

Missouri  
Department of  
Natural Resources

Use Attainability Analysis

for

WBID 1610 Tuque Creek

Submitted by

Pickett Ray and Silver

To

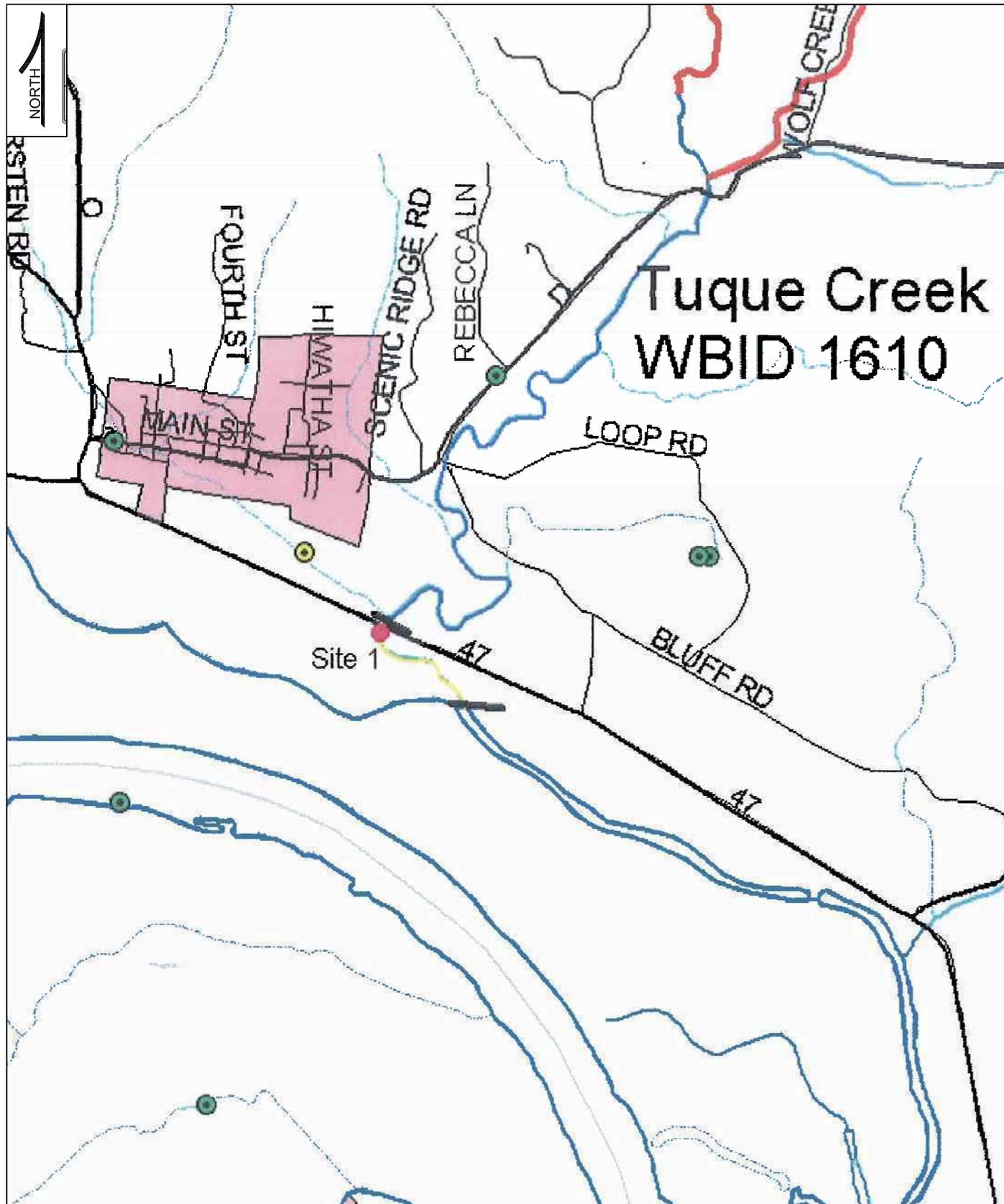
Missouri Department of Natural Resources

Water Protection Program

Date Received: June 5, 2007



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# Tuque Creek WBID 1610

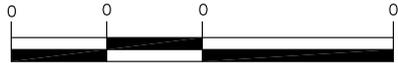
**PICKETT RAY & SILVER**  
 Civil Engineers Land Surveyors Natural Resources

Address: 333 Mid Rivers Mall Drive  
 St. Peters, Missouri 63376

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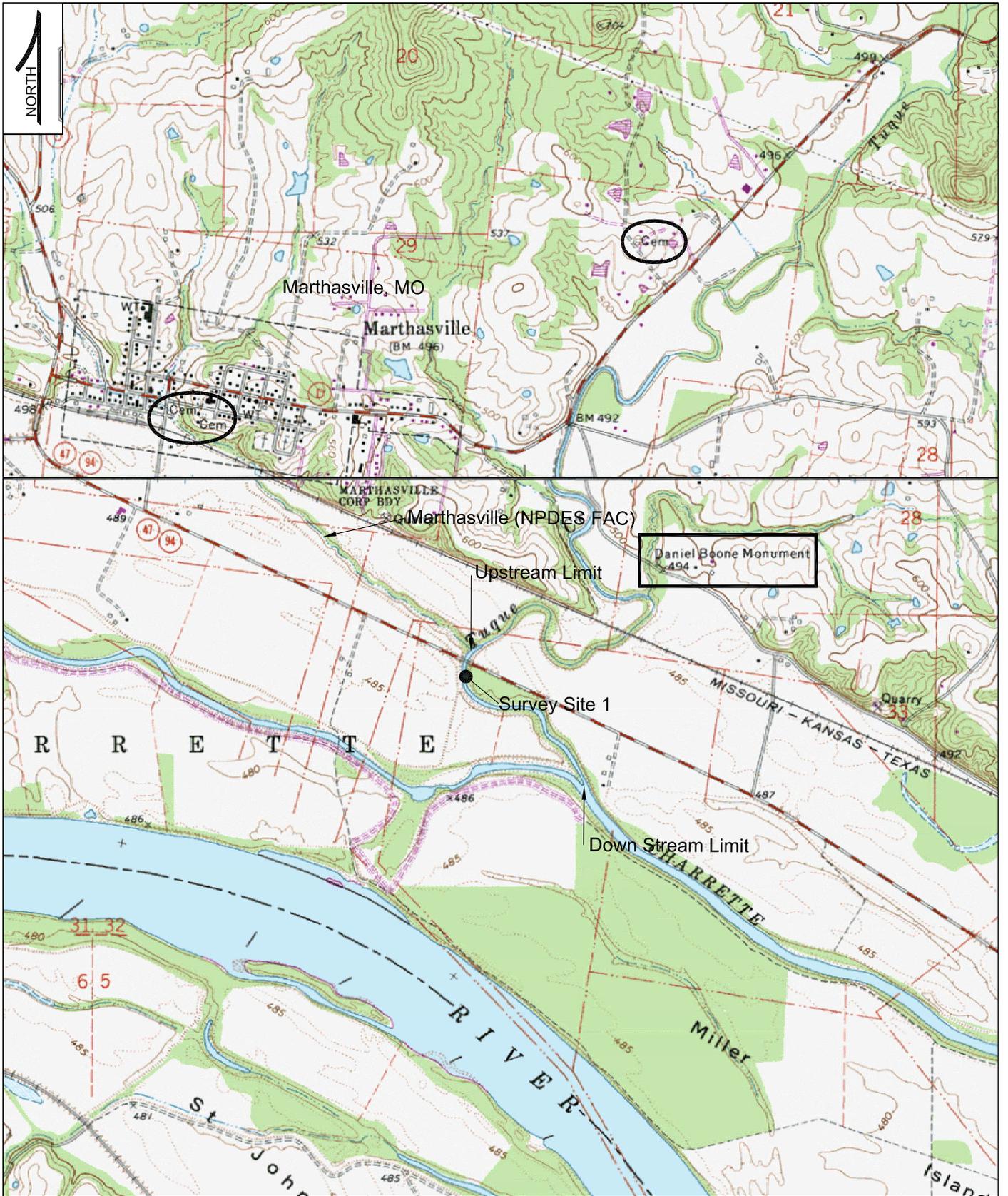
WBID #: 1610  
 Name: Tuque Creek  
 GIS MAP



NOT TO SCALE

PRS Job Number: 07031.MODN.00E  
 Drawn By: M.C. Date: 05-25-07  
 Checked By: J.V. Date: 05-25-07

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WBID #: 1610  
Name: Tuque Creek  
County: Warren  
USGS Location Map



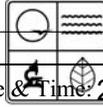
GRAPHIC SCALE  
1 inch = 2000 ft.

PRS Job Number: 07031.MODN.00E  
Drawn By: M.C. Date: 05-29-07  
Checked By: J.V. Date: 05-29-07

WBID# 1610

## Field Data Sheets for Recreational Use Stream Surveys

Site# 1



Missouri

## Data Sheet B - Site Characterization

Department of

(must be completed for each site)

Date & Time: 4 May 2017 07:35	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): R. Martin & J Hrabik	Hwy. 47
Current Weather Conditions: sunny 70°F	Facility Name: Marthasville
Weather Conditions for Past 10 days: 0.5" rain	Permit Number: MO 0044113
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

## Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)		
Site GPS Coordinates: UTM X: 15S 0670258	Y: 4276155	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)		
Global Positioning System (GPS)	Interpolation	
Static Mode	x	Topographic Map or DRG
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ
Precise Positioning Service		Satellite Imagery
Signal Averaging		Interpolation Other Real Time Differential Correction with
Real Time Differential Processing		Post Processing
HORIZONTAL ACCURACY ESTIMATE		
GPS Data Quality	Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters
EPE	± 17 Feet or ± _____ Meters	
PDOP		

## Photos:

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<b>See Attached Photos</b>		1610-1-1073 1610-1-1074	Downstream Upstream	1610-1-1075 1610-1-1076	Bridge (Hwy. 47) 6 ft. bank slope, downstream of bridge

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

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

## Surrounding Conditions\*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: Pic# 1610-1-1076				

## Indications of Human Use\*: (attach photos)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: Pic. # 1610-1-1075					

\* Page Two – Data Sheet B for WBID # 1610-1:

**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					
POOL					

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

If so, is there an obvious current?  Yes  No

Select one of the following channel features:

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

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

% Cobble	% Gravel	% Sand	50	% Silt	50	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

None

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: cattle waste
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: woody debris
Surface Deposit:	<input type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

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

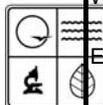
\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

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

Surveyor's Signature: Renee Martin Date of Survey: 24 May 2007

Organization: AE Solutions Position: Field Tech.

### Recreational Use Attainability Analysis Field Survey Sheet



Waterbody ID: 1610 Site #: 1610-1  
 Missouri Department of Natural Resources  
 Estimated stream width: 4 (m) (height between low bank width and water)  
 GPS Location: 0670258 UTM Y: 4276155  
 UTM X: 0670258 UTM Y: 4276155  
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 17 (feet) PDOP: \_\_\_\_\_  
 Average Stream Width: 12.5 (meters) Length of Survey Segment: 250 (meters)  
 (20x average stream width)  
 Field Staff: Renee Martin & Jenny Hrabik

Dissolved Oxygen	
Dissolved Oxygen:	<u>6.57</u> (mg/L)
Dissolved Oxygen:	<u>75.4</u> (% sat)
Specific Cond:	<u>411.6</u> (µS/cm)
Water Temperature:	<u>22.6</u> (°C)

#### Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0	0.1	0	0.1	0	0.2	0.1	0.1	0	0.2	0.3	0.1	0.1	0.1
2	1.2	>1	1.4	0.8	1.4	0.3	1.5	0.2	1.2	0.3	1.0	0.6	1.0	0.6	1.2	0.7	1.5	>1	1.6	0.6	1.2	0.6
3	2.3	>1	2.7	>1	2.7	0.8	2.8	0.9	2.4	>1	2.0	1.0	2.0	>1	2.3	>1	3.0	>1	2.9	>1	2.3	>1
4	3.4	>1	4.0	>1	4.0	>1	4.1	>1	3.6	>1	3.0	>1	3.0	>1	3.4	>1	4.5	>1	4.2	>1	3.4	>1
5	4.5	>1	5.3	>1	5.3	>1	5.4	>1	4.8	>1	4.0	>1	4.0	>1	4.5	>1	6.0	>1	5.5	>1	4.5	>1
6	5.6	>1	6.6	>1	6.6	>1	6.7	>1	6.0	>1	5.0	>1	5.0	>1	5.6	>1	7.5	>1	6.8	>1	5.6	>1
7	6.7	>1	7.9	>1	7.9	>1	8.0	>1	7.2	>1	6.0	>1	6.0	>1	6.7	>1	9.0	>1	8.1	>1	6.7	>1
8	7.8	>1	9.2	>1	9.2	>1	9.3	>1	8.4	>1	7.0	>1	7.0	>1	7.8	>1	10.5	>1	9.4	0.9	7.8	>1
9	8.9	>1	10.5	>1	10.5	0.6	10.6	0.6	9.6	>1	8.0	1.0	8.0	>1	8.9	>1	12.0	>1	10.7	0.7	8.9	0.7
10	10.0	0.7	11.8	>1	11.8	0.3	11.9	0.3	10.8	0.6	9.0	0.4	9.0	0.8	10.0	0.9	13.5	>1	12.0	0.4	10.0	0.5
11	11.1	0.1	13.1	0.1	13.1	0.1	13.2	0.1	12.0	0.1	10.0	0.1	10.0	0.1	11.1	0.1	15.0	0.3	13.3	0.1	11.1	0.1
12	12.0	0	14.0	0	13.5	0	13.5	0	12.0	0	10.5	0	10.5	0	11.2	0	15.0	0	13.5	0	12.0	0
Feature Type (riffle, run, or pool)	Pool																					
depths less than 0.1m?																						

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as < 0.1; and greater than 1m as > 1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Renee Martin Date: 5/24/07

**WBID# 1610**



**Site# 1 Photo ID# Downstream from Transect 1**



**Site# 1 Photo ID# Upstream from Transect 1**



**Site# 1 Photo ID# Bridge Hwy 47/49**



**Site# 1 Photo ID# Slope, left bank, downstream of bridge**