

Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0555 East Fork Honey Creek

Submitted by

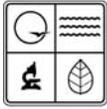
Pickett Ray and Silver

To

Missouri Department of Natural Resources

Water Protection Program

Date Received: October 31, 2007



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

Data Sheet A – Water Body Identification

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

Water Body Name (from USGS 7.5' quad): E. Fk. Honey Creek	
Missouri Water Body Identification (WBID) Number: 0555	
8-digit HUC: 20090415	County: Mercer
Upstream Legal Description (from Table H): 3, 64N, 23W	
Downstream Legal Description (from Table H): 29, 63N, 23W	
Number of sites evaluated: 5	
List all sites numbers, listed consequently upstream to downstream: 0555_01 County Rd. 264, 0555_02 County Rd. 262, 0555_03 County Rd. 261, 0555_04 Hwy JJ Bridge, 0555_05 122 nd St.	

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 Hedgewood Finishing – MO 0118753

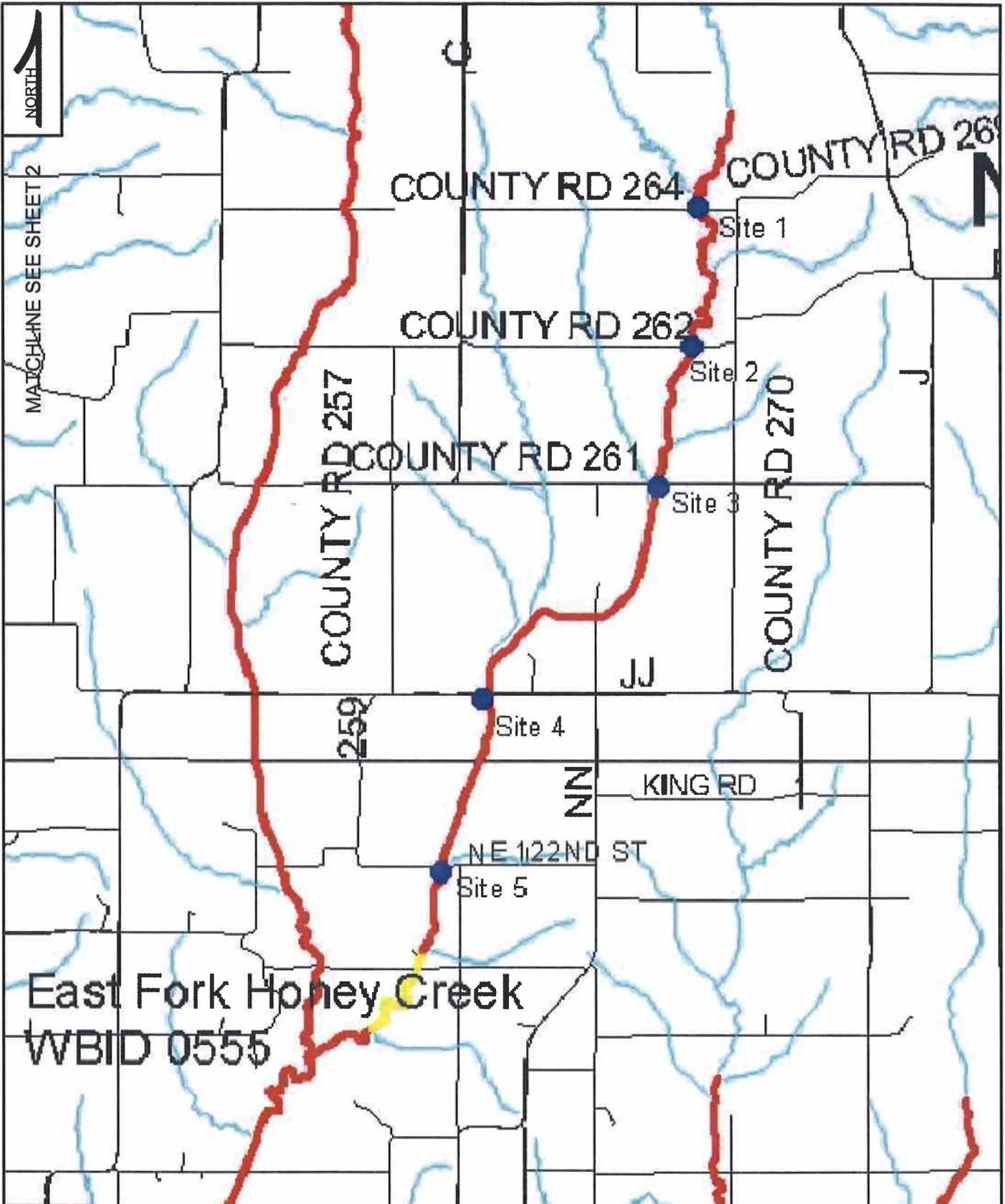
III. UAA Surveyor (please print legibly)

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:** _____

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East Fork Honey Creek
WBID 0555

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

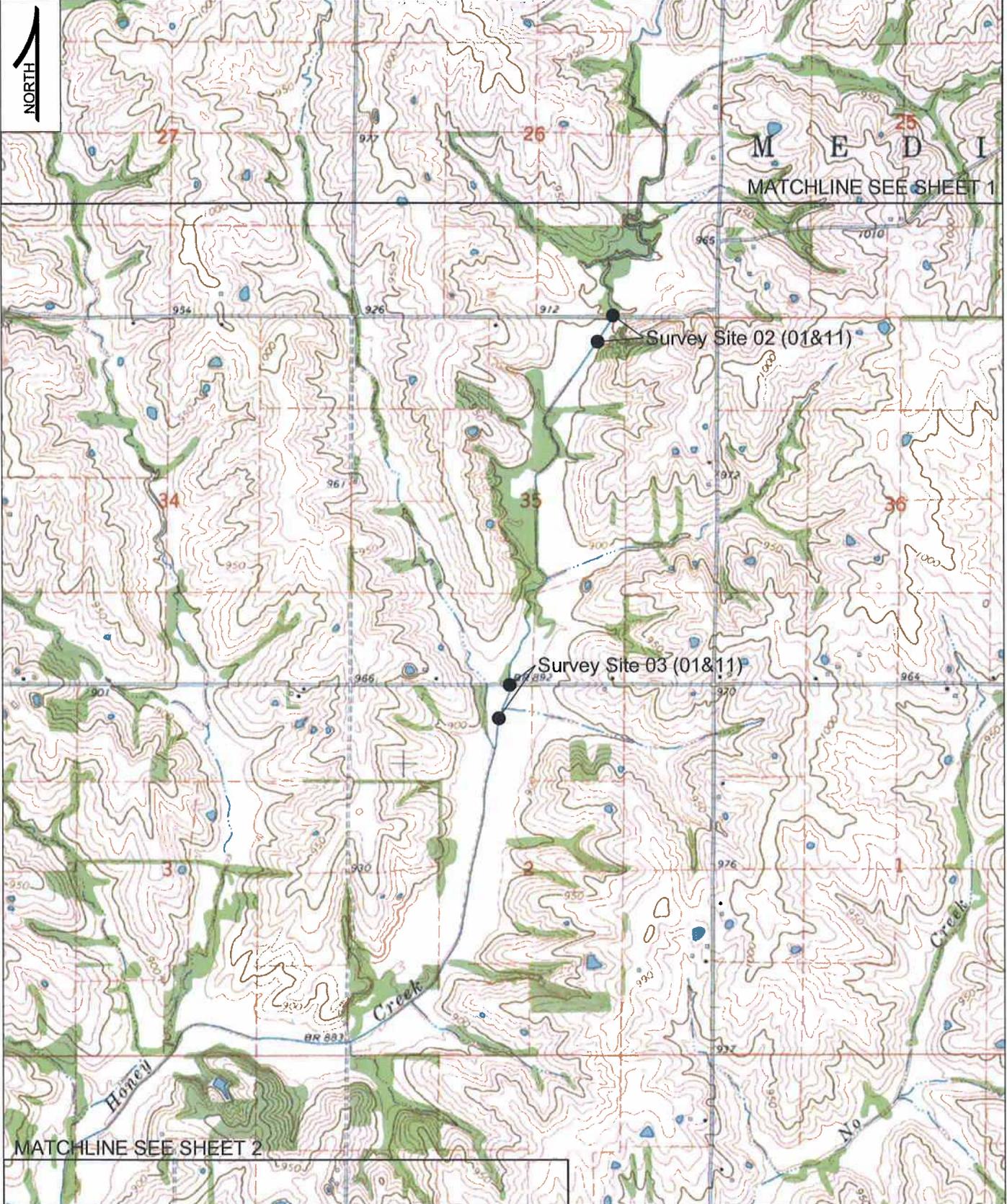
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WBID #: 0555
 Name: E Fk Honey Creek
 County: Mercer
 GIS Location Map
 Sheet 1 of 1

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

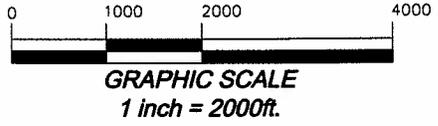
PRS Job Number: 07031.MODN.01E
 Drawn By: BLS Date: 10-12-07
 Checked By: JCV Date: 10-12-07

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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

WBID #: 0555
 Name: E. Fk. Honey Creek
 County: Mercer
 USGS Location Map



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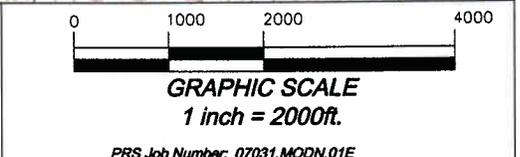
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 Drawn By: BLS Date: 10-12-07
 Checked By: JCV Date: 10-12-07

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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

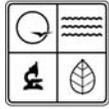
WBID #: 0555
 Name: E. Fk. Honey Creek
 County: Mercer
 USGS Location Map



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Sheet 3 of 3

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: 9/17/07 10:00	Site Location Description (e.g., road crossing): County Rd. 264
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: sunny/clear	Facility Name: PSF Hedgewood Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118753
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:

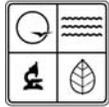
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0462038	Northing (UTM Y): 4463823	Horizontal Accuracy: (EPE / FOM / PDOP)	18 feet	
Site 11	Easting (UTM X): 0462096	Northing (UTM Y): 4463682	Horizontal Accuracy: (EPE / FOM / PDOP)	27 feet	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_0115	upstream	101_0116	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 Data Sheet D- Recreational Use Interview 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	10% Gravel	90% Sand	% Silt	% Mud/Clay	% Bedrock
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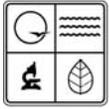
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

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 type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<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.



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: 9-17-07

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>555</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) 01 UTM X: <u>462038</u> JTM Y: <u>4463823</u> +/- <u>18</u> (feet) 11 UTM X: <u>462096</u> JTM Y: <u>4463682</u> +/- <u>27</u> (feet) Average Stream Width: <u>1.0</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>	Dissolved Oxygen
	Date: <u>9/17/2007</u> Time: <u>10:00</u>
	Dissolved Oxygen: <u>2.30</u> (mg/L)
	Dissolved Oxygen: <u>26.0</u> (% sat)
	Specific Cond: <u>265.0</u> (µS/cm)
	Water Temperature: <u>17.1</u> (°C)

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		0.24	0.02	0.09	0.03	0.10	0.00	0.10	0.00	0.08	0.00	0.07	0.00	0.04	0.01	0.09	0.00	0.10	0.00	0.39	0.00	0.05	0.02
2		0.48	0.01	0.18	0.05	0.20	0.00	0.20	0.00	0.16	0.00	0.14	0.00	0.08	0.02	0.18	0.00	0.20	0.00	0.78	0.00	0.10	0.02
3		0.72	0.07	0.27	0.05	0.30	0.00	0.30	0.00	0.24	0.00	0.21	0.00	0.12	0.04	0.27	0.00	0.30	0.00	1.17	0.00	0.15	0.02
4		0.96	0.11	0.36	0.06	0.40	0.00	0.40	0.00	0.32	0.00	0.28	0.00	0.16	0.05	0.36	0.00	0.40	0.00	1.56	0.00	0.20	0.02
5		1.20	0.15	0.45	0.06	0.50	0.00	0.50	0.00	0.40	0.00	0.35	0.00	0.20	0.05	0.45	0.00	0.50	0.00	1.95	0.00	0.25	0.02
6		1.44	0.10	0.54	0.07	0.60	0.00	0.60	0.00	0.48	0.00	0.42	0.00	0.24	0.05	0.54	0.00	0.60	0.00	2.34	0.00	0.30	0.02
7		1.68	0.00	0.63	0.07	0.70	0.00	0.70	0.00	0.56	0.00	0.49	0.00	0.28	0.03	0.63	0.00	0.70	0.00	2.73	0.00	0.35	0.02
8		1.92	0.00	0.72	0.04	0.80	0.00	0.80	0.00	0.64	0.00	0.56	0.00	0.32	0.02	0.72	0.00	0.80	0.00	3.12	0.00	0.40	0.02
9		2.16	0.02	0.81	0.02	0.90	0.00	0.90	0.00	0.72	0.00	0.63	0.00	0.36	0.01	0.81	0.00	0.90	0.00	3.51	0.00	0.45	0.02
Right Bank		2.40	0.00	0.98	0.00	1.00	0.00	1.00	0.00	0.85	0.00	0.72	0.00	0.48	0.00	0.90	0.00	1.05	0.00	3.90	0.00	0.55	0.00
Feature Type		Pool		Run		Dry		Dry		Dry		Dry		Pool		Dry		Dry		Dry		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

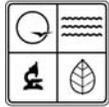
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

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: 9/17/07 10:40	Site Location Description (e.g., road crossing): County Rd. 262
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Hedgewood Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118753
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:

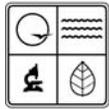
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0461947	Northing (UTM Y): 4462197	Horizontal Accuracy: (EPE / FOM / PDOP)		23 feet
Site 11	Easting (UTM X): 0461857	Northing (UTM Y): 4462066	Horizontal Accuracy: (EPE / FOM / PDOP)		19 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_0117	upstream	101_0118	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%.)

1% Cobble	9% Gravel	90% Sand	% Silt	% Mud/Clay	% Bedrock
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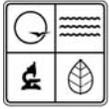
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

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: no water
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: no water
Bottom Deposit:	<input type="checkbox"/> Sludge	<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 type="checkbox"/> None	<input checked="" type="checkbox"/> Other: no water

*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.



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.)

County Road 262 does not exist anymore; it is just a dirt road now.

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

Surveyor's Signature: _____ Date of Survey: 9-17-07

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>555</u> Site #: <u>2</u> Estimated Channel Incision: <u>2.5</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0461947</u> JTM Y: <u>4462197</u> +/- <u>23</u> (feet) 11 UTM X: <u>0461857</u> JTM Y: <u>4462066</u> +/- <u>19</u> (feet) 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) Field Staff: <u>Jennifer Hrabik and Justyn Foth</u>	Dissolved Oxygen Date: <u>9/17/2007</u> Time: <u>10:40</u> Dissolved Oxygen: <u>---</u> (mg/L) --- Dissolved Oxygen: <u>---</u> (% sat) Specific Cond: <u>---</u> (µS/cm) Water Temperature: <u>---</u> (°C) DRY
---	--

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.39	0.00	0.12	0.00	0.11	0.00	0.24	0.00	0.25	0.00	0.22	0.00	0.18	0.00	0.15	0.00	0.24	0.00	0.36	0.00	0.14	0.00
	2	0.78	0.00	0.24	0.00	0.22	0.00	0.48	0.00	0.50	0.00	0.44	0.00	0.36	0.00	0.30	0.00	0.48	0.00	0.72	0.00	0.28	0.00
	3	1.17	0.00	0.36	0.00	0.33	0.00	0.72	0.00	0.75	0.00	0.66	0.00	0.54	0.00	0.45	0.00	0.72	0.00	1.08	0.00	0.42	0.00
	4	1.56	0.00	0.48	0.00	0.44	0.00	0.96	0.00	1.00	0.00	0.88	0.00	0.72	0.00	0.60	0.00	0.96	0.00	1.44	0.00	0.56	0.00
	5	1.95	0.00	0.60	0.00	0.55	0.00	1.20	0.00	1.25	0.00	1.10	0.00	0.90	0.00	0.75	0.00	1.20	0.00	1.80	0.00	0.70	0.00
	6	2.34	0.00	0.72	0.00	0.66	0.00	1.44	0.00	1.50	0.00	1.32	0.00	1.08	0.00	0.90	0.00	1.44	0.00	2.16	0.00	0.84	0.00
	7	2.73	0.00	0.84	0.00	0.77	0.00	1.68	0.00	1.75	0.00	1.54	0.00	1.26	0.00	1.05	0.00	1.68	0.00	2.52	0.00	0.98	0.00
	8	3.12	0.00	0.96	0.00	0.88	0.00	1.92	0.00	2.00	0.00	1.76	0.00	1.44	0.00	1.20	0.00	1.92	0.00	2.88	0.00	1.12	0.00
	9	3.51	0.00	1.08	0.00	0.99	0.00	2.16	0.00	2.25	0.00	1.98	0.00	1.62	0.00	1.35	0.00	2.16	0.00	3.24	0.00	1.26	0.00
Right Bank		3.90	0.00	1.20	0.00	1.10	0.00	2.40	0.00	2.50	0.00	2.25	0.00	1.80	0.00	1.55	0.00	2.40	0.00	3.60	0.00	1.40	0.00
Feature Type <small>(riffle, run, or pool)</small>		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry	

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

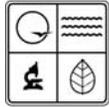
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

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: 9/17/07 11:00	Site Location Description (e.g., road crossing): County Rd. 261
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Hedgewood Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118753
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:

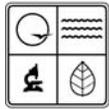
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0461492	Northing (UTM Y): 4460574	Horizontal Accuracy: (EPE / FOM / PDOP) 17 feet
Site 11	Easting (UTM X): 0461485	Northing (UTM Y): 4460375	Horizontal Accuracy: (EPE / FOM / PDOP) 45 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_119	upstream	101_120	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 Data Sheet D- Recreational Use Interview 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	60% Sand	% Silt	40% Mud/Clay	% Bedrock
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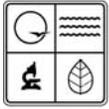
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Willows cottonwood

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.



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: 9-17-07

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>555</u> Site #: <u>3</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0461492</u> JTM Y: <u>4460574</u> +/- <u>17</u> (feet) 11 UTM X: <u>0461485</u> JTM Y: <u>4460375</u> +/- <u>45</u> (feet) Average Stream Width: <u>1.0</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>	Dissolved Oxygen
	Date: <u>9/17/2007</u> Time: <u>11:00</u>
	Dissolved Oxygen: <u>6.25</u> (mg/L)
	Dissolved Oxygen: <u>67.3</u> (% sat)
	Specific Cond: <u>446.5</u> (µS/cm)
	Water Temperature: <u>18.1</u> (°C)

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		0.13	0.03	0.13	0.03	0.13	0.17	0.16	0.05	0.12	0.01	0.02	0.01	0.09	0.03	0.06	0.01	0.09	0.01	0.04	0.01	0.22	0.06
2		0.26	0.08	0.26	0.06	0.26	0.17	0.32	0.02	0.24	0.02	0.04	0.01	0.18	0.04	0.12	0.03	0.18	0.01	0.08	0.01	0.44	0.16
3		0.39	0.09	0.39	0.06	0.39	0.06	0.48	0.11	0.36	0.04	0.06	0.01	0.27	0.05	0.18	0.05	0.27	0.01	0.12	0.01	0.66	0.28
4		0.52	0.09	0.52	0.06	0.52	0.07	0.64	0.11	0.48	0.03	0.08	0.01	0.36	0.05	0.24	0.05	0.36	0.01	0.16	0.01	0.88	0.41
5		0.65	0.06	0.65	0.35	0.65	0.08	0.80	0.13	0.60	0.02	0.10	0.01	0.45	0.05	0.30	0.05	0.45	0.01	0.20	0.01	1.10	0.45
6		0.78	0.06	0.78	0.39	0.78	0.05	0.96	0.13	0.72	0.02	0.12	0.01	0.54	0.04	0.36	0.04	0.54	0.01	0.24	0.01	1.32	0.53
7		0.91	0.05	0.91	0.38	0.91	0.09	1.12	0.10	0.84	0.02	0.13	0.01	0.63	0.05	0.42	0.03	0.63	0.01	0.28	0.01	1.54	0.50
8		1.04	0.05	1.04	0.34	1.04	0.11	1.28	0.07	0.96	0.02	0.14	0.01	0.72	0.05	0.48	0.02	0.72	0.01	0.32	0.01	1.76	0.46
9		1.17	0.04	1.17	0.24	1.17	0.02	1.44	0.02	1.08	0.01	0.16	0.01	0.81	0.02	0.54	0.01	0.81	0.01	0.36	0.01	1.98	0.14
Right Bank		1.35	0.00	1.30	0.18	1.32	0.00	1.65	0.00	1.25	0.00	0.18	0.00	0.90	0.00	0.60	0.00	0.95	0.00	0.48	0.00	2.20	0.00
Feature Type <small>(riffle, run, or pool)</small>		Run		Run		Run		Run		Run		Run		Run		Run		Run		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

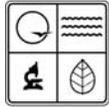
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

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: 9/17/07 11:40	Site Location Description (e.g., road crossing): Hwy JJ Bridge
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Hedgewood Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118753
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:

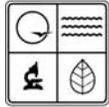
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0459481	Northing (UTM Y): 4458116	Horizontal Accuracy: (EPE / FOM / PDOP)	16 feet	
Site 11	Easting (UTM X): 0459534	Northing (UTM Y): 4457976	Horizontal Accuracy: (EPE / FOM / PDOP)	24 feet	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_121	upstream	101_122	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	70% Sand	% Silt	30% Mud/Clay	% Bedrock
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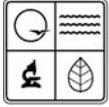
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Willows

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.



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: 9-17-07

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>555</u> Site #: <u>4</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) 01 UTM X: <u>0459481</u> UTM Y: <u>4458116</u> +/- <u>16</u> (feet) 11 UTM X: <u>0459534</u> UTM Y: <u>4457976</u> +/- <u>24</u> (feet) Average Stream Width: <u>2.9</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>	Dissolved Oxygen Date: <u>9/17/2007</u> Time: <u>11:40</u> Dissolved Oxygen: <u>5.93</u> (mg/L) Dissolved Oxygen: <u>61.1</u> (% sat) Specific Cond: <u>580.0</u> (µS/cm) Water Temperature: <u>19.1</u> (°C)
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Transect Cross-Section

Station		01		02		03		04		05		06		07		08		09		10		11	
		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1	0.03	0.01	0.20	0.01	0.30	0.03	0.60	0.11	0.25	0.04	0.25	0.03	0.11	0.01	0.30	0.05	0.07	0.01	0.12	0.02	0.33	0.08
	2	0.06	0.01	0.40	0.01	0.60	0.11	1.20	0.15	0.50	0.09	0.50	0.05	0.22	0.01	0.60	0.06	0.14	0.01	0.24	0.02	0.66	0.11
	3	0.09	0.01	0.60	0.00	0.90	0.14	1.80	0.20	0.75	0.17	0.75	0.04	0.33	0.01	0.90	0.08	0.21	0.01	0.36	0.03	0.99	0.09
	4	0.12	0.01	0.80	0.11	1.20	0.21	2.40	0.16	1.00	0.19	1.00	0.04	0.44	0.01	1.20	0.10	0.28	0.01	0.48	0.05	1.32	0.06
	5	0.15	0.01	1.00	0.08	1.50	0.30	3.00	0.19	1.25	0.16	1.25	0.05	0.55	0.01	1.50	0.15	0.35	0.01	0.60	0.05	1.65	0.03
	6	0.18	0.01	1.20	0.15	1.80	0.35	3.60	0.24	1.50	0.15	1.50	0.07	0.66	0.01	1.80	0.17	0.42	0.01	0.72	0.04	1.98	0.03
	7	0.21	0.01	1.40	0.16	2.10	0.39	4.20	0.33	1.75	0.14	1.75	0.05	0.77	0.01	2.10	0.19	0.49	0.01	0.84	0.05	2.31	0.02
	8	0.24	0.01	1.60	0.10	2.40	0.44	4.80	0.25	2.00	0.10	2.00	0.04	0.88	0.01	2.40	0.11	0.56	0.01	0.96	0.04	2.64	0.02
	9	0.27	0.01	1.80	0.04	2.70	0.40	5.40	0.17	2.25	0.05	2.25	0.01	0.99	0.01	2.70	0.15	0.63	0.01	1.08	0.02	2.97	0.01
Right Bank		0.35	0.00	2.00	0.00	3.00	0.32	6.00	0.00	2.50	0.00	2.55	0.00	1.10	0.00	3.00	0.00	0.73	0.00	1.20	0.00	3.30	0.00
Feature Type		Run		Pool		Pool		Pool		Run													
<small>(riffle, run, or pool)</small>																							

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

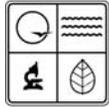
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

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: 9/17/07 12:20	Site Location Description (e.g., road crossing): 122 nd St.
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Hedgewood Finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118753
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:

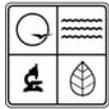
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0459019	Northing (UTM Y): 4456269	Horizontal Accuracy: (EPE / FOM / PDOP) 24 feet
Site 11	Easting (UTM X): 0458983	Northing (UTM Y): 4456084	Horizontal Accuracy: (EPE / FOM / PDOP) 24 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_123	upstream	101_124	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	70% Sand	% Silt	30% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Willows
algae

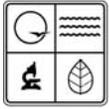
Water Characteristics*: (Mark all that apply.)

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 # 0555

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.)

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

Surveyor's Signature: _____ Date of Survey: 9-17-07

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>555</u> Site #: <u>5</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) 01 UTM X: <u>0459019</u> UTM Y: <u>4456269</u> +/- <u>24</u> (feet) 11 UTM X: <u>0458983</u> UTM Y: <u>4456084</u> +/- <u>24</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>	Dissolved Oxygen
	Date: <u>9/17/2007</u> Time: <u>12:20</u>
	Dissolved Oxygen: <u>5.62</u> (mg/L)
	Dissolved Oxygen: <u>62.9</u> (% sat)
	Specific Cond: <u>347.0</u> (µS/cm)
	Water Temperature: <u>18.1</u> (°C)

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	1.00	0.25	0.28	0.03	0.24	0.11	0.22	0.04	0.60	0.04	0.04	0.02	0.40	0.11	0.60	0.01	0.70	0.04	0.50	0.12	0.60	0.04
	2	2.00	0.35	0.56	0.02	0.48	0.16	0.44	0.05	1.20	0.05	0.08	0.04	0.80	0.16	1.20	0.12	1.40	0.06	1.00	0.10	1.20	0.18
	3	3.00	0.46	0.84	0.04	0.72	0.14	0.66	0.09	1.80	0.09	0.12	0.07	1.20	0.20	1.80	0.15	2.10	0.07	1.50	0.04	1.80	0.17
	4	4.00	0.38	1.12	0.05	0.96	0.20	0.88	0.07	2.40	0.08	0.16	0.03	1.60	0.18	2.40	0.13	2.80	0.10	2.00	0.04	2.40	0.15
	5	5.00	0.30	1.40	0.10	1.20	0.19	1.10	0.06	3.00	0.16	0.20	0.06	2.00	0.10	3.00	0.06	3.50	0.15	2.50	0.05	3.00	0.15
	6	6.00	0.21	1.68	0.11	1.44	0.15	1.32	0.06	3.60	0.09	0.24	0.06	2.40	0.05	3.60	0.04	4.20	0.16	3.00	0.09	3.60	0.14
	7	7.00	0.20	1.96	0.08	1.68	0.12	1.54	0.03	4.20	0.05	0.28	0.07	2.80	0.05	4.20	0.10	4.90	0.12	3.50	0.11	4.20	0.09
	8	8.00	0.30	2.24	0.06	1.92	0.06	1.76	0.03	4.80	0.03	0.32	0.10	3.20	0.03	4.80	0.15	5.60	0.09	4.00	0.12	4.80	0.10
	9	9.00	0.10	2.52	0.02	2.16	0.01	1.98	0.02	5.40	0.02	0.36	0.10	3.60	0.02	5.40	0.11	6.30	0.11	4.50	0.20	5.40	0.12
Right Bank		10.00	0.00	2.80	0.00	2.40	0.00	2.20	0.00	6.00	0.00	0.48	0.00	4.50	0.00	6.05	0.00	7.00	0.00	5.05	0.00	6.00	0.00
Feature Type <small>(riffle, run, or pool)</small>		Pool		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.

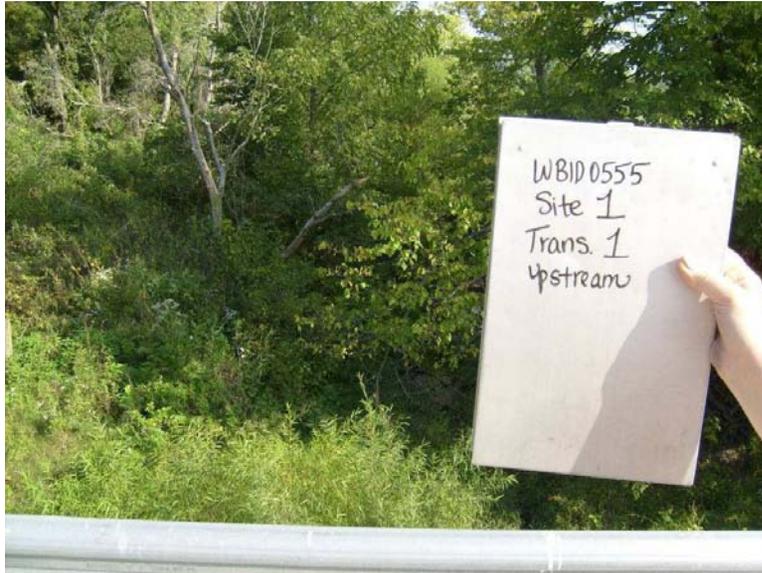
Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

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

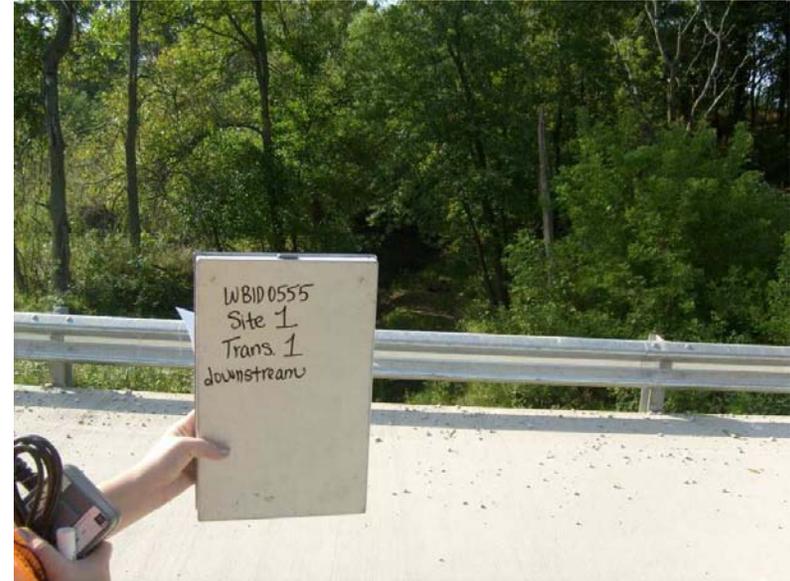
All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____

WBID# 0555



Site# 1 Photo ID# 101_0115, Upstream



Site# 1 Photo ID# 101_0116, Downstream

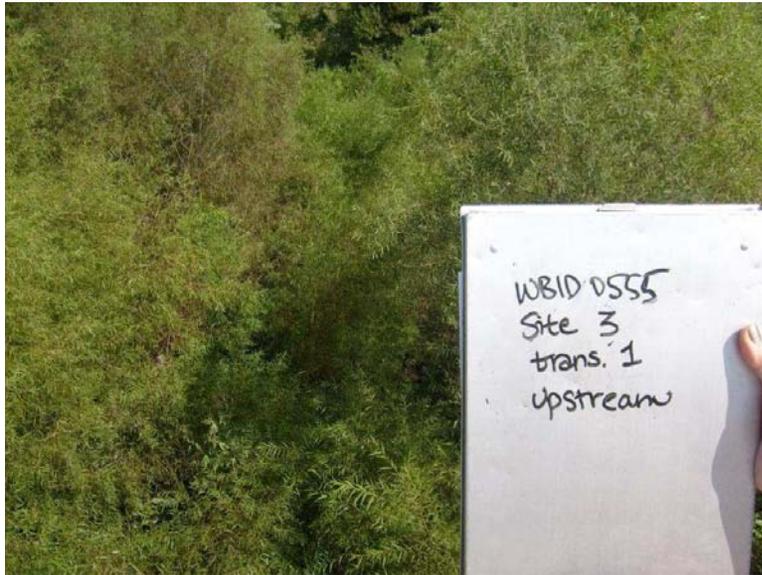


Site# 2 Photo ID# 101_0117, Upstream



Site# 2 Photo ID# 101_0118, Downstream

WBID# 0555



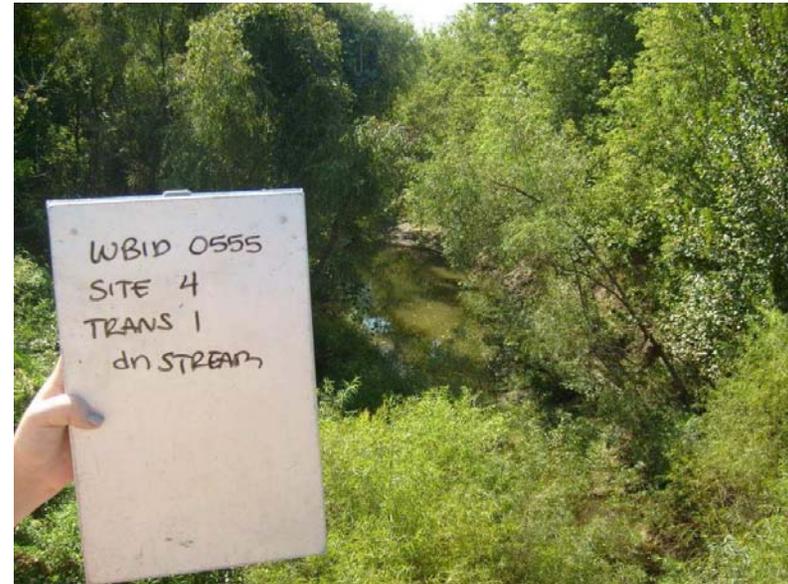
Site# 3 Photo ID# 101_0119, Upstream



Site# 3 Photo ID# 101_0120, Downstream



Site# 4 Photo ID# 101_0121, Upstream



Site# 4 Photo ID# 101_0122, Downstream

WBID# 0555



Site# 5 Photo ID# 101_123, Upstream



Site# 5 Photo ID# 101_124, Downstream