 m			16	
	7	0.3 m			17 8.84	ppm
	8	0.2 m			18 88	%
	9	<0.1 m			19	
	10	<0.1 m			20	
Transect	1 wetted width				21	
	2 m				22	
	3				23 Channel Feature:	
	4 measurements				24	
	5 m				25	
	6 apart				26 Dissolved Oxygen	
	7				.	
	8				.	ppm
	9				.	%
	10				n	

If there is an odd number of entries find middle rank [(n+1)/2]. The corresponding sorted value depth i 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 twe 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: Kerry Grothen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

WBID# 867
Site# 7

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

Date & Time: 5/25/07 1145	Site Location Description (e.g., road crossing): Rd E bridge crossing (West side)
Personnel (Data Collectors): K. Snethen/A. Bartlett	
Current Weather Conditions: Cloudy, rainy	Facility Name: Green Ridge Lagoon
Weather Conditions for Past 10 days:	Permit Number: MO 0049654

Drought Conditions?: No drought ☑; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 38.63082 N Y: 093.32873 W

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	± 26 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
	upstream		downstream		

Uses Observed*: (Uses actually observed at time of survey.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☑ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☐ Steep slopes	☑ None of the above	☐ Other:

Comments:

Indications of Human Use*: (attach photos)

☑ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:

Comments:

% CHANNEL FEATURES

RUN - 10
RIFFLE - 10
POOL - 80

*** Page Two – Data Sheet B for WBID #** 867 : SITE # 7
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%.)

60 % Cobble	30 % Gravel	10 % Sand	— % Silt	— % Mud/Clay	— % Bedrock

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

Macrophytes on bank

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☐ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Clearish Brown
Bottom Deposit:	☐ Sludge	☒ Solids	☐ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ 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: Kerry Snethen Date of Survey: 5/25/07

Organization: BWR Position: Env. Scientist

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

WBID # 867 Site # 7

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect A 1	wetted width	0.4 m			1 Channel Feature: POOL	
2	10.0 m	0.3 m			2	
3		0.4 m			3	
4	measurements	0.4 m			4 Dissolved Oxygen	
5	1.0 m	0.3 m			5	
6	apart	0.3 m			6 6.43 ppm	
7		0.3 m			7 64 %	
8		0.2 m			8	
9		0.1 m			9	
10		0.1 m			10	
					11	
Transect B 1	wetted width	0.3 m			12 Channel Feature: POOL	
2	10.2 m	0.3 m			13	
3		0.3 m			14	
4	measurements	0.5 m			15 Dissolved Oxygen:	
5	1.02 m	0.4 m			16	
6	apart	0.4 m			17 6.57 ppm	
7		0.3 m			18 65 %	
8		0.2 m			19	
9		0.1 m			20	
10		<0.1 m			21	
					22	
Transect C 1	wetted width	0.2 m			23 Channel Feature: POOL	
2	10.0 m	0.1 m			24	
3		0.1 m			25	
4	measurements	0.1 m			26 Dissolved Oxygen	
5	1.00 m	0.1 m			.	
6	apart	0.2 m			. 7.04 ppm	
7		0.2 m			. 70 %	
8		0.1 m			n	
9		<0.1 m				
10		<0.1 m				

If there is an odd number of entries find middle rank [(n+1)/2]. The corresponding sorted value depth i 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 twc 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: Kerry Snethen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 7

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect D 1	wetted width	<0.1 m			1 Channel Feature : RIFFLE	
2	8.3 m	<0.1 m			2	
3		<0.1 m			3	
4	measurements	<0.1 m			4 Dissolved Oxygen	
5	0.83 m	<0.1 m			5	
6	apart	<0.1 m			6 6.46	ppm
7		<0.1 m			7 64	%
8		<0.1 m			8	
9		<0.1 m			9	
10		<0.1 m			10	
					11	
Transect E 1	wetted width	<0.1 m			12 Channel Feature : POOL	
2	11.5 m	0.1 m			13	
3		0.1 m			14	
4	measurements	0.2 m			15 Dissolved Oxygen:	
5	1.15 m	0.3 m			16	
6	apart	0.3 m			17 5.38	ppm
7		0.3 m			18 53	%
8		0.3 m			19	
9		0.2 m			20	
10		0.1 m			21	
					22	
Transect F 1	wetted width	<0.1 m			23 Channel Feature : POOL	
2	8.2 m	0.2 m			24	
3		0.2 m			25	
4	measurements	0.3 m			26 Dissolved Oxygen	
5	0.82 m	0.3 m			.	
6	apart	0.3 m			. 6.54	ppm
7		0.2 m			. 65	%
8		0.1 m			n	
9		0.1 m				
10		<0.1 m				

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 tw 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: Kerry Snethen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 7

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect G 1	wetted width	0.1 m			1 Channel Feature : POOL	
2	11.3 m	0.3 m			2	
3		0.4 m			3	
4	measurements	0.4 m			4 Dissolved Oxygen	
5	1.13 m	0.5 m			5	
6	apart	0.3 m			6 5.95	ppm
7		0.3 m			7 59	%
8		0.4 m			8	
9		0.4 m			9	
10		0.2 m			10	
Transect H 1	wetted width	0.1 m			11	
2	10.8 m	0.3 m			12 Channel Feature : POOL	
3		0.3 m			13	
4	measurements	0.5 m			14	
5	1.08 m	0.5 m			15 Dissolved Oxygen:	
6	apart	0.5 m			16	
7		0.5 m			17 6.30	ppm
8		0.3 m			18 63	%
9		0.2 m			19	
10		0.1 m			20	
Transect I 1	wetted width	<0.1 m			21	
2	4.8 m	0.1 m			22	
3		0.1 m			23 Channel Feature : POOL	
4	measurements	0.2 m			24	
5	0.48 m	0.1 m			25	
6	apart	0.1 m			26 Dissolved Oxygen	
7		0.1 m			.	
8		<0.1 m			. 6.49	ppm
9		<0.1 m			. 64	%
10		<0.1 m			n	

If there is an odd number of entries find middle rank [(n+1)/2]. The corresponding sorted value depth i 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: Kerry Grothen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 7

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect 1	wetted width	0.1 m			1 Channel Feature : POOL	
2	10.6 m	0.2 m			2	
3		0.2 m			3	
4	measurements	0.2 m			4 Dissolved Oxygen	
5	1.06 m	0.2 m			5	
6	apart	0.2 m			6 6.52	ppm
7		0.1 m			7 65	%
8		0.1 m			8	
9		<0.1 m			9	
10		<0.1 m			10	
Transect 2	wetted width	0.1 m			11	
2	11.2 m	0.3 m			12 Channel Feature : POOL	
3		0.5 m			13	
4	measurements	0.5 m			14	
5	1.12 m	0.5 m			15 Dissolved Oxygen:	
6	apart	0.5 m			16	
7		0.4 m			17 5.61	ppm
8		0.3 m			18 56	%
9		0.2 m			19	
10		0.2 m			20	
Transect	wetted width				21	
2	m				22	
3					23 Channel Feature:	
4	measurements				24	
5	m				25	
6	apart				26 Dissolved Oxygen	
7					.	
8					.	ppm
9					.	%
10					n	

If there is an odd number of entries find middle rank [(n+1)/2]. The corresponding sorted value depth i 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 twc 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: Kerry Snothen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

WBID# 867
Site# 8

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

Date & Time: 5/25/07 1230	Site Location Description (e.g., road crossing): Rd. E bridge crossing (East side)
Personnel (Data Collectors): K. Snethen/A. Bartlett	
Current Weather Conditions: Cloudy/rainy	Facility Name: Green Ridge Lagoon
Weather Conditions for Past 10 days:	Permit Number: MO 0049654

Drought Conditions?: No drought ☑; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 38.63036 N Y: 093.32448 W

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	± 26 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
	upstream		downstream		

Uses Observed*: (Uses actually observed at time of survey.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☐ Steep slopes	☒ None of the above	☐ Other:

Comments:

Indications of Human Use*: (attach photos)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:

Comments:

% CHANNEL FEATURES

RUN - 10
RIFFLE - 10
Pool - 80

*** Page Two – Data Sheet B for WBID #** 867 : SITE # 8
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%.)

60 % Cobble	30 % Gravel	10 % Sand	— % Silt	— % Mud/Clay	— % Bedrock

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

Macrophytes on bank.

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☐ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Clearish Brown
Bottom Deposit:	☐ Sludge	☒ Solids	☐ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ 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: Kerry Snethen Date of Survey: 5/25/07

Organization: BWR Position: Env. Scientist

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

WBID # 867 Site # 8

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect A 1	wetted width	0.4 m			1 Channel Feature : POOL	
2	10.9 m	0.7 m			2	
3		0.7 m			3	
4	measurements	0.8 m			4 Dissolved Oxygen	
5	1.09 m	0.7 m			5	
6	apart	0.8 m			6 5.70	ppm
7		0.8 m			7 57	%
8		0.8 m			8	
9		0.4 m			9	
10		0.2 m			10	
Transect B 1	wetted width	0.2 m			11	
2	11.1 m	0.4 m			12 Channel Feature : POOL	
3		0.6 m			13	
4	measurements	0.7 m			14	
5	1.11 m	0.7 m			15 Dissolved Oxygen:	
6	apart	0.6 m			16	
7		0.6 m			17 5.85	ppm
8		0.5 m			18 58	%
9		0.4 m			19	
10		0.4 m			20	
Transect C 1	wetted width	0.2 m			21	
2	13.2 m	0.4 m			22	
3		0.5 m			23 Channel Feature : POOL	
4	measurements	0.6 m			24	
5	1.32 m	0.7 m			25	
6	apart	0.8 m			26 Dissolved Oxygen	
7		0.7 m			. 6.01	ppm
8		0.6 m			. 60	%
9		0.5 m			n	
10		0.3 m				

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 tw 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: Kerry Snethen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 8

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect D 1	wetted width	0.1 m			1 Channel Feature : POOL	
2	10.7 m	0.1 m			2	
3		0.2 m			3	
4	measurements	0.2 m			4 Dissolved Oxygen	
5	1.07 m	0.2 m			5	
6	apart	0.2 m			6 5.71	ppm
7		0.2 m			7 57	%
8		0.2 m			8	
9		0.2 m			9	
10		<0.1 m			10	
					11	
Transect E 1	wetted width	0.2 m			12 Channel Feature : POOL	
2	10.7 m	0.2 m			13	
3		0.5 m			14	
4	measurements	0.4 m			15 Dissolved Oxygen :	
5	1.07 m	0.4 m			16	
6	apart	0.4 m			17 5.17	ppm
7		0.3 m			18 51	%
8		0.2 m			19	
9		0.2 m			20	
10		0.1 m			21	
					22	
Transect F 1	wetted width	0.5 m			23 Channel Feature : POOL	
2	10.1 m	0.6 m			24	
3		0.5 m			25	
4	measurements	0.5 m			26 Dissolved Oxygen	
5	1.01 m	0.5 m			.	
6	apart	0.5 m			. 5.86	ppm
7		0.4 m			. 58	%
8		0.4 m			n	
9		0.3 m				
10		0.3 m				

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 tw 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: Kerry Snethen **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 8

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect G 1	wetted width	0.3 m			1 Channel Feature: POOL	
2	8.0 m	0.4 m			2	
3		0.5 m			3	
4	measurements	0.4 m			4 Dissolved Oxygen	
5	0.80 m	0.4 m			5	
6	apart	0.3 m			6 5.90	ppm
7		0.2 m			7 59	%
8		0.2 m			8	
9		0.1 m			9	
10		0.1 m			10	
Transect H 1	wetted width	0.3 m			11	
2	6.6 m	0.3 m			12 Channel Feature: POOL	
3		0.3 m			13	
4	measurements	0.4 m			14	
5	0.66 m	0.4 m			15 Dissolved Oxygen:	
6	apart	0.3 m			16	
7		0.2 m			17 6.22	ppm
8		0.2 m			18 62	%
9		<0.1 m			19	
10		<0.1 m			20	
Transect I 1	wetted width	<0.1 m			21	
2	3.0 m	0.1 m			22	
3		0.1 m			23 Channel Feature: POOL	
4	measurements	0.1 m			24	
5	0.30 m	0.1 m			25	
6	apart	0.1 m			26 Dissolved Oxygen	
7		<0.1 m			.	
8		<0.1 m			. 6.89	ppm
9		<0.1 m			. 68	%
10		<0.1 m			n	

If there is an odd number of entries find middle rank [(n+1)/2]. The corresponding sorted value depth t 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: Kerry Snotha **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

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

WBID # 867 Site # 8

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
Transect 1 1	wetted width	0.2 m			1 Channel Feature : POOL	
2	9.8 m	0.2 m			2	
3		<0.1 m			3	
4	measurements	0.1 m			4 Dissolved Oxygen	
5	0.98 m	0.2 m			5	
6	apart	0.2 m			6 6.82	ppm
7		0.2 m			7 68	%
8		0.1 m			8	
9		0.1 m			9	
10		<0.1 m			10	
Transect 2 1	wetted width	0.3 m			11	
2	14.6 m	0.3 m			12 Channel Feature : POOL	
3		0.3 m			13	
4	measurements	0.4 m			14	
5	1.46 m	0.4 m			15 Dissolved Oxygen:	
6	apart	0.4 m			16	
7		0.4 m			17 6.45	ppm
8		0.5 m			18 64	%
9		0.3 m			19	
10		0.2 m			20	
Transect 1	wetted width				21	
2	m				22	
3					23 Channel Feature : POOL	
4	measurements				24	
5	m				25	
6	apart				26 Dissolved Oxygen	
7					.	
8					. 6.15	ppm
9					. 64	%
10					n	

If there is an odd number of entries find middle rank [(n+1)/2]. The corresponding sorted value depth i the middle rank is the median depth.
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I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UA datasheet is true and accurate.

Signed: Kerry Smith **Date:** 5/25/07

Organization: BWR **Position:** Env. Scientist

February 5, 2007

WBID# 867
Site# 9

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

Date & Time: 7/06/07 1340	Site Location Description (e.g., road crossing): RD. CROSSING @ CHANEY RD. (DOWNSTREAM)
Personnel (Data Collectors): ALEX BARTLETT	
Current Weather Conditions: SUNNY ~80°F	Facility Name: GREEN RIDGE LAGOON
Weather Conditions for Past 10 days: FAIR / SUNNY	Permit Number: MO0049659
Drought Conditions?: No drought ☒; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 38.59818 Y: 093.43856

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
867-1,2	TRAN K-J	867-3,4,5	TRAN C-B		

Uses Observed*: (Uses actually observed at time of survey.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☒ Fence	☐ Steep slopes	☐ None of the above	☐ Other:

Comments:

Indications of Human Use*: (attach photos)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:

Comments: CHANEY RD.

CHANNEL FEATURE %
RUN: 40 RIFFLE: ____
~~RIFFLE~~
POOL: 60

*** Page Two – Data Sheet B for WBID #** 267 **:**
#9

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%.)

5 % Cobble	70 % Gravel	0 % Sand	25 % Silt	0 % Mud/Clay	0 % Bedrock

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

CONSIDERABLE MACROPHYTE GROWTH: PRIMROSE
SOME ALGAL GROWTH ON GRAVEL SUBSTRATE

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: BROWNISH-RED
Bottom Deposit:	☐ Sludge	☒ Solids	☒ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☒ Foam	☐ None	☐ 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: 7/6/2007

Organization: BWR CORP Position: ENV. SCI.

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

867 #9

		Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
TA	1	WETTED WIDTH	<0.1			1 CHANNEL FEATURE:	
	2	2.4	0.1			2 RUN	
	3		0.1			3	
	4	MEASUREMENTS	0.1			4 DISSOLVED	OXYGEN:
	5	0.24 m	0.1			5	
	6	APART	0.1			6 4.29	ppm
	7		0.1			7	
	8		0.1			8	
	9		0.1			9	
	10		0.1			10	
						11	
TB	1	WETTED WIDTH	0.1			12 CHANNEL	FEATURE:
	2	2.0	0.3			13 POOL	
	3		0.3			14	
	4	MEASUREMENTS	0.3			15 DISSOLVED	OXYGEN:
	5	0.20 m	0.3			16	
	6	APART	0.5			17 4.03	ppm
	7		0.4			18	
	8		0.4			19	
	9		0.4			20	
	10		0.3			21	
						22 CHANNEL	FEATURE:
TC	1	WETTED WIDTH	0.3			23 POOL	
	2	2.6	0.3			24	
	3		0.4			25 DISSOLVED	OXYGEN:
	4	MEASUREMENTS	0.5			26	
	5	0.26 m	0.4			. 3.29	ppm
	6	APART	0.4			.	
	7		0.2			.	
	8		0.2			n	
	9		0.1				
	10		0.1				

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Signed: [signature] **Date:** 7/6/07

Organization: BWR CORP. Position: ENV. SCI.

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

867 #9

		Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
D	1	WETTED WIDTH	<0.1			1 CHANNEL	FEATURE:
	2	0.5	<0.1			2 RUN	
	3		<0.1			3	
	4	MEASUREMENTS	<0.1			4 DISSOLVED	OXYGEN:
	5	0.05 m	<0.1			5	
	6	APART	<0.1			6 3.22	ppm
	7		<0.1			7	
	8		<0.1			8	
	9		<0.1			9	
	10		<0.1			10	
						11 CHANNEL	FEATURE:
E	1	WETTED WIDTH	<0.1			12 RUN	
	2	1.0	0.1			13	
	3		0.1			14 DISSOLVED	OXYGEN:
	4	MEASUREMENTS	0.1			15	
	5	0.10 m	0.1			16 3.10	ppm
	6	APART	0.1			17	
	7		<0.1			18	
	8		<0.1			19	
	9		<0.1			20	
	10		<0.1			21	
						22 CHANNEL	FEATURE:
F	1	WETTED WIDTH	<0.1			23 POOL	
	2	3.2	0.2			24	
	3		0.2			25	
	4	MEASUREMENTS	0.2			26 DISSOLVED	OXYGEN:
	5	0.32 m	0.2			.	
	6	APART	0.2			. 3.95	ppm
	7		0.2			.	
	8		0.1			n	
	9		0.1				
	10		0.1				

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Organization: BWR CORP. Position: ENV. SCI.

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

867 #9

		Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
T_G	1	WETTED WIDTH	0.1			1 CHANNEL FEATURE:	
	2	4.0	0.3			2 POOL	
	3		0.4			3	
	4	MEASUREMENTS	0.6			4 DISSOLVED OXYGEN:	
	5	0.40 m	0.5			5	
	6	APART	0.6			6 2.91	ppm
	7		0.6			7	
	8		0.4			8	
	9		0.2			9	
	10		0.2			10	
						11	
T_H	1	WETTED WIDTH	0.1			12 CHANNEL FEATURE:	
	2	2.5	0.2			13 RUN	
	3		0.2			14	
	4	MEASUREMENTS	0.2			15 DISSOLVED OXYGEN:	
	5	0.25 m	0.2			16	
	6	APART	0.2			17 4.45	ppm
	7		0.2			18	
	8		0.2			19	
	9		0.2			20	
	10		0.2			21	
						22	
T_I	1	WETTED WIDTH	0.1			23 CHANNEL FEATURE:	
	2	2.3	0.1			24 RUN	
	3		0.1			25	
	4		0.2			26 DISSOLVED OXYGEN:	
	5	MEASUREMENTS	0.2			.	
	6	0.23 m	0.2			. 4.71	ppm
	7	APART	0.3			.	
	8		0.2			n	
	9		0.2				
	10		0.1				

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Organization: BWR CORP. Position: ENV. SCI.

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

867 #9

	Distance from Stream edge	Depth	Rank		Assigned Rank	Sorted depth
TJ 1	WETTED WIDTH	<0.1			1 CHANNEL FEATURE:	
2	1.8	0.1			2 POOL	
3		0.1			3	
4	MEASUREMENTS	0.1			4. DISSOLVED OXYGEN:	
5	0.18 m	0.3			5	
6	APART	0.3			6 3.00	ppm
7		0.2			7	
8		0.2			8	
9		0.2			9	
10		0.2			10	
					11	
1	WETTED WIDTH	0.2			12 CHANNEL FEATURE:	
2	2.0	0.2			13 POOL	
3		0.3			14	
TK 4	MEASUREMENTS	0.3			15 DISSOLVED OXYGEN:	
5	0.20 m	0.3			16	
6	APART	0.3			17 3.12	ppm
7		0.2			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.
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Signed: [signature] **Date:** 7/6/07

Organization: BWR CORP. Position: ENV. SCI.

Upstream (Site 1) of Basin Fork

Downstream (Site 1) of Basin Fork

Upstream (Site 2) of Basin Fork

Downstream (Site 2) of Basin Fork

Upstream (Site 3) of Basin Fork

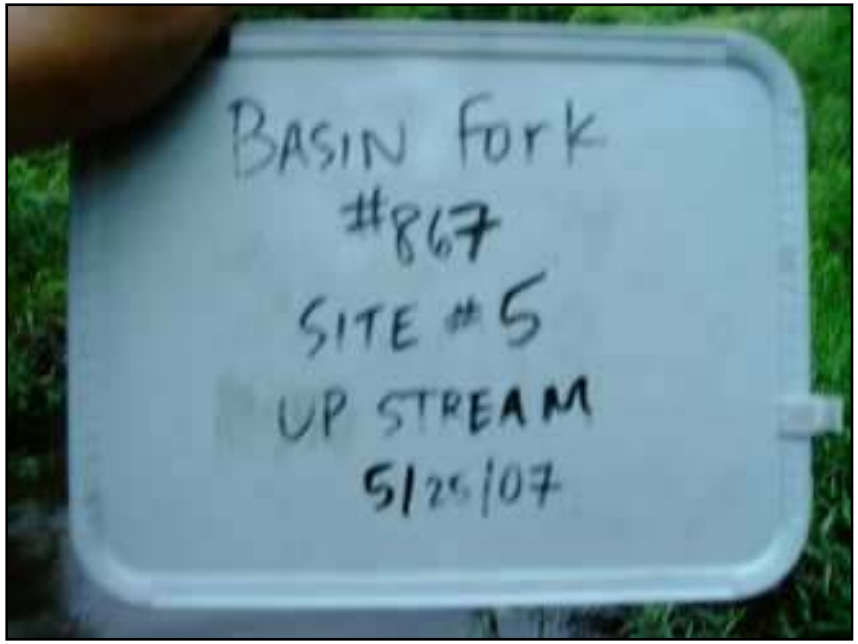
Downstream (Site 3) of Basin Fork

Downstream (Site #4) of Basin Fork.

Downstream (Site #4) of Basin Fork.

Upstream (Site #4) of Basin Fork.

Upstream (Site #4) of Basin Fork.



Upstream (Site #5) of Basin Fork.

Upstream (Site #5) of Basin Fork.

Downstream (Site #5) of Basin Fork.

Downstream (Site #5) of Basin Fork.

Downstream (Site #6) of Basin Fork.

Downstream (Site #6) of Basin Fork.

Upstream (Site #6) of Basin Fork.

Upstream (Site #6) of Basin Fork.

Upstream (Site #7) of Basin Fork.

Upstream (Site #7) of Basin Fork.

Downstream (Site #7) of Basin Fork.

Downstream (Site #7) of Basin Fork.

Downstream (Site #8) of Basin Fork.

Downstream (Site #8) of Basin Fork.

Upstream (Site #8) of Basin Fork.

Upstream (Site #8) of Basin Fork.

Upstream (Site #9) of Basin Fork

Upstream (Site #9) of Basin Fork

Downstream (Site #9) of Basin Fork

Downstream (Site #9) of Basin Fork