HUBBLE CREEK
WBID 2202

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
301 West High Street
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):	Hubble Creek
Missouri Water Body Identification (WBID) Number:	2202
8-digit HUC: 07140107 - Whitewater	County: Cape Girardeau
Upstream Legal Description (from Table H):	30, 32N, 13E
Downstream Legal Description(from Table H):	Hwy 61
Number of sites evaluated	3
List all sites numbers, listed consequently upstream to downstream: Site-1, 2, 3	

II. Subesegmentation (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):	Arbor Trails Subdivision
Discharger Permit Number(s):	MO 0128279

IV. UAA Surveyor (please print legibly)

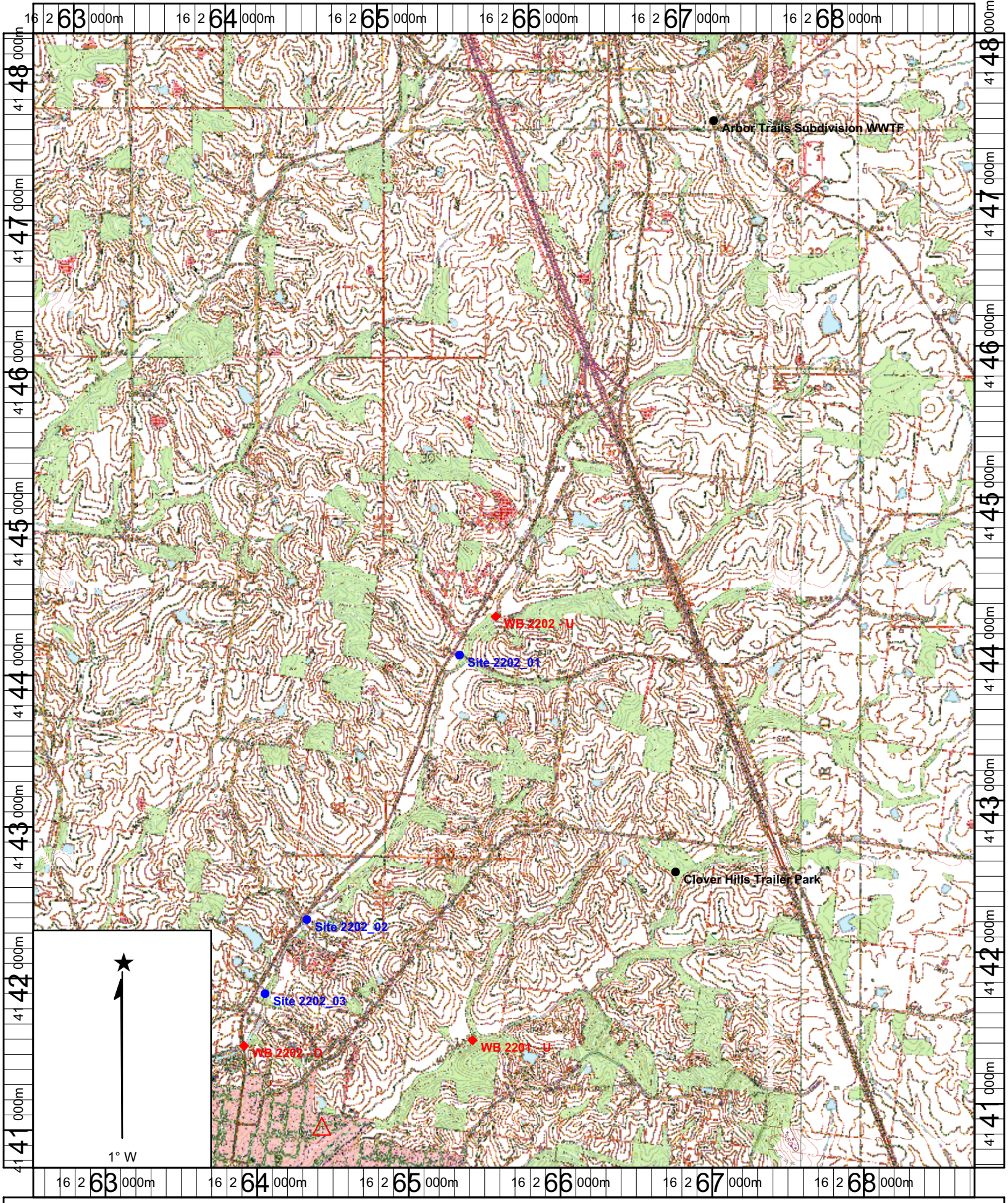
Name of Surveyor Robert R. Bacon	Telephone Number: (573) 634-7078
Organization/Employer: ERC	
Position: Field Manager	

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

Signed: Robert R Bacon **Date:** 05-07-2007

RRC 5-21-07

AK 5/22/07



Name: JACKSON
Date: 5/22/2007
Scale: 1 inch equals 2564 feet

Location: 16 0265731 E 4144406 N

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WBID# 2202
Site# 1

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: 05/07/07 07:00	Site Location Description (e.g., road crossing): Hwy Y + Col - downstream
Personnel (Data Collectors): Ashley + Bob	Facility Name: Arbor Trails Subdivision
Current Weather Conditions: Sunny + clear 68°	Permit Number: MO 0128279
Weather Conditions for Past 10 days:	
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: 1025026432 Y: 4144049

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	± 19 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)
1 OA2	Upstream T11	1 A1	downstream T1

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: wooded, sub-urban

WBID# 2202
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: None					

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	100 % Bedrock

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

filamentous algae, slick rock bottom

Water Characteristics*: (Mark all that apply.)

ODOR:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:	
COLOR:	☐ Clear	☐ Green	☐ Gray	☒ Milky	☐ Other:	light turbidity
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: [signature] Date of Survey: 09/07/07

Organization: ERC Position: Field Manager

RMC 5-21-07
[illegible] 5/22/07

Incomplete

CDB up 002 @ (01-11)

ERC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 2202 Site #: 1 Hubble Creek

Weather Conditions: Sunny & clear 68°

GPS Location:

UTM X: 16 S 0265432 UTM Y: 4144049

Horizontal Accuracy Estimate (GPS Data Quality): +/- 19 (feet)

Average Stream Width: 9.25 (meters) Length of Survey Segment: 185 (meters)

Field Staff: Abby & Bob

Water Quality Parameters

Dissolved Oxygen: 8.03 (mg/L)

Dissolved Oxygen: 83.1 (% sat)

Specific Cond: .475 (µS/cm)

Water Temperature: 17.00 (°C)

Time: 07:13:58

Transect Cross-Section

	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	.05	0	.07	0	.01	0	.06	0	.01	0	.06	0	.02	0	.02	0	.40	0	.23	0	.03
2	1	.13	1.03	.08	1.175	.04	.94	.09	.766	.01	1.16	.27	1.132	.25	1.17	.35	1.051	.45	.85	.34	1.13	.29
3	2	.13	2.06	.08	2.35	.08	1.88	.06	1.532	.08	2.32	.21	2.264	.32	2.34	.27	2.102	.41	1.7	.34	2.26	.41
4	3	.14	3.09	.10	3.525	.10	2.82	.05	2.298	.11	3.45	.15	3.396	.30	3.51	.34	3.153	.40	2.55	.36	3.39	.41
5	4	.12	4.12	.04	4.70	.08	3.76	.06	3.064	.12	4.64	.20	4.528	.32	4.68	.31	4.204	.36	3.4	.40	4.52	.37
6	5	.10	5.15	.09	5.875	.03	4.70	.10	3.83	.11	5.80	.16	5.66	.18	5.85	.19	5.255	.25	4.25	.37	5.65	.28
7	6	.07	6.18	.07	7.05	0	5.64	.10	4.596	.10	6.96	.15	6.792	.30	7.02	.15	6.306	.20	5.1	.34	6.78	.20
8	7	.06	7.21	.08	8.225	.01	6.58	.09	5.362	.11	8.12	.13	7.924	.29	8.19	.14	7.357	.24	5.95	.36	7.91	.07
9	8	.04	8.24	.07	9.4	.11	7.52	.08	6.128	.08	9.28	.13	9.056	.28	9.36	.12	8.408	.33	6.8	.34	9.04	.17
10	9	.05	9.27	.02	10.575	.09	8.46	.14	6.894	.05	10.44	.10	10.188	.25	10.53	.19	9.459	.30	7.65	.20	10.17	.22
11	10	.04	10.30	.02	11.75	.02	9.40	.02	7.66	.02	11.6	.10	11.32	.02	11.7	.02	10.51	.02	8.5	.01	11.3	.01
12	10.10	0	10.5	0	11.80	0	9.45	0	7.67	0	11.61	0	11.33	0	11.8	0	10.52	0	8.51	0	11.4	0
Feature Type (riffle, run, or pool)	Run		Riffle		riffle		riffle		riffle		run		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.

Signed: [signature] Date: 5/7/07

[signature] 5/22/07 RWC 5-21-07

WBID# 2202
Site# 2

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: 05/07/07 08:55	Site Location Description (e.g., road crossing): - downstream Hwy Cel + new development
Personnel (Data Collectors): Alaley + Bob	Facility Name: Arbor Trails Subdivision
Current Weather Conditions: sunny pt/cloudy	Permit Number: MO 0128279
Weather Conditions for Past 10 days:	
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: 16 S 0264375 Y: 4142336

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)
A4	Upstream T11	A3	Downstream T1

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:
subdivision

WBID# 2202
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 OVER	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:
Comments:					

Stream Morphology:

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

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

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

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

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

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

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

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

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

filamentous algae

Water Characteristics*: (Mark all that apply.)

ODOR:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
COLOR:	☐ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Turbid (lightly)
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.

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

Surveyor's Signature: Robert R Bacon Date of Survey: 05/07/07

Organization: ERC Position: Field Manager

RNC 5-21-07

CD-A Down ... up -004 02-11

ERC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 2202 Site #: 2

Weather Conditions: sunny + clear 71°

GPS Location:
UTM X: 1650264375 UTM Y: 4142336
Horizontal Accuracy Estimate (GPS Data Quality): +/- 17 (feet)

Average Stream Width: 19.75 (meters) Length of Survey Segment: 200 (meters)

Field Staff: Abby + Bob

Water Quality Parameters

Dissolved Oxygen: 10.56 (mg/L)

Dissolved Oxygen: 111.2 (% sat)

Specific Cond: .229 (µS/cm)

Water Temperature: 17.92 (°C)

Time: 08:57:34

Transect Cross-Section

	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	.01	0	.01	0	.01	0	0	0	.09	0	.01	0	.01	0	.02	0	.01	0	.01	0	.01
2	1.257	.31	1.19	.15	1.11	.15	.583	.05	.92	.38	1.042	.04	1.085	0	1.512	.05	.92	.04	1.061	.33	1.094	.15
3	2.514	.32	2.38	.04	2.22	.15	1.166	.09	1.84	.28	2.084	.07	2.17	.10	3.024	.07	1.84	.14	2.122	.33	2.188	.23
4	3.771	.31	3.57	.06	3.33	.15	1.749	.15	2.76	.29	3.126	.05	3.255	.22	4.536	.09	2.76	.13	3.183	.32	3.282	.27
5	5.028	.32	4.76	.02	4.44	.11	2.332	.17	3.68	.23	4.168	.07	4.34	.10	6.048	.07	3.68	.10	4.244	.28	4.376	.32
6	6.285	.34	5.95	.01	5.55	.08	2.915	.28	4.6	.33	5.21	.08	5.425	.01	7.56	.08	4.6	.12	5.305	.26	5.47	.15
7	7.542	.36	7.14	.09	6.66	.19	3.498	.28	5.52	.39	6.252	.04	6.51	.06	9.072	0	5.52	.09	6.366	.23	6.564	.08
8	8.799	.31	8.33	.03	7.77	.19	4.081	.27	6.44	.35	7.294	.04	7.595	.16	10.584	0	6.44	.08	7.427	.19	7.658	.04
9	10.056	.31	9.52	0	8.88	.18	4.664	.25	7.36	.25	8.336	.07	8.68	.03	12.096	0	7.36	.03	8.488	.18	8.752	.05
10	11.313	.24	10.71	.12	9.99	.14	5.247	.17	8.28	.30	9.378	.07	9.765	.02	13.608	.47	8.28	.02	9.549	.15	9.846	.04
11	12.57	.01	11.9	.15	11.10	.01	5.83	.01	9.20	.02	10.42	.01	10.85	.01	15.12	.47	9.2	.01	10.61	.04	10.94	.01
12	12.58	0	12.0	0	11.11	0	5.84	0	9.21	0	10.43	0	10.86	0	15.13	0	9.3	0	10.62	0	11.16	0
Feature Type (riffle, run, or pool)	run		riffle		run		riffle		run		riffle		riffle		riffle		riffle		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.

Signed: [signature] Date: 05/07/07

[initials] 5/22/07 [initials] 5-21-07

WBID# 2202
Site# 3

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: 5-7-07	Site Location Description (e.g., road crossing): Hwy 61 ; Independence Street - downstream
Personnel (Data Collectors): Abby ; Bob	
Current Weather Conditions: sunny/ptly cloudy	Facility Name:
	Permit Number:
Weather Conditions for Past 10 days:	
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: 16 S 0264088 Y: 4141851			
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	± 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)
A6	Upstream T11	A5	Downstream T1

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: Urban

WBID# 2202
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 OVER	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:
Comments:					

Stream Morphology:

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

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

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

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

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

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

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

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

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

Filamentous algae

Water Characteristics*: (Mark all that apply.)

ODOR:	☐ Sewage	☐ Musky	☐ Chemical	☒ None	☐ Other:
COLOR:	☐ Clear	☐ Green	☐ Gray	☐ Milky	☒ Other: Turbid
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: [signature] Date of Survey: 05/07/07

Organization: ERC Position: field crew

RWC 5-21-07
MC 5/22/07

W-H Pics Up -.006 (03-01) Down -.005 @ (03-01)

ERC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 2202 Site #: 03

Weather Conditions: Sunny / partly cloudy 75°

GPS Location:

UTM X: 16S 0264088 UTM Y: 4141851

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

way pt #3

Average Stream Width: 10 (meters) Length of Survey Segment: 200 (meters)

Field Staff: Abby + Bob

Water Quality Parameters

Dissolved Oxygen: 11.37 (mg/L)

Dissolved Oxygen: 128.6 (% sat)

Specific Cond: .478 (µS/cm)

Water Temperature: 21.21 (°C)

Time: 10:57:45

Transect Cross-Section

	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	.01	0	.01	0	.01	0	.01	0	.01	0	.02	0	.01	0	.01	0	.02	0	.01	0	.03
2	1.007	.02	1.065	.07	.91	.09	1.19	.07	.7	.08	1.085	.25	1.08	.10	1.282	.51	1.34	.57	1.42	.37	1.622	.20
3	2.014	.05	2.13	.10	1.82	.08	2.38	.03	1.4	.05	2.17	.30	2.16	.18	2.564	.35	2.68	.58	2.84	.37	3.244	.21
4	3.021	.22	3.195	.10	2.73	.02	3.57	0	2.1	.11	3.255	.28	3.24	.09	3.846	.23	4.02	.56	4.26	.42	4.866	.07
5	4.028	.25	4.26	.02	3.64	.15	4.76	0	2.8	.19	4.34	.31	4.32	.21	5.128	.20	5.36	.45	5.68	.41	6.488	0
6	5.035	.40	5.325	.35	4.55	.18	5.95	.02	3.5	.04	5.425	.29	5.40	.15	6.41	.19	6.7	.33	7.1	.37	8.11	0
7	6.042	.50	6.39	.42	5.46	.20	7.14	0	4.2	.10	6.51	.21	6.48	.33	7.692	.28	8.04	.33	8.52	.40	9.732	0
8	7.049	.52	7.455	.60	6.37	.16	8.33	.06	4.9	.13	7.595	.10	7.56	.34	8.974	.47	9.38	.25	9.94	.45	11.354	0
9	8.056	.46	8.52	.50	7.28	.14	9.52	.07	5.6	.28	8.68	.11	8.64	.19	10.256	.41	10.72	.23	11.36	.48	12.976	0
10	9.063	.19	9.585	.33	8.19	.17	10.71	.10	6.3	.20	9.765	.04	9.72	.10	11.538	.35	12.06	.22	12.78	.41	14.598	.09
11	10.07	.01	10.65	.03	9.10	.03	11.9	.01	7.0	.01	10.85	.01	10.80	.01	12.82	.01	13.4	.01	14.2	.03	16.22	.06
12	10.08	0	10.66	0	9.11	0	11.91	0	7.01	0	10.80	0	10.90	0	12.83	0	13.41	0	14.21	0	16.23	0
Feature Type (riffle, run, or pool)	run		riffle		run		riffle		run		riffle		riffle		pool		pool		pool		riffle	

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.

Signed: [signature] Date: 5/7/07

[signature] 5/22/07 [signature] 5-21-07

WBID# 2202

Site# 1 Photo ID# A2, Upstream

Site# 1 Photo ID# A1, Downstream

Site# 2 Photo ID# A4, Upstream

Site# 2 Photo ID# A3, Downstream

WBID# 2202

Site# 3 Photo ID# A6, Upstream

Site# 3 Photo ID# A5, Downstream

Field Data Sheet for Recreational Use Stream Survey

Data Sheet D—Recreational Use Interview

Stream Name _____ *(WBID #* _____)

I. Introduction

Date & Time (include AM or PM): 5/7/07

Interviewed: ☒ In person ☐ By phone ☐ By mail
(NOTE: If you are an Interviewee filling out this form to mail back to DNR, proceed to Question #1.)

Interviewee selected because (e.g., house next to stream; standing by stream, etc.) _____
stopped by to see what we were doing

Interviewer introduction to Interviewee: "My name is _____, I work for __*(name of your employer)*____, and I am collecting information on how people use __*(name of the stream)*____."

ASK:

1.) Are you willing to respond to a survey about this stream? (It will just take a few minutes.)
☒ Yes ☐ No If yes, list contact information for the interviewee below:
Legal name: Nabors Farris
Current mailing address: 1029 W. Mount Dr. Cape 63701
Daytime phone number: (573) 450-1071
E-mail address (optional):

2.a.) Do you live in this area? ☐ Yes ☒ No owns building near stream
If yes, how many years? for 11 yrs

2.b.) If you don't live nearby, are you still familiar with this stream? ☒ Yes ☐ No
If yes, how many years? 11
If no, thank the individual for taking the time to talk to you and conclude the interview.

3.) Are you familiar with this particular stretch of the stream? (show them the map, pointing out local landmarks such as roads, bridges, property lines) ☒ Yes ☐ No
If yes, proceed to "II. Personal Use?".
If no, proceed to Section V.

II. Personal Use?

1.) Have you or your family personally used the stream for recreation since November 28, 1975?
☐ Yes ☒ No
If yes, proceed to #3.
If no, proceed to #2.

2.a.) List reasons stream not used. not enough depth

2.b.) Proceed to "III. Witnessed Use?".

3.) How do you use the stream?

Whole Body Contact Recreation			
Swimming ☐	Tubing ☐	Snorkeling/Skin Diving ☐	Water Skiing ☐

If Interviewee (or family) used the stream for WBCR since Nov. 28, 1975, ask:

4.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)?_____

4.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol)._____

Secondary Contact Recreation				
Fishing ☐	Wading ☐	Boating ☐	Trapping ☐	Other: ☐ List:

If Interviewee (or family) used the stream for SCR since Nov. 28, 1975, ask:

4.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)?_____

4.d.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol)._____

III. Witnessed Use?

1.) Have you observed others using this stream for recreation since Nov. 28, 1975? ☐ Yes ☒ No

If yes, proceed to #2.
If no, proceed to, "IV. Anecdotal Use?".

2.) What kinds of uses have you witnessed?

Whole Body Contact Recreation			
Swimming ☐	Tubing ☐	Snorkeling/Skin Diving ☐	Water Skiing ☐

If Interviewee witnessed WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)?_____

2.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol)._____

Secondary Contact Recreation				
Fishing ☐	Wading ☐	Boating ☐	Trapping ☐	Other: ☐ List:

If Interviewee witnessed SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)?_____

2.d.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol)._____

IV. Anecdotal Use?

1.) Have you heard about anyone using this stream since Nov. 28, 1975 for recreation – not seen or done yourself, but just heard about it? ☐ Yes ☒ No

If yes, proceed to #2.

If no, thank the individual for taking the time to talk to you and conclude the interview.

2.) What kind of uses have you heard about?

Whole Body Contact Recreation			
Swimming ☐	Tubing ☐	Snorkeling/Skin Diving ☐	Water Skiing ☐

If Interviewee heard of WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)?_____

2.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol)._____

Secondary Contact Recreation				
Fishing ☐	Wading ☐	Boating ☐	Trapping ☐	Other: ☐ List:

If Interviewee heard of SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often(times/year) ?

2.d.) Where, exactly? Describe specific location *and mark on the* (See map requirements in the protocol).

V. Others to Contact?

Can you recommend someone else we could contact that knows the stream? ☒ Yes ☐ No
If yes, that person's contact info (name, address, phone, directions?) Joe Willing bring - lives on Hwy 61 - white house lived close for a long time
If no, thank the individual for taking the time to talk to you and conclude the interview.

VI. Additional Comments

1.) From the Interviewee: eventually the town wants to put a bike + walking trail on side of the creek

2.) From the Interviewer:

VII. Information on Interviewer

Has interviewer been trained by Missouri DNR to conduct UAA Interviews?
☒ Yes ☐ No If yes, how (check all that apply):
Workshop? (if so, enter date): _____
On-line training seminar? _____
Followed Interview Instruction Sheets? _____
Other _____

Interviewer Information:
Signature: _____
Printed Name: _____
Employer (where applicable): _____
Interviewer's phone #: _____ E-mail: _____