

**MUDDY CREEK
WBID 0557**

Recreational Use Attainability Analysis

May 2007

PREPARED FOR:
RFP No: B3Z07134
Water Quality Monitoring & Assessment Section
Water Protection Program
Division of Environmental Quality
MISSOURI DEPARTMENT OF NATURAL RESOURCES
P O Box 176
Jefferson City, MO 65102

PREPARED BY:
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1123 Wilkes Blvd., Ste. 400
Columbia, MO 65201

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): <i>Muddy Creek</i>	
Missouri Water Body Identification (WBID) Number: <i>557</i>	
8-digit HUC: <i>10280102</i>	County: <i>Mercer/Grundy</i>
Upstream Legal Description (from Table H): <i>22, 66N, 23W</i>	
Downstream Legal Description (from Table H): <i>Mouth</i>	
Number of sites evaluated <i>6th 20</i>	
List all sites numbers, listed cnsquently upstream to downstream: <i>Site 1, Site 2, Site 3, Site 4, Site 5, Site 6, 7-20</i>	

II. Subsegmentation (fill this section out only in cases where subsegmentation is being proposed)

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates:		Downstream Coordinates:	
UTM X	Y	UTM X	Y
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters	
EPE	± _____ Feet or ± _____ Meters		
PDOP			

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

Discharger Facility Name(s): <i>Mercer WWTF, Trenton Munic Util WWTF</i>
Discharger Permit Number(s): <i>MO 0056057, MO 0039748</i>

IV. UAA Surveyor (please print legibly)

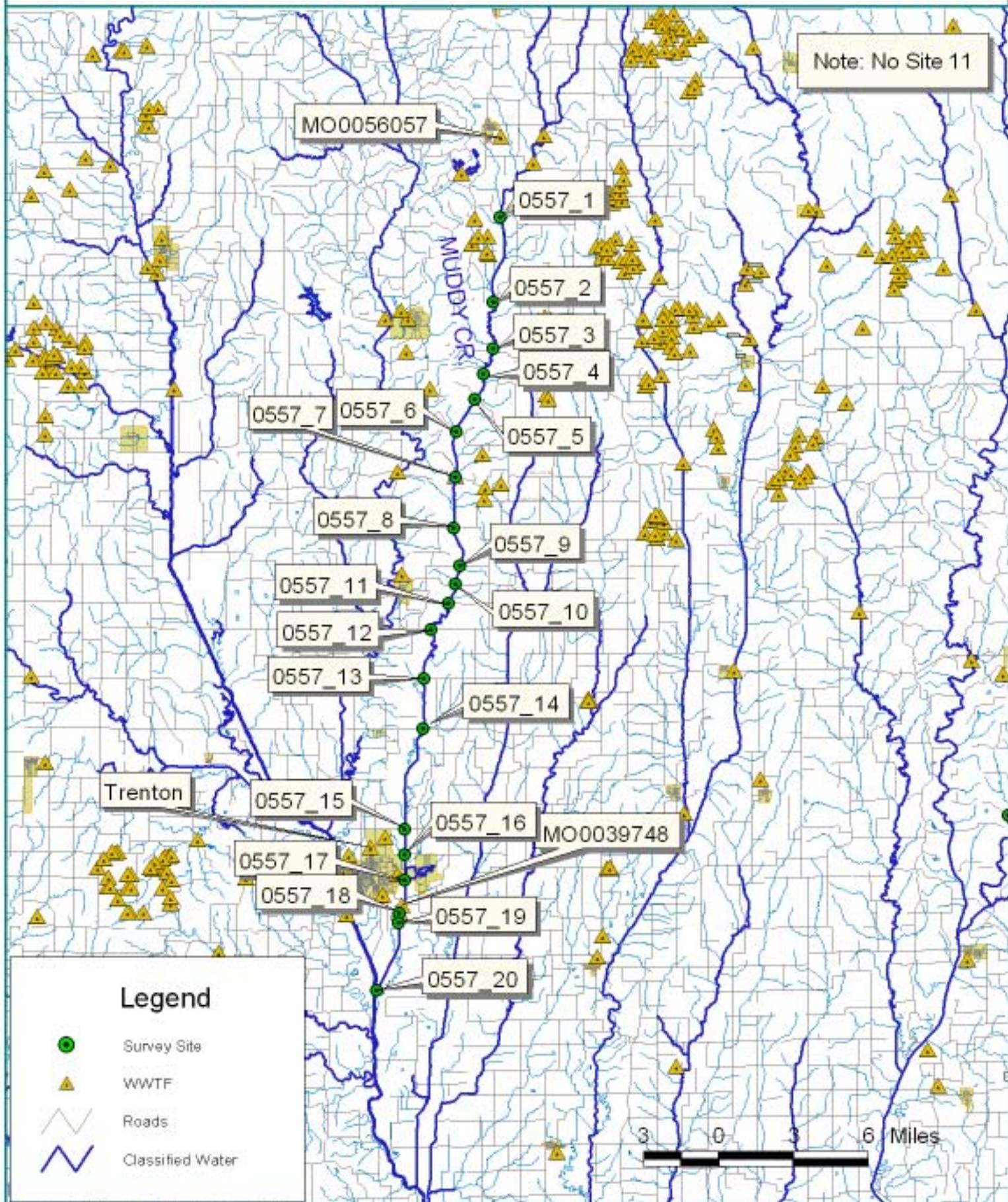
Name of Surveyor: <i>Cassidy Lueberling</i>	Telephone Number: <i>573-443-9100</i>
Organization/Employer: <i>MEC Water Resources</i>	
Position: <i>WQSTL/Field Team Lead</i>	

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

Signed: *Cassidy Lueberling* Date: *5/22/07*

BUC 5-25-07

**Muddy Creek (0557), Length = 36.5 mi.,
Permit # MO0039748, MO0056057**



WBID# 557
 Site# 1

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5/21/07 15137</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors):	<u>CR. 153 Bridge</u>
Current Weather Conditions: <u>Clear, 80°F</u>	Facility Name: <u>Mercer White</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0056057</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations: *Landowner wouldn't grant access

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>455851</u>		Y: <u>4478899</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>20</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>557-1-11</u>	<u>Site 1 US view (from Bridge)</u>		
<u>557-1-12</u>	<u>Site 1 DS view</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

WBID# 557
 Site# 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

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

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Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: Cassidy Smith Date of Survey: 5/21/07

Organization: MFC Water Position: NQS II/Field Team Lead

WBID# 557
 Site# 2

Field Data Sheets for Recreational Use Stream Surveys

Muddy Cr.

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

Date & Time: <u>5/21/07 16:10</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CL, JB</u>	<u>Hwy 136 Bridge</u>
Current Weather Conditions: <u>Clear 89°F</u>	Facility Name: <u>Mercer WWTF</u>
	Permit Number: <u>MO 0056057</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>455380</u>		Y: <u>4473406</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>22</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>557-213</u>	<u>Site 2 US View</u>		
<u>557-214</u>	<u>Site 2 DS View</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

WBID# 557
 Site# 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
5 RIFFLE						
85 RUN	1	0	4.3	18	.1	.2
10 POOL	10	162	6.6	18	.2	.3

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

0 % Cobble	5 % Gravel	80 % Sand	5 % Silt	10 % Mud/Clay	0 % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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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 type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: Cassidy [Signature] Date of Survey: 5/21/07

Organization: MEC Water Position: WRSTI/Field Team Lead

MEC Recreational Use Attainability Analysis Field Survey Sheet

Dissolved Oxygen

Date: 5/25/07 Time: 16:15

Dissolved Oxygen: 9.16 (mg/L)

Dissolved Oxygen: 112.6 (% sat)

Specific Cond: 484.5 (µS/cm)

Water Temperature: 26.0 (°C)

Waterbody ID: 557 Site #: 2 (WBID_Site#)

Estimated Channel Incision: 3 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 455380 UTM Y: 4473406

Horizontal Accuracy Estimate (GPS Data Quality): +/- 22 (feet)

Average Stream Width: 9 (meters) Length of Survey Segment: 180 (meters)
(20x average stream width)

Field Staff: CL, SB

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)										
1	0.3	.1	.3	.1	0	.3	.2	.1	.2	.1	5.1	.1	5.1	0.1	2.4	0.1	3.3	0.1	.6	.1	.2	0.1
2	1.19	.2	1.37	.1	0.39	.3	0.60	.3	0.85	.2	5.66	.1	2.7	.1	2.85	.1	3.48	.1	1.17	.1	0.82	.3
3	2.08	<.1	2.44	.1	0.78	.3	1.00	.3	1.5	.2	6.22	.1	3.6	<.1	3.3	.1	3.66	.2	1.74	.2	1.44	.3
4	2.97	0	3.51	<.1	1.17	.3	1.40	.2	2.15	.2	6.78	<.1	4.5	0	3.75	.1	3.84	.2	2.31	.2	2.06	.2
5	3.86	0	4.58	0	1.56	.2	1.8	.2	2.8	.2	7.34	<.1	5.4	<.1	4.2	<.1	4.02	.2	2.88	.3	2.68	.2
6	4.75	.1	5.65	0	1.95	.1	2.2	.2	3.45	.2	7.9	<.1	6.3	<.1	4.65	<.1	4.2	.2	3.45	.3	3.3	.2
7	5.64	.1	6.72	0	2.34	.1	2.6	.1	4.1	.2	8.46	.1	7.2	<.1	5.1	<.1	4.38	.3	4.02	.3	3.92	.3
8	6.53	.1	7.99	<.1	2.73	.1	3.0	.1	4.75	.1	9.02	.1	8.1	.1	5.55	<.1	4.56	.3	4.59	.2	4.54	.3
9	7.42	.1	8.86	.1	3.12	.1	3.4	.1	5.4	<.1	9.58	<.1	9.0	.1	6.0	.1	4.74	.2	5.16	.1	5.16	.3
10	8.31	.1	9.93	<.1	3.51	.1	3.8	.1	6.05	.1	10.14	<.1	9.9	.1	6.45	.1	4.92	.2	5.73	.1	5.78	.3
11	9.2	.1	11.0	.1	3.9	.1	4.2	.1	6.7	.1	10.7	.1	10.8	.1	6.9	0.1	5.1	0.1	6.3	0.1	6.4	0.1
12	9.3	0	11.3	0	5.1	0	6.3	0	9.2	0	11	0	12.3	0	7.5	0	5.4	0	6.6	0	6.6	0
Feature Type (riffle run, or pool)	Run		Slide/Pool		Run		Run		Run		Pool		Pool									

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
Transects in order of up to downstream.

Mark dry depth measurements as 0, measurements less than 0.1m as <0.1, and greater than 1m as >1
Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 9m.

Signed: [Signature] Date: 5/25/07

[Signature] Date: 5-25-07

WBID# 557
 Site# 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5/21/07 7:15</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CL, JB</u>	<u>Bridge over CR Gazebo St</u>
Current Weather Conditions: <u>Clear, 83°F</u>	Facility Name: <u>Mercer WWTF</u>
	Permit Number: <u>MO 0056057</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>455384</u>		Y: <u>4470424</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>22</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>557-3-15</u>	<u>Site 3 US view</u>		
<u>557-3-16</u>	<u>Site 3 DS view</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

WBID# 557
 Site# 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
5% 75% 80% RIFPLE	9	160	10	20	.1	.2
RUN	7	120	9.3	20	.3	.4
POOL	1	0	10.8	20	.6	1.0

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFPLE					
RUN					
POOL					

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

20 % Cobble	10 % Gravel	10 % Sand	5 % Silt	40 % Mud/Clay	15 % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

—

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>Brown</u>
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: Cassidy Kuehling Date of Survey: 5/21/07
 Organization: MFC Water Position: WEST/Field Team Lead

auc 5-25-07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Dissolved Oxygen

Date: 5/21/07 Time: 17:25

Dissolved Oxygen: 8.10 (mg/L)

Dissolved Oxygen: 98.8 (% sat)

Specific Cond: 503 (µS/cm)

Water Temperature: 25.8 (°C)

Waterbody ID: 557 Site #: 3
(WBID Site#)

Estimated Channel Incision: .3 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 4553384 UTM Y: 4470924

Horizontal Accuracy Estimate (GPS Data Quality): +/- 2.2 (feet)

Average Stream Width: 11 (meters) Length of Survey Segment: 200 (meters)
(20x average stream width)

Field Staff: CL, SB

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	.3	.1	.3	.1	.3	0.1	0	.1	1.2	0.1	.3	.1	.3	.1	.3	.1	.9	.1	.1	.1	0	.1
2	1.27	.3	1.54	.2	1.57	.2	1.40	.3	2.45	.2	1.95	.3	1.11	.3	0.83	0	1.54	.2	0.75	>1	1.2	.5
3	2.24	.4	2.78	.3	2.84	.2	2.8	.6	3.7	.2	3.6	.3	1.92	.4	1.36	.1	2.18	.1	1.4	1.0	2.4	.4
4	3.21	.6	4.02	.3	4.11	.2	4.2	.6	4.95	.2	5.25	.3	2.73	.3	1.89	.3	2.82	0	2.05	.8	3.6	.7
5	4.18	.9	5.26	.4	5.38	.3	5.6	.5	6.2	.4	6.9	.3	3.54	.3	2.42	.4	3.46	<.1	2.70	.8	4.8	.7
6	5.15	1.0	6.5	.4	6.65	.3	7	.4	7.45	.4	8.55	.3	4.35	.3	2.95	.4	4.10	<.1	3.35	.8	6.0	.5
7	6.12	1.0	7.74	.4	7.92	.4	8.4	.5	8.7	.4	10.2	.3	5.16	.4	3.48	.4	4.74	.2	4.0	.6	7.2	.6
8	7.09	.6	8.98	.4	9.19	.6	9.8	.5	9.95	.4	11.85	.3	5.97	.3	4.01	.5	5.38	.2	4.65	.5	8.4	.6
9	8.06	.6	10.22	.4	10.46	.6	11.2	.5	11.2	.4	13.5	.2	6.78	.2	4.54	.4	6.02	.1	5.3	.4	9.6	.3
10	9.03	.4	11.46	.2	11.73	.6	12.6	.4	12.45	.5	15.15	.1	7.59	.2	5.07	.2	6.66	.1	5.95	.3	10.8	.3
11	10	.1	12.7	0.1	13.0	0.1	14.0	.1	13.7	0.1	16.8	.1	8.4	0.1	5.6	.1	7.3	.1	6.6	0.1	12.0	.1
12	10.8	0	13	0	13.0	0	14.3	0	13.7	0	16.8	0	9.3	0	6.0	0	10	0	7.2	0	12.3	0
	Pool										Run		Run		Run		Riffle		Pool		Pool	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <.1; and greater than 1m as >1
Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: [Signature] Date: 5/21/07

WBID# 557
 Site# 4

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5/22/07 6:30</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CL, JB</u>	<u>Hwy E bridge</u>
Current Weather Conditions: <u>P. Cloudy</u>	Facility Name: <u>Morris WWTF</u>
	Permit Number: <u>MO 0056057</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>454772</u>		Y: <u>4468783</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>23</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>557-4-17</u>	<u>site 4 US view</u>		
<u>557-4-18</u>	<u>site 4 DS view</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

WBID# 557
 Site# 4

Field Data Sheets for Recreational Use Stream Surveys

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

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
15 65 20 RIFPLE	6	120	204.8	20	.1	.2
RUN	7	140	3.0	20	.3	.5
POOL	1	0	12	20	>1	>1

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFPLE					
RUN					
POOL					

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

5 % Cobble	55 % Gravel	15 % Sand	5 % Silt	20 % Mud/Clay	0 % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

—

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: Cassidy Schubert Date of Survey: 5/22/07
 Organization: MEC Water Position: WQST/Field Team Lead

BUC 5-25-07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 557 Site #: 4
(WBID_Site#)

Estimated Channel Incision: 3 (m) (height between low bank width and water)
GPS Location (taken at transect 1):
UTM X: 454772 UTM Y: 4468783

Horizontal Accuracy Estimate (GPS Data Quality): +/- 23 (feet)

Average Stream Width: 12 (meters) Length of Survey Segment: 200 (meters)
(20X average stream width)

Field Staff: CL, SB

Dissolved Oxygen

Date: 5/24/07 Time: 6:55

Dissolved Oxygen: 7.70 (mg/L)

Dissolved Oxygen: 83.2 (% sat)

Specific Cond: 496 (µS/cm)

Water Temperature: 19.1 (°C)

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11			
	Distance (m)	Depth (m)																						
1	1.1	1.3	1.3	1.1	0	0.1	0	1.1	0	1.1	0.1	0	0.1	0	1.1	0	1.1	0	1.1	0	1.1	0	1.1	
2	1.28	4	1.34	3	0.93	1.2	0.51	3	0.6	2	1.26	1.2	0.28	5	0.72	1.2	0.6	1.2	0.6	1.2	0.79	1.3	1.26	1.2
3	2.46	>1	2.38	2	1.86	3	1.02	3	1.2	2	1.52	1.1	0.56	5	1.44	<1	1.2	1.4	1.2	1.58	3	5.25	<1	1
4	3.64	1	3.42	3	2.79	4	1.53	2	1.8	2	1.78	1.1	0.84	4	2.16	1	1.8	5	2.37	3	3.78	4	5.04	1
5	4.82	1	4.46	4	3.72	3	2.04	<1	2.4	2	2.04	1.2	1.12	5	2.88	1	2.4	4	3.16	4	5.04	4	6.3	1
6	6.0	1	5.5	4	4.65	3	2.55	<1	3.0	3	2.3	1.2	1.4	4	3.6	1	3.0	4	3.95	4	6.3	4	7.56	1
7	7.18	1	6.54	4	5.58	2	3.06	<1	3.6	3	2.56	1.1	1.68	3	4.32	1	3.6	4	4.74	4	7.56	4	8.82	1.04
8	8.36	1	7.58	3	6.51	3	3.57	<1	4.2	4	2.82	1.1	1.96	3	5.04	<1	4.2	3	5.53	4	8.82	4	10.08	<1
9	9.54	>1	8.62	2	7.44	3	4.08	1.1	4.8	4	3.08	1.1	2.24	2	5.76	1.1	4.8	3	6.32	4	10.08	4	11.34	1.5
10	10.72	3	9.66	2	8.37	2	4.59	1.1	5.4	3	3.34	1.1	2.52	1.1	6.48	<1	5.4	3	7.11	4	11.34	4	12.6	1
11	11.9	1	10.7	1.1	9.3	1	5.1	0.1	6.0	0.1	3.6	0.1	2.8	0.1	7.2	1.1	6.0	1.1	7.9	0.1	12.6	1	12.6	1
12	12.0	0	11	0	9.3	0	11.1	0	6.3	0	4.8	0	3.0	0	8.0	0	6.0	0	8.0	0	12.6	0	12.6	0
Feature Type (riffle run, or pool)	Pool		Pool		Pool		Riffle/Run		Riffle/Run		Riffle		Run		Riffle		Run		Pool		Pool		Pool	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
Transects in order of up to downstream.
Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1
Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width; distance and depth = 0m.

Signed: [Signature] Date: 5/24/07
[Signature] Date: 5-25-07

WBID# 557
 Site# 5

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5/22/07 7:50</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CL, JB</u>	<u>Bridge on Harrier Rd</u>
Current Weather Conditions: <u>P. Cloudy, 70°F</u>	Facility Name: <u>Mercer WWTF</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0056057</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>454235</u>		Y: <u>4467124</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>29</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>557-5-19</u>	<u>Site 5 US view</u>		
<u>557-5-20</u>	<u>Site 5 DS view</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

MEC Recreational Use Attainability Analysis Field Survey Sheet

Dissolved Oxygen

Date: 5/22/07 Time: 5:00

Dissolved Oxygen: 8.97 (mg/L)

Dissolved Oxygen: 96.6 (% sat)

Specific Cond: 496.7 (µS/cm)

Water Temperature: 18.9 (°C)

Waterbody ID: 557 Site #: 5
(MSID_Site#)

Estimated Channel Incision: .15 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 454235 UTM Y: 4467124

Horizontal Accuracy Estimate (GPS Data Quality): +/- 29 (feet)

Average Stream Width: 7 (meters) Length of Survey Segment: 150 (meters)
(20x average stream width)

Field Staff: CL, SB

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	3.3	.1	.6	0.1	1.0	.1	2.5	0.1	.6	0.1	.1	.1	.2	.1	0	.1	.1	0.1	0	0.1	0.3	.1
2	3.8	.1	1.05	<.1	2.17	.1	3.12	.2	1.03	.1	1.29	.1	1.28	.2	0.65	.1	0.69	.1	0.80	.2	1.07	.1
3	4.3	.2	1.50	.1	3.34	.3	3.74	.2	1.46	.2	2.48	<.1	2.30	.2	1.30	.1	1.28	.1	1.28	.1	1.6	.1
4	4.8	.2	1.95	.1	4.51	.3	4.36	.2	1.89	.2	3.67	<.1	3.44	<.1	1.95	.1	1.87	.1	2.4	.1	2.61	<.1
5	5.3	.2	2.4	.2	5.68	.1	4.98	.3	2.32	.3	4.86	<.1	4.52	0	2.60	.1	2.46	.1	3.2	.1	3.28	<.1
6	5.8	.2	2.85	.2	6.85	0	5.6	.3	2.75	.4	6.05	<.1	5.6	0	3.35	.1	3.05	.2	4.0	.1	4.15	.1
7	6.3	.2	3.3	.2	8.02	0	6.22	.4	3.18	.4	7.24	<.1	6.68	0	3.90	.1	3.64	.1	4.8	.1	4.92	<.1
8	6.8	.2	3.75	.2	9.19	0	6.84	.3	3.61	.5	8.43	<.1	7.76	0	4.55	.2	4.23	.1	5.6	<.1	5.69	.1
9	7.3	.2	4.2	.2	10.36	.2	7.46	.3	4.04	.5	9.62	<.1	8.84	<.1	5.2	.2	4.82	<.1	6.4	<.1	6.46	<.1
10	7.8	.1	4.65	.1	11.53	.3	8.08	.3	4.47	.3	10.81	.1	9.92	<.1	5.55	.1	5.41	.1	7.2	<.1	7.23	.1
11	8.3	.1	5.1	.1	12.7	0.1	8.7	.1	4.19	0.1	12.8	0.1	11.0	0.1	6.5	0	6.0	.1	8.0	.1	8.0	0.1
12	8.0	0	7.2	0	13	0	9	0	5.2	0	12.0	0	13.2	0	7.2	0	7.0	0	8.3	0	8.3	0
Feature Type (with run, or pool)	Run	Pool	Pool	Run	Run	Run																

Notes: Transects will be measured beginning on left descending bank and ending on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0. Measurements less than 0.1m as <.1; and greater than 1m as >1.

Measurement 1 depth = 0.1m (unless depth is indicated); Measurement 11 depth = 0.1m (unless depth is indicated); Measurement 12 distance = entire width with distance and depth = 0m.

Signed:

Carole Shubert

Date:

5/22/07

CL SB

WBID# 557
 Site# 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5/22/07 9:05</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CL, JB</u>	<u>Bridge on Imperial St</u>
Current Weather Conditions: <u>Cloudy, 75°F</u>	Facility Name: <u>Mercer WWT</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0056057</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>453047</u>		Y: <u>4465057</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>32</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>557-6-21</u>	<u>Site 6 view US</u>		
<u>557-6-22</u>	<u>Site 6 DS view</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

WBID# 557
 Site# 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE	4	48	10.2	16	.1	.2
RUN	5	64	8.1	16	.3	.4
POOL	1	0	9.1	16	.5	.7

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

<u>20</u> % Cobble	<u>5</u> % Gravel	<u>60</u> % Sand	<u>5</u> % Silt	<u>10</u> % Mud/Clay	<u>0</u> % Bedrock
--------------------	-------------------	------------------	-----------------	----------------------	--------------------

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: Cassidy Smith Date of Survey: 5/22/07
 Organization: MEC Water Position: W&SII/Field Team Lead

MEC Recreational Use Attainability Analysis Field Survey Sheet

Dissolved Oxygen

Date: 5/22/07 Time: 9:10

Dissolved Oxygen: 9.15 (mg/L)

Dissolved Oxygen: 98.8 (% sat)

Specific Cond: 499.9 (µS/cm)

Water Temperature: 19.1 (°C)

Waterbody ID: 557 Site #: 6 (WBID_Site#)

Estimated Channel Incision: 0.15 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 453047 UTM Y: 4465057

Horizontal Accuracy Estimate (GPS Data Quality): +/- 32 (feet)

Average Stream Width: 8 (meters) Length of Survey Segment: 160 (meters)
(20x average stream width)

Field Staff: CL, TB

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	0	.1	.3	.1	.6	.1	1.5	0.1	.3	.1	1.6	.1	3	0.1	.3	.1	.6	0.1	0	.1	.5	.1
2	0.91	4.1	1.42	.4	1.81	.3	2.35	.1	1.05	.1	1.89	.2	3.51	.3	1.35	.1	0.96	.1	0.45	.2	1.32	.2
3	1.82	.4	2.54	.4	3.02	.3	3.2	.1	1.80	.4	2.18	.2	4.02	.4	2.4	.1	1.32	.1	0.90	.2	2.14	.1
4	2.73	.5	3.66	.4	4.23	.3	4.05	.1	2.55	.4	2.47	.3	4.53	.4	3.45	.1	1.68	.1	1.35	.2	2.96	.1
5	3.64	.5	4.78	.7	5.44	.4	4.9	.2	3.3	.3	2.76	.3	5.04	.4	4.5	.1	2.04	.1	1.80	.2	3.78	.1
6	4.55	.5	5.9	.7	6.65	.5	5.85	.1	4.05	.3	3.05	.3	5.55	.4	5.55	.1	2.4	.1	2.25	.2	4.6	<.1
7	5.46	.6	7.02	.6	7.86	.5	6.6	.1	4.8	.3	3.34	.2	6.06	.4	6.6	.1	2.76	.1	2.70	.2	5.42	<.1
8	6.37	.7	8.14	.7	9.07	.2	7.45	<.1	5.55	.1	3.63	.3	6.57	.5	7.65	.2	3.12	.1	3.15	.2	6.24	<.1
9	7.28	.5	9.26	.6	10.38	.4	8.3	0	6.3	.3	3.92	.2	7.08	.4	8.7	.2	3.48	.1	3.60	.1	7.66	<.1
10	8.19	.5	10.38	.5	11.49	.3	9.15	.1	7.05	.3	4.21	.2	7.59	.3	9.75	.2	3.54	.1	4.05	.1	7.88	.1
11	9.1	.1	11.5	0	12.7	.1	10.0	.1	7.9	.1	4.5	.1	8.1	.1	10.8	.1	4.42	.1	4.5	.1	8.7	.1
12	9.1	0	11.5	0	13	0	10.2	0	9.1	0	4.8	0	9.7	0	11.1	0	8.7	0	5.5	0	13.5	0
Feature Type (riffle run, or pool)	Pool		Pool		Pool		Riffle		Run		Run		Pool		Pool		Pool		Run		Run	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0, measurements less than 0.1m as <0.1, and greater than 1m as >1

Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: _____

Candy Shukling

Date: 5/22/07

BWC 5-25-07

WBID# 557
 Site# 7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5-24-07 9:30</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB, JB</u>	<u>Independence / Coon Cemetery Road Crossing</u>
Current Weather Conditions: <u>Cloudy Cool</u>	Facility Name: <u>Trenton WWTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0039748</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>453008</u>		Y: <u>4462120</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>18</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0557-7-1</u>	<u>upstream</u>		
<u>0557-7-2</u>	<u>downstream</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:
Agricultural land. Surrounding.

WBID# 557
 Site# 7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

% Cobble	<u>10</u> % Gravel	<u>85</u> % Sand	<u>5</u> % Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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: <u>Sand</u>
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: [Signature] Date of Survey: 5-24-07

Organization: MEL Position: WQ SCIENTIST 700-1211

MEL 5-25-07 MEL

MEC Recreational Use Attainability Analysis Field Survey Sheet

Dissolved Oxygen

Waterbody ID: 557 Site #: 7 (WBLD_Ste#)

Estimated Channel Incision: 1.5 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 453008 UTM Y: 4462120

Horizontal Accuracy Estimate (GPS Data Quality): +/- 18 (feet)

Average Stream Width: 7 (meters) Length of Survey Segment: 140 (meters)
(20x average stream width)

Field Staff: CB, JB

Date: 5-24 Time: 9:30

Dissolved Oxygen: 76.5 (mg/L)

Dissolved Oxygen: 584 (% sat)

Specific Cond: 481 (µS/cm)

Water Temperature: 19.8 (°C)

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	5.1	0.1	2.0	0.1	1.5	0.1	0.2	0.1	6.1	0.1	0.1	0.1	6.2	0.1	5.1	0.1	6.1	0.1	6.1	0.1	6.3	0.1
2	1.0	0.1	2.0	0.1	3.0	0.1	1.4	0.3	1.25	0.3	0.7	0.2	0.9	0.4	0.8	0.3	0.5	0.5	0.7	0.3	1.5	0.1
3	2.0	0.2	2.0	0.1	3.0	0.1	2.6	0.4	2.48	0.3	1.3	0.3	1.5	0.3	1.5	0.2	0.8	0.4	1.3	0.3	2.6	0.1
4	3.0	0.1	2.0	0.1	4.7	0.1	3.7	0.3	3.58	0.2	2.0	0.4	2.2	0.3	2.2	0.2	1.2	0.4	2.0	0.4	3.8	0.1
5	4.0	0.1	2.0	0.1	5.7	0.1	4.9	0.3	4.78	0.2	2.6	0.3	2.9	0.3	2.9	0.2	1.6	0.3	2.6	0.3	4.9	0.1
6	5.0	0.1	2.0	0.1	6.8	0.1	6.1	0.2	5.82	0.2	3.2	0.3	3.6	0.2	3.6	0.2	2.0	0.3	3.2	0.3	6.1	0.2
7	6.0	0.1	2.0	0.1	7.8	0.1	7.3	0.3	6.9	0.2	3.8	0.3	4.2	0.2	4.2	0.2	2.3	0.3	3.8	0.2	7.3	0.1
8	7.0	0.2	2.0	0.1	8.9	0.1	8.5	0.4	8.1	0.2	4.4	0.3	4.9	0.2	4.9	0.1	2.7	0.3	4.4	0.2	8.4	0.1
9	8.0	0.2	2.0	0.1	9.9	0.1	9.6	0.4	9.2	0.2	5.1	0.2	5.6	0.2	5.6	0.1	3.1	0.2	5.1	0.2	9.6	0.2
10	9.0	0.1	2.0	0.1	11.0	0.2	10.8	0.3	10.3	0.2	5.7	0.2	6.2	0.1	6.3	0.1	3.4	0.2	5.7	0.2	10.7	0.3
11	9.9	0.1	2.1	0.1	12.0	0.1	12.8	0.1	11.5	0.1	6.2	0.1	7.7	0.1	7.0	0.1	3.8	0.1	6.3	0.1	11.9	0.1
12	10	0	11.1	0	12.1	0	12.5	0	12.5	0	6.7	0	7.7	0	8.0	0	4.3	0	6.8	0	12.0	0

Notes: Transects will be measured beginning on left ascending bank and finishing on right ascending bank

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Mark dry depth measurements as 0, measurements less than 0.1m as <0.1, and greater than 1m as >1
Measurement 1 depth = 0.1m (unless depth is marked); Measurement 12 distance = error within width distance and depth = 0m

Signed: Shawn Bork Date: 5-24-07

WBID# 557
 Site# 8

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5-24-07 10:15</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB, JB</u>	<u>Jasper Road Crossing</u>
Current Weather Conditions: <u>Cloudy, Cool</u>	Facility Name: <u>Trenton WWTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0039748</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>452890</u>		Y: <u>4458915</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>20.4</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0557-8-3</u>	<u>Upstream</u>		
<u>0557-8-4</u>	<u>Downstream</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:
Agricultural land surrounding

WBID# 557
 Site# 8

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

% Cobble	<u>5</u>	% Gravel	<u>90</u>	% Sand	<u>5</u>	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: [Signature] Date of Survey: 5-24-07
 Organization: MEL Position: Field Team Leader

RNC 5-25-07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Dissolved Oxygen

Date: 5-24-07 Time: 10:15 AM

Dissolved Oxygen: 9.6 (mg/L)

Dissolved Oxygen: 97 (% sat)

Specific Cond: 340 (µS/cm)

Water Temperature: 19.4 (°C)

Waterbody ID: 557 Site #: 8 (WBID_Site#)

Estimated Channel Incision: 1.5 (m) (height between low bank width and water)

GPS Location (taken at transect 1): UTM X: 452840 UTM Y: 4458915

Horizontal Accuracy Estimate (GPS Data Quality): +/- 20.4 (feet)

Average Stream Width: 8 (meters) Length of Survey Segment: 160 (meters)
(20x average stream width)

Field Staff: CB, JB

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	0.5	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.5	0.1	0.5	0.1	1.0	0.1	0.5	0.1	1.0	0.1	0.1	0.1	0.1	0.1
2	1.5	0.3	0.9	0.2	1.4	0.2	1.1	0.1	1.0	0.1	1.0	0.2	1.4	0.1	0.6	0.3	1.8	0.2	0.5	0.2	0.7	0.3
3	2.4	0.2	1.7	0.1	2.3	0.1	2.1	0.1	1.5	0.2	1.5	0.2	1.8	0.1	1.2	0.3	2.6	0.3	0.9	0.2	1.2	0.2
4	3.4	0.2	2.6	0.1	3.2	0.2	3.0	0.1	2.1	0.3	2.0	0.2	2.2	0.2	1.7	0.1	3.4	0.3	1.4	0.2	1.8	0.2
5	4.3	0.2	3.4	0.1	4.1	0.1	4.0	0.1	2.6	0.3	2.5	0.2	2.6	0.2	2.3	0.1	4.2	0.3	1.8	0.2	2.3	0.2
6	5.3	0.1	4.2	0.1	5.1	0.1	5.0	0.1	3.1	0.3	3.1	0.2	3.1	0.2	2.8	0.1	5.0	0.3	2.2	0.2	2.9	0.2
7	6.2	0.2	5.0	0.1	6.0	0.1	6.0	0.1	3.6	0.3	3.6	0.2	3.5	0.2	3.3	0.2	5.7	0.3	2.6	0.2	3.5	0.2
8	7.2	0.2	5.8	0.1	6.9	0.1	7.0	0.1	4.1	0.4	4.1	0.3	3.9	0.2	3.9	0.2	6.5	0.3	3.0	0.2	4.0	0.2
9	8.1	0.1	6.7	0.1	7.8	0.1	7.9	0.1	4.7	0.4	4.6	0.3	4.3	0.2	4.4	0.2	7.3	0.3	3.5	0.2	4.6	0.2
10	9.1	0.1	7.5	0.1	8.7	0.1	8.9	0.1	5.2	0.5	5.1	0.2	4.7	0.2	5.0	0.2	8.1	0.3	3.9	0.1	5.1	0.1
11	10.0	0.1	8.3	0.1	9.6	0.1	9.9	0.1	5.7	0.1	5.4	0.1	5.1	0.1	5.5	0.1	8.9	0.1	4.3	0.1	5.7	0.1
12	13.0	0	10.3	0	12.6	0	10.0	0	6	0	5.7	0	5.2	0	5.6	0	9.2	0	6.8	0	7.7	0
Feature Type (riffle run, or pool)	Run	Run																				

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0. Measurements less than 0.1m as <0.1 and greater than 1m as >1
Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: _____

[Signature]

Date: 5-24-07

NRV 5-25-07

WBID# 557
 Site# 9

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5-24-07</u> <u>11:15</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB, JB</u>	<u>NE 126 Road Crossing</u>
Current Weather Conditions: <u>Cloudy, Windy 70°</u>	Facility Name: <u>Trenton WWTTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0039748</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>No Signal</u>		Y: _____	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± _____ Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0557-9-5</u>	<u>up stream</u>		
<u>0557-9-6</u>	<u>down stream</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: <u>Ag land</u>				

WBID# 577 557
 Site# 9

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

% Cobble	% Gravel	<u>90</u> % Sand	<u>10</u> % Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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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:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: *[Signature]* Date of Survey: 5-24-07
 Organization: MEL Position: Field Tech

MEC Recreational Use Attainability Analysis Field Survey Sheet

Dissolved Oxygen

Date: 5-24 Time: 11:15

Dissolved Oxygen: 9.3 (mg/L)

Dissolved Oxygen: 101.5 (% sat)

Specific Cond: 589.579 (µS/cm)

Water Temperature: 20.0 (°C)

Waterbody ID: 557 Site #: 9 (WBID_Site#)

Estimated Channel Incision: 1.5 (m) (height between low bank width and water)

GPS Location (taken at transect 1): UTM X: 453284 UTM Y: 4454518 No GPS Signal

Horizontal Accuracy Estimate (GPS Data Quality): +/- 20.0 (feet)

Average Stream Width: 8 (meters) Length of Survey Segment: 140 (meters)
(20x average stream width)

Field Staff: CB, JB

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11			
	Distance (m)	Depth (m)																						
1	4.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.5	0.1	1.5	0.1	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
2	4.5	0.1	1.4	0.1	0.6	0.1	1.5	0.2	2.4	0.1	1.8	0.1	1.1	0.1	0.1	1.6	0.1	0.7	0.1	0.4	0.2	0.8	0.1	
3	5.1	0.1	2.8	0.1	1.0	0.1	2.9	0.1	3.2	0.1	2.6	0.1	2.1	0.1	3.2	0.1	0.9	0.2	0.7	0.2	1.5	0.1	0.1	
4	5.6	0.1	4.1	0.1	1.5	0.1	4.3	0.1	4.1	0.1	3.4	0.1	3.1	0.1	4.7	0.1	1.1	0.2	1.0	0.2	1.3	0.2	2.2	0.1
5	6.1	0.1	5.5	0.1	2.0	0.2	5.7	0.1	4.9	0.1	4.2	0.1	4.1	0.1	6.3	0.1	1.3	0.2	1.3	0.2	1.6	0.2	2.9	0.1
6	6.7	0.1	6.8	0.1	2.5	0.2	7.2	0.1	5.8	0.1	5.0	0.1	5.1	0.1	7.8	0.1	1.5	0.2	1.6	0.2	1.6	0.2	3.6	0.1
7	7.2	0.1	8.1	0.1	2.9	0.2	8.6	0.1	6.7	0.1	5.7	0.1	6.0	0.1	9.3	0.1	1.7	0.1	1.8	0.2	1.8	0.2	4.2	0.1
8	7.7	0.1	9.5	0.1	3.4	0.2	10.0	0.1	7.5	0.1	6.5	0.1	7.0	0.2	10.9	0.1	1.9	0.1	2.1	0.1	2.1	0.1	4.9	0.2
9	8.2	0.2	10.8	0.1	3.9	0.1	11.4	0.1	8.4	0.1	7.3	0.2	8.0	0.1	12.4	0.1	2.1	0.1	2.4	0.1	2.4	0.1	5.6	0.1
10	8.8	0.2	12.2	0.2	4.3	0.1	12.8	0.1	9.2	0.1	8.1	0.1	9.0	0.1	14.0	0.1	2.3	0.1	2.7	0.1	2.7	0.1	6.3	0.1
11	9.3	0.1	13.5	0.1	4.8	0.1	14.2	0.1	10.1	0.1	8.9	0.1	10.0	0.1	15.5	0.1	2.5	0.1	3.0	0.1	3.0	0.1	7.0	0.1
12	9.5	0	13.7	0	6.8	0	14.3	0	16.2	0	9.0	0	11.0	0	15.6	0	3.7	0	10.4	0	10.4	0	8.1	0

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Signed: [Signature] Date: 5-24-07

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

Date & Time: <u>8-24-07 12:15</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB, JB</u>	<u>Route B Bridge</u>
Current Weather Conditions: <u>Cloudy ~70°</u>	Facility Name: <u>Trenton WTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0039748</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>0452985</u>		Y: <u>4455293</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>25</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0557-10-7</u>	<u>up stream</u>		
<u>0557-10-8</u>	<u>down stream</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:
Ag land

WBID# 557
 Site# 10

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

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

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:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: [Signature] Date of Survey: 5-24-07

Organization: MEC Position: Field Team Leader

MEC Recreational Use Attainability Analysis Field Survey Sheet

Dissolved Oxygen

Date: 5-24-07 Time: 2:15

Dissolved Oxygen: 9.31 (mg/L)

Dissolved Oxygen: 104.2 (% sat)

Specific Cond: 530 (µS/cm)

Water Temperature: 20.6 (°C)

Waterbody ID: 5770557 ^{CS} Site #: 10 (WBID_Site#)

Estimated Channel Incision: 1.5 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 0452985

UTM Y: 4455293

Horizontal Accuracy Estimate (GPS Data Quality): +/- 25 (feet)

Average Stream Width: 16 (meters) Length of Survey Segment: 200 (meters)

(20x average stream width)

Field Staff: CB, JB

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	0.1	0.1	0.1	0.1	6.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
2	0.8	6.2	1.5	0.2	1.3	0.1	1.5	0.2	1.5	0.1	3.4	0.1	3.4	0.1	1.2	0.1	3.6	0.1	0.9	0.2	0.8	0.3	1.3
3	1.5	0.1	2.9	0.2	2.8	0.1	2.8	0.2	2.8	0.1	4.2	0.1	4.2	0.1	4.2	0.1	4.8	0.1	2.4	0.1	1.5	0.4	2.4
4	2.2	0.1	4.3	0.2	4.1	0.2	4.2	0.1	4.2	0.1	4.2	0.1	4.2	0.1	2.5	0.1	4.8	0.1	2.4	0.1	2.1	0.3	3.6
5	2.9	0.1	5.7	0.2	5.4	0.2	5.5	0.1	5.5	0.1	5.5	0.1	5.5	0.1	3.2	0.1	5.4	0.1	3.2	0.1	2.8	0.2	4.7
6	3.6	0.1	7.1	0.1	6.7	0.3	6.9	0.1	6.9	0.1	6.9	0.1	6.9	0.1	3.9	0.1	6.1	0.1	4.0	0.1	3.5	0.2	5.9
7	4.2	0.1	8.4	0.2	7.9	0.2	8.3	0.1	8.2	0.1	8.2	0.1	8.2	0.1	4.5	0.1	6.7	0.1	4.7	0.1	4.2	0.2	7.1
8	4.9	0.1	9.8	0.3	9.2	0.3	9.6	0.1	9.6	0.1	9.6	0.1	9.6	0.1	5.2	0.1	7.3	0.1	5.5	0.1	4.9	0.2	8.2
9	5.6	0.2	11.2	0.3	10.5	0.3	11.0	0.1	10.9	0.1	6.1	0.2	5.7	0.1	7.9	0.1	7.9	0.2	6.3	0.2	5.5	0.2	9.4
10	6.3	0.1	12.6	0.3	11.7	0.3	12.3	0.1	12.3	0.1	6.5	0.2	6.5	0.1	8.5	0.1	8.5	0.2	7.0	0.2	6.2	0.1	10.5
11	7.0	0.1	14.0	0.1	13.0	0.1	13.7	0.1	13.6	0.1	6.9	0.1	7.2	0.1	9.1	0.1	7.9	0.1	6.9	0.1	6.9	0.1	11.7
12	8.3	0	14.1	0	13.3	0	13.8	0	13.7	0	7.0	0	9.2	0	9.2	0	8.2	0	7.0	0	7.0	0	14.2

Feature Type (riffle run, or pool)

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Signed: [Signature] Date: 5-24-07

AWC 5-25-07

WBID# 577 ^{CB} 557
 Site# 11

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5-24-07</u> ¹³⁰⁰ 1000	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB, JB</u>	<u>NE 110th St. Crossing</u>
Current Weather Conditions: <u>Cloudy ~70°</u>	Facility Name: <u>Trenton WWTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0039748</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>462554</u>		Y: <u>4454074</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>25</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0557-11-9</u>	<u>UP</u>		
<u>0557-11-10</u>	<u>Down stream</u>		
<u>0557-11-11</u>	<u>rope tied to bridge</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:
As

WBID# 577^{CB} 557
 Site# 11

Field Data Sheets for Recreational Use Stream Surveys

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

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <u>Short rope tied under bridge</u>					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFPLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFPLE					
RUN					
POOL					

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

<input type="checkbox"/> Cobble	<input checked="" type="checkbox"/> 10 % Gravel	<input checked="" type="checkbox"/> 90 % Sand	<input type="checkbox"/> Silt	<input type="checkbox"/> Mud/Clay	<input type="checkbox"/> Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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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:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: Date of Survey: 5-24-07
 Organization: MEL Position: 5-25-07^{ANC} Field m. Leader

ANC 5-29-07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>577-557 CB</u> Site #: <u>11</u> (WBID_Site#) Estimated Channel Incision: <u>1.5 m</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>452554</u> UTM Y: <u>4454074</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 25</u> (feet) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (20x average stream width) Field Staff: <u>CB, JB</u>	Dissolved Oxygen Date: <u>5-24</u> Time: <u>1:00</u> Dissolved Oxygen: <u>9.76</u> (mg/L) <u>1300</u> Dissolved Oxygen: <u>106.7</u> (% sat) Specific Cond: <u>485</u> (µS/cm) Water Temperature: <u>20.7</u> (°C)
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Measurement	01		02		03		04		05		06		07		08		09		10		11				
	Distance (m)	Depth (m)																							
1	0.5	0.1	0.1	0.1	6.1	0.1	0.1	0.1	4.5	0.1	1.0	0.1	1.0	0.1	6.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1			
2	1.2	0.3	0.8	0.3	0.9	0.2	6.7	0.2	5.1	0.1	1.4	0.1	1.4	0.2	0.1	1.8	0.2	0.9	0.1	1.2	0.2	0.9	0.2	0.7	6.3
3	2.0	0.3	1.5	0.3	1.7	0.2	1.3	0.2	5.6	0.1	1.8	0.1	2.5	0.2	1.6	0.1	2.0	0.3	1.7	0.2	1.3	0.2	1.3	0.2	
4	2.7	0.2	2.2	0.3	2.4	0.2	1.9	0.2	6.2	0.1	2.2	0.1	3.3	0.2	2.4	0.2	2.7	0.4	2.5	0.2	1.9	0.1	0.1	0.1	
5	3.5	0.2	2.9	0.2	3.2	0.2	2.5	0.2	6.7	0.2	2.6	0.2	4.0	0.1	3.1	0.2	3.5	0.3	3.3	0.2	2.5	0.1	0.1	0.1	
6	4.2	0.2	3.6	0.2	4.0	0.2	3.1	0.2	7.3	0.2	3.1	0.2	4.8	0.1	3.9	0.3	4.2	0.2	4.2	0.2	3.1	0.1	0.1	0.1	
7	4.9	0.2	4.2	0.1	4.8	0.2	3.7	0.2	7.9	0.2	3.5	0.2	5.5	0.2	4.6	0.3	4.9	0.2	5.0	0.2	3.7	0.1	0.1	0.1	
8	5.7	0.1	4.9	0.1	5.6	0.2	4.3	0.2	8.4	0.2	3.9	0.2	6.3	0.2	5.4	0.3	5.7	0.2	5.8	0.2	4.3	0.1	0.1	0.1	
9	6.4	0.1	5.6	0.1	6.3	0.1	4.9	0.1	9.0	0.1	4.3	0.3	7.0	0.2	6.1	0.2	6.4	0.1	6.6	0.1	4.9	0.1	0.1	0.1	
10	7.2	0.1	6.3	0.1	7.1	0.1	5.5	0.1	9.5	0.3	4.7	0.3	7.8	0.3	6.9	0.2	7.2	0.1	7.4	0.1	5.5	0.1	0.1	0.1	
11	7.9	0.1	7.0	0.1	7.9	0.1	6.1	0.1	10.1	0.1	5.1	0.1	8.5	0.1	7.6	0.1	7.9	0.1	8.2	0.1	6.1	0.1	0.1	0.1	
12	8.9	0	8.3	0	9.4	0	8.1	0	10.2	0	5.2	0	8.7	0	8.0	0	8.2	0	10.3	0	8.7	0	0	0	
Feature Type (riffle run, or pool)	Run	Run	Run																						

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
 Transects in order of up to downstream.
 Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1
 Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: [Signature] Date: 5-24-07
034c 5-25-07

WBID# 577 557
 Site# 12

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5-24-07 2:15</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB, JB</u>	<u>NE 100th St bridge</u>
Current Weather Conditions: <u>Cloudy ~70</u>	Facility Name: <u>Trenton WWTP</u>
	Permit Number: <u>MO 0039748</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>461425</u>		Y: <u>4452399</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>37.2</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0557_12_12</u>	<u>Upstream</u>		
<u>0557_12_13</u>	<u>Footprints</u>		
<u>0557_12_14</u>	<u>Down stream</u>		
<u>0557_12_15</u>	<u>Tangled fishing line</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:
Ag

WBID# 577^{CB} 557
 Site# 12

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input checked="" type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites		<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input checked="" type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:
Comments: <u>fishing line tangled on power lines near bridge</u>					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

% Cobble	<u>25</u> % Gravel	<u>75</u> % Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: *Alex Bork* Date of Survey: 5-24-07

Organization: MEC Position: Field Team Leader nrc

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 527⁰⁸ 557 Site #: 12
 Estimated Channel Incision: 1.50²⁵ (m) (height between low bank width and water)
 GPS Location (taken at transect 1):
 UTM X: 451425 UTM Y: 4452 399
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 372 (feet)
 Average Stream Width: 10 9⁰³ (meters) Length of Survey Segment: 150⁰³ 200 (meters)
 (20x average stream width)
 Field Staff: CB, JB

Dissolved Oxygen

Date: 5-24-07 Time: 2:15-2:45
 Dissolved Oxygen: 9.43 (mg/L) 1415
 Dissolved Oxygen: 105.8 (% sat)
 Specific Cond: 533 (µS/cm)
 Water Temperature: 20.9 (°C)

Measurement	01		02		03		04		05		06		07		08		09		10		11			
	Distance (m)	Depth (m)																						
1	6.1	0.1	6.1	6.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.1	0.1	0.1	0.1	0.1	1.0	0.1	0.1	0.1	0.1	0.1	0.1	
2	1.6	0.7	1.7	5.7	2.2	0.6	0.6	0.2	6.9	0.2	0.6	0.3	0.8	0.1	0.1	1.5	6.1	1.7	0.1	1.0	0.1	0.1	0.1	
3	3.1	2.1	3.3	>1	4.2	0.8	1.6	0.2	1.7	0.2	1.2	0.3	1.4	6.1	1.9	0.2	2.4	0.2	2.4	0.1	2.9	0.1	0.1	
4	4.5	>1	4.8	>1	6.3	0.8	1.5	0.2	2.5	0.3	1.7	0.3	2.1	0.2	2.4	0.2	3.2	0.1	3.9	0.1	3.9	0.1	0.1	
5	6.0	>1	6.4	>1	8.4	>1	1.9	0.2	3.3	0.2	2.2	0.3	2.7	0.2	2.9	0.3	3.9	0.1	3.9	0.1	4.8	0.1	0.2	
6	7.5	>1	8.0	>1	10.5	>1	2.4	0.2	4.2	0.2	2.8	0.2	3.4	0.2	3.4	0.3	4.6	0.2	4.8	0.1	5.7	0.1	3.6	
7	9.6	>1	9.6	>1	12.5	>1	2.9	0.2	5.0	0.1	3.3	0.2	4.1	0.2	3.8	0.3	5.3	0.2	5.7	0.1	6.7	0.1	4.2	
8	10.5	>1	11.2	>1	14.6	>1	3.3	0.2	5.8	0.2	3.8	0.1	4.7	0.2	4.3	0.3	6.0	0.2	6.7	0.2	7.6	0.1	4.8	
9	11.9	>1	12.7	>1	16.7	>1	3.8	0.1	6.6	0.3	4.3	0.1	5.4	0.2	4.8	0.4	6.8	0.2	7.6	0.1	8.6	0.1	5.4	
10	13.4	>1	14.3	>1	18.7	20.7	4.2	0.1	7.4	0.3	4.9	0.2	6.0	0.3	5.2	0.4	7.5	0.2	8.6	0.1	9.5	0.1	6.0	
11	14.9	0.1	15.9	6.1	20.8	20.8	4.7	0.1	8.2	0.1	5.9	0.1	6.7	0.1	5.7	0.1	8.2	0.1	9.5	0.1	10.9	0.1	6.0	
12	15.0	0	16.0	0	21.0	0	6.2	0	8.4	0	6.3	0	6.8	0	5.8	0	8.4	0	10.9	0	10.9	0	8.5	
Feature Type (riffle run, or pool)	pool		pool		pool		Run		Run															

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
 Transects in order of up to downstream.
 Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1
 Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m

Signed: [Signature] Date: 5-24-07
ORC 5-25-07

WBID# 577 ^{CB} 557
 Site# 13

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5-24-07</u> <u>1510</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB, JB</u>	<u>80th St. Bridge</u>
Current Weather Conditions: <u>cloudy ~65</u>	Facility Name: <u>Trenton WWTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0039748</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>450965</u>		Y: <u>4449198</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>20.5</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0577-13-17</u> <u>CB</u>	<u>upstream</u>		
<u>0577-13-18</u> <u>CB</u>	<u>downstream</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

WBID# 577⁵⁵⁷
 Site# 13

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

% Cobble	<u>5</u> % Gravel	<u>80</u> % Sand	<u>15</u> % Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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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:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: *MEL* Date of Survey: 9-22-07
 Organization: MEL Position: Field Team Leader

RWC 5-25-07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>577-557</u> Site #: <u>13</u> (WBID_Site#) Estimated Channel Incision: <u>1.5</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>0450955</u> UTM Y: <u>4449198</u> <u>20.5</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 38.8</u> (feet) Average Stream Width: <u>12</u> (meters) Length of Survey Segment: <u>240</u> (meters) (20x average stream width) Field Staff: <u>CR, JB</u>	Dissolved Oxygen Date: <u>5-24-07</u> Time: <u>8:40</u> Dissolved Oxygen: <u>9.21</u> (mg/L) <u>1510</u> Dissolved Oxygen: <u>102.3</u> (% sat) Specific Cond: <u>544</u> (µS/cm) Water Temperature: <u>20.5</u> (°C)
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Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	0.1	0.1	0.1	0.1	0.5	0.1	0.1	0.1	5.0	0.1	0.5	0.1	1.3	0.1	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	1.1	0.3	1.0	0.5	1.7	0.3	0.7	0.4	5.8	0.1	1.8	0.7	2.7	0.2	1.9	0.3	1.7	0.3	1.8	0.6	1.7	0.3	
3	2.1	0.4	1.8	0.4	2.9	0.3	1.4	0.4	6.7	0.2	3.1	0.7	4.1	0.2	3.3	0.5	3.3	0.4	3.5	0.5	3.2	0.3	
4	3.1	0.6	2.7	0.4	4.2	0.2	2.0	0.4	7.5	0.2	4.5	0.7	5.5	0.3	4.8	0.7	4.8	0.6	5.2	0.3	4.8	0.3	
5	4.1	0.7	3.5	0.4	5.4	0.2	2.7	0.3	8.4	0.2	5.8	0.5	6.9	0.3	6.2	0.3	6.4	0.6	6.9	0.3	6.4	0.3	
6	5.2	0.9	4.4	0.5	6.6	0.2	3.3	0.3	9.2	0.3	7.1	0.4	8.3	0.4	7.7	0.7	8.0	0.7	8.7	0.1	7.9	0.3	
7	6.2	0.9	5.3	0.6	7.8	0.5	3.9	0.2	16.0	0.3	8.4	0.2	9.6	0.4	9.1	0.9	9.6	0.7	10.4	0.1	9.5	0.3	
8	7.2	0.9	6.1	0.5	9.0	0.4	4.6	0.2	16.9	0.2	9.7	0.2	11.0	0.5	10.6	0.9	11.2	0.8	12.1	0.1	11.1	0.3	
9	8.2	0.8	7.0	0.4	10.3	0.2	5.2	0.2	11.7	0.2	11.1	0.2	12.4	0.7	12.0	0.9	12.7	0.7	13.8	0.1	12.7	0.3	
10	9.2	0.7	7.8	0.3	11.5	0.3	5.9	0.1	12.6	0.3	12.4	0.2	13.8	0.7	13.5	0.5	14.3	0.5	15.5	0.3	14.2	0.4	
11	10.2	0.4	8.7	0.1	12.7	0.1	6.5	0.1	13.4	0.1	13.7	0.1	15.2	0.1	14.9	0.1	15.9	0.1	17.2	0.1	15.8	0.1	
12	11.0	0.1	9.0	0	13.0	0	7.4	0.0	13.6	0	14.2	0	15.3	0	15.0	0	16.0	0.0	17.3	0	15.9	0	
Feature Type (riffle run, or pool)	Pool		Pool		Run		Run		Run		Run		Pool		Pool		Pool		Run		Run		Run

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
 Transects in order of up to downstream.
 Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1
 Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: [Signature] Date: 5-24-07
ANC 5-25-07

WBID# 577^{CB}557
 Site# 14

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5-24-07 1600</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB, JB</u>	<u>Rt 0 Bridge Crossing</u>
Current Weather Conditions: <u>Cloudy ~ 65</u>	Facility Name: <u>Trenton WWTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0039748</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>0450931</u>		Y: <u>4445996</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>30</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0577-14-19</u> <u>CB</u>	<u>upstream</u>		
<u>0577-14-20</u> <u>CB</u>	<u>downstream</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:
Ag. land

WBID# 877 557
 Site# 14

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

<input type="checkbox"/> Cobble	<input type="checkbox"/> 5 % Gravel	<input type="checkbox"/> 96 % Sand	<input type="checkbox"/> 5 % Silt	<input type="checkbox"/> % Mud/Clay	<input type="checkbox"/> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: *Shirley Bob* Date of Survey: 5-24-07

Organization: MEL Position: Field Team Leader

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>572-537</u> ^{CS} Site #: <u>14</u> (WBID_Site#) Estimated Channel Incision: <u>1.5</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>0450431</u> UTM Y: <u>4445996</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 30</u> (feet) Average Stream Width: <u>10</u> (meters) Length of Survey Segment: <u>200</u> (meters) (20x average stream width) Field Staff: <u>CB, SB</u>	Dissolved Oxygen Date: <u>5-24-07</u> Time: <u>14:00</u> Dissolved Oxygen: <u>9.28</u> (mg/L) Dissolved Oxygen: <u>104.3</u> (% sat) Specific Cond: <u>535</u> (µS/cm) Water Temperature: <u>20.6</u> (°C)
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Measurement	01		02		03		04		05		06		07		08		09		10		11			
	Distance (m)	Depth (m)																						
1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
2	1.2	0.2	1.3	0.1	1.5	0.3	1.1	0.4	1.2	0.5	1.4	0.2	4.4	0.1	10.7	0.2	1.2	0.2	1.2	0.2	1.2	0.2	0.3	0.3
3	2.4	0.1	2.5	0.1	2.8	0.3	2.1	0.3	2.1	0.5	2.4	0.2	5.9	0.2	11.4	0.2	3.9	0.1	0.9	0.3	1.5	0.2	0.2	0.1
4	3.5	0.1	3.6	0.2	4.2	0.1	3.1	0.3	3.1	0.5	3.9	0.2	7.3	0.2	12.1	0.2	5.7	0.1	1.2	0.3	2.2	0.1	0.1	0.1
5	4.7	0.2	4.8	0.2	5.5	0.1	4.1	0.3	4.6	0.4	5.2	0.2	8.7	0.2	12.8	0.3	7.6	0.1	1.6	0.3	2.9	0.1	0.1	0.1
6	5.8	0.1	6.0	0.1	6.9	0.1	5.1	0.3	4.9	0.4	6.5	0.1	10.2	0.2	13.5	0.3	9.5	0.2	1.6	0.3	3.6	0.1	0.1	0.1
7	6.9	0.1	7.2	0.1	8.7	0	6.1	0.3	5.8	0.3	7.7	0.1	11.0	0.1	14.2	0.3	11.4	0.2	1.4	0.3	4.2	0.1	0.1	0.1
8	8.1	0.1	8.4	0.1	9.6	0.1	7.1	0.2	6.7	0.3	9.0	0.2	13.0	0.1	14.9	0.3	13.3	0.2	1.4	0.3	4.9	0.1	0.1	0.1
9	9.2	0.1	9.5	0.1	11.0	0.1	8.1	0.2	7.7	0.2	10.3	0.2	14.4	0.2	15.6	0.2	15.1	0.1	1.3	0.3	5.6	0.2	0.2	0.2
10	10.4	0.1	10.7	0.1	12.3	0.1	9.1	0.1	8.6	0.2	11.5	0.2	15.9	0.2	16.3	0.2	17.0	0.1	1.3	0.3	6.3	0.2	0.2	0.2
11	11.5	0.1	11.9	0.1	13.7	0.1	10.1	0.1	9.5	0.2	12.8	0.1	17.3	0.1	17.0	0.1	18.9	0.1	1.3	0.3	7.0	0.1	0.1	0.1
12	11.6	0	15.7	0	14.8	0	12.6	0	10.1	0	15.2	0	17.4	0	18.2	0.0	20.3	0	1.3	0.3	8.0	0	0	0
Feature Type (riffle run, or pool)	Run	Run	Run	Run																				

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
 Transects in order of up to downstream.
 Mark dry depth measurements as 0. (measurements less than 0.1m as <0.1, and greater than 1m as >1)
 Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: [Signature] Date: 5-24-07
 AWC 5-25-07

WBID# 557
 Site# 15

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5-24-07</u> ¹¹⁴² <u>5:00</u> <u>1700</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB</u>	<u>NE 20th Bridge</u>
Current Weather Conditions: <u>Cloudy</u> <u>~65°</u>	Facility Name: <u>Trenton WWTP</u>
	Permit Number: <u>MO 0039748</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>449734</u>		Y: <u>4439534</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>24.2</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0557-15-21</u> <u>CB</u>	<u>upstream</u>		
<u>0557-15-22</u> <u>CB</u>	<u>downstream</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: <u>Ag Land</u>				

WBID# 557
 Site# 15

Field Data Sheets for Recreational Use Stream Surveys

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

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

<input type="checkbox"/> Cobble	<input checked="" type="checkbox"/> 5 % Gravel	<input checked="" type="checkbox"/> 85 % Sand	<input checked="" type="checkbox"/> 5 % Silt	<input checked="" type="checkbox"/> 5 % Mud/Clay	<input type="checkbox"/> Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature:  Date of Survey: 5-24-07

Organization: MEL Position: Field Team Leader

RUC 5-25-07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 557 Site #: 15
 Estimated Channel Incision: 1.5 ^{ave} (m) (height between low bank width and water)
 GPS Location (taken at transect 1):
 UTM X: 449739 UTM Y: 4439534 ^{NW} ^{Survey}
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 24.2 (feet)
 Average Stream Width: 12 (meters) Length of Survey Segment: 380 (meters)
 (20x average stream width) 240
 Field Staff: CB, JB

Dissolved Oxygen

Date: 5-24-07 Time: 05:00
 Dissolved Oxygen: 9.15 (mg/L)
 Dissolved Oxygen: 101.3 (% sat)
 Specific Cond: 530 (µS/cm)
 Water Temperature: 20.3 (°C)

Measurement	01		02		03		04		05		06		07		08		09		10		11			
	Distance (m)	Depth (m)																						
1	0.1	0.1	6.1	0.5	0.1	0.5	0.1	0.1	0.1	0.1	8.2	0.1	0.3	0.1	0.3	0.1	3.5	0.1	0.1	0.2	0.1	0.1	0.1	
2	0.8	0.3	1.4	0.8	1.4	0.8	1.3	0.2	1.4	0.2	8.6	0.2	0.9	0.3	0.9	0.3	4.2	0.1	1.3	0.1	1.5	0.1	1.5	
3	1.4	0.5	2.7	0.9	2.7	>1	2.6	0.2	2.6	0.2	9.0	0.3	1.5	0.3	4.9	0.1	2.3	0.2	2.7	0.1	2.7	0.1	2.7	
4	2.1	0.5	3.9	0.9	3.9	>1	3.8	0.2	3.9	0.2	9.4	0.4	2.2	0.3	5.6	0.1	3.4	0.2	4.6	0.2	4.6	0.2	4.6	
5	2.7	0.5	5.2	0.9	5.2	7.1	5.1	0.2	5.1	0.1	9.8	0.4	2.8	0.2	6.3	0.1	4.5	0.1	5.3	0.2	5.3	0.2	5.3	
6	3.4	0.4	6.5	0.8	6.5	7.1	6.3	0.2	6.4	0.1	10.2	0.4	3.4	0.2	7.0	0.2	5.6	0.2	6.6	0.2	6.6	0.2	6.6	
7	4.1	0.5	7.8	0.8	7.8	7.1	7.5	0.2	7.6	0.1	10.6	0.3	4.0	0.2	7.6	0.2	6.6	0.1	7.8	0.1	7.8	0.1	7.8	
8	4.7	0.5	9.1	0.8	9.1	7.1	8.8	0.4	8.9	0.2	11.0	0.3	4.6	0.2	8.3	0.2	7.7	0.2	9.1	0.1	9.1	0.1	9.1	
9	5.4	0.5	10.3	0.9	10.3	7.1	10.0	0.4	10.1	0.3	11.4	0.3	5.3	0.2	9.0	0.1	8.8	0.2	10.4	0.1	10.4	0.1	10.4	
10	6.0	0.3	11.6	0.9	11.6	0.8	11.3	0.4	11.4	0.3	11.8	0.4	5.9	0.1	9.7	0.1	9.8	0.3	11.6	0.1	11.6	0.1	11.6	
11	6.7	0.1	12.9	0.5	12.9	0.5	12.5	0.1	12.6	0.2	12.2	0.1	6.5	0.1	10.4	0.1	10.9	0.1	12.9	0.1	12.9	0.1	12.9	
12	6.8	0	13.0	0	13.0	0	12.8	0	12.7	0	12.3	0	6.6	0	13.9	0	13.7	0	13.0	0	13.0	0	13.0	
Feature Type (riffle run, or pool)	Pool		Pool		Pool		Pool		Run															

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
 Transects in order of up to downstream.
 Mark dry depth measurements as 0, measurements less than 0.1m as <0.1, and greater than 1m as >1
 Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: [Signature] Date: 5-24-07
ARC 5-25-07

WBID# 557
 Site# 16

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5-24-07 6:00</u>	Site Location Description (e.g., road crossing): <u>NE Tenth St. ^(10th)</u>
Personnel (Data Collectors): <u>CB, JB</u>	
Current Weather Conditions: <u>Part Cloudy ~ 65</u>	Facility Name: <u>Trenton WWTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0039748</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>449737</u>		Y: <u>4437921</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>34</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0557-16-23</u> <u>CB</u>	<u>upstream</u>		
<u>0557-16-25</u> <u>CB</u>	<u>down stream</u>		
<u>0557-16-24</u> <u>CB</u>	<u>water pipe in bottom of stream</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments: Airport on west bank

WBID# 577
 Site# 16

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

% Cobble	<u>5</u> % Gravel	<u>80</u> % Sand	<u>10</u> % Silt	<u>5</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: *Alan Beck* Date of Survey: 5-24-07
 Organization: MRE Position: Field Tech

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 557 Site #: 16 (WBID_Site#)
 Estimated Channel Incision: 1.5 (m) (height between low bank width and water)
 GPS Location (taken at transect 1): UTM X: 04497737 UTM Y: 4437921
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 34 (feet)
 Average Stream Width: 9 (meters) Length of Survey Segment: 180 (meters)
 (20x average stream width) Field Staff: CB, JB

Dissolved Oxygen

Date: 5-24-07 Time: 6:00 PM
 Dissolved Oxygen: 9.19 (mg/L)
 Dissolved Oxygen: 102.4 (% sat)
 Specific Cond: 529 (µS/cm)
 Water Temperature: 20.5 (°C)

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	6.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	1.4	6.1	1.4	6.1	6.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	1.1	0.2	1.0	0.3	1.2	0.5	1.2	0.3	2.0	2.0	0.1	0.9	0.3	0.8	0.2	1.4	0.1	0.5	0.3	0.7	0.2	1.2	0.2
3	2.0	0.3	1.8	0.5	2.3	0.6	2.3	0.4	2.6	0.2	1.6	0.3	1.6	0.3	2.5	0.2	1.0	0.3	1.2	0.2	2.2	0.1	0.1
4	2.9	0.1	2.7	0.6	3.4	0.6	3.3	0.3	3.2	0.2	2.2	0.3	2.3	0.4	3.7	0.2	1.4	0.3	1.8	0.2	3.3	0.1	0.1
5	3.8	4.1	3.5	0.6	4.5	0.5	4.4	0.3	3.8	0.2	2.9	0.3	3.1	0.4	4.8	0.2	1.9	0.2	2.3	0.2	4.3	0.1	0.1
6	4.8	0.1	4.4	0.6	5.6	0.3	5.4	0.2	4.5	0.2	3.6	0.3	3.8	0.5	6.0	0.2	2.3	0.2	2.9	0.2	5.4	0.1	0.1
7	5.7	0.1	5.2	0.5	6.6	0.2	6.4	0.2	5.1	0.2	4.3	0.3	4.5	0.4	7.1	0.1	2.7	0.2	3.4	0.2	6.5	0.1	0.1
8	6.6	0.2	6.1	0.5	7.7	0.2	7.5	0.2	5.7	0.2	5.0	0.2	5.3	0.3	8.3	0.1	3.2	0.2	4.0	0.2	7.5	0.1	0.1
9	7.5	0.3	6.9	0.4	8.8	0.2	8.5	0.2	6.3	0.1	5.6	0.2	6.0	0.4	9.4	0.2	3.6	0.1	4.5	0.1	8.6	0.1	0.1
10	8.4	0.1	7.8	0.4	9.9	0.1	9.6	0.2	6.9	0.1	6.3	0.1	6.8	0.3	10.6	0.2	4.1	0.1	5.1	0.1	9.6	0.1	0.1
11	9.3	0.1	8.6	0.1	11.0	0.1	10.6	0.1	7.5	0.1	7.0	0.1	7.5	0.1	11.7	0.1	4.5	0.1	5.6	0.1	10.7	0.1	0.1
12	9.4	0	8.7	0	11.7	0	10.7	0	8.4	0	7.5	0	7.6	0	11.8	0	12.5	0	12.7	0	10.8	0	0

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
 Transects in order of up to downstream.
 Mark dry depth measurements as 0. Measurements less than 0.1m as <0.1, and greater than 1m as >1
 Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: [Signature] Date: 5-24-07

WBID# 577^{CB} 557
 Site# 17

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5-25-07 6:30</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB, JB</u>	<u>Hwy 6 Road Crossing</u>
Current Weather Conditions: <u>Sunny ~55°</u>	Facility Name: <u>Trenton WWTP</u>
	Permit Number: <u>MO 0039748</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>449717</u>		Y: <u>4436282</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>37.9</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0557</u> → <u>0577-17-26</u>	<u>up stream</u>		
→ <u>0577-17-27</u>	<u>down stream</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:
Airport Upstream Ag land

WBID# 577 557
 Site# 17

Field Data Sheets for Recreational Use Stream Surveys

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

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

% Cobble	10 % Gravel	75 % Sand	10 % Silt	5 % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: *Ann Beck* Date of Survey: 5-25-07
 Organization: MEL Position: Field Tech

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 577^{CR} 537 Site #: 17
 (WBID_Site#)

Estimated Channel Incision: 1.5 (m) (height between low bank width and water)

GPS Location (taken at transect 1):
 UTM X: 0449717 UTM Y: 4430282

Horizontal Accuracy Estimate (GPS Data Quality): +/- 37.9 (feet)

Average Stream Width: 12 (meters) Length of Survey Segment: 240 (meters)
 (20x average stream width)

Field Staff: CR, JR

Dissolved Oxygen

Date: 5-25-07 Time: 6:30 am

Dissolved Oxygen: 10.26 (mg/L)

Dissolved Oxygen: 101.5 (% sat)

Specific Cond: 544 (µS/cm)

Water Temperature: 14.7 (°C)

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	0.1	0.1	0.1	0.1	2.5	0.1	4.0	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.6	0.1	3.5	0.1	6.2	0.1	6.2	0.1
2	1.0	0.3	1.0	0.3	3.5	0.1	4.7	0.1	1.2	2.0	0.8	0.3	0.8	0.2	1.8	0.2	4.2	0.2	1.5	0.1	6.9	0.2	
3	1.9	0.2	1.9	0.3	4.4	0.1	5.4	0.1	2.3	0	1.5	0.2	1.5	0.2	3.0	0.1	4.9	0.2	2.7	0.6	1.6	0.3	
4	2.8	0.1	2.8	0.3	5.4	0.1	6.1	0.1	3.5	2.0	2.2	0.1	2.3	0.2	4.3	2.0	5.5	0.2	4.0	2.0	2.3	0.3	
5	3.7	0.2	3.7	0.3	6.3	0.2	6.8	0.2	4.6	0.1	2.9	0.1	3.0	0.2	5.5	2.0	6.2	0.2	5.2	0.1	3.8	0.2	
6	4.7	0.3	4.7	0.1	7.3	0.2	7.5	0.2	5.7	0.2	3.6	0.2	3.7	0.2	6.7	2.0	6.9	0.1	6.5	0.1	3.8	0.2	
7	5.6	0.2	5.6	0.1	8.2	0.1	8.1	0.2	6.8	0.2	4.3	0.2	4.4	0.2	7.9	2.0	7.6	0.1	7.7	0.2	4.5	0.2	
8	6.5	0.2	6.5	0.2	9.2	0.1	8.8	0.2	7.9	0.2	5.0	0.2	5.1	0.1	9.1	0.1	8.3	0.2	9.0	0.2	5.2	0.1	
9	7.4	0.2	7.4	0.2	10.1	0.1	9.5	0.3	9.1	0.2	5.7	0.1	5.9	0.1	10.4	0.2	8.9	0.1	10.2	0.2	5.9	0.1	
10	8.3	0.2	8.3	0.3	11.1	0.1	10.2	0.2	10.2	0.3	6.4	0.1	6.6	0.1	11.6	0.2	9.6	0.3	11.5	0.2	6.6	0.1	
11	9.2	0.1	9.2	0.1	12.0	0.1	10.9	0.1	11.3	0.1	7.1	0.1	7.3	0.1	12.8	0.1	10.3	0.1	12.7	0.1	7.3	0.1	
12	9.3	0	9.3	0	12.1	0	11.0	0	11.4	0	7.2	0	9.7	0	12.9	0	10.4	0	13.2	0	11.0	0	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1 and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: [Signature] Date: 5-25-07

WBID# 577^{CB} 557
 Site# 18

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5-25-07</u> <u>7:45</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB,</u>	<u>below Trenton WWTP Discharge</u>
Current Weather Conditions: <u>Sunny ~60°</u>	Facility Name: <u>Trenton WWTP</u>
	Permit Number: <u>MO 0039748</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>449418</u>		Y: <u>4434142</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>39</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID, Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID, Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0577-18-28</u>	<u>upstream</u>	<u>0577-18-31</u>	<u>Discharge</u>
<u>0577-18-29</u>	<u>downstream</u>		
<u>0577-18-30</u>	<u>NPDES Discharge</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input checked="" type="checkbox"/> Other: <u>Ag on East bank WWTP on West side</u>

Comments:

WBID# 577-0557^{CB}
 Site# 18

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input checked="" type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <u>Discharge at Transect 1</u>					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

% Cobble	<u>5</u>	% Gravel	<u>85</u>	% Sand	<u>10</u>	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Water Characteristics*: (Mark all that apply.)

ODOR:	<input checked="" type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other: <u>Slight Odor</u>
COLOR:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>Murky Brown</u>
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: *Max B...* Date of Survey: 5-27-07
 Organization: MEC Position: Field Tech

MEC Recreational Use Attainability Analysis Field Survey Sheet

Dissolved Oxygen

Date: 5-25-07 Time: 7:45 am

Dissolved Oxygen: 10.44 (mg/L)

Dissolved Oxygen: 105.1 (% sat)

Specific Cond: 720 (µS/cm)

Water Temperature: 15.3 (°C)

Waterbody ID: 577^{US} 0557 Site #: 18 (WBID_Site#)

Estimated Channel Incision: 1.5 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 449418 UTM Y: 4434142

Horizontal Accuracy Estimate (GPS Data Quality): +/- 39 (feet)

Average Stream Width: 11 (meters) Length of Survey Segment: 220 (meters)
(20x average stream width)

Field Staff: CB + JB

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	0.1	0.1	0.1	0.1	0.9	0.1	0.8	0.1	2.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	1.2	0.3	0.8	0.4	1.4	0.1	1.4	0.1	3.1	0.1	1.1	0.1	1.3	0.4	1.7	0.2	2.0	0.2	1.7	4.6	1.5	4.1	
3	2.4	0.3	1.5	0.5	2.0	0.2	1.9	0.1	3.9	0.1	2.1	0.1	2.5	0.4	2.8	0.3	3.2	0.1	2.7	4.0	2.4	0.1	
4	3.5	0.6	2.3	0.4	2.5	0.2	2.5	0.2	4.7	0.1	3.1	0.1	3.7	0.4	4.0	0.5	4.5	4.1	3.6	4.1	3.4	0.1	
5	4.7	0.1	3.0	0.3	3.0	0.3	3.1	0.2	5.5	0.1	4.1	0.2	4.9	0.4	5.1	0.6	5.7	0.1	4.6	4.6	4.3	0.1	
6	5.8	0.3	3.7	0.4	3.6	0.4	3.7	0.2	6.3	0.1	5.1	0.1	6.2	0.4	6.2	0.7	7.0	0.1	5.6	5.6	5.3	0.2	
7	6.9	0.2	4.4	0.3	4.1	0.4	4.2	0.2	7.0	0.2	6.6	0.1	7.4	0.4	7.3	0.7	8.3	0.1	6.6	6.6	6.3	0.2	
8	8.1	0.2	5.1	0.2	4.6	0.4	4.8	0.3	7.8	0.2	7.0	0.1	8.6	0.4	8.4	0.6	9.5	0.2	7.5	7.5	7.2	0.3	
9	9.2	0.3	5.9	0.2	5.1	0.5	5.4	0.3	8.6	0.1	8.0	0.1	9.8	0.3	9.6	0.6	10.8	0.3	8.5	8.5	8.2	0.4	
10	10.4	0.1	6.6	0.2	5.7	0.5	5.9	0.3	9.4	0.2	9.0	0.1	11.0	0.3	10.7	0.5	12.0	0.3	9.5	9.5	9.1	0.3	
11	11.5	0.1	7.3	0.1	6.2	0.1	6.5	0.1	10.2	0.1	10.0	0.1	12.2	0.1	11.5	0.1	13.3	0.1	10.5	10.5	10.1	0.1	
12	11.6	0	7.4	0	6.3	0	6.6	0	10.3	0	10.3	0	12.3	0	11.9	0	13.4	0	10.6	10.6	10.2	0	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1
Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: [Signature] Date: 5-25-07

WBID# 577 ^{CB} 0557
 Site# 19

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5-25-07</u> <u>8:45</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB, JB</u>	<u>South End of WWTP</u>
Current Weather Conditions: <u>Sunny</u> <u>~65°</u>	Facility Name: <u>Trenton WWTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0039748</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>449 338</u>		Y: <u>4433517</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>37.5</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0557</u> → <u>0577-19-32</u> <u>CB</u>	<u>upstream</u>		
→ <u>0577-19-33</u> <u>CB</u>	<u>downstream</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments: Ag on East Bank, WWTP on West Side

WBID# 877 0557
 Site# 19

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

% Cobble	<u>5</u> % Gravel	<u>85</u> % Sand	<u>10</u> % Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>murky Brown</u>
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: [Signature] Date of Survey: 5-25-07
 Organization: MEC Position: Field Tech

MEC Recreational Use Attainability Analysis Field Survey Sheet

Dissolved Oxygen

Date: 5-25-07 Time: 8:45

Dissolved Oxygen: 10.10 (mg/L)

Dissolved Oxygen: 101.6 (% sat)

Specific Cond: 575 (µS/cm)

Water Temperature: 15.9 (°C)

Waterbody ID: 5770557^{CB} Site #: 19 (WBID_Site#)

Estimated Channel Incision: 1.5 (m) (height between low bank width and water)

GPS Location (taken at transect 1): UTM X: 449858 UTM Y: 4433517

Horizontal Accuracy Estimate (GPS Data Quality): +/- 37.5 (feet)

Average Stream Width: 10 (meters) Length of Survey Segment: 200 (meters)
(20x average stream width)

Field Staff: CB, JB

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11			
	Distance (m)	Depth (m)																						
1	0.3	0.1	0.8	0.1	0.5	0.1	0.4	0.1	0.4	0.1	0.1	0.1	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.0	0.1	0.1	0.1
2	1.2	0.3	1.2	0.2	1.1	0.2	1.7	0.2	1.4	0.3	0.9	0.2	2.3	0.2	0.5	0.2	0.7	0.3	0.7	0.4	1.9	0.1	0.1	0.1
3	2.0	0.3	1.7	0.3	1.7	0.2	3.0	0.3	2.4	0.3	1.6	0.3	3.3	0.2	1.0	0.2	1.4	0.3	1.4	0.4	2.7	0.2	0.2	0.2
4	2.9	0.3	2.1	0.4	2.3	0.2	4.3	0.1	3.3	0.1	2.4	0.3	4.4	0.2	1.4	0.2	2.0	0.2	2.1	0.4	3.6	0.2	0.2	0.2
5	3.8	0.2	2.5	0.4	2.9	0.2	5.6	0.1	4.3	0.1	3.2	0.3	5.4	0.2	1.8	0.3	2.7	0.2	2.7	0.3	4.4	0.2	0.2	0.2
6	4.7	0.3	3.0	0.5	3.5	0.2	6.9	0.2	5.3	0.2	4.6	0.2	6.4	0.3	2.3	0.3	3.3	0.3	3.4	0.2	5.3	0.2	0.2	0.2
7	5.5	0.3	3.4	0.4	4.1	0.2	8.2	0.2	6.3	0.2	4.7	0.2	7.4	0.3	2.7	0.3	3.9	0.2	4.1	0.1	6.1	0.2	0.2	0.2
8	6.4	0.2	3.8	0.3	4.7	0.2	9.5	0.2	7.3	0.1	5.5	0.1	8.4	0.3	3.1	0.3	4.6	0.2	4.7	0.1	7.0	0.3	0.3	0.3
9	7.3	0.2	4.2	0.3	5.3	0.2	10.8	0.2	8.2	0.1	6.3	0.1	9.5	0.4	3.5	0.3	5.2	0.2	5.4	0.1	7.8	0.2	0.2	0.2
10	8.1	0.2	4.7	0.2	5.9	0.2	12.1	0.3	9.2	0.1	7.0	0.1	10.5	0.4	4.0	0.2	5.9	0.2	6.0	0.1	8.7	0.2	0.2	0.2
11	9.0	0.1	5.1	0.1	6.5	0.1	13.4	0.1	10.2	0.1	7.8	0.1	11.5	0.1	4.4	0.1	6.5	0.1	6.7	0.1	9.5	0.1	0.1	0.1
12	9.1	0	5.2	0	7.6	0	13.5	0	11.2	0	8.2	0	11.4	0	5.2	0	7.2	0	6.9	0	9.6	0	0	0

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0, measurements less than 0.1m as <0.1, and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed:



Date: 5-25-07

WBID# 577 ^{CB} 557
 Site# 20

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5-25-07</u> <u>10:00</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>CB, JB</u>	<u>Dirt Road off SW 50th</u>
Current Weather Conditions: <u>Sunny</u> <u>~65</u>	Facility Name: <u>Trenton WWTP</u>
	Permit Number: <u>no 0039748</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>447944</u>		Y: <u>4429187</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>27.2</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0557</u> → <u>CB</u> <u>0577-20-34</u>	<u>up stream</u>		
→ <u>CB</u> <u>0577-20-35</u>	<u>down stream</u>		

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:
Ag land on East Side Johnson River on W.

WBID# 277-^{CB}557
 Site# 20

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

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

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

<input type="checkbox"/> Cobble	<input type="checkbox"/> Gravel	<input type="checkbox"/> Sand	<input type="checkbox"/> Silt	<input type="checkbox"/> Mud/Clay	<input type="checkbox"/> Bedrock
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10 60 30

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>murky brown</u>
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: [Signature] Date of Survey: 6-25-07
 Organization: MEC Position: Field Tech.

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 577^{CB} 557 Site #: 20 (WBID_Site#)

Estimated Channel Incision: 1.6 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 447944 UTM Y: 4429187

Horizontal Accuracy Estimate (GPS Data Quality): +/- 27.2 (feet)

Average Stream Width: 13 (meters) Length of Survey Segment: 260 (meters)
(20x average stream width)

Field Staff: CB, JT

Dissolved Oxygen

Date: 5-25-07 Time: 10:00

Dissolved Oxygen: 16.09 (mg/L)

Dissolved Oxygen: 102.3 (% sat)

Specific Cond: 698 (µS/cm)

Water Temperature: 16.4 (°C)

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11							
	Distance (m)	Depth (m)																										
1	0.1	0.1	9.0	0.1	0.1	0.1	1.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1					
2	1.3	0.3	9.7	0.1	1.0	0.8	0.2	0.1	1.3	0.2	1.2	0.1	1.4	0.1	1.4	0.1	1.6	0.1	1.6	0.1	1.9	0.3	1.1	0.2	0.8	0.1		
3	2.5	0.6	10.3	0.1	3.3	0.8	0.2	0.1	2.1	0.1	2.1	0.1	2.7	0	3.1	0.1	3.1	0.1	3.5	0.4	2.2	0.2	1.9	0.1	3.2	0.2	1.4	0.1
4	3.7	0.5	11.0	0.2	4.8	0.6	0.2	0.1	2.8	0.2	3.5	0.1	4.0	0.1	4.5	0.1	4.5	0.1	5.2	0.4	3.2	0.2	2.1	0.2	3.2	0.2	2.1	0.2
5	4.9	0.4	11.6	0.2	6.4	0.2	0.2	0.1	3.6	0.1	4.6	0.1	5.3	0.1	6.0	0.1	6.0	0.1	6.8	0.5	4.3	0.2	2.7	0.2	4.3	0.2	2.7	0.2
6	6.1	0.2	12.3	0.3	8	0.1	0.1	0.2	4.4	0.2	5.8	0.1	6.6	0.1	7.5	0.1	7.5	0.1	8.5	0.6	5.3	0.3	3.3	0.2	5.3	0.3	3.3	0.2
7	7.2	<0.1	12.9	0.3	9.6	0.1	0.1	0.2	5.8	0.2	6.9	0.1	7.9	0.1	9.0	0.1	10.1	0.7	6.3	0.3	6.3	0.3	3.9	0.2	6.3	0.3	3.9	0.2
8	8.4	0.1	13.6	0.2	11.2	0.1	0.1	0.3	6.5	0.2	8.0	0.1	9.2	0.2	10.5	0.1	11.8	0.1	7.4	0.1	7.4	0.1	4.5	0.2	7.4	0.1	4.5	0.2
9	9.6	0.1	14.2	0.2	12.7	0.1	0.1	0.1	7.3	0.2	9.1	0.1	10.5	0.2	11.9	0.1	13.4	0.1	8.4	0.1	8.4	0.1	5.2	0.2	8.4	0.1	5.2	0.2
10	10.8	0.2	14.9	0.2	14.3	0.2	0.2	0.1	8.0	0.2	10.3	0.1	11.8	0.2	13.4	0.1	15.1	0.1	9.5	0.1	9.5	0.1	5.8	0.2	9.5	0.1	5.8	0.2
11	12.0	0.1	15.5	0.1	15.9	0.1	0.1	0.1	8.7	0.1	11.4	0.1	13.1	0.1	14.9	0.1	16.7	0.1	10.5	0.1	10.5	0.1	6.4	0.1	10.5	0.1	6.4	0.1
12	12.1	0	15.6	0	16.0	0	0	0	9.5	0	12.6	0	13.3	0	15.0	0	16.8	0	12.5	0	12.5	0	6.5	0	12.5	0	6.5	0

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0, measurements less than 0.1m as <0.1, and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: [Signature] Date: 5-25-07

WBID# 557



Site# 1 Photo ID# 557-1-11, Upstream



Site# 1 Photo ID# 557-1-12, Downstream

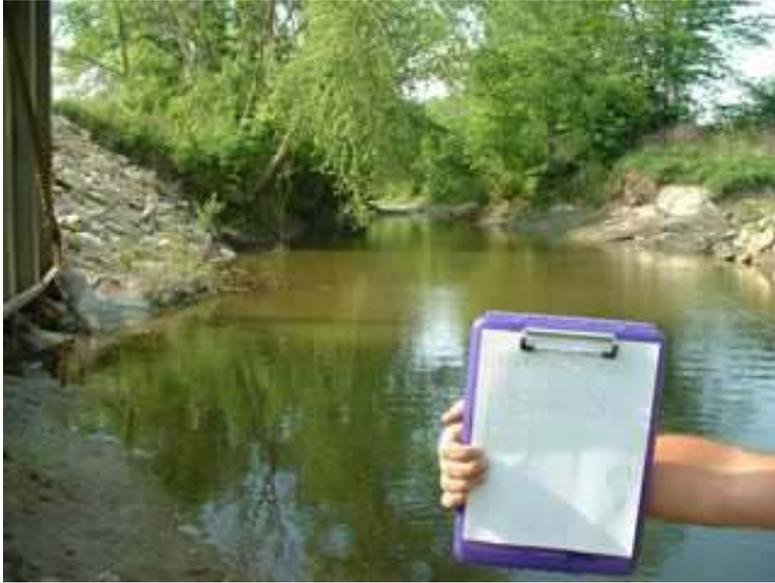


Site# 2 Photo ID# 557-2-13, Upstream



Site# 2 Photo ID# 557-2-14, Downstream

WBID# 557



Site# 3 Photo ID# 557-3-15, Upstream



Site# 3 Photo ID# 557-3-16, Downstream



Site# 4 Photo ID# 557-4-17, Upstream



Site# 4 Photo ID# 557-4-18, Downstream

WBID# 557



Site# 5 Photo ID# 557-5-19, Upstream



Site#5 Photo ID# 557-5-20, Downstream



Site# 6 Photo ID# 557-6-21, Upstream



Site# 6 Photo ID# 557-6-22, Downstream

WBID# 557



Site# 7 Photo ID# 557-7-1, Upstream



Site# 7 Photo ID# 557-7-2, Downstream



Site# 8 Photo ID# 557-8-3, Upstream



Site# 8 Photo ID# 557-8-4, Downstream

WBID# 557



Site# 9 Photo ID# 557-9-5, Upstream



Site# 9 Photo ID# 557-9-6, Downstream



Site# 10 Photo ID# 557-10-7, Upstream



Site# 10 Photo ID# 557-10-8, Downstream

WBID# 557



Site# 11 Photo ID# 557-11-9, Upstream



Site# 11 Photo ID# 557-11-10, Downstream



Site# 11 Photo ID# 557-11-11, Rope tied to bridge

WBID# 557



Site# 12 Photo ID# 557-12-12, Upstream



Site# 12 Photo ID# 557-12-13, Footprints



Site# 12 Photo ID# 557-12-14, Downstream



Site# 12 Photo ID# 557-12-15, Tangled fishing line

WBID# 557



Site# 13 Photo ID# 557-13-17, Upstream



Site# 13 Photo ID# 557-13-18, Downstream



Site# 14 Photo ID# 557-14-19, Upstream



Site# 14 Photo ID# 557-14-20, Downstream

WBID# 557



Site# 15 Photo ID# 557-15-21, Upstream



Site# 15 Photo ID# 557-15-22, Downstream



Site# 16 Photo ID# 557-16-23, Upstream



Site#16 Photo ID# 557-16-25, Downstream

WBID# 557



Site# 16 Photo ID# 557-16-24, Water pipe



Site# 17 Photo ID# 557-17-26, Upstream



Site#17 Photo ID# 557-17-27, Downstream

WBID# 557



Site# 18 Photo ID# 557-18-28, Upstream



Site# 18 Photo ID# 557-18-29, Downstream



Site# 18 Photo ID# 557-18-30, NPDES discharge

WBID# 557



Site# 19 Photo ID# 557-19-32, Upstream



Site# 19 Photo ID# 557-19-33, Downstream



Site# 20 Photo ID# 557-20-34, Upstream



Site# 20 Photo ID# 557-20-35, Downstream