

**Use Attainability Analysis**  
**for**  
**Water Body Identification # 2139**  
**Wallen Creek**

**Conducted by:**  
**Environmental Resources Coalition**

**To:**  
**Missouri Department of Natural Resources**  
**Water Protection Program**

**Submitted: November 28, 2005**



## Stream Description – WB ID: 2139 – Wallen Creek

Wallen Creek (WB# 2139) is located in the Meramec River Hills (Level IV region 39g) of the Ozark Highlands eco-region. Chapman et al. (2002) characterized the region as the following:

*The Meramec River Hills ecoregion is deeply dissected, with steep-sided hills and chert-covered ridges. The hills tend to be more rugged than in the Osage/Gasconade Hills (39e) ecoregion to the northwest. Land use is mainly timber and recreation, with some pastureland for grazing, and barite and iron mining in the southeast. The potential natural vegetation in this region is shortleaf pine-oak forest and woodland, with a greater oak concentration than in forests of the Current River Hills (39h) to the south. Streams in this region drain northeast into the Mississippi River.*

The Wallen Creek classified stream segment (WB# 2139) is a class C stream located in southeastern Washington County. The classified stream segment ends at Highway U and begins approximately two miles upstream. An unnamed tributary to Wallen Creek is the receiving water body for the Whispering Pines Mobile Home Park lagoon outfall (MO0089893). Whispering Pines Mobile Home Park is a small establishment located just off Highway 21 and is comprised of approximately 10 living units. The lagoon outfall for this establishment is located two and eight tenths miles upstream of the uppermost end of the classified stream segment up a branch of Wallen Creek. The area surrounding the classified stream segment is predominately large forest, farm pastures and rural residences.

Chapman, S.S., Omernik, J.M., Griffith, G.E., Schroeder, W.A., Nigh, T.A., and Wilton, T.F., 2002, Ecoregions of Iowa and Missouri (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,800,000).

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

## Field Data Sheets for Recreational Use Stream Surveys

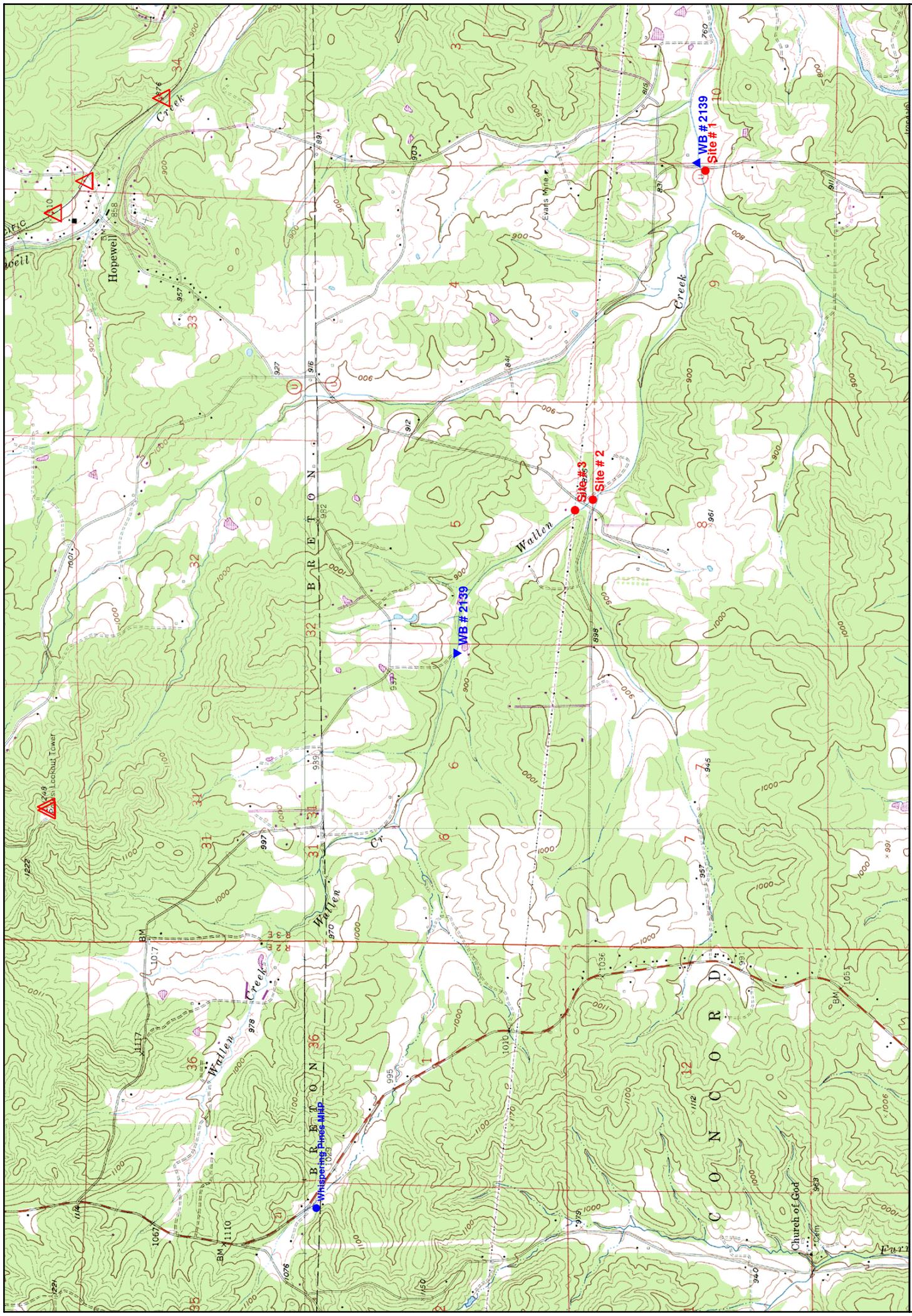
### Data Sheet A: Water Body Identification

<b>Water Body Name:</b> Wallen Creek
<b>8 – digit HUC:</b> 07140104
<b>Missouri WBID #</b> 2139
<b>County:</b> Washington
<b>Upstream Legal Description:</b> Sec. 9, T36N, R3E, Washington County
<b>Downstream Legal Description:</b> Sec. 6, T36N, R3N, Washington County
<b>Upstream Coordinates:</b> Latitude 37.8657039 ° N , Longitude 90.7363851 ° W
<b>Downstream Coordinates:</b> Latitude 37.8506229 ° N , Longitude 90.6986728 ° W
<b>Discharger Facility Name(s):</b> Whispering Pines MHP WWTF
<b>Discharger Permit Number(s):</b> MO0089893
<b>Number of Sites Evaluated:</b> 3
<b>Name of Surveyor and Telephone Number:</b> Robert R. Bacon, (573) 634-7078
<b>Organization:</b> Environmental Resources Coalition (ERC)
<b>Position:</b> 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: 11-28-2005



Name: IRONDALE  
Date: 11/30/2005  
Scale: 1 inch equals 2667 feet

Location: 037.8657126° N 090.7368287° W

## 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  
Potosi, Missouri - Station ID: 236826

<b>Date</b>	<b>Precipitation (Inches)</b>	<b>Min. Temp (°F)</b>	<b>Max. Temp (°F)</b>	<b>Avg. Temp (°F)</b>
04/07/2005	0.27	54	72	63
04/08/2005	Trace	44	60	52
04/09/2005	0	45	72	59
04/10/2005	0	51	78	65
04/11/2005	0	62	80	71
04/12/2005	0.74	51	65	58
04/13/2005	0.35	44	65	55
04/14/2005	0.01	34	54	44
04/15/2005	0	34	65	50
04/16/2005	0	45	73	59
04/17/2005	0	54	79	67

<b>Date</b>	<b>Precipitation (Inches)</b>	<b>Min. Temp (°F)</b>	<b>Max. Temp (°F)</b>	<b>Avg. Temp (°F)</b>
05/22/2005	0.39	52	73	63
05/23/2005	0.02	58	78	68
05/24/2005	0	55	81	68
05/25/2005	0	50	72	61
05/26/2005	0	56	72	64
05/27/2005	0	52	69	61
05/28/2005	0.1	50	77	64
05/29/2005	0.27	52	76	64
05/30/2005	0	52	80	66
05/31/2005	0	57	79	68
06/01/2005	0	53	78	66

# WB # 2139 – Wallen Creek

## Site # 1 - Highway U

**GPS Location**

**37.8508394 North  
90.6988195 West**

### Upstream Views

**04/17/05**

**06/01/05**



### Downstream Views

**04/17/05**

**06/01/05**



## Physical Dimensions – Site # 1

	<b>04/17/05</b>	<b>06/01/05</b>
<b>Assessment Location</b>	Upstream	Upstream
<b>Time</b>	7:50 AM	11:36 AM
<b>Stream Type</b>	Riffle	Riffle
<b>Width (m)</b>	11.58	11.58
<b>Length (m)</b>	30.48	45.72
<b>Avg. Depth (cm)</b>	9.62	16.65
<b>Maximum Depth (cm)*</b>	13.0	30.0
<b>Flow Present</b>	Yes	Yes
<b>Flow (cfs)</b>	-	-

### **SUBSTRATE**

<b>Cobble</b>	50%	30%
<b>Gravel</b>	50%	70%
<b>Sand</b>	0%	0%
<b>Silt</b>	0%	0%
<b>Mud / Clay</b>	0%	0%
<b>Bedrock</b>	0%	0%
	100%	100%

### **OTHER**

<b>Uses Observed</b>	Livestock watering	Livestock watering
<b>Evidence of Human Use (WBCR)</b>	None	None
<b>Aquatic Vegetation</b>	10% macrophyte cover	10% macrophyte cover
<i>Water Characteristics</i>		
<b>Odor</b>	None	None
<b>Color</b>	Clear	Clear
<b>Bottom Deposits</b>	Periphyton	Periphyton
<b>Surface Deposits</b>	None	None

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

**NOTES: Site # 1 is the lowermost assessment site on Wallen Creek.**

# WB # 2139 – Wallen Creek

## Site # 2 - Yonker Road (downstream of low water crossing)

GPS Location

37.8573821 North  
90.7246268 West

### Upstream Views

04/17/05



06/01/05



### Downstream Views

04/17/05



06/01/05



## Physical Dimensions – Site # 2

	<b>04/17/05</b>	<b>06/01/05</b>
<b>Assessment Location</b>	Downstream	Downstream
<b>Time</b>	8:10 AM	11:31 AM
<b>Stream Type</b>	Riffle	Riffle
<b>Width (m)</b>	4.88	3.45
<b>Length (m)</b>	30.48	42.72
<b>Avg. Depth (cm)</b>	9.89	6.23
<b>Maximum Depth (cm)*</b>	24	13
<b>Flow Present</b>	Yes	Yes
<b>Flow (cfs)</b>	-	-
 <b><u>SUBSTRATE</u></b>		
<b>Cobble</b>	0%	10%
<b>Gravel</b>	0%	0%
<b>Sand</b>	0%	0%
<b>Silt</b>	0%	0%
<b>Mud / Clay</b>	0%	0%
<b>Bedrock</b>	100%	90%
	100%	100%
 <b><u>OTHER</u></b>		
<b>Uses Observed</b>	None	None
<b>Evidence of Human Use (WBCR)</b>	None	None
<b>Aquatic Vegetation</b>	None	None
<i>Water Characteristics</i>		
<b>Odor</b>	None	None
<b>Color</b>	Clear	Clear
<b>Bottom Deposits</b>	Light periphyton coverage	Periphyton
<b>Surface Deposits</b>	None	Foam/oil film on edges and red bacteria

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

# WB # 2139 – Wallen Creek

## Site # 3 - Yonker Road (upstream of low water crossing)

**GPS Location**

**37.8584639 North  
90.725435 West**

### Upstream Views

**04/17/05**

**06/01/05**



### Downstream Views

**04/17/05**

**06/01/05**



## Physical Dimensions – Site # 3

	<b>04/17/05</b>	<b>06/01/05</b>
<b>Assessment Location</b>	Upstream	Upstream
<b>Time</b>	8:00 AM	11:21 AM
<b>Stream Type</b>	Run	Run
<b>Width (m)</b>	8.84	6.25
<b>Length (m)</b>	30.48	91.44
<b>Avg. Depth (cm)</b>	13.47	15.00
<b>Maximum Depth (cm)*</b>	20.5	29.0
<b>Flow Present</b>	Yes	Yes
<b>Flow (cfs)</b>	-	-

### **SUBSTRATE**

<b>Cobble</b>	100%	90%
<b>Gravel</b>	0%	0%
<b>Sand</b>	0%	0%
<b>Silt</b>	0%	0%
<b>Mud / Clay</b>	0%	0%
<b>Bedrock</b>	0%	10%
	100%	100%

### **OTHER**

<b>Uses Observed</b>	None	Holes dug in gravel in creek with cup (see note)
<b>Evidence of Human Use (WBCR)</b>	None	None
<b>Aquatic Vegetation</b>	15% plant cover	20% plant cover
<i>Water Characteristics</i>		
<b>Odor</b>	None	None
<b>Color</b>	Clear	Clear
<b>Bottom Deposits</b>	Light periphyton coverage	Light periphyton coverage
<b>Surface Deposits</b>	None	Foam

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

### **NOTES: Site # 3 is the uppermost assessment site on Wallen Creek.**

On 06/01/05 the assessment team found evidence that someone had dug three small holes in the gravel bottom of the stream bed using a large plastic cup, which was still present at time of assessment. Latter that day a person interviewed noted that he had seen two adults in the stream near this site the day before our assessment.

## Site Descriptions

**Site #1:** Site # 1 of Wallen Creek is the downstream most assessment site and is located where the creek passes under Highway U. The area surrounding the creek includes large wooded areas, pastures with a couple of rural residences. Fences cross the stream at this location for the purpose of livestock watering. An ATV path runs along side Highway U and crosses the stream at this location.

**Site #2:** Site # 2 of Wallen Creek is located at Yonker Road downstream of the low water bridge crossing. Fences cross the stream at this location for livestock watering. The area surrounding the stream at this location consists of large wooded areas, pastures, and a few rural residences.

**Site #3:** Site # 3 of Wallen Creek is located at Yonker Road upstream of the low water bridge crossing. The area surrounding the stream at this location consists of large wooded areas, pastures, and a few rural residences.

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

Signed: Robert A. Ben

Date: 11-28-2005

Organization: ERC

Position: Dir. of Aquatic Services

## Summaries of Interviews

The following interviews were conducted by Abby Welschmeyer with adjacent landowners and potential creek users. The interviews were conducted in-person, or over the phone. Some of the questions asked are as follows:

- How long have you lived near this body of water?
- Do you or your family use this body of water for recreational activities?
  - If not used, why?
  - If used, what type of activities, how many times per year, and under what flow conditions (low, medium, or high)?
- Have you seen other people using the water body? (If so, many of the same aforementioned questions apply.)

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

**Date:** 06/01/05

**Time:** 12:00 PM

**Name:** Arthur E. Smith

**Reason for Interview:** lives near Site # 1

Arthur Smith has lived near Wallen Creek for 79 years, and does not use the stream for recreational activities. Mr. Smith stated that he has seen people fishing for minnows from the stream during the summer months.

**Date:** 06/01/05

**Time:** 12:09 PM

**Name:** Kassie Smith

**Reason for Interview:** lives near Site # 1

Kassie Smith has lived near Wallen Creek for five years, and her extended family collectively owns one and one half miles along the water body. She and her family use the stream for swimming and wading during the summer months. Mrs. Smith stated that there are several spots in the stream that are deep enough for one to put their head under water.

## Summaries of Interviews (cont'd)

**Date:** 06/01/05

**Time:** 12:01 PM

**Name:** Geneva Marler

**Reason for Interview:** lives near Site # 1

Geneva Marler has lived near Wallen Creek for 27 years. She does not use the stream for recreational activities. Ms. Marler stated that she has seen people using the stream to fish for minnows a few times during the summer months.

**Date:** 06/01/05

**Time:** 12:27 PM

**Name:** William E. Smith

**Reason for Interview:** raking hay near site #3

William Smith has lived near Wallen Creek for 76 years and does not use the stream for recreation because he goes to a nearby lake. Mr. Smith stated that he has seen children and adults swimming and wading in the stream during the summer months.

**Date:** 06/01/05

**Time:** 12:41 PM

**Name:** Danny Smith

**Reason for Interview:** baling hay near Site # 3

Danny Smith has lived near Wallen Creek for 48 years. He stated that he and his family use the stream for swimming and fishing during the summer months. Mr. Smith also commented that the stream is almost entirely privately owned by the Smith families, and his relatives near Site # 1 use the creek for recreation frequently.