



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0715 Richland Creek

Submitted by
SES, Inc.

To
Missouri Department of Natural Resources
Water Protection Program

Date Received: June 3, 2007

Field Data Sheets for Recreation Use Stream Surveys
Data Sheet A - Water Body Identification
(For water body being surveyed)

Water Body Information

Water Body Name:	Richland Creek	WBID:	715
8 digit HUC code:	10300102	County:	Callaway
Upstream Legal Description	48N 9W 29		
Downstream Legal Description	48N 9W 35		
Number of Sites Evaluated	3		
List all site numbers, listed upstream to downstream	1,2,3		

Discharger Facility Information

Discharger Facility Name(s):	Mac's Mobile Manor
Discharger Permit Number(s):	M00101052

UAA Surveyor

Name of Surveyor:	Aaron Ball	Telephone Number:	(913)307-0054 Ext. 14
Organization/Employer:	SES, Inc.		
Position:	Field Team Leader		

Signed: _____ Date: _____

WBID # 715 **Site #** 1
Mark # 4 **Dissolved Oxygen (ppm)** 11.9
Upstream Views Physical Dimensions: Is there any water present at this view? Yes

If so, is there an obvious current? Yes

Select one of the following channel features:

% of Channel Feature

Riffle	20				
Run	0				
Pool	80				

Downstream View's Physical Dimensions: Is there any water present at this view? Yes

If so, is there an obvious current? Yes

Substrate:

% Cobble	% Gravel	% Sand	% Silt
50	40	5	5
% Mud/Clay	% Bedrock		
0	0		

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

Carex, rushes, grasses along banks and in gravel. Minimal aquatic vegetation

Water Characteristics

Odor Sewage Musky Chemical **None** Other
 Color **Clear** Green Gray Milky Other
 Bottom Deposit Sludge Solids Fine Sed. **None** Other
 Surface Deposit Oil Scum **Foam** None Other

Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth)
(Median Depth Shown in Bold)

Site # 1

Mark # 4

0715_Richland Creek_Callaway

	Depth (m)
Transect 1	0.35
Substrate:	0.40
Rocky	0.30
Water Clarity:	0.25
Clear	0.20
Channel Feature:	0.20
Pool	0.20
Channel Width:	0.20
9 yards	0.20
0.20	0.20
Transect 2	0.10
Substrate:	0.10
Rocky	0.25
Water Clarity:	0.30
Clear	0.35
Channel Feature:	0.20
Pool	0.15
Channel Width:	0.10
8 yards	0.15
0.15	0.10
Transect 3	0.35
Substrate:	0.25
Rocky	0.15
Water Clarity:	0.10
Clear	0.00
Channel Feature:	0.00
Pool	0.10
Channel Width:	0.20
12 yards	0.15
0.15	0.15
Transect 4	0.05
Substrate:	0.05
Rocky	0.10
Water Clarity:	0.15
Clear	0.05
Channel Feature:	0.00
Riffle	0.10
Channel Width:	0.15
9 yards	0.15
0.08	0.05

	Depth (m)
Transect 5	0.05
Substrate:	0.10
Rocky	0.15
Water Clarity:	0.20
Clear	0.25
Channel Feature:	0.30
Pool	0.30
Channel Width:	0.35
6 yards	0.35
0.23	0.20
Transect 6	0.05
Substrate:	0.15
	0.20
Water Clarity:	0.30
Clear	0.35
Channel Feature:	0.30
Pool	0.35
Channel Width:	0.20
6 yards	0.10
0.20	0.05
Transect 7	0.05
Substrate:	0.05
Rocky	0.05
Water Clarity:	0.05
	0.05
Channel Feature:	0.10
Riffle	0.10
Channel Width:	0.15
5 yards	0.20
0.08	0.15
Transect 8	0.20
Substrate:	0.45
Rocky	0.50
Water Clarity:	0.50
Clear	0.40
Channel Feature:	0.30
Pool	0.20
Channel Width:	0.10
11 yards	0.05
0.25	0.10

	Depth (m)
Transect 9	0.45
Substrate:	0.45
Rocky	0.30
Water Clarity:	0.25
Clear	0.35
Channel Feature:	0.40
Pool	0.50
Channel Width:	0.50
7 yards	0.50
0.43	0.35
Transect 10	0.15
Substrate:	0.35
Rocky	0.55
Water Clarity:	0.95
Clear	1.00
Channel Feature:	1.00
Pool	1.00
Channel Width:	1.00
8 yards	0.70
0.83	0.40
Transect 11	0.15
Substrate:	0.30
Rocky	0.40
Water Clarity:	0.50
Clear	0.55
Channel Feature:	0.45
Pool	0.50
Channel Width:	0.60
10 yards	0.60
0.50	0.50
Site Median	Site Maximum
0.20	1.00

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

WBID 715
Site # 2

Date and Time: 5/8/2007 10:10

Current Weather Conditions Clear

Weather Conditions for Past 10 days: Rained 5/1-5/4 and 5/6; 1-inch total

Drought Conditions? No

Site Location (e.g. road crossing) crossing on road 105

GPS Mark: 5

Upstream Photo 4 Downstream Photo 5

Uses Observed (Uses actually observed at time of survey) Circle

Swimming	Skin Diving	SCUBA diving	Tubing
Water Skiing	Wind Surfing	Kayaking	Boating
Wading	Rafting	Hunting	Trapping
Fishing	None of the Above	Other	

Surrounding Conditions

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	

Indications of Human Use

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

WBID # 715 **Site #** 2
Mark # 5 **Dissolved Oxygen (ppm)** 13.6
Upstream Views Physical Dimensions: Is there any water present at this view? Yes

If so, is there an obvious current? Yes

Select one of the following channel features:

% of Channel Feature

Riffle	14				
Run	0				
Pool	86				

Downstream View's Physical Dimensions: Is there any water present at this view? Yes

If so, is there an obvious current? Yes

Substrate:

% Cobble	% Gravel	% Sand	% Silt
50	40	5	5
% Mud/Clay	% Bedrock		
0	0		

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

Some floating aquatic vegetation. Carex, rushes, grasses along bank and in gravel

Water Characteristics

Odor Sewage Musky Chemical **None** Other
 Color **Clear** Green Gray Milky Other
 Bottom Deposit Sludge Solids Fine Sed. **None** Other
 Surface Deposit Oil Scum Foam **None** Other

Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth)
(Median Depth Shown in Bold)

Site # 2

Mark # 5

0715_Richland Creek_Callaway

	Depth (m)
Transect 1	0.05
Substrate:	0.10
Rocky	0.20
Water Clarity:	0.25
Clear	0.35
Channel Feature:	0.40
	0.30
Channel Width:	0.30
17 yards	0.30
0.30	0.30
Transect 2	0.30
Substrate:	0.35
Rocky	0.35
Water Clarity:	0.35
Clear	0.35
Channel Feature:	0.30
	0.20
Channel Width:	0.15
13 yards	0.30
0.30	0.15
Transect 3	0.15
Substrate:	0.35
Silty	0.40
Water Clarity:	0.45
	0.55
Channel Feature:	0.65
	0.70
Channel Width:	0.55
13 yards	0.40
0.43	0.20
Transect 4	0.35
Substrate:	0.40
Rocky	0.45
Water Clarity:	0.45
Clear	0.60
Channel Feature:	0.60
Pool	0.35
Channel Width:	0.15
8 yards	0.10
0.38	0.00

	Depth (m)
Transect 5	0.05
Substrate:	0.00
Rocky	0.00
Water Clarity:	0.00
Clear	0.00
Channel Feature:	0.00
	0.25
Channel Width:	0.25
13 yards	0.15
0.03	0.20
Transect 6	0.05
Substrate:	0.15
	0.20
Water Clarity:	0.30
Clear	0.45
Channel Feature:	0.45
	0.45
Channel Width:	0.40
10 yards	0.30
0.30	0.20
Transect 7	0.08
Substrate:	0.10
Rocky	0.15
Water Clarity:	0.15
Clear	0.15
Channel Feature:	0.20
	0.15
Channel Width:	0.15
5 yards	0.10
0.15	0.10
Transect 8	0.05
Substrate:	0.10
Rocky	0.15
Water Clarity:	0.20
Clear	0.30
Channel Feature:	0.40
Pool	0.45
Channel Width:	0.50
12 yards	0.45
0.35	0.45

	Depth (m)
Transect 9	0.05
Substrate:	0.10
Rocky	0.15
Water Clarity:	0.35
Clear	0.45
Channel Feature:	0.50
	0.45
Channel Width:	0.20
10 yards	0.30
0.25	0.15
Transect 10	0.10
Substrate:	0.20
Rocky	0.30
Water Clarity:	0.25
Clear	0.00
Channel Feature:	0.00
	0.00
Channel Width:	0.05
18 yards	0.05
0.08	0.10
Transect 11	0.00
Substrate:	0.05
	0.05
Water Clarity:	0.15
Murky	0.30
Channel Feature:	0.40
	0.50
Channel Width:	0.65
13 yards	0.50
0.35	0.40

Site Median	Site Maximum
0.25	0.70

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

WBID 715
Site # 3

Date and Time: 5/8/2007 12:30

Current Weather Conditions cloudy

Weather Conditions for Past 10 days: Rained 5/1-5/4 and 5/6; 1-inch total

Drought Conditions? No

Site Location (e.g. road crossing)

GPS Mark: 6

Upstream Photo 6 Downstream Photo 7

Uses Observed (Uses actually observed at time of survey) Circle

Swimming	Skin Diving	SCUBA diving	Tubing
Water Skiing	Wind Surfing	Kayaking	Boating
Wading	Rafting	Hunting	Trapping
Fishing	None of the Above	Other	

Surrounding Conditions

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	

Indications of Human Use

Roads	Rope swings	Foot paths/prints	Dock/platform
Livestock Watering	RV/ATV Tracks	Camping Sites	Fire pit/ring
NPDES Discharge	Fishing Tackle	Other:	None of the Above

WBID # 715 **Site #** 3
Mark # 6 **Dissolved Oxygen (ppm)** 12.3
Upstream Views Physical Dimensions: Is there any water present at this view?

If so, is there an obvious current?

Select one of the following channel features:

	% of Channel Feature				
Riffle	18				
Run	0				
Pool	82				

Downstream View's Physical Dimensions: Is there any water present at this view?

If so, is there an obvious current?

Substrate:

% Cobble	% Gravel	% Sand	% Silt
50	40	5	5
% Mud/Clay	% Bedrock		
0	0		

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

Present in areas. 90% coverage in areas. Algae on rocks.

Water Characteristics

Odor Sewage Musky Chemical **None** Other
 Color **Clear** Green Gray Milky Other
 Bottom Deposit Sludge Solids Fine Sed. **None** Other
 Surface Deposit Oil Scum **Foam** None Other

Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth)
(Median Depth Shown in Bold)

Site # 3

Mark # 6

0715_Richland Creek_Callaway

	Depth (m)
Transect 1	0.30
Substrate:	0.45
Silty	0.50
Water Clarity:	0.45
Murky	0.45
Channel Feature:	0.50
Pool	0.65
Channel Width:	0.80
21 yards	0.90
0.50	1.00
Transect 2	0.25
Substrate:	0.45
Silty	0.40
Water Clarity:	0.50
Murky	0.55
Channel Feature:	0.65
Pool	0.75
Channel Width:	0.80
21 yards	0.65
0.58	0.60
Transect 3	0.25
Substrate:	0.45
Rocky	0.40
Water Clarity:	0.50
Murky	0.55
Channel Feature:	0.65
Pool	0.75
Channel Width:	0.80
18 yards	0.65
0.58	0.60
Transect 4	0.05
Substrate:	0.10
Rocky	0.05
Water Clarity:	0.25
Clear	0.05
Channel Feature:	0.05
Riffle	0.10
Channel Width:	0.15
5 yards	0.15
0.10	0.10

	Depth (m)
Transect 5	0.10
Substrate:	0.15
Rocky	0.30
Water Clarity:	0.40
Clear	0.45
Channel Feature:	0.45
Pool	0.45
Channel Width:	0.35
6 yards	0.30
0.33	0.20
Transect 6	0.35
Substrate:	0.40
Rocky	0.40
Water Clarity:	0.35
Clear	0.35
Channel Feature:	0.35
Pool	0.30
Channel Width:	0.35
7 yards	0.35
0.35	0.15
Transect 7	0.20
Substrate:	0.15
Rocky	0.05
Water Clarity:	0.15
Clear	0.35
Channel Feature:	0.35
Riffle	0.30
Channel Width:	0.25
14 yards	0.30
0.23	0.20
Transect 8	0.10
Substrate:	0.15
Rocky	0.20
Water Clarity:	0.20
Clear	0.30
Channel Feature:	0.35
Pool	0.35
Channel Width:	0.30
13 yards	0.40
0.30	0.40

	Depth (m)
Transect 9	0.05
Substrate:	0.05
Rocky	0.15
Water Clarity:	0.15
Clear	0.20
Channel Feature:	0.20
Pool	0.25
Channel Width:	0.20
13 yards	0.20
0.18	0.15
Transect 10	0.25
Substrate:	0.35
	0.35
Water Clarity:	0.20
Clear	0.25
Channel Feature:	0.20
Pool	0.15
Channel Width:	0.15
13 yards	0.05
0.20	0.05
Transect 11	0.20
Substrate:	0.20
Rocky	0.30
Water Clarity:	0.35
Clear	0.30
Channel Feature:	0.50
Pool	0.50
Channel Width:	0.45
9 yards	0.35
0.33	0.25
Site Median	Site Maximum
0.30	1.00

WBID# 715



Site# 1 Photo ID# 3, Downstream



Site# 2 Photo ID# 4, Upstream



Site# 2 Photo ID# 5, Downstream

WBID# 715



Site# 3 Photo ID# 6, Upstream



Site# 3 Photo ID# 7, Downstream