



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 1663 Pin Oak Creek

Submitted by

MEC Water Resources

To

Missouri Department of Natural Resources

Water Protection Program

On

December 1, 2007

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): PIN OAK CREEK	
Missouri Water Body Identification (WBID) Number: 1663	
8-digit HUC: 20090330	County: FRANKLIN
Upstream Legal Description (from Table H): 3,44 N, 3W	
Downstream Legal Description (from Table H): Mouth	
Number of sites evaluated 3	
List all sites numbers, listed consecutively upstream to downstream: ① HWY E; ② 300 m DN STREAM SITE 01 T11; ③ BOEUF LUTHERAN RD	

II. Discharger Facility Information (list all permitted dischargers on the stream)

Discharger Facility Name(s): CEDAR CREEK CONFERENCE CE
Discharger Permit Number(s): MO 0130231

III. UAA Surveyor (please print legibly)

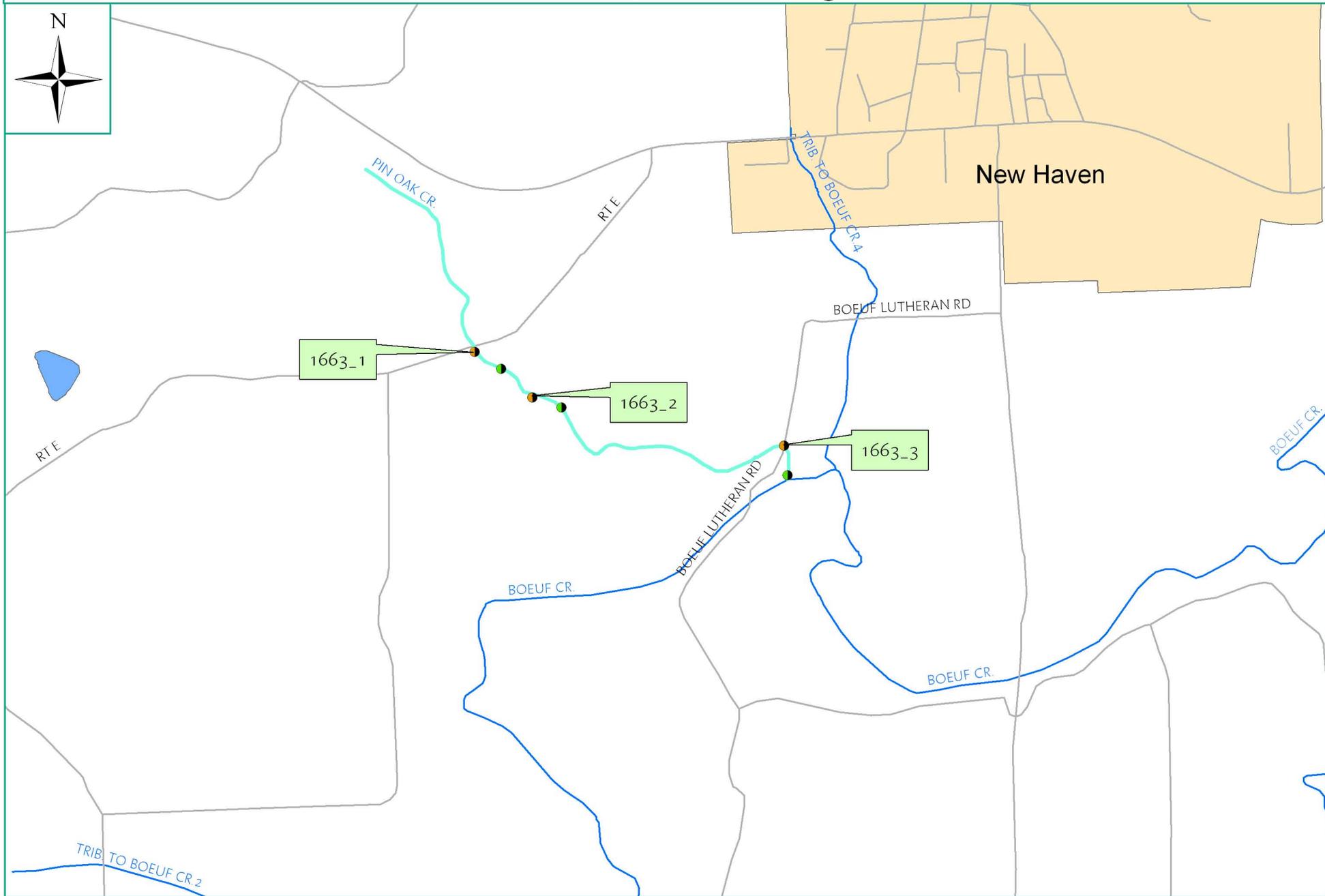
Name of Surveyor: R. MARTIN	Telephone Number: 875.7844
Organization/Employer: AE SOLUTIONS	
Position: ENV. SPECIALIST	

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

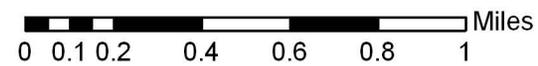
Signed: *[Signature]* Date: 10/11/07

AUC 10-17-07

Pin Oak Cr. (WBID 1663)



- Upstream Boundary
- Downstream Boundary



WBID # 1663
 Site # 01

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization
 (must be completed for each site)

Date & Time: <u>10/11/07 1445</u>	Site Location Description (e.g., road crossing): <u>HWY E</u>
Personnel (Data Collectors): <u>Rm/JF</u>	
Current Weather Conditions: <u>Clear</u>	Facility Name: <u>CEDAR CREEK CONFERENCE CE.</u>
Weather Conditions for Past 10 days: <u>clear</u>	Permit Number: <u>MO 0130231</u>
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): <u>4272771</u>	Northing (UTM Y): <u>0657240</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>16</u> Meters <u>JF</u> <u>FF</u>
Site 11	Easting (UTM X): <u>4272681</u>	Northing (UTM Y): <u>0657382</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>17</u> Meters <u>JF</u> <u>FF</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>43</u>	<u>UP Stream side 1</u>	<u>44</u>	<u>DN Stream side 1</u>		

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.)

WBID # 1663
 Site # 01

Field Data Sheets for Recreational Use Stream Surveys
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 checked="" 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: <i>None</i>				

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

<i>10</i> % Cobble	<i>10</i> % Gravel	<i>30</i> % Sand	<i>—</i> % Silt	<i>200</i> ^{g ul} 30 % Mud/Clay	<i>30</i> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

all pools have ~75% filamentous algae from top to bottom of H₂O column

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 # 1663
Site # 01

Field Data Sheets for Recreational Use Stream Surveys

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: *Amee Mart* Date of Survey: 10/11/07
Organization: AE Solutions Position: Env. Specialist

awc 10-17-07

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 1663 Site #: 1663-1
 (WBID_Site#)

Estimated Channel Incision: 1.0 (m) (height between low bank width and water)

GPS Location (taken at transect 1):
 UTM X: 4272771 UTM Y: 652240
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 16 (feet)

GPS Location (taken at transect 11):
 UTM X: 4272681 UTM Y: 652382
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 17 (feet)

Average Stream Width: 4.1 (meters) Length of Survey Segment: 150 (meters)
 (To determine Length of Reach) (20x average stream width)

Field Staff: R. Martin & J. Foth

Dissolved Oxygen	
Date: <u>10/11/07</u>	Time: <u>1445</u>
Dissolved Oxygen: <u>11.82</u> (mg/L)	
Dissolved Oxygen: <u>113</u> (% sat)	
Specific Cond: <u>330.0</u> (µS/cm)	
Water Temp.: <u>17.7</u> (°C)	

		Transect Cross Section																					
		01		02		03		04		05		^{RM} 06 07		^{RM} 07 06		08		09		10		11	
Station		Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	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		0.72	0.23	0.60	0.08	0.20	DRY	0.40	DRY	0.58	DRY	0.33	0.01	0.28	DRY	0.70	0.24	0.08	0.02	0.28	0.02	0.25	DRY
2		1.44	0.34	1.22	0.00	0.40		0.80		1.16		0.66	0.08	0.56		1.40	0.16	0.16	0.04	0.56	0.11	0.50	
3		2.16	0.52	1.83	0.15	0.60		1.20		1.74		0.99	0.11	0.84		2.10	0.20	0.24	0.03	0.84	0.16	0.78	
4		2.88	0.52	2.44	0.15	0.80		1.60		2.32		1.32	0.21	1.12		2.80	0.23	0.32	0.05	1.12	0.23	1.00	
5		3.60	0.44	3.05	0.11	1.00		2.00		2.90		1.65	0.16	1.40		3.50	0.40	0.40	0.05	1.40	0.32	1.25	
6		4.32	0.34	3.60	0.14	1.20		2.40		3.48		1.98	0.15	1.68		4.20	0.36	0.48	0.04	1.68	0.30	1.50	
7		5.04	0.30	4.27	0.09	1.40		2.80		4.06		2.31	0.08	1.94		4.90	0.35	0.56	0.05	1.94	0.28	1.75	
8		5.76	0.24	4.88	0.06	1.60		3.20		4.64		2.67	0.02	2.24		5.60	0.30	0.64	0.02	2.24	0.16	2.00	
9		6.48	0.20	5.49	0.08	1.80	↓	3.60	↓	5.22	↓	2.97	0.01	2.52	↓	6.30	0.04	0.72	0.01	2.52	0.08	2.25	↓
Right Bank		7.20	0	6.10	0	2.00	0	4.00	0	5.80	0	3.30	0	3.80	0	7.10	0	0.85	0	3.80	0	2.50	0
Feature Type (riffle, run, or pool)		POOL		RUN		DRY		DRY		DRY		POOL		DRY		POOL		RUN		POOL		DRY	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0depth). This width is the wetted width
 GPS location corresponds to Transect 01 and Transect 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: [Signature] Date: 10/11/07

RNC 10-17-07

WBID # 1663
 Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization
 (must be completed for each site)

Date & Time: <u>10/11/07 1520</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>RM/JF</u>	<u>200 meters DN from Site 1, Transect # 11</u>
Current Weather Conditions: <u>CLEAR</u>	Facility Name: <u>CEDAR CREEK CONFERENCE CE</u>
Weather Conditions for Past 10 days: <u>CLEAR RAINY</u>	Permit Number: <u>MO 0130231</u>
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): <u>4272528</u>	Northing (UTM Y): <u>652550</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>20</u> Meters		
Site 11	Easting (UTM X): <u>4272473</u>	Northing (UTM Y): <u>652707</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>20</u> Meters		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>45</u>	<u>UPstream site 2</u>	<u>46</u>	<u>DN Stream site 2</u>		

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.)				

WBID # 1663

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

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 checked="" type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <i>Agriculture</i>				

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: <i>None</i>				

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

<i>20</i> % Cobble	<i>20</i> % Gravel	<i>30</i> % Sand	<i>—</i> % Silt	<i>—</i> % Mud/Clay	<i>30</i> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

<i>grass on gravel bars w/in channel</i>
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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: <i>DRY</i>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" 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 # 1663
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

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: *James Mont* Date of Survey: 10/11/07

Organization: AE Solutions Position: Env. Specialist

AAC 10-17-07

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 1663 Site #: 1663-02
 (WBID_Site#)

Estimated Channel Incision: 1.0 (m) (height between low bank width and water)

GPS Location (taken at transect 1):
 UTM X: 4272528 UTM Y: 652550
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 20 (feet)

GPS Location (taken at transect 11):
 UTM X: 4272473 UTM Y: 652707
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 20 (feet)

Average Stream Width: 3.4 (meters) Length of Survey Segment: 150 (meters)
 (To determine Length of Reach) (20x average stream width)

Field Staff: P. Martin ¹ ~~RM~~ J. Feth

Dissolved Oxygen	
Date: <u>10/11/07</u>	Time: <u>1520</u>
Dissolved Oxygen: _____	(mg/L)
Dissolved Oxygen: _____	(% sat)
Specific Cond: _____	(µS/cm)
Water Temp.: _____	(°C)

① DRY - No measurements

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	0.39	DRY	0.35	DRY	0.30	DRY	3.15	DRY	0.18	DRY	0.33	DRY	0.34	DRY	0.25	DRY	0.40	DRY	0.23	DRY	0.30	DRY
	2	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	3	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	4	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	5	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	6	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	7	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	8	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	9	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
Right Bank	0	3.90	0	3.50	0	3.0	0	3.15	0	1.80	0	3.30	0	3.40	0	2.50	0	4.00	0	2.30	0	3.00	0
	1	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	2	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	3	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	4	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	5	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	6	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	7	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	8	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
	9	↓		↓		↓		↓		↓		↓		↓		↓		↓		↓		↓	
Feature Type (riffle, run, or pool)	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 location corresponds to Transect 01 and Transect 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: P. Martin Date: 10/11/07

BWC 10-17-07

WBID # 1663
 Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization
 (must be completed for each site)

Date & Time: <u>10/11/07 1555</u>	Site Location Description (e.g., road crossing): <u>BOEUF WITHEREN RD</u>
Personnel (Data Collectors): <u>RML/TF</u>	<u>Hwy 1E, bridge crossing</u>
Current Weather Conditions: <u>clear</u>	Facility Name: <u>CEDAR CREEK CONFERENCE CE.</u>
Weather Conditions for Past 10 days: <u>clear</u>	Permit Number: <u>MO 0130231</u>
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input checked="" 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): <u>4277270</u>	Northing (UTM Y): <u>6539101</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>18</u> Meters <u>18</u> <u>18</u>
Site 11	Easting (UTM X): <u>4272110</u>	Northing (UTM Y): <u>6539118</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>37</u> Meters <u>37</u> <u>37</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>47</u>	<u>Upstream, site 3</u>	<u>48</u>	<u>DN Stream site 3</u>		

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.)

WBID # 1663
 Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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: <p align="center"><i>None</i></p>				

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

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

<i>Algae w/in pools, Arrow head, Duckweed.</i>
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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 # 1663
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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: *[Signature]* Date of Survey: 10/11/07
Organization: AE Solutions Position: Env. Specialist
RNC 10-17-07

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 1663 Site #: 1663-03
 (WBID_Site#)
 Estimated Channel Incision: 2.0 (m) (height between low bank width and water)
 GPS Location (taken at transect 1):
 UTM X: 4272270 UTM Y: 653901
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 18 (feet)

GPS Location (taken at transect 11):
 UTM X: 4272110 UTM Y: 653918
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 37 (feet)

Average Stream Width: 2.10 (meters) Length of Survey Segment: 150 (meters)
 (To determine Length of Reach) (20x average stream width)

Field Staff: P. Martin & J. Foth

Dissolved Oxygen

Date: 10/11/07 Time: 1555

Dissolved Oxygen: _____ (mg/L)
 Dissolved Oxygen: _____ (% sat)
 Specific Cond: _____ (µS/cm)
 Water Temp.: _____ (°C)

DRY - No
Measurement

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		0.35	DRY	0.37	DRY	0.21	DRY	0.27	0.10	0.21	DRY	0.22	0.10	0.09	0.02	0.08	0.01	0.16	0.06	0.40	0.11	0.73 0.73	0.24
2								0.54	0.17					0.11	0.18	0.03	0.16	0.02	0.32	0.10	0.80	0.25	1.46
3								0.81	0.30					0.18	0.27	0.06	0.24	0.03	0.48	0.10	1.20	0.32	2.19
4								1.08	0.35					0.20	0.36	0.06	0.32	0.03	0.64	0.12	1.60	0.37	2.92
5								1.35	0.36					0.23	0.45	0.08	0.40	0.04	0.80	0.12	2.00	0.46	3.65
6								1.62	0.31					0.20	0.54	0.10	0.48	0.01	0.96	0.09	2.40	0.78	4.36
7								1.89	0.25					0.16	0.63	0.06	0.56	0.01	1.12	0.07	2.80	>10	5.11
8								2.16	0.12					0.14	0.72	0.03	0.64	0.05	1.28	0.05	3.20	0.85	5.84
9								2.43	0.05					0.09	0.81	0.01	0.72	0.03	1.44	0.02	3.60	0.67	6.57
Right Bank		3.50	0	3.70	0	2.10	0	2.70	0	2.10	0	2.25	0	0.90	0	0.85	0	1.65	0	4.00	0.20	7.30	0
Feature Type (riffle, run, or pool)		DRY		DRY		DRY		Pool		DRY		Pool		Pool		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 location corresponds to Transect 01 and Transect 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.

ANC 10-17-07

Signed: P. Martin Date: 10/11/07

