



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0585 Tombstone Creek

Submitted by
SES, Inc.

To
Missouri Department of Natural Resources
Water Protection Program

On

October 14, 2008

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A – Water Body Identification

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

Water Body Name (from USGS 7.5' quad): Tombstone Creek
Missouri Water Body Identification (WBID) Number: 585
8-digit HUC: 10280102
County(ies), Listed Upstream to Downstream: Harrison, Daviess
Upstream Legal Description (from Table H): T62N R26W Section 28
Downstream Legal Description (from Table H): T62N R26W Section 35
Number of sites evaluated: 3
List all site numbers, <u>consecutively upstream to downstream</u> : 1, 2, 3
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): Gilman City WWTF MO0098663
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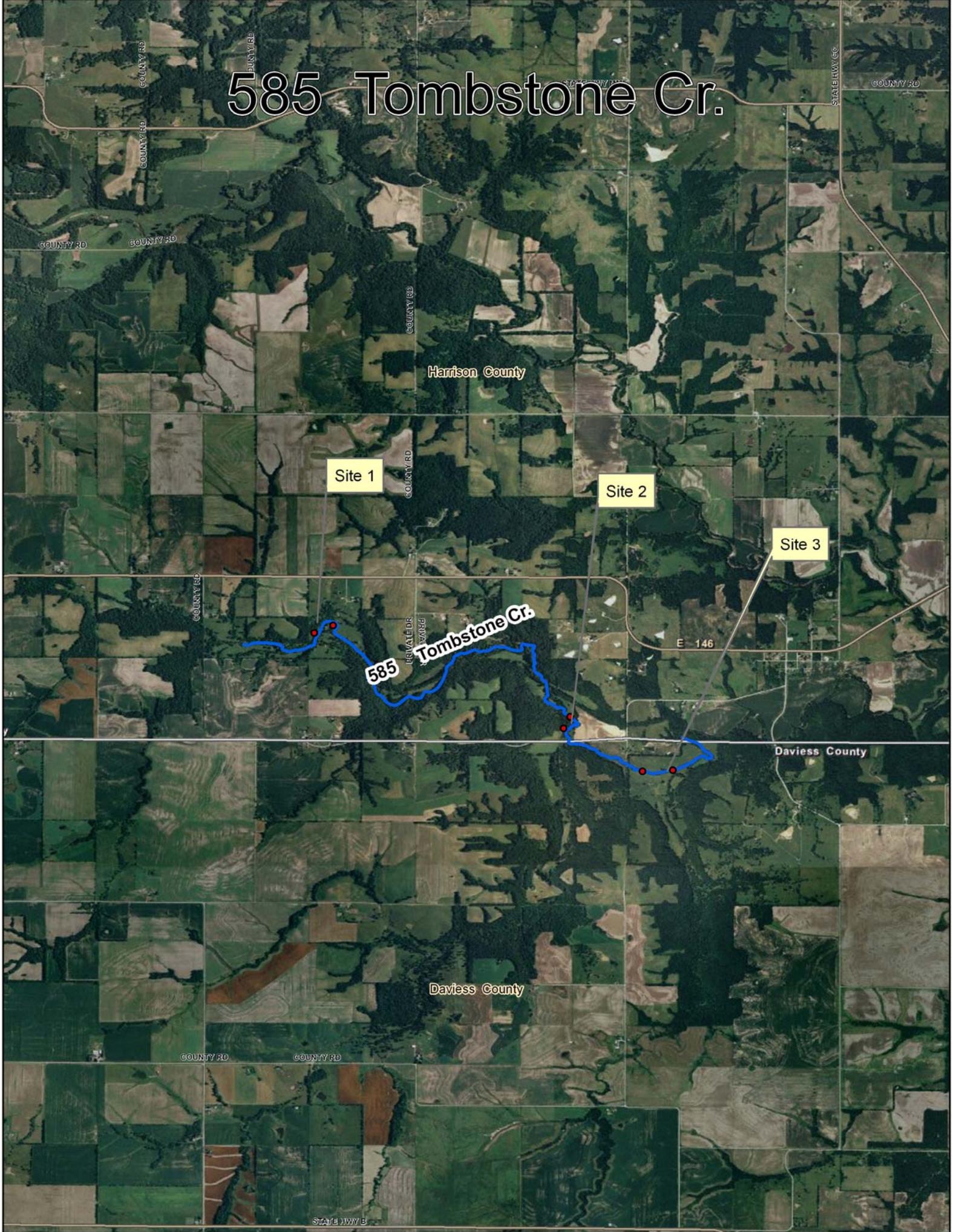
III. UAA Surveyor (please **PRINT** legibly)

Name of Surveyor: Gilisa Gould	Telephone Number: 913-307-0046
Organization/Employer: SES, Inc.	

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: _____ Gilisa Gould _____ **Date:** _____ **10.07.08** _____

585 Tombstone Cr.



Harrison County

Site 1

Site 2

Site 3

585 Tombstone Cr.

E 146

Daviess County

Daviess County

STATE HWY 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)
(must be completed for each site)

Date & Time: 9.19.08 13:05	Location Description (e.g., road crossing): South of Hwy 146
Stream Name: Tombstone Creek	
Current Weather Conditions: clear	Facility Name(s): Gilman City WWTF
Weather Conditions for Past 10 days: 9.52 cm	Permit Number(s): MO0098663
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): 0429334	Northing (UTM Y): 4443929	Horizontal Accuracy: (EPE / FOM / PDOP)	5 Meters
Site 11	Easting (UTM X): 0429477	Northing (UTM Y): 4444003	Horizontal Accuracy: (EPE / FOM / PDOP)	6 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
71	Upstream, N/A	72	Downstream, N/A		
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.)				

Site #: 1

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" 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 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	30 % Gravel	70 % Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

none

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 checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
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.

Site #: 1

Field Data Sheets for Recreational Use Stream Surveys**Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

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

Comments: (Please record any additional comments here.)

Camera is not working. No photos available for this site.

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

Printed Names of Personnel Collecting Data: Gilisa Gould and Chris Schuler

Surveyor's Signature: Gilisa Gould Date of Survey: 9.19.08

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Tombstone Cr.</u> Waterbody ID: <u>585</u> Site #: <u>1</u> Estimated Channel Incision: <u>3</u> (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: <u>0429334</u> UTM Y: <u>4443929</u> +/- <u>5</u> (meters) 11 UTM X: <u>0429477</u> UTM Y: <u>4444003</u> +/- <u>6</u> (meters) Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Chris Schuler</u>	Dissolved Oxygen
	Date: <u>9.19.08</u> Time: <u>13:05</u>
	Dissolved Oxygen: <u>8.7</u> (mg/L)
	Dissolved Oxygen: _____ (% sat)
	Specific Cond: _____ (µS/cm)
	Water Temperature: <u>18.0</u> (°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	0.30	0.10	0.40	0.05	0.30	0.05	0.60	0.01	0.50	0.05	0.40	0.40	0.60	0.05	0.30	0.05	0.30	0.01	0.30	0.10	0.50	0.01
2	0.60	0.15	0.80	0.15	0.60	0.10	1.20	0.15	1.00	0.25	0.80	0.65	1.20	0.10	0.60	0.10	0.60	0.10	0.60	0.10	1.00	0.05
3	0.90	0.30	1.20	0.20	0.90	0.15	1.80	0.10	1.50	0.35	1.20	0.60	1.80	0.15	0.90	0.10	0.90	0.20	0.90	0.10	1.50	0.00
4	1.20	0.05	1.60	0.25	1.20	0.20	2.40	0.15	2.00	0.40	1.60	0.40	2.40	0.15	1.20	0.15	1.20	0.20	1.20	0.05	2.00	0.01
5	1.50	0.05	2.00	0.30	1.50	0.25	3.00	0.15	2.50	0.20	2.00	0.30	3.00	0.10	1.50	0.20	1.50	0.20	1.50	0.10	2.50	0.05
6	1.80	0.30	2.40	0.35	1.80	0.20	3.60	0.20	3.00	0.25	2.40	0.20	3.60	0.10	1.80	0.15	1.80	0.20	1.80	0.05	3.00	0.10
7	2.10	0.30	2.80	0.25	2.10	0.20	4.20	0.20	3.50	0.15	2.80	0.05	4.20	0.10	2.10	0.20	2.10	0.15	2.10	0.10	3.50	0.20
8	2.40	0.30	3.20	0.10	2.40	0.10	4.80	0.15	4.00	0.10	3.20	0.15	4.80	0.05	2.40	0.20	2.40	0.10	2.40	0.10	4.00	0.20
9	2.70	0.10	3.60	0.10	2.70	0.05	5.40	0.05	4.50	0.05	3.60	0.15	5.40	0.05	2.70	0.10	2.70	0.05	2.70	0.10	4.50	0.20
Right Bank	3.00	0.00	4.00	0.00	3.00	0.00	6.00	0.00	5.00	0.00	4.00	0.00	6.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	5.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	pool		pool		run		run		pool		pool		run		run		run		riffle		riffle	

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

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

Depth measurements taken at 10 equally spaced locations along transect (determine 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: Gilisa Gould Date: 10.07.08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)
(must be completed for each site)

Date & Time: 9.19.08 12:30	Location Description (e.g., road crossing): Upstream E. 400 th Street
Stream Name: Tombstone Creek	
Current Weather Conditions: clear	Facility Name(s): Gilman City WWTF
Weather Conditions for Past 10 days: 9.52 cm	Permit Number(s): MO0098663
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): 0431263	Northing (UTM Y): 4443082	Horizontal Accuracy: (EPE / FOM / PDOP) 7 Meters
Site 11	Easting (UTM X): 0431215	Northing (UTM Y): 4442966	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
69	Upstream	70	Downstream		
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.)				

Site #: 2

Field Data Sheets for Recreational Use Stream Surveys

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

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

<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 type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: hay fields
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	25 % Gravel	75% Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

None in water; banks are vegetated

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 type="checkbox"/> Fine sediments	<input checked="" 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.

Site #: 2

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

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: Gilisa Gould and Chris Schuler

Surveyor’s Signature: Gilisa Gould Date of Survey: 9.19.08

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

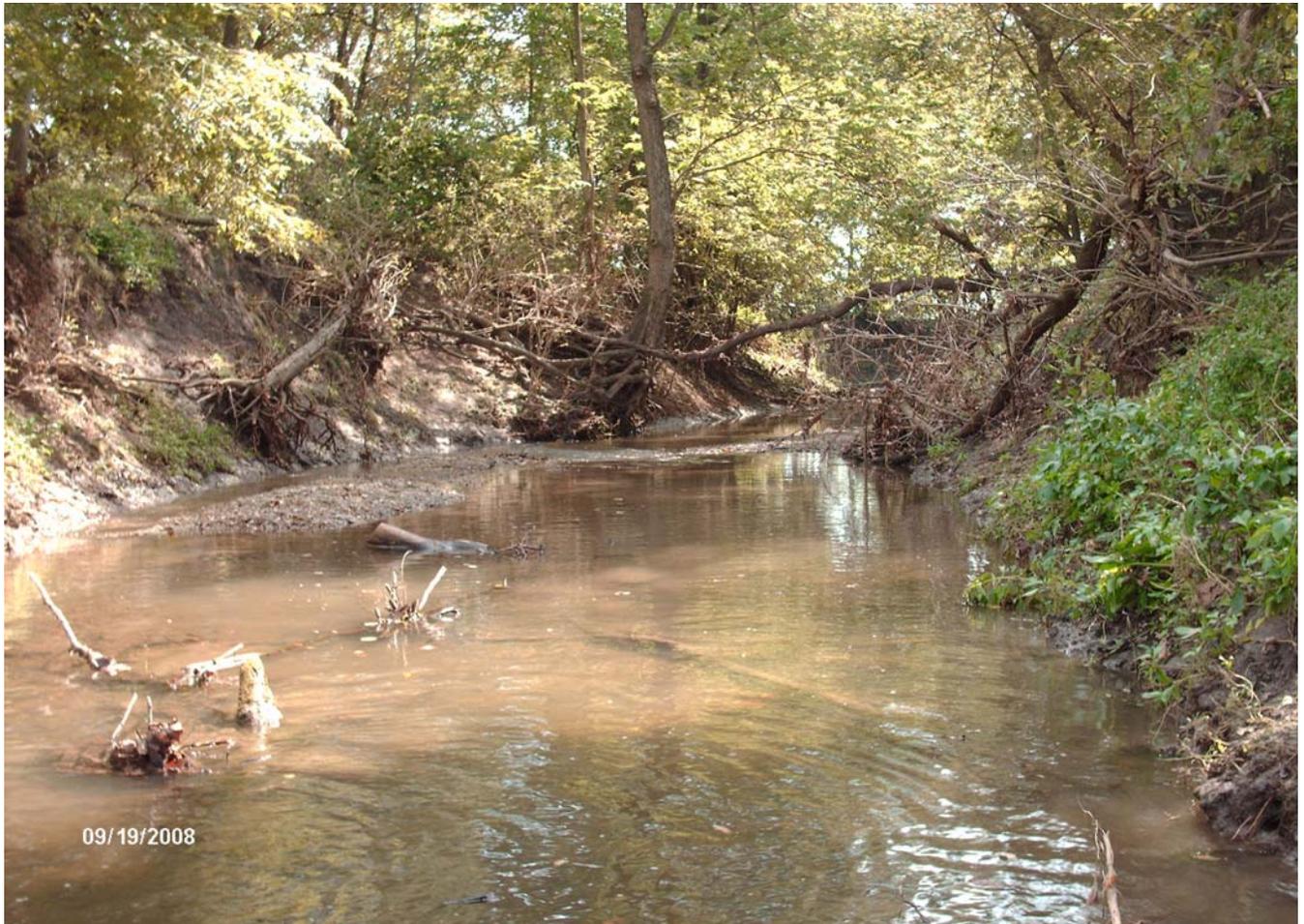
Stream Name: <u>Tombstone Creek</u> Waterbody ID: <u>585</u> Site #: <u>2</u> Estimated Channel Incision: <u>4</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0431263</u> UTM Y: <u>4443082</u> +/- <u>7</u> (meters) 11 UTM X: <u>0431215</u> UTM Y: <u>4442966</u> +/- <u>5</u> (meters) Average Stream Width: <u>3</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Chris Schuler</u>	Dissolved Oxygen Date: <u>9.19.08</u> Time: <u>12:30</u> Dissolved Oxygen: <u>8.2</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>18.2</u> (°C)
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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	0.50	0.45	0.50	0.01	0.60	0.10	0.40	0.05	0.30	0.05	0.30	0.01	0.30	0.10	0.60	0.10	0.30	0.10	0.30	0.10	0.40	0.05
2	1.00	0.70	1.00	0.05	1.20	0.30	0.80	0.10	0.60	0.10	0.60	0.10	0.60	0.15	1.20	0.10	0.60	0.15	0.60	0.30	0.80	0.20
3	1.50	0.75	1.50	0.00	1.80	0.10	1.20	0.15	0.90	0.15	0.90	0.20	0.90	0.30	1.80	0.10	0.90	0.20	0.90	0.40	1.20	0.35
4	2.00	0.50	2.00	0.01	2.40	0.10	1.60	0.20	1.20	0.15	1.20	0.20	1.20	0.35	2.40	0.05	1.20	0.15	1.20	0.45	1.60	0.40
5	2.50	0.40	2.50	0.05	3.00	0.05	2.00	0.20	1.50	0.10	1.50	0.20	1.50	0.35	3.00	0.05	1.50	0.10	1.50	0.35	2.00	0.35
6	3.00	0.20	3.00	0.10	3.60	0.02	2.40	0.20	1.80	0.10	1.80	0.20	1.80	0.25	3.60	0.10	1.80	0.05	1.80	0.25	2.40	0.25
7	3.50	0.05	3.50	0.20	4.20	0.30	2.80	0.25	2.10	0.10	2.10	0.20	2.10	0.10	4.20	0.10	2.10	0.05	2.10	0.15	2.80	0.20
8	4.00	0.15	4.00	0.20	4.80	0.30	3.20	0.30	2.40	0.05	2.40	0.15	2.40	0.10	4.80	0.10	2.40	0.20	2.40	0.10	3.20	0.15
9	4.50	0.10	4.50	0.20	5.40	0.30	3.60	0.15	2.70	0.05	2.70	0.05	2.70	0.05	5.40	0.10	2.70	0.10	2.70	0.05	3.60	0.10
Right Bank	5.00	0.00	5.00	0.00	6.00	0.00	4.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	6.00	0.00	3.00	0.00	3.00	0.00	4.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	pool		riffle		run		pool		run		run		pool		run		run		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine 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: Gilisa Gould Date: 10.07.08



Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)
(must be completed for each site)

Date & Time: 9.19.08 12:00	Location Description (e.g., road crossing): Downstream 320 th Street
Stream Name: Tombstone Creek	
Current Weather Conditions: clear	Facility Name(s): Gilman City WWTF
Weather Conditions for Past 10 days: 9.52 cm	Permit Number(s): MO0098663
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): 0431805	Northing (UTM Y): 4442541	Horizontal Accuracy: (EPE / FOM / PDOP)	5 Meters
Site 11	Easting (UTM X): 0432032	Northing (UTM Y): 4442548	Horizontal Accuracy: (EPE / FOM / PDOP)	7 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
67	downstream	68	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

<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.)				

Site #: 3

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" 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 type="checkbox"/> Fence	<input checked="" 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	30% Gravel	70 % Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

None in water; banks are vegetated

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 type="checkbox"/> Fine sediments	<input checked="" 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.

Site #: 3

Field Data Sheets for Recreational Use Stream Surveys**Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

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

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: Gilisa Gould and Chris Schuler

Surveyor's Signature: Gilisa Gould Date of Survey: 9.19.08

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Tombstone Creek</u> Waterbody ID: <u>585</u> Site #: <u>3</u> Estimated Channel Incision: <u>3</u> (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: <u>0431805</u> UTM Y: <u>4442541</u> +/- <u>5</u> (meters) 11 UTM X: <u>0432032</u> UTM Y: <u>4442548</u> +/- <u>7</u> (meters) Average Stream Width: <u>5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Chris Schuler</u>	Dissolved Oxygen
	Date: <u>9.19.08</u> Time: <u>12:00</u>
	Dissolved Oxygen: <u>9</u> (mg/L)
	Dissolved Oxygen: _____ (% sat)
	Specific Cond: _____ (µS/cm)
	Water Temperature: <u>17.9</u> (°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	0.50	0.05	0.50	0.15	0.40	0.01	0.40	0.10	0.50	0.15	0.70	0.15	0.40	0.45	0.50	0.10	0.50	0.20	0.60	0.20	0.50	0.15
2	1.00	0.10	1.00	0.15	0.80	0.01	0.80	0.10	1.00	0.20	1.40	0.05	0.80	0.25	1.00	0.10	1.00	0.30	1.20	0.25	1.00	0.10
3	1.50	0.15	1.50	0.20	1.20	0.05	1.20	0.20	1.50	0.30	2.10	0.10	1.20	0.25	1.50	0.10	1.50	0.30	1.80	0.20	1.50	0.05
4	2.00	0.15	2.00	0.25	1.60	0.15	1.60	0.20	2.00	0.45	2.80	0.05	1.60	0.10	2.00	0.15	2.00	0.30	2.40	0.30	2.00	0.05
5	2.50	0.10	2.50	0.35	2.00	0.15	2.00	0.10	2.50	0.65	3.50	0.00	2.00	0.10	2.50	0.15	2.50	0.30	3.00	0.30	2.50	0.01
6	3.00	0.15	3.00	0.35	2.40	0.15	2.40	0.10	3.00	0.70	4.20	0.00	2.40	0.15	3.00	0.35	3.00	0.30	3.60	0.20	3.00	0.01
7	3.50	0.15	3.50	0.35	2.80	0.15	2.80	0.05	3.50	0.75	4.90	0.05	2.80	0.20	3.50	0.35	3.50	0.30	4.20	0.05	3.50	0.10
8	4.00	0.15	4.00	0.30	3.20	0.15	3.20	0.05	4.00	0.35	5.60	0.20	3.20	0.30	4.00	0.30	4.00	0.30	4.80	0.05	4.00	0.15
9	4.50	0.20	4.50	0.15	3.60	0.05	3.60	0.01	4.50	0.10	6.30	0.25	3.60	0.15	4.50	0.10	4.50	0.20	5.40	0.10	4.50	0.20
Right Bank	5.00	0.00	5.00	0.00	4.00	0.00	4.00	0.00	5.00	0.00	7.00	0.00	4.00	0.00	5.00	0.00	5.00	0.00	6.00	0.00	5.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	run	pool	run	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: Gilisa Gould

Date: 10.07.08

