Use Attainability Analysis

for

Water Body Identification # 0715

Richland Creek

Conducted by:

Environmental Resources Coalition

To:

Missouri Department of Natural Resources
Water Protection Program

Submitted: July 14, 2005

Environmental Resources Coalition

Stream Description – WB ID: 0715 – Richland Creek

Richland Creek (WB 0715) is a four mile Class C stream. The water body is located in central Callaway County at the northern edge of the Ozark Border physiographic region (Thom and Wilson 1980). The Ozark Border physiographic region includes the rugged river hills with deep, relatively productive soils along both sides of the Missouri River and extending along the lower Mississippi River on the eastern border of the state to the Mississippi Lowlands physiographic region. The Missouri River Section of the Ozark Border region is characterized by streams flowing to the Missouri River. The dominant topography of the region is highly dissected gentle rolling plains. Soils range from deep productive loess soils to shallow soils derived from bedrock.

Richland Creek is the receiving water body for Mac's Mobile Home Manor (MO0101052). The classified reach runs from the Highway 54 bridge (site # 1) and flow south east to join Maddox Branch, which combine to form Crows Fork Creek. The effluent from the Mac's Mobile Home Manor enters Richland Creek near of site # 1. Three sites of the stream were assessed for physical characteristics. During this assessment, the assessment team did not find sufficient depth to support whole body contact recreation (maximum depth of at least one meter or average depth of at least ½ meter.)

Thom, R. H. and J. H. Wilson. 1980. The Natural Divisions of Missouri. Trans. Mo. Acad. Sci. 14: 9-23

Note: During the first visit to each site, ERC selected an assessment location (either upstream or downstream) based on which side appeared deepest and or most likely for whole body recreation.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A: Water Body Identification

Water Body Name: Richland Creek
8 – digit HUC: 10300102
Missouri WBID # 0715
County: Callaway
Upstream Legal Description: Sec. 29, T48N, R9W Callaway County
Downstream Legal Description: Sec. 35, T48N, R9W, Callaway County
Upstream Coordinates: Latitude 38.9008271° N , Longitude 91.9428257° W
Downstream Coordinates: Latitude 38.8876271 ° N , Longitude 91.8939351 ° W
Discharger Facility Name(s): Mac's Mobile Manor
Discharger Permit Number(s): MO0101052
Number of Sites Evaluated: 3
Name of Surveyor and Telephone Number: Robert R. Bacon, (573) 634-7078
Organization: Environmental Resources Coalition (ERC)
Position: Director of Aquatic Services

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

Signed: Robert R Bacon

Date: 7-14-2005

Weather Conditions

Weather conditions for the field surveys and the previous ten days are listed in the tables below.

Data from the Midwestern Regional Climate Center
Fulton, Missouri, Station ID: 235207

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Average Temp (°F)
04/15/2005	0	37	66	52
04/16/2005	0	40	73	57
04/17/2005	0	47	79	63
04/18/2005	0	51	80	66
04/19/2005	0	51	80	66
04/20/2005	0	55	81	68
04/21/2005	0.19	57	80	69
04/22/2005	0.84	53	78	66
04/23/2005	0.05	38	60	49
04/24/2005	0	32	53	43
04/25/2005	0	38	58	48

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Average Temp (°F)
05/28/2005	0.08	48	77	63
05/29/2005	0.03	53	79	66
05/30/2005	0.05	58	79	69
05/31/2005	0.01	59	76	68
06/01/2005	0	54	80	67
06/02/2005	0	54	80	67
06/03/2005	0	57	81	69
06/04/2005	0	58	84	71
06/05/2005	0.18	63	91	77
06/06/2005	0	60	87	74
06/07/2005	0	63	82	73

Name: KINGDOM CITY
Date: 7/14/2005
Scale: 1 inch equals 2000 feet

Location: 038.8973268° N 091.9161340° W

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WB # 0715 – Richland Creek

Site # 1 - Highway 54 (Mac Rd)

GPS Location	**38.9012435 North** **91.9414105 West**
Elevation (feet)	**738.4**

Upstream Views

04/25/05

06/07/05

Downstream Views

04/25/05

06/07/05

Physical Dimensions – Site # 1

	04/25/05	06/07/05
Assessment Location	Upstream	Upstream
Time	7:44 AM	8:03 AM
Stream Type	Run / Pool	Run / Pool
Width (m)	13.72	12.34
Length (m)	76.20	76.20
Ave Depth (cm)	24.80	15.75
Maximum Depth (cm)*	46.0	27.0
Flow Present	Yes (very slow)	Yes (very slow)
Flow (cfs)	-	-
SUBSTRATE		
Cobble	0%	0%
Gravel	30%	90%
Sand	60%	10%
Silt	10%	0%
Mud / Clay	0%	0%
Bedrock	0%	0%
	100%	100%
OTHER		
Uses Observed	None	None
Evidence of Human Use (WBCR)	None	None
Aquatic Vegetation	None	Large floating mats of green algae 60%
Water Characteristics		
Odor	None	None
Color	Cloudy, turbid	Turbid
Bottom Deposits	None	None
Surface Deposits	None	None

* Maximum depth is maximum measured depth within the stream cross-section.

NOTES: Site # 1 is the uppermost site on Richland Creek.

WB # 0715 – Richland Creek

Site # 2 - County Road 116

GPS Location **38.9006534 North**
91.9334855 West

Upstream Views

04/25/05

06/07/05

Downstream Views

04/25/05

06/07/05

Physical Dimensions – Site # 2

	04/25/05	06/07/05
Assessment Location	Upstream	Upstream
Time	8:03 AM	8:16 AM
Stream Type	Pool	Pool
Width (m)	12.80	11.89
Length (m)	22.86	22.86
Ave Depth (cm)	29.43	20.00
Maximum Depth (cm)*	52.0	38.0
Flow Present	Yes	Yes
Flow (cfs)	-	-
SUBSTRATE		
Cobble	0%	0%
Gravel	20%	80%
Sand	80%	20%
Silt	0%	0%
Mud / Clay	0%	0%
Bedrock	0%	0%
	100%	100%
OTHER		
Uses Observed	None	None
Evidence of Human Use (WBCR)	None	None
Aquatic Vegetation	None	Floating mats of algae 15%
Water Characteristics		
Odor	None	None
Color	Turbid	Turbid
Bottom Deposits	Very light periphyton coverage	None
Surface Deposits	None	None

* Maximum depth is maximum measured depth within the stream cross-section.

NOTES:

WB # 0715 – Richland Creek

Site # 3 - County Road 105

GPS Location **38.8897819 North**
91.9144422 West

Upstream Views

04/25/05

06/07/05

Downstream Views

04/25/05

06/07/05

Physical Dimensions – Site # 3

	04/25/05	06/07/05
Assessment Location	Upstream	Upstream
Time	8:17 AM	8:26 AM
Stream Type	Run	Run
Width (m)	7.92	8.53
Length (m)	15.24	15.24
Ave Depth (cm)	19.21	6.13
Maximum Depth (cm)*	39.0	16.0
Flow Present	Yes	Yes
Flow (cfs)	-	-

SUBSTRATE

Cobble	80%	40%
Gravel	20%	50%
Sand	0%	10%
Silt	0%	0%
Mud / Clay	0%	0%
Bedrock	0%	0%
	100%	100%

OTHER

Uses Observed	Livestock watering	Livestock watering
Evidence of Human Use (WBCR)	None	None
Aquatic Vegetation	Periphyton	Emergent plants, Periphyton
Water Characteristics		
Odor	None	None
Color	Lightly turbid	Clear
Bottom Deposits	Periphyton	None
Surface Deposits	Foam	None

* Maximum depth is maximum measured depth within the stream cross-section.

NOTES:

Site Descriptions

Site #1: Site #1 of Richland Creek is located off Highway 54 on Mac Road, and is the farthest upstream site of the classified reach. Surrounding conditions at this site include a trailer park, the Highway 54 overpass, and large wooded areas. Steep banks line the stream on both sides, making the stream difficult to access. The water at this location was moderately turbid throughout the assessment period.

Site #2: Site #2 of Richland Creek is located on County Road 116. The surrounding conditions include wooded areas, pastures, clay pits and the county road. Steep banks at the site make the stream difficult to access.

Site #3: Site #3 of Richland Creek is located on County Road 105. The surrounding conditions include farm pastures and large wooded areas. The stream is used for livestock watering at this site, and is completely fenced off.

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

Signed: Robert A Bacon

Date: 7-14-2005

Organization: ERC

Position: Dir of Aquatic Services

Summaries of Interviews

The following interviews were conducted by Abby Welschmeyer and Anna Welschmeyer with landowners and creek users during the months of May and June of 2005. Questions were asked of the interviewee either in person or over the phone, and survey sheets were completed based on the information acquired by the interviewer. The questions asked are as follows:

- How long have you lived near this body of water?
- Do you or your family utilize this body of water for recreational activities?
- If not used, why?
- If used, what types of activities, what season, how many times per period, and what flow conditions (low, medium, or high)?
- Have you witnessed other people utilizing the water body? (If so, the aforementioned questions apply.)

To assist in the collection of interviews, letters were developed detailing the water quality rule, our affiliation with the Missouri Department of Natural Resources and our contact information. These letters were left at residences nearby the water body where no one answered the door. This turned out to be a very effective way of quickly collecting key interviews of people most familiar with the resource.

Date: 06/30/05
Time: 1:26 PM
Name: William Backer
Reason for Interview: owns land near water body – phone interview

William Backer has owned land along Richland Creek for 40 years, and owns approximately ¾ of a mile along its banks. He does not use the stream for recreational purposes because of lack of water depth, and he stated that he doesn't pay much attention to the creek. Mr. Backer has not seen anyone else utilizing the stream and assumes that it is because there is not much depth in the stream.

Date: 05/25/05
Time: 10:31 AM
Name: Gary Galeski, Sr.
Reason for Interview: lives near site #2

Gary Galeski has lived near Richland Creek for ten years. He does not use the stream for recreational activities because he does not have the need. Mr. Galeski has not seen anyone else using the stream.

Summaries of Interviews (cont'd)

Date: 05/25/05
Time: 11:13 AM
Name: Gary Blackburn
Reason for Interview: lives near site #2

Gary Blackburn has lived near Richland Creek for seven years. He does not use the stream because he would have to cross property lines in order to do so, and he says that has no reason to use it. Mr. Blackburn has not seen anyone use the water body for recreational activities. He stated that the stream is for observational purposes only.

Date: 06/29/05
Time: 3:35 PM
Name: Lee Roy Miller
Reason for Interview: owns land near site #2 – phone interview

Lee Roy Miller has lived near Richland Creek for 48 years. He does not use the stream for recreational activities because he does not have the need to do so. Mr. Miller stated that he has not seen anyone else use the stream, and speculated that that was because there is not enough water in the stream.

Date: 05/25/05
Time: 10:15 AM
Name: Raymond Clingman
Reason for Interview: lives between sites #2 and #3

Raymond Clingman has lived near Richland Creek for 55 years. He does not use the stream for recreational activities because he does not need to do so. Mr. Clingman also stated that he has not seen anyone else use the stream for recreation.

Date: 05/25/05
Time: 9:49 AM
Name: Alfred Cassmeyer
Reason for Interview: lives near site #3

Alfred Cassmeyer has lived near Richland Creek for 47 years, and occasionally uses the stream for fishing. He stated that he has not seen anyone using the stream because it lacks sufficient depth. He then contradicted himself by stating that people swim in a hole in the stream and wade in the rest of the stream when it isn't flowing. Mr. Cassmeyer also said that none of the stream is over two feet deep.

Summaries of Interviews (cont'd)

Date: 05/25/05
Time: 9:55 AM
Name: David Renner
Reason for Interview: lives near site #3

David Renner has lived near Richland Creek for 62 years and was at a neighbor's house (Alfred Cassmeyer's) at the time of the interview. He does not use the stream for recreational activities because it lacks sufficient depth. Mr. Renner stated that he has not seen anyone else using the stream for the same reason he does not use it.

Date: 06/29/05
Time: 3:46 PM
Name: Frank Griffith
Reason for Interview: lives near site #3 – phone interview

Frank Griffith has lived near Richland Creek for 57 years. He does not use the stream for recreational purposes because it lacks sufficient depth. Mr. Griffith stated that he does not go to the creek because there is not a hole deep enough for swimming. He commented that he has not seen anyone else using the stream for recreation.

Date: 06/29/05
Time: 3:40 PM
Name: Ed Books
Reason for Interview: owns land/lives near site #3 – phone interview

Ed Books has lived near Richland Creek for 56 years. He does not use the stream for recreational activities because it lacks sufficient depth. He has seen his neighbor fishing from the stream occasionally during the summer months, but has not seen anyone in the water.

Date: 05/25/05
Time: 10:05 AM
Name: Barbara A. Ketterman
Reason for Interview: lives near site #3

Barbara Ketterman has lived near Richland Creek for 40 years. She does not use the stream for recreational activities because she has a pool in her yard and no longer has children at home to fish from the stream. Ms. Ketterman stated that she has not seen anyone else using the stream for recreation.