Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0077 South Fork South Fabius River

Submitted by
MEC Water Resources

To
Missouri Department of Natural Resources
Water Protection Program

On
October 17, 2008

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A – Water Body Identification

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

Water Body Name (from USGS 7.5' quad):	S. Fk. S. Fabius R.
Missouri Water Body Identification (WBID) Number:	0077
8-digit HUC:	07110003
County(ies), Listed Upstream to Downstream:	Adair, Knox
Upstream Legal Description (from Table H):	13, 63N, 14W
Downstream Legal Description (from Table H):	9, 62N, 12W
Number of sites evaluated:	11

List all site numbers, consecutively upstream to downstream:

Site 1: Rt. J Crossing
Site 2: Mule Train Way Crossing
Site 3: ~~Rt. J Crossing~~ MO Hwy 11 Crossing
Site 4: Gene Way Crossing
Site 5: Oak Grove Way Crossing
Site 6: CR 36 Crossing
Site 7: 50m dnstream of site 6
Site 8: Rt. J Crossing
Site 9: 50 m dnstream of site 8
Site 10: CR 113 Crossing
Site 11: County Rd 118 Crossing

Include a Site Location Map(s). The map must include all requirements detailed in the *Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol* (Section IV.D.8.a).

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

Facility Name(s) and Permit Number(s):

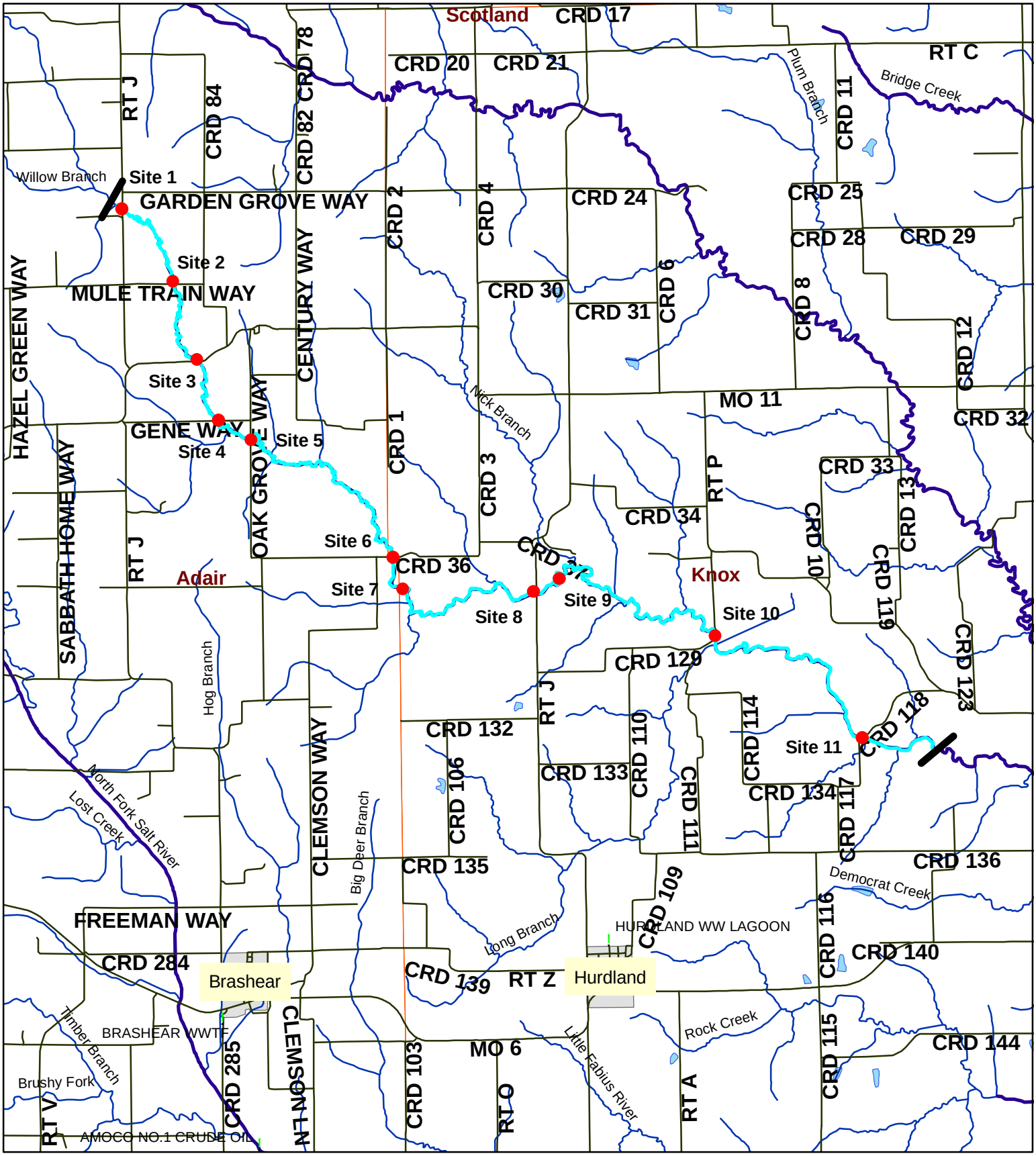
Hurdland WW Lagoon
MO 0115894

III. UAA Surveyor (please **PRINT** legibly)

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

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

Signed: Renee Martin **Date:** 9/18/08



S. Fk. S. Fabius River
WBID 0077
Adair County

Meters

0 1,250 2,500 5,000 7,500

WBID # 0077

Site # 0077-1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 8/12/08 15:30	Location Description (e.g., road crossing): Rt. J crossing
Stream Name: S.FK.S. Fabius R.	
Current Weather Conditions: Cloudy	Facility Name(s): Hurdland WW lagoon
Weather Conditions for Past 10 days: Ø" of rain	Permit Number(s): MO Ø115894
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought ☑; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0550787	Northing (UTM Y): 4458049	Horizontal Accuracy: (EPE / FOM / PDOP) 16 ~~Meters~~ Ft ~~Jt~~
Site 11	Easting (UTM X): 0550845	Northing (UTM Y): 445~~779~~ 7979 ~~JCH~~	Horizontal Accuracy: (EPE / FOM / PDOP) 38 ~~Meters~~ Ft ~~Jt~~

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3156	Up stream	3157	DN stream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ 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.)

N/A

Stream Name & WBID # S. Fk s. Fabius 0077 Date of Survey 8/12/08

Site # 0077-1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☒ Steep slopes	☐ Other:

Comments: Private Property

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

☒ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock Watering
☒ None of the above	Comments / Other: N/A			

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

10 % Cobble	— % Gravel	15 % Sand	— % Silt	75 % Mud/Clay	— % Bedrock

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

abundant Benthic algae

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

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

Stream Name & WBID # S. Fk S. Fabius 0077 Date of Survey 8/12/08

Site # 0077-1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
		N/A			

Comments: (Please record any additional comments here.)

Log jam at Transect 6
Lots of woody debris

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 8/12/08

Organization: AE Solutions Position: Environmental Specialist

9/2/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. S. Fabius R. Waterbody ID: 0077 Site #: 0077_01

Estimated Channel Incision: 0.20 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: 550787 UTM Y: 4458049 +/- 16 (feet)

11 UTM X: 550845 UTM Y: 4457979 +/- 38 (feet)

Average Stream Width: 2.7 (meters) Length of Survey Segment: 150 (meters)

(To determne Length of Reach) (20x average stream width)

Field Staff: JH, TH

Dissolved Oxygen

Date: 8/12/2008 Time: 15:30

Dissolved Oxygen: 5.55 (mg/L)

Dissolved Oxygen: 64.4 (% sat)

Specific Cond: 378 (µS/cm)

Water Temperature: 20.6 (°C)

Transect Cross-Section

Station	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)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.11	0.02	0.37	0.11	0.28	0.16	0.39	0.01	0.21	0.15	0.09	0.02	0.18	0.08	0.26	0.21	0.24	0.15	0.30	0.18	0.55	0.29
2	0.22	0.02	0.74	0.15	0.56	0.25	0.78	0.13	0.42	0.28	0.18	0.04	0.36	0.11	0.52	0.30	0.48	0.20	0.60	0.34	1.10	0.40
3	0.33	0.01	1.11	0.24	0.84	0.31	1.17	0.33	0.63	0.25	0.27	0.10	0.54	0.16	0.78	0.40	0.72	0.28	0.90	0.44	1.65	0.55
4	0.44	0.01	1.48	0.24	1.12	0.36	1.56	0.50	0.84	0.24	0.36	0.06	0.72	0.15	1.04	0.40	0.96	0.30	1.20	0.40	2.20	0.60
5	0.55	0.03	1.85	0.35	1.40	0.38	1.95	0.55	1.05	0.20	0.45	0.04	0.90	0.15	1.30	0.41	1.20	0.35	1.50	0.40	2.75	0.70
6	0.66	0.01	2.22	0.41	1.68	0.40	2.34	0.58	1.26	0.16	0.54	0.06	1.08	0.13	1.56	0.38	1.44	0.27	1.80	0.29	3.30	0.73
7	0.77	0.01	2.59	0.30	1.96	0.26	2.73	0.54	1.47	0.18	0.63	0.02	1.26	0.10	1.82	0.30	1.68	0.22	2.10	0.18	3.85	0.56
8	0.88	0.01	2.96	0.15	2.24	0.06	3.12	0.42	1.68	0.18	0.72	0.01	1.44	0.08	2.08	0.20	1.92	0.16	2.40	0.15	4.40	0.45
9	0.99	0.01	3.33	0.10	2.52	0.01	3.51	0.21	1.89	0.10	0.81	0.01	1.62	0.02	2.34	0.15	2.16	0.15	2.70	0.10	4.95	0.26
Right Bank	1.15	0.00	3.70	0.00	2.80	0.00	3.90	0.00	2.10	0.00	0.90	0.00	1.80	0.00	2.60	0.00	2.40	0.00	3.00	0.00	5.50	0.00
Feature Type (riffle, run, or pool)	Riffle		Pool		Pool		Pool		Pool		Riffle		Pool		Pool		Pool		Pool		Pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine bv dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____ Date: 8/12/2008

WBID # 0077

Site # 0077-2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 8/12/08 14:40	Location Description (e.g., road crossing):
Stream Name: S. Fk. S. Fabius R.	Mule Train Way Crossing
Current Weather Conditions: heavy rain	Facility Name(s): Hurdland WW lagoon
Weather Conditions for Past 10 days: Ø" of rain	Permit Number(s): MO Ø115894
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought ☑; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0551682	Northing (UTM Y): 4556722	Horizontal Accuracy: (EPE / FOM / PDOP) 25 ~~Meters~~ ~~34~~ ft
Site 11	Easting (UTM X): 0551672	Northing (UTM Y): 4556589	Horizontal Accuracy: (EPE / FOM / PDOP) 18 ~~Meters~~ ~~34~~ ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3152	UPSTREAM	3153	Downstream	3154	fence at Transect 1
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3155	Cattle crossing at Transect 1				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the 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.)

N/A

Stream Name & WBID # S. FK. S. Fabius R. # 0077 Date of Survey 8/12/08

Site # 0077-2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☒ Fence	☐ No trespass sign	☑ Steep slopes	☐ Other:

Comments: Private Property

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

☒ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☑ Livestock Watering
☐ None of the above	Comments / Other:			

Cattle crossing at Transects 9 and 10.

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

— % Cobble	— % Gravel	20 % Sand	— % Silt	80 % Mud/Clay	— % Bedrock

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

Benthic algae - abundant

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☑ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☑ None	☐ Other:

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

Stream Name & WBID # S.Fk.S. Fabius R. #0077 Date of Survey 8/12/08

Site # 0077-2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
		N/A			

Comments: (Please record any additional comments here.)

N/A

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 8/12/08

Organization: AESolutions Position: Environmental Specialist

8/12/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. S. Fabius R. Waterbody ID: 0077 Site #: 0077_02

Estimated Channel Incision: 0.20 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: 551682 UTM Y: 4556722 +/- 25 (feet)

11 UTM X: 551672 UTM Y: 4556589 +/- 18 (feet)

Average Stream Width: 2.40 (meters) Length of Survey Segment: 150 (meters)

(To determne Length of Reach) (20x average stream width)

Field Staff: JH, TH

Dissolved Oxygen

Date: 8/12/2008 Time: 14:40

Dissolved Oxygen: 5.52 (mg/L)

Dissolved Oxygen: 63.5 (% sat)

Specific Cond: 346 (µS/cm)

Water Temperature: 21.0 (°C)

Transect Cross-Section

Station	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)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.10	0.04	0.34	0.08	0.26	0.15	0.27	0.15	0.08	0.04	0.24	0.40	0.70	0.45	0.16	0.30	0.10	0.10	0.12	0.18	0.31	0.10
2	0.20	0.09	0.68	0.12	0.52	0.15	0.54	0.20	0.16	0.06	0.48	0.47	1.40	0.60	0.32	0.20	0.20	0.08	0.24	0.20	0.62	0.10
3	0.30	0.10	1.02	0.10	0.78	0.20	0.81	0.15	0.24	0.10	0.72	0.54	2.10	0.70	0.48	0.19	0.30	0.08	0.36	0.18	0.93	0.10
4	0.40	0.16	1.36	0.09	1.04	0.19	1.08	0.30	0.32	0.10	0.96	0.51	2.80	0.66	0.64	0.19	0.40	0.06	0.48	0.17	1.24	0.15
5	0.50	0.20	1.70	0.10	1.30	0.20	1.35	0.20	0.40	0.08	1.20	0.60	3.50	0.65	0.80	0.18	0.50	0.10	0.60	0.16	1.55	0.15
6	0.60	0.10	2.04	0.10	1.56	0.20	1.62	0.04	0.48	0.04	1.44	0.50	4.20	0.65	0.96	0.16	0.60	0.09	0.72	0.15	1.86	0.08
7	0.70	0.14	2.38	0.15	1.82	0.21	1.89	0.08	0.56	0.02	1.68	0.45	4.90	0.65	1.12	0.18	0.70	0.04	0.84	0.15	2.17	0.01
8	0.80	0.11	2.72	0.16	2.08	0.18	2.16	0.21	0.64	0.01	1.92	0.35	5.60	0.40	1.28	0.25	0.80	0.04	0.96	0.08	2.48	0.10
9	0.90	0.10	3.06	0.04	2.34	0.15	2.43	0.13	0.72	0.01	2.16	0.10	6.30	0.10	1.44	0.18	0.90	0.08	1.08	0.06	2.79	0.08
Right Bank	1.00	0.00	3.40	0.00	2.60	0.00	2.70	0.00	0.80	0.00	2.40	0.00	7.00	0.00	1.60	0.00	1.00	0.00	1.20	0.00	3.10	0.00
Feature Type (riffle, run, or pool)	Riffle		Pool		Pool		Pool		Riffle		Pool		Pool		Run		Riffle		Run		Pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine bv dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____ Date: 8/12/2008

WBID # 0077

Site # 0077-3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 8/12/08 13:45	Location Description (e.g., road crossing):
Stream Name: S. Fk. S. Fabius R.	~~Rt. J Crossing~~ Rm MO Hwy 11 Crossing
Current Weather Conditions: heavy rain	Facility Name(s): Hurdland WW Lagoon
Weather Conditions for Past 10 days: 0" of rain	Permit Number(s): MO 0115894
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought ☑; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0552113	Northing (UTM Y): 4455355	Horizontal Accuracy: (EPE / FOM / PDOP) 26 ~~Meters~~ Ft
Site 11	Easting (UTM X): 0552181	Northing (UTM Y): 4455163	Horizontal Accuracy: (EPE / FOM / PDOP) 28 ~~Meters~~ Ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3150	downstream	3151	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ 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.)

N/A

Stream Name & WBID # S. Fk S. Fabius 0077 Date of Survey 8/12/08

Site # 0077-3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☑ Steep slopes	☐ Other:

Comments: Private Property

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

☒ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☑ Livestock Watering
☐ None of the above	Comments / Other:			

Cattle crossing at Transects 3, 10, and 11

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

– % Cobble	– % Gravel	20 % Sand	– % Silt	80 % 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:
Bottom Deposit:	☐ Sludge	☐ Solids	☑ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☑ None	☐ Other:

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

Stream Name & WBID # S. Fk. S. Fabius 0077 Date of Survey 8/12/08

Site # 0077-3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
		N/A			

Comments: (Please record any additional comments here.)

Huge log jam at Transect 8 stopped flow completely. Flood event washed sand and gravel against logs.

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 8/12/08

Organization: AE Solutions Position: Environmental Specialist

SV 9/15/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. S. Fabius R. Waterbody ID: 0077 Site #: 0077_03

Estimated Channel Incision: 0.30 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: 552113 UTM Y: 4455355 +/- 26 (feet)

11 UTM X: 552181 UTM Y: 4455163 +/- 23 (feet)

Average Stream Width: 7.0 (meters) Length of Survey Segment: 150 (meters)

(To determne Length of Reach) (20x average stream width)

Field Staff: JH, TAH

Dissolved Oxygen

Date: 8/12/2008 Time: 13:45

Dissolved Oxygen: 4.10 (mg/L)

Dissolved Oxygen: 46.5 (% sat)

Specific Cond: 410 (µS/cm)

Water Temperature: 21.0 (°C)

Transect Cross-Section

Station	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)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.80	0.41	0.65	0.23	0.15	0.08	0.80	0.30	0.70	0.55	0.75	0.61	0.81	0.49	0.45	0.13	0.90	0.30	0.80	0.51	0.81	0.12
2	1.60	0.58	1.30	0.45	0.30	0.10	1.60	0.50	1.40	0.71	1.50	0.79	1.62	0.76	0.90	0.25	1.80	0.65	1.60	0.71	1.62	0.15
3	2.40	0.66	1.95	0.60	0.45	0.15	2.40	0.72	2.10	0.98	2.25	0.93	2.43	0.88	1.35	0.26	2.70	0.89	2.40	0.92	2.43	0.33
4	3.20	0.75	2.60	0.55	0.60	0.15	3.20	0.73	2.80	>1.00	3.00	>1.00	3.24	0.99	1.80	0.26	3.60	>1.00	3.20	>1.00	3.24	0.65
5	4.00	0.65	3.25	0.50	0.75	0.20	4.00	0.64	3.50	>1.00	3.75	>1.00	4.05	>1.00	2.25	0.25	4.50	>1.00	4.00	>1.00	4.05	0.76
6	4.80	0.70	3.90	0.37	0.90	0.13	4.80	0.60	4.20	0.99	4.50	>1.00	4.86	>1.00	2.70	0.20	5.40	>1.00	4.80	>1.00	4.86	0.70
7	5.60	0.63	4.55	0.34	1.05	0.16	5.60	0.65	4.90	0.81	5.25	0.98	5.67	>1.00	3.15	0.10	6.30	0.98	5.60	>1.00	5.67	0.66
8	6.40	0.40	5.20	0.14	1.20	0.15	6.40	0.45	5.60	0.75	6.00	0.71	6.48	0.82	3.60	0.01	7.20	0.70	6.40	0.58	6.48	0.65
9	7.20	0.18	5.85	0.02	1.35	0.10	7.20	0.38	6.30	0.59	6.75	0.59	7.29	0.61	4.05	0.01	8.10	0.34	7.20	0.35	7.29	0.80
Right Bank	8.00	0.00	6.50	0.00	1.50	0.00	8.00	0.00	7.00	0.00	7.50	0.00	8.10	0.00	4.50	0.00	9.00	0.00	8.00	0.00	8.10	0.00
Feature Type (riffle, run, or pool)	Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine bv dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____ Date: 8/12/2008

WBID # 0077

Site # 04

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 8/12/08 13:13	Location Description (e.g., road crossing): Gene Way Crossing
Stream Name: S. Fk. S. Fabius R.	
Current Weather Conditions: ~~medium~~ moderate rain JRH	Facility Name(s): Hurdland WW lagoon
Weather Conditions for Past 10 days: 0" of rain JRH	Permit Number(s): MO 0115894
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought ☒; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0552451	Northing (UTM Y): 4454299	Horizontal Accuracy: (EPE / FOM / PDOP) 30 ~~Meters~~ JRH ft
Site 11	Easting (UTM X): 0552459	Northing (UTM Y): 4454227	Horizontal Accuracy: (EPE / FOM / PDOP) 32 ~~Meters~~ JRH ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
31487 JRH	upstream low water crossing	3148	dnstream	3149	dnstream
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ 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.)

N/A

Stream Name & WBID # S. Fk. S. Fabius R. #0077 Date of Survey 8/12/08

Site # 04

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☒ Steep slopes	☐ Other:

Comments:
Private property

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

☒ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☒ Livestock Watering
☐ None of the above	Comments / Other: N/A			

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

– % Cobble	– % Gravel	85 % Sand	– % Silt	15 % Mud/Clay	– % Bedrock

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

Filamentous + benthic algae – abundant
willows – abundant

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

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

Stream Name & WBID # S.Fk.S.Fabius R. #0077 Date of Survey 8/12/08

Site # 04

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
		N/A			

Comments: (Please record any additional comments here.)

2 track (crossing) at Trans. 4
livestock watering @ Trans. 7
large log jam @ Trans. 7

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 8/12/08

Organization: AE Solutions Position: Environmental Specialist

JH 9/19/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. S. Fabius R. Waterbody ID: 0077 Site #: 0077_04

Estimated Channel Incision: 0.20 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: 552451 UTM Y: 4454299 +/- 30 (feet)

11 UTM X: 552459 UTM Y: 4454227 +/- 32 (feet)

Average Stream Width: 2.1 (meters) Length of Survey Segment: 150 (meters)

(To determne Length of Reach) (20x average stream width)

Field Staff: JH, TH

Dissolved Oxygen

Date: 8/12/2008 Time: 13:13

Dissolved Oxygen: 6.76 (mg/L)

Dissolved Oxygen: 77.2 (% sat)

Specific Cond: 396 (µS/cm)

Water Temperature: 21.5 (°C)

Transect Cross-Section

Station	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)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.11	0.04	0.34	0.16	0.12	0.08	0.35	0.34	0.35	0.30	0.13	0.10	0.12	0.25	0.18	0.15	0.21	0.05	0.18	0.10	0.29	0.15
2	0.22	0.08	0.68	0.15	0.24	0.08	0.70	0.41	0.70	0.42	0.26	0.10	0.24	0.25	0.36	0.15	0.42	0.08	0.36	0.12	0.58	0.22
3	0.33	0.04	1.02	0.10	0.36	0.11	1.05	0.44	1.05	0.55	0.39	0.12	0.36	0.26	0.54	0.20	0.63	0.10	0.54	0.19	0.87	0.28
4	0.44	0.09	1.36	0.15	0.48	0.14	1.40	0.45	1.40	0.56	0.52	0.09	0.48	0.22	0.72	0.15	0.84	0.10	0.72	0.20	1.16	0.46
5	0.55	0.10	1.70	0.20	0.60	0.13	1.75	0.48	1.75	0.60	0.65	0.10	0.60	0.11	0.90	0.41	1.05	0.14	0.90	0.21	1.45	0.40
6	0.66	0.08	2.04	0.35	0.72	0.11	2.10	0.46	2.10	0.74	0.78	0.09	0.72	0.08	1.08	0.43	1.26	0.22	1.08	0.15	1.74	0.38
7	0.77	0.08	2.38	0.67	0.84	0.10	2.45	0.55	2.45	0.70	0.91	0.06	0.84	0.08	1.26	0.40	1.47	0.25	1.26	0.18	2.03	0.33
8	0.88	0.08	2.72	0.63	0.96	0.06	2.80	0.54	2.80	0.50	1.04	0.06	0.96	0.01	1.44	0.32	1.68	0.25	1.44	0.04	2.32	0.21
9	0.99	0.06	3.06	0.55	1.08	0.04	3.15	0.52	3.15	0.25	1.17	0.02	1.08	0.01	1.62	0.15	1.89	0.32	1.62	0.11	2.61	0.11
Right Bank	1.10	0.00	3.40	0.00	1.20	0.00	3.50	0.00	3.50	0.00	1.30	0.00	1.20	0.00	1.80	0.00	2.10	0.00	1.80	0.00	2.90	0.00
Feature Type (riffle, run, or pool)	Riffle		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine bv dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____ Date: 8/12/2008

WBID # 0077

Site # 05

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 8/12/08 12:25	Location Description (e.g., road crossing): Oak Grove Way Crossing
Stream Name: S. Fk. S. Fabius R.	
Current Weather Conditions: Light rain	Facility Name(s): Hurdland WW lagoon
Weather Conditions for Past 10 days: 0" of rain	Permit Number(s): MO 0115894
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought ☒; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0552872	Northing (UTM Y): 4454024	Horizontal Accuracy: (EPE / FOM / PDOP) 26 ~~Meters~~ ft
Site 11	Easting (UTM X): 0553000	Northing (UTM Y): 4454031	Horizontal Accuracy: (EPE / FOM / PDOP) 30 ~~Meters~~ ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3144	dnstream	3145	upstream	3146	Crossing through Stream at Transect 7
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ 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.)

N/A

Stream Name & WBID # S. Fk. S. Fabius R. # 0077 Date of Survey 8/12/08

Site # 05

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☒ Fence	☐ No trespass sign	☒ Steep slopes	☐ Other:

Comments:
private property

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

☒ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock Watering
~~☐~~ ☒ None of the above	Comments / Other:			

Crossing at Transect 7

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

– % Cobble	– % Gravel	100 % Sand	– % Silt	– % Mud/Clay	– % Bedrock

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

Willows – abundant
~~log jam @ Transect 5~~ ARH
~~Crossing @ Trans. 7~~ ARH

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

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

Stream Name & WBID # S. Fk. S. Fabius R. #0077 Date of Survey 8/12/08

Site # 05

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
		N/A			

Comments: (Please record any additional comments here.)

log jam at Transect 5

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 8/12/08

Organization: AE Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. S. Fabius R. Waterbody ID: 0077 Site #: 0077_05

Estimated Channel Incision: 0.20 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: 552872 UTM Y: 4454024 +/- 26 (feet)

11 UTM X: 553000 UTM Y: 4454031 +/- 30 (feet)

Average Stream Width: 2.6 (meters) Length of Survey Segment: 150 (meters)

(To determne Length of Reach) (20x average stream width)

Field Staff: JH, TH

Dissolved Oxygen

Date: 8/12/2008 Time: 12:25

Dissolved Oxygen: 1.55 (mg/L)

Dissolved Oxygen: 15.7 (% sat)

Specific Cond: 411 (µS/cm)

Water Temperature: 19.6 (°C)

Transect Cross-Section

Station	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)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.23	0.01	0.27	0.04	0.21	0.02	0.36	0.07	0.16	0.02	0.24	0.11	0.26	0.13	0.25	0.10	0.23	0.06	0.22	0.03	0.43	0.46
2	0.46	0.02	0.54	0.01	0.42	0.10	0.72	0.07	0.32	0.02	0.48	0.08	0.52	0.09	0.50	0.10	0.46	0.09	0.44	0.24	0.86	0.40
3	0.69	0.05	0.81	0.01	0.63	0.05	1.08	0.06	0.48	0.02	0.72	0.02	0.78	0.08	0.75	0.12	0.69	0.08	0.66	0.29	1.29	0.30
4	0.92	0.04	1.08	0.01	0.84	0.08	1.44	0.04	0.64	0.02	0.96	0.01	1.04	0.06	1.00	0.15	0.92	0.03	0.88	0.20	1.72	0.33
5	1.15	0.02	1.35	0.02	1.05	0.25	1.80	0.04	0.80	0.01	1.20	0.11	1.30	0.08	1.25	0.16	1.15	0.04	1.10	0.13	2.15	0.31
6	1.38	0.02	1.62	0.05	1.26	0.30	2.16	0.02	0.96	0.02	1.44	0.10	1.56	0.09	1.50	0.18	1.38	0.01	1.32	0.13	2.58	0.32
7	1.61	0.05	1.89	0.05	1.47	0.26	2.52	0.01	1.12	0.02	1.68	0.13	1.82	0.13	1.75	0.21	1.61	0.02	1.54	0.17	3.01	0.32
8	1.84	0.08	2.16	0.08	1.68	0.34	2.88	0.01	1.28	0.02	1.92	0.12	2.08	0.14	2.00	0.21	1.84	0.02	1.76	0.14	3.44	0.41
9	2.07	0.08	2.43	0.10	1.89	0.35	3.24	0.02	1.44	0.02	2.16	0.10	2.34	0.15	2.25	0.18	2.07	0.05	1.98	0.08	3.87	0.38
Right Bank	2.30	0.00	2.70	0.00	2.10	0.00	3.60	0.00	1.60	0.00	2.40	0.00	2.60	0.00	2.50	0.00	2.30	0.00	2.20	0.00	4.30	0.00
Feature Type (riffle, run, or pool)	Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine bv dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____ Date: 8/12/2008

WBID # 0077

Site # 0077-~~16~~ 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 8/12/08 11:24	Location Description (e.g., road crossing):
Stream Name: S. Fk. S. Fabius R.	CR 36 Crossing
Current Weather Conditions: overcast	Facility Name(s): Hurdland WW lagoon
Weather Conditions for Past 10 days: 0" of rain	Permit Number(s): MO 0115894
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought ☑; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 0555491	Northing (UTM Y): 4451892	Horizontal Accuracy: (EPE / FOM / PDOP)	20 ~~Meters~~ SPLH ft
Site 11	Easting (UTM X): 0555512	Northing (UTM Y): 4451717	Horizontal Accuracy: (EPE / FOM / PDOP)	20 ~~Meters~~ SPLH ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3138	UPSTREAM + Fence	3139	DN STREAM		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ 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.)

N/A

Stream Name & WBID # S. Fk. S. Fabius R. # 0077 Date of Survey 8/12/08

Site # 0077 - ~~6~~ 7A
6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☒ Fence	☐ No trespass sign	☐ Steep slopes	☐ Other:

Comments: Private Property

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

☒ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☒ Livestock Watering
☐ None of the above	Comments / Other: N/A			

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

— % Cobble	— % Gravel	100 % Sand	— % Silt	— % Mud/Clay	— % Bedrock

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

abundant Filamentous algae / abundant Benthic algae

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☑ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☑ Oil	☐ Scum	☐ Foam	☐ None	☐ Other:

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

Stream Name & WBID # S.FK S. Fabius R. # 0077 Date of Survey 8/12/08

Site # 0077-~~5~~ 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
		N/A			

Comments: (Please record any additional comments here.)

Cattle watering 25 m DN stream of Transect 11

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + ~~Tiffanie~~ Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 8/12/08

Organization: AE Solutions Position: Environmental Specialist

JV 9/19/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. S. Fabius R. Waterbody ID: 0077 Site #: 0077_06

Estimated Channel Incision: 0.20 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: 555491 UTM Y: 4451892 +/- 20 (feet)

11 UTM X: 555512 UTM Y: 4451717 +/- 20 (feet)

Average Stream Width: 2.9 (meters) Length of Survey Segment: 150 (meters)

(To determne Length of Reach) (20x average stream width)

Field Staff: JH, TAH

Dissolved Oxygen

Date: 8/12/2008 Time: 11:24

Dissolved Oxygen: 7.76 (mg/L)

Dissolved Oxygen: 88.5 (% sat)

Specific Cond: 382 (µS/cm)

Water Temperature: 21.6 (°C)

Transect Cross-Section

Station	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)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.28	0.08	0.31	0.12	0.16	0.06	0.33	0.13	0.13	0.04	0.15	0.08	0.37	0.21	0.52	0.18	0.40	0.30	0.24	0.08	0.25	0.02
2	0.56	0.10	0.62	0.02	0.32	0.06	0.66	0.13	0.26	0.06	0.30	0.08	0.74	0.26	1.04	0.26	0.80	0.25	0.48	0.09	0.50	0.02
3	0.84	0.06	0.93	0.01	0.48	0.04	0.99	0.11	0.39	0.08	0.45	0.09	1.11	0.47	1.56	0.30	1.20	0.25	0.72	0.08	0.75	0.04
4	1.12	0.02	1.24	0.04	0.64	0.05	1.32	0.10	0.52	0.10	0.60	0.08	1.48	0.38	2.08	0.30	1.60	0.25	0.96	0.08	1.00	0.04
5	1.40	0.01	1.55	0.06	0.80	0.10	1.65	0.10	0.65	0.09	0.75	0.03	1.85	0.26	2.60	0.30	2.00	0.20	1.20	0.06	1.25	0.05
6	1.68	0.01	1.86	0.10	0.96	0.11	1.98	0.11	0.78	0.08	0.90	0.02	2.22	0.23	3.12	0.38	2.40	0.16	1.44	0.07	1.50	0.03
7	1.96	0.01	2.17	0.12	1.12	0.10	2.31	0.14	0.91	0.08	1.05	0.02	2.59	0.13	3.64	0.40	2.80	0.10	1.68	0.06	1.75	0.02
8	2.24	0.01	2.48	0.14	1.28	0.08	2.64	0.15	1.04	0.06	1.20	0.01	2.96	0.10	4.16	0.32	3.20	0.02	1.92	0.03	2.00	0.02
9	2.52	0.01	2.79	0.10	1.44	0.02	2.97	0.11	1.17	0.02	1.35	0.02	3.33	0.01	4.68	0.18	3.60	0.02	2.16	0.01	2.25	0.02
Right Bank	2.80	0.00	3.10	0.00	1.65	0.00	3.30	0.00	1.35	0.00	1.55	0.00	3.70	0.00	5.20	0.00	4.00	0.00	2.40	0.00	2.50	0.00
Feature Type (riffle, run, or pool)	Riffle		Run		Run		Run		Run		Run		Pool		Pool		Pool		Riffle		Riffle	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine bv dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____ Date: 8/12/2008

WBID # 0077

Site # 0077-7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 8/12/08 1145	Location Description (e.g., road crossing):
Stream Name: S. Fk. S. Fabius R.	50m downstream Site 6, Transect 11
Current Weather Conditions: Overcast	Facility Name(s): Hurdland WW Lagoon
Weather Conditions for Past 10 days: Ø" of rain	Permit Number(s): MO Ø115894
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought ☒; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0555524	Northing (UTM Y): 4451662	Horizontal Accuracy: (EPE / FOM / PDOP) 23 ~~Meters~~ SWH ft
Site 11	Easting (UTM X): 0555483	Northing (UTM Y): 4451536	Horizontal Accuracy: (EPE / FOM / PDOP) 20 ~~Meters~~ SWH ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3140	UPSTREAM	3141	DNSTREAM	3142	Livestock watering
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3143	cattle crossing				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the 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.)

N/A

Stream Name & WBID # S. Fk. S. Fabius R. #0077 Date of Survey 8/12/08

Site # 0077-7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☒ Fence	☐ No trespass sign	☒ Steep slopes	☐ Other:

Comments: Private Property

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

☐ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☒ Livestock Watering
☐ None of the above	Comments / Other:			

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

— % Cobble	— % Gravel	100 % Sand	— % Silt	— % Mud/Clay	— % Bedrock

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

Benthic algae - abundant

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

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

Stream Name & WBID # S. FK. S. Fabius R #0077 Date of Survey 8/12/08

Site # 0077-7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
		N/A			

Comments: (Please record any additional comments here.)

Some woody debris in stream

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 8/12/08

Organization: AE Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. S. Fabius R. Waterbody ID: 0077 Site #: 0077_07

Estimated Channel Incision: 0.20 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: 555524 UTM Y: 4451662 +/- 23 (feet)

11 UTM X: 555483 UTM Y: 4451536 +/- 20 (feet)

Average Stream Width: 4.20 (meters) Length of Survey Segment: 150 (meters)

(To determne Length of Reach) (20x average stream width)

Field Staff: JH, TAH

Dissolved Oxygen

Date: 8/12/2008 Time: 11:45

Dissolved Oxygen: 5.44 (mg/L)

Dissolved Oxygen: 62.1 (% sat)

Specific Cond: 347 (µS/cm)

Water Temperature: 20.8 (°C)

Transect Cross-Section

Station	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)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.49	0.40	0.50	0.45	0.40	0.35	0.64	0.35	0.55	0.35	0.58	0.26	0.46	0.28	0.12	0.09	0.14	0.09	0.51	0.20	0.24	0.15
2	0.98	0.51	1.00	0.58	0.80	0.49	1.28	0.45	1.10	0.41	1.16	0.31	0.92	0.34	0.24	0.12	0.28	0.12	1.02	0.80	0.48	0.25
3	1.47	0.56	1.50	0.60	1.20	0.54	1.92	0.46	1.65	0.45	1.74	0.36	1.38	0.33	0.36	0.14	0.42	0.12	1.53	0.71	0.72	0.30
4	1.96	0.51	2.00	0.63	1.60	0.51	2.56	0.47	2.20	0.40	2.32	0.32	1.84	0.34	0.48	0.15	0.56	0.10	2.04	0.64	0.96	0.34
5	2.45	0.45	2.50	0.55	2.00	0.50	3.20	0.41	2.75	0.36	2.90	0.31	2.30	0.26	0.60	0.13	0.70	0.10	2.55	0.64	1.20	0.36
6	2.94	0.50	3.00	0.48	2.40	0.53	3.84	0.40	3.30	0.35	3.48	0.28	2.76	0.28	0.72	0.10	0.84	0.10	3.06	0.58	1.44	0.40
7	3.43	0.45	3.50	0.39	2.80	0.45	4.48	0.40	3.85	0.40	4.06	0.32	3.22	0.24	0.84	0.08	0.98	0.06	3.57	0.61	1.68	0.45
8	3.92	0.44	4.00	0.45	3.20	0.35	5.12	0.38	4.40	0.40	4.64	0.30	3.68	0.17	0.96	0.06	1.12	0.08	4.08	0.50	1.92	0.50
9	4.41	0.34	4.50	0.03	3.60	0.15	5.76	0.03	4.95	0.20	5.22	0.25	4.14	0.15	1.08	0.03	1.26	0.04	4.59	0.29	2.16	0.38
Right Bank	4.90	0.00	5.00	0.00	4.00	0.00	6.40	0.00	5.50	0.00	5.80	0.00	4.60	0.00	1.20	0.00	1.40	0.00	5.10	0.00	2.40	0.00
Feature Type (riffle, run, or pool)	Pool		Pool		Pool		Pool		Pool		Pool		Pool		Riffle		Riffle		Pool		Pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine bv dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____ Date: 8/12/2008

WBID # 0077

Site # 0077-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 8/12/08 0950	Location Description (e.g., road crossing):
Stream Name: S. FK. S. Fabius R.	Rt. J Crossing
Current Weather Conditions: mostly cloudy	Facility Name(s): Hurdland WW lagoon
Weather Conditions for Past 10 days: 0" of rain	Permit Number(s): MO 0115894
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought ☒; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0558029	Northing (UTM Y): 4451232	Horizontal Accuracy: (EPE / FOM / PDOP) 58 ~~Meters~~ ft
Site 11	Easting (UTM X): 0558217	Northing (UTM Y): 4451299	Horizontal Accuracy: (EPE / FOM / PDOP) 38 ~~Meters~~ ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3134	UPSTREAM	3135	DNSTREAM		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ 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.)

N/A

Stream Name & WBID # S.FK.S. Fabius R. #0077 Date of Survey 8/12/08

Site # 0077-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☐ Steep slopes	☐ Other:

Comments: private property

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

☒ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock Watering
☒ None of the above	Comments / Other: N/A			

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

— % Cobble	— % Gravel	80 % Sand	— % Silt	20 % Mud/Clay	— % Bedrock

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

Benthic algae - abundant

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

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

Stream Name & WBID # S.Fk.S. Fabius R. #0077 Date of Survey 8/12/08

Site # 0077-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
		N/A			

Comments: (Please record any additional comments here.)

N/A

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 8/12/08

Organization: AE Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. S. Fabius R. Waterbody ID: 0077 Site #: 0077_08

Estimated Channel Incision: 0.30 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: 558029 UTM Y: 4451232 +/- 58 (feet)

11 UTM X: 558217 UTM Y: 4451299 +/- 38 (feet)

Average Stream Width: 5.30 (meters) Length of Survey Segment: 150 (meters)

(To determne Length of Reach) (20x average stream width)

Field Staff: JRH, TAH

Dissolved Oxygen

Date: 8/12/2008 Time: 9:50

Dissolved Oxygen: 3.99 (mg/L)

Dissolved Oxygen: 44.5 (% sat)

Specific Cond: 412 (µS/cm)

Water Temperature: 20.8 (°C)

Transect Cross-Section

Station	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)
Left Bank	0	0	0	0	0	0	0	0.19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.76	0.20	0.75	0.75	0.84	0.35	0.74	0.45	0.76	0.20	0.41	0.02	0.25	0.08	0.24	0.20	0.16	0.11	0.56	0.02	0.32	0.04
2	1.52	0.43	1.50	0.74	1.68	0.37	1.48	0.54	1.52	0.44	0.82	0.11	0.50	0.10	0.48	0.25	0.32	0.15	1.12	0.01	0.64	0.10
3	2.28	0.66	2.25	0.68	2.52	0.39	2.22	0.43	2.28	0.58	1.23	0.18	0.75	0.15	0.72	0.08	0.48	0.15	1.68	0.02	0.96	0.10
4	3.04	0.90	3.00	0.68	3.36	0.38	2.96	0.35	3.04	0.59	1.64	0.21	1.00	0.21	0.96	0.20	0.64	0.14	2.24	0.03	1.28	0.12
5	3.80	0.80	3.75	0.66	4.20	0.28	3.70	0.28	3.80	0.65	2.05	0.35	1.25	0.36	1.20	0.20	0.80	0.14	2.80	0.09	1.60	0.11
6	4.56	0.58	4.50	0.65	5.04	0.28	4.44	0.18	4.56	0.70	2.46	0.40	1.50	0.48	1.44	0.21	0.96	0.12	3.36	0.08	1.92	0.08
7	5.32	0.53	5.25	0.55	5.88	0.25	5.18	0.11	5.32	0.45	2.87	0.45	1.75	0.46	1.68	0.25	1.12	0.10	3.92	0.01	2.24	0.06
8	6.08	0.40	6.00	0.31	6.72	0.30	5.92	0.07	6.08	0.26	3.28	0.54	2.00	0.43	1.92	0.18	1.28	0.09	4.48	0.02	2.56	0.04
9	6.84	0.19	6.75	0.10	7.56	0.35	6.66	0.02	6.84	0.02	3.69	0.50	2.25	0.24	2.16	0.10	1.44	0.02	5.04	0.18	2.88	0.02
Right Bank	7.60	0.00	7.50	0.00	8.40	0.00	7.40	0.00	7.60	0.00	4.10	0.00	2.50	0.00	2.40	0.00	1.60	0.00	5.60	0.00	3.20	0.00
Feature Type (riffle, run, or pool)	Pool		Pool		Pool		Pool		Pool		Pool		Pool		Run		Run		Riffle		Riffle	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine bv dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____ Date: 8/12/2008

WBID # 0077

Site # 0077-09

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 8/12/08 1020	Location Description (e.g., road crossing):
Stream Name: S. Fk. S. Fabius R.	50m dwnstream site 8, Transect 11
Current Weather Conditions: mostly cloudy	Facility Name(s): Hurdland WW lagoon
Weather Conditions for Past 10 days: 0" of rain	Permit Number(s): MO 0115894
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought ☒; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0558214	Northing (UTM Y): 4451398	Horizontal Accuracy: (EPE / FOM / PDOP) 59 ~~Meters~~ SKM ft
Site 11	Easting (UTM X): 0558342	Northing (UTM Y): 4451481	Horizontal Accuracy: (EPE / FOM / PDOP) 22 ~~Meters~~ SKM ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3136	UPSTREAM	3137	DN STREAM		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ 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.)

N/A

Stream Name & WBID # S. Fk. S. Fabius R # 0077 Date of Survey 8/12/08

Site # 0077-09

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☒ Steep slopes	☐ Other:

Comments:

Private Property

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

☐ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock Watering
☒ None of the above	Comments / Other: N/A			

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

— % Cobble	— % Gravel	40 % Sand	— % Silt	60 % Mud/Clay	— % Bedrock

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

Benthic algae - abundant

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
Color:	☒ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☒ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

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

Stream Name & WBID # S. Fk. S. Fabius R. # 0077 Date of Survey 8/12/08

Site # 0077-09

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
		N/A			

Comments: (Please record any additional comments here.)

N/A

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 8/12/08

Organization: AE Solutions Position: Environmental Specialist

9/19/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. S. Fabius R. Waterbody ID: 0077 Site #: 0077_09

Estimated Channel Incision: 0.20 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: 558214 UTM Y: 4451398 +/- 59 (feet)

11 UTM X: 558342 UTM Y: 4451481 +/- 22 (feet)

Average Stream Width: 4.10 (meters) Length of Survey Segment: 150 (meters)

(To determne Length of Reach) (20x average stream width)

Field Staff: JH, TAH

Dissolved Oxygen

Date: 8/12/2008 Time: 10:20

Dissolved Oxygen: 6.24 (mg/L)

Dissolved Oxygen: 70.0 (% sat)

Specific Cond: 407 (µS/cm)

Water Temperature: 20.3 (°C)

Transect Cross-Section

Station	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)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.14	0.16	0.23	0.02	0.67	0.02	0.58	0.40	0.72	0.24	0.38	0.06	0.64	0.11	0.42	0.16	0.37	0.02	0.25	0.02	0.14	0.10
2	0.28	0.14	0.46	0.06	1.34	0.01	1.16	0.58	1.44	0.45	0.76	0.08	1.28	0.25	0.84	0.21	0.74	0.09	0.50	0.10	0.28	0.08
3	0.42	0.10	0.69	0.08	2.01	0.00	1.74	0.65	2.16	0.54	1.14	0.15	1.92	0.52	1.26	0.28	1.11	0.11	0.75	0.10	0.42	0.08
4	0.56	0.09	0.92	0.02	2.68	0.00	2.32	0.65	2.88	0.45	1.52	0.15	2.56	0.53	1.68	0.25	1.48	0.08	1.00	0.08	0.56	0.10
5	0.70	0.04	1.15	0.06	3.35	0.00	2.90	0.43	3.60	0.45	1.90	0.16	3.20	0.55	2.10	0.20	1.85	0.09	1.25	0.07	0.70	0.09
6	0.84	0.02	1.38	0.09	4.02	0.06	3.48	0.41	4.32	0.43	2.28	0.07	3.84	0.54	2.52	0.22	2.22	0.12	1.50	0.08	0.84	0.11
7	0.98	0.01	1.61	0.10	4.69	0.09	4.06	0.31	5.04	0.40	2.66	0.10	4.48	0.42	2.94	0.21	2.59	0.10	1.75	0.05	0.98	0.06
8	1.12	0.01	1.84	0.00	5.36	0.08	4.64	0.12	5.76	0.25	3.04	0.02	5.12	0.36	3.36	0.18	2.96	0.10	2.00	0.09	1.12	0.02
9	1.26	0.01	2.07	0.00	6.03	0.02	5.22	0.02	6.48	0.04	3.42	0.01	5.76	0.10	3.78	0.10	3.33	0.12	2.25	0.08	1.26	0.01
Right Bank	1.40	0.00	2.30	0.00	6.70	0.00	5.80	0.00	7.20	0.00	3.80	0.00	6.40	0.00	4.20	0.00	3.70	0.00	2.50	0.00	1.40	0.00
Feature Type (riffle, run, or pool)	Riffle		Riffle		Riffle		Pool		Pool		Riffle		Pool		Pool		Run		Riffle		Riffle	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine bv dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____ Date: 8/12/2008

WBID # 0077

Site # 0077 -10

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 8/12/08 08:54	Location Description (e.g., road crossing): CR 113 Crossing
Stream Name: S.FK. S. Fabius R.	
Current Weather Conditions: Sunny, clear	Facility Name(s): Hurdland WW lagoon
Weather Conditions for Past 10 days: Ø" of rain	Permit Number(s): MO Ø115894
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought ☒; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 0561181	Northing (UTM Y): 4450486	Horizontal Accuracy: (EPE / FOM / PDOP) 30	~~Meters~~ ft
Site 11	Easting (UTM X): 0561178	Northing (UTM Y): 4450343	Horizontal Accuracy: (EPE / FOM / PDOP) 21	~~Meters~~ ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3132	UPSTREAM	3133	DNSTREAM		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ 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.)

N/A

Stream Name & WBID # S FK. S. Fabius # 0077 Date of Survey 8/12/08

Site # 0077-10

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☒ Steep slopes	☐ Other:

Comments: Private Property

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

☒ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock Watering
☒ None of the above	Comments / Other: N/A			

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

— % Cobble	— % Gravel	90 % Sand	— % Silt	10 % Mud/Clay	— % Bedrock

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

Benthic algae - abundant

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☑ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☑ Oil	☐ Scum	☐ Foam	☐ None	☐ Other:

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

9/14/08

Stream Name & WBID # S.Fk.S. Fabius #0077 Date of Survey 8/12/08

Site # 0077-10

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

N/A

Comments: (Please record any additional comments here.)

Dam at Transect 3 - created pool for Transects 1-3. Debris from flood event.
Lots of debris in water

Huge log jam at Transect 10.

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 8/12/08

Organization: AE Solutions Position: Environmental Specialist

JV 8/19/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. S. Fabius R. Waterbody ID: 0077 Site #: 0077_10

Estimated Channel Incision: 0.20 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: 561181 UTM Y: 4450486 +/- 30 (feet)

11 UTM X: 561178 UTM Y: 4450343 +/- 21 (feet)

Average Stream Width: 5.50 (meters) Length of Survey Segment: 150 (meters)

(To determne Length of Reach) (20x average stream width)

Field Staff: JRH, TAH

Dissolved Oxygen

Date: 8/12/2008 Time: 8:54

Dissolved Oxygen: 5.20 (mg/L)

Dissolved Oxygen: 49.9 (% sat)

Specific Cond: 397 (µS/cm)

Water Temperature: 20.6 (°C)

Transect Cross-Section

Station	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)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.95	0.25	0.88	0.68	0.75	0.80	0.49	0.13	0.14	0.03	0.61	0.23	0.15	0.08	0.38	0.10	0.38	0.02	0.45	0.10	0.85	0.16
2	1.90	0.26	1.76	0.77	1.50	>1.00	0.98	0.11	0.28	0.16	1.22	0.44	0.30	0.18	0.76	0.13	0.76	0.12	0.90	0.21	1.70	0.20
3	2.85	0.29	2.64	0.71	2.25	>1.00	1.47	0.02	0.42	0.18	1.83	0.37	0.45	0.16	1.14	0.25	1.14	0.16	1.35	0.48	2.55	0.38
4	3.80	0.25	3.52	0.65	3.00	>1.00	1.96	0.06	0.56	0.17	2.44	0.36	0.60	0.20	1.52	0.37	1.52	0.20	1.80	0.89	3.40	0.40
5	4.75	0.32	4.40	0.62	3.75	>1.00	2.45	0.34	0.70	0.15	3.05	0.31	0.75	0.19	1.90	0.35	1.90	0.24	2.25	>1.00	4.25	0.57
6	5.70	0.33	5.28	0.59	4.50	0.90	2.94	0.35	0.84	0.14	3.66	0.31	0.90	0.15	2.28	0.28	2.28	0.25	2.70	>1.00	5.10	0.20
7	6.65	0.44	6.16	0.61	5.25	0.79	3.43	0.36	0.98	0.10	4.27	0.28	1.05	0.16	2.66	0.20	2.66	0.20	3.15	0.78	5.95	0.34
8	7.60	0.45	7.04	0.70	6.00	0.65	3.92	0.45	1.12	0.09	4.88	0.20	1.20	0.14	3.04	0.15	3.04	0.23	3.60	0.51	6.80	0.35
9	8.55	0.00	7.92	0.33	6.75	0.38	4.41	0.45	1.26	0.02	5.49	0.14	1.35	0.08	3.42	0.08	3.42	0.25	4.05	0.22	7.65	0.30
Right Bank	9.50	0.00	8.80	0.00	7.50	0.00	4.90	0.00	1.40	0.00	6.10	0.00	1.50	0.00	3.80	0.00	3.80	0.00	4.50	0.00	8.50	0.00
Feature Type (riffle, run, or pool)	Pool		Pool		Pool		Run		Run		Run		Run		Pool		Pool		Pool		Pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine bv dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____ Date: 8/12/2008

WBID # 0077

Site # 11

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 8/12/08 0720	Location Description (e.g., road crossing): County Rd 118 Crossing
Stream Name: S. FK. S. Fabius R.	
Current Weather Conditions: Sunny & Clear	Facility Name(s): Hurdland WW lagoon
Weather Conditions for Past 10 days: Ø" of rain	Permit Number(s): MO Ø115894
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought ☒; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0563785	Northing (UTM Y): 4448716	Horizontal Accuracy: (EPE / FOM / PDOP) 42 ~~Meters~~ ft
Site 11	Easting (UTM X): 0563932	Northing (UTM Y): 4448673	Horizontal Accuracy: (EPE / FOM / PDOP) 26 ~~Meters~~ ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3129	Upstream	3130	UPSTREAM	3131	DN STREAM
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ 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.)

N/A

Stream Name & WBID # S. Fk. S. Fabius R. #0077 Date of Survey 8/12/08

Site # 11

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☐ Steep slopes	☐ Other:

Comments:
private property

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

☒ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock Watering
☐ None of the above	Comments / Other: N/A			

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

– % Cobble	– % Gravel	90 % Sand	– % Silt	10 % Mud/Clay	– % Bedrock

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

Benthic algae - abundant

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☑ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☑ None	☐ Other:

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

Stream Name & WBID # S.Fk.S.Fabius R. #0077 Date of Survey 8/12/08

Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
		N/A			

Comments: (Please record any additional comments here.)

Wood debris in water from past rain

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik & Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 8/12/08

Organization: AE Solutions Position: Environmental Specialist

9/19/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. S. Fabius R. Waterbody ID: 0077 Site #: 0077_11

Estimated Channel Incision: 0.20 (m) (height between low bank width and water)

GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)

01 UTM X: 563785 UTM Y: 4448716 +/- 42 (feet)

11 UTM X: 563932 UTM Y: 4448673 +/- 26 (feet)

Average Stream Width: 8.90 (meters) Length of Survey Segment: 180 (meters)

(To determne Length of Reach) (20x average stream width)

Field Staff: JH, TH

Dissolved Oxygen

Date: 8/12/2008 Time: 7:20

Dissolved Oxygen: 3.25 (mg/L)

Dissolved Oxygen: 33.8 (% sat)

Specific Cond: 427 (µS/cm)

Water Temperature: 19.5 (°C)

Transect Cross-Section

Station	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)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.92	>1.00	0.91	0.65	0.85	0.30	0.98	0.28	0.75	0.20	0.85	0.25	0.96	0.54	1.09	0.35	0.84	0.25	0.60	0.15	1.03	0.09
2	1.84	0.84	1.82	0.81	1.70	0.29	1.96	0.25	1.50	0.22	1.70	0.31	1.92	0.40	2.18	0.25	1.68	0.25	1.20	0.23	2.06	0.03
3	2.76	0.76	2.73	0.85	2.55	0.35	2.94	0.30	2.25	0.25	2.55	0.60	2.88	0.35	3.27	0.22	2.52	0.20	1.80	0.24	3.09	0.12
4	3.68	0.76	3.64	0.91	3.40	0.45	3.92	0.31	3.00	0.27	3.40	0.61	3.84	0.32	4.36	0.20	3.36	0.15	2.40	0.22	4.12	0.10
5	4.60	0.77	4.55	0.77	4.25	0.51	4.90	0.44	3.75	0.25	4.25	0.63	4.80	0.26	5.45	0.20	4.20	0.14	3.00	0.20	5.15	0.01
6	5.52	0.79	5.46	0.75	5.10	0.60	5.88	0.62	4.50	0.20	5.10	0.64	5.76	0.30	6.54	0.26	5.04	0.13	3.60	0.18	6.18	0.00
7	6.44	0.87	6.37	0.75	5.95	0.63	6.86	0.75	5.25	0.20	5.95	0.63	6.72	0.35	7.63	0.30	5.88	0.04	4.20	0.22	7.21	0.00
8	7.36	0.84	7.28	0.68	6.80	0.68	7.84	0.75	6.00	0.21	6.80	0.63	7.68	0.53	8.72	0.29	6.72	0.06	4.80	0.22	8.24	0.00
9	8.28	0.76	8.19	0.60	7.65	0.68	8.82	0.35	6.75	0.06	7.65	0.60	8.64	0.35	9.81	0.24	7.56	0.09	5.40	0.16	9.27	0.01
Right Bank	9.20	0.00	9.10	0.00	8.50	0.06	9.80	0.00	7.50	0.00	8.50	0.11	9.60	0.00	10.90	0.00	8.40	0.00	6.00	0.00	10.30	0.00
Feature Type (riffle, run, or pool)	Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Riffle		Run		Riffle	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine bv dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____ Date: 8/12/2008

WBID #0077

Site #01

Downstream

WBID #0077

Site #02

Downstream

WBID #0077

Site #01

Upstream

WBID #0077

Site #02

Upstream

WBID #0077
Site #02
Cattle crossing
at Transect #9

WBID #0077
Site #03
Upstream

WBID #0077
Site #02
Fence at
Transect #1

WBID #0077
Site #03
Downstream

WBID #0077
Site #04
Downstream

WBID #0077
Site #05
Downstream

WBID #0077
Site #04
Upstream
Low Water
Crossing

WBID #0077
Site #04
Downstream

WBID #0077
Site #05
Crossing through
stream at Trans. #7

WBID #0077
Site #06
Downstream

WBID #0077
Site #05
Upstream

WBID #0077
Site #06
Upstream
Fence

WBID #0077
Site #07
Downstream

WBID #0077
Site #07
Cattle
Crossing

WBID #0077
Site #07
Upstream

WBID #0077
Site #07
Livestock
Watering

WBID #0077

Site #08

Downstream

WBID #0077

Site #09

Downstream

WBID #0077

Site #08

Upstream

WBID #0077

Site #09

Upstream

WBID #0077
Site #10
Downstream

WBID #0077
Site #11
Upstream

WBID #0077
Site #10
Upstream

AES
WBID: 0077
SITE: 11
UPSTREAM

WBID #0077
Site #11
Downstream