



Missouri  
Department of  
Natural Resources

## Use Attainability Analysis

for

WBID 0600 West Yellow Creek

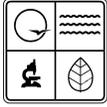
Submitted by

Pickett Ray and Silver

to

Missouri Department of Natural Resources  
Water Protection Program

Date received: October 31, 2007



Missouri  
 Department of Natural Resources  
Permit Data Sheets for Recreational Use Stream Surveys  
 Natural Resources

**Data Sheet A – Water Body Identification**

**I. Water Body Information** (For water body being surveyed)

Water Body Name (from USGS 7.5' quad): W. Fk. Yellow Creek	
Missouri Water Body Identification (WBID) Number: 0600	
8-digit HUC: 20090415	County: Sullivan
Upstream Legal Description (from Table H): 14, 63N, 19W	
Downstream Legal Description (from Table H): 14, 61N, 19W	
Number of sites evaluated: 8	
List all sites numbers, listed consequently upstream to downstream: 0600_01 Hwy N Bridge, 0600_02 Hwy 6 Bridge, 0600_03 Owen Rd, 0600_04 150m downstream of site 03, 0600_05 Pelican Rd, 0600_06 Hwy C Bridge, 0600_07 Shelby Rd, 0600_08 Tower Rd	

**Site Locations Map(s):** Attach a map of the entire segment with assessment sites clearly labeled. Mark any other items that may be of interest.

**II. Facility Information** (list all permitted discharges to the water body segment)

Facility Name(s) and Permit Number(s): PSF Valley View Finishing – MO 0118478
---

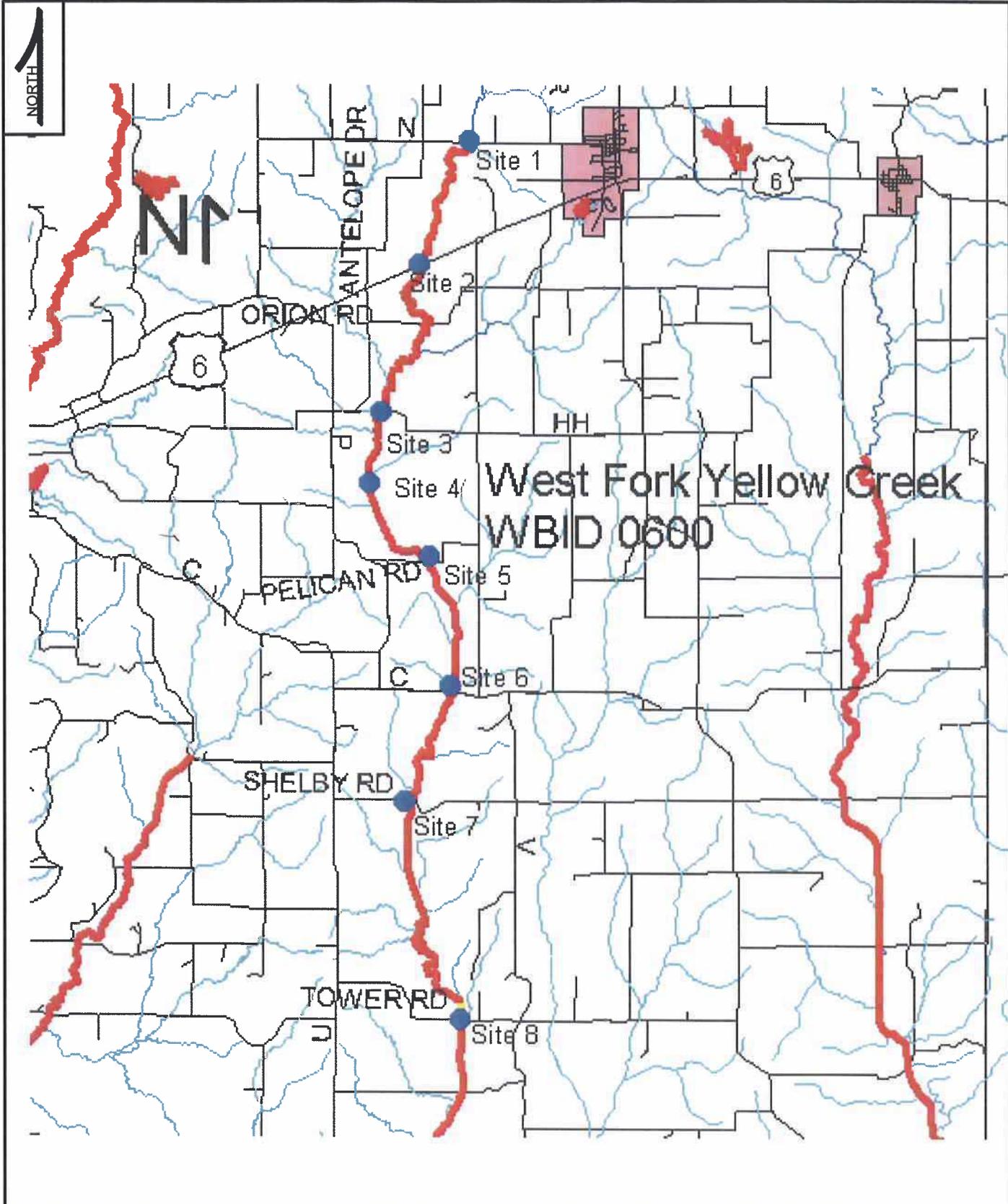
**III. UAA Surveyor** (please print legibly)

Name of Surveyor: Renee Martin	Telephone Number: 573-875-7844
Organization/Employer: Applied Environmental Solutions	

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

**Signed:** \_\_\_\_\_ **Date:** \_\_\_\_\_

\\3serverprsr\Projects\07031\dwg\07031\_MODN\_01E\0600 West Fork Yellow Creek.dwg, 10/26/2007 7:48:31 AM, BLSTOESZ



**PICKETT RAY & SILVER**

Civil Engineers Land Surveyors Natural Resources  
Address: 333 Mid Rivers Mall Drive St. Peters, Missouri 63376  
Phone: (636)397-1211 Fax: (636)397-1104 Website: www.prs3.com

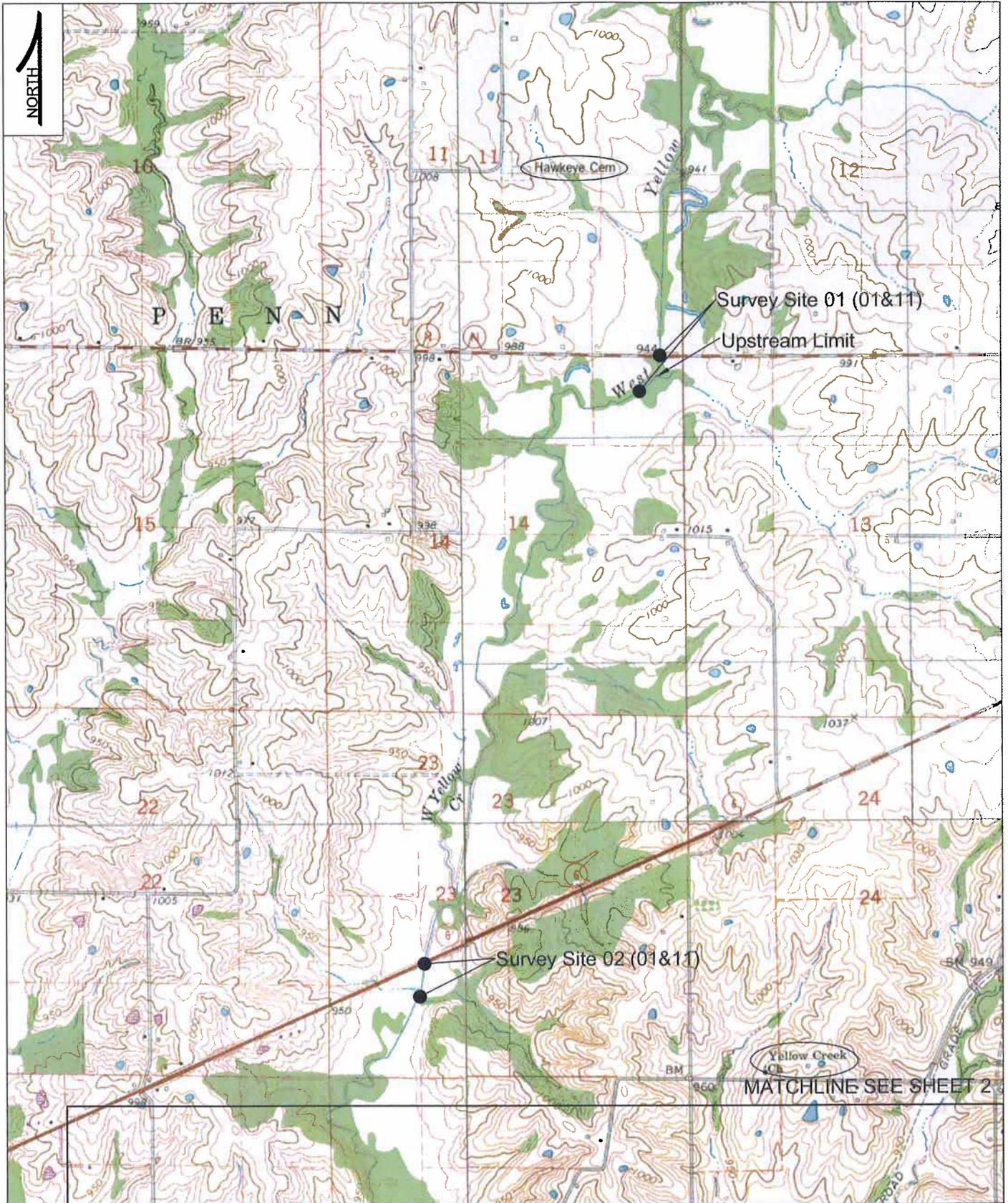
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WBID #: 0600  
Name: West Fork Yellow Creek  
County: Sullivan  
GIS Location Map  
Sheet 1 of 1

Map provided by AES.  
Please refer to USGS for exact site location indicators.

PRS Job Number: 07031.MODN.01E  
Drawn By: BLS Date: 10-12-07  
Checked By: JCV Date: 10-12-07

\\3serverpr\Projects\07031\dwg\07031\_MODN\_01E\0600 West Fork Yellow Creek.dwg, 10/29/2007 10:28:15 AM, 1:2000, MATT COSBY

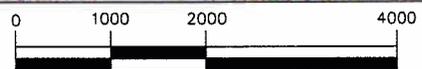


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WBID #: 0600  
 Name: West Fork Yellow Creek  
 County: Sullivan  
 USGS Location Map  
 Sheet 1 of 5



**GRAPHIC SCALE**  
 1 inch = 2000ft.

PRS Job Number: 07031.MODN.01E  
 Drawn By: BLS Date: 10-12-07  
 Checked By: JCV Date: 10-12-07

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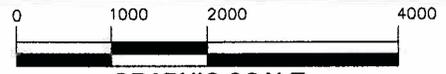


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WBID #: 0600  
 Name: West Fork Yellow Creek  
 County: Sullivan  
 USGS Location Map  
 Sheet 2 of 5



**GRAPHIC SCALE**  
 1 inch = 2000ft.

PRS Job Number: 07031.MODN.01E  
 Drawn By: BLS Date: 10-12-07  
 Checked By: JCV Date: 10-12-07

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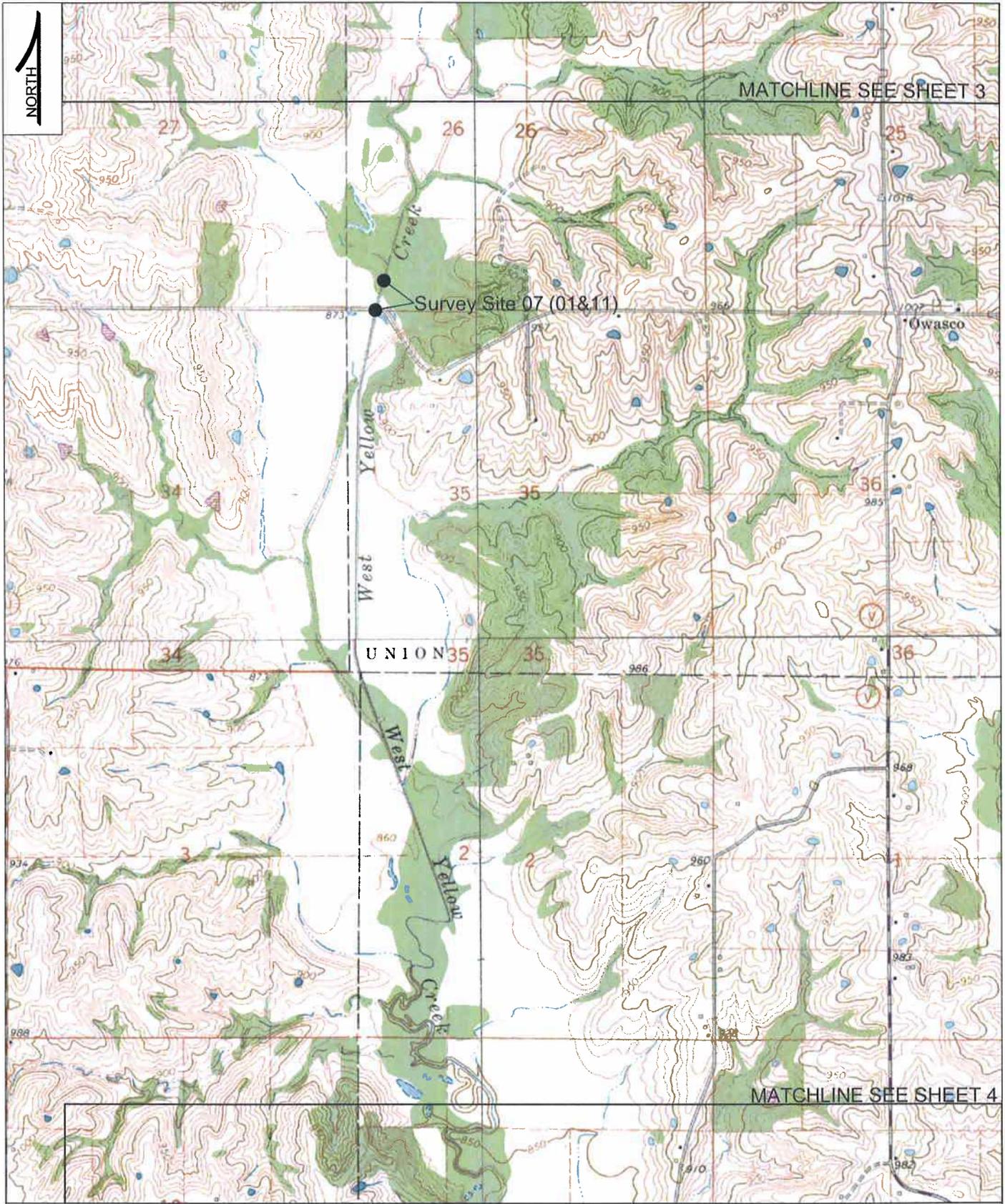
WBID #: 0600  
 Name: West Fork Yellow  
 Creek  
 County: Sullivan  
 USGS Location Map  
 Sheet 3 of 5



**GRAPHIC SCALE**  
 1 inch = 2000ft.

PRS Job Number: 07031.MODN.01E  
 Drawn By: BLS Date: 10-12-07  
 Checked By: JCV Date: 10-12-07

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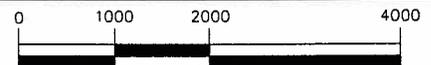


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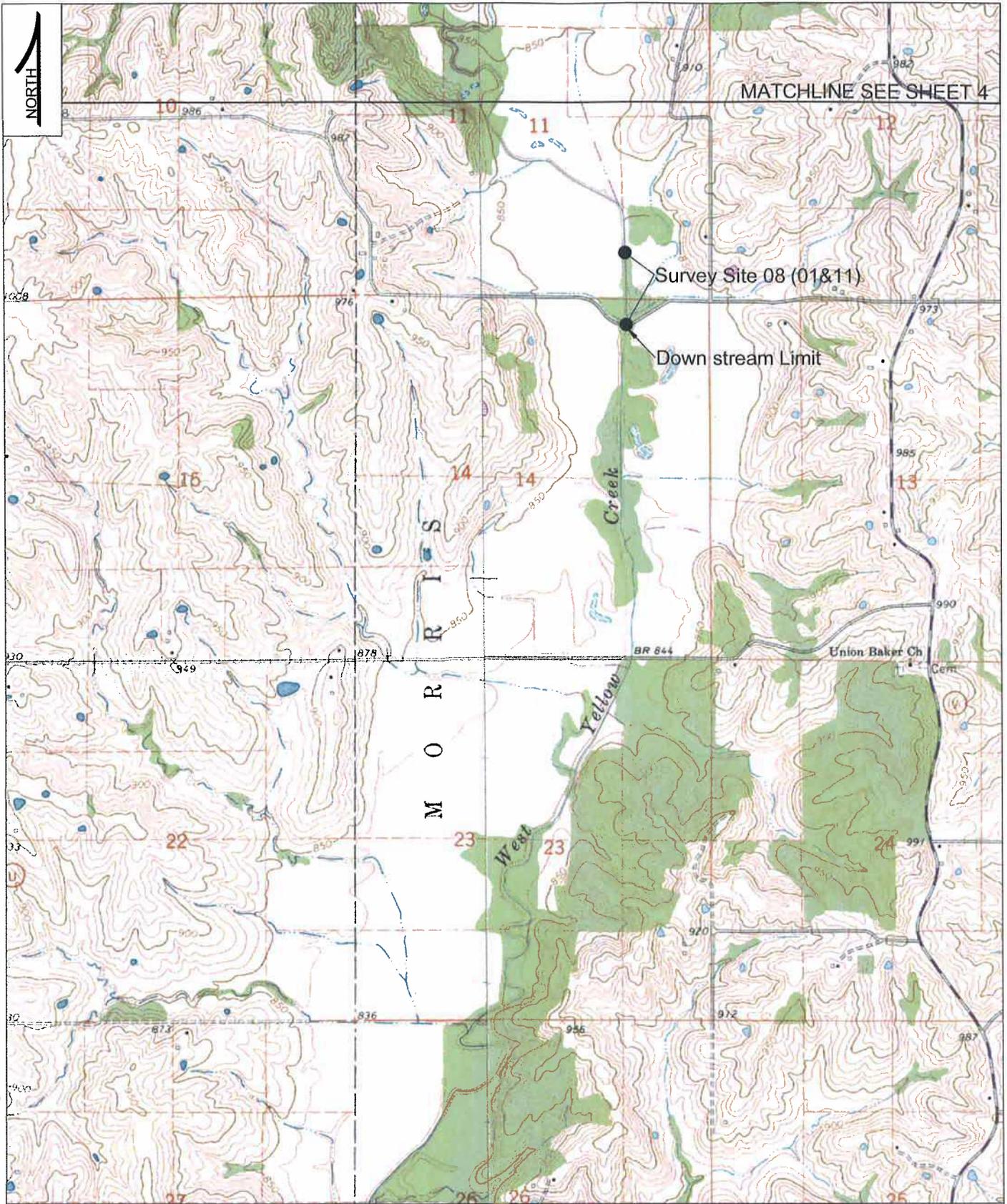
WBID #: 0600  
 Name: West Fork Yellow Creek  
 County: Sullivan  
 USGS Location Map  
 Sheet 4 of 5



**GRAPHIC SCALE**  
 1 inch = 2000ft.

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 Drawn By: BLS Date: 10-12-07  
 Checked By: JCV Date: 10-12-07

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 Address: 333 Mid Rivers Mall Drive St. Peters, Missouri 63376  
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 Website: www.prs3.com

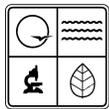
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WBID #: 0600  
 Name: West Fork Yellow Creek  
 County: Sullivan  
 USGS Location Map  
 Sheet 5 of 5



**GRAPHIC SCALE**  
 1 inch = 2000ft.

PRS Job Number: 07031.MODN.01E  
 Drawn By: BLS Date: 10-12-07  
 Checked By: JCV Date: 10-12-07



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization**  
 (must be completed for each site)

Date & Time: 9/19/07 15:25	Site Location Description (e.g., road crossing): Hwy N Bridge
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

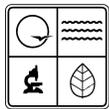
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0500871	Northing (UTM Y): 4457577	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet
Site 11	Easting (UTM X): 0500784	Northing (UTM Y): 4457425	Horizontal Accuracy: (EPE / FOM / PDOP) 23 feet

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_169	Downstream, livestock watering	101_170	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**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.)				



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**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"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input checked="" type="checkbox"/> Livestock Watering
Comments / Other: Heavy livestock influence in creek				

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

% Cobble	% Gravel	10% Sand	% Silt	90% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

none
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**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: animal waste
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge <sup>1</sup>	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*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.

WBID # 0600

Site # 1



Missouri Field Data Sheets for Recreational Use Stream Surveys  
Department of  
Natural Resources **Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

Rained last night  
1 Sludge= thick, mucky mud

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

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9-15-07

Organization: AE Solutions

Position: Env. Specialist

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

 <p> <b>Missouri Department of Natural Resources</b>                  Waterbody ID: <u>600</u> Site #: <u>1</u>                  Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water)                  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)  <b>01</b> UTM X: <u>0500871</u> UTM Y: <u>4457577</u> +/- <u>19</u> (feet)  <b>11</b> UTM X: <u>0500784</u> UTM Y: <u>4457425</u> +/- <u>23</u> (feet)                  Average Stream Width: <u>3.0</u> (meters) Length of Survey Segment: <u>150</u> (meters)                  (To determine Length of Reach) (20x average stream width)                  Field Staff: <u>Jennifer Hrabik and Justyn Foth</u> </p>	<p style="text-align: center;"><b>Dissolved Oxygen</b></p> Date: <u>9/19/2007</u> Time: <u>15:25</u> Dissolved Oxygen: <u>4.32</u> (mg/L) Dissolved Oxygen: <u>40.1</u> (% sat) Specific Cond: <u>310.5</u> (µS/cm) Water Temperature: <u>20.2</u> (°C)
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#### Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.68	0.54	0.78	0.20	0.28	0.10	0.26	0.10	0.27	0.10	0.25	0.11	0.50	0.10	0.08	0.08	0.22	0.06	0.12	0.03	0.26	0.05
	2	1.36	0.70	1.56	0.25	0.56	0.12	0.52	0.13	0.54	0.25	0.50	0.15	1.00	0.22	0.16	0.08	0.44	0.09	0.24	0.03	0.52	0.04
	3	2.04	0.73	2.34	0.29	0.84	0.11	0.78	0.11	0.81	0.20	0.75	0.13	1.50	0.25	0.24	0.06	0.66	0.13	0.36	0.02	0.78	0.05
	4	2.72	0.65	3.12	0.34	1.12	0.10	1.04	0.10	1.08	0.23	1.00	0.15	2.00	0.24	0.32	0.09	0.88	0.12	0.48	0.05	1.04	0.04
	5	3.40	0.58	3.90	0.41	1.40	0.13	1.30	0.12	1.35	0.24	1.25	0.10	2.50	0.30	0.40	0.05	1.10	0.13	0.60	0.04	1.30	0.05
	6	4.08	0.52	4.68	0.34	1.68	0.13	1.56	0.14	1.62	0.25	1.50	0.08	3.00	0.26	0.48	0.04	1.32	0.11	0.72	0.05	1.56	0.03
	7	4.76	0.38	5.46	0.30	1.96	0.11	1.82	0.11	1.89	0.25	1.75	0.04	3.50	0.20	0.56	0.04	1.54	0.08	0.84	0.08	1.82	0.03
	8	5.44	0.26	6.24	0.35	2.24	0.10	2.08	0.10	2.16	0.30	2.00	0.01	4.00	0.15	0.64	0.03	1.76	0.06	0.96	0.01	2.08	0.02
	9	6.12	0.18	7.02	0.33	2.52	0.14	2.34	0.10	2.43	0.10	2.25	0.01	4.50	0.08	0.72	0.02	1.98	0.03	1.08	0.02	2.34	0.02
<b>Right Bank</b>		6.80	0.00	7.80	0.00	2.80	0.00	2.60	0.00	2.75	0.00	2.50	0.00	5.00	0.00	0.80	0.00	2.25	0.00	1.20	0.00	2.60	0.00
<b>Feature Type</b>		Pool		Pool		Run																	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

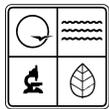
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization**

(must be completed for each site)

Date & Time: 9/20/07 8:30	Site Location Description (e.g., road crossing): Hwy 6 Bridge
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

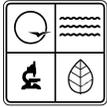
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 4454883	Northing (UTM Y): 0499799	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet
Site 11	Easting (UTM X): 4454730	Northing (UTM Y): 0499754	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_171	upstream	101_172	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**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.)				



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**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"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

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

% Cobble	% Gravel	20% Sand	% Silt	80% Mud/Clay	% Bedrock
----------	----------	----------	--------	--------------	-----------

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

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

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge <sup>1</sup>	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*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.

WBID # 0600

Site # 2



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

1 Sludge= thick, mucky mud

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

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/20/07

Organization: AE Solutions

Position: Env. Specialist

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Missouri Department of Natural Resources Site #: <u>2</u> Estimated Channel Incision: <u>1.5</u> (m) (height between low bank width and water)  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0499799</u> UTM Y: <u>4454883</u> +/- <u>19</u> (feet) <b>11</b> UTM X: <u>0499754</u> UTM Y: <u>4454730</u> +/- <u>19</u> (feet)  Average Stream Width: <u>6.0</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)  Field Staff: <u>Jennifer Hrabik and Justyn Foth</u>	<b>Dissolved Oxygen</b>
	Date: <u>9/20/2007</u> Time: <u>8:30</u>
	Dissolved Oxygen: <u>4.72</u> (mg/L)
	Dissolved Oxygen: <u>50.3</u> (% sat)
	Specific Cond: <u>271.7</u> (µS/cm)
	Water Temperature: <u>19.0</u> (°C)

#### Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0.45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>1</b>	0.70	0.18	0.70	0.45	0.63	0.34	0.76	0.64	0.41	0.23	0.68	0.10	0.73	0.13	0.50	0.02	0.53	0.05	0.56	0.10	0.39	0.05
	<b>2</b>	1.40	0.25	1.40	0.90	1.26	0.79	1.52	0.81	0.82	0.34	1.36	0.20	1.46	0.20	1.00	0.08	1.06	0.08	1.12	0.14	0.78	0.18
	<b>3</b>	2.10	0.30	2.10	0.83	1.89	>1	2.28	0.73	1.23	0.46	2.04	0.26	2.19	0.18	1.50	0.12	1.59	0.10	1.68	0.18	1.17	0.15
	<b>4</b>	2.80	0.19	2.80	0.78	2.52	>1	3.04	0.55	1.64	0.54	2.72	0.40	2.92	0.16	2.00	0.14	2.12	0.13	2.24	0.20	1.56	0.17
	<b>5</b>	3.50	0.18	3.50	0.70	3.15	0.92	3.80	0.44	2.05	0.61	3.40	0.51	3.65	0.14	2.50	0.19	2.65	0.15	2.80	0.18	1.95	0.14
	<b>6</b>	4.20	0.19	4.20	0.48	3.78	0.81	4.56	0.22	2.46	0.53	4.08	0.55	4.38	0.19	3.00	0.16	3.18	0.15	3.36	0.15	2.34	0.13
	<b>7</b>	4.90	0.28	4.90	0.36	4.41	0.56	5.32	0.14	2.87	0.39	4.76	0.50	5.11	0.19	3.50	0.22	3.71	0.13	3.92	0.13	2.73	0.09
	<b>8</b>	5.60	0.27	5.60	0.30	5.04	0.40	6.08	0.13	3.28	0.24	5.44	0.35	5.84	0.14	4.00	0.17	4.24	0.18	4.48	0.07	3.12	0.05
	<b>9</b>	6.30	0.15	6.30	0.21	5.67	0.17	6.84	0.08	3.69	0.18	6.12	0.22	6.57	0.09	4.50	0.13	4.77	0.17	5.04	0.06	3.51	0.02
<b>Right Bank</b>		7.00	0.00	7.00	0.00	6.30	0.00	7.60	0.00	4.10	0.00	6.85	0.00	7.30	0.00	5.00	0.00	5.30	0.00	5.60	0.00	3.90	0.00
<b>Feature Type</b>		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

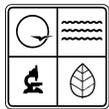
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization**

(must be completed for each site)

Date & Time: 9/20/07 9:40	Site Location Description (e.g., road crossing): Owen Rd.
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

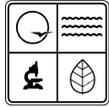
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0498741	Northing (UTM Y): 4451591	Horizontal Accuracy: (EPE / FOM / PDOP) 17 feet
Site 11	Easting (UTM X): 0498799	Northing (UTM Y): 4451432	Horizontal Accuracy: (EPE / FOM / PDOP) 24 feet

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_174	upstream	101_175	downstream		

**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.)				



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**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"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

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

1% Cobble	9% Gravel	45% Sand	% Silt	45% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Algae
Arrowhead

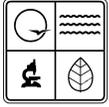
**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge <sup>1</sup>	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*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.

WBID # 0600

Site # 3



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

Landowner stopped by and commented that people dump a lot of trash into stream here, and he feels it is a big problem that needs to be taken care of.

1 Sludge= thick, mucky mud

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

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/20/07

Organization: AE Solutions

Position: Env Specialist

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Missouri Department of Natural Resources Waterbody ID: <u>600</u> Site #: <u>3</u> Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water)  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0498741</u> UTM Y: <u>4451591</u> +/- <u>17</u> (feet) <b>11</b> UTM X: <u>0498799</u> UTM Y: <u>4451432</u> +/- <u>24</u> (feet)  Average Stream Width: <u>5.0</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)  Field Staff: <u>Jennifer Hrabik and Justyn Foth</u>	<b>Dissolved Oxygen</b>
	Date: <u>9/20/2007</u> Time: <u>9:40</u>
	Dissolved Oxygen: <u>5.67</u> (mg/L)
	Dissolved Oxygen: <u>64.7</u> (% sat)
	Specific Cond: <u>345.2</u> (µS/cm)
	Water Temperature: <u>20.9</u> (°C)

#### Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>1</b>	0.16	0.01	0.27	0.04	0.40	0.04	0.43	0.19	0.60	0.01	0.40	0.09	0.73	0.24	0.50	0.04	0.59	0.11	0.94	0.10	0.63	0.18
	<b>2</b>	0.32	0.01	0.54	0.08	0.80	0.10	0.86	0.17	1.20	0.01	0.80	0.19	1.46	0.30	1.00	0.08	1.18	0.16	1.88	0.16	1.26	0.30
	<b>3</b>	0.48	0.06	0.81	0.15	1.20	0.14	1.29	0.18	1.80	0.01	1.20	0.25	2.19	0.29	1.50	0.11	1.77	0.18	2.82	0.23	1.89	0.35
	<b>4</b>	0.64	0.08	1.08	0.20	1.60	0.18	1.72	0.20	2.40	0.01	1.60	0.36	2.92	0.38	2.00	0.16	2.36	0.15	3.76	0.15	2.52	0.40
	<b>5</b>	0.80	0.05	1.35	0.31	2.00	0.16	2.15	0.23	3.00	0.01	2.00	0.50	3.65	0.32	2.50	0.25	2.95	0.24	4.70	0.14	3.15	0.39
	<b>6</b>	0.96	0.06	1.62	0.30	2.40	0.17	2.58	0.22	3.60	0.02	2.40	0.70	4.38	0.34	3.00	0.25	3.54	0.34	5.64	0.27	3.78	0.41
	<b>7</b>	1.12	0.04	1.89	0.24	2.80	0.20	3.01	0.20	4.20	0.02	2.80	0.75	5.11	0.45	3.50	0.31	4.13	0.37	6.58	0.30	4.41	0.38
	<b>8</b>	1.28	0.03	2.16	0.11	3.20	0.17	3.44	0.16	4.80	0.02	3.20	0.56	5.84	0.50	4.00	0.17	4.72	0.35	7.52	0.25	5.04	0.29
	<b>9</b>	1.44	0.01	2.43	0.06	3.60	0.17	3.87	0.11	5.40	0.01	3.60	0.34	6.57	0.46	4.50	0.12	5.31	0.26	8.46	0.23	5.67	0.15
<b>Right Bank</b>		1.65	0.00	2.70	0.00	4.00	0.00	4.30	0.00	0.60	0.00	4.00	0.00	7.30	0.25	5.00	0.00	5.90	0.00	9.40	0.00	6.30	0.00
<b>Feature Type</b>		Run		Run		Pool		Pool		Run		Pool											

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

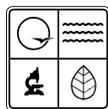
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization**

(must be completed for each site)

Date & Time: 9/20/07 10:00	Site Location Description (e.g., road crossing): 150m downstream of site 03
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 4451319	Northing (UTM Y): 0498830	Horizontal Accuracy: (EPE / FOM / PDOP) 23 feet
Site 11	Easting (UTM X): 4451206	Northing (UTM Y): 0498759	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_176	upstream	101_177	downstream	101_179	Beaver dam-downstream transect 10
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**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.)				



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**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"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

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

3% Cobble	2% Gravel	45% Sand	% Silt	30% Mud/Clay	20% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Algae
Cattails
Duckweed
rushes

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

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge <sup>1</sup>	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*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.

WBID # 0600

Site # 4



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

1 Sludge= thick, mucky mud

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

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/20/07

Organization: AE Solutions

Position: Env. Specialist

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

<div style="display: inline-block; vertical-align: top;"> <p><b>Missouri</b> <b>Department of</b> <b>Natural Resources</b></p> </div> <p style="margin-left: 100px;">Site #: <u>4</u></p> <p>Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water)</p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;"><b>01</b></td> <td style="width: 15%;">UTM X: <u>0498830</u></td> <td style="width: 15%;">UTM Y: <u>4451319</u></td> <td style="width: 10%;">+/- <u>23</u></td> <td style="width: 15%;">(feet)</td> </tr> <tr> <td><b>11</b></td> <td>UTM X: <u>0498759</u></td> <td>UTM Y: <u>4451206</u></td> <td>+/- <u>19</u></td> <td>(feet)</td> </tr> </table> <p>Average Stream Width: <u>4.0</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)      (20x average stream width)</p> <p>Field Staff: <u>Jennifer Hrabik and Justyn Foth</u></p>	<b>01</b>	UTM X: <u>0498830</u>	UTM Y: <u>4451319</u>	+/- <u>23</u>	(feet)	<b>11</b>	UTM X: <u>0498759</u>	UTM Y: <u>4451206</u>	+/- <u>19</u>	(feet)	<p style="text-align: center; margin: 0;"><b>Dissolved Oxygen</b></p> <p>Date: <u>9/20/2007</u>      Time: <u>10:00</u></p> <p>Dissolved Oxygen: <u>4.04</u> (mg/L)</p> <p>Dissolved Oxygen: <u>47.3</u> (% sat)</p> <p>Specific Cond: <u>342.1</u> (µS/cm)</p> <p>Water Temperature: <u>20.4</u> (°C)</p>
<b>01</b>	UTM X: <u>0498830</u>	UTM Y: <u>4451319</u>	+/- <u>23</u>	(feet)							
<b>11</b>	UTM X: <u>0498759</u>	UTM Y: <u>4451206</u>	+/- <u>19</u>	(feet)							

#### Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>1</b>	0.25	0.03	0.28	0.03	0.36	0.01	0.51	0.01	0.49	0.01	0.07	<0.01	0.20	0.05	0.65	0.10	0.43	0.26	0.59	0.19	0.53	0.03
	<b>2</b>	0.50	0.05	0.56	0.06	0.72	0.01	1.02	0.03	0.98	0.07	0.14	<0.01	0.40	0.06	1.30	0.09	0.86	0.44	1.18	0.34	1.06	0.07
	<b>3</b>	0.75	0.07	0.84	0.14	1.08	0.02	1.53	0.05	1.47	0.06	0.21	0.01	0.60	0.08	1.95	0.15	1.29	0.65	1.77	0.37	1.59	0.15
	<b>4</b>	1.00	0.08	1.12	0.15	1.44	0.01	2.04	0.06	1.96	0.11	0.28	0.02	0.80	0.09	2.60	0.34	1.72	0.66	2.36	0.37	2.12	0.26
	<b>5</b>	1.25	0.08	1.40	0.15	1.80	0.01	2.55	0.05	2.45	0.16	0.35	0.01	1.00	0.13	3.25	0.30	2.15	0.60	2.95	0.22	2.65	0.34
	<b>6</b>	1.50	0.07	1.68	0.14	2.16	0.01	3.06	0.04	2.94	0.20	0.42	0.01	1.20	0.17	3.90	0.25	2.58	0.45	3.54	0.14	3.18	0.50
	<b>7</b>	1.75	0.06	1.96	0.16	2.52	0.02	3.57	0.04	3.43	0.19	0.49	<0.01	1.40	0.19	4.55	0.22	3.01	0.38	4.13	0.12	3.71	0.54
	<b>8</b>	2.00	0.05	2.24	0.17	2.88	0.03	4.08	0.03	3.92	0.14	0.56	0.01	1.60	0.07	5.20	0.26	3.44	0.36	4.72	0.11	4.24	0.41
	<b>9</b>	2.25	0.04	2.52	0.11	3.24	0.02	4.59	0.05	4.41	0.08	0.63	<0.01	1.80	0.04	5.85	0.28	3.87	0.18	5.31	0.09	4.77	0.17
<b>Right Bank</b>		2.50	0.00	2.80	0.00	3.60	0.00	5.10	0.00	4.95	0.00	0.75	0.00	2.00	0.00	6.50	0.00	4.35	0.00	5.95	0.00	5.30	0.00
<b>Feature Type</b>		Pool		Pool		Run		Run		Run		Riffle		Run		Pool		Pool		Pool		Pool	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

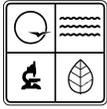
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization**

(must be completed for each site)

Date & Time: 9/20/07 10:45	Site Location Description (e.g., road crossing): Pelican Rd.
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

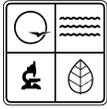
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0499943	Northing (UTM Y): 4448313	Horizontal Accuracy: (EPE / FOM / PDOP) 17 feet
Site 11	Easting (UTM X): 0499990	Northing (UTM Y): 4448102	Horizontal Accuracy: (EPE / FOM / PDOP) 20 feet

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_181	upstream	101_180	downstream		

**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.)				



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**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"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

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

% Cobble	% Gravel	70% Sand	% Silt	30% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

none
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**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge <sup>1</sup>	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input checked="" type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

\*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.

WBID # 0600

Site # 5



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

1 Sludge= thick, mucky mud

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

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9-20-07

Organization: AE Solutions

Position: Env. Specialist

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

<div style="display: inline-block; vertical-align: top;"> <p><b>Missouri</b> <b>Department of</b> <b>Natural Resources</b></p> </div> <div style="display: inline-block; vertical-align: top; margin-left: 20px;"> <p>Waterbody ID: <u>600</u></p> <p>Site #: <u>5</u></p> <p>Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water)</p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <p><b>01</b> UTM X: <u>0499943</u> UTM Y: <u>4448313</u> +/- <u>17</u> (feet)</p> <p><b>11</b> UTM X: <u>0499990</u> UTM Y: <u>4448102</u> +/- <u>20</u> (feet)</p> <p>Average Stream Width: <u>7.5</u> (meters) Length of Survey Segment: <u>150</u> (meters)</p> <p>(To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>Jennifer Hrabik and Justyn Foth</u></p> </div>	<p style="text-align: center;"><b>Dissolved Oxygen</b></p> <p>Date: <u>9/20/2007</u> Time: <u>10:45</u></p> <p>Dissolved Oxygen: <u>5.23</u> (mg/L)</p> <p>Dissolved Oxygen: <u>57.4</u> (% sat)</p> <p>Specific Cond: <u>298.3</u> (µS/cm)</p> <p>Water Temperature: <u>19.7</u> (°C)</p>
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#### Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0.55	0	0.40	0	0	0	0	0	0	0	0	0	0	0	0
	<b>1</b>	0.88	0.36	0.87	0.18	0.52	0.21	1.00	0.70	0.92	0.63	0.79	0.54	0.82	0.49	0.41	0.12	0.57	0.14	0.60	0.05	0.26	0.05
	<b>2</b>	1.76	0.60	1.74	0.15	1.04	0.37	2.00	0.95	1.84	0.92	1.58	0.79	1.64	0.54	0.82	0.18	1.14	0.23	1.20	0.09	0.52	0.04
	<b>3</b>	2.64	0.68	2.61	0.13	1.56	0.40	3.00	>1	2.76	>1	2.37	0.89	2.46	0.51	1.23	0.24	1.71	0.25	1.80	0.15	0.78	0.09
	<b>4</b>	3.52	0.62	3.48	0.21	2.08	0.65	4.00	>1	3.68	>1	3.16	0.92	3.28	0.69	1.64	0.30	2.28	0.20	2.40	0.20	1.04	0.11
	<b>5</b>	4.40	0.55	4.35	0.24	2.60	0.81	5.00	>1	4.60	>1	3.95	>1	4.10	0.92	2.05	0.31	2.85	0.24	3.00	0.25	1.30	0.16
	<b>6</b>	5.28	0.53	5.22	0.26	3.12	0.70	6.00	>1	5.52	>1	4.74	>1	4.92	0.79	2.46	0.25	3.42	0.27	3.60	0.22	1.56	0.15
	<b>7</b>	6.16	0.50	6.09	0.16	3.64	0.40	7.00	>1	6.44	0.93	5.53	0.63	5.74	0.62	2.87	0.22	3.99	0.23	4.20	0.23	1.82	0.15
	<b>8</b>	7.04	0.36	6.96	0.14	4.16	0.34	8.00	0.91	7.36	0.71	6.32	0.49	6.56	0.60	3.28	0.19	4.56	0.19	4.80	0.18	2.08	0.11
	<b>9</b>	7.92	0.18	7.83	0.11	4.68	0.25	9.00	0.65	8.28	0.53	7.11	0.41	7.38	0.39	3.69	0.15	5.13	0.16	5.40	0.20	2.34	0.06
<b>Right Bank</b>		8.80	0.00	8.70	0.00	5.20	0.00	10.00	0.50	9.20	0.45	7.90	0.00	8.20	0.00	4.10	0.00	5.75	0.00	6.05	0.00	2.60	0.00
<b>Feature Type</b>		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Run		Run		Pool		Run	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

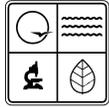
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization**

(must be completed for each site)

Date & Time: 9/20/07 11:45	Site Location Description (e.g., road crossing): Hwy. C Bridge
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

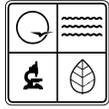
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0500466	Northing (UTM Y): 4445478	Horizontal Accuracy: (EPE / FOM / PDOP) 20 feet
Site 11	Easting (UTM X): 0500386	Northing (UTM Y): 4445320	Horizontal Accuracy: (EPE / FOM / PDOP) 21 feet

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_182	Upstream-fence-livestock watering	101_183	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**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.)				



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**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"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

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

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

% Cobble	% Gravel	60% Sand	% Silt	40% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Algae
Duckweed

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

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge <sup>1</sup>	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*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.

WBID # 0600

Site # 6



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

1 Sludge= thick, mucky mud

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

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/20/07

Organization: AE Solutions

Position: Env. Specialist

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Missouri Department of Natural Resources Waterbody ID: <u>600</u> Site #: <u>6</u> Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water)  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0500466</u> UTM Y: <u>4445478</u> +/- <u>20</u> (feet) <b>11</b> UTM X: <u>0500386</u> UTM Y: <u>4445320</u> +/- <u>21</u> (feet)  Average Stream Width: <u>4.0</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)  Field Staff: <u>Jennifer Hrabik and Justyn Foth</u>	<b>Dissolved Oxygen</b> Date: <u>9/20/2007</u> Time: <u>11:45</u>  Dissolved Oxygen: <u>5.45</u> (mg/L)  Dissolved Oxygen: <u>61.4</u> (% sat)  Specific Cond: <u>349.3</u> (µS/cm)  Water Temperature: <u>21.2</u> (°C)
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#### Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.59	0.10	0.13	0.02	0.08	0.01	0.38	0.15	0.09	0.01	0.78	0.17	0.32	0.17	1.02	0.20	0.80	0.12	0.13	0.06	0.03	0.01
	2	1.18	0.20	0.26	0.01	0.16	0.02	0.76	0.25	0.18	0.01	1.56	0.35	0.64	0.28	2.04	0.57	1.60	0.17	0.26	0.04	0.06	0.01
	3	1.77	0.05	0.39	0.02	0.24	0.01	1.14	0.26	0.27	0.02	2.34	0.46	0.96	0.32	3.06	0.70	2.40	0.25	0.39	0.05	0.09	0.01
	4	2.36	0.03	0.52	0.06	0.32	0.01	1.52	0.25	0.36	0.02	3.12	0.40	1.28	0.39	4.08	0.80	3.20	0.27	0.52	0.09	0.12	0.01
	5	2.95	0.30	0.65	0.10	0.40	0.02	1.90	0.25	0.45	0.04	3.90	0.27	1.60	0.44	5.10	>1	4.00	0.45	0.65	0.07	0.15	0.01
	6	3.54	0.48	0.78	0.11	0.48	0.02	2.28	0.22	0.54	0.04	4.68	0.20	1.92	0.42	6.12	>1	4.80	0.59	0.78	0.06	0.18	0.01
	7	4.13	0.61	0.91	0.09	0.56	0.03	2.66	0.11	0.63	0.03	5.46	0.18	2.24	0.37	7.14	>1	5.60	0.63	0.91	0.03	0.21	0.01
	8	4.72	0.45	1.04	0.06	0.64	0.03	3.04	0.06	0.72	0.02	6.24	0.30	2.56	0.26	8.16	>1	6.40	0.60	1.04	0.02	0.24	0.01
	9	5.31	0.15	1.17	0.04	0.72	0.01	3.42	0.05	0.81	0.01	7.02	0.34	2.88	0.14	9.18	0.60	7.20	0.43	1.17	0.01	0.27	0.01
<b>Right Bank</b>		5.90	0.00	1.30	0.00	0.80	0.00	3.85	0.00	0.90	0.00	7.80	0.00	3.20	0.00	10.20	0.00	8.00	0.00	1.30	0.00	0.38	0.00
<b>Feature Type</b> <small>(riffle, run, or pool)</small>		Pool		Run		Run		Pool		Run		Pool		Pool		Pool		Pool		Run		Riffle	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width  
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.  
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)  
 Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)  
 All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization**

(must be completed for each site)

Date & Time: 9/20/07 12:20	Site Location Description (e.g., road crossing): Shelby Rd.
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0499574	Northing (UTM Y): 4443257	Horizontal Accuracy: (EPE / FOM / PDOP) 21 feet
Site 11	Easting (UTM X): 0499534	Northing (UTM Y): 4443093	Horizontal Accuracy: (EPE / FOM / PDOP) 14 feet

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_184	Upstream	101_185	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**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.)				



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**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"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

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

% Cobble	% Gravel	80% Sand	% Silt	20% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

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

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

\*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.

WBID # 0600

Site # 7



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

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

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/20/07

Organization: AE Solutions

Position: Env Specialist

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

<p> <b>Missouri Department of Natural Resources</b>                  Waterbody ID: <u>600</u> Site #: <u>7</u>                  Estimated Channel Incision: <u>2.5</u> (m) (height between low bank width and water)             </p> <p>                 GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)             </p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;"><b>01</b></td> <td style="width: 15%;">UTM X:</td> <td style="width: 25%;"><u>0499574</u></td> <td style="width: 15%;">UTM Y:</td> <td style="width: 20%;"><u>4443257</u></td> <td style="width: 20%;">+/- <u>21</u> (feet)</td> </tr> <tr> <td><b>11</b></td> <td>UTM X:</td> <td><u>0499534</u></td> <td>UTM Y:</td> <td><u>4443093</u></td> <td>+/- <u>14</u> (feet)</td> </tr> </table> <p>                 Average Stream Width: <u>2.0</u> (meters) Length of Survey Segment: <u>150</u> (meters)                  (To determine Length of Reach) (20x average stream width)             </p> <p>Field Staff: <u>Jennifer Hrabik and Justyn Foth</u></p>	<b>01</b>	UTM X:	<u>0499574</u>	UTM Y:	<u>4443257</u>	+/- <u>21</u> (feet)	<b>11</b>	UTM X:	<u>0499534</u>	UTM Y:	<u>4443093</u>	+/- <u>14</u> (feet)	<p style="text-align: center; margin: 0;"><b>Dissolved Oxygen</b></p> <p>Date: <u>9/20/2007</u> Time: <u>12:20</u></p> <p>Dissolved Oxygen: <u>4.67</u> (mg/L)</p> <p>Dissolved Oxygen: <u>53.1</u> (% sat)</p> <p>Specific Cond: <u>377.5</u> (µS/cm)</p> <p>Water Temperature: <u>21.7</u> (°C)</p>
<b>01</b>	UTM X:	<u>0499574</u>	UTM Y:	<u>4443257</u>	+/- <u>21</u> (feet)								
<b>11</b>	UTM X:	<u>0499534</u>	UTM Y:	<u>4443093</u>	+/- <u>14</u> (feet)								

#### Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>1</b>	0.27	0.02	0.09	0.02	0.07	0.01	0.07	0.01	0.36	0.15	0.25	0.05	0.13	0.04	0.10	0.02	0.09	0.01	0.35	0.11	0.28	0.03
	<b>2</b>	0.54	0.07	0.18	0.05	0.14	0.02	0.14	0.01	0.72	0.30	0.50	0.07	0.26	0.04	0.20	0.03	0.18	0.01	0.70	0.13	0.56	0.04
	<b>3</b>	0.81	0.06	0.27	0.06	0.21	0.03	0.21	0.02	1.08	0.44	0.75	0.08	0.39	0.05	0.30	0.02	0.27	0.02	1.05	0.18	0.84	0.05
	<b>4</b>	1.08	0.05	0.36	0.05	0.28	0.05	0.28	0.01	1.44	0.56	1.00	0.09	0.52	0.04	0.40	0.02	0.36	0.03	1.40	0.17	1.12	0.05
	<b>5</b>	1.35	0.03	0.45	0.04	0.35	0.05	0.35	0.01	1.80	0.67	1.25	0.11	0.65	0.03	0.50	0.02	0.45	0.01	1.75	0.15	1.40	0.05
	<b>6</b>	1.62	0.04	0.54	0.04	0.42	0.06	0.42	0.02	2.16	0.60	1.50	0.12	0.78	0.03	0.60	0.01	0.54	0.02	2.10	0.05	1.68	0.07
	<b>7</b>	1.89	0.05	0.63	0.03	0.49	0.07	0.49	0.01	2.52	0.39	1.75	0.13	0.91	0.02	0.70	0.01	0.63	0.02	2.45	0.02	1.96	0.05
	<b>8</b>	2.16	0.04	0.72	0.01	0.56	0.05	0.56	0.01	2.88	0.20	2.00	0.09	1.04	0.02	0.80	0.01	0.72	0.03	2.80	0.04	2.24	0.04
	<b>9</b>	2.43	0.02	0.81	0.01	0.63	0.02	0.63	0.01	3.24	0.04	2.25	0.05	1.17	0.04	0.90	0.01	0.81	0.02	3.15	0.07	2.52	0.04
<b>Right Bank</b>		2.70	0.00	0.90	0.00	0.70	0.00	0.70	0.00	3.60	0.00	2.50	0.00	1.35	0.00	1.05	0.00	0.90	0.00	3.55	0.00	2.80	0.00
<b>Feature Type</b>		Run		Run		Run		Run		Pool		Run		Run		Run		Run		Pool		Pool	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

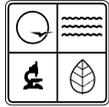
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization**

(must be completed for each site)

Date & Time: 9/20/07 13:00	Site Location Description (e.g., road crossing): Tower Rd.
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

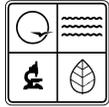
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0500642	Northing (UTM Y): 4438337	Horizontal Accuracy: (EPE / FOM / PDOP) 17 feet
Site 11	Easting (UTM X): 0500645	Northing (UTM Y): 4438147	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_186	Upstream	101_187	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**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.)				



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**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"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

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

% Cobble	% Gravel	80% Sand	% Silt	20% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

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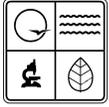
**Water Characteristics\*:** (Mark all that apply.)

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

\*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.

WBID # 0600

Site # 8



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

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

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/20/07

Organization: AE Solutions

Position: Env Specialist

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Missouri Department of Natural Resources Waterbody ID: <u>600</u> Site #: <u>8</u> Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water)  GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>0500642</u> UTM Y: <u>4438337</u> +/- <u>17</u> (feet) <b>11</b> UTM X: <u>0500645</u> UTM Y: <u>4438147</u> +/- <u>19</u> (feet)  Average Stream Width: <u>4.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)  Field Staff: <u>Jennifer Hrabik and Justyn Foth</u>	<b>Dissolved Oxygen</b>
	Date: <u>9/20/2007</u> Time: <u>13:00</u>
	Dissolved Oxygen: <u>4.99</u> (mg/L)
	Dissolved Oxygen: <u>58.8</u> (% sat)
	Specific Cond: <u>470.4</u> (µS/cm)
	Water Temperature: <u>24.3</u> (°C)

#### Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>1</b>	0.25	0.03	0.27	0.10	0.56	0.50	0.20	0.19	0.36	0.12	0.49	0.08	0.59	0.08	0.62	0.10	0.80	0.08	0.53	0.21	0.52	0.30
	<b>2</b>	0.50	0.06	0.54	0.10	1.12	0.64	0.40	0.28	0.72	0.11	0.98	0.13	1.18	0.09	1.24	0.13	1.60	0.01	1.06	0.11	1.04	0.55
	<b>3</b>	0.75	0.05	0.81	0.12	1.68	0.69	0.60	0.25	1.08	0.13	1.47	0.21	1.77	0.15	1.86	0.20	2.40	0.04	1.59	0.13	1.56	0.37
	<b>4</b>	1.00	0.06	1.08	0.10	2.24	0.45	0.80	0.18	1.44	0.12	1.96	0.33	2.36	0.12	2.48	0.19	3.20	0.10	2.12	0.13	2.08	0.37
	<b>5</b>	1.25	0.06	1.35	0.08	2.80	0.34	1.00	0.14	1.80	0.11	2.45	0.32	2.95	0.14	3.10	0.18	4.00	0.03	2.65	0.16	2.60	0.44
	<b>6</b>	1.50	0.07	1.62	0.07	3.36	0.25	1.20	0.11	2.16	0.15	2.94	0.34	3.54	0.13	3.72	0.21	4.80	0.02	3.18	0.21	3.12	0.35
	<b>7</b>	1.75	0.10	1.89	0.06	3.92	0.16	1.40	0.10	2.52	0.17	3.43	0.37	4.13	0.18	4.34	0.16	5.60	0.08	3.71	0.22	3.64	0.34
	<b>8</b>	2.00	0.05	2.16	0.03	4.48	0.10	1.60	0.08	2.88	0.25	3.92	0.34	4.72	0.26	4.96	0.20	6.40	0.22	4.24	0.29	4.16	0.30
	<b>9</b>	2.25	0.01	2.43	0.01	5.04	0.04	1.80	0.05	3.24	0.18	4.41	0.20	5.31	0.18	5.58	0.13	7.20	0.18	4.77	0.21	4.68	0.21
<b>Right Bank</b>		2.50	0.00	2.75	0.00	5.60	0.00	2.00	0.00	3.60	0.00	4.90	0.00	5.95	0.00	6.20	0.00	8.00	0.00	5.30	0.00	5.20	0.00
<b>Feature Type</b> <small>(riffle, run, or pool)</small>		Run		Pool																			

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

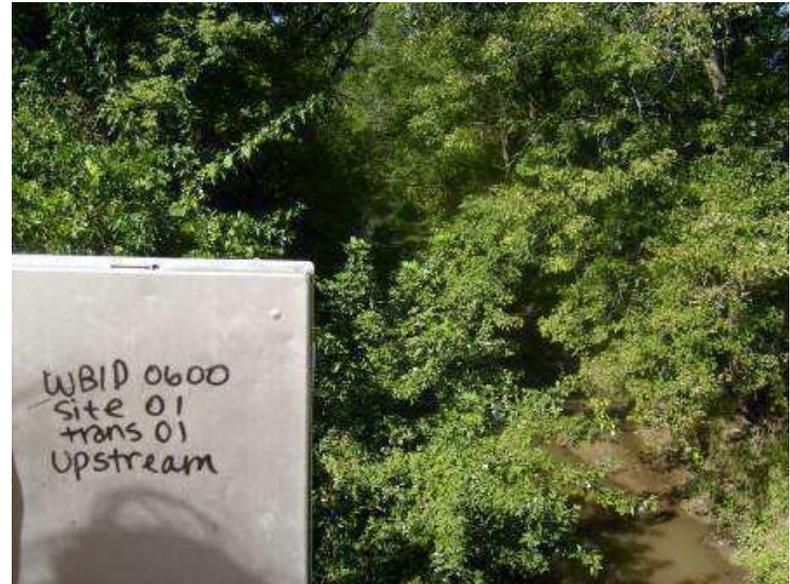
All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

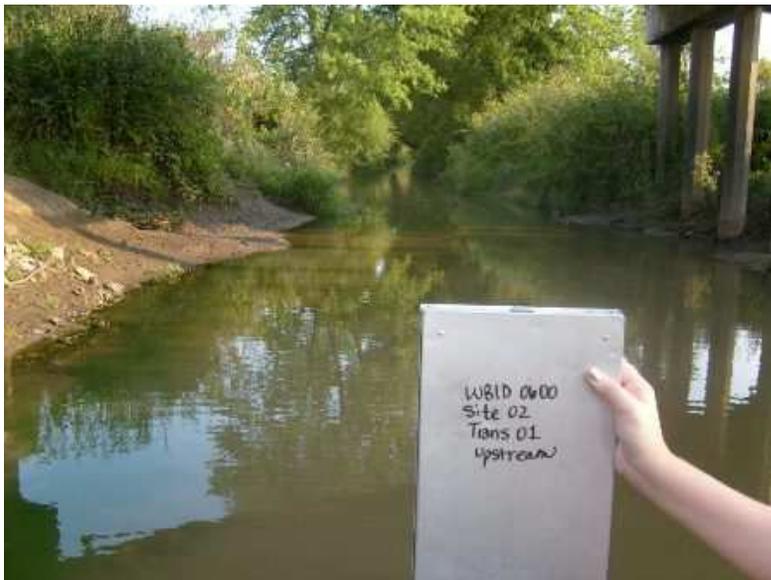
**WBID# 0600**



**Site# 1 Photo ID# 101-169, Downstream / Livestock**



**Site# 1 Photo ID# 101-170, Upstream**



**Site# 2 Photo ID# 101-171, Upstream**



**Site# 2 Photo ID# 101-172, Downstream**

**WBID# 0600**



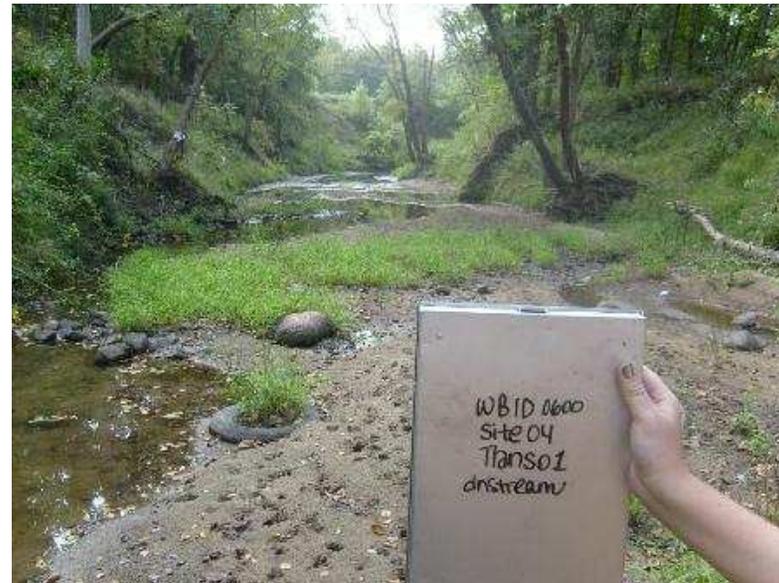
**Site# 3 Photo ID# 101-174, Upstream**



**Site# 3 Photo ID# 101-175, Downstream**



**Site# 4 Photo ID# 101-176, Upstream**

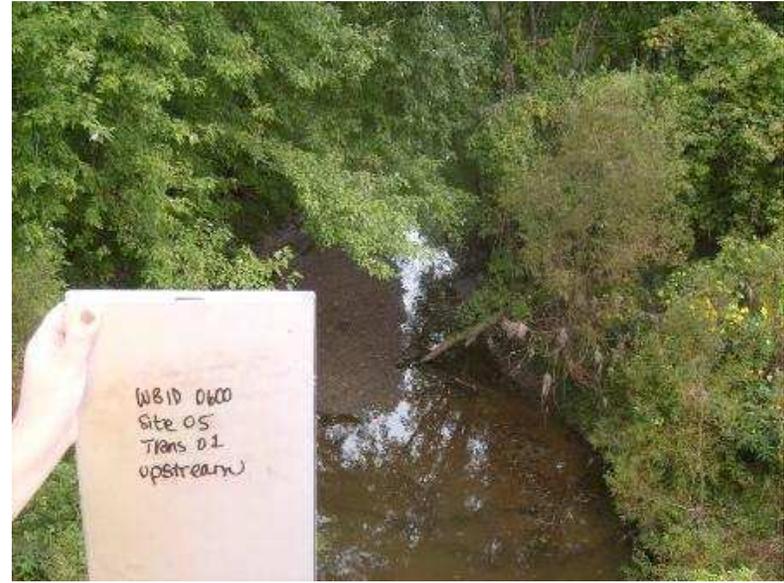


**Site# 4 Photo ID# 101-177, Downstream**

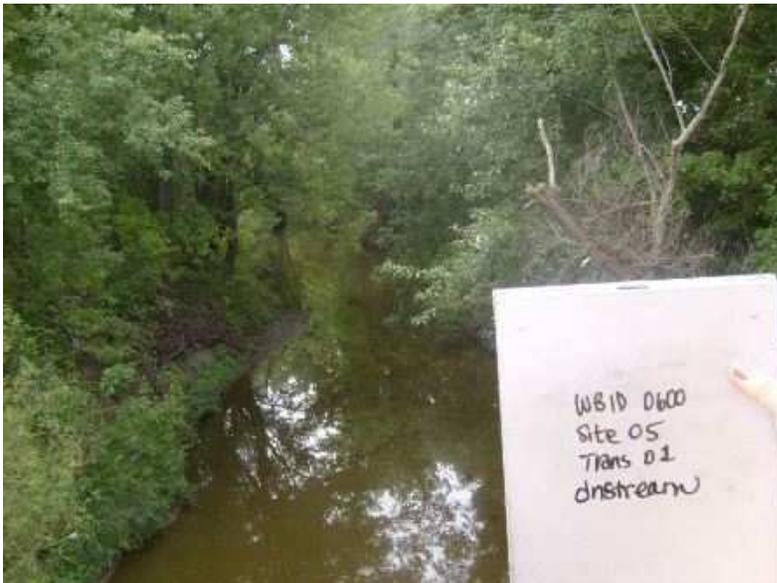
**WBID# 0600**



**Site# 4 Photo ID# 101-179, Beaver dam**



**Site# 5 Photo ID# 101-181, Upstream**



**Site# 5 Photo ID# 101-180, Downstream**



**Site# 6 Photo ID# 101-182, Upstream**

**WBID# 0600**



**Site# 6 Photo ID# 101-183, Downstream**



**Site# 7 Photo ID# 101-184, Upstream**



**Site# 7 Photo ID# 101-185, Downstream**



**Site# 8 Photo ID# 101-186, Upstream**

**WBID# 0600**



**Site# 8 Photo ID# 101-187, Downstream**



Missouri  
Department of  
Natural Resources

# Memo

**To:** file  
**From:** Mike Kruse, MO DNR  
**Date:** April 28, 2008  
**Re:** Wrong Name

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The 2007 UAA for WBID # 600 West Yellow Creek was submitted under the incorrect name of West Fork Yellow Creek. However, the correct segment (name and WBID) was surveyed.