



Use Attainability Analysis

for

WBID 1057 Little Bear 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):	Little Bear Creek
Missouri Water Body Identification (WRID) Number:	1057
8-digit HUC: 1029011	County: Miller
Upstream Legal Description (from Table H):	25.40N, 15W
Downstream Legal Description (from Table H):	Mouth
Number of sites evaluated:	3
List all sites numbers, listed consequently upstream to downstream:	1, 2, + 3

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):
East Hwy 42 Business Park MO 0128520
Palace Lane Estates MHP MO 0106992
School of Osage RII HS MO 014388
Brookview Apts / Osage Beach MO 0103896

III. UAA Surveyor (please print legibly)

Name of Surveyor	Robert Bacon	Telephone Number:	(573) 634-7078
Organization/Employer:	CRC		

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

Signed: Robert Bacon Date: 10/26/07

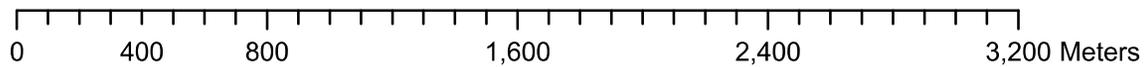
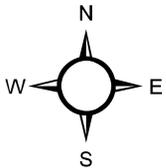
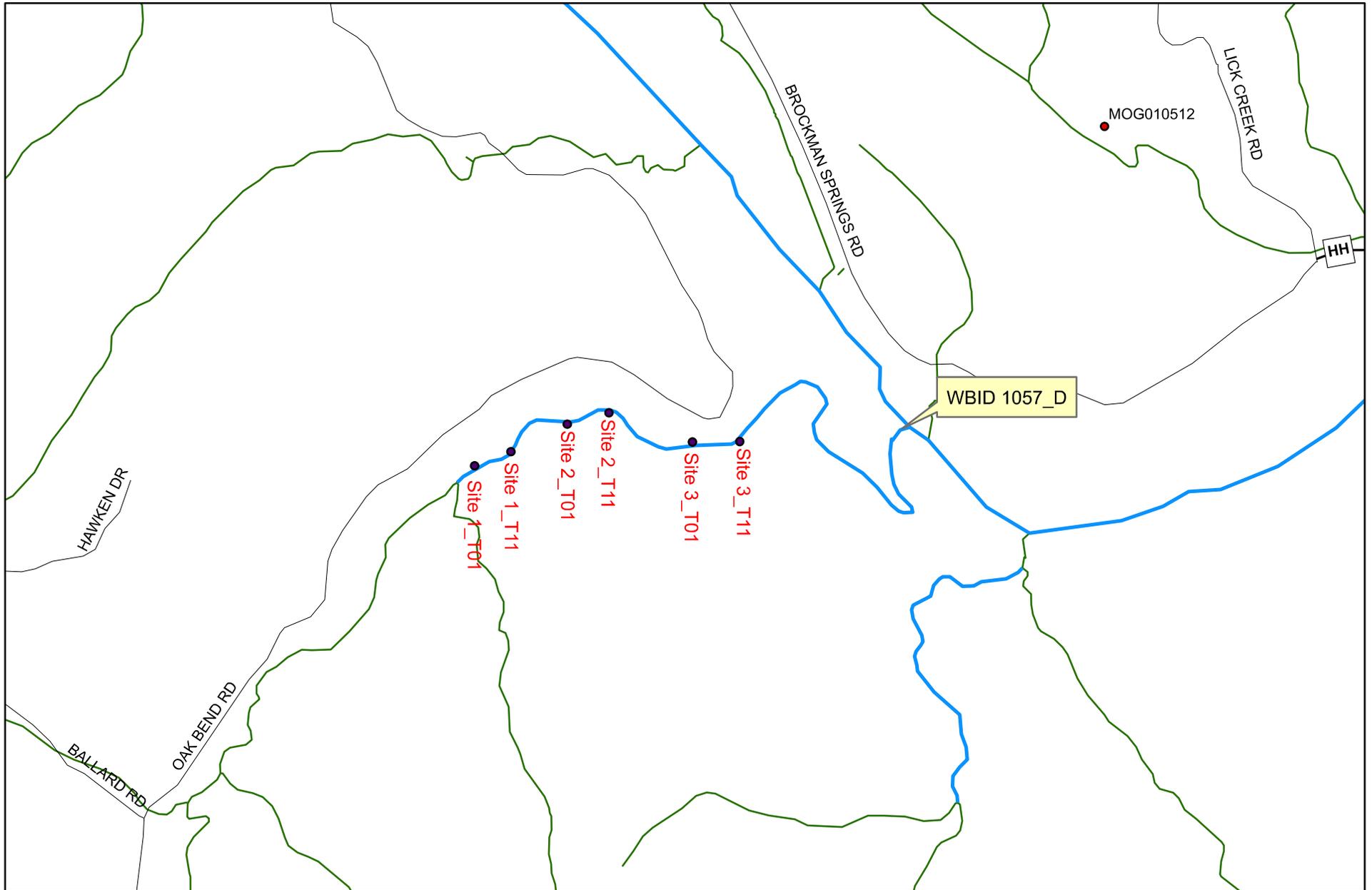
Weather Conditions

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 Weather Underground.com
Kaiser, MO

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Avg. Temp (°F)
10/16/2007	0.00	51	71	61
10/17/2007	0.01	55	73	64
10/18/2007	0.00	57	77	67
10/19/2007	0.00	53	66	60
10/20/2007	0.00	42	82	62
10/21/2007	0.00	64	84	74
10/22/2007	0.09	46	64	55
10/23/2007	0.00	42	60	51
10/24/2007	0.00	46	59	52
10/25/2007	0.00	35	57	46
10/26/2007	0.02	46	51	48

WBID 1057 Little Bear Creek - Miller County



WBID # 1057Site # 01**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization**

(must be completed for each site)

Date & Time: <u>10-26-07 10:23</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>Rob Brown & Matt Nelson</u>	<u>Upstream of site 2, East of Oak Bend Rd.</u>
Current Weather Conditions: <u>light drizzle 50°F</u>	Facility Name: <u>East Hwy 42 Business Park / Palace Lane Station MHP</u> <u>School of Orange Beach / Proseguis Apartments / Orange Beach</u>
Weather Conditions for Past 10 days: <u>see table</u>	Permit Number: <u>MO0128520 MO0106992 MO0104389</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"/> <u>MO0103876</u>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1530539935</u>	Northing (UTM Y): <u>42272651</u>	Horizontal Accuracy: <u>(EPE) / FOM / PDOP</u>	<u>7</u>	Meters
Site 11	Easting (UTM X): <u>1530540093</u>	Northing (UTM Y): <u>4227314</u>	Horizontal Accuracy: <u>(EPE) / FOM / PDOP</u>	<u>9</u>	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>I107-T01</u>	<u>Downstream View</u>	<u>I106-T11</u>	<u>Upstream View</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 # 1057Site # 1**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:

Wooded Area d fieldPermission to access stream granted by landowner**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:

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

<u>35</u> % Cobble	<u>65</u> % Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

<u>Approx. 10% aquatic vegetation</u>

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 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 # 1057

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: Matt Neban Date of Survey: 10-26-07

Organization: Environmental Resources Coalition Position: Field Technician

I107 @ T01 down stream
I108 @ T11 up

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

Waterbody ID: <u>1057</u> Site #: <u>01</u> Estimated Channel Incision: <u>.20</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>1520521925</u> UTM Y: <u>4227651</u> +/- <u>2</u> (meters) 067 11 UTM X: <u>1520540097</u> UTM Y: <u>4227214</u> +/- <u>9</u> (meters) 068 Average Stream Width: <u>6.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Bob Bacon and Kirk Nelson</u>	Dissolved Oxygen Date: <u>10-26-07</u> Time: <u>1023</u> Dissolved Oxygen: <u>8.35</u> (mg/L) Dissolved Oxygen: <u>80.1</u> (% sat) Specific Cond: <u>436</u> (µS/cm) Water Temperature: <u>13.46</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	0
1		.66	.01	.57	.02	.40	.13	.32	.15	.29	.21	.25	.04	.39	.01	1.02	.27	1.10	.22	1.09	.11	.55	.14
2		1.32	.06	1.14	0	.80	.16	1.44	.12	1.68	.20	.52	.07	.78	.01	2.06	.21	2.20	.23	2.16	.03	1.19	.24
3		1.98	.05	1.71	.03	1.20	.25	2.16	.10	2.52	.21	.78	.10	1.17	.02	3.09	.03	3.20	.25	3.24	0	1.77	.26
4		2.64	.10	2.28	.01	1.60	.29	2.88	.50	3.36	.27	1.04	.09	1.56	.10	4.12	0	4.40	.23	4.32	.01	2.36	.31
5		3.30	.16	2.85	.03	2.00	.22	3.60	.50	4.20	.31	1.30	.11	1.95	.10	5.15	.09	5.50	.25	5.40	.01	2.95	.31
6		3.96	.23	3.42	.03	2.40	.16	4.32	.32	5.04	.30	1.55	.15	2.34	.09	6.18	.14	6.60	.19	6.48	.02	3.54	.26
7		4.62	.32	3.99	.03	2.80	.13	5.04	.24	5.88	.31	1.82	.15	2.73	.09	7.12	.21	7.70	.19	7.56	.07	4.12	.26
8		5.28	.33	4.56	.02	3.20	.13	5.76	.17	6.72	.25	2.08	.15	3.12	.08	8.24	.25	8.80	.15	8.64	.10	4.72	.27
9		5.94	.30	5.13	.02	3.60	.11	6.48	.11	7.56	.19	2.24	.13	3.51	.03	9.24	.13	9.90	.15	9.72	.08	5.21	.21
Right Bank		6.60	0	5.70	0	4.00	0	7.20	0	8.40	0	2.60	0	3.90	0	10.20	0	11.00	0	10.80	0	5.90	0
Feature Type		run		riffle		run		pool		run		riffle		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 >)
All measurements to be taken to the nearest 0.01 meter.

Signed: Bob A Bacon Date: 10-26-07

WBID # 1057Site # 02**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization**

(must be completed for each site)

Date & Time: <u>10-26-07</u> <u>11:16</u>	Site Location Description (e.g., road crossing): <u>downstream (ca 200m) of site 1 - east of Oak Bend road</u>
Personnel (Data Collectors): <u>Bob B. and Matt N</u>	
Current Weather Conditions: <u>1:44 drizzle, 50%</u>	Facility Name: <u>East Hwy 42 Business Park / Palace Laundry Station and School of Design & Art / Academics / Arts / 2549 2549 2549</u>
Weather Conditions for Past 10 days: <u>see table</u>	Permit Number: <u>MO 028520 MO 010692 MO 0104588</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"/> <u>MO 0103896</u>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1520540249</u>	Northing (UTM Y): <u>4227827</u>	Horizontal Accuracy: (EPE) FOM / PDOP	<u>4</u>	Meters
Site 11	Easting (UTM X): <u>1520540520</u>	Northing (UTM Y): <u>4227191</u>	Horizontal Accuracy: (EPE) FOM / PDOP	<u>8</u>	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>I 109</u>	<u>downstream view @ +01</u>	<u>I 110</u>	<u>upstream view @ -11</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 # 1057

Site # 02

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: - woods				

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: Gravel Mining				

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

5 % Cobble	95 % Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

~20% cover of stream

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 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 # 1057

Site # 02

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:  Date of Survey: 10-26-2007

Organization: ERC Position: Field Manager

I 109 T01 down
I 110 T11 up

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>1057</u> Site #: <u>07</u> Estimated Channel Incision: <u>.15</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>153 0540349</u> UTM Y: <u>4227827</u> +/- <u>4</u> (meters) <u>069</u> 11 UTM X: <u>153 0540336</u> UTM Y: <u>4227828</u> +/- <u>8</u> (meters) <u>070</u> Average Stream Width: <u>6.0</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Bob Bevan and Matt Nelson</u>	<b style="text-align: center;">Dissolved Oxygen Date: <u>10-26-07</u> Time: <u>11:16</u> Dissolved Oxygen: <u>7.05</u> (mg/L) Dissolved Oxygen: <u>69.0</u> (% sat) Specific Cond: <u>448</u> (µS/cm) Water Temperature: <u>14.31</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		.41	.08	.80	.11	.77	.05	.39	.05	.47	.03	.57	.05	.42	.09	.20	.06	.90	.09	.90	.17	.27	.04
2		.82	.18	1.60	.13	1.54	.08	.78	.11	.94	.05	1.14	.12	.84	.11	.60	.07	1.80	.10	1.80	.14	.54	.04
3		1.23	.25	2.40	.27	2.31	.08	1.17	.10	1.41	.02	1.71	.12	1.26	.12	.90	.08	2.70	.07	2.70	.06	.81	.06
4		1.64	.34	3.20	.32	3.08	.12	1.56	.08	1.88	.07	2.28	.11	1.68	.11	1.20	.10	3.60	.03	3.60	.10	1.08	.07
5		2.05	.42	4.00	.38	3.85	.14	1.95	.08	2.35	.05	2.85	.14	2.10	.08	1.50	.12	4.50	.05	4.50	.11	1.25	.07
6		2.46	.48	4.80	.41	4.62	.14	2.34	.14	2.82	.05	3.42	.14	2.52	.07	1.80	.10	5.40	.07	5.40	.09	1.62	.12
7		2.87	.56	5.60	.50	5.39	.14	2.73	.17	3.29	.04	3.99	.12	2.94	.04	2.10	.09	6.30	.13	6.30	.08	1.89	.14
8		3.28	.62	6.40	.49	6.16	.07	3.12	.17	3.76	.07	4.56	.15	3.36	.02	2.40	.07	7.20	.12	7.20	.01	2.36	.11
9		3.69	.62	7.20	.23	6.93	.10	3.51	.18	4.23	.06	5.13	.16	3.78	.01	2.70	.05	8.10	.06	8.10	.04	2.43	.07
Right Bank		4.10	0	8.20	0	7.70	0	3.90	0	4.70	0	5.70	0	4.20	0	3.00	0	9.00	0	9.60	0	2.70	0
Feature Type		run		run		run		run		riffle		run		riffle									

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width.
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten).
 Mark dry depth measurements as 0; record aerial 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: Bob Bevan Date: 10-26-07

WBID # 1057

Site # 03

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10-26-07 12:05</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>Bob Bacon & Matt Noha</u>	<u>Downstream of site #2 E of Oak Bend Rd.</u>
Current Weather Conditions: <u>Light Drizzle, 50°F</u>	Facility Name: <u>East Hwy 42 Business Park / Palace Lane Estates / NWP School of Orange Hill HS / Brockton Lp / Orange Bend</u>
Weather Conditions for Past 10 days: <u>see table</u>	Permit Number: <u>MO 0123520 MO 0106992 MO 0104388</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"/> <u>MO 0103896</u>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>15 0540910</u>	Northing (UTM Y): <u>4227757</u>	Horizontal Accuracy: (EPE/ FOM / PDOP)	<u>5</u>	Meters
Site 11	Easting (UTM X): <u>15 0541122</u>	Northing (UTM Y): <u>4227759</u>	Horizontal Accuracy: (EPE/ FOM / PDOP)	<u>7</u>	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>I111-T01</u>	<u>Downstream View</u>	<u>I112-T11</u>	<u>Upstream View</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 # 1057

Site # 03

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

Comments:

Surrounding woods & open field

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

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

Comments / Other:

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

% Cobble	<u>95</u>	% Gravel	<u>5</u>	% Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Approx 35% channel coverage

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 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 # 1057

Site # 03

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: Matt Nebe Date of Survey: 10-26-07

Organization: ERC Position: Field Tech.

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

I11 @ T01 down
 I12 @ T11 up

Waterbody ID: <u>1052</u> Site #: <u>03</u> Estimated Channel Incision: <u>.20</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EP3 / PDOP / FOM) 01 UTM X: <u>1530542910</u> UTM Y: <u>42277257</u> +/- <u>5</u> (meters) <u>071</u> 11 UTM X: <u>1530541122</u> UTM Y: <u>42277259</u> +/- <u>7</u> (meters) <u>072</u> Average Stream Width: <u>6.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Bob Bacon & Mill Nelson</u>	Dissolved Oxygen Date: <u>10-26-07</u> Time: <u>12:05</u> Dissolved Oxygen: <u>6.67</u> (mg/L) Dissolved Oxygen: <u>65.5</u> (% sat) Specific Cond: <u>438</u> (µS/cm) Water Temperature: <u>14.52</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	0
1	.40	.21	.76	.16	.27	.08	.63	.17	.87	.15	.35	.07	.36	.02	.28	.04	.49	.03	.65	.04	.89	.18
2	.80	.24	1.52	.24	.54	.12	1.26	.30	1.74	.25	.70	.10	.72	.06	.56	.06	.98	.05	1.30	.03	1.78	.27
3	1.20	.24	2.28	.31	.81	.11	1.89	.43	2.61	.39	1.05	.11	1.08	.09	.84	.10	1.47	.07	1.95	.09	2.67	.28
4	1.60	.26	3.04	.23	1.08	.10	2.52	.56	3.48	.47	1.40	.12	1.44	.07	1.12	.12	1.96	.12	2.60	.21	3.56	.25
5	2.00	.19	3.80	.43	1.35	.08	3.15	.61	4.35	.56	1.75	.11	1.80	.07	1.40	.14	2.45	.17	3.25	.32	4.45	.21
6	2.40	.19	4.56	.43	1.62	.11	3.78	.67	5.22	.48	2.10	.10	2.16	.06	1.68	.16	2.94	.19	3.90	.26	5.34	.15
7	2.80	.15	5.32	.31	1.89	.19	4.41	.74	6.09	.47	2.45	.10	2.52	.04	1.96	.12	3.43	.19	4.55	.22	6.73	.13
8	3.20	.10	6.08	.28	2.16	.18	5.04	.58	6.96	.42	2.80	.10	2.88	.06	2.24	.16	3.92	.07	5.20	.12	7.12	.07
9	3.60	.06	6.84	.15	2.70	.12	5.67	.40	7.83	.37	3.15	.06	3.24	.05	2.52	.09	4.41	.07	5.85	.08	8.01	.08
Right Bank	4.00	0	7.60	0	2.70	0	6.30	0	8.70	0	3.50	0	3.60	0	2.80	0	4.90	0	6.50	0	8.50	0
Feature Type <small>(riffle, run, or pool)</small>	run		run		run		pool		pool		run		riffle		run		run		run		run	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). The width is the wetted width.
 GPS location 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: Bob Bacon Date: 10-26-07

WBID# 1057 Little Bear Creek



Site# 1 Photo ID# T01-I-107 Downstream



Site# 1 Photo ID# T11-I-108 Upstream



Site# 2 Photo ID# T-01-I-109 Downstream



Site# 2 Photo ID# T11-I-110 Upstream

WBID# 1057 Little Bear Creek



Site# 3 Photo ID# T01-I-111 Downstream



Site# 3 Photo ID# T-11-I-112 Upstream