



Use Attainability Analysis

for

WBID 0292 Clear Creek

Submitted by
SES, Inc.

To
Missouri Department of Natural Resources
Water Protection Program

On
May 28, 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): Clear Creek
Missouri Water Body Identification (WBID) Number: 292
8-digit HUC: 10240010
County(ies), Listed Upstream to Downstream: Nodaway
Upstream Legal Description (from Table H): 67N 36W Sec36
Downstream Legal Description (from Table H): 66N 37W Sec26
Number of sites evaluated: 7
List all site numbers, <u>consecutively upstream to downstream</u> : 1, 2, 3, 4, 5, 6, 7
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): information not available
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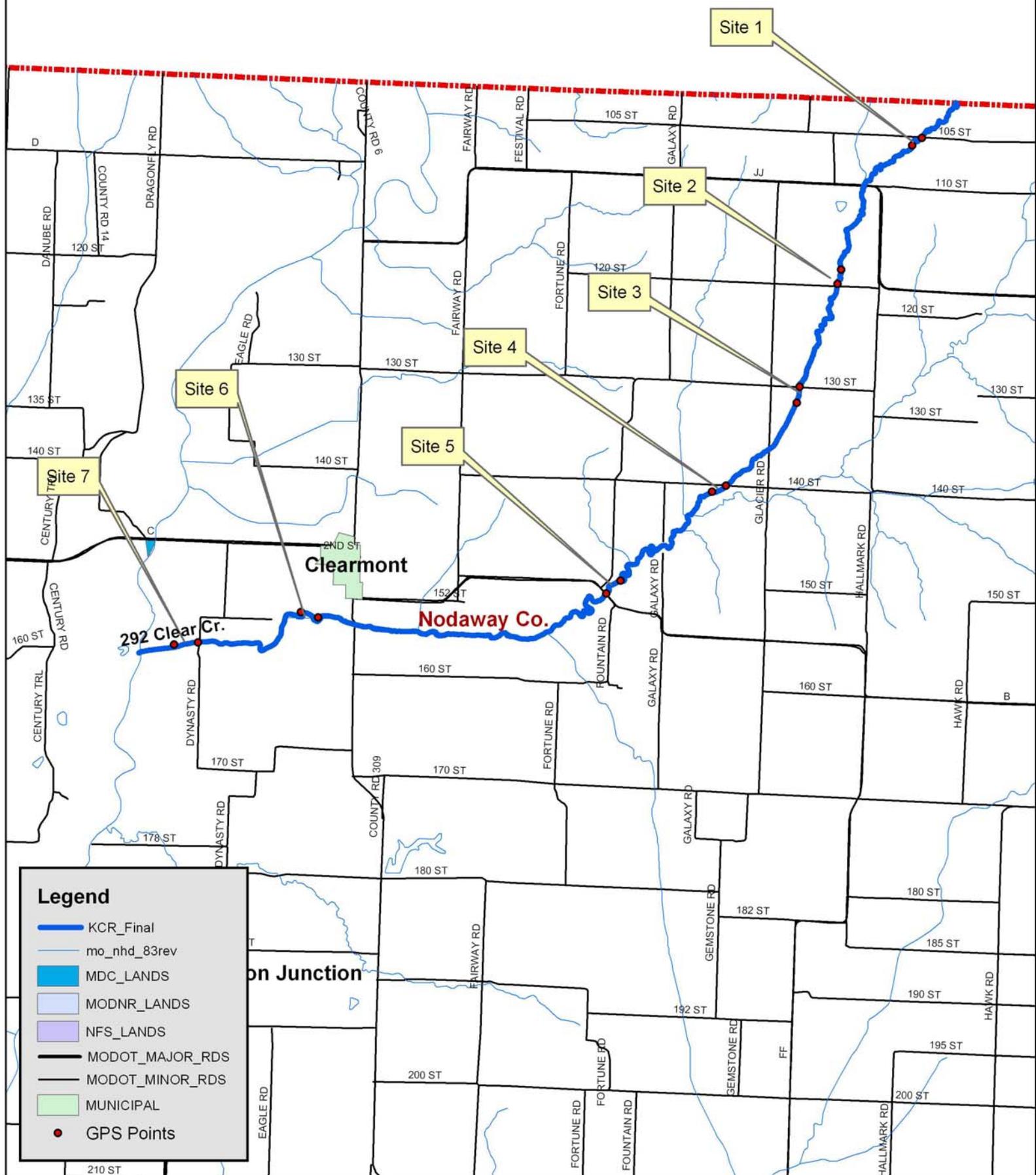
III. UAA Surveyor (please **PRINT** legibly)

Name of Surveyor: Aaron Ball	Telephone Number: 913.307.0046 Ext.14
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: Aaron Ball **Date:** 4.23.08

292 Clear Cr.



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: 4.14.08 8:15	Location Description (e.g., road crossing):
Stream Name: Clear Creek	105th St.
Current Weather Conditions: clear	Facility Name(s): N/A
Weather Conditions for Past 10 days: 2.0 inches	Permit Number(s): N/A
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): 0336863	Northing (UTM Y): 4492819	Horizontal Accuracy: (EPE / FOM / PDOP) 2 Meters		
Site 11	Easting (UTM X): 0336713	Northing (UTM Y): 4492698	Horizontal Accuracy: (EPE / FOM / PDOP) 3 Meters		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
21	cow tracks	22	downstream, T1	23	upstream, T11
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 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 checked="" type="checkbox"/> Livestock Watering
<input type="checkbox"/> None of the above	Comments / Other:			

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

% Cobble	% Gravel	20% Sand	10% Silt	70% 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 grassed.

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 type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown, silty
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.)

none

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 Aaron Ball

Surveyor's Signature: Aaron Ball

Date of Survey: 4.14.08

Organization: SES, Inc.

Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Clear Creek</u> Waterbody ID: <u>292</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>0336863</u> UTM Y: <u>4492819</u> +/- <u>2</u> (meters) 11 UTM X: <u>0336713</u> UTM Y: <u>4492698</u> +/- <u>3</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 Aaron Ball</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4.14.08</u> Time: <u>8:15</u> Dissolved Oxygen: <u>15.3</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>4.3</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	
	1	0.20	0.05	0.20	0.10	0.30	0.10	0.20	0.05	0.20	0.15	0.10	0.10	0.20	0.10	0.20	0.25	0.20	0.10	0.20	0.05	0.30	0.10
	2	0.40	0.10	0.40	0.30	0.60	0.05	0.40	0.05	0.40	0.15	0.20	0.10	0.40	0.15	0.40	0.30	0.40	0.10	0.40	0.20	0.60	0.20
	3	0.60	0.20	0.60	0.30	0.90	0.10	0.60	0.10	0.60	0.15	0.30	0.10	0.60	0.20	0.60	0.40	0.60	0.15	0.60	0.25	0.90	0.15
	4	0.80	0.20	0.80	0.30	1.20	0.10	0.80	0.10	0.80	0.20	0.40	0.20	0.80	0.20	0.80	0.40	0.80	0.30	0.80	0.25	1.20	0.15
	5	1.00	0.20	1.00	0.20	1.50	0.10	1.00	0.10	1.00	0.20	0.50	0.15	1.00	0.20	1.00	0.25	1.00	0.35	1.00	0.20	1.50	0.10
	6	1.20	0.20	1.20	0.15	1.80	0.10	1.20	0.15	1.20	0.20	0.60	0.20	1.20	0.25	1.20	0.20	1.20	0.25	1.20	0.25	1.80	0.10
	7	1.40	0.25	1.40	0.10	2.10	0.10	1.40	0.20	1.40	0.20	0.70	0.20	1.40	0.30	1.40	0.20	1.40	0.20	1.40	0.20	2.10	0.10
	8	1.60	0.30	1.60	0.10	2.40	0.10	1.60	0.20	1.60	0.20	0.80	0.15	1.60	0.35	1.60	0.20	1.60	0.20	1.60	0.10	2.40	0.10
	9	1.80	0.25	1.80	0.10	2.70	0.15	1.80	0.15	1.80	0.20	0.90	0.10	1.80	0.30	1.80	0.20	1.80	0.15	1.80	0.15	2.70	0.10
Right Bank		2.00	0.25	2.00	0.10	3.00	0.10	2.00	0.10	2.00	0.20	1.00	0.10	2.00	0.20	2.00	0.10	2.00	0.10	2.00	0.10	3.00	0.10
Feature Type <small>(riffle, run, or pool)</small>		run		run		riffle		riffle		run		pool											

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine 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: Aaron Ball Date: 4.23.08

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: 4.15.08 9:30	Location Description (e.g., road crossing):
Stream Name: Clear Creek	120th Street
Current Weather Conditions: clear	Facility Name(s): N/A
Weather Conditions for Past 10 days: 2.0 inches	Permit Number(s): N/A
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): 0335593	Northing (UTM Y): 4490742	Horizontal Accuracy: (EPE / FOM / PDOP)	8 Meters	
Site 11	Easting (UTM X): 0335531	Northing (UTM Y): 4490526	Horizontal Accuracy: (EPE / FOM / PDOP)	5 Meters	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
24	upstream, T11	25	downstream, T1		
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 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	20% Gravel	70% Sand	10% 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.
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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 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 checked="" 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.

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.)

none

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 Aaron Ball

Surveyor’s Signature: Aaron Ball

Date of Survey: 4.15.08

Organization: SES, Inc.

Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Clear Creek</u> Waterbody ID: <u>292</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>0335593</u> UTM Y: <u>4490742</u> +/- <u>8</u> (meters) 11 UTM X: <u>0335531</u> UTM Y: <u>4490526</u> +/- <u>5</u> (meters) Average Stream Width: <u>4</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 Aaron Ball</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4.15.08</u> Time: <u>9:30</u> Dissolved Oxygen: <u>15.3</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>5</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	
	1	0.30	0.20	0.40	0.05	0.50	0.01	0.30	0.20	0.40	0.05	0.40	0.20	0.30	0.15	0.40	0.10	0.30	0.10	0.30	0.20	0.40	0.10
	2	0.60	0.20	0.80	0.05	1.00	0.05	0.60	0.20	0.80	0.00	0.80	0.20	0.60	0.20	0.80	0.15	0.60	0.10	0.60	0.30	0.80	0.05
	3	0.90	0.20	1.20	0.05	1.50	0.05	0.90	0.15	1.20	0.05	1.20	0.20	0.90	0.20	1.20	0.10	0.90	0.10	0.90	0.20	1.20	0.10
	4	1.20	0.20	1.60	0.10	2.00	0.05	1.20	0.10	1.60	0.10	1.60	0.10	1.20	0.20	1.60	0.10	1.20	0.10	1.20	0.20	1.60	0.10
	5	1.50	0.10	2.00	0.10	2.50	0.10	1.50	0.10	2.00	0.15	2.00	0.10	1.50	0.15	2.00	0.10	1.50	0.10	1.50	0.15	2.00	0.10
	6	1.80	0.10	2.40	0.15	3.00	0.10	1.80	0.10	2.40	0.15	2.40	0.10	1.80	0.10	2.40	0.10	1.80	0.15	1.80	0.10	2.40	0.10
	7	2.10	0.10	2.80	0.15	3.50	0.10	2.10	0.10	2.80	0.15	2.80	0.15	2.10	0.10	2.80	0.10	2.10	0.15	2.10	0.10	2.80	0.10
	8	2.40	0.10	3.20	0.15	4.00	0.10	2.40	0.10	3.20	0.15	3.20	0.15	2.40	0.10	3.20	0.15	2.40	0.10	2.40	0.10	3.20	0.10
	9	2.70	0.10	3.60	0.20	4.50	0.10	2.70	0.10	3.60	0.15	3.60	0.15	2.70	0.10	3.60	0.15	2.70	0.20	2.70	0.10	3.60	0.15
Right Bank		3.00	0.05	4.00	0.20	5.00	0.10	3.00	0.10	4.00	0.10	4.00	0.10	3.00	0.10	4.00	0.10	3.00	0.20	3.00	0.20	4.00	0.10
Feature Type <small>(riffle, run, or pool)</small>		run		run		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: _____ Date: 4.23.08

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: 4.15.08 9:50	Location Description (e.g., road crossing): 130th Street
Stream Name: Clear Creek	
Current Weather Conditions: clear	Facility Name(s): N/A
Weather Conditions for Past 10 days: 2.0 inches	Permit Number(s): N/A
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): 0334945	Northing (UTM Y): 4488894	Horizontal Accuracy: (EPE / FOM / PDOP) 7 Meters
Site 11	Easting (UTM X): 0334887	Northing (UTM Y): 4488645	Horizontal Accuracy: (EPE / FOM / PDOP) 4 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
26	downstream, T1	27	upstream, T11		
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 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:
Comments: pasture, crop fields				

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%.)

5% Cobble	20% Gravel	30% Sand	% Silt	45% 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 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 checked="" 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.

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.)

none

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

Surveyor's Signature: Aaron Ball

Date of Survey: 4.15.08

Organization: SES, Inc

Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Clear Creek</u> Waterbody ID: <u>292</u> Site #: <u>3</u> Estimated Channel Incision: <u>4.5</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>0334945</u> UTM Y: <u>4488894</u> +/- <u>7</u> (meters) 11 UTM X: <u>0334887</u> UTM Y: <u>4488645</u> +/- <u>4</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 Aaron Ball</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4.15.08</u> Time: <u>9:50</u> Dissolved Oxygen: <u>14.7</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>5.3</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	0.30	0.05	0.30	0.10	0.30	0.10	0.40	0.10	0.20	0.05	0.20	0.05	0.20	0.10	0.20	0.10	0.30	0.10	0.50	0.20	0.20	0.10
	2	0.60	0.10	0.60	0.10	0.60	0.10	0.80	0.10	0.40	0.15	0.40	0.05	0.40	0.20	0.40	0.20	0.60	0.10	1.00	0.20	0.40	0.10
	3	0.90	0.10	0.90	0.15	0.90	0.15	1.20	0.10	0.60	0.15	0.60	0.05	0.60	0.20	0.60	0.20	0.90	0.15	1.50	0.15	0.60	0.15
	4	1.20	0.15	1.20	0.20	1.20	0.15	1.60	0.15	0.80	0.10	0.80	0.05	0.80	0.20	0.80	0.20	1.20	0.15	2.00	0.20	0.80	0.20
	5	1.50	0.20	1.50	0.15	1.50	0.15	2.00	0.10	1.00	0.10	1.00	0.15	1.00	0.20	1.00	0.20	1.50	0.20	2.50	0.20	1.00	0.20
	6	1.80	0.20	1.80	0.15	1.80	0.20	2.40	0.10	1.20	0.15	1.20	0.25	1.20	0.20	1.20	0.25	1.80	0.20	3.00	0.20	1.20	0.20
	7	2.10	0.20	2.10	0.15	2.10	0.15	2.80	0.10	1.40	0.15	1.40	0.25	1.40	0.20	1.40	0.25	2.10	0.15	3.50	0.10	1.40	0.30
	8	2.40	0.10	2.40	0.10	2.40	0.10	3.20	0.10	1.60	0.15	1.60	0.20	1.60	0.25	1.60	0.25	2.40	0.20	4.00	0.00	1.60	0.30
	9	2.70	0.05	2.70	0.10	2.70	0.15	3.60	0.10	1.80	0.10	1.80	0.10	1.80	0.20	1.80	0.20	2.70	0.15	4.50	0.10	1.80	0.30
Right Bank		3.00	0.05	3.00	0.10	3.00	0.10	4.00	0.10	2.00	0.05	2.00	0.05	2.00	0.10	2.00	0.20	3.00	0.10	5.00	0.15	2.00	0.20
Feature Type		run		run		run		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: Aaron Ball Date: 4.23.08

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: 4.15.08 10:20	Location Description (e.g., road crossing): 140th Street
Stream Name: Clear Creek	
Current Weather Conditions: clear	Facility Name(s): N/A
Weather Conditions for Past 10 days: 2.0 inches	Permit Number(s): N/A
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): 0333799	Northing (UTM Y): 4487338	Horizontal Accuracy: (EPE / FOM / PDOP) 7 Meters
Site 11	Easting (UTM X): 0333556	Northing (UTM Y): 4487237	Horizontal Accuracy: (EPE / FOM / PDOP) 3 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
28	downstream, T1	29	upstream, T11		
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 #4

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 checked="" type="checkbox"/> Other:
Comments: crop fields				

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	20% Gravel	70% Sand	10% 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 have grass and trees.

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 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 #4

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

none

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

Printed Names of Personnel Collecting Data: Aaron Ball and Gilisa Gould

Surveyor’s Signature: Aaron Ball

Date of Survey: 4.15.08

Organization: SES, Inc.

Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Clear Creek</u> Waterbody ID: <u>292</u> Site #: <u>4</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>0333799</u> UTM Y: <u>4487338</u> +/- <u>7</u> (meters) 11 UTM X: <u>0333556</u> UTM Y: <u>4487237</u> +/- <u>3</u> (meters) Average Stream Width: <u>4</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 Aaron Ball</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4.15.08</u> Time: <u>10:20</u> Dissolved Oxygen: <u>15.6</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>6.9</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	
1		0.40	0.10	0.40	0.10	0.20	0.10	0.40	0.15	0.40	0.15	0.30	0.05	0.40	0.05	0.30	0.10	0.30	0.30	0.40	0.10	0.40	0.10
2		0.80	0.15	0.80	0.15	0.40	0.15	0.80	0.20	0.80	0.15	0.60	0.10	0.80	0.05	0.60	0.15	0.60	0.30	0.80	0.05	0.80	0.05
3		1.20	0.15	1.20	0.15	0.60	0.15	1.20	0.15	1.20	0.10	0.90	0.20	1.20	0.05	0.90	0.10	0.90	0.20	1.20	0.05	1.20	0.10
4		1.60	0.15	1.60	0.15	0.80	0.20	1.60	0.10	1.60	0.10	1.20	0.20	1.60	0.10	1.20	0.10	1.20	0.15	1.60	0.05	1.60	0.15
5		2.00	0.10	2.00	0.10	1.00	0.20	2.00	0.15	2.00	0.10	1.50	0.20	2.00	0.10	1.50	0.15	1.50	0.10	2.00	0.10	2.00	0.10
6		2.40	0.10	2.40	0.10	1.20	0.25	2.40	0.10	2.40	0.15	1.80	0.15	2.40	0.10	1.80	0.20	1.80	0.10	2.40	0.15	2.40	0.15
7		2.80	0.10	2.80	0.15	1.40	0.20	2.80	0.10	2.80	0.15	2.10	0.10	2.80	0.15	2.10	0.20	2.10	0.10	2.80	0.15	2.80	0.15
8		3.20	0.10	3.20	0.05	1.60	0.25	3.20	0.15	3.20	0.15	2.40	0.10	3.20	0.15	2.40	0.20	2.40	0.01	3.20	0.15	3.20	0.15
9		3.60	0.15	3.60	0.05	1.80	0.20	3.60	0.10	3.60	0.10	2.70	0.10	3.60	0.15	2.70	0.15	2.70	0.01	3.60	0.15	3.60	0.15
Right Bank		4.00	0.20	4.00	0.10	2.00	0.20	4.00	0.10	4.00	0.10	3.00	0.10	4.00	0.20	3.00	0.05	3.00	0.01	4.00	0.15	4.00	0.15
Feature Type		run		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: Aaron Ball Date: 4.23.08

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: 4.15.08 10:55	Location Description (e.g., road crossing):
Stream Name: Clear Creek	Highway B
Current Weather Conditions: clear	Facility Name(s): N/A
Weather Conditions for Past 10 days: 2.0 inches	Permit Number(s): N/A
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): 0332118	Northing (UTM Y): 4485837	Horizontal Accuracy: (EPE / FOM / PDOP) 4 Meters
Site 11	Easting (UTM X): 0331894	Northing (UTM Y): 4485635	Horizontal Accuracy: (EPE / FOM / PDOP) 2 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
30	upstream, T11	31	downstream, T1		
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 #5

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 type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other:
Comments: crop fields, major highway intersection				

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	10% Gravel	80% Sand	10% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

none in water. grass and trees on banks.

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 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 #5

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.)

none

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 Aaron Ball

Surveyor’s Signature: Aaron Ball

Date of Survey: 4.15.08

Organization: SES, Inc.

Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Clear Creek</u> Waterbody ID: <u>292</u> Site #: <u>5</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>0332118</u> UTM Y: <u>4485837</u> +/- <u>4</u> (meters) 11 UTM X: <u>0331894</u> UTM Y: <u>4485635</u> +/- <u>2</u> (meters) Average Stream Width: <u>7</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 Aaron Ball</u>	Dissolved Oxygen Date: <u>4.15.08</u> Time: <u>10:55</u> Dissolved Oxygen: <u>15.7</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>8.9</u> (°C)
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Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Station	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Left Bank																						
1	0.90	0.30	0.80	0.15	0.80	0.20	0.90	0.30	1.10	0.10	0.80	0.15	0.70	0.15	0.90	0.10	0.90	0.10	0.80	0.15	0.90	0.30
2	1.80	0.20	1.60	0.10	1.60	0.20	1.80	0.20	2.20	0.10	1.60	0.10	1.40	0.20	1.80	0.10	1.80	0.00	1.60	0.30	1.80	0.30
3	2.70	0.15	2.40	0.15	2.40	0.20	2.70	0.25	3.30	0.10	2.40	0.10	2.10	0.20	2.70	0.10	2.70	0.05	2.40	0.10	2.70	0.20
4	3.60	0.10	3.20	0.30	3.20	0.10	3.60	0.25	4.40	0.10	3.20	0.10	2.80	0.25	3.60	0.05	3.60	0.10	3.20	0.10	3.60	0.20
5	4.50	0.10	4.00	0.20	4.00	0.20	4.50	0.15	5.50	0.15	4.00	0.10	3.50	0.25	4.50	0.05	4.50	0.10	4.00	0.10	4.50	0.10
6	5.40	0.10	4.80	0.20	4.80	0.20	5.40	0.10	6.60	0.15	4.80	0.15	4.20	0.20	5.40	0.10	5.40	0.20	4.80	0.20	5.40	0.10
7	6.30	0.10	5.60	0.15	5.60	0.15	6.30	0.05	7.70	0.20	5.60	0.20	4.90	0.15	6.30	0.10	6.30	0.20	5.60	0.10	6.30	0.05
8	7.20	0.15	6.40	0.25	6.40	0.15	7.20	0.00	8.80	0.20	6.40	0.20	5.60	0.15	7.20	0.10	7.20	0.30	6.40	0.10	7.20	0.05
9	8.10	0.20	7.20	0.20	7.20	0.15	8.10	0.05	9.90	0.20	7.20	0.20	6.30	0.20	8.10	0.15	8.10	0.20	7.20	0.10	8.10	0.15
Right Bank																						
9.00	9.00	0.15	8.00	0.30	8.00	0.20	9.00	0.15	11.00	0.20	8.00	0.20	7.00	0.30	9.00	0.20	9.00	0.20	8.00	0.10	9.00	0.10
Feature Type	run		run		run		run/riffle		riffle/run		riffle/run		run		riffle/run		run		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: Aaron Ball Date: 4.23.08

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: 4.15.08 13:15	Location Description (e.g., road crossing):
Stream Name: Clear Creek	water treatment facility on the west side of Clearmont, MO
Current Weather Conditions: clear	Facility Name(s): N/A
Weather Conditions for Past 10 days: 2.0 inches	Permit Number(s): N/A
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): 0327354	Northing (UTM Y): 4485269	Horizontal Accuracy: (EPE / FOM / PDOP) 4 Meters
Site 11	Easting (UTM X): 0327087	Northing (UTM Y): 4485347	Horizontal Accuracy: (EPE / FOM / PDOP) 4 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
34	upstream, T11	35	downstream, T1		
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 # 6

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input checked="" 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 checked="" type="checkbox"/> Other:
Comments: crop fields, pasture				

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	% Gravel	30% Sand	30% Silt	40% 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 washed out and bare.

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 type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown/silty
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 # 6

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

none

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 Aaron Ball

Surveyor’s Signature: Aaron Ball

Date of Survey: 4.15.08

Organization: SES, Inc.

Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Clear Creek</u> Waterbody ID: <u>292</u> Site #: <u>6</u> Estimated Channel Incision: <u>5</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>0327354</u> UTM Y: <u>4485269</u> +/- <u>4</u> (meters) 11 UTM X: <u>0327087</u> UTM Y: <u>4485347</u> +/- <u>4</u> (meters) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Aaron Ball</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4.15.08</u> Time: <u>13:15</u> Dissolved Oxygen: <u>13</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>14</u> (°C)
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		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	
	1	0.90	0.10	1.30	0.30	1.00	0.20	1.20	0.40	1.00	0.40	1.30	0.20	1.20	0.30	0.70	0.30	1.10	0.15	0.70	0.10	0.80	0.10
	2	1.80	0.10	2.60	0.40	2.00	0.30	2.40	0.45	2.00	0.40	2.60	0.20	2.40	0.35	1.40	0.50	2.20	0.30	1.40	0.15	1.60	0.20
	3	2.70	0.20	3.90	0.30	3.00	0.20	3.60	0.45	3.00	0.40	3.90	0.20	3.60	0.35	2.10	0.50	3.30	0.30	2.10	0.10	2.40	0.15
	4	3.60	0.30	5.20	0.20	4.00	0.40	4.80	0.35	4.00	0.50	5.20	0.20	4.80	0.25	2.80	0.40	4.40	0.40	2.80	0.10	3.20	0.20
	5	4.50	0.20	6.50	0.10	5.00	0.30	6.00	0.50	5.00	0.35	6.50	0.20	6.00	0.20	3.50	0.40	5.50	0.30	3.50	0.10	4.00	0.30
	6	5.40	0.20	7.80	0.15	6.00	0.40	7.20	0.20	6.00	0.30	7.80	0.20	7.20	0.20	4.20	0.30	6.60	0.30	4.20	0.20	4.80	0.30
	7	6.30	0.30	9.10	0.20	7.00	0.40	8.40	0.20	7.00	0.20	9.10	0.30	8.40	0.20	4.90	0.30	7.70	0.30	4.90	0.25	5.60	0.30
	8	7.20	0.30	10.40	0.20	8.00	0.30	9.60	0.15	8.00	0.30	10.40	0.30	9.60	0.10	5.60	0.50	8.80	0.20	5.60	0.60	6.40	0.40
	9	8.10	0.50	11.70	0.20	9.00	0.15	10.80	0.20	9.00	0.30	11.70	0.30	10.80	0.10	6.30	0.10	9.90	0.10	6.30	0.65	7.20	0.40
Right Bank		9.00	0.50	13.00	0.20	10.00	0.05	12.00	0.10	10.00	0.35	13.00	0.35	12.00	0.20	7.00	0.50	11.00	0.50	7.00	0.65	8.00	0.45
Feature Type		run		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: Aaron Ball Date: 4.23.08

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: 4.15.08 12:45	Location Description (e.g., road crossing): Dynasty Road
Stream Name: Clear Creek	
Current Weather Conditions: clear	Facility Name(s): N/A
Weather Conditions for Past 10 days: 2.0 inches	Permit Number(s): N/A
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): 0325461	Northing (UTM Y): 4484869	Horizontal Accuracy: (EPE / FOM / PDOP) 4 Meters
Site 11	Easting (UTM X): 0325089	Northing (UTM Y): 4484829	Horizontal Accuracy: (EPE / FOM / PDOP) 3 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
32	downstream, T1	33	upstream, T11		
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 # 7

Field Data Sheets for Recreational Use Stream Surveys

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

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

<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 type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other:
Comments: pasture, crop fields				

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	% Gravel	30% Sand	40% Silt	30% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

none in water. trees and shrubs on banks

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 type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
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 # 7

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

none

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 Aaron Ball

Surveyor’s Signature: Aaron Ball

Date of Survey: 4.15.08

Organization: SES, Inc.

Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Clear Creek</u> Waterbody ID: <u>292</u> Site #: <u>7</u> Estimated Channel Incision: <u>6</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>0325461</u> UTM Y: <u>4484869</u> +/- <u>4</u> (meters) 11 UTM X: <u>0325089</u> UTM Y: <u>4484829</u> +/- <u>3</u> (meters) Average Stream Width: <u>9</u> (meters) Length of Survey Segment: <u>180</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Aaron Ball</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4.15.08</u> Time: <u>12:45</u> Dissolved Oxygen: <u>13.1</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>11.3</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	1.00	0.10	0.80	0.10	1.20	0.10	1.40	0.40	0.90	0.40	1.20	0.35	1.40	0.55	1.20	0.05	1.20	0.40	1.60	0.60	1.50	1.00
2	2.00	0.15	1.60	0.15	2.40	0.25	2.80	0.40	1.80	0.45	2.40	0.50	2.80	0.40	2.40	0.10	2.40	0.45	3.20	0.60	3.00	1.00
3	3.00	0.20	2.40	0.35	3.60	0.30	4.20	0.40	2.70	0.45	3.60	0.60	4.20	0.45	3.60	0.05	3.60	0.50	4.80	0.75	4.50	1.00
4	4.00	0.20	3.20	0.30	4.80	0.35	5.60	0.40	3.60	0.30	4.80	0.60	5.60	0.50	4.80	0.25	4.80	0.75	6.40	0.80	6.00	1.00
5	5.00	0.30	4.00	0.30	6.00	0.30	7.00	0.40	4.50	0.30	6.00	0.50	7.00	0.40	6.00	0.45	6.00	0.80	8.00	1.00	7.50	1.00
6	6.00	0.40	4.80	0.40	7.20	0.30	8.40	0.20	5.40	0.40	7.20	0.55	8.40	0.40	7.20	0.50	7.20	0.95	9.60	1.00	9.00	1.00
7	7.00	0.55	5.60	0.50	8.40	0.30	9.80	0.10	6.30	0.45	8.40	0.50	9.80	0.20	8.40	0.55	8.40	1.00	11.20	1.00	10.50	1.00
8	8.00	0.60	6.40	0.50	9.60	0.30	11.20	0.00	7.20	0.50	9.60	0.50	11.20	0.20	9.60	0.60	9.60	1.00	12.80	0.90	12.00	1.00
9	9.00	0.50	7.20	0.60	10.80	0.25	12.60	0.00	8.10	0.55	10.80	0.50	12.60	0.30	10.80	1.00	10.80	0.80	14.40	0.70	13.50	1.00
Right Bank	10.00	0.40	8.00	0.35	12.00	0.25	14.00	0.30	9.00	0.55	12.00	0.30	14.00	0.30	12.00	1.00	12.00	0.80	16.00	0.55	15.00	1.00
Feature Type <small>(riffle, run, or pool)</small>	run		run		run		pool		pool		pool		pool		run		run		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: Aaron Ball Date: 4.23.08

WBID# 0292 Clear Creek



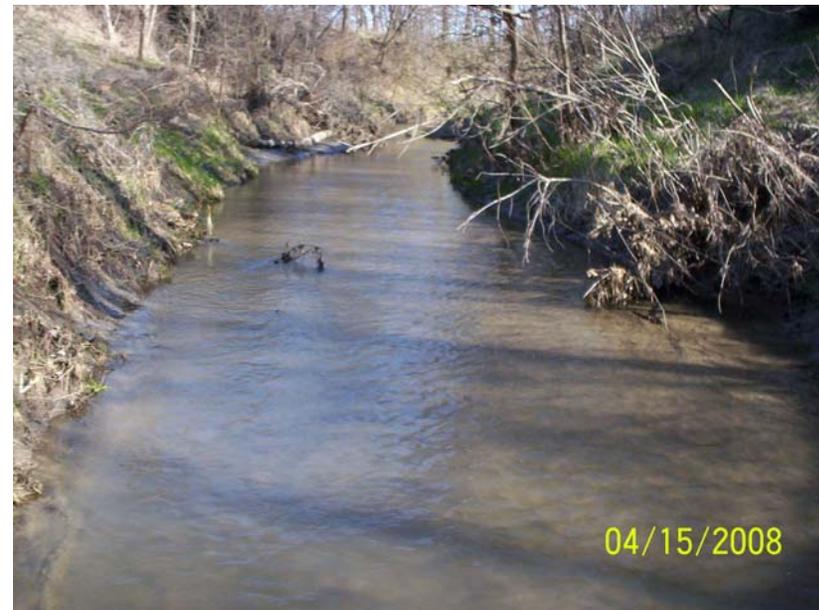
Site# 1 Photo ID# 21 "Cow Tracks"



Site# 1 Photo ID# 22, Downstream, T01



Site# 1 Photo ID# 23, Upstream, T11



Site# 2 Photo ID# 24, Upstream, T11

WBID# 0292 Clear Creek



Site# 2 Photo ID# 25 Downstream, T01



Site# 3 Photo ID# 26, Downstream, T01



Site# 3 Photo ID# 27, Upstream, T11



Site# 4 Photo ID# 28, Downstream, T01

WBID# 0292 Clear Creek



Site# 4 Photo ID# 29 Upstream, T11



Site# 5 Photo ID# 30, Upstream, T11



Site# 5 Photo ID# 31, Downstream, T01



Site# 6 Photo ID# 34, Upstream, T11

WBID# 0292 Clear Creek



04/15/2008

Site# 6 Photo ID# 35 Downstream, T01



04/15/2008

Site# 7 Photo ID# 32, Downstream, T01



04/15/2008

Site# 7 Photo ID# 33, Upstream, T11