Missouri
Department of
Natural Resources

LONG BRANCH
WBID 0602

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:
MEC WATER RESOURCES, INC.
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):	Long Branch
Missouri Water Body Identification (WBID) Number:	602
8-digit HUC: 10280103	County: Linn
Upstream Legal Description (from Table H):	11, 59N, 20W
Downstream Legal Description(from Table H):	Mouth
Number of sites evaluated	8
List all sites numbers, listed cnsequantly upstream to downstream: 1 - HOLLOW RD; 2 - HAVEN RD; 3 - HILL RD CROSSING; 4 - Hyde RD; 5 - HACKER RD; 6 - HWY M; 7 - DOWNSTREAM HEATH RD; 8 - DOWNSTREAM OF IVA RD CROSSING	

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

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates: UTM X	Y	Downstream Coordinates: 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 _____
EPE	± _____ Feet or ± _____ Meters	
PDOP		± _____ Feet or ± _____ Meters

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

Discharger Facility Name(s):	PSF, South Meadows Finish
Discharger Permit Number(s):	MO 0118737

IV. UAA Surveyor (please print legibly)

Name of Surveyor RENEE MARTIN	Telephone Number: (573) 443-4100
Organization/Employer: MEC Water Resources	
Position: ENV. SPECIALIST	

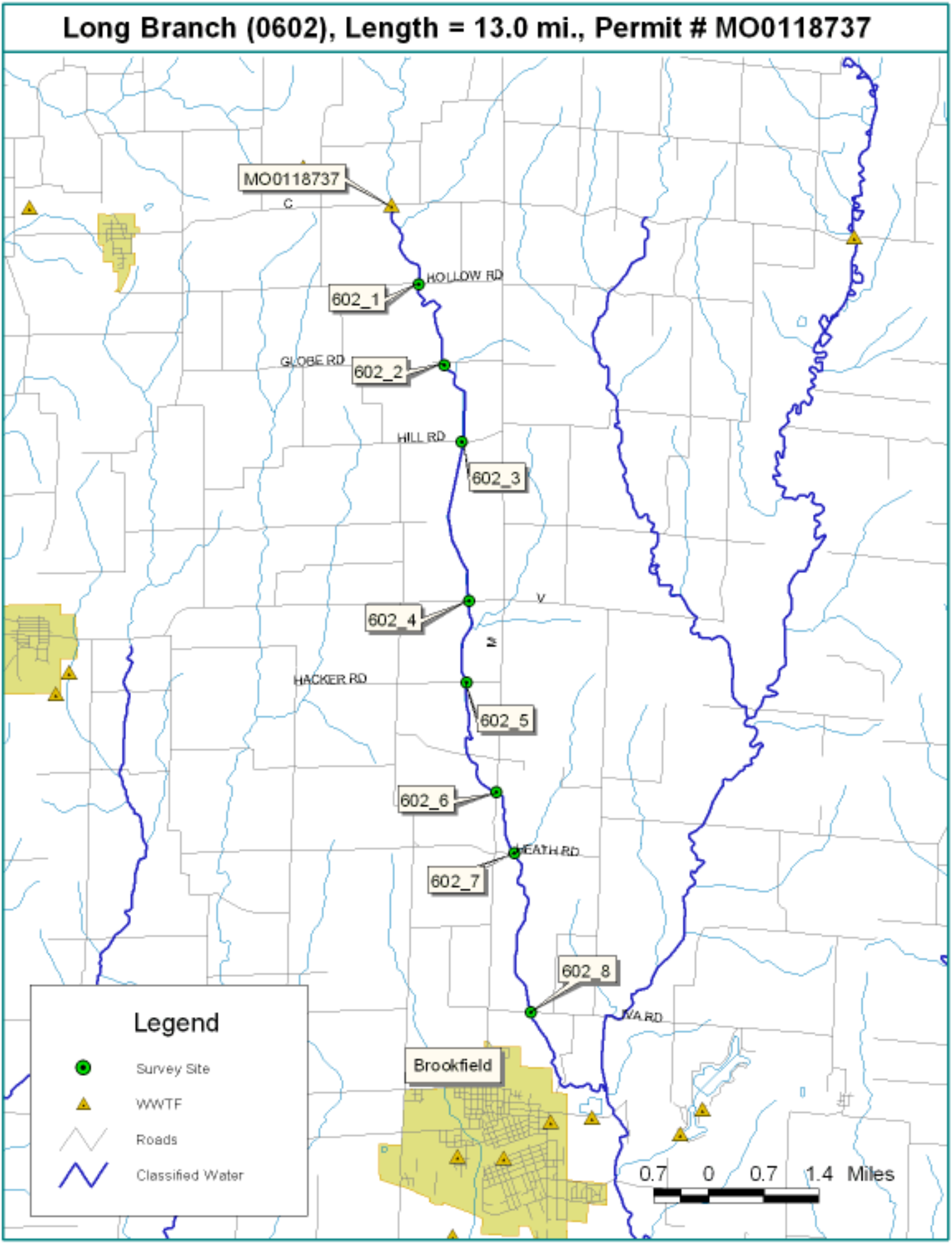
Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Signed: _____ **Date:** 5/21/07

RMC 5-23-07

MK 5/24/07

Long Branch (0602), Length = 13.0 mi., Permit # MO0118737



WBID# 602
Site# 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: 21MAY 2007 07:30	Site Location Description (e.g., road crossing): downstream of Hollow Road Crossing
Personnel (Data Collectors): JRH + TAH	
Current Weather Conditions: Sunny 55°F	Facility Name: PSF, SOUTH MEADOWS FINISH
	Permit Number: MO 0118737
Weather Conditions for Past 10 days: UNKNOWN	
Drought Conditions?: No drought ☐; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☒	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 15S 0491918 Y: 4421456

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	X	Satellite Imagery	X
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	± 20 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)
602_1_984	downstream		
602_1_985	upstream		
602_1_986	Hollow Rd. Crossing		
602_1_987	steep slope near Rd. Crossing (downstream)		

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☒ Steep slopes	☐ None of the above	☐ Other:

Comments:
pic # 987 (602_1_987)

WBID# 602
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)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:
Comments: pic# 602_1_986					

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%.) 35 BS/AE 2 add to 100 35 AHC 34 AHC

% Cobble		% Gravel	5 % Sand	60 % Silt	31 % Mud/Clay	% Bedrock

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

none

Water Characteristics*: (Mark all that apply.)

ODOR:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
COLOR:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Brown (non flowing)
BOTTOM DEPOSIT:	☒ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
WATER SURFACE DEPOSITION:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ 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: Jenny Drabik Date of Survey: 21MAY2007

Organization: AE Solution Position: Field Tech

AHC 3-23-07 AK-5/24/07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 602 Site #: 602_1 (WBID_Site#)

Estimated Channel Incision: 4 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 0491918 UTM Y: 4421456

Horizontal Accuracy Estimate (GPS Data Quality): +/- 20 (feet) (1)

Average Stream Width: 4.5 (meters) Length of Survey Segment: 150 (meters) (20x average stream width)

Field Staff: JRH & TAH

Dissolved Oxygen

Date: 21MAY2007 Time: 07:30

Dissolved Oxygen: 9.11 (mg/L)

Dissolved Oxygen: 92.1 (% sat)

Specific Cond: 276.3 (µS/cm)

Water Temperature: 15.8 (°C)

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)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	1.3	Ø.1	Ø	<Ø.1	Ø.2	Ø.1	Ø.1	Ø.1	Ø.7	Ø.1	Ø.1	Ø.1	Ø	Ø.6	Ø.1	Ø.1	Ø	Ø.1	Ø	Ø.4	Ø.2	Ø.1
2	1.4	Ø.1	Ø.3	|	Ø.5	Ø.2	Ø.2	Ø.2	1.1	Ø.2	Ø.5	Ø.2	Ø.4	Ø.7	Ø.5	Ø.5	Ø.6	Ø.4	Ø.3	Ø.3	Ø.6	Ø.3
3	1.5	Ø.1	Ø.6	|	Ø.4	Ø.2	Ø.3	Ø.1	1.5	Ø.3	Ø.9	Ø.2	Ø.8	Ø.7	Ø.9	Ø.5	1.2	Ø.7	Ø.6	Ø.4	1.Ø	Ø.5
4	1.6	Ø.1	Ø.9	|	Ø.5	Ø.1	Ø.4	Ø.1	1.9	Ø.3	1.3	Ø.3	1.2	1.Ø	1.3	Ø.4	1.8	Ø.8	Ø.9	Ø.4	1.4	Ø.5
5	1.7	Ø.1	1.2	|	Ø.6	Ø.1	Ø.5	Ø.1	2.3	Ø.3	1.7	Ø.4	1.6	>1	1.7	Ø.4	2.4	Ø.7	1.2	Ø.5	1.8	Ø.7
6	1.8	Ø.1	1.5	Ø.1	Ø.7	Ø.1	Ø.6	Ø.1	2.7	Ø.2	2.1	Ø.5	2.Ø	>1	2.1	Ø.4	3.Ø	Ø.7	1.5	Ø.5	2.2	Ø.7
7	1.9	Ø.1	1.8	Ø.1	Ø.8	Ø.1	Ø.7	Ø.1	3.1	Ø.2	2.5	Ø.6	2.4	>1	2.5	Ø.3	3.6	Ø.6	1.8	Ø.5	2.6	Ø.6
8	2.Ø	Ø.1	2.1	Ø.1	Ø.9	Ø.1	Ø.8	Ø.1	3.5	Ø.2	2.9	Ø.6	2.8	>1	2.9	Ø.5	4.2	Ø.6	2.1	Ø.4	3.Ø	Ø.5
9	2.1	Ø.1	2.4	<Ø.1	1.Ø	Ø.1	Ø.9	Ø.1	3.9	Ø.2	3.3	Ø.7	3.2	Ø.7	3.3	Ø.7	4.8	Ø.5	2.4	Ø.3	3.4	Ø.5
10	2.2	Ø.1	2.7	|	1.1	Ø.1	1.Ø	Ø.1	4.3	Ø.1	3.7	Ø.6	3.6	Ø.6	3.7	Ø.7	5.4	Ø.4	2.7	Ø.2	3.8	Ø.3
11	2.3	Ø.1	3.Ø	|	1.2	Ø.1	1.1	Ø.1	4.7	Ø.1	4.1	Ø.1	4.Ø	Ø.6	4.1	Ø.5	6.Ø	Ø.1	3.Ø	Ø.1	4.2	Ø.1
12	3.1	Ø	3.7	Ø	4.Ø	Ø	2.5	Ø	4.7	Ø	4.5	Ø	4.2	Ø	4.9	Ø	6.Ø	Ø	3.5	Ø	4.6	Ø
Feature Type (riffle, run, or pool)	run		run		run		run		run		pool		pool		pool		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 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

(1) waited ~15 min, couldn't get better accuracy est.

Signed: Jenny Hrabik Date: 21MAY2007

RHC 5-23-07

AK 5/24/07

WBID# 602
Site# 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: 21MAY2007 09:00	Site Location Description (e.g., road crossing): downstream of Haven Rd Crossing
Personnel (Data Collectors): JRH + TAH	
Current Weather Conditions: Sunny 60° F	Facility Name: PSF, SOUTH MEADOWS FINISH
	Permit Number: MO 0118737
Weather Conditions for Past 10 days: UNKNOWN	
Drought Conditions?: No drought ☐; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☒	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: 15 S 0492432 Y: 4419823			
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)	X	Aerial Photograph or DOQQ	
Precise Positioning Service	X	Satellite Imagery	
Signal Averaging	X	Interpolation Other	X
Real Time Differential Processing	X		
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± — Meters	Source Map Scale: 1:24,000 1:100,000 Other —	
EPE	± 17 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)
602-2-988	Upstream		
602-2-989	downstream		
602-2-990	Bridge (Haven Rd)		
602-2-991	Steep slope downstream of Bridge		

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☒ Steep slopes	☐ None of the above	☐ Other:

Comments: pic# 602_2_991

WBID# 602
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)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:

Comments:
Pic# 602-2-990 Haven Rd Crossing

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	% Sand	% Silt	% Mud/Clay	% Bedrock
	1	89	5	5	

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

none

Water Characteristics*: (Mark all that apply.)

ODOR:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
COLOR:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Brown (non-flowing)
BOTTOM DEPOSIT:	☐ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
WATER SURFACE DEPOSITION:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ 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: Jimmy Arabie Date of Survey: 21 MAY 2007

Organization: AE Solutions Position: Field Tech.

February 16, 2007

AWC 5-23-07
MC 5/24/07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 602 Site #: 602_2 (WBID_Site#)

Estimated Channel Incision: 4 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 0492432 UTM Y: 4419823

Horizontal Accuracy Estimate (GPS Data Quality): +/- 17 (feet)

Average Stream Width: 4.5 (meters) Length of Survey Segment: 150 (meters) (20x average stream width)

Field Staff: JRH + TAH

Dissolved Oxygen

Date: 21MAY2007 Time: 0900

Dissolved Oxygen: 8.3 (mg/L)

Dissolved Oxygen: 86.7 (% sat)

Specific Cond: 286.1 (µS/cm)

Water Temperature: 17.6 (°C)

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)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0.2	0.1	0.	0.3	0	0.4	0	0.2	0	0.1	0	0.3	0.5	0.1	0.4	0.1	0.6	0.1	0.6	0.1	0.2	0.1
2	0.3	0.2	0.2	0.3	0.4	0.3	0.4	0.3	0.4	0.2	0.2	0.3	1.2	0.1	0.6	0.1	0.9	0.1	0.9	0.1	0.7	0.1
3	0.4	0.2	0.4	0.4	0.8	0.4	0.8	0.3	0.8	0.2	0.4	0.3	1.9	0.1	0.8	0.1	1.2	0.1	1.2	0.1	1.2	0.2
4	0.5	0.1	0.6	0.4	1.2	0.4	1.2	0.3	1.2	0.2	0.6	0.3	2.6	<0.1	1.0	0.1	1.5	0.1	1.5	0.1	1.7	0.1
5	0.6	0.2	0.8	0.3	1.6	0.4	1.6	0.3	1.6	0.1	0.8	0.3	3.3		1.2	0.2	1.8	0.1	1.8	0.2	2.2	0.2
6	0.7	0.2	1.0	0.3	2.0	0.4	2.0	0.3	2.0	0.1	1.0	0.2	4.0		1.4	0.2	2.1	0.1	2.1	0.2	2.7	0.1
7	0.8	0.2	1.2	0.4	2.4	0.3	2.4	0.3	2.4	0.1	1.2	0.2	4.7		1.6	0.2	2.4	0.1	2.4	0.2	3.2	0.1
8	0.9	0.1	1.4	0.5	2.8	0.2	2.8	0.3	2.8	0.1	1.4	0.2	5.4		1.8	0.2	2.7	0.2	2.7	0.2	3.7	0.1
9	1.0	0.1	1.6	0.4	3.2	0.2	3.2	0.3	3.2	0.1	1.6	0.2	6.1		2.0	0.1	3.0	0.2	3.0	0.2	4.2	<0.1
10	1.1	0.1	1.8	0.4	3.6	0.2	3.6	0.2	3.6	0.3	1.8	0.1	6.8	0.2	2.2	0.1	3.3	0.3	3.3	0.1	4.7	0.1
11	1.2	0.1	2.0	0.4	4.0	0.1	4.0	0.1	4.0	0.2	2.0	0.1	7.5	0.1	2.4	0.1	3.6	0.5	3.6	0.1	5.2	0.1
12	2.8	0	2.4	0	4.7	0	4.7	0	4.6	0	2.7	0	8.1	0	3.5	0	4.2	0	4.2	0	5.8	0
Feature Type (riffle, run, or pool)	run		run		run		pool		run		run		run		run		run		run		~~pool~~ JRH 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: 21MAY2007

RHC 5-23-07

JRH 5/24/07

WBID# 602
Site# 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: 21MAY2007 0950	Site Location Description (e.g., road crossing): Downstream of Hill Rd Crossing
Personnel (Data Collectors): JRH + TAH	
Current Weather Conditions: Sunny 65°F	Facility Name: PSF, South Meadows Finish
	Permit Number: MO 0118737
Weather Conditions for Past 10 days: UNKNOWN	
Drought Conditions?: No drought ☐; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☒	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM 15S X: 0492774 Y: 4418266

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	X	Satellite Imagery	X
Signal Averaging	X	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	± 18 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)
602-3_992	upstream		
602-3_993	downstream		
602_3_994	Hill Rd Crossing		
602_3_995	steep slope downstream of bridge		

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☒ Steep slopes	☐ None of the above	☐ Other:

Comments: pic # 602_3_995

WBID# 602
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)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:
Comments: pic#602_3_994					

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	90	% Sand	% Silt	9	% Mud/Clay	% Bedrock

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

none

Water Characteristics*: (Mark all that apply.)

ODOR:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
COLOR:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Brown (nonflowing)
BOTTOM DEPOSIT:	☐ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
WATER SURFACE DEPOSITION:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ 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: Jenny Drabek Date of Survey: 21 MAY 2007

Organization: AE Solutions Position: Field Tech

February 16, 2007

QAQC 5-23-07
AK 5/24/07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 602 Site #: 602-3 (WBID_Site#)

Estimated Channel Incision: 5 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 0492774 UTM Y: 4418266

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

Average Stream Width: 10.0 (meters) Length of Survey Segment: 150 (meters) (20x average stream width)

Field Staff: JRH & TAH

Dissolved Oxygen

Date: 21 MAY 2007 Time: 0950

Dissolved Oxygen: 8.33 (mg/L)

Dissolved Oxygen: 88.5 (% sat)

Specific Cond: 292.1 (µS/cm)

Water Temperature: 18.2 (°C)

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)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0	0.2	0.1	0.1	0	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.5	0.1	0.6	0.1	0.5	0.1	1.1	0.1
2	0.5	0.1	0.7	0.3	0.6	0.3	0.8	0.3	0.6	0.2	0.5	0.2	0.6	0.2	1.0	0.2	0.7	0.1	0.8	0.1	1.3	0.1
3	1.0	0.1	1.3	0.4	1.2	0.3	1.3	0.3	1.1	0.1	0.9	<0.1	0.9	0.2	1.5	0.2	0.8	0.1	1.1	<0.1	1.5	<0.1
4	1.5	0.1	1.9	0.4	1.8	0.3	1.8	0.3	1.6	0.2	1.3	<0.1	1.2	0.2	2.0	0.2	0.9	0.1	1.4	0.1	1.7	<0.1
5	2.0	0.1	2.5	0.3	2.4	0.3	2.3	0.5	2.1	0.2	1.7	<0.1	1.5	0.3	2.5	0.2	1.0	0.1	1.7	0.1	1.9	<0.1
6	2.5	0.1	3.1	0.2	3.0	0.3	2.8	0.6	2.6	0.2	2.1	0.1	1.8	0.3	3.0	0.1	1.1	0.1	2.0	0.1	2.1	0.1
7	3.0	0.2	3.7	0.1	3.6	0.4	3.3	0.4	3.1	0.1	2.5	0.2	2.1	0.3	3.5	0.1	1.2	0.1	2.3	0.1	2.3	<0.1
8	3.5	0.2	4.3	0.2	4.2	0.3	3.8	0.2	3.6	0.1	2.9	0.3	2.4	0.3	4.0	0.1	1.3	0.1	2.6	0.1	2.5	0.1
9	4.0	0.2	4.9	0.3	4.8	0.4	4.3	0.2	4.1	0.1	3.3	0.3	2.7	0.2	4.5	0.2	1.4	0.1	2.9	0.1	2.7	0.1
10	4.5	0.2	5.5	0.4	5.4	0.3	4.8	0.3	4.6	0.1	3.7	0.3	3.0	0.2	5.0	0.1	1.5	0.1	3.2	0.1	2.9	0.1
11	5.0	0.1	6.1	0.1	6.0	0.1	5.3	0.1	5.1	0.1	4.1	0.2	3.3	0.1	5.5	0.1	1.6	0.1	3.5	0.1	3.1	0.1
12	5.4	0	6.4	0	6.3	0	5.5	0	6.9	0	4.8	0	4.2	0	6.0	0	6.9	0	4.7	0	4.5	0
Feature Type (riffle, run, or pool)	run		pool		pool		pool		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 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: [signature] Date: 21 MAY 2007

5-23-07

CAK 5/24/07

WBID# 602
Site# 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: 21MAY2007 1045	Site Location Description (e.g., road crossing): downstream of Hyde Rd Crossing
Personnel (Data Collectors): JRH & TAH	
Current Weather Conditions: Sunny 70°	Facility Name: PSF, SOUTH MEADOWS FINISH
	Permit Number: MD 0118737
Weather Conditions for Past 10 days: UNKNOWN	
Drought Conditions?: No drought ☐; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☒	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 15S 0492926 Y: 4415033

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	± 17 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)
602_4_996	Upstream		
602_4_997	downstream		
602_4_998	Hyde Rd Bridge		
602_4_999	Slope downstream of Bridge		

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☒ Steep slopes	☐ None of the above	☐ Other:

Comments:
pic # 602_4_999

WBID# 602
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)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:
Comments: pic# 602_4_998					

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	% Sand	% Silt	% Mud/Clay	% Bedrock
	1	85	5	9	

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

none

Water Characteristics*: (Mark all that apply.)

ODOR:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
COLOR:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Brown (nonflowing)
BOTTOM DEPOSIT:	☐ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
WATER SURFACE DEPOSITION:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ 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: Jenny Drabek Date of Survey: 5/21/07

Organization: AE Solutions Position: Field Tech

RWC 5-23-07
AK 5/24/07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 602 Site #: 602_4 (WBID_Site#)

Estimated Channel Incision: 4 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 0492926 UTM Y: 4415033

Horizontal Accuracy Estimate (GPS Data Quality): +/- 17 (feet)

Average Stream Width: 5.0 (meters) Length of Survey Segment: 150 (meters) (20x average stream width)

Field Staff: JRH + TAH

Dissolved Oxygen

Date: 21MAY2007 Time: 1045

Dissolved Oxygen: 9.5~~9~~25 (mg/L) JRH

① Dissolved Oxygen: 98.6 (% sat)

Specific Cond: 303.0 (µS/cm)

Water Temperature: 18.7 (°C)

①recalibrated DO meter

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)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0.2	0.1	1.1	0.1	3.6	0.1	0.8	0.1	4.6	0.1	0	<0.1	0.2	0.1	0.3	0.1	0.6	0.1	0.4	0.1	0.5	0.1
2	0.4	0.1	1.5	<0.1	3.9	0.1	1.1	0.1	4.7		0.4	<0.1	0.5	0.3	0.6	0.3	1.1	0.1	0.6	0.1	0.7	0.1
3	0.6	0.1	1.9	<0.1	4.2	0.1	1.4	0.1	4.8		0.8	0.2	0.8	0.4	0.9	0.3	1.6	0.1	0.8	0.2	0.9	0.2
4	0.8	0.2	2.3	<0.1	4.5	0.1	1.7	0.1	4.9		1.2	0.1	1.1	0.3	1.2	0.3	2.1	0.1	1.0	0.2	1.1	0.2
5	1.0	0.2	2.7	<0.1	4.8	0.1	2.0	0.1	5.0		1.6	<0.1	1.4	0.3	1.5	0.3	2.6	0.1	1.2	0.2	1.3	0.2
6	1.2	0.1	3.1	<0.1	5.1	<0.1	2.3	0.1	5.1		2.0	<0.1	1.7	0.3	1.8	0.3	3.1	0.2	1.4	0.2	1.5	0.2
7	1.4	0.1	3.5	<0.1	5.4	<0.1	2.6	<0.1	5.2		2.4	0.1	2.0	0.4	2.1	0.3	3.6	0.2	1.6	0.2	1.7	0.1
8	1.6	0.1	3.9	0.1	5.7	0.1	2.9	<0.1	5.3		2.8	<0.1	2.3	0.3	2.4	0.3	4.1	0.2	1.8	0.2	1.9	0.1
9	1.8	0.1	4.3	0.1	6.0	0.2	3.2	0.2	5.4		3.2	<0.1	2.6	0.3	2.7	0.3	4.6	0.3	2.0	0.2	2.1	0.1
10	2.0	0.1	4.7	0.1	6.3	0.2	3.5	0.3	5.5		3.6	<0.1	2.9	0.1	3.0	0.1	5.1	0.5	2.2	0.1	2.3	0.1
11	2.2	0.1	5.1	0.1	6.6	0.1	3.8	0.1	5.6		4.0	<0.1	3.2	0.1	3.3	0.1	5.6	0.4	2.4	0.1	2.5	0.1
12	4.8	0	6.5	0	6.7	0	4.5	0	6.4	0	4.7	0	3.4	0	3.8	0	5.7	0	3.8	0	3.7	0
Feature Type (riffle, run, or pool)	run		run		run		run		run		riffle		run		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 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: 21MAY2007

[signature] 5-23-07

[signature] 5/24/07

WBID# 602
Site# 5

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: 21 MAY 2007 1140	Site Location Description (e.g., road crossing): downstream of Hacker Rd. Crossing
Personnel (Data Collectors): JRH + TAH	
Current Weather Conditions: Sunny 70° F	Facility Name: PSF, South Meadows Finish
	Permit Number: MO 0118737
Weather Conditions for Past 10 days: UNKNOWN	
Drought Conditions?: No drought ☐; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☒	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: 15S 0492866		Y: ~~4413387~~ 4413387	
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)	X	Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	X
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	± 15 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)
602-5-1001	upstream		
602-5-1002	downstream		
602-5-1003	Hacker Rd crossing		
602-5-1004	steep slope downstream of bridge		

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☒ Steep slopes	☐ None of the above	☐ Other:

Comments:
pic# 602_5_1004

WBID# 602
Site# 5

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)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:
Comments: pic # 602_5_1003					

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	% Sand	% Silt	% Mud/Clay	% Bedrock
	5	90	5		

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

none

Water Characteristics*: (Mark all that apply.)

ODOR:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
COLOR:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Brown (nonflowing)
BOTTOM DEPOSIT:	☐ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
WATER SURFACE DEPOSITION:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ 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: Jenny Drabek Date of Survey: 21 MAY 2007

Organization: AESolutions Position: Field Tech

February 16, 2007

5-23-07
5/24/07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 602 Site #: 602_5 (WBID_Site#)

Estimated Channel Incision: 4 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 04928166 UTM Y: 4413387

Horizontal Accuracy Estimate (GPS Data Quality): +/- 15 (feet)

Average Stream Width: 6.0 (meters) Length of Survey Segment: 150 (meters) (20x average stream width)

Field Staff: JRH + TAH

Dissolved Oxygen

Date: 21MAY2007 Time: 1140

Dissolved Oxygen: ~~9.31~~ JRH 8.72 (mg/L)

Dissolved Oxygen: 98.7 (% sat)

Specific Cond: 330.5 (µS/cm)

Water Temperature: 21.8 (°C)

Transect Cross-Section

Measurement	01 Distance (m)	01 Depth (m)	02 Distance (m)	02 Depth (m)	03 Distance (m)	03 Depth (m)	04 Distance (m)	04 Depth (m)	05 Distance (m)	05 Depth (m)	06 Distance (m)	06 Depth (m)	07 Distance (m)	07 Depth (m)	08 Distance (m)	08 Depth (m)	09 Distance (m)	09 Depth (m)	10 Distance (m)	10 Depth (m)	11 Distance (m)	11 Depth (m)
1	0.7	0.1	0.1	0.1	0.3	0.1	0.6	0.1	2.2	0.1	1.3	0.1	0.4	0.1	0.4	0.1	0.2	0.1	0	<0.1	0.2	0.1
2	0.9	<0.1	0.2	0.2	0.4	0.1	1.0	0.1	2.3	0.1	1.5	0.1	1.1	0.1	0.5		0.4		0.6		0.3	
3	1.1	0.1	0.3	0.2	0.5	0.2	1.4	0.1	2.4	0.1	1.7	0.1	1.8	<0.1	0.6		0.6		1.2		0.4	
4	1.3	0.1	0.4	0.2	0.6	0.1	1.8	0.1	2.5	0.1	1.9	0.1	2.5	<0.1	0.7		0.8		1.8		0.5	
5	1.5	0.1	0.5	0.2	0.7	0.1	2.2	0.1	2.6	0.2	2.1	0.1	3.2	<0.1	0.8		1.0		2.4		0.6	
6	1.7	0.1	0.6	0.2	0.8		2.6	0.1	2.7	0.2	2.3	0.1	3.9	<0.1	0.9		1.2		3.0		0.7	
7	1.9	0.1	0.7	0.2	0.9		3.0	0.1	2.8	0.2	2.5	0.1	4.6	0.1	1.0		1.4		3.6		0.8	
8	2.1	0.1	0.8	0.1	1.0		3.4	0.2	2.9	0.2	2.7	0.1	5.3	0.1	1.1		1.6		4.2		0.9	
9	2.3	0.2	0.9	0.1	1.1		3.8	0.2	3.0	0.1	2.9	0.2	6.0	<0.1	1.2		1.8		4.8		1.0	
10	2.5	0.1	1.0	0.1	1.2		4.2	0.1	3.1	0.1	3.1	0.2	6.7	<0.1	1.3		2.0		5.4		1.1	
11	2.7	0.1	1.1	0.1	1.3		4.6	0.1	3.2	0.1	3.3	0.1	7.4	0.1	1.4		2.2		6.0		1.2	
12	3.5	0	4.4	0	5.2	0	5.3	0	3.5	0	4.3	0	8.3	0	5.8	0	4.5	0	6.4	0	8.2	0
Feature Type (riffle, run, or pool)	run		run		run		run		run		run		run		run		run		riffle		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: Jenny Hrabik Date: 21MAY2007

GWC 5-23-07

AR 5/24/07

WBID# 602
Site# 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: 21MAY2007 1220	Site Location Description (e.g., road crossing): downstream of HWY M road crossing
Personnel (Data Collectors): JRH & TAH	Facility Name: PSF, SOUTH MEADOWS FINISH JRH
Current Weather Conditions: windy sunny 75°F	Permit Number: mo 0118737
Weather Conditions for Past 10 days: UNKNOWN	
Drought Conditions?: No drought ☐; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☒	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 15 S 0493470 Y: 4411150

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	± 16 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)
602-6-1005	upstream		
602-6-1006	downstream		
602-6-1007	Hwy M Bridge		
602-6-1008	Slope downstream of M Bridge		

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☒ Steep slopes	☐ None of the above	☐ Other:

Comments: pic # 602-6-1008

WBID# 602
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)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:
Comments: pic#602_6_1007					

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	50 % Sand	20 % Silt	30 % Mud/Clay	% Bedrock

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

none

Water Characteristics*: (Mark all that apply.)

ODOR:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
COLOR:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Brown (nonflowing)
BOTTOM DEPOSIT:	☒ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
WATER SURFACE DEPOSITION:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ 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: Jenny Hrabik Date of Survey: 21 MAY 2007

Organization: AE Solutions Position: Field Tech

RWC 5-23-07
AK 5/24/07

February 16, 2007

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 602 Site #: 602_6 (WBID_Site#)

Estimated Channel Incision: 4 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 0493470 UTM Y: 4411150

Horizontal Accuracy Estimate (GPS Data Quality): +/- 16 (feet)

Average Stream Width: 7.0 (meters) Length of Survey Segment: 150 (meters) (20x average stream width)

Field Staff: JRH & TAH

Dissolved Oxygen

Date: 21MAY2007 Time: 1220

Dissolved Oxygen: 7.64 (mg/L)

Dissolved Oxygen: 86.8 (% sat)

Specific Cond: 326.4 (µS/cm)

Water Temperature: 20.8 (°C)

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)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0	0.1	0.2	0.1	0	0.1	0.1	0.1	0.1	0.1	0.4	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	0.4	0.2	0.6	0.2	0.2	0.2	0.5	0.2	0.6	0.1	0.9	0.4	0.9	0.3	1.1	0.3	0.8	0.3	0.8	0.3	0.9	0.4
3	0.7	0.2	1.0	0.1	0.4	0.3	0.9	0.3	1.1	0.1	1.4	0.5	1.6	0.6	2.1	>1	1.5	0.4	1.5	0.4	1.7	0.3
4	1.0	0.3	1.4	0.1	0.6	0.3	1.3	0.4	1.6	0.5	1.9	0.5	2.3	0.7	3.1	>1	2.2	0.7	2.2	0.7	2.5	0.5
5	1.3	0.2	1.8	0.2	0.8	0.2	1.7	0.4	2.1	0.5	2.4	0.6	3.0	0.6	4.1	>1	2.9	0.8	2.9	0.7	3.3	0.5
6	1.6	0.2	2.2	0.2	1.0	0.2	2.1	0.5	2.6	0.5	2.9	0.5	3.7	0.6	5.1	>1	3.6	0.7	3.6	0.7	4.1	0.7
7	1.9	0.1	2.6	0.2	1.2	0.1	2.5	0.5	3.1	0.5	3.4	0.5	4.4	0.6	6.1	>1	4.3	0.7	4.3	0.7	4.9	0.6
8	2.2	0.1	3.0	0.3	1.4		2.9	0.6	3.6	0.6	3.9	0.5	5.1	0.5	7.1	>1	5.0	0.9	5.0	0.6	5.7	0.6
9	2.5	0.1	3.4	0.3	1.6		3.3	0.6	4.1	0.6	4.4	0.4	5.8	0.5	8.1	>1	5.7	0.7	5.7	0.5	6.5	0.7
10	2.8	0.2	3.8	0.2	1.8		3.7	0.3	4.6	0.5	4.9	0.3	6.5	0.3	9.1	0.4	6.4	0.3	6.4	0.4	7.3	0.6
11	3.1	0.1	4.2	0.1	2.0		4.1	0.1	5.1	0.4	5.4	0.1	7.2	0.1	10.1	0.1	7.1	0.1	7.1	0.2	8.1	0.6
12	3.7	0	4.6	0	4.6	0	4.6	0	6.0	0	6.3	0	9.0	0	10.1	0	8.0	0	7.6	0	8.3	0
Feature Type (riffle, run, or pool)	run		pool		run		pool		pool		pool		pool		pool		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 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Jenny Harbin Date: 21MAY2007

5-23-07

CAK 5/24/07

WBID# 602
Site# 7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: 21 MAY 2007 1330	Site Location Description (e.g., road crossing): downstream of Heath Rd. crossing
Personnel (Data Collectors): JRH & TAH	Facility Name: PSF, SOUTH MEADOWS FINISH
Current Weather Conditions: Sunny 80°F	Permit Number: MO 0118737
Weather Conditions for Past 10 days: UNKNOWN	
Drought Conditions?: No drought ☐; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☒	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 15 S 0493836 Y: 4409904

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	± 17 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)
602_7_1009	upstream		
602_7_1010	downstream		
602_7_1011	Bridge (Heath Rd)		
602_7_1012	Slope downstream of Bridge		

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☒ Steep slopes	☐ None of the above	☐ Other:

Comments: pic# 602_7_1012

WBID# 602
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)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:
Comments: pic# 602-7_1011					

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	5 % Gravel	80 % Sand	5 % Silt	10 % Mud/Clay	% Bedrock

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

none

Water Characteristics*: (Mark all that apply.)

ODOR:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
COLOR:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Brown (nonturbid)
BOTTOM DEPOSIT:	☒ Sludge	☒ Solids	☒ Fine sediments	☐ None	☐ Other:
WATER SURFACE DEPOSITION:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ 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: Jenny Drabek Date of Survey: 21 MAY 2007

Organization: AES Solutions Position: Field Tech

February 16, 2007

RMC 5-23-07
AMC 5/24/07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 602 Site #: 602_7 (WBID_Site#)

Estimated Channel Incision: 5 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 0493836 UTM Y: 4409904

Horizontal Accuracy Estimate (GPS Data Quality): +/- 17 (feet)

Average Stream Width: 4.5 (meters) Length of Survey Segment: 150 (meters) (20x average stream width)

Field Staff: JRH & TAH

Dissolved Oxygen

Date: 21MAY2007 Time: 1330

Dissolved Oxygen: 6.92 (mg/L)

Dissolved Oxygen: 78.3 (% sat)

Specific Cond: 332.7 (µS/cm)

Water Temperature: 21.6 (°C)

Transect Cross-Section

Measurement	01 Distance (m)	01 Depth (m)	02 Distance (m)	02 Depth (m)	03 Distance (m)	03 Depth (m)	04 Distance (m)	04 Depth (m)	05 Distance (m)	05 Depth (m)	06 Distance (m)	06 Depth (m)	07 Distance (m)	07 Depth (m)	08 Distance (m)	08 Depth (m)	09 Distance (m)	09 Depth (m)	10 Distance (m)	10 Depth (m)	11 Distance (m)	11 Depth (m)
1	0.5	0.1	0.8	0.1	0	<0.1	0	<0.1	0.2	0.1	0.2	0.1	0.3	0.1	0.2	0.1	0.1	0.1	1.5	0.1	0.4	0.1
2	0.9	0.1	1.1	<0.1	0.5		0.2		0.4	0.2	0.4	0.1	0.6	0.2	0.4	0.1	0.5	0.2	1.7	0.1	0.6	0.1
3	1.3	0.2	1.4	0.1	1.0		0.4		0.6	0.2	0.6	0.2	0.9	0.2	0.6	0.1	0.9	0.2	1.9	0.2	0.8	0.1
4	1.7	0.3	1.7	0.2	1.5		0.6		0.8	0.3	0.8	0.1	1.2	0.1	0.8	0.2	1.3	0.3	2.1	0.2	1.0	0.2
5	2.1	0.4	2.0	0.2	2.0		0.8		1.0	0.4	1.0	0.1	1.5	0.1	1.0	0.2	1.7	0.3	2.3	0.3	1.2	0.3
6	2.5	0.4	2.3	0.3	2.5		1.0		1.2	0.3	1.2	0.1	1.8	0.1	1.2	0.2	2.1	0.3	2.5	0.3	1.4	0.3
7	2.9	0.3	2.6	0.2	3.0		1.2		1.4	0.3	1.4	0.1	2.1	0.1	1.4	0.1	2.5	0.2	2.7	0.3	1.6	0.3
8	3.3	0.2	2.9	0.3	3.5		1.4	0.1	1.6	0.3	1.6	0.1	2.4	0.2	1.6		2.9	0.2	2.9	0.2	1.8	0.2
9	3.7	0.2	3.2	0.3	4.0		1.6	0.1	1.8	0.2	1.8	0.1	2.7	0.2	1.8		3.3	0.2	3.1	0.1	2.0	0.2
10	4.1	0.1	3.5	0.2	4.5		1.8	<0.1	2.0	0.1	2.0	0.1	3.0	0.1	2.0		3.7	0.2	3.3	0.1	2.2	0.1
11	4.5	0.1	3.8	0.1	5.0		2.0	<0.1	2.2	0.1	2.2	0.1	3.3	0.1	2.2		4.1	0.1	3.5	0.1	2.4	0.1
12	5.2	0	4.1	0	5.3	0	2.5	0	2.5	0	5.6	0	4.2	0	3.1	0	4.5	0	4.0	0	3.2	0
Feature Type (riffle, run, or pool)	pool		run		run		run		run		run		run		run		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: Jenny Hrabik Date: 21MAY2007

RWC 5-23-07
JAK 5/24/07

WBID# 602
Site# 8

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: 21MAY2007 1415	Site Location Description (e.g., road crossing): downstream of Iva Rd. Crossing
Personnel (Data Collectors): JRH + TAH	
Current Weather Conditions: sunny 85°F	Facility Name: PSF, SOUTH MEADOWS FINISH
	Permit Number: MO 0118737
Weather Conditions for Past 10 days: UNKNOWN	
Drought Conditions?: No drought ☐; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☒	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)

Site GPS Coordinates: UTM X: 15 S 0494173 Y: 4406673

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	± 23 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)
602_8_1013	up	602_8_1017	trash downstrm of bridge
602_8_1014	down		
602_8_1015	Iva Rd Bridge		
602_8_1016	slope (downstream of bridge)		

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ None of the above	☐ 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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☒ Steep slopes	☐ None of the above	☐ Other:

Comments: pic # 602_8_1016

WBID# 602
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)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☒ Other: trash
Comments: pic # 602_8_1015 Iva Rd Crossing # 602_8_1017 trash (downstrm of Bridge)					

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	5 % Gravel	80 % Sand	5 % Silt	10 % Mud/Clay	— % Bedrock

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

none

Water Characteristics*: (Mark all that apply.)

ODOR:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
COLOR:	☐ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Brown
BOTTOM DEPOSIT:	☒ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
WATER SURFACE DEPOSITION:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ 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: Jenny Drabek Date of Survey: 21 MAY 2007

Organization: AE Solutions Position: Field Tech

DWC 5-23-07
AK 5/24/07

February 16, 2007

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 602 Site #: 602-8 (WBID_Site#)

Estimated Channel Incision: 4 (m) (height between low bank width and water)

GPS Location (taken at transect 1):

UTM X: 0494173 UTM Y: 4406673

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

Average Stream Width: 1.5 (meters) Length of Survey Segment: 150 (meters) (20x average stream width)

Field Staff: JRH & TAH

Dissolved Oxygen

Date: 21 MAY 2007 Time: 1415

Dissolved Oxygen: 6.46 (mg/L)

Dissolved Oxygen: 72.9 (% sat)

Specific Cond: 333.3 (µS/cm)

Water Temperature: 22.7 (°C)

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)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0.1	0.1	0.1	0.1	0	0.1	0.4	0.1	0.3	0.1	0.2	0.1	0.2	0.1	0.3	0.1	0.6	0.1	0.3	0.1	0.1	0.1
2	0.7	0.2	0.4	0.3	0.6	0.3	1.0	0.2	0.9	0.3	0.6	0.2	0.4	0.2	0.7	0.2	1.1	0.2	0.8	0.2	0.6	0.5
3	1.3	0.5	0.7	0.4	1.2	0.3	1.6	0.1	1.5	0.4	1.0	0.3	0.6	0.2	1.1	0.2	1.6	0.3	1.3	0.6	1.1	>
4	1.9	0.5	1.0	0.4	1.8	0.4	2.2	0.1	2.1	0.5	1.4	0.2	0.8	0.2	1.5	0.2	2.1	0.4	1.8	0.9	1.6	>
5	2.5	0.3	1.3	0.3	2.4	0.5	2.8	0.4	2.7	0.4	1.8	0.2	1.0	0.2	1.9	0.2	2.6	0.5	2.3	>1	2.1	>
6	3.1	0.2	1.6	0.2	3.0	0.5	3.4	0.5	3.3	0.5	2.2	0.3	1.2	0.1	2.3	0.3	3.1	0.5	2.8	>1	2.6	>
7	3.7	0.1	1.9	0.2	3.6	0.6	4.0	0.7	3.9	0.5	2.6	0.3	1.4	<0.1	2.7	0.3	3.6	0.4	3.3	>1	3.1	>
8	4.3	0.1	2.2	0.2	4.2	0.5	4.6	>1	4.5	0.4	3.0	0.3	1.6	<0.1	3.1	0.4	4.1	0.4	3.8	>1	3.6	>
9	4.9	0.2	2.5	0.2	4.8	0.5	5.2	>1	5.1	0.3	3.4	0.2	1.8	0.1	3.5	>1	4.6	0.3	4.3	0.6	4.1	>
10	5.5	0.2	2.8	0.1	5.4	0.2	5.8	0.6	5.7	0.2	3.8	0.2	2.0	0.1	3.9	>1	5.1	0.1	4.8	0.3	4.6	0.6
11	6.1	0.1	3.1	0.1	6.0	0.2	6.4	0.2	6.3	0.1	4.2	0.1	2.2	0.1	4.3	0.1	5.6	0.1	5.3	0.1	5.1	0.1
12	6.5	0	4.5	0	6.0	0	6.5	0	7.3	0	4.4	0	4.4	0	5.1	0	6.2	0	5.6	0	5.5	0
Feature Type (riffle, run, or pool)	run		run		pool		pool		pool		pool		pool		pool		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 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Jennifer Krabbe Date: 21 MAY 2007

QAC 5/24/07 5-23-07

WBID# 602

Site# 1 Photo ID# 602-1-984, Downstream

Site# 1 Photo ID# 602-1-985, Upstream

Site# 1 Photo ID# 602-1-986, Hollow Rd. crossing

Site# 1 Photo ID# 602-1-987, Steep slope

WBID# 602

Site# 2 Photo ID# 602-2-988, Upstream

Site# 2 Photo ID# 602-2-989, Downstream

Site# 2 Photo ID# 602-2-990, Bridge

Site# 2 Photo ID# 602-2-991, Steep slope

WBID# 602

Site# 3 Photo ID# 602-3-992, Upstream

Site# 3 Photo ID# 602-3-993, Downstream

Site# 3 Photo ID# 602-3-994, Hill Rd Crossing

Site# 3 Photo ID# 602-3-995, Steep slope

WBID# 602

Site# 4 Photo ID# 602-4-996, Upstream

Site# 4 Photo ID# 602-4-997, Downstream

Site# 4 Photo ID# 602-4-998, Hyde Rd Bridge

Site# 4 Photo ID# 602-4-999, Slope downstream

WBID# 602

Site# 5 Photo ID# 602-5-1001, Upstream

Site# 5 Photo ID# 602-5-1002, Downstream

Site# 5 Photo ID# 602-5-1003, Hacker Rd crossing

Site# 5 Photo ID# 602-5-1004, Steep slope

WBID# 602

Site# 6 Photo ID# 602-6-1005, Upstream

Site# 6 Photo ID# 602-6-1006, Downstream

Site# 6 Photo ID# 602-6-1007, Hwy M bridge

Site# 6 Photo ID# 602-6-1008, Slope downstream

WBID# 602

Site# 7 Photo ID# 602-7-1009, Upstream

Site# 7 Photo ID# 602-7-1010, Downstream

Site# 7 Photo ID# 602-7-1011, Bridge

Site# 7 Photo ID# 602-7-1012, Slope downstream

WBID# 602

Site# 8 Photo ID# 602-8-1013, Upstream

Site# 8 Photo ID# 602-8-1014, Downstream

Site# 8 Photo ID# 602-8-1015, Iva Rd bridge

Site# 8 Photo ID# 602-8-1016, Slope downstream

WBID# 602

Site# 8 Photo ID# 602-8-1017, Trash