



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 2208 Cane Creek

Submitted by
MEC/ERC

To

Missouri Department of Natural Resources
Water Protection Program

On

October 24, 2008

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):	Cane Creek	
Missouri Water Body Identification (WBID) Number:	2208	
8-digit HUC:	07140107 Whitewater	
County(ies), Listed Upstream to Downstream:	Cape Girardeau	
Upstream Legal Description (from Table H):	Hwy 55	
Downstream Legal Description (from Table H):	Sec 3146, 32N, 12E	
Number of sites evaluated:	3	
List all site numbers, <u>consecutively upstream to downstream</u> :		
1) Northwest outer Road downstream	2) Downstream at Co Rd 439	3) Downstream off Co Rd 436
Include a Site Location Map(s). The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).		

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

Facility Name(s) and Permit Number(s):	
Fruitland Dressed Meats	MO6822098
Frontier Food Mart	MO0099759
Westbridge Place Subd	MO0100277
Bretz Subd	MO0057347

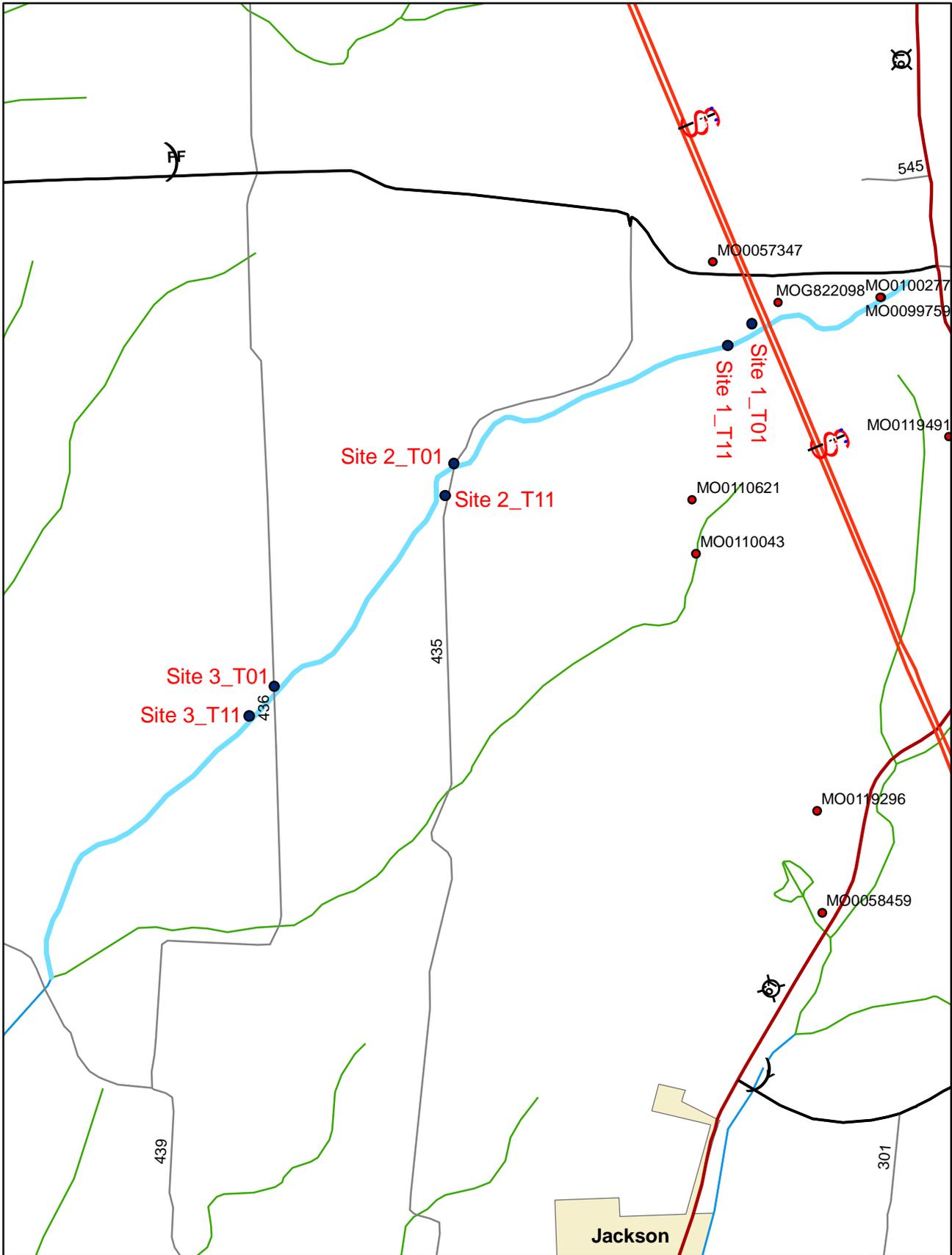
III. UAA Surveyor (please PRINT legibly)

Name of Surveyor:	Abigail L. Lynn	Telephone Number:	(573) 634-7078
Organization/Employer:	ERC		

Please verify that you have completed all sections of all data sheets, checked all applicable boxes, provided a map (that includes all requirements listed in the *Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol*) and that this form is complete.

Signed: Abigail L. Lynn Date: 10/9/08

WBID # 2208 - Cane Creek Cape Girardeau County



0 650 1,300 2,600 Meters

Weather Conditions

Weather conditions ten days previous to stream assessment are listed in the tables below. The date(s) that the stream was assessed are shaded.

Data from the WeatherUnderground.com
Cape Girardeau, MO

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Avg. Temp (°F)
9/29/2008	0.04	53.0	82.0	68.0
9/30/2008	0.00	46.0	73.0	62.0
10/1/2008	0.00	42.0	73.0	58.0
10/2/2008	0.01	41.0	68.0	54.0
10/3/2008	0.00	37.0	73.0	55.0
10/4/2008	0.01	42.0	77.0	58.0
10/5/2008	0.01	44.0	82.0	63.0
10/6/2008	0.00	55.0	84.0	68.0
10/7/2008	1.71	62.0	73.0	68.0
10/8/2008	0.00	48.0	72.0	60.0
10/9/2008	0.01	41.0	77.0	58.0

WBID # 2208

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10/9/08</u> <u>7:38</u>	Location Description (e.g., road crossing): <u>Outer Road Downstream</u> <u>(NW)</u>
Stream Name: <u>Cane Creek</u>	Facility Name(s): <u>Fruitland Dressed Meats / Frontier Food Mart</u> <u>Westbridge Place Subd / Bretz Subd</u>
Current Weather Conditions: <u>60° clear</u>	Permit Number(s): <u>MOG822098 MO0099759</u> <u>MO0100277 MO0057347</u>
Weather Conditions for Past 10 days: <u>attached</u>	
Official Drought Conditions at time of this survey (search DNR home page for "drought"): 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>1650265688</u>	Northing (UTM Y): <u>4147682</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>7</u> Meters
Site 11	Easting (UTM X): <u>1650265566</u>	Northing (UTM Y): <u>4147586</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>288</u>	<u>transect I</u> <u>Downstream</u>	<u>289</u>	<u>transect II</u> <u>UPstream</u>		
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 the 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.)				

Stream Name & WBID # Cane Creek 2208

Date of Survey 12/9/09

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

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 type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <i>Wooded, CRP field</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
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

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

% Cobble	<i>20</i> % Gravel	% Sand	<i>20</i> % Silt	<i>60</i> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

green film on top of water - no other vegetation present

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 checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other: <i>Green Scum</i>

*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 affect another use.

Stream Name & WBID # Cune Creek 2208

Date of Survey 10/9/08

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

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.)

Oxygen meter broke after this site assessment.

Site 2 and 3 have different site for water quality

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

Printed Names of Personnel Collecting Data: Abigail Lyon & Tannis Howell

Surveyor's Signature: *Abigail Lyon* Date of Survey: 10/9/08

Organization: ERCI Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Cane Creek</u>	Waterbody ID: <u>2208</u>	Site #: <u>1</u>	Dissolved Oxygen	
Estimated Channel Incision: <u>0.1</u> (m) (height between low bank width and water)			Date: <u>10/9/2008</u>	Time: <u>7:38</u>
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM)			Dissolved Oxygen: <u>2.85</u> (mg/L)	
01 UTM X <u>16S0265688</u>	UTM Y: <u>4147682</u>	+/- <u>7</u> (meters)	Dissolved Oxygen: <u>29.4</u> (% sat)	
11 UTM X <u>16S0265566</u>	UTM Y: <u>4147586</u>	+/- <u>6</u> (meters)	Specific Cond: <u>822</u> (µS/cm)	
Average Stream Width: <u>0.9</u> (meters)		Length of Survey Segment: <u>150</u> (meters)	Water Temperature: <u>16.2</u> (°C)	
(To determine Length of Reach)			(20x average stream width)	
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>				

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	0
1	0.08	0.13	0.08	0.03	0.085	0.03	0.05	0.02	0.16	0.06	0.11	0.04	0.13	0.06	0.09	0.03	0.11	0.02	0.07	0.02	0.07	0.05
2	0.16	0.16	0.16	0.05	0.17	0.06	0.1	0.02	0.32	0.08	0.22	0.07	0.26	0.11	0.18	0.03	0.22	0.06	0.14	0.04	0.14	0.06
3	0.24	0.18	0.24	0.08	0.255	0.07	0.15	0.02	0.48	0.08	0.33	0.07	0.39	0.15	0.27	0.02	0.33	0.09	0.21	0.05	0.21	0.1
4	0.32	0.19	0.32	0.11	0.34	0.09	0.2	0.03	0.64	0.09	0.44	0.11	0.52	0.16	0.36	0.01	0.44	0.1	0.28	0.06	0.28	0.09
5	0.4	0.2	0.4	0.14	0.425	0.1	0.25	0.03	0.8	0.1	0.55	0.13	0.65	0.17	0.45	0	0.55	0.1	0.35	0.07	0.35	0.07
6	0.48	0.21	0.48	0.15	0.51	0.1	0.3	0.03	0.96	0.11	0.66	0.14	0.78	0.14	0.54	0	0.66	0.1	0.42	0.07	0.42	0.06
7	0.56	0.21	0.56	0.16	0.595	0.08	0.35	0.02	1.12	0.09	0.77	0.15	0.91	0.14	0.63	0.01	0.77	0.08	0.49	0.06	0.49	0.07
8	0.64	0.19	0.64	0.16	0.68	0.07	0.4	0.02	1.28	0.08	0.88	0.12	1.04	0.1	0.72	0.02	0.88	0.07	0.56	0.04	0.56	0.06
9	0.72	0.16	0.72	0.13	0.765	0.05	0.45	0.02	1.44	0.09	0.99	0.06	1.17	0.07	0.81	0.02	0.99	0.07	0.63	0.02	0.63	0.03
Right Bank	0.8	0	0.8	0	0.85	0	0.5	0	1.6	0	1.1	0	1.3	0	0.9	0	1.1	0	0.7	0	0.7	0
Feature Type <small>(riffle, run, or pool)</small>	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 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/9/2008

WBID # 2208

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10/9/08</u>	Location Description (e.g., road crossing): <u>Downstream at Co Rd 435</u>
Stream Name: <u>Cane Creek</u>	
Current Weather Conditions: <u>60° clear</u>	Facility Name(s): <u>Fruitland Dressed Meats Frontier Food Mart Westbridge Plaza Subd Bretz Subd</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MDG882098 M00099759 M00100277 M00057347</u>
Official Drought Conditions at time of this survey (search DNR home page for "drought"): 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>11650264234</u>	Northing (UTM Y): <u>4147109</u>	Horizontal Accuracy: (EPE) FOM / PDOP <u>6</u> Meters
Site 11	Easting (UTM X): <u>11650264181</u>	Northing (UTM Y): <u>4146960</u>	Horizontal Accuracy: (EPE) FOM / PDOP <u>6</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>290</u>	<u>transect I Downstream</u>	<u>291</u>	<u>transect II upstream</u>		
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 the 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.)				

Stream Name & WBID # Cane Creek 2208

Date of Survey 10/9/08

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

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 type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Pasture</u>				

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
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

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

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

60-70% Algae mats on bedrock
filamentous 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 type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
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 checked="" 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 affect another use.

Stream Name & WBID # Cane Creek 2208

Date of Survey 10/9/08

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

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.)

- On data sheet C, GPS + depth measurements were taken on 10/9/08 08:21

- DO measurements taken on 10/15/08 @ 12:01 because DO meter broke on 10/9/08

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

Printed Names of Personnel Collecting Data: Abby Lynn & Travis R. Howell

Surveyor's Signature: Travis R. Howell Date of Survey: 10-9-08

Organization: ERC Position: Field Crew

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Cane Creek</u> Waterbody ID: <u>2208</u> Site #: <u>2</u> Estimated Channel Incision: <u>0.1</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM) 01 UTM X <u>16S0264234</u> UTM Y: <u>4147109</u> +/- <u>6</u> (meters) 11 UTM X <u>16S0264181</u> UTM Y: <u>4146960</u> +/- <u>6</u> (meters) 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>Abby Lynn and Travis Howell (AL & TH)</u> (10/9/08 at 08:21)	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>10/15/2008</u> Time: <u>12:01</u> Dissolved Oxygen: <u>10.42</u> (mg/L) Dissolved Oxygen: <u>118.8</u> (% sat) Specific Cond: <u>475</u> (µS/cm) Water Temperature: <u>21.8</u> (°C)
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Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Station	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Left Bank																						
1	0.81	0.02	0.46	0.07	0.15	0.06	0.41	0.17	0.31	0.06	0.4	0.07	0.47	0.1	0.41	0.09	0.57	0.08	0.46	0.02	0.58	0.06
2	1.62	0.03	0.92	0.06	0.3	0.06	0.82	0.21	0.62	0.06	0.8	0.09	0.94	0.05	0.82	0.08	1.14	0.1	0.92	0.06	1.16	0.1
3	2.43	0.09	1.38	0.03	0.45	0.05	1.23	0.25	0.93	0.03	1.2	0.08	1.41	0.05	1.23	0.08	1.71	0.1	1.38	0.08	1.74	0.06
4	3.24	0.02	1.84	0.04	0.6	0.05	1.64	0.18	1.24	0.01	1.6	0.08	1.88	0.03	1.64	0.15	2.28	0.05	1.84	0.05	2.32	0.06
5	4.05	0.04	2.3	0.02	0.75	0.05	2.05	0.25	1.55	0.02	2	0.08	2.35	0.1	2.05	0.12	2.85	0.11	2.3	0.04	2.9	0.09
6	4.86	0.04	2.76	0.02	0.9	0.06	2.46	0.24	1.86	0.03	2.4	0.08	2.82	0.03	2.46	0.13	3.42	0.04	2.76	0.08	3.48	0.1
7	5.67	0.03	3.22	0.03	1.05	0.02	2.87	0.26	2.17	0.03	2.8	0.08	3.29	0.03	2.87	0.15	3.99	0.06	3.22	0.1	4.06	0.08
8	6.48	0.03	3.68	0.03	1.2	0.11	3.28	0.2	2.48	0.03	3.2	0.07	3.76	0.03	3.28	0.22	4.56	0.07	3.68	0.1	4.64	0.04
9	7.29	0.04	4.14	0.01	1.35	0.12	3.69	0.18	2.79	0.03	3.6	0.06	4.23	0.06	3.69	0.2	5.13	0.03	4.14	0.07	5.22	0.03
Right Bank																						
8.1	0	4.6	0	1.5	0	4.1	0	3.1	0	4	0	4.7	0	4.1	0	5.7	0	4.6	0	5.8	0	
Feature Type	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 0.1 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/9/2008

WBID # 2208

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10/9/08 09:40</u>	Location Description (e.g., road crossing): <u>Downstream off Co Rd 436</u>
Stream Name: <u>Cane Creek</u>	
Current Weather Conditions: <u>63° clear</u>	Facility Name(s): <u>Fruitland Dressed Meats Frontier Foods Mart Westbridge Place Subd. Aretz Subd</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MO0822098 MO0099759 MO0100277 MO0057347</u>
Official Drought Conditions at time of this survey (search DNR home page for "drought"): 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>1650263314</u>	Northing (UTM Y): <u>4146106</u>	Horizontal Accuracy: <u>(EPE / FOM / PDOP) 4</u> Meters
Site 11	Easting (UTM X): <u>1650263184</u>	Northing (UTM Y): <u>4145974</u>	Horizontal Accuracy: <u>(EPE / FOM / PDOP) 6</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>293</u>	<u>transect II upstream</u>	<u>294</u>	<u>transect I downstream</u>		
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 the 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.)				

Stream Name & WBID # Cane Creek 2208

Date of Survey 10/9/08

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

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 type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

Wooded, Private road next to stream

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
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

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

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	<u>100</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

70-80% Algae on bedrock - slippery

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 checked="" 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 checked="" 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 affect another use.

Stream Name & WBID # Cane Creek 2208

Date of Survey 10/9/08

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

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.)

- Private road runs along creek from ^{WT}T4 - T11
 (no picture taken because no paths to stream nor does the road cross the stream)

- On Data sheet C - GPS pts + depth measurements taken on 10/9/08 at 09:40

- DO measurements taken on 10/15/08 at 12:12

- DO meter broken 10/9/08

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

Printed Names of Personnel Collecting Data: Abigail Lynn + Travis Howell

Surveyor's Signature: Abigail Lynn Date of Survey: 10/9/08

Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Cane Creek</u> Waterbody ID: <u>2208</u> Site #: <u>3</u> Estimated Channel Incision: <u>0.3</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM) 01 UTM X <u>16S0263314</u> UTM Y: <u>4146106</u> +/- <u>4</u> (meters) 11 UTM X <u>16S0263184</u> UTM Y: <u>4145974</u> +/- <u>6</u> (meters) Average Stream Width: <u>8.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u> (10/9/2008 at 9:40)	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>10/15/2008</u> Time: <u>12:12</u> Dissolved Oxygen: <u>15.67</u> (mg/L) Dissolved Oxygen: <u>182.9</u> (% sat) Specific Cond: <u>430</u> (µS/cm) Water Temperature: <u>23.08</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)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1	0.56	0.01	0.48	0.01	0.79	0.12	0.87	0.2	0.95	0.16	0.98	0.15	0.75	0.19	0.68	0.03	0.63	0.01	0.83	0.12	0.77	0.09
	2	1.12	0.01	0.96	0.02	1.58	0.14	1.74	0.16	1.9	0.18	1.96	0.15	1.5	0.17	1.36	0.05	1.26	0.02	1.66	0.14	1.54	0.1
	3	1.68	0.03	1.44	0.04	2.37	0.16	2.61	0.1	2.85	0.24	2.94	0.123	2.25	0.19	2.04	0.07	1.89	0.01	2.49	0.13	2.31	0.23
	4	2.24	0.03	1.92	0.03	3.16	0.16	3.48	0.12	3.8	0.22	3.92	0.12	3	0.16	2.72	0.08	2.52	0.04	3.32	0.11	3.08	0.12
	5	2.8	0.04	2.4	0.05	3.95	0.19	4.35	0.14	4.75	0.21	4.9	0.12	3.75	0.16	3.4	0.07	3.15	0.04	4.15	0.06	3.85	0.14
	6	3.36	0.05	2.88	0.03	4.74	0.22	5.22	0.17	5.7	0.2	5.88	0.11	4.5	0.15	4.08	0.08	3.78	0.05	4.98	0.12	4.62	0.16
	7	3.92	0.07	3.36	0.05	5.53	0.18	6.09	0.14	6.65	0.2	6.86	0.08	5.25	0.14	4.76	0.12	4.41	0.06	5.81	0.14	5.39	0.16
	8	4.48	0.08	3.84	0.05	6.32	0.16	6.96	0.05	7.6	0.2	7.84	0.08	6	0.12	5.44	0.06	5.04	0.04	6.64	0.14	6.16	0.17
	9	5.04	0.03	4.32	0.04	7.11	0.07	7.83	0.05	8.55	0.17	8.82	0.11	6.75	0.1	6.12	0.06	5.67	0.06	7.47	0.14	6.93	0.18
Right Bank		5.6	0	4.8	0	7.9	0	8.7	0	9.5	0	9.8	0	7.5	0	6.8	0	6.3	0	8.3	0	7.7	0
Feature Type <small>(riffle, run, or pool)</small>		Run		Run		Run		Run		Run		Run		Run		Run		Run		Run		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 0.1 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/9/2008



