



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0139 Long Branch

Submitted by

MEC Water Resources

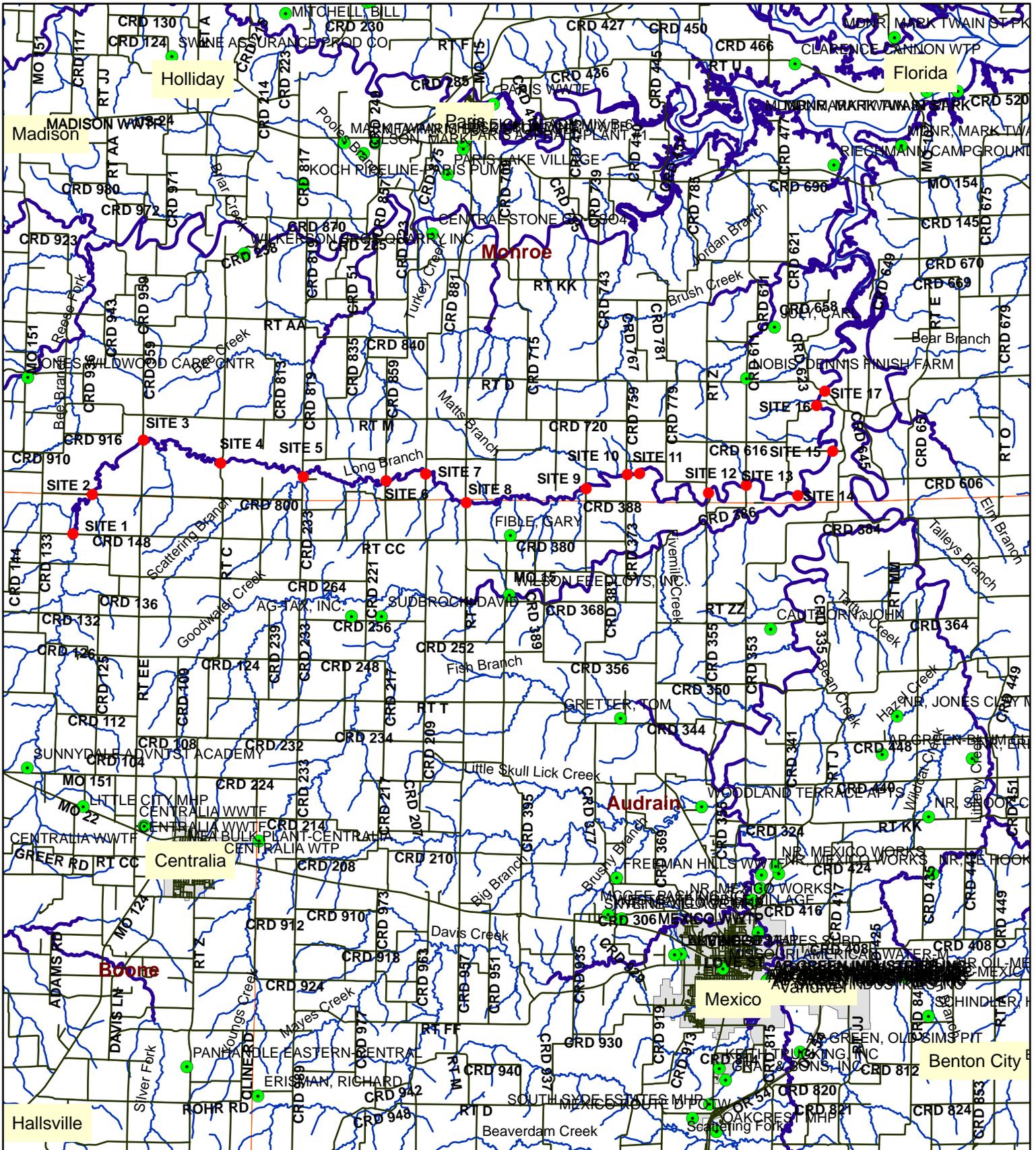
To

Missouri Department of Natural Resources

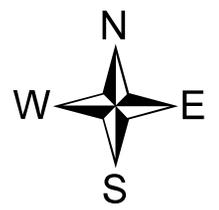
Water Protection Program

On

May 29, 2008



**Long Branch
WBID 0139
Audrain County**



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: 4/30/08 15:45	Location Description (e.g., road crossing):
Stream Name: Long Branch	County Rd. 148 crossing
Current Weather Conditions: sunny and clear	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0569865	Northing (UTM Y): 4353623	Horizontal Accuracy: (EPE / FOM / PDOP) 23 feet
Site 11	Easting (UTM X): 0569839	Northing (UTM Y): 4353733	Horizontal Accuracy: (EPE / FOM / PDOP) 25 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3016	upstream	3017	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 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.)				

Site # 01

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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: Private property Field				

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

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

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

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

none

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 affect another use.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 01</u> Estimated Channel Incision: <u>0.10</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>569865</u> UTM Y: <u>4353623</u> +/- <u>23</u> (feet) 11 UTM X: <u>569839</u> UTM Y: <u>4353733</u> +/- <u>25</u> (feet) Average Stream Width: <u>7.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	Dissolved Oxygen Date: <u>4/30/2008</u> Time: <u>15:45</u> Dissolved Oxygen: <u>6.47</u> (mg/L) Dissolved Oxygen: <u>66.0</u> (% sat) Specific Cond: <u>306.0</u> (µS/cm) Water Temperature: <u>16.1</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	0
1	0.92	0.51	0.68	0.31	0.75	0.43	0.80	0.46	0.63	0.09	0.63	0.15	0.70	0.30	0.81	0.42	0.79	0.23	0.80	0.40	0.72	0.38
2	1.84	0.51	1.36	0.46	1.50	1.00	1.60	0.61	1.26	0.26	1.26	0.24	1.40	0.40	1.62	0.83	1.58	0.27	1.60	0.76	1.44	0.47
3	2.76	0.47	2.04	0.54	2.25	>1.00	2.40	0.92	1.89	0.32	1.89	0.37	2.10	0.48	2.43	>1.00	2.37	0.31	2.40	1.00	2.16	0.60
4	3.68	0.46	2.72	0.48	3.00	0.99	3.20	>1.00	2.52	0.42	2.52	0.45	2.80	0.70	3.24	>1.00	3.16	0.50	3.20	>1.00	2.88	0.61
5	4.60	0.46	3.40	0.66	3.75	0.96	4.00	>1.00	3.15	0.55	3.15	0.61	3.50	0.95	4.05	>1.00	3.95	0.61	4.00	0.75	3.60	0.52
6	5.52	0.51	4.08	0.68	4.50	0.71	4.80	0.93	3.78	0.63	3.78	0.70	4.20	0.99	4.86	>1.00	4.74	0.60	4.80	0.43	4.32	0.43
7	6.44	0.48	4.76	0.59	5.25	0.62	5.60	0.67	4.41	0.60	4.41	0.89	4.90	>1.00	5.67	0.89	5.53	0.48	5.60	0.02	5.04	0.31
8	7.36	0.40	5.44	0.52	6.00	0.41	6.40	0.41	5.04	0.50	5.04	0.78	5.60	>1.00	6.48	0.61	6.32	0.52	6.40	0.02	5.76	0.24
9	8.28	0.21	6.12	0.30	6.75	0.12	7.20	0.36	5.67	0.33	5.67	0.58	6.30	0.62	7.29	0.39	7.11	0.28	7.20	0.02	6.48	0.13
Right Bank	9.20	0.00	6.80	0.00	7.50	0.00	8.00	0.00	6.30	0.00	6.30	0.00	7.00	0.00	8.10	0.00	7.90	0.00	8.00	0.00	7.20	0.00
Feature Type <small>(riffle, run, or pool)</small>	Pool																					

rwc

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: _____ Date: _____

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: 4/30/08 14:55	Location Description (e.g., road crossing):
Stream Name: Long Branch	County Rd. 900 crossing
Current Weather Conditions: sunny and clear	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0570648	Northing (UTM Y): 4355214	Horizontal Accuracy: (EPE / FOM / PDOP) 26 feet
Site 11	Easting (UTM X): 0570731	Northing (UTM Y): 4355382	Horizontal Accuracy: (EPE / FOM / PDOP) 31 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3013	upstream	3014	downstream	3015	Man-made dam/riffle and access at Transect 10
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at 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.)				

Site # 02

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 checked="" 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: Private property Field				

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

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

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

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

none

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 affect another use.

Site # 02

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.)

Numerous tree branches in water

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik and Renee Martin

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 02</u> Estimated Channel Incision: <u>0.10</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>570648</u> UTM Y: <u>4355214</u> +/- <u>26</u> (feet) 11 UTM X: <u>570731</u> UTM Y: <u>4355382</u> +/- <u>31</u> (feet) Average Stream Width: <u>9.5</u> (meters) Length of Survey Segment: <u>190</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	Dissolved Oxygen Date: <u>4/30/2008</u> Time: <u>14:55</u> Dissolved Oxygen: <u>7.14</u> (mg/L) Dissolved Oxygen: <u>75.4</u> (% sat) Specific Cond: <u>282.0</u> (µS/cm) Water Temperature: <u>16.8</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	1.02	0.33	1.10	0.43	0.95	0.44	1.01	0.27	0.85	0.13	0.91	0.28	0.90	0.52	1.03	0.19	1.20	0.19	0.68	0.02	0.48	0.13
2	2.04	0.50	2.20	0.69	1.90	0.74	2.02	0.39	1.70	0.39	1.82	0.47	1.80	0.64	2.06	0.54	2.40	0.36	1.36	0.02	0.96	0.25
3	3.06	0.44	3.30	0.92	2.85	0.79	3.03	0.27	2.55	0.44	2.73	0.77	2.70	0.51	3.09	0.38	3.60	0.44	2.04	0.08	1.44	0.27
4	4.08	0.44	4.40	>1.00	3.80	0.82	4.04	0.27	3.40	0.47	3.64	0.87	3.60	0.56	4.12	0.31	4.80	0.46	2.72	0.10	1.92	0.37
5	5.10	0.46	5.50	>1.00	4.75	0.79	5.05	0.27	4.25	0.71	4.55	0.92	4.50	0.50	5.15	0.34	6.00	0.51	3.40	0.06	2.40	0.39
6	6.12	0.59	6.60	>1.00	5.70	0.72	6.06	0.40	5.10	0.68	5.46	0.97	5.40	0.34	6.18	0.34	7.20	0.50	4.08	0.08	2.88	0.37
7	7.14	0.52	7.70	>1.00	6.65	0.73	7.07	0.61	5.95	0.89	6.37	0.95	6.30	0.52	7.21	0.31	8.40	0.64	4.76	0.10	3.36	0.31
8	8.16	0.42	8.80	0.77	7.60	0.50	8.08	0.53	6.80	0.86	7.28	0.78	7.20	0.52	8.24	0.18	9.60	0.63	5.44	0.13	3.84	0.28
9	9.18	0.26	9.90	0.46	8.55	0.34	9.09	0.33	7.65	0.45	8.19	0.44	8.10	0.26	9.27	0.13	10.80	0.38	6.12	0.06	4.32	0.25
Right Bank	10.20	0.00	11.00	0.00	9.50	0.00	10.10	0.00	8.50	0.00	9.10	0.00	9.00	0.00	10.30	0.00	12.00	0.00	6.80	0.00	4.80	0.00
Feature Type <small>(riffle, run, or pool)</small>	Pool		Run		Riffle		Run															

rwc

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: _____ Date: _____

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: 4/30/08 14:10	Location Description (e.g., road crossing):
Stream Name: Long Branch	County Rd. 959 crossing
Current Weather Conditions: sunny and clear	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0572706	Northing (UTM Y): 4357396	Horizontal Accuracy: (EPE / FOM / PDOP) 27 feet
Site 11	Easting (UTM X): 0572870	Northing (UTM Y): 4357336	Horizontal Accuracy: (EPE / FOM / PDOP) 45 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3011	upstream	3012	Downstream Fence		
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.)				

Site # 03

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: Private property Fields				

Evidence of Human Use*: (Attach photos and reference in “Photos” section.)

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

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

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

none

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 affect another use.

Site # 03

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.)

Numerous fallen trees in water

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik and Renee Martin

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 03</u> Estimated Channel Incision: <u>0.30</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>572706</u> UTM Y: <u>4357396</u> +/- <u>27</u> (feet) 11 UTM X: <u>572870</u> UTM Y: <u>4357336</u> +/- <u>45</u> (feet) Average Stream Width: <u>8.0</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	Dissolved Oxygen Date: <u>4/30/2008</u> Time: <u>14:10</u> Dissolved Oxygen: <u>7.86</u> (mg/L) Dissolved Oxygen: <u>78.7</u> (% sat) Specific Cond: <u>278.0</u> (µS/cm) Water Temperature: <u>15.3</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	0.55	0.34	0.98	0.41	0.92	0.21	0.95	0.80	1.00	0.26	0.55	0.23	0.72	0.47	0.75	0.37	0.92	0.26	0.56	0.38	0.69	0.55
2	1.10	0.36	1.96	0.48	1.84	0.27	1.90	>1.00	2.00	0.32	1.10	0.20	1.44	0.60	1.50	0.64	1.84	0.51	1.12	0.54	1.38	0.64
3	1.65	0.50	2.94	0.45	2.76	0.27	2.85	>1.00	3.00	0.27	1.65	0.24	2.16	0.54	2.25	0.75	2.76	0.58	1.68	0.60	2.07	0.58
4	2.20	0.34	3.92	0.33	3.68	0.19	3.80	>1.00	4.00	0.37	2.20	0.42	2.88	0.59	3.00	0.75	3.68	0.50	2.24	0.61	2.76	0.61
5	2.75	0.32	4.90	0.27	4.60	0.10	4.75	0.66	5.00	0.39	2.75	0.59	3.60	0.46	3.75	0.70	4.60	0.42	2.80	0.48	3.45	0.54
6	3.30	0.32	5.88	0.09	5.52	0.24	5.70	0.58	6.00	0.20	3.30	0.63	4.32	0.47	4.50	0.66	5.52	0.90	3.36	0.40	4.14	0.44
7	3.85	0.27	6.86	0.07	6.44	0.19	6.65	0.67	7.00	0.45	3.85	0.63	5.04	0.46	5.25	0.53	6.44	0.86	3.92	0.33	4.83	0.33
8	4.40	0.41	7.84	0.02	7.36	0.18	7.60	0.79	8.00	0.44	4.40	0.55	5.76	0.31	6.00	0.50	7.36	0.48	4.48	0.27	5.52	0.30
9	4.95	0.41	8.82	0.10	8.28	0.17	8.55	>1.00	9.00	0.36	4.95	0.46	6.48	0.17	6.75	0.39	8.28	0.30	5.04	0.20	6.21	0.13
Right Bank	5.50	0.00	9.80	0.00	9.20	0.00	9.50	>1.00	10.00	0.00	5.50	0.00	7.20	0.00	7.50	0.00	9.20	0.00	5.60	0.00	6.90	0.00
Feature Type <small>(riffle, run, or pool)</small>	Run		Run		Run		Pool															

rwc

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: _____ Date: _____

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: 4/30/08 13:25	Location Description (e.g., road crossing):
Stream Name: Long Branch	Rt. C crossing
Current Weather Conditions: sunny and clear	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0575818	Northing (UTM Y): 4356469	Horizontal Accuracy: (EPE / FOM / PDOP) 21 feet
Site 11	Easting (UTM X): 0575937	Northing (UTM Y): 4356500	Horizontal Accuracy: (EPE / FOM / PDOP) 32 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3009	downstream	3010	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at 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.)				

Site # 04

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: Private property Wooded area				

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

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

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

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

Sparse benthic 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 affect another use.

Site # 04

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.)

Numerous fallen trees in water

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

Printed Names of Personnel Collecting Data: _____ Jennifer Hrabik and Renee Martin _____

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 04</u> Estimated Channel Incision: <u>0.20</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>575818</u> UTM Y: <u>4356469</u> +/- <u>21</u> (feet) 11 UTM X: <u>575937</u> UTM Y: <u>4356500</u> +/- <u>32</u> (feet) Average Stream Width: <u>7.0</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>R. Martin and J. Hrabik</u>	Dissolved Oxygen Date: <u>4/30/2008</u> Time: <u>13:25</u> Dissolved Oxygen: <u>8.74</u> (mg/L) Dissolved Oxygen: <u>86.6</u> (% sat) Specific Cond: <u>264.0</u> (µS/cm) Water Temperature: <u>14.9</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	0.72	0.08	0.55	0.06	0.45	0.19	0.87	0.32	0.90	0.24	0.82	0.33	0.64	0.13	0.55	0.13	0.57	0.18	0.76	0.34	0.62	0.24
	2	1.44	0.15	1.10	0.23	0.90	0.34	1.74	0.58	1.80	0.61	1.64	0.40	1.28	0.17	1.10	0.36	1.14	0.25	1.52	0.54	1.24	0.40
	3	2.16	0.25	1.65	0.32	1.35	0.36	2.61	0.74	2.70	0.69	2.46	0.44	1.92	0.16	1.65	0.46	1.71	0.36	2.28	0.73	1.86	0.51
	4	2.88	0.26	2.20	0.34	1.80	0.32	3.48	0.62	3.60	0.62	3.28	0.43	2.56	0.19	2.20	0.59	2.28	0.52	3.04	0.86	2.48	0.61
	5	3.60	0.19	2.75	0.40	2.25	0.34	4.35	0.48	4.50	0.68	4.10	0.31	3.20	0.24	2.75	0.66	2.85	0.73	3.80	0.82	3.10	0.61
	6	4.32	0.13	3.30	0.41	2.70	0.31	5.22	0.50	5.40	0.68	4.92	0.23	3.84	0.24	3.30	0.65	3.42	0.79	4.56	0.64	3.72	0.53
	7	5.04	0.10	3.85	0.36	3.15	0.19	6.09	0.53	6.30	0.68	5.74	0.21	4.48	0.10	3.85	0.64	3.99	0.81	5.32	0.27	4.34	0.47
	8	5.76	0.10	4.40	0.27	3.60	0.06	6.96	0.46	7.20	0.61	6.56	0.21	5.12	0.22	4.40	0.59	4.56	0.80	6.08	0.27	4.96	0.46
	9	6.48	0.16	4.95	0.18	4.05	0.01	7.83	0.21	8.10	0.20	7.38	0.06	5.76	0.28	4.95	0.45	5.13	0.73	6.84	0.10	5.58	0.32
Right Bank		7.20	0.00	5.50	0.00	4.50	0.00	8.70	0.00	9.00	0.00	8.20	0.00	6.40	0.00	5.50	0.00	5.70	0.17	7.60	0.00	6.20	0.00
Feature Type		Run		Run		Run		Run		Pool		Pool		Pool		Pool		Run		Run		Run	

rwc

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: _____ Date: _____

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: 4/30/08 12:30	Location Description (e.g., road crossing):
Stream Name: Long Branch	County Rd. 819 crossing
Current Weather Conditions: sunny and clear	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0579143	Northing (UTM Y): 4355922	Horizontal Accuracy: (EPE / FOM / PDOP) 25 feet
Site 11	Easting (UTM X): 0579233	Northing (UTM Y): 4356048	Horizontal Accuracy: (EPE / FOM / PDOP) 18 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3007	Upstream Low water crossing	3008	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 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.)				

Site # 05

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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: Private property Pasture/field				

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

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

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

10% Cobble	20% Gravel	70% Sand	-% Silt	-% Mud/Clay	-% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Sparse benthic 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 affect another use.

Site # 05

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.)

Numerous fallen trees in water

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik and Renee Martin

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

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

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 05</u> Estimated Channel Incision: <u>0.20</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>579143</u> UTM Y: <u>4355922</u> +/- <u>25</u> (feet) 11 UTM X: <u>579233</u> UTM Y: <u>4356048</u> +/- <u>18</u> (feet) Average Stream Width: <u>8.0</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	<p align="center">Dissolved Oxygen</p> Date: <u>4/30/2008</u> Time: <u>12:30</u> Dissolved Oxygen: <u>8.75</u> (mg/L) Dissolved Oxygen: <u>82.9</u> (% sat) Specific Cond: <u>275.0</u> (µS/cm) Water Temperature: <u>12.9</u> (°C)
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rwc

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	0.10	0	0	0	0	0	0.25	
1		0.48	0.06	0.91	0.52	0.93	0.31	0.80	0.19	0.70	0.52	0.84	0.39	0.95	0.66	0.80	0.41	0.80	0.32	0.77	0.03	0.81	0.39
2		0.96	0.06	1.82	0.76	1.86	0.51	1.60	0.44	1.40	0.86	1.68	0.43	1.90	0.86	1.60	0.54	1.60	0.74	1.54	0.01	1.62	0.51
3		1.44	0.15	2.73	0.75	2.79	0.46	2.40	0.71	2.10	>1.00	2.52	0.46	2.85	0.86	2.40	0.77	2.40	0.92	2.31	0.03	2.43	0.56
4		1.92	0.15	3.64	0.74	3.72	0.59	3.20	0.90	2.80	>1.00	3.36	0.55	3.80	0.86	3.20	0.94	3.20	>1.00	3.08	0.15	3.24	0.74
5		2.40	0.15	4.55	0.56	4.65	0.68	4.00	0.97	3.50	>1.00	4.20	0.52	4.75	0.94	4.00	0.91	4.00	>1.00	3.85	0.19	4.05	0.59
6		2.88	0.15	5.46	0.61	5.58	0.73	4.80	0.97	4.20	>1.00	5.04	0.46	5.70	0.92	4.80	>1.00	4.80	>1.00	4.62	0.20	4.86	0.72
7		3.36	0.15	6.37	0.45	6.51	0.70	5.60	0.97	4.90	>1.00	5.88	0.33	6.65	0.90	5.60	>1.00	5.60	>1.00	5.39	0.18	5.67	0.73
8		3.84	0.09	7.28	0.29	7.44	0.51	6.40	>1.00	5.60	>1.00	6.72	0.31	7.60	0.67	6.40	>1.00	6.40	>1.00	6.16	0.21	6.48	0.63
9		4.32	0.04	8.19	0.21	8.37	0.45	7.20	>1.00	6.30	0.62	7.56	0.24	8.55	0.42	7.20	0.71	7.20	0.63	6.93	0.19	7.29	0.13
Right Bank		4.80	0.00	9.10	0.00	9.30	0.00	8.00	0.00	7.00	0.00	8.40	0.00	9.50	0.00	8.00	0.00	8.00	0.00	7.70	0.00	8.10	0.00
Feature Type		Riffle		Run		Run		Pool		Run		Run		Run		Pool		Pool		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: _____ Date: _____

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: 4/30/08 11:40	Location Description (e.g., road crossing):
Stream Name: Long Branch	County Rd. 859 crossing
Current Weather Conditions: sunny and clear	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0582474	Northing (UTM Y): 4355759	Horizontal Accuracy: (EPE / FOM / PDOP) 36 feet
Site 11	Easting (UTM X): 0582518	Northing (UTM Y): 435580	Horizontal Accuracy: (EPE / FOM / PDOP) 25 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3005	Upstream	3006	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 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.)				

Site # 06

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: Private property Pasture				

Evidence of Human Use*: (Attach photos and reference in “Photos” section.)

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

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

30% Cobble	40% Gravel	30% Sand	-% Silt	-% Mud/Clay	-% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Sparse benthic algae Sparse grasses
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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 affect another use.

Site # 06

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.)

Numerous fallen trees in water

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik and Renee Martin

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 06</u> Estimated Channel Incision: <u>0.20</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>582474</u> UTM Y: <u>4355759</u> +/- <u>36</u> (feet) 11 UTM X: <u>582518</u> UTM Y: <u>4355580</u> +/- <u>25</u> (feet) Average Stream Width: <u>10.0</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	Dissolved Oxygen Date: <u>4/30/2008</u> Time: <u>11:40</u> Dissolved Oxygen: <u>8.89</u> (mg/L) Dissolved Oxygen: <u>85.8</u> (% sat) Specific Cond: <u>304.0</u> (µS/cm) Water Temperature: <u>13.7</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	0.39	0.04	1.10	0.63	1.32	0.41	0.95	0.74	1.33	0.53	0.77	0.33	1.12	0.19	1.11	0.18	1.05	0.39	0.92	0.21	1.05	0.08
2	0.78	0.01	2.20	0.66	2.64	0.69	1.90	0.85	2.66	0.40	1.54	0.27	2.24	0.18	2.22	0.19	2.10	0.50	1.84	0.25	2.10	0.10
3	1.17	0.01	3.30	0.61	3.96	0.71	2.85	0.90	3.99	0.56	2.31	0.32	3.36	0.20	3.33	0.18	3.15	0.53	2.76	0.36	3.15	0.07
4	1.56	0.07	4.40	0.54	5.28	0.75	3.80	0.92	5.32	0.85	3.08	0.27	4.48	0.18	4.44	0.18	4.20	0.56	3.68	0.39	4.20	0.06
5	1.95	0.15	5.50	0.55	6.60	0.73	4.75	0.95	6.65	0.79	3.85	0.24	5.60	0.26	5.55	0.24	5.25	0.56	4.60	0.36	5.25	0.13
6	2.34	0.10	6.60	0.47	7.92	0.70	5.70	0.96	7.98	0.67	4.62	0.13	6.72	0.27	6.66	0.27	6.30	0.58	5.52	0.34	6.30	0.16
7	2.73	0.19	7.70	0.50	9.24	0.77	6.65	0.85	9.31	0.54	5.39	0.10	7.84	0.39	7.77	0.27	7.35	0.54	6.44	0.31	7.35	0.24
8	3.12	0.20	8.80	0.45	10.56	0.80	7.60	0.43	10.64	0.43	6.16	0.12	8.96	0.37	8.88	0.38	8.40	0.46	7.36	0.26	8.40	0.24
9	3.51	0.15	9.90	0.38	11.88	0.71	8.55	0.30	11.97	0.33	6.93	0.08	10.08	0.30	9.99	0.40	9.45	0.34	8.28	0.24	9.45	0.16
Right Bank	3.90	0.00	11.00	0.00	13.20	0.00	9.50	0.00	13.30	0.00	7.70	0.00	11.20	0.00	11.10	0.00	10.50	0.00	9.20	0.00	10.50	0.00
Feature Type <small>(riffle, run, or pool)</small>	Riffle		Run		Pool		Run		Run		Riffle		Run		Run		Run		Riffle		Run	

TWC

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: _____ Date: _____

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: 4/30/08 10:55	Location Description (e.g., road crossing):
Stream Name: Long Branch	County Rd. 881 crossing
Current Weather Conditions: sunny and clear	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0584066	Northing (UTM Y): 4356034	Horizontal Accuracy: (EPE / FOM / PDOP) 16 feet
Site 11	Easting (UTM X): 0584281	Northing (UTM Y): 4356172	Horizontal Accuracy: (EPE / FOM / PDOP) 38 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3003	Upstream	3004	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 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.)				

Site # 07

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: Private property				

Evidence of Human Use*: (Attach photos and reference in “Photos” section.)

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

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

30% Cobble	50% Gravel	20% Sand	-% Silt	-% Mud/Clay	-% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Sparse benthic algae Sparse grasses
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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 affect another use.

Site # 07

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.)

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik and Renee Martin

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 07</u> Estimated Channel Incision: <u>0.20</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>584066</u> UTM Y: <u>4356034</u> +/- <u>16</u> (feet) 11 UTM X: <u>584281</u> UTM Y: <u>4356172</u> +/- <u>38</u> (feet) Average Stream Width: <u>10.0</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4/30/2008</u> Time: <u>10:55</u> Dissolved Oxygen: <u>9.4</u> (mg/L) Dissolved Oxygen: <u>88.7</u> (% sat) Specific Cond: <u>290.0</u> (µS/cm) Water Temperature: <u>12.7</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	0.57	0.02	0.90	0.19	0.85	0.15	1.17	0.25	0.95	0.26	1.00	0.27	0.95	0.37	0.90	0.78	1.00	0.62	1.42	0.23	1.31	0.42
	2	1.14	0.04	1.80	0.23	1.70	0.30	2.34	0.23	1.90	0.30	2.00	0.39	1.90	0.65	1.80	>1.00	2.00	>1.00	2.84	0.23	2.62	0.53
	3	1.71	0.04	2.70	0.20	2.55	0.25	3.51	0.25	2.85	0.27	3.00	0.45	2.85	0.75	2.70	>1.00	3.00	>1.00	4.26	0.14	3.93	0.44
	4	2.28	0.07	3.60	0.12	3.40	0.23	4.68	0.30	3.80	0.19	4.00	0.47	3.80	0.74	3.60	>1.00	4.00	>1.00	5.68	0.00	5.24	0.79
	5	2.85	0.07	4.50	0.08	4.25	0.33	5.85	0.32	4.75	0.06	5.00	0.45	4.75	0.66	4.50	>1.00	5.00	>1.00	7.10	0.01	6.55	0.72
	6	3.42	0.07	5.40	0.12	5.10	0.27	7.02	0.31	5.70	0.06	6.00	0.48	5.70	0.48	5.40	>1.00	6.00	0.79	8.52	0.00	7.86	0.66
	7	3.99	0.16	6.30	0.12	5.95	0.17	8.19	0.32	6.65	0.08	7.00	0.42	6.65	0.38	6.30	0.75	7.00	0.43	9.94	0.01	9.17	0.51
	8	4.56	0.20	7.20	0.08	6.80	0.15	9.36	0.33	7.60	0.15	8.00	0.30	7.60	0.23	7.20	0.38	8.00	0.30	11.36	0.12	10.48	0.37
	9	5.13	0.20	8.10	0.20	7.65	0.23	10.53	0.20	8.55	0.08	9.00	0.13	8.55	0.04	8.10	0.36	9.00	0.20	12.78	0.45	11.79	0.08
Right Bank		5.70	0.00	9.00	0.00	8.50	0.00	11.70	0.00	9.50	0.00	10.00	0.00	9.50	0.00	9.00	0.00	10.00	0.00	14.20	0.00	13.10	0.00
Feature Type		Riffle		Run		Pool		Run		Riffle													

rwc

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: _____ Date: _____

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: 4/30/08 10:00	Location Description (e.g., road crossing):
Stream Name: Long Branch	Rt. E crossing
Current Weather Conditions: mostly sunny	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0585706	Northing (UTM Y): 4354879	Horizontal Accuracy: (EPE / FOM / PDOP) 20 feet
Site 11	Easting (UTM X): 0585955	Northing (UTM Y): 4354910	Horizontal Accuracy: (EPE / FOM / PDOP) 16 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3001	Upstream	3002	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 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.)				

Site # 08

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: Private property				

Evidence of Human Use*: (Attach photos and reference in “Photos” section.)

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

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

30% Cobble	60% Gravel	10% Sand	-% Silt	-% Mud/Clay	-% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Sparse benthic algae Sparse grasses
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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 affect another use.

Site # 08

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.)

Log jam at Transect 4- causing pools

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik and Renee Martin

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

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

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 08</u> Estimated Channel Incision: <u>0.30</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>585706</u> UTM Y: <u>4354879</u> +/- <u>20</u> (feet) 11 UTM X: <u>585955</u> UTM Y: <u>4354910</u> +/- <u>16</u> (feet) Average Stream Width: <u>11.0</u> (meters) Length of Survey Segment: <u>220</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	<p align="center">Dissolved Oxygen</p> Date: <u>4/30/2008</u> Time: <u>10:00</u> Dissolved Oxygen: <u>7.91</u> (mg/L) Dissolved Oxygen: <u>74.3</u> (% sat) Specific Cond: <u>285.5</u> (µS/cm) Water Temperature: <u>12.4</u> (°C)
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rwc

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	1.50	0.68	1.48	0.17	0.95	0.10	0.60	0.36	0.55	0.08	1.55	0.27	0.80	0.56	1.10	0.65	1.35	0.39	0.97	0.73	1.25	0.45
2	3.00	0.77	2.96	0.38	1.90	0.26	1.20	0.47	1.10	0.10	3.10	0.52	1.60	0.59	2.20	0.52	2.70	0.31	1.94	0.87	2.50	0.46
3	4.50	0.80	4.44	0.44	2.85	0.41	1.80	0.71	1.65	0.12	4.65	0.64	2.40	0.62	3.30	0.50	4.05	0.21	2.91	0.83	3.75	0.41
4	6.00	0.83	5.92	0.55	3.80	0.50	2.40	0.87	2.20	0.13	6.20	0.60	3.20	0.61	4.40	0.44	5.40	0.18	3.88	0.86	5.00	0.54
5	7.50	0.83	7.40	0.60	4.75	0.55	3.00	0.99	2.75	0.16	7.75	0.54	4.00	0.50	5.50	0.53	6.75	0.10	4.85	0.79	6.25	0.63
6	9.00	0.79	8.88	0.64	5.70	0.64	3.60	>1.00	3.30	0.17	9.30	0.51	4.80	0.36	6.60	0.45	8.10	0.07	5.82	0.82	7.50	0.72
7	10.50	0.66	10.36	0.63	6.65	0.77	4.20	>1.00	3.85	0.19	10.85	0.50	5.60	0.34	7.70	0.33	9.45	0.02	6.79	0.71	8.75	0.85
8	12.00	0.58	11.84	0.63	7.60	0.92	4.80	>1.00	4.40	0.20	12.40	0.47	6.40	0.30	8.80	0.20	10.80	0.01	7.76	0.54	10.00	0.86
9	13.50	0.39	13.32	0.60	8.55	0.66	5.40	0.96	4.95	0.25	13.95	0.38	7.20	0.19	9.90	0.07	12.15	0.13	8.73	0.51	11.25	0.40
Right Bank	15.00	0.00	14.80	0.00	9.50	0.08	6.00	0.00	5.50	0.00	15.50	0.00	8.00	0.00	11.00	0.00	13.50	0.00	9.70	0.00	12.50	0.00
Feature Type	Pool		Pool		Pool		Run		Riffle		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: _____ Date: _____

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: 4/30/08 08:50	Location Description (e.g., road crossing):
Stream Name: Long Branch	County Rd. 739 crossing
Current Weather Conditions: mostly sunny	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0590527	Northing (UTM Y): 4355442	Horizontal Accuracy: (EPE / FOM / PDOP) 23 feet
Site 11	Easting (UTM X): 0590608	Northing (UTM Y): 4355622	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2999	downstream	3000	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at 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.)				

Site # 09

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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: Private property Steep slopes on right descending bank				

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

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

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

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

Benthic 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 affect another use.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 09</u> Estimated Channel Incision: <u>0.40</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>590527</u> UTM Y: <u>4355442</u> +/- <u>23</u> (feet) 11 UTM X: <u>590608</u> UTM Y: <u>4355622</u> +/- <u>19</u> (feet) Average Stream Width: <u>12.5</u> (meters) Length of Survey Segment: <u>250</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	Dissolved Oxygen Date: <u>4/30/2008</u> Time: <u>8:50</u> Dissolved Oxygen: <u>9.57</u> (mg/L) Dissolved Oxygen: <u>88.3</u> (% sat) Specific Cond: <u>290.0</u> (µS/cm) Water Temperature: <u>11.8</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	0.74	0.10	0.71	0.16	0.99	0.15	1.16	0.13	1.32	0.37	1.56	0.34	1.45	0.47	1.36	0.59	1.42	0.41	1.40	0.50	1.30	0.23
	2	1.48	0.18	1.42	0.25	1.98	0.27	2.32	0.21	2.64	0.34	3.12	0.24	2.90	0.53	2.72	0.68	2.84	0.40	2.80	0.56	2.60	0.40
	3	2.22	0.27	2.13	0.36	2.97	0.34	3.48	0.36	3.96	0.33	4.68	0.24	4.35	0.66	4.08	0.74	4.26	0.40	4.20	0.64	3.90	0.44
	4	2.96	0.33	2.84	0.46	3.96	0.45	4.64	0.27	5.28	0.43	6.24	0.28	5.80	0.50	5.44	0.76	5.68	0.28	5.60	0.66	5.20	0.50
	5	3.70	0.38	3.55	0.56	4.95	0.55	5.80	0.29	6.60	0.47	7.80	0.38	7.25	0.47	6.80	0.70	7.10	0.34	7.00	0.60	6.50	0.48
	6	4.44	0.43	4.26	0.60	5.94	0.62	6.96	0.27	7.92	0.52	9.36	0.40	8.70	0.46	8.16	0.65	8.52	0.24	8.40	0.42	7.80	0.53
	7	5.18	0.43	4.97	0.59	6.93	0.55	8.12	0.31	9.24	0.48	10.92	0.48	10.15	0.43	9.52	0.54	9.94	0.17	9.80	0.38	9.10	0.74
	8	5.92	0.42	5.68	0.59	7.92	0.59	9.28	0.38	10.56	0.46	12.48	0.51	11.60	0.37	10.88	0.31	11.36	0.15	11.20	0.36	10.40	0.53
	9	6.66	0.27	6.39	0.54	8.91	0.61	10.44	0.50	11.88	0.46	14.04	0.43	13.05	0.24	12.24	0.17	12.78	0.12	12.60	0.31	11.70	0.50
Right Bank		7.40	0.00	7.10	0.04	9.90	0.10	11.60	0.12	13.20	0.25	15.60	0.00	14.50	0.00	13.60	0.00	14.20	0.00	14.00	0.00	13.00	0.00
Feature Type		Run	Run																				

rwc

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: _____ Date: _____

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: 4/30/08 06:45	Location Description (e.g., road crossing):
Stream Name: Long Branch	County Rd. 759 crossing
Current Weather Conditions: mostly sunny	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0592188	Northing (UTM Y): 4356011	Horizontal Accuracy: (EPE / FOM / PDOP) 21 feet
Site 11	Easting (UTM X): 0592421	Northing (UTM Y): 4356049	Horizontal Accuracy: (EPE / FOM / PDOP) 24 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2995	downstream	2996	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at 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.)				

Site # 10

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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: Private property Pasture				

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

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

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

40% Cobble	30% Gravel	10% Sand	-% Silt	-% Mud/Clay	20% 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 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 affect another use.

Site # 10

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.)

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

Printed Names of Personnel Collecting Data: _____ Jennifer Hrabik and Renee Martin _____

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 10</u> Estimated Channel Incision: <u>0.20</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>592188</u> UTM Y: <u>4356011</u> +/- <u>21</u> (feet) 11 UTM X: <u>592421</u> UTM Y: <u>4356049</u> +/- <u>24</u> (feet) Average Stream Width: <u>16.0</u> (meters) Length of Survey Segment: <u>300</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	Dissolved Oxygen Date: <u>4/30/2008</u> Time: <u>6:45</u> Dissolved Oxygen: <u>8.65</u> (mg/L) Dissolved Oxygen: <u>80.9</u> (% sat) Specific Cond: <u>283.0</u> (µS/cm) Water Temperature: <u>12.1</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	0.26	0	0	0	0.22	0	0.44	0	0	0	0	0	0.40	
	1	1.98	0.38	1.28	0.25	1.10	0.15	1.27	0.50	1.30	0.55	1.53	0.40	2.21	0.08	2.45	0.28	0.80	0.32	1.81	0.40	1.80	0.67
	2	3.96	0.40	2.56	0.33	2.20	0.33	2.54	0.66	2.60	0.89	3.06	0.48	4.42	0.00	4.90	0.00	1.60	0.38	3.62	0.59	3.60	0.96
	3	5.94	0.45	3.84	0.41	3.30	0.33	3.81	0.69	3.90	0.90	4.59	0.54	6.63	0.00	7.35	0.00	2.40	0.40	5.43	0.61	5.40	0.77
	4	7.92	0.50	5.12	0.39	4.40	0.40	5.08	0.69	5.20	>1.00	6.12	0.63	8.84	0.00	9.80	0.00	3.20	0.34	7.24	0.55	7.20	0.69
	5	9.90	0.50	6.40	0.33	5.50	0.49	6.35	0.66	6.50	0.95	7.65	0.68	11.05	0.00	12.25	0.00	4.00	0.26	9.05	0.74	9.00	0.65
	6	11.88	0.48	7.68	0.27	6.60	0.63	7.62	0.64	7.80	>1.00	9.18	0.66	13.26	0.01	14.70	0.00	4.80	0.20	10.86	0.90	10.80	0.50
	7	13.86	0.38	8.96	0.37	7.70	0.79	8.89	0.66	9.10	>1.00	10.71	0.71	15.47	0.13	17.15	0.01	5.60	0.16	12.67	0.79	12.60	0.48
	8	15.84	0.28	10.24	0.37	8.80	0.71	10.16	0.71	10.40	>1.00	12.24	0.66	17.68	0.20	19.60	0.24	6.40	0.13	14.48	0.54	14.40	0.45
	9	17.82	0.20	11.52	0.26	9.90	0.79	11.43	0.65	11.70	0.86	13.77	0.59	19.89	0.12	22.05	0.20	7.20	0.12	16.29	0.31	16.20	0.48
Right Bank		19.80	0.00	12.80	0.00	11.00	0.71	12.70	0.00	13.00	0.51	15.30	0.00	22.10	0.00	24.50	0.00	8.00	0.00	18.10	0.00	18.00	0.24
Feature Type		Run		Run		Run		Run		Run		Riffle		Riffle		Riffle		Run		Run			

rwc

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: _____ Date: _____

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: 4/30/08 07:40	Location Description (e.g., road crossing):
Stream Name: Long Branch	Downstream of Site 10
Current Weather Conditions: mostly sunny	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0592450	Northing (UTM Y): 4356051	Horizontal Accuracy: (EPE / FOM / PDOP) 22 feet
Site 11	Easting (UTM X): 0592684	Northing (UTM Y): 4356113	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2997	upstream	2998	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 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.)				

Site # 11

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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: Private property Pasture				

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%.)

40% Cobble	30% Gravel	10% Sand	-% Silt	-% Mud/Clay	20% 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 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 affect another use.

Site # 11

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.)

Could not get access at original site (off County Rd. 706).

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik and Renee Martin

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 11</u> Estimated Channel Incision: <u>0.50</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>592450</u> UTM Y: <u>4356051</u> +/- <u>22</u> (feet) 11 UTM X: <u>592684</u> UTM Y: <u>4356113</u> +/- <u>19</u> (feet) Average Stream Width: <u>15.0</u> (meters) Length of Survey Segment: <u>300</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	Dissolved Oxygen Date: <u>4/30/2008</u> Time: <u>7:40</u> Dissolved Oxygen: <u>8.97</u> (mg/L) Dissolved Oxygen: <u>83.4</u> (% sat) Specific Cond: <u>285.6</u> (µS/cm) Water Temperature: <u>11.9</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	0.20	0	0	0	0	0	0.15	0	0	0	0	0	0	0	0	0	0	0	0
	1	1.64	0.59	1.55	0.75	1.85	0.54	1.79	0.64	1.65	0.86	1.75	0.59	1.58	0.41	1.20	0.21	0.50	0.13	0.75	0.27	0.86	0.32
	2	3.28	0.78	3.10	0.73	3.70	0.66	3.58	0.64	3.30	0.89	3.50	0.66	3.16	0.59	2.40	0.39	1.00	0.29	1.50	0.33	1.72	0.35
	3	4.92	0.78	4.65	0.68	5.55	0.68	5.37	0.60	4.95	0.89	5.25	0.76	4.74	0.63	3.60	0.50	1.50	0.33	2.25	0.44	2.58	0.43
	4	6.56	0.69	6.20	0.64	7.40	0.61	7.16	0.59	6.60	0.92	7.00	0.97	6.32	0.72	4.80	0.41	2.00	0.42	3.00	0.48	3.44	0.56
	5	8.20	0.62	7.75	0.64	9.25	0.56	8.95	0.52	8.25	0.91	8.75	0.96	7.90	0.89	6.00	0.07	2.50	0.31	3.75	0.50	4.30	0.62
	6	9.84	0.58	9.30	0.60	11.10	0.45	10.74	0.48	9.90	0.85	10.50	0.89	9.48	0.89	7.20	0.07	3.00	0.33	4.50	0.48	5.16	0.54
	7	11.48	0.51	10.85	0.60	12.95	0.44	12.53	0.43	11.55	0.80	12.25	0.80	11.06	0.80	8.40	0.16	3.50	0.30	5.25	0.33	6.02	0.62
	8	13.12	0.47	12.40	0.70	14.80	0.42	14.32	0.37	13.20	0.65	14.00	0.77	12.64	0.64	9.60	0.19	4.00	0.17	6.00	0.37	6.88	0.64
	9	14.76	0.40	13.95	0.62	16.65	0.45	16.11	0.34	14.85	0.39	15.75	0.58	14.22	0.43	10.80	0.15	4.50	0.07	6.75	0.06	7.74	0.45
Right Bank		16.40	0.00	15.50	0.00	18.50	0.00	17.90	0.00	16.50	0.00	17.50	0.00	15.80	0.00	12.00	0.00	5.00	0.00	7.50	0.00	8.60	0.00
Feature Type		Run		Pool		Run		Riffle		Riffle		Run		Run									

rwc

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: _____ Date: _____

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: 4/29/08 16:40	Location Description (e.g., road crossing):
Stream Name: Long Branch	Rt. Z crossing
Current Weather Conditions: mostly sunny	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0595456	Northing (UTM Y): 4355270	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet
Site 11	Easting (UTM X): 0595600	Northing (UTM Y): 4355499	Horizontal Accuracy: (EPE / FOM / PDOP) 20 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2993	upstream	2994	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 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.)				

Site # 12

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 checked="" 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: Private property				

Evidence of Human Use*: (Attach photos and reference in “Photos” section.)

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

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

60% Cobble	25% Gravel	10% Sand	-% Silt	5% Mud/Clay	-% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Benthic 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 affect another use.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 12</u> Estimated Channel Incision: <u>0.50</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>595456</u> UTM Y: <u>4355270</u> +/- <u>19</u> (feet) 11 UTM X: <u>595600</u> UTM Y: <u>4355499</u> +/- <u>20</u> (feet) Average Stream Width: <u>12.5</u> (meters) Length of Survey Segment: <u>250</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	Dissolved Oxygen Date: <u>4/29/2008</u> Time: <u>16:40</u> Dissolved Oxygen: <u>9.78</u> (mg/L) Dissolved Oxygen: <u>94.8</u> (% sat) Specific Cond: <u>264.7</u> (µS/cm) Water Temperature: <u>14.4</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	1.90	0.60	1.96	0.30	0.82	0.27	1.00	0.58	1.80	0.59	1.31	0.27	1.00	0.20	0.98	0.08	0.82	0.43	1.00	0.35	0.85	0.42
2	3.80	0.75	3.92	0.33	1.64	0.64	2.00	0.73	3.60	0.92	2.62	0.40	2.00	0.27	1.96	0.04	1.64	0.54	2.00	0.81	1.70	0.47
3	5.70	0.75	5.88	0.39	2.46	0.77	3.00	0.71	5.40	0.83	3.93	0.39	3.00	0.16	2.94	0.06	2.46	0.56	3.00	>1.00	2.55	0.47
4	7.60	0.56	7.84	0.58	3.28	0.85	4.00	0.62	7.20	0.60	5.24	0.29	4.00	0.18	3.92	0.13	3.28	0.53	4.00	>1.00	3.40	0.54
5	9.50	0.64	9.80	0.59	4.10	0.68	5.00	0.55	9.00	0.40	6.55	0.26	5.00	0.25	4.90	0.10	4.10	0.47	5.00	>1.00	4.25	0.51
6	11.40	0.55	11.76	0.59	4.92	0.85	6.00	0.46	10.80	0.46	7.86	0.33	6.00	0.30	5.88	0.21	4.92	0.41	6.00	>1.00	5.10	0.51
7	13.30	0.48	13.72	0.54	5.74	0.96	7.00	0.43	12.60	0.51	9.17	0.40	7.00	0.32	6.86	0.25	5.74	0.35	7.00	>1.00	5.95	0.46
8	15.20	0.46	15.68	0.54	6.56	0.89	8.00	0.31	14.40	0.52	10.48	0.42	8.00	0.31	7.84	0.22	6.56	0.25	8.00	0.65	6.80	0.40
9	17.10	0.50	17.64	0.59	7.38	0.72	9.00	0.23	16.20	0.38	11.79	0.46	9.00	0.13	8.82	0.13	7.38	0.15	9.00	0.36	7.65	0.37
Right Bank	19.00	0.00	19.60	0.00	8.20	0.00	10.00	0.00	18.00	0.00	13.10	0.00	10.00	0.00	9.80	0.00	8.20	0.00	10.00	0.00	8.50	0.00
Feature Type <small>(riffle, run, or pool)</small>	Pool		Run		Riffle		Run		Run		Riffle		Riffle		Riffle		Riffle		Run		Riffle	

rwc

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: _____ Date: _____

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: 4/29/08 15:40	Location Description (e.g., road crossing):
Stream Name: Long Branch	County Rd. 611 crossing
Current Weather Conditions: mostly sunny	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0596979	Northing (UTM Y): 4355580	Horizontal Accuracy: (EPE / FOM / PDOP) 27 feet
Site 11	Easting (UTM X): 0597205	Northing (UTM Y): 4355754	Horizontal Accuracy: (EPE / FOM / PDOP) 30 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2991	downstream	2992	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at 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.)				

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

Evidence of Human Use*: (Attach photos and reference in “Photos” section.)

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

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

50% Cobble	40% Gravel	10% Sand	-% Silt	-% Mud/Clay	-% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Benthic 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 affect another use.

Site # 13

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.)

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik and Renee Martin

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 13</u> Estimated Channel Incision: <u>0.80</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>596979</u> UTM Y: <u>4355580</u> +/- <u>27</u> (feet) 11 UTM X: <u>597205</u> UTM Y: <u>4355754</u> +/- <u>30</u> (feet) Average Stream Width: <u>15.0</u> (meters) Length of Survey Segment: <u>300</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4/29/2008</u> Time: <u>15:40</u> Dissolved Oxygen: <u>11.98</u> (mg/L) Dissolved Oxygen: <u>117.0</u> (% sat) Specific Cond: <u>260.0</u> (µS/cm) Water Temperature: <u>14.3</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		1.54	0.09	1.33	0.21	1.70	0.23	1.35	0.20	1.92	0.38	2.00	0.45	1.67	0.36	1.32	0.13	1.25	0.18	0.90	0.07	1.10	0.23
2		3.08	0.12	2.66	0.24	3.40	0.33	2.70	0.32	3.84	0.24	4.00	0.43	3.34	0.34	2.64	0.17	2.50	0.32	1.80	0.10	2.20	0.23
3		4.62	0.15	3.99	0.28	5.10	0.32	4.05	0.44	5.76	0.19	6.00	0.42	5.01	0.39	3.96	0.18	3.75	0.38	2.70	0.19	3.30	0.34
4		6.16	0.15	5.32	0.33	6.80	0.31	5.40	0.51	7.68	0.21	8.00	0.30	6.68	0.38	5.28	0.15	5.00	0.45	3.60	0.19	4.40	0.39
5		7.70	0.18	6.65	0.34	8.50	0.40	6.75	0.64	9.60	0.25	10.00	0.27	8.35	0.26	6.60	0.23	6.25	0.53	4.50	0.24	5.50	0.34
6		9.24	0.12	7.98	0.34	10.20	0.37	8.10	0.75	11.52	0.27	12.00	0.25	10.02	0.18	7.92	0.27	7.50	0.58	5.40	0.20	6.60	0.41
7		10.78	0.07	9.31	0.33	11.90	0.40	9.45	0.73	13.44	0.38	14.00	0.26	11.69	0.08	9.24	0.39	8.75	0.48	6.30	0.10	7.70	0.39
8		12.32	0.07	10.64	0.27	13.60	0.34	10.80	0.73	15.36	0.40	16.00	0.29	13.36	0.01	10.56	0.44	10.00	0.34	7.20	0.16	8.80	0.34
9		13.86	0.10	11.97	0.16	15.30	0.08	12.15	0.70	17.28	0.29	18.00	0.23	15.03	0.17	11.88	0.45	11.25	0.08	8.10	0.18	9.90	0.24
Right Bank		15.40	0.00	13.30	0.00	17.00	0.00	13.50	0.00	19.20	0.00	20.00	0.00	16.70	0.00	13.20	0.00	12.50	0.00	9.00	0.00	11.00	0.00
Feature Type		Riffle		Run		Riffle		Run															

rwc

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: _____ Date: _____

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: 4/29/08 14:10	Location Description (e.g., road crossing):
Stream Name: Long Branch	County Rd. 621 crossing
Current Weather Conditions: few clouds	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0599053	Northing (UTM Y): 4355167	Horizontal Accuracy: (EPE / FOM / PDOP) 17 feet
Site 11	Easting (UTM X): 0599258	Northing (UTM Y): 4355287	Horizontal Accuracy: (EPE / FOM / PDOP) 27 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2989	Upstream Low water crossing	2990	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 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.)				

Site # 14

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 checked="" 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: Private property Crop fields				

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

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

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

40% Cobble	40% Gravel	10% Sand	-% Silt	-% Mud/Clay	10% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Abundant benthic 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 affect another use.

Site # 14

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.)

County Rd. 621 becomes private farm road- spoke with landowner to get permission to access.

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik and Renee Martin

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 14</u> Estimated Channel Incision: <u>0.20</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>599053</u> UTM Y: <u>4355167</u> +/- <u>17</u> (feet) 11 UTM X: <u>599258</u> UTM Y: <u>4355287</u> +/- <u>27</u> (feet) Average Stream Width: <u>14.0</u> (meters) Length of Survey Segment: <u>280</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	Dissolved Oxygen Date: <u>4/29/2008</u> Time: <u>14:10</u> Dissolved Oxygen: <u>13.47</u> (mg/L) Dissolved Oxygen: <u>131.0</u> (% sat) Specific Cond: <u>260.0</u> (µS/cm) Water Temperature: <u>14.1</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	1.30	0.34	0.90	0.03	1.37	0.20	1.30	0.20	1.60	0.26	1.30	0.43	1.71	0.66	1.55	0.54	1.70	0.63	1.58	0.39	1.37	0.46
	2	2.60	0.41	1.80	0.27	2.74	0.51	2.60	0.32	3.20	0.39	2.60	0.71	3.42	0.59	3.10	0.45	3.40	0.63	3.16	0.50	2.74	0.67
	3	3.90	0.40	2.70	0.37	4.11	0.65	3.90	0.40	4.80	0.34	3.90	0.92	5.13	0.54	4.65	0.52	5.10	0.53	4.74	0.64	4.11	0.65
	4	5.20	0.40	3.60	0.23	5.48	0.73	5.20	0.53	6.40	0.42	5.20	>1.00	6.84	0.64	6.20	0.47	6.80	0.46	6.32	0.71	5.48	0.68
	5	6.50	0.41	4.50	0.23	6.85	0.79	6.50	0.42	8.00	0.51	6.50	>1.00	8.55	0.68	7.75	0.41	8.50	0.40	7.90	0.82	6.85	0.68
	6	7.80	0.40	5.40	0.46	8.22	0.50	7.80	0.40	9.60	0.61	7.80	>1.00	10.26	0.66	9.30	0.38	10.20	0.42	9.48	0.92	8.22	0.70
	7	9.10	0.45	6.30	0.50	9.59	0.53	9.10	0.48	11.20	0.92	9.10	>1.00	11.97	0.52	10.85	0.33	11.90	0.46	11.06	0.86	9.59	0.63
	8	10.40	0.40	7.20	0.45	10.96	0.31	10.40	0.45	12.80	0.94	10.40	>1.00	13.68	0.45	12.40	0.34	13.60	0.51	12.64	0.71	10.96	0.58
	9	11.70	0.21	8.10	0.21	12.33	0.27	11.70	0.40	14.40	0.31	11.70	0.82	15.39	0.35	13.95	0.27	15.30	0.38	14.22	0.71	12.33	0.70
Right Bank		13.00	0.00	9.00	0.00	13.70	0.00	13.00	0.00	16.00	0.00	13.00	0.00	17.10	0.00	15.50	0.00	17.00	0.00	15.80	0.00	13.70	0.00
Feature Type		Riffle		Riffle		Run		Run		Riffle		Run											

rwc

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: _____ Date: _____

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: 4/29/08 13:00	Location Description (e.g., road crossing):
Stream Name: Long Branch	County Rd. 614 crossing
Current Weather Conditions: partly cloudy	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0600454	Northing (UTM Y): 4356952	Horizontal Accuracy: (EPE / FOM / PDOP) 17 feet
Site 11	Easting (UTM X): 0600602	Northing (UTM Y): 4357241	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2987	Upstream Low water crossing	2988	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 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.)				

Site # 15

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 checked="" 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: Private property Steep slopes on right descending bank				

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

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

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

40% Cobble	30% Gravel	30% Sand	-% Silt	-% Mud/Clay	-% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Sparse grasses Sparse benthic algae
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Water Characteristics*: (Mark all that apply.)

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

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Site # 15

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.)

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik and Renee Martin

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 15</u> Estimated Channel Incision: <u>0.20</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>600454</u> UTM Y: <u>4356952</u> +/- <u>17</u> (feet) 11 UTM X: <u>600602</u> UTM Y: <u>4357241</u> +/- <u>19</u> (feet) Average Stream Width: <u>18.0</u> (meters) Length of Survey Segment: <u>300</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4/29/2008</u> Time: <u>13:00</u> Dissolved Oxygen: <u>11.51</u> (mg/L) Dissolved Oxygen: <u>109.2</u> (% sat) Specific Cond: <u>286.0</u> (µS/cm) Water Temperature: <u>13.0</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	2.15	0.28	2.64	0.45	1.96	0.54	1.95	0.42	1.00	0.13	2.00	0.32	1.85	0.26	1.80	0.17	1.70	0.07	1.21	0.18	1.27	0.28
	2	4.30	0.37	5.28	0.36	3.92	0.34	3.90	0.37	2.00	0.16	4.00	0.28	3.70	0.36	3.60	0.21	3.40	0.19	2.42	0.30	2.54	0.52
	3	6.45	0.43	7.92	0.43	5.88	0.32	5.85	0.27	3.00	0.18	6.00	0.26	5.55	0.38	5.40	0.30	5.10	0.38	3.63	0.41	3.81	0.71
	4	8.60	0.56	10.56	0.44	7.84	0.36	7.80	0.20	4.00	0.24	8.00	0.24	7.40	0.37	7.20	0.39	6.80	0.50	4.84	0.47	5.08	0.75
	5	10.75	0.63	13.20	0.39	9.80	0.40	9.75	0.20	5.00	0.24	10.00	0.19	9.25	0.37	9.00	0.43	8.50	0.56	6.05	0.51	6.35	0.47
	6	12.90	0.59	15.84	0.33	11.76	0.38	11.70	0.23	6.00	0.24	12.00	0.16	11.10	0.30	10.80	0.58	10.20	0.56	7.26	0.44	7.62	0.50
	7	15.05	0.50	18.48	0.31	13.72	0.34	13.65	0.18	7.00	0.24	14.00	0.13	12.95	0.28	12.60	0.52	11.90	0.44	8.47	0.37	8.89	0.54
	8	17.20	0.45	21.12	0.34	15.68	0.41	15.60	0.12	8.00	0.24	16.00	0.10	14.80	0.24	14.40	0.43	13.60	0.42	9.68	0.27	10.16	0.45
	9	19.35	0.36	23.76	0.32	17.64	0.32	17.55	0.12	9.00	0.16	18.00	0.08	16.65	0.06	16.20	0.17	15.30	0.31	10.89	0.01	11.43	0.37
Right Bank		21.50	0.00	26.40	0.00	19.60	0.00	19.50	0.00	10.00	0.00	20.00	0.00	18.50	0.00	18.00	0.00	17.00	0.00	12.10	0.00	12.70	0.00
Feature Type		Run		Run		Run		Run		Riffle		Riffle		Run									

rwc

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: _____ Date: _____

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: 4/29/08 12:00	Location Description (e.g., road crossing):
Stream Name: Long Branch	County Rd. 624 crossing
Current Weather Conditions: partly cloudy	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0599808	Northing (UTM Y): 4358787	Horizontal Accuracy: (EPE / FOM / PDOP) 14 feet
Site 11	Easting (UTM X): 0599909	Northing (UTM Y): 4358993	Horizontal Accuracy: (EPE / FOM / PDOP) 18 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2984	Upstream	2985	downstream	2986	Boat access at Transect 1
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.)				

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 checked="" 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 checked="" type="checkbox"/> Boating accesses ¹	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: Private property 1- at bridge				

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

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

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

20% Cobble	10% Gravel	70% Sand	-% Silt	-% Mud/Clay	-% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Sparse benthic 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 affect another use.

Site # 16

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.)

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik and Renee Martin

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 16</u> Estimated Channel Incision: <u>0.20</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>599808</u> UTM Y: <u>4358787</u> +/- <u>14</u> (feet) 11 UTM X: <u>599909</u> UTM Y: <u>4358993</u> +/- <u>18</u> (feet) Average Stream Width: <u>16.5</u> (meters) Length of Survey Segment: <u>300</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4/29/2008</u> Time: <u>12:00</u> Dissolved Oxygen: <u>10.76</u> (mg/L) Dissolved Oxygen: <u>101.8</u> (% sat) Specific Cond: <u>286.0</u> (µS/cm) Water Temperature: <u>12.8</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	2.05	0.21	1.85	0.26	1.60	0.32	1.27	0.34	1.98	0.27	2.00	0.39	2.50	0.80	1.85	0.15	0.77	0.08	1.00	0.26	1.13	0.15
	2	4.10	0.34	3.70	0.40	3.20	0.38	2.54	0.39	3.96	0.51	4.00	0.82	5.00	>1.00	3.70	0.30	1.54	0.18	2.00	0.33	2.26	0.16
	3	6.15	0.39	5.55	0.51	4.80	0.36	3.81	0.40	5.94	0.63	6.00	>1.00	7.50	>1.00	5.55	0.46	2.31	0.26	3.00	0.40	3.39	0.26
	4	8.20	0.27	7.40	0.46	6.40	0.41	5.08	0.39	7.92	0.69	8.00	>1.00	10.00	0.87	7.40	0.58	3.08	0.30	4.00	0.45	4.52	0.23
	5	10.25	0.26	9.25	0.40	8.00	0.28	6.35	0.54	9.90	0.68	10.00	>1.00	12.50	0.68	9.25	0.64	3.85	0.31	5.00	0.45	5.65	0.23
	6	12.30	0.16	11.10	0.38	9.60	0.13	7.62	0.39	11.88	0.85	12.00	>1.00	15.00	0.60	11.10	0.69	4.62	0.47	6.00	0.44	6.78	0.38
	7	14.35	0.27	12.95	0.47	11.20	0.06	8.89	0.48	13.86	0.85	14.00	>1.00	17.50	0.81	12.95	0.70	5.39	0.47	7.00	0.45	7.91	0.40
	8	16.40	0.25	14.80	0.36	12.80	0.03	10.16	0.68	15.84	0.54	16.00	0.68	20.00	0.90	14.80	0.64	6.16	0.40	8.00	0.44	9.04	0.27
	9	18.45	0.31	16.65	0.23	14.40	0.01	11.43	0.39	17.82	0.21	18.00	0.52	22.50	0.72	16.65	0.51	6.93	0.17	9.00	0.39	10.17	0.26
Right Bank		20.50	0.00	18.50	0.00	16.00	0.00	12.70	0.00	19.80	0.00	20.00	0.00	25.00	0.00	18.50	0.00	7.70	0.00	10.00	0.00	11.30	0.00
Feature Type		Run		Run		Riffle		Run		Pool		Pool		Run		Run		Riffle		Riffle		Riffle	

rwc

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: _____ Date: _____

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: 4/29/08 10:45	Location Description (e.g., road crossing):
Stream Name: Long Branch	Rt. D crossing
Current Weather Conditions: partly cloudy	Facility Name(s): Sunnysdale Advntst Academy & Little City MHP
Weather Conditions for Past 10 days: 1.07 in. precipitation	Permit Number(s): MO 0044563 & MO 0057363
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): 0600142	Northing (UTM Y): 4359365	Horizontal Accuracy: (EPE / FOM / PDOP) 32 feet
Site 11	Easting (UTM X): 0600346	Northing (UTM Y): 4359627	Horizontal Accuracy: (EPE / FOM / PDOP) 15 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2982	upstream	2983	downstream	2986	Boat access at Transect 1
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.)				

Site # 17

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 checked="" 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: Private property				

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

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

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

5% Cobble	10% Gravel	85% 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 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 affect another use.

Site # 17

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.)

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik and Renee Martin

Surveyor's Signature: _____ Date of Survey: _____

Organization: _____ Position: _____

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

Stream Name: <u>Long Branch</u> Waterbody ID: <u>0139</u> Site #: <u>0139 17</u> Estimated Channel Incision: <u>0.20</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>600142</u> UTM Y: <u>4359365</u> +/- <u>32</u> (feet) 11 UTM X: <u>600346</u> UTM Y: <u>4359627</u> +/- <u>15</u> (feet) Average Stream Width: <u>23.5</u> (meters) Length of Survey Segment: <u>300</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik and R. Martin</u>	<p align="center">Dissolved Oxygen</p> Date: <u>4/29/2008</u> Time: <u>10:45</u> Dissolved Oxygen: <u>7.45</u> (mg/L) Dissolved Oxygen: <u>68.7</u> (% sat) Specific Cond: <u>292.3</u> (µS/cm) Water Temperature: <u>12.1</u> (°C)
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rwc

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	2.41	0.50	2.50	0.58	2.13	0.38	2.10	0.52	2.05	0.72	2.30	0.80	2.20	0.79	3.15	0.90	2.45	>1.00	2.00	0.80	2.60	0.50
2	4.82	0.83	5.00	0.82	4.26	0.43	4.20	0.88	4.10	>1.00	4.60	>1.00	4.40	>1.00	6.30	0.93	4.90	>1.00	4.00	>1.00	5.20	0.89
3	7.23	0.78	7.50	0.96	6.39	0.45	6.30	>1.00	6.15	>1.00	6.90	>1.00	6.60	>1.00	9.45	0.34	7.35	>1.00	6.00	>1.00	7.80	>1.00
4	9.64	0.82	10.00	>1.00	8.52	0.42	8.40	>1.00	8.20	>1.00	9.20	>1.00	8.80	>1.00	12.60	0.40	9.80	>1.00	8.00	>1.00	10.40	>1.00
5	12.05	0.89	12.50	0.98	10.65	0.36	10.50	>1.00	10.25	>1.00	11.50	0.98	11.00	>1.00	15.75	0.60	12.25	>1.00	10.00	0.95	13.00	>1.00
6	14.46	0.76	15.00	>1.00	12.78	0.31	12.60	>1.00	12.30	>1.00	13.80	0.95	13.20	>1.00	18.90	0.55	14.70	>1.00	12.00	0.85	15.60	0.88
7	16.87	0.85	17.50	>1.00	14.91	0.41	14.70	>1.00	14.35	>1.00	16.10	0.94	15.40	>1.00	22.05	0.50	17.15	>1.00	14.00	0.85	18.20	0.79
8	19.28	0.85	20.00	0.90	17.04	0.34	16.80	0.99	16.40	>1.00	18.40	0.95	17.60	>1.00	25.20	0.38	19.60	0.93	16.00	0.62	20.80	0.67
9	21.69	0.48	22.50	0.85	19.17	0.27	18.90	0.74	18.45	0.69	20.70	0.81	19.80	0.70	28.35	0.11	22.05	0.21	18.00	0.20	23.40	0.50
Right Bank	24.10	0.00	25.00	0.00	21.30	0.00	21.00	0.00	20.50	0.00	23.00	0.00	22.00	0.00	31.50	0.00	24.50	0.00	20.00	0.00	26.00	0.00
Feature Type	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 0.1 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: _____ Date: _____

AES

WBID#0139
Site #1
Upstream





AES

WBID#0139
Site #1
Downstream

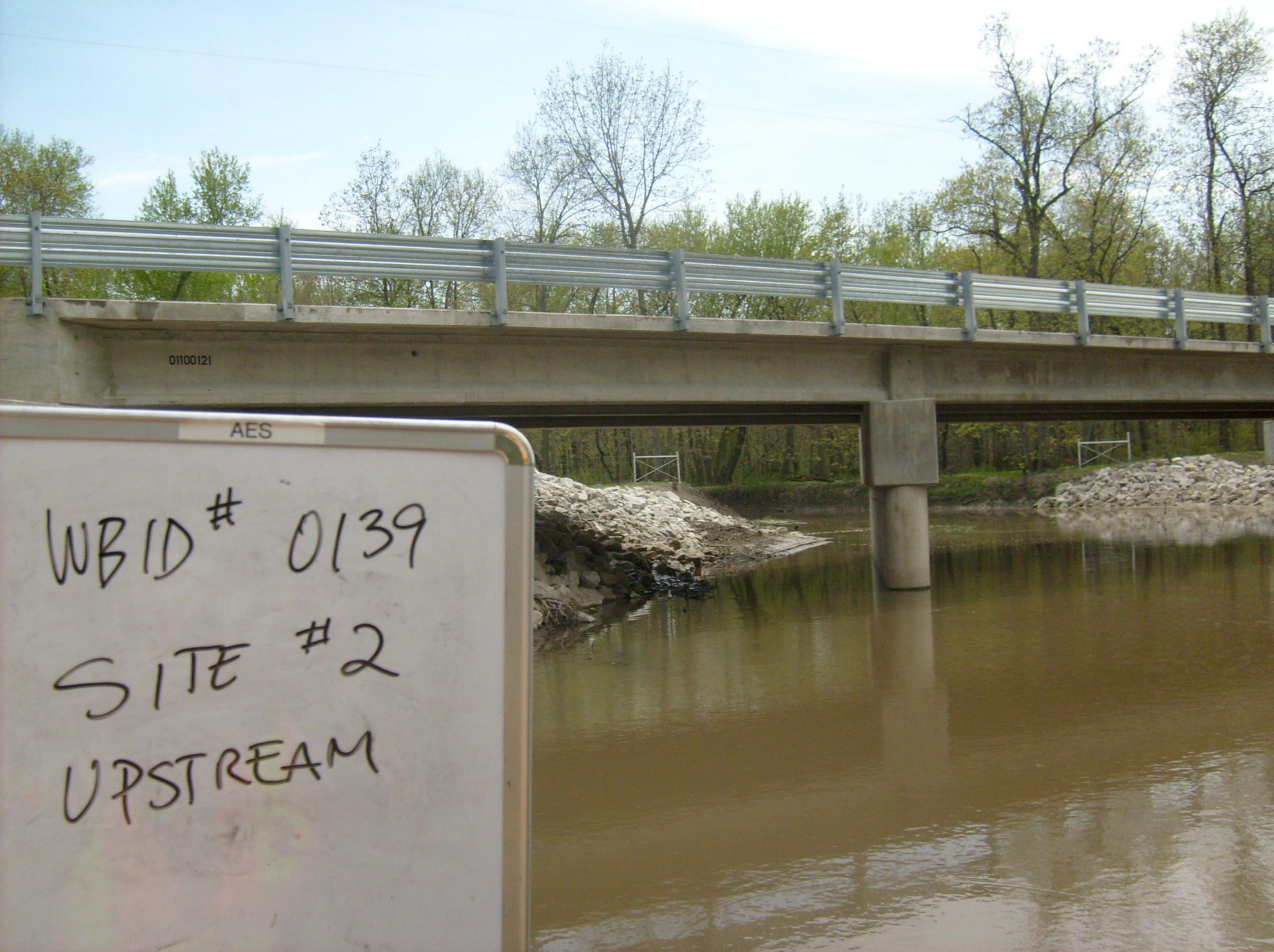
01100121

AES

WBID # 0139

SITE #2

UPSTREAM





AES

WBID # 0139

SITE #2

DNSTREAM

SMART BOARD

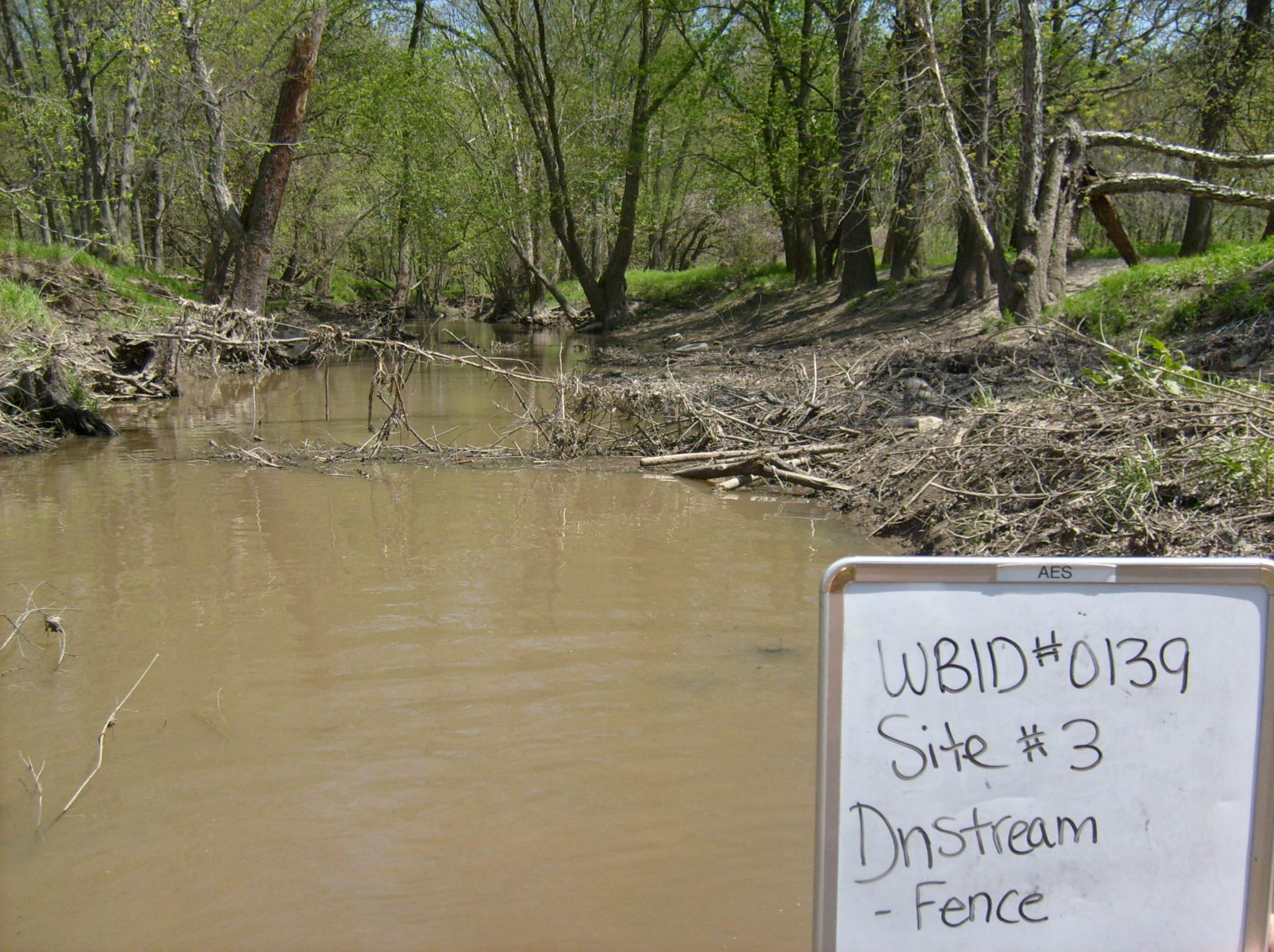
A photograph of a stream with a rocky bank and a grassy hillside. The stream is in the foreground, with a rocky bank on the right side. The water is brownish and reflects the sky. The background shows a grassy hillside and a line of trees.

WBID #0139
Site #2
Transect #10
Man-made dam
and cr. access



AES

WBID#0139
Site #3
Upstream



AES

WBID#0139

Site # 3

Dnstream
- Fence



AES
WBID # 0139

SITE # 4

DN STREAM

AES

WBID # 0139

SITE # 4

UPSTREAM





AES

WBID # 0139

SITE # 5

UPSTREAM

- Low H₂O XING -



AES

WBID # 0139
SITE # 5
DNSTREAM



AES

WBID# 0139

SITE# 6

UPSTREAM

AES

WBID[#] 0139

SITE[#] 6

DNSTREAM



AES

WBID #0139
Site #7
UPSTREAM





AES

WBID #0139
Site # 7
Dnstream



WBID #0139
Site #8
Upstream



WBID #0139
Site #8
Downstream



AES

WBID # 0139

SITE # 9

DN STREAM



AES

WBID # 0139

SITE # 9

UP STREAM

AES

WBID # 0139

SITE # 10

DN STREAM





AES

WBID # 0139

SITE # 10

UPSTREAM



WBID #0139
Site #11
Upstream



WBID #0139
Site #11
Downstream



AES
WBID# 0139

Site # 12

UPSTREAM

AES

WBID# 0139

Site # 12

DN STREAM

ESSE



AES

WBID# 0139
Site # 13
Dn stream



AES

WBID# 0139

Site # 13

Up stream



AES

WBID # 0139.

Site # 14

Upstream

low H₂O crossing

AES

WBID # 0139.

Site # 14

Dnstream



AES

WBID #0139
Site #15
Upstream
Low H₂O crossing





AES

WBID #0139
Site #15
DnStream

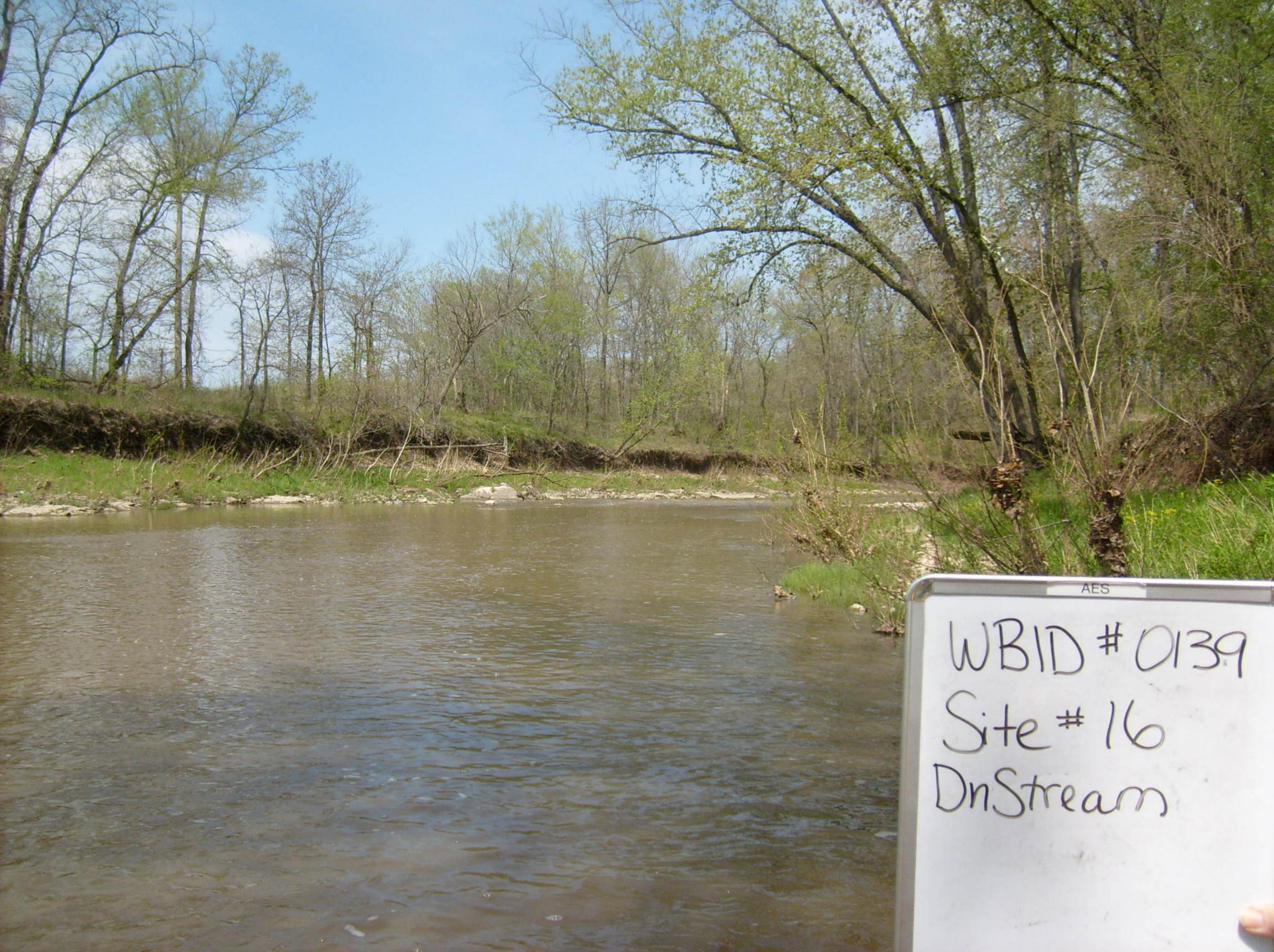
AES

WBID # 0139

Site # 16

UpStream





AES

WBID # 0139
Site # 16
DnStream

WBID # 0139
Site # 16
Boat Access



AES
WBID# 0139
Site # 17
Upstream





AES

WBID# 0139

Site # 17

DnStream