

RECREATIONAL USE ATTAINABILITY ANALYSIS: UAA #1385

Tributary to East Yellow Creek (WBID 3960) Marceline, Linn County, Missouri

Submitted to

UAA Review Committee

Water Quality Monitoring & Assessment Section, Water Protection Program
MISSOURI DEPARTMENT OF NATURAL RESOURCES
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Submitted by

Geosyntec 
consultants

engineers | scientists | innovators

&



November 11, 2016

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1.1 Project Background

In 2014, the Missouri Department of Natural Resources (MDNR) adopted into the Water Quality Standards (CSR10 CSR 20-7.031) the expanded classified waters of Missouri using the 1:100,000 data set (8-20-2013 MUDD V1.0)¹. This expansion assigned default classification (Class C) and associated designated beneficial uses to all newly classified waters. The City of Marceline (Marceline) retained the services of Geosyntec Consultants (Geosyntec) to evaluate if whole body or secondary contact recreation is an existing or attainable use for the newly classified stream segment to which the Marceline Wastewater Treatment Plant (Marceline WWTP) discharges. The stream segment is listed on the City's National Pollution Discharge Elimination System (NPDES) operating permit (MO- 0039721) as Tributary to East Yellow Creek. The stream segment is locally known as Halls Branch and/or Reardon Branch. For the purpose of this report, the stream is referred to as Halls Branch. Geosyntec Consultants submitted a Pre-Assessment Work Plan to MDNR for approval. MDNR subsequently approved the work plan and assigned UAA #1385 to the assessment. Halls Branch was evaluated for existing or attainable recreational uses in accordance with MDNR's Recreational Use Attainability Analysis (UAA): Water Body Survey and Assessment Protocol (MDNR 2007).

1.2 Study Area

Halls Branch (**Figure 1 and Figure 2**) is a small tributary to East Yellow Creek that receives discharges from the Marceline WWTP. The stream is located in Linn County, and flows westward approximately 5 miles from Marceline to East Yellow Creek. In accordance with the MDNR's 2014 classified streams layer, Halls Branch is now classified and designated for the following beneficial uses: irrigation, livestock and wildlife watering, protection of aquatic life, whole body contact recreation "B" (WBC-B) and secondary contact recreation (SCR).

1.3 Methods and Materials

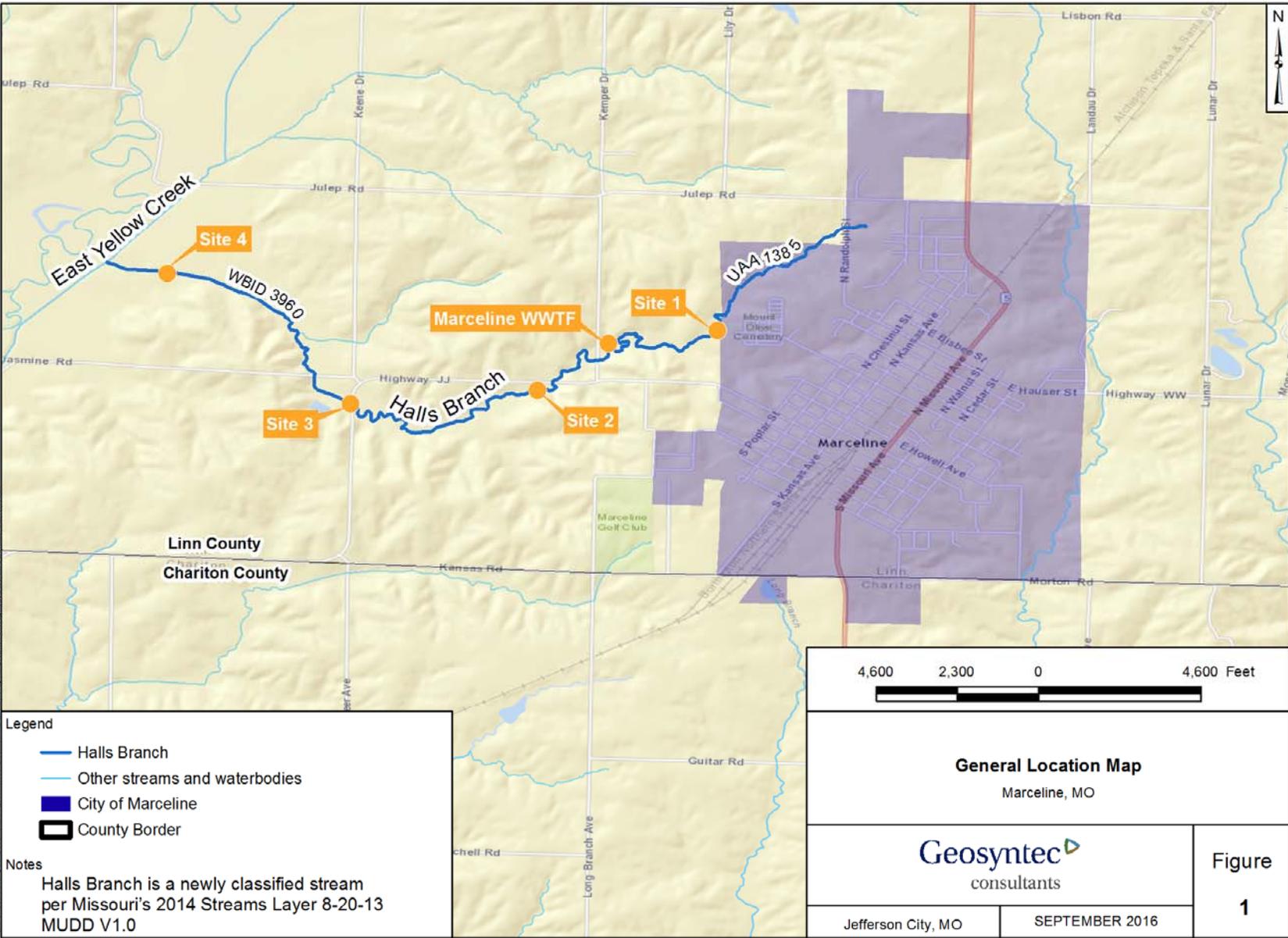
The UAA was conducted in accordance with MDNR's Missouri Recreational Use Attainability Analysis: Water Body Survey and Assessment Protocol dated December 19, 2007. A summary of elements outlined in the protocol includes:

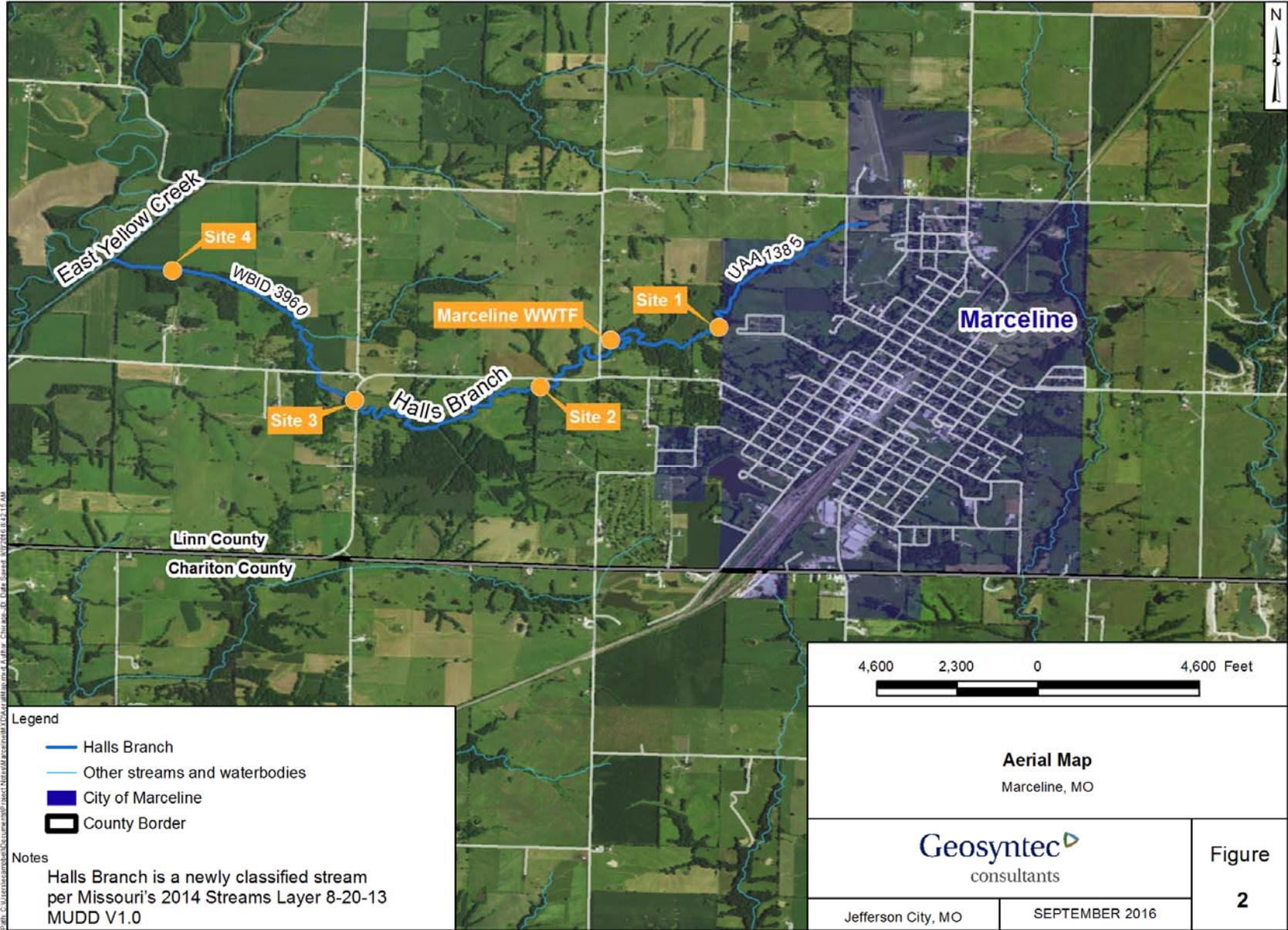
- Field surveys must be conducted within the defined recreational season (April 1 - October 31).
- Field surveys should be conducted during base flow conditions.
- A record of precipitation data occurring 10 days prior to field surveys should be maintained.
- Field surveys should include (at minimum) 3 sites per five stream miles.
- Survey segment length should be 20 times average stream width (minimum 150 meters, maximum 300 meters) and include 11 equidistant cross-sections, not near hydrological anomalies (e.g., root wads, etc.).

¹ Missouri Use Designation Dataset Version 1.0, August 20, 2013 (8-20-2013 MUDD V1.0), refers to all streams in the Missouri Use Designation Dataset Version 1.0, August 20, 2013, that are not otherwise listed in Table H.

- Cross-sections should contain at least 10 measurements between the left and right banks.
- Photographic records should be kept of upstream and downstream views at each site and any potential recreational uses observed.
- Interviews should be conducted with persons present during field surveys or with nearby-residents.
- Sites should be identified on a 1:24,000 USGS topographic map (**Figure 1**).

Depth measurements were made using a rod graduated to the nearest 0.01 meter (m). Depth measurements below 0.01 m were recorded as <0.01 m.





1.4 Results and Discussion

On July 27, 2016 four sites along Halls Branch were evaluated following the MDNR UAA protocol and assessed for existing or attainable uses. Field surveys were conducted during base flow conditions, supported by antecedent precipitation records and the U.S. Drought Monitor data. Precipitation records for 10 days preceding the survey were obtained from the Midwestern Regional Climate Center weather station in Brookfield, MO (Station ID 00230980, **Table 1**). According to the July 26, 2016 Drought Monitor map² (**Appendix A**), the Marceline area was not experiencing drought or abnormally dry conditions during the field survey

Table 1. Daily Precipitation Totals from Brookfield, MO Weather Station.

Date (mm/dd/yyyy)	Precipitation (Inches)
7/17/2016	0.00
7/18/2016	0.00
7/19/2016	T
7/20/2016	0.00
7/21/2016	0.00
7/22/2016	0.00
7/23/2016	0.00
7/24/2016	0.00
7/25/2016	0.00
7/26/2016	0.00
7/27/2016	0.00

Note: T=Trace.

1.4.1 Site Characterization

Site 1. Mt. Olivet Cemetery, Upstream of WWTF, (UTMX: 0503336, UTM Y 4396614)

Site 1 is surrounded by a densely forested riparian buffer and contains steeply sloping banks at the downstream portion of the 150-meter (m) surveyed reach (**Appendix B**). At the time of the field survey, the stream channel was almost entirely devoid of water and substrates were primarily composed of fine sediments (**Table 2**). Measureable water depths were observed only at transect 11 (**Appendix C**) which had a mean depth of 0.002 m. The maximum depth observed at site 1 was 0.05 m (**Table 3**). No evidence of contact recreation was observed at site 1.

Site 2. Highway JJ Road Crossing (UTMX: 0502208, UTM Y: 4396143)

The landscape surrounding site 2 includes steeply sloping stream banks covered with a densely vegetated and forested riparian buffer (**Table 2, Appendix B**). Substrates were composed predominately of sand with a small percentage of silt and mud/clay. Algal growth was minimal and observed only on mud/silt flats. Field survey staff reported a wastewater effluent odor along the surveyed reach, which is downstream from the Marceline WWTP. Mean water depth was 0.086 m across 11 transects (**Table 3**).

² http://droughtmonitor.unl.edu/data/pdfs/20160726/20160726_mo_trd.pdf accessed 9/22/2016.

The maximum depth observed along the transects was 0.44 m. No evidence of contact recreation was observed at this site.

Site 3. Highway JJ Road Crossing (UTMX: 0500864, UTM Y: 4395991)

Site 3 is characterized by steeply sloping banks covered with dense vegetation (**Table 2, Appendix B**). Channel substrate was predominately sand and mud/clay. Minimal algal growth was observed on mud flats and a small isolated oily sheen was observed near the water’s edge. No petroleum odor was observed and it is suspected the oily sheen was related to natural processes. Mean water depth was 0.062 m across 11 transects and the maximum observed depth was 0.24 m (**Table 3**). No evidence of contact recreation was observed.

Site 4. Ewigman Farms (UTMX: 0499669, UTM Y: 4397091)

The streambanks surrounding site 4 are steeply sloping with a thinly forested riparian buffer adjacent to agriculture fields (**Table 2, Appendix B**). Channel substrate was predominately sand with minimal silt, mud, and gravel. Mean water depth was 0.043 m across 11 transects and the maximum depth observed was 0.26 m (**Appendix C**). No evidence of contact recreation was observed at this site. Property owners adjacent to the creek indicate no personal use of Halls Branch for recreation. Instead, adjacent waterbodies (farm ponds and East Yellow Creek) are used for recreational fishing opportunities (**Appendix D**).

Table 2. Surrounding Conditions and Observed Human Uses for Halls Branch.

Site Number	Surrounding Conditions	Observed Uses	Signs of Human Activity	Channel Substrate	Bank Condition
1	Cemetery, Fence	None	None	Sand, Silt, Mud/Clay, Cobble, Gravel	Forested riparian zone
2	Road, Fence	None	None	Sand, Silt, Clay, Gravel	Forested riparian zone
3	Road, Fence	None	None	Sand, Clay, Silt, Gravel	Steep slopes, Forested riparian zone.
4	Row crops, Fence	None	None	Sand, Silt, Clay, Gravel	Steep slopes

Table 3. Halls Branch Water Depth Summary.

Site Number	Mean Depth(m)	Maximum Depth (m)
1	0.002	0.05
2	0.086	0.44
3	0.062	0.24
4	0.043	0.26

1.4.2 Interview Summary

Geosyntec did not observe individuals at or nearby Halls Branch during the time of the field surveys. Interviews conducted with individuals residing near or adjacent to Halls Branch indicate no current recreational use. One individual reported an anecdotal account of fur-trapping along the creek, however Missouri's defined furbearer season (November 15 to March 31) falls outside of the designated recreation season (April 1 to October 31). Another individual indicated that, as a child, he played near the creek upstream of the wastewater treatment facility (throwing rocks in the creek and breaking ice when it froze over). Individuals report that the small size and the availability of other nearby water bodies, more conducive to recreational activities, are the primary reasons they do not use Halls Branch (**Appendix D**).

1.5 Recreational Use Attainability Recommendation

Based on data obtained during the field survey on July 27, 2016 and individual interviews, Geosyntec determined that the surveyed reach of Halls Branch is not being used for recreation and does not meet the MDNR use attainment depth criteria (WBCR-B: maximum depth of at least 1 meter or median depth of at least 0.5 meters, SCR: depth of at least 0.5 meters) based on:

- Maximum observed depth = 0.44 m, Median depth = 0.02 m,
- Absence of observed human use,
- Absence of personal use by individuals interviewed, and
- Difficult to access due to steeply sloping banks, densely vegetated riparian buffer and much of it is fenced.

Geosyntec concludes that WBCR nor SCR are neither existing nor attainable uses within the Tributary to East Yellow Creek (8-20-13 MUDD V1.0, WBID 3960, Halls Branch).

1.6 References

Missouri Department of Natural Resources. Division of Environmental Quality. Water Protection Program. Missouri Recreational Use Attainability Analysis: Water Body Survey and Assessment Protocol. December 19, 2007.

**2016 RECREATIONAL USE ATTAINABILITY ANALYSIS
HALLS BRANCH**

APPENDICES

Appendix A
Drought Monitor Map and Conditions Report

U.S. Drought Monitor

Missouri

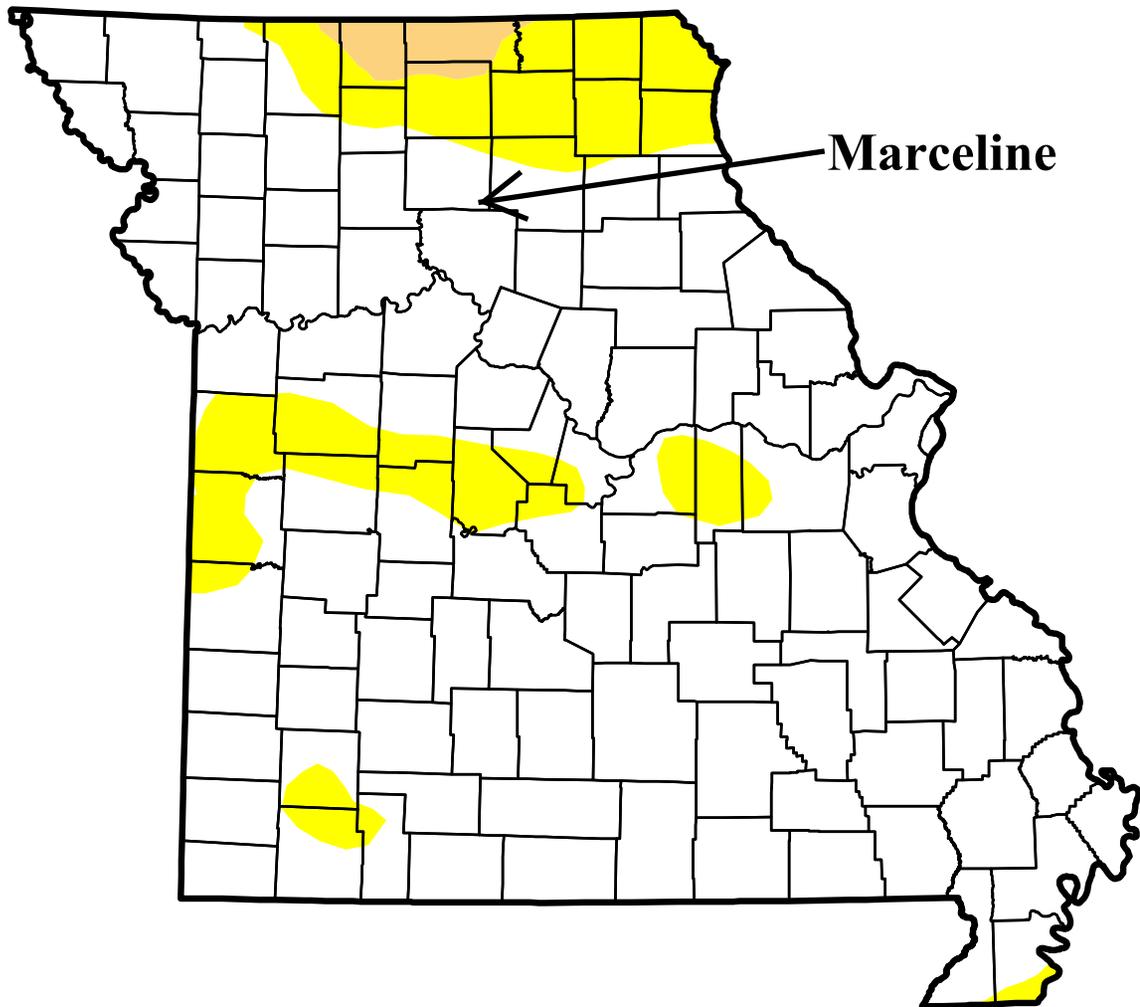
July 26, 2016

(Released Thursday, Jul. 28, 2016)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	84.96	15.04	1.37	0.00	0.00	0.00
Last Week <i>7/19/2016</i>	81.87	18.13	4.32	0.00	0.00	0.00
3 Months Ago <i>4/26/2016</i>	24.17	75.83	14.37	0.00	0.00	0.00
Start of Calendar Year <i>12/29/2015</i>	100.00	0.00	0.00	0.00	0.00	0.00
Start of Water Year <i>9/29/2015</i>	69.09	30.91	0.00	0.00	0.00	0.00
One Year Ago <i>7/28/2015</i>	100.00	0.00	0.00	0.00	0.00	0.00

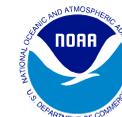


Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Brad Rippey
U.S. Department of Agriculture



Appendix B
Halls Branch Site Photos

Site 1 Downstream View



Site 1 Upstream View



Site 2 Downstream View



Site 2 Upstream View



Site 3 Downstream View



Site 3 Upstream View



Site 4 Downstream View



Site 4 Upstream View



Appendix C
MDNR UAA Field Data Sheets

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): Halls Branch
Missouri Water Body Identification (WBID) Number: 3960
8-digit HUC: 10280103
County(ies), Listed Upstream to Downstream: Linn
Upstream Legal Description (from Table H): S29 T57N R18W
Downstream Legal Description (from Table H): S27 T57N R19W
Number of sites evaluated: 4
List all site numbers, <u>consecutively upstream to downstream</u> : 1,2,3,4
Include a Site Location Map(s). The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).

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

Facility Name(s) and Permit Number(s): Marceline Wastewater Treatment Facility MO0039721

III. UAA Surveyor (please PRINT legibly)

Name of Surveyor: Leslie Lueckenhoff	Telephone Number: 573-443-4100
Organization/Employer: Geosyntec Consultants	

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

Signed: Leslie Lueckenhoff Date: 9/9/16

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: Halls Branch Waterbody ID: 3960 Site #: 01

Estimated Channel Incision: $\frac{4}{15} \times 0.2m$ (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: 503330 UTM Y: 4390014 +/- 22 ft (meters)

11 UTM X: 503150 UTM Y: 4390490 +/- 17 ft (meters)

Average Stream Width: 0.07m (meters) Length of Survey Segment: 150m (meters)
(To determine Length of Reach) (20x average stream width)

Field Staff: Cody Luckenberry et al. Steve Luckenberry

Dissolved Oxygen

Date: 7/27/16 Time: 7:37

Dissolved Oxygen: 2.99 (mg/L)

Dissolved Oxygen: 33.8 (% sat)

Specific Cond: 896 (µS/cm)

Water Temperature: 21.37 (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.01
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.03
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.15	0.04
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.25	0.05
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.02
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.01
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.45	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.01
Right Bank																					0.7	0.01
Feature Type	NA		Riffle Run																			

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

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

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

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

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Steve Luckenberry Date: 7/27/16

WBID #

Site #

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: 7/27/10	Location Description (e.g., road crossing): Mt. Oliver Cemetery
Stream Name: Halls Branch	Accessed via Marceline Cemetery property
Current Weather Conditions: Partly sunny, 80°F	Facility Name(s): MARCELINE WWTF
Weather Conditions for Past 10 days: Dry	Permit Number(s):
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0503330	Northing (UTM Y): 4396614	Horizontal Accuracy: (EPE / FOM / PDOP) 22ft Meters
Site 11	0503159	4396490	14 ft
Site 02	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: (EPE / FOM / PDOP) Meters
Site 03	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: (EPE / FOM / PDOP) Meters
Site 04	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: (EPE / FOM / PDOP) Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
	Upstream transect		Downstream transect		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <i>Cemetery</i>
Comments:				

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

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

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

<i>1</i> % Cobble	<i>1</i> % Gravel	<i>60</i> % Sand	% Silt	% Mud/Clay	<i>38</i> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

No algal growth as a result of no water present for much of the assessment

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input checked="" type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

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

Stream Name & WBID # _

Date of Survey _

Site # _

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: _ *Cody Weibking, Leslie Luckenhoff*

Surveyor's Signature: _ *Leslie Luckenhoff*

Date of Survey: _ *7/27/16*

Organization: _ *Geosyntec*

Position: _ *Scientist*

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: Halls Branch Waterbody ID: 3960 Site #: 2

Estimated Channel Incision: 0.3m (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: 0302208 UTM Y: 4396143 +/- 20 ft (meters)

11 UTM X: 0302059 UTM Y: 4396070 +/- 24 ft (meters)

Average Stream Width: 4m (meters) Length of Survey Segment: 150m (meters)
(To determine Length of Reach) (20x average stream width)

Field Staff: Cody Webbering, Leslie Weckenhoff

Dissolved Oxygen

Date: 7/27/16 Time: 8:49

Dissolved Oxygen: 3.03 (mg/L)

Dissolved Oxygen: 42.0 (% sat)

Specific Cond: 865 (µS/cm)

Water Temperature: 22.54 (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	.07	.2	.1	.2	.07	0.0	.12	.5	.03	.1	.01	.1	.05	.2	.06	.1	.01	.2	.03	.1	.04
2	0.9	.17	.7	.1	.4	.1	1.0	.26	1	.04	.2	0	.3	.1	.6	.03	.2	.62	.4	0	.2	.08
3	1.3	.19	1.1	.09	.9	.09	1.4	.3	1.4	0	.8	.01	.6	.11	.9	.01	.3	.04	.6	0	.3	.09
4	1.8	.25	1.3	.09	1.2	.1	1.8	.37	1.9	0	.4	.02	.9	.11	1.3	0	.4	.06	.9	0	.4	.06
5	2.1	.3	1.5	.08	1.4	.09	2	.4	2.4	.01	.5	.03	1.1	.09	1.5	0	.5	.08	1.2	0	.5	.08
6	2.4	.3	1.7	.08	1.7	.09	2.2	.43	2.7	.03	.6	.02	1.2	.06	1.8	.15	.6	.07	1.5	0	.6	.08
7	2.7	.33	2.1	.09	1.9	.06	2.6	.44	3	.04	.7	.02	1.3	.04	2	.17	.8	.07	1.9	.01	.7	.05
8	3.0	.27	2.5	.07	2.1	.05	3	.42	3.3	.04	.8	.01	1.4	.04	2.4	.2	.9	.03	2.4	.09	.8	.05
9	3.4	.16	3	.06	2.2	.05	3.4	.3	3.7	.02	1.9	.01	1.6	.02	3	.24	.95	.01	2.8	.05	.9	.04
Right Bank	3.7	0.0	3.4	0.0	2.5	0.0	3.0	0.0	3.9	0.0	1.0	0.0	1.8	0.0	3.5	0.0	1.0	0.0	3.1	0.0	1.1	0.0
Feature Type	RUN		RUN		RUN		Pool		RIFLE		RIFLE		RIFLE		RIFLE		RUN		RIFLE		RIFLE	
(riffle, run, or 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 by dividing wetted width by ten)
Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)
All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Leslie Weckenhoff Date: 7/27/16

WBID # _

Site # _

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: <u>7/27/16</u>	Location Description (e.g., road crossing): <u>Highway JJ Rd. crossing</u>
Stream Name: <u>Halls Branch</u>	
Current Weather Conditions: <u>Sunny</u>	Facility Name(s): <u>Marcelline WWTF</u>
Weather Conditions for Past 10 days: <u>Dry</u>	Permit Number(s):
Official Drought Conditions at time of this survey (search DNR home page for “drought”): No drought <input checked="" type="checkbox"/> Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: (EPE / FOM / PDOP) Meters
Site 02	Easting (UTM X): <u>0502208</u>	Northing (UTM Y): <u>43761413</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>20 Meters Feet</u>
Site 03	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: (EPE / FOM / PDOP) Meters
Site 04	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: (EPE / FOM / PDOP) Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
	<u>upstream transect</u>		<u>Downstream transect</u>		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

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

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

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

% Cobble	0.5	% Gravel	45	% Sand	25	% Silt	25	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

observed algal growth on mud/silt ^ minimal

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input checked="" type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

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

Stream Name & WBID # _

Date of Survey _

Site # _

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: *Cody Luebbering Leslie Lueckenhoff*

Surveyor's Signature: *Cody Luebbering*

Date of Survey: *7/27/16*

Organization: *Geosyntec*

Position: *Scientist*

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results



Stream Name: Halls Branch Waterbody ID: 3960 Site #: 03

Estimated Channel Incision: 0.35 ^{ft} 0.5m (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: 05002604 UTM Y: 4395991 +/- 28ft (meters)

11 UTM X: 0500678 UTM Y: 4396096 +/- 10ft (meters)

Average Stream Width: _____ (meters) Length of Survey Segment: _____ (meters)
(To determine Length of Reach) (20x average stream width)

Field Staff: Cody Luebbeving, Leslie Luckenbach

Dissolved Oxygen

Date: 7/27/16 Time: 9:46

Dissolved Oxygen: 8.27 (mg/L)

Dissolved Oxygen: 99.6 (% sat)

Specific Cond: 791 (µS/cm)

Water Temperature: 24.67 (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	.2	.1	.05	.01	.2	.04	.1	.02	0.05	.01	.3	.14	.3	.07	.3	.03	.3	.06	.2	.10	.2	.05
2	.8	.15	.1	.02	.7	.04	.15	.02	.1	.02	.6	.21	.9	.08	.7	.06	.9	.11	.4	.16	1.0	.10
3	1.2	.12	.15	.02	1	.06	.2	.02	.15	.02	1.0	.19	1.2	.06	1	.06	1.1	.14	1.0	.18	1.5	.11
4	1.4	.06	.2	.02	1.3	.08	.3	.01	.3	.02	1.3	.17	1.4	.04	1.3	.03	1.4	.13	1.3	.19	1.9	.1
5	2.2	.05	.25	.03	1.6	.05	.4	.01	.4	.02	1.6	.15	1.9	.03	1.7	.02	1.8	.11	1.5	.2	2.4	.2
6	2.5	.03	.3	.03	1.9	.05	.5	.01	.5	.01	1.9	.1	2.3	.05	1.9	.01	2.2	.08	1.8	.2	3.0	.24
7	3	.03	.35	.02	2.2	.06	.6	.01	.55	.01	2.1	.09	2.8	.05	2.1	.02	2.5	.08	2.1	.2	3.8	.19
8	3.3	.03	.5	.02	2.5	.06	.75	.01	.6	.01	2.3	.07	3.0	.01	2.6	.02	2.9	.12	2.4	.13	4.4	.15
9	3.7	.02	.7	.01	2.9	.05	.9	.01	1.05	.01	2.6	.03	3.2	.04	3	.01	3.4	.03	2.6	.06	4.9	.05
Right Bank	3.9	0.0	0.8	0.0	3.1	0.0	1.0	0.0	0.7	0.0	2.8	0.0	3.4	0.0	3.4	0.0	3.7	0.0	2.8	0.0	5.1	0.0
Feature Type (riffle, run, or pool)	Run		Riffle		Run		Riffle		Riffle		Run											

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)
All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Leslie Luckenbach Date: 7/27/16

WBID #

Site #

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: 7/27/16 9:46	Location Description (e.g., road crossing): Highway JJ road crossing
Stream Name: Halls Branch	
Current Weather Conditions: sunny	Facility Name(s): Marceline WWTF
Weather Conditions for Past 10 days:	Permit Number(s):
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0500864	Northing (UTM Y): 4395091	Horizontal Accuracy: (EPE / FOM / PDOP) 20ft Meters
Site 02	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: (EPE / FOM / PDOP) Meters
Site 03	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: (EPE / FOM / PDOP) Meters
Site 04	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: (EPE / FOM / PDOP) Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
	UPSTREAM TRANSECT		DOWNSTREAM TRANSECT		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

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

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

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

% Cobble	1,0 % Gravel	35 % Sand	29 % Silt	35 % Mud/Clay	10 % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Minimal algae on mud flats.

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input checked="" type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input checked="" type="checkbox"/> Oil <i>isolated</i>	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

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Stream Name & WBID # _

Date of Survey _

Site # _

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Cody Weibeking, Leslie Luckenhoff

Surveyor's Signature: [Signature]

Date of Survey: 7/27/16

Organization: Geosyntec

Position: Scientist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: Hells Branch Waterbody ID: _____ Site #: 04

Estimated Channel Incision: 1.8 + 0.8m (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: 04994629 UTM Y: 4397091 +/- 2.0ft (meters)

11 UTM X: 0499462 UTM Y: 4397117 +/- 17 (meters)

Average Stream Width: 1.8 (meters) Length of Survey Segment: 150 (meters)
(To determine Length of Reach) (20x average stream width)

Field Staff: Cody Luebben, Leslie Luckenhoff

Dissolved Oxygen

Date: 7/27/16 Time: 10:59

Dissolved Oxygen: 7.31 (mg/L)

Dissolved Oxygen: 87.0 (% sat)

Specific Cond: 708 (µS/cm)

Water Temperature: 23.96 (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	.1	.04	.05	.02	.2	.2	.2	.01	.05	.01	.2	.06	.4	0.03	.2	.01	.3	.03	.2	.02	.1	.01
2	.2	.04	.1	.03	.6	.19	.4	.03	.1	.01	.4	.09	.8	0.01	.3	.02	.5	.01	.4	.02	.2	.01
3	.3	.05	.2	.05	1.0	.19	.6	.03	.2	.02	.6	.09	1.1	0.01	.5	.03	.7	.02	.7	.02	.3	.01
4	.4	.05	.25	.04	1.3	.21	.8	.05	.25	.02	.9	.07	1.5	0	.7	.05	.9	.04	.9	.02	.4	.02
5	.6	.05	.3	.04	1.7	.26	1	.07	.35	.03	1.1	.05	2.0	0	.9	.04	1.1	.03	1.1	.02	1.5	.02
6	.7	.06	.4	.03	2.0	.26	1.1	.07	.4	.02	1.2	.01	2.9	0	1.1	.03	1.2	.02	1.3	.02	1.6	.02
7	.8	.05	.5	.03	2.3	.25	1.3	.09	.5	.02	1.4	.01	3.1	0.01	1.3	.05	1.4	.01	1.5	.02	1.7	.02
8	.9	.04	.55	.04	2.5	.23	1.4	.09	.6	.02	1.6	.02	3.7	.01	1.5	.09	1.6	.01	1.7	.04	.8	.01
9	1.0	.03	.65	.02	2.6	.09	1.5	.05	.75	.01	1.7	.01	4.0	.05	1.6	.05	1.7	.01	1.9	.03	.9	.03
Right Bank	1.2	0.0	.75	0.0	2.9	0.0	1.6	0.0	0.9	0.0	1.8	0.0	4.2	0.0	1.7	0.0	1.9	0.0	2.0	0.0	1.1	0.0
Feature Type	RUN		RUN		FOOT RUN		RUN		RIFLE		RUN		RUN		RIFLE		RUN		RUN		RIFLE	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)
All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Leslie Luckenhoff Date: 7/27/16

WBID # _

Site # _

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: 7/27/16	Location Description (e.g., road crossing): Elwigan Farms
Stream Name: Half Branch	
Current Weather Conditions: Sunny	Facility Name(s): Marceline WWTF
Weather Conditions for Past 10 days: Dry	Permit Number(s):
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: (EPE / FOM / PDOP) Meters
Site 02	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: (EPE / FOM / PDOP) Meters
Site 03	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: (EPE / FOM / PDOP) Meters
Site 04	Easting (UTM X): 04991209	Northing (UTM Y): 4397091	Horizontal Accuracy: (EPE / FOM / PDOP) 20 ft Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
	upstream transect		downstream transect		

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

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

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

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

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

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

% Cobble	4	% Gravel	70	% Sand	16	% Silt	10	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

minimal algae

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

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

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: *Cody Webbering, Leslie Weskenhoff*

Surveyor's Signature: *Leslie Weskenhoff*

Date of Survey: *7/27/16*

Organization: *Geosyntec*

Position: *Scientist*

Appendix D
UAA Interview Data Sheets

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet D – Recreational Use Interview
(must be completed for each interview)

I. Introduction

Stream Name and WBID: Halls Branch WBID 3960

Date & Time (include AM or PM): _ _

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.)

House adjacent to stream

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: Mr. & Mrs. Dan Elwigman

Current mailing address: 29289 Jasmine

Daytime phone number: () Did not provide

E-mail address (optional): _ _

2.a.) Do you live in this area? Yes No

If yes, how many years? _

2.b.) If you don't live in this area, are you still familiar with this stream? Yes No

If yes, how many years? _

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, and complete #2.

2.a.) If no, list reasons stream not used. _

They use Yellow Creek and farm ponds for recreation

b.) From here proceed to "III. Witnessed Use?".

3.) How do you use the stream?

<i>Whole Body Contact Recreation (WBCR)</i>			
<input type="checkbox"/> Swimming	<input type="checkbox"/> Tubing	<input type="checkbox"/> Snorkeling/Skin Diving	<input type="checkbox"/> 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).

<i>Secondary Contact Recreation (SCR)</i>				
<input type="checkbox"/> Fishing	<input type="checkbox"/> Wading	<input type="checkbox"/> Boating	<input type="checkbox"/> Trapping	<input type="checkbox"/> Other:

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).

4.e.) Which of these times and places (if any) did children wade or play?

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?

<i>Whole Body Contact Recreation (WBCR)</i>			
<input type="checkbox"/> Swimming	<input type="checkbox"/> Tubing	<input type="checkbox"/> Snorkeling/Skin Diving	<input type="checkbox"/> 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 (SCR)

Fishing | Wading | Boating | Trapping | Other:

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* (See map requirements in the protocol)._

2.e.) Which of these times and places (if any) did you specifically witness children wading or playing? ___

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 (WBCR)

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)._

WBID # _

Name of Person Interviewed_

Site # _

Date of Interview_

Secondary Contact Recreation (SCR)

<input type="checkbox"/> Fishing	<input type="checkbox"/> Wading	<input type="checkbox"/> Boating	<input type="checkbox"/> Trapping	<input type="checkbox"/> Other:
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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 map* (See map requirements in the protocol). _

2.e.) Which of these times and places (if any) did you hear specifically of children wading or playing? ____

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?)_

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

VI. Additional Comments

From the Interviewee:_

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):

Pre-Assessment Meeting
 Workshop
 On-line training seminar
 Other. If "Other," list: _

Interviewer's Signature: _

Interviewer's Name, Printed: _

Employer (where applicable): _

Interviewer's Phone No.: _

E-mail: _

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet D – Recreational Use Interview

(must be completed for each interview)

I. Introduction

Stream Name and WBID: Halls Branch WBID 3960

Date & Time (include AM or PM): 7/27/16 12:15 pm

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.)

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: Dennis Cupp

Current mailing address: 30441 Kemper Dr.

Daytime phone number: (660) 413-3052

E-mail address (optional): _____

2.a.) Do you live in this area? Yes No

If yes, how many years? At current address for 2+ years, has lived in Marceline his whole life.

2.b.) If you don't live in this area, are you still familiar with this stream? Yes No

If yes, how many years? _____

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, and complete #2.

2.a.) If no, list reasons stream not used. _____

TOO SMALL

b.) From here proceed to "III. Witnessed Use?"

3.) How do you use the stream?

<i>Whole Body Contact Recreation (WBCR)</i>			
<input type="checkbox"/> Swimming	<input type="checkbox"/> Tubing	<input type="checkbox"/> Snorkeling/Skin Diving	<input type="checkbox"/> 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).__

<i>Secondary Contact Recreation (SCR)</i>				
<input type="checkbox"/> Fishing	<input type="checkbox"/> Wading	<input type="checkbox"/> Boating	<input type="checkbox"/> Trapping	<input type="checkbox"/> Other:

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).__

4.e.) Which of these times and places (if any) did children wade or play? _____

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?

<i>Whole Body Contact Recreation (WBCR)</i>			
<input type="checkbox"/> Swimming	<input type="checkbox"/> Tubing	<input type="checkbox"/> Snorkeling/Skin Diving	<input type="checkbox"/> 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 (SCR)

Fishing Wading Boating Trapping Other:

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* (See map requirements in the protocol). _

2.e.) Which of these times and places (if any) did you specifically witness children wading or playing? ____

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? *trapping*

Whole Body Contact Recreation (WBCR)

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 (SCR)

- Fishing
- Wading
- Boating
- Trapping
- Other:

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)?

TRAPPING SEASON FOR NUMEROUS YEARS

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

NEAR WWTF.

2.e.) Which of these times and places (if any) did you hear specifically of children wading or playing?

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?)

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

VI. Additional Comments

From the Interviewee:

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):

- Pre-Assessment Meeting
- Workshop
- On-line training seminar
- Other. If "Other," list:

Interviewer's Signature:

Leslie Luckenhoff

Interviewer's Name, Printed:

Leslie Luckenhoff

Employer (where applicable):

GeoSyntec

Interviewer's Phone No.:

573-499-5446

E-mail:

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet D – Recreational Use Interview

(must be completed for each interview)

I. Introduction

Stream Name and WBID: Halls Branch 3960

Date & Time (include AM or PM): 9/21/16 13:15 PM

Interviewed: Inperson 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.)

Property adjacent to creek

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: Jake and Charlene Shermuly

Current mailing address: _____

Daytime phone number: (660) 376-2295

E-mail address (optional): _____

2.a.) Do you live in this area? Yes No

If yes, how many years? Family farm has been there for 7100 years.

2.b.) If you don't live in this area, are you still familiar with this stream? Yes No

If yes, how many years? _____

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, and complete #2.

2.a.) If no, list reasons stream not used. _____

Not enough water.

b.) From here proceed to "III. Witnessed Use?". NO

3.) How do you use the stream?

Whole Body Contact Recreation (WBCR)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Tubing	<input type="checkbox"/> Snorkeling/Skin Diving	<input type="checkbox"/> Water Skiing
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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 (SCR)

<input type="checkbox"/> Fishing	<input type="checkbox"/> Wading	<input type="checkbox"/> Boating	<input type="checkbox"/> Trapping	<input type="checkbox"/> Other:
----------------------------------	---------------------------------	----------------------------------	-----------------------------------	---------------------------------

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).

4.e.) Which of these times and places (if any) did children wade or play?

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 (WBCR)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Tubing	<input type="checkbox"/> Snorkeling/Skin Diving	<input type="checkbox"/> Water Skiing
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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)?

<i>Secondary Contact Recreation (SCR)</i>				
<input type="checkbox"/> Fishing	<input type="checkbox"/> Wading	<input type="checkbox"/> Boating	<input type="checkbox"/> Trapping	<input type="checkbox"/> Other:

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 map* (See map requirements in the protocol).

2.e.) Which of these times and places (if any) did you hear specifically of children wading or playing? _____

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)?

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

VI. Additional Comments

From the Interviewee:

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):

Pre-Assessment Meeting
 Workshop
 On-line training seminar
 Other. If "Other," list: _

Interviewer's Signature: *Leslie Luellenhoff*

Interviewer's Name, Printed: *Leslie Luellenhoff*

Employer (where applicable): *Geosyntec Consultants*

Interviewer's Phone No.: *573-443-4100*

E-mail: *lluellenhoff@geosyntec.com*

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet D – Recreational Use Interview

(must be completed for each interview)

I. Introduction

Stream Name and WBID: Halls Branch 3960

Date & Time (include AM or PM): 9/21/16 1335 pm

Interviewed: Inperson 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.)

Property adjacent to Halls Branch.

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: George Kelly

Current mailing address: _

Daytime phone number: (660) 375-3295

E-mail address (optional): _

2.a.) Do you live in this area? Yes No

If yes, how many years? Grew up there.

2.b.) If you don't live in this area, are you still familiar with this stream? Yes No

If yes, how many years? _

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, and complete #2.

2.a.) If no, list reasons stream not used. _

b.) From here proceed to "III. Witnessed Use?".

3.) How do you use the stream? (see next page)

Whole Body Contact Recreation (WBCR)			
<input type="checkbox"/> Swimming	<input type="checkbox"/> Tubing	<input type="checkbox"/> Snorkeling/Skin Diving	<input type="checkbox"/> 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 (SCR)				
<input type="checkbox"/> Fishing	<input type="checkbox"/> Wading	<input type="checkbox"/> Boating	<input type="checkbox"/> Trapping	<input checked="" type="checkbox"/> Other:

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)?

when he was a kid. Primarily crossed it to get to bordering property and would throw rocks into it. Also would play on the ice when it froze over.

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

Above the WWTF, which was where his parents farm was located.

4.e.) Which of these times and places (if any) did children wade or play?

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 (WBCR)			
<input type="checkbox"/> Swimming	<input type="checkbox"/> Tubing	<input type="checkbox"/> Snorkeling/Skin Diving	<input type="checkbox"/> 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 (SCR)

Fishing Wading Boating Trapping Other:

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 (See map requirements in the protocol).

2.e.) Which of these times and places (if any) did you specifically witness children wading or playing? _____

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 (WBCR)

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 (SCR)

Fishing Wading Boating Trapping Other:

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 map (See map requirements in the protocol).

2.e.) Which of these times and places (if any) did you hear specifically of children wading or playing?

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?)

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

VI. Additional Comments

From the Interviewee:

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):

Pre-Assessment Meeting Workshop On-line training seminar Other. If "Other," list:

Interviewer's Signature: Leslie Luckenhoff

Interviewer's Name, Printed: Leslie Luckenhoff

Employer (where applicable): Geosyntec Consultants

Interviewer's Phone No.: 513-443-4100 E-mail: lluckenhoff@geosyntec.com