



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0742 Manacle Creek

Submitted by

MEC Water Resources

To

Missouri Department of Natural Resources

Water Protection Program

On

May 29, 2008

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A – Water Body Identification

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

Water Body Name (from USGS 7.5' quad): Manacle Cr.
Missouri Water Body Identification (WBID) Number: 0742
8-digit HUC: 10300102
County(ies), Listed Upstream to Downstream: Callaway
Upstream Legal Description (from Table H): 35, 49N, 11W
Downstream Legal Description (from Table H): Mouth
Number of sites evaluated: 3
List all site numbers, <u>consecutively upstream to downstream</u> : Site 1: 50 m upstream of County Rd. 276 crossing Site 2: County Rd. 269 crossing Site 3: 150 m downstream of Site 2
Include a Site Location Map(s). The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).

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

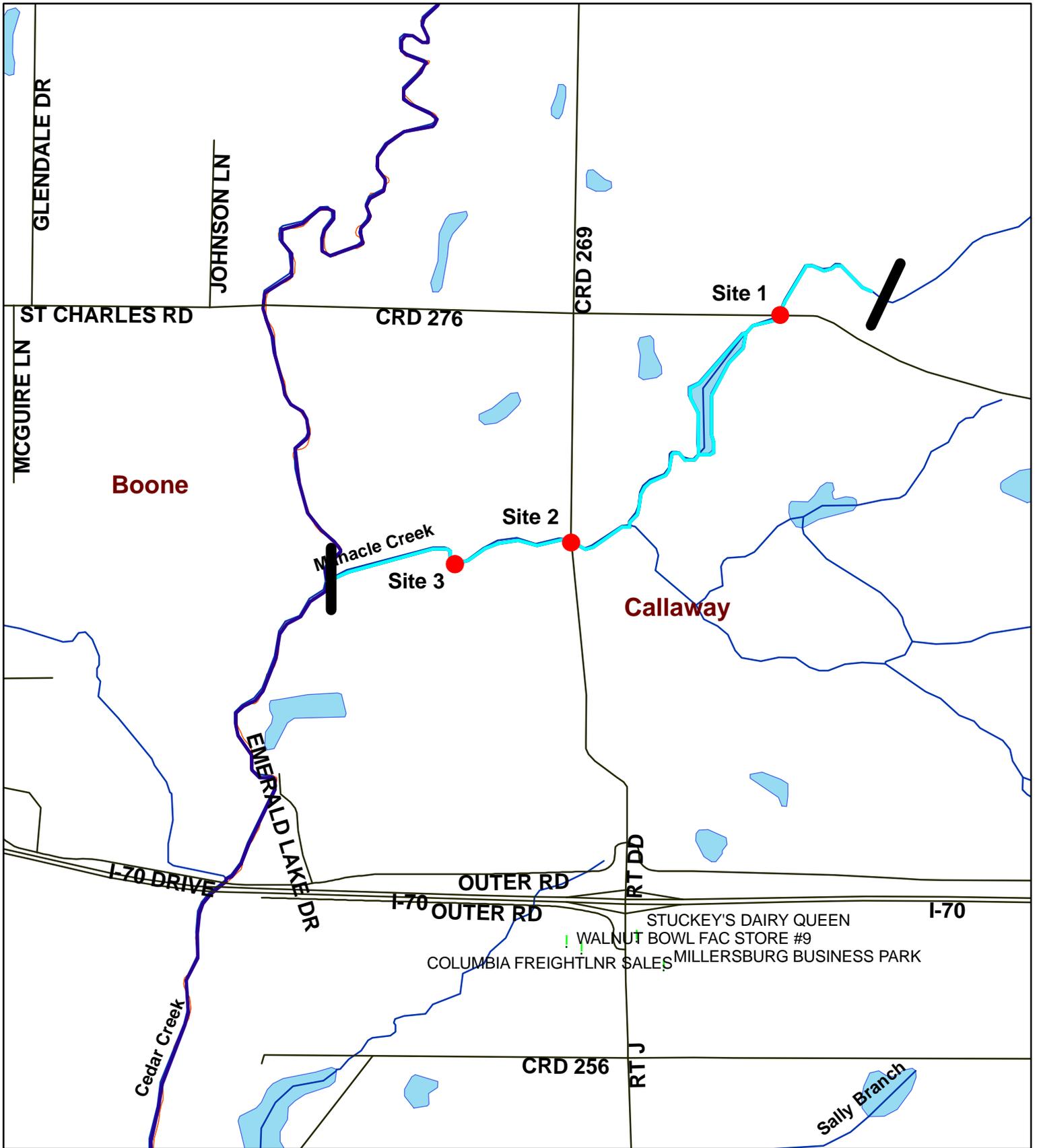
Facility Name(s) and Permit Number(s): Missouri Biosolids, LLC MO 0131342

III. UAA Surveyor (please PRINT legibly)

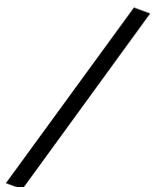
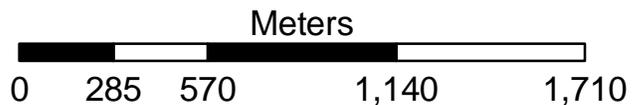
Name of Surveyor: Renee Martin	Telephone Number: 573-875-7844
Organization/Employer: AE Solutions	

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

Signed: _____ Date: _____



**Manacle Creek
WBID 0742
Callaway 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: 4/16/2008 6:45	Location Description (e.g., road crossing):
Stream Name: Manacle Cr.	County Rd. 276 Crossing –upstream 50m
Current Weather Conditions: Partly cloudy	Facility Name(s): Missouri Bio Solids, LLC
¹ Weather Conditions for Past 10 days: rain on & off	Permit Number(s): MO 0131342
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"/>	

1-2.3” precipitation past 10 days. Rm 4/16/2008

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0576186	Northing (UTM Y): 4314685	Horizontal Accuracy: (EPE / FOM / PDOP) 20 Feet
Site 11	Easting (UTM X): 0576134	Northing (UTM Y): 4314574	Horizontal Accuracy: (EPE / FOM / PDOP) 17 Feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2938	Upstream site 1	2939	Dnstream site 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 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 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: trash			

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

10% Cobble	30% Gravel	10% Sand	% Silt	50% 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 type="checkbox"/> Clear	<input type="checkbox"/> Green	<input checked="" 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 checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

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

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 & 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>Manacle Creek</u> Waterbody ID: <u>0742</u> Site #: <u>0742_01</u> Estimated Channel Incision: <u>0.1</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>576186</u> UTM Y: <u>4314685</u> +/- <u>20</u> (feet) 11 UTM X: <u>576134</u> UTM Y: <u>4314574</u> +/- <u>17</u> (feet) Average Stream Width: <u>3.0</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>J. Hrabik & R. Martin</u>	Dissolved Oxygen Date: <u>4/16/2008</u> Time: <u>16:45</u> Dissolved Oxygen: <u>9.54</u> (mg/L) Dissolved Oxygen: <u>82.1</u> (% sat) Specific Cond: <u>200.4</u> (µS/cm) Water Temperature: <u>8.9</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	0.38	0.04	0.41	0.20	0.45	0.20	0.35	0.23	0.33	0.10	0.23	0.13	0.28	0.06	0.20	0.03	0.16	0.01	0.24	0.02	0.20	0.01
2	0.76	0.06	0.82	0.10	0.90	0.40	0.70	0.32	0.66	0.15	0.46	0.16	0.56	0.13	0.40	0.07	0.32	0.02	0.48	0.06	0.40	0.01
3	1.14	0.12	1.23	0.06	1.35	0.52	1.05	0.34	0.99	0.13	0.69	0.15	0.84	0.19	0.60	0.07	0.48	0.04	0.72	0.08	0.60	0.02
4	1.52	0.19	1.64	0.06	1.80	0.66	1.40	0.42	1.32	0.13	0.92	0.17	1.12	0.20	0.80	0.01	0.64	0.06	0.96	0.08	0.80	0.02
5	1.90	0.24	2.05	0.10	2.25	0.73	1.75	0.33	1.65	0.19	1.15	0.13	1.40	0.24	1.00	0.06	0.80	0.06	1.20	0.12	1.00	0.07
6	2.28	0.27	2.46	0.09	2.70	0.73	2.10	0.20	1.98	0.21	1.38	0.12	1.68	0.20	1.20	0.08	0.96	0.09	1.44	0.13	1.20	0.10
7	2.66	0.27	2.87	0.15	3.15	0.62	2.45	0.08	2.31	0.13	1.61	0.13	1.96	0.20	1.40	0.06	1.12	0.10	1.68	0.12	1.40	0.10
8	3.04	0.27	3.28	0.13	3.60	0.54	2.80	0.03	2.64	0.13	1.84	0.15	2.24	0.13	1.60	0.02	1.28	0.08	1.92	0.15	1.60	0.08
9	3.42	0.28	3.69	0.10	4.05	0.39	3.15	0.01	2.97	0.03	2.07	0.08	2.52	0.15	1.80	0.04	1.44	0.03	2.16	0.15	1.80	0.05
Right Bank	3.80	0.00	4.10	0.00	4.50	0.00	3.50	0.00	3.30	0.00	2.30	0.00	2.80	0.00	2.00	0.00	1.60	0.00	2.40	0.00	2.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	Pool		Pool		Pool		Pool		Run		Run		Pool		Riffle		Riffle		Run		Riffle	

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: 4/22/2008 18:15	Location Description (e.g., road crossing):
Stream Name: Manacle Cr.	County Rd. 269 Crossing
Current Weather Conditions: Partly cloudy	Facility Name(s): Missouri Bio Solids, LLC
Weather Conditions for Past 10 days: 2.3" precipitation	Permit Number(s): MO 0131342
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): 0575246	Northing (UTM Y): 4313618	Horizontal Accuracy: (EPE / FOM / PDOP) 24 Feet
Site 11	Easting (UTM X): 0575071	Northing (UTM Y): 4313593	Horizontal Accuracy: (EPE / FOM / PDOP) 21 Feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2962	Upstream	2963	Dnstream	2964	Trash dump @ tran 10-11
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 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:			
Trash dump @ trans 10-11				

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

% Cobble	10% Gravel	60% Sand	% Silt	30% 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 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 & 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>Manacle Creek</u> Waterbody ID: <u>0742</u> Site #: <u>0742_02</u> Estimated Channel Incision: <u>0.1</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>575246</u> UTM Y: <u>4313618</u> +/- <u>24</u> (feet) 11 UTM X: <u>575071</u> UTM Y: <u>4313593</u> +/- <u>21</u> (feet) Average Stream Width: <u>6.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>R. Martin & J. Hrabik</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4/22/2008</u> Time: <u>18:15</u> Dissolved Oxygen: <u>9.48</u> (mg/L) Dissolved Oxygen: <u>108.2</u> (% sat) Specific Cond: <u>599</u> (µS/cm) Water Temperature: <u>21.9</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	0.46	0.21	0.46	0.06	0.41	0.06	0.69	0.16	0.46	0.23	0.56	0.20	1.06	0.26	0.40	0.15	0.70	0.24	0.80	0.46	0.84	0.17
2	0.92	0.29	0.92	0.13	0.82	0.09	1.38	0.26	0.92	0.18	1.12	0.30	2.12	0.25	0.80	0.12	1.40	0.10	1.60	0.40	1.68	0.16
3	1.38	0.35	1.38	0.20	1.23	0.13	2.07	0.27	1.38	0.18	1.68	0.34	3.18	0.24	1.20	0.08	2.10	0.08	2.40	0.48	2.52	0.30
4	1.84	0.50	1.84	0.16	1.64	0.17	2.76	0.26	1.84	0.18	2.24	0.43	4.24	0.20	1.60	0.16	2.80	0.13	3.20	0.51	3.36	0.38
5	2.30	0.53	2.30	0.20	2.05	0.21	3.45	0.27	2.30	0.14	2.80	0.34	5.30	0.21	2.00	0.13	3.50	0.23	4.00	0.45	4.20	0.37
6	2.76	0.43	2.76	0.23	2.46	0.24	4.14	0.36	2.76	0.18	3.36	0.36	6.36	0.18	2.40	0.08	4.20	0.25	4.80	0.45	5.04	0.40
7	3.22	0.40	3.22	0.15	2.87	0.23	4.83	0.28	3.22	0.23	3.92	0.44	7.42	0.07	2.80	0.08	4.90	0.26	5.60	0.36	5.88	0.27
8	3.68	0.36	3.68	0.15	3.28	0.27	5.52	0.26	3.68	0.23	4.48	0.40	8.48	0.08	3.20	0.06	5.60	0.36	6.40	0.28	6.72	0.18
9	4.14	0.20	4.14	0.09	3.69	0.20	6.21	0.23	4.14	0.20	5.04	0.27	9.54	0.31	3.60	0.04	6.30	0.71	7.20	0.20	7.56	0.17
Right Bank	4.60	0.00	4.60	0.00	4.10	0.00	6.90	0.00	4.60	0.00	5.60	0.00	10.60	0.00	4.00	0.00	7.00	0.20	8.00	0.00	8.40	0.00
Feature Type	Run		Riffle		Run		Run		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: 4/22/2008 18:40	Location Description (e.g., road crossing):
Stream Name: Manacle Cr.	150m dnstream of site 2
Current Weather Conditions: Partly cloudy	Facility Name(s): Missouri Bio Solids, LLC
Weather Conditions for Past 10 days: 2.3" precipitation	Permit Number(s): MO 0131342
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): 0574910	Northing (UTM Y): 4313593	Horizontal Accuracy: (EPE / FOM / PDOP) 22 Feet
Site 11	Easting (UTM X): 0574778	Northing (UTM Y): 4313511	Horizontal Accuracy: (EPE / FOM / PDOP) 22 Feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2965	Upstream	2966	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.)				

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 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: none			

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

10% Cobble	30% Gravel	40% 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.

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 & 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>Manacle Creek</u> Waterbody ID: <u>0742</u> Site #: <u>0742_03</u> Estimated Channel Incision: <u>1</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>574910</u> UTM Y: <u>4313593</u> +/- <u>22</u> (feet) 11 UTM X: <u>574778</u> UTM Y: <u>4313511</u> +/- <u>22</u> (feet) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>R. Martin & J. Hrabik</u>	Dissolved Oxygen Date: <u>4/22/200/</u> Time: <u>18:40</u> Dissolved Oxygen: <u>10.25</u> (mg/L) Dissolved Oxygen: <u>118.6</u> (% sat) Specific Cond: <u>662</u> (µS/cm) Water Temperature: <u>22.2</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	0.90	0.47	0.91	0.44	0.95	0.43	0.87	0.18	0.45	0.23	0.23	0.03	0.65	0.20	0.50	0.08	0.68	0.10	0.55	0.41	0.75	0.15
2	1.80	0.43	1.82	0.51	1.90	0.75	1.74	0.28	0.90	0.28	0.46	0.08	1.30	0.30	1.00	0.12	1.36	0.08	1.10	0.32	1.50	0.03
3	2.70	0.39	2.73	0.58	2.85	0.81	2.61	0.37	1.35	0.27	0.69	0.16	1.95	0.36	1.50	0.19	2.04	0.12	1.65	0.20	2.25	0.01
4	3.60	0.39	3.64	0.62	3.80	0.70	3.48	0.42	1.80	0.20	0.92	0.16	2.60	0.45	2.00	0.25	2.72	0.14	2.20	0.19	3.00	0.07
5	4.50	0.39	4.55	0.73	4.75	0.60	4.35	0.39	2.25	0.18	1.15	0.18	3.25	0.29	2.50	0.26	3.40	0.14	2.75	0.09	3.75	0.20
6	5.40	0.51	5.46	0.72	5.70	0.58	5.22	0.42	2.70	0.15	1.38	0.18	3.90	0.19	3.00	0.26	4.08	0.18	3.30	0.08	4.50	0.16
7	6.30	0.45	6.37	0.72	6.65	0.46	6.09	0.38	3.15	0.15	1.61	0.15	4.55	0.19	3.50	0.20	4.76	0.16	3.85	0.08	5.25	0.09
8	7.20	0.36	7.28	0.51	7.60	0.42	6.96	0.35	3.60	0.17	1.84	0.17	5.20	0.10	4.00	0.18	5.44	0.15	4.40	0.12	6.00	0.12
9	8.10	0.16	8.19	0.26	8.55	0.34	7.83	0.34	4.05	0.06	2.07	0.16	5.85	0.06	4.50	0.10	6.12	0.08	4.95	0.08	6.75	0.04
Right Bank	9.00	0.00	9.10	0.00	9.50	0.00	8.70	0.00	4.50	0.00	2.30	0.00	6.50	0.00	5.00	0.00	6.80	0.00	5.50	0.00	7.50	0.00
Feature Type <small>(riffle, run, or pool)</small>	Pool	Pool	Run	Run	Riffle	Riffle	Run	Riffle	Riffle	Run	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: _____

AES

WBID # 0742

SITE # 1

UPSTREAM

AES

WBID # 0742

SITE # 1

DN STREAM



AES

WBID # 0742

SITE # 2

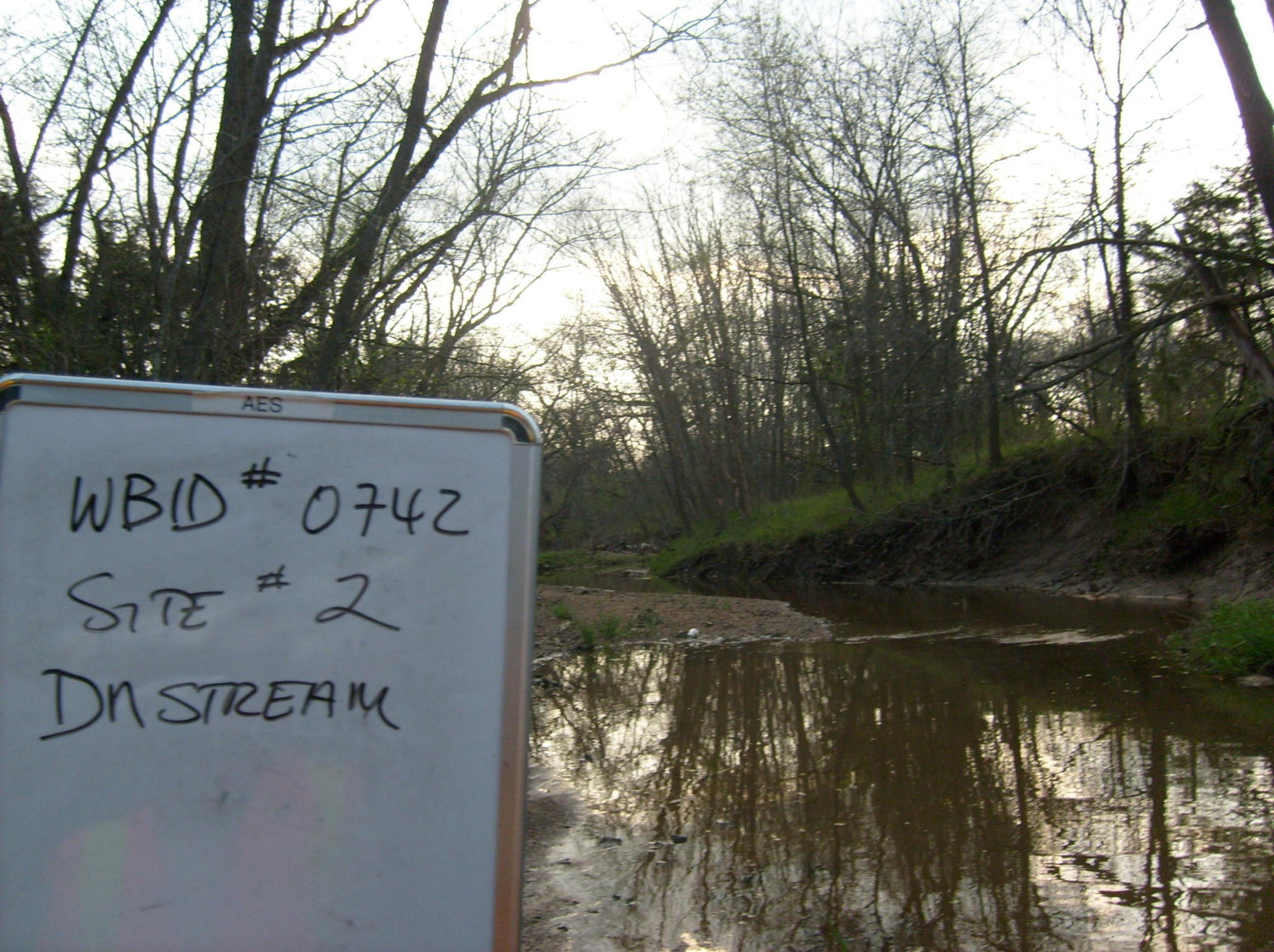
UP STREAM

AES

WBID # 0742

SITE # 2

DN STREAM





WBID #0742
Site #2
Transects
#10-11
Trash dump



WBID #0742
Site #3
Upstream



WBID #0742
Site #3
Downstream