



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0390 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: 390
8-digit HUC: 10300101
County(ies), Listed Upstream to Downstream: Clinton, Clay
Upstream Legal Description (from Table H): 54N 31W Sec. 9
Downstream Legal Description (from Table H): 53N 31W 23
Number of sites evaluated: 10
List all site numbers, <u>consecutively upstream to downstream</u> : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
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)

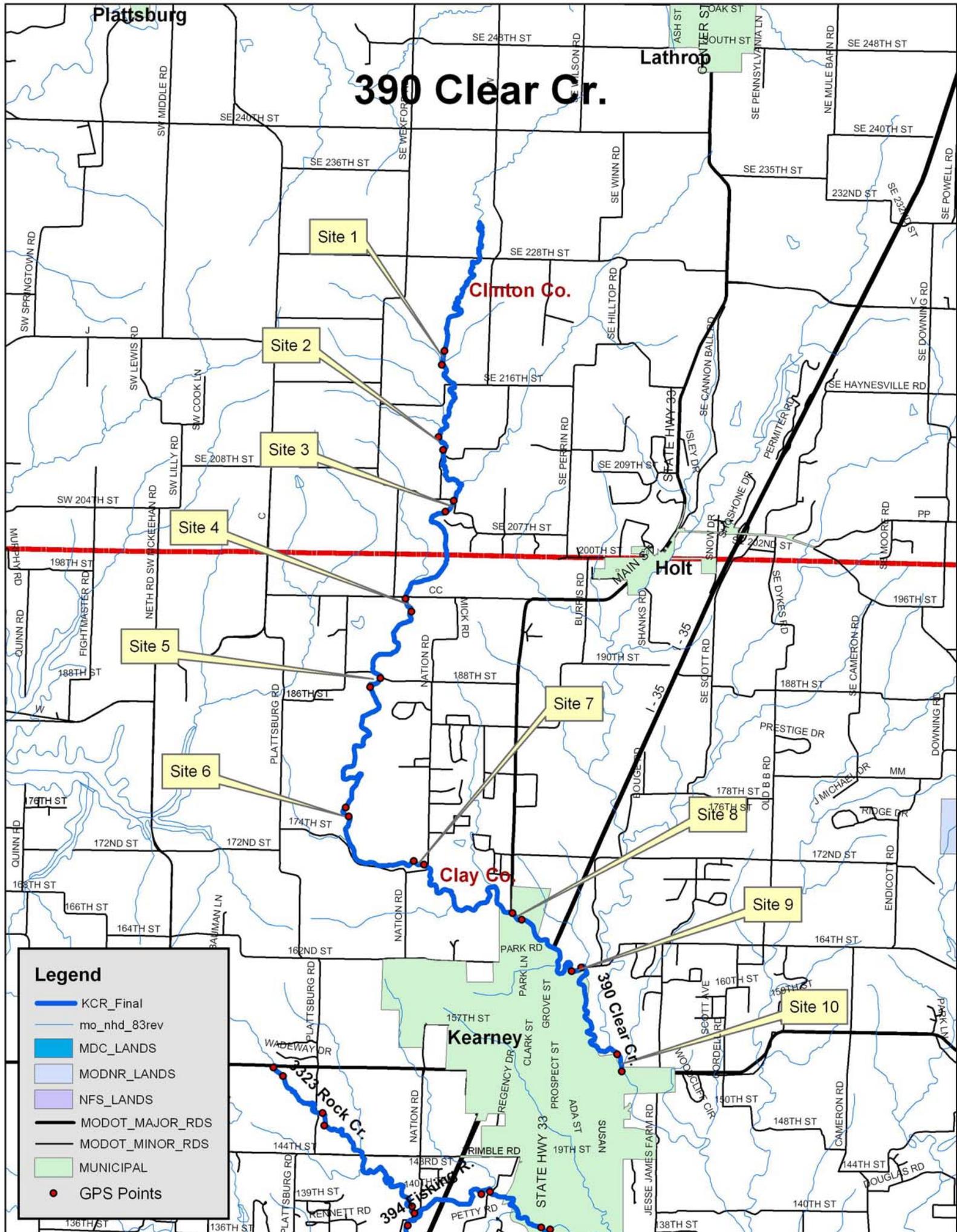
Facility Name(s) and Permit Number(s): Park Estates MO 0126004

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:** _____



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: 5.14.08 12:15	Location Description (e.g., road crossing): 216 St.
Stream Name: Clear Cr.	
Current Weather Conditions: partly cloudy	Facility Name(s): Park Estates
Weather Conditions for Past 10 days: 3.37	Permit Number(s): MO0126004
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): 0380732	Northing (UTM Y): 4372113	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters
Site 11	Easting (UTM X): 0380702	Northing (UTM Y): 4371848	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
44	upstream, T11	45	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 #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%.)

10% Cobble	10% Gravel	80% 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 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 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 #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.)

Most upstream portion of segment not assessed due to landowner refusing access.

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: 5.14.08

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 Cr.</u> Waterbody ID: <u>390</u> Site #: <u>1</u> Estimated Channel Incision: <u>1</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>0380732</u> UTM Y: <u>4372113</u> +/- <u>5</u> (meters) 11 UTM X: <u>0380702</u> UTM Y: <u>4371848</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>5.14.08</u> Time: <u>12:15</u> Dissolved Oxygen: <u>8.8</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>19.8</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	0
	1	0.30	0.15	0.50	0.10	0.50	0.25	0.60	0.15	0.60	0.10	0.50	0.05	0.50	0.15	0.40	0.05	0.40	0.10	0.40	0.10	0.30	0.10
	2	0.60	0.30	1.00	0.10	1.00	0.30	1.20	0.25	1.20	0.05	1.00	0.01	1.00	0.20	0.80	0.05	0.80	0.10	0.80	0.05	0.60	0.15
	3	0.90	0.30	1.50	0.15	1.50	0.35	1.80	0.20	1.80	0.10	1.50	0.01	1.50	0.25	1.20	0.10	1.20	0.10	1.20	0.20	0.90	0.15
	4	1.20	0.30	2.00	0.20	2.00	0.35	2.40	0.20	2.40	0.10	2.00	0.01	2.00	0.30	1.60	0.15	1.60	0.10	1.60	0.20	1.20	0.15
	5	1.50	0.25	2.50	0.15	2.50	0.20	3.00	0.20	3.00	0.05	2.50	0.00	2.50	0.25	2.00	0.05	2.00	0.10	2.00	0.05	1.50	0.10
	6	1.80	0.25	3.00	0.15	3.00	0.20	3.60	0.15	3.60	0.10	3.00	0.05	3.00	0.25	2.40	0.20	2.40	0.00	2.40	0.05	1.80	0.10
	7	2.10	0.20	3.50	0.15	3.50	0.20	4.20	0.25	4.20	0.10	3.50	0.10	3.50	0.25	2.80	0.20	2.80	0.00	2.80	0.05	2.10	0.05
	8	2.40	0.20	4.00	0.20	4.00	0.15	4.80	0.30	4.80	0.10	4.00	0.10	4.00	0.20	3.20	0.15	3.20	0.10	3.20	0.05	2.40	0.05
	9	2.70	0.20	4.50	0.20	4.50	0.10	5.40	0.20	5.40	0.10	4.50	0.10	4.50	0.10	3.60	0.10	3.60	0.05	3.60	0.05	2.70	0.01
Right Bank		3.00	0.00	5.00	0.00	5.00	0.00	6.00	0.00	6.00	0.00	5.00	0.00	5.00	0.00	4.00	0.00	4.00	0.00	4.00	0.00	3.00	0.00
Feature Type		rifle		run		pool		pool		rifle		rifle		pool		run		rifle		rifle		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: 5.23.08

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: 5.14.08 11:30	Location Description (e.g., road crossing):
Stream Name: Clear Cr.	SE Hamilton Road
Current Weather Conditions: partly cloudy	Facility Name(s): Park Estates
Weather Conditions for Past 10 days: 3.37 inches	Permit Number(s): MO0126004
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): 0380621	Northing (UTM Y): 4370483	Horizontal Accuracy: (EPE / FOM / PDOP) 6 Meters
Site 11	Easting (UTM X): 0380703	Northing (UTM Y): 4370237	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
42	upstream, T11	43	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	10% Gravel	90% 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 with sedge and horsetail

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 Aaron Ball

Surveyor's Signature: Aaron Ball

Date of Survey: 5.14.08

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 Cr.</u> Waterbody ID: <u>390</u> Site #: <u>2</u> Estimated Channel Incision: <u>1</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>0380621</u> UTM Y: <u>4370483</u> +/- <u>6</u> (meters) 11 UTM X: <u>0380703</u> UTM Y: <u>4370237</u> +/- <u>5</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 Aaron Ball</u>	Dissolved Oxygen Date: <u>5.14.08</u> Time: <u>11:30</u> Dissolved Oxygen: <u>10.2</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>20.1</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	0
	1	0.20	0.10	0.50	0.10	0.40	0.15	0.30	0.10	0.40	0.15	0.30	0.05	0.20	0.20	0.30	0.05	0.30	0.10	0.30	0.10	0.40	0.10
	2	0.40	0.10	1.00	0.10	0.80	0.20	0.60	0.15	0.80	0.05	0.60	0.10	0.40	0.15	0.60	0.05	0.60	0.15	0.60	0.10	0.80	0.10
	3	0.60	0.10	1.50	0.10	1.20	0.20	0.90	0.15	1.20	0.10	0.90	0.10	0.60	0.10	0.90	0.05	0.90	0.05	0.90	0.10	1.20	0.10
	4	0.80	0.10	2.00	0.05	1.60	0.10	1.20	0.10	1.60	0.10	1.20	0.15	0.80	0.10	1.20	0.10	1.20	0.05	1.20	0.10	1.60	0.10
	5	1.00	0.15	2.50	0.10	2.00	0.10	1.50	0.10	2.00	0.15	1.50	0.20	1.00	0.15	1.50	0.10	1.50	0.05	1.50	0.10	2.00	0.10
	6	1.20	0.20	3.00	0.10	2.40	0.10	1.80	0.10	2.40	0.10	1.80	0.20	1.20	0.05	1.80	0.20	1.80	0.05	1.80	0.10	2.40	0.10
	7	1.40	0.20	3.50	0.01	2.80	0.10	2.10	0.10	2.80	0.10	2.10	0.20	1.40	0.10	2.10	0.20	2.10	0.10	2.10	0.15	2.80	0.10
	8	1.60	0.20	4.00	0.05	3.20	0.10	2.40	0.20	3.20	0.10	2.40	0.20	1.60	0.10	2.40	0.15	2.40	0.10	2.40	0.20	3.20	0.15
	9	1.80	0.10	4.50	0.05	3.60	0.05	2.70	0.10	3.60	0.15	2.70	0.20	1.80	0.05	2.70	0.10	2.70	0.10	2.70	0.10	3.60	0.10
Right Bank		2.00	0.00	5.00	0.00	4.00	0.00	3.00	0.00	4.00	0.00	3.00	0.00	2.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	4.00	0.00
Feature Type		run		run		run		run		run		run		riffle		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: 5.23.08

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: 5.14.08 11:00	Location Description (e.g., road crossing): 207th Street
Stream Name: Clear Cr.	
Current Weather Conditions: partly cloudy	Facility Name(s): Park Estates
Weather Conditions for Past 10 days: 3.37 inches	Permit Number(s): MO0126004
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): 0380905	Northing (UTM Y): 4369279	Horizontal Accuracy: (EPE / FOM / PDOP) 7 Meters
Site 11	Easting (UTM X): 0380748	Northing (UTM Y): 4369071	Horizontal Accuracy: (EPE / FOM / PDOP) 6 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
40	downstream, T1	41	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 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:				

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	80% 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

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 #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 Aaron Ball

Surveyor’s Signature: Aaron Ball

Date of Survey: 5.14.08

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 Cr.</u> Waterbody ID: <u>390</u> Site #: <u>3</u> Estimated Channel Incision: <u>1</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>0380905</u> UTM Y: <u>4369279</u> +/- <u>7</u> (meters) 11 UTM X: <u>0380748</u> UTM Y: <u>4369071</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 Aaron Ball</u>	Dissolved Oxygen
	Date: <u>5.14.08</u> Time: <u>11:00</u>
	Dissolved Oxygen: <u>8.8</u> (mg/L)
	Dissolved Oxygen: _____ (% sat)
	Specific Cond: _____ (µS/cm)
	Water Temperature: <u>21.1</u> (°C)

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	0.70	0.10	0.60	0.10	0.50	0.10	0.60	0.10	0.50	0.35	0.70	0.30	0.60	0.30	0.70	0.40	0.50	0.30	0.70	0.45	0.70	0.10
	2	1.40	0.15	1.20	0.10	1.00	0.10	1.20	0.15	1.00	0.40	1.40	0.30	1.20	0.35	1.40	0.40	1.00	0.35	1.40	0.45	1.40	0.15
	3	2.10	0.15	1.80	0.25	1.50	0.15	1.80	0.10	1.50	0.35	2.10	0.25	1.80	0.35	2.10	0.40	1.50	0.45	2.10	0.40	2.10	0.20
	4	2.80	0.15	2.40	0.20	2.00	0.10	2.40	0.10	2.00	0.30	2.80	0.10	2.40	0.30	2.80	0.45	2.00	0.45	2.80	0.30	2.80	0.20
	5	3.50	0.15	3.00	0.20	2.50	0.15	3.00	0.20	2.50	0.25	3.50	0.05	3.00	0.25	3.50	0.35	2.50	0.45	3.50	0.25	3.50	0.20
	6	4.20	0.10	3.60	0.30	3.00	0.20	3.60	0.20	3.00	0.30	4.20	0.10	3.60	0.20	4.20	0.40	3.00	0.40	4.20	0.20	4.20	0.30
	7	4.90	0.10	4.20	0.20	3.50	0.20	4.20	0.20	3.50	0.15	4.90	0.10	4.20	0.20	4.90	0.30	3.50	0.40	4.90	0.20	4.90	0.35
	8	5.60	0.10	4.80	0.35	4.00	0.30	4.80	0.30	4.00	0.10	5.60	0.10	4.80	0.20	5.60	0.20	4.00	0.50	5.60	0.20	5.60	0.40
	9	6.30	0.40	5.40	0.25	4.50	0.15	5.40	0.30	4.50	0.10	6.30	0.10	5.40	0.10	6.30	0.20	4.50	0.40	6.30	0.10	6.30	0.35
Right Bank		7.00	0.00	6.00	0.00	5.00	0.00	6.00	0.00	5.00	0.00	7.00	0.00	6.00	0.00	7.00	0.00	5.00	0.00	7.00	0.00	7.00	0.00
Feature Type		run		run		run		run		run		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: 5.23.08

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: 5.14.08 10:20	Location Description (e.g., road crossing):
Stream Name: Clear Cr.	Highway CC
Current Weather Conditions: clear	Facility Name(s): Park Estates
Weather Conditions for Past 10 days: 3.37 inches	Permit Number(s): MO0126004
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): 0379993	Northing (UTM Y): 4367427	Horizontal Accuracy: (EPE / FOM / PDOP) 4 Meters
Site 11	Easting (UTM X): 0380107	Northing (UTM Y): 4367183	Horizontal Accuracy: (EPE / FOM / PDOP) 7 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
38	downstream, T1	39	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 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%.)

10% Cobble	20% 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 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.)

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: 5.14.08

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 Cr.</u> Waterbody ID: <u>390</u> Site #: <u>4</u> Estimated Channel Incision: <u>1</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>0379993</u> UTM Y: <u>4367427</u> +/- <u>4</u> (meters) 11 UTM X: <u>0380107</u> UTM Y: <u>4367183</u> +/- <u>7</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 Aaron Ball</u>	Dissolved Oxygen Date: <u>5.14.08</u> Time: <u>10:20</u> Dissolved Oxygen: <u>10.6</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>14.9</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	0
	1	0.70	0.30	0.60	0.40	0.70	0.10	0.70	0.20	0.80	0.20	0.60	0.10	0.60	0.30	0.70	0.20	0.50	0.05	0.50	0.35	0.40	0.25
	2	1.40	0.35	1.20	0.30	1.40	0.10	1.40	0.30	1.60	0.20	1.20	0.20	1.20	0.35	1.40	0.20	1.00	0.10	1.00	0.40	0.80	0.50
	3	2.10	0.40	1.80	0.20	2.10	0.15	2.10	0.15	2.40	0.20	1.80	0.30	1.80	0.30	2.10	0.20	1.50	0.10	1.50	0.45	1.20	0.85
	4	2.80	0.40	2.40	0.20	2.80	0.20	2.80	0.10	3.20	0.20	2.40	0.35	2.40	0.25	2.80	0.15	2.00	0.30	2.00	0.30	1.60	0.70
	5	3.50	0.35	3.00	0.20	3.50	0.20	3.50	0.10	4.00	0.20	3.00	0.40	3.00	0.20	3.50	0.15	2.50	0.30	2.50	0.20	2.00	0.55
	6	4.20	0.30	3.60	0.10	4.20	0.10	4.20	0.10	4.80	0.10	3.60	0.55	3.60	0.25	4.20	0.30	3.00	0.40	3.00	0.15	2.40	0.50
	7	4.90	0.20	4.20	0.10	4.90	0.05	4.90	0.20	5.60	0.20	4.20	0.60	4.20	0.30	4.90	0.35	3.50	0.55	3.50	0.05	2.80	0.40
	8	5.60	0.15	4.80	0.05	5.60	0.05	5.60	0.10	6.40	0.25	4.80	0.60	4.80	0.35	5.60	0.30	4.00	0.60	4.00	0.05	3.20	0.20
	9	6.30	0.10	5.40	0.05	6.30	0.20	6.30	0.45	7.20	0.40	5.40	0.55	5.40	0.30	6.30	0.30	4.50	0.40	4.50	0.10	3.60	0.10
Right Bank		7.00	0.00	6.00	0.00	7.00	0.00	7.00	0.00	8.00	0.00	6.00	0.00	6.00	0.00	7.00	0.00	5.00	0.00	5.00	0.00	4.00	0.00
Feature Type		run		run		run		run		run		pool		run		pool		pool		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: 5.23.08

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: 5.14.08 9:20	Location Description (e.g., road crossing): 188th Road
Stream Name: Clear Cr.	
Current Weather Conditions: clear	Facility Name(s): Park Estates
Weather Conditions for Past 10 days: 3.37 inches	Permit Number(s): MO0126004
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): 0379517	Northing (UTM Y): 4365920	Horizontal Accuracy: (EPE / FOM / PDOP) 2 Meters
Site 11	Easting (UTM X): 0379330	Northing (UTM Y): 4365746	Horizontal Accuracy: (EPE / FOM / PDOP) 4 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
36	downstream, T1	37	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 #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 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 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	70% Sand	% Silt	% Mud/Clay	5% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

none in water

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.

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 Aaron Ball

Surveyor’s Signature: Aaron Ball

Date of Survey: 5.14.08

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 Cr.</u> Waterbody ID: <u>390</u> Site #: <u>5</u> Estimated Channel Incision: <u>2</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>0379517</u> UTM Y: <u>4365920</u> +/- <u>2</u> (meters) 11 UTM X: <u>0379330</u> UTM Y: <u>4365746</u> +/- <u>4</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>5.14.08</u> Time: <u>9:20</u>
	Dissolved Oxygen: <u>9.2</u> (mg/L)
	Dissolved Oxygen: _____ (% sat)
	Specific Cond: _____ (µS/cm)
	Water Temperature: <u>16.2</u> (°C)

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	0
	1	0.50	0.10	0.70	0.40	0.90	0.25	0.60	0.20	0.70	0.20	0.50	0.30	0.70	0.05	0.80	0.20	0.70	0.05	0.60	0.10	0.70	0.10
	2	1.00	0.25	1.40	0.45	1.80	0.30	1.20	0.20	1.40	0.30	1.00	0.30	1.40	0.05	1.60	0.10	1.40	0.10	1.20	0.10	1.40	0.20
	3	1.50	0.30	2.10	0.45	2.70	0.35	1.80	0.10	2.10	0.30	1.50	0.25	2.10	0.10	2.40	0.10	2.10	0.15	1.80	0.20	2.10	0.25
	4	2.00	0.30	2.80	0.40	3.60	0.20	2.40	0.00	2.80	0.30	2.00	0.20	2.80	0.20	3.20	0.10	2.80	0.20	2.40	0.20	2.80	0.30
	5	2.50	0.35	3.50	0.50	4.50	0.20	3.00	0.00	3.50	0.05	2.50	0.20	3.50	0.20	4.00	0.15	3.50	0.15	3.00	0.30	3.50	0.40
	6	3.00	0.25	4.20	0.40	5.40	0.05	3.60	0.10	4.20	0.05	3.00	0.20	4.20	0.15	4.80	0.20	4.20	0.20	3.60	0.40	4.20	0.45
	7	3.50	0.15	4.90	0.40	6.30	0.00	4.20	0.20	4.90	0.10	3.50	0.20	4.90	0.20	5.60	0.30	4.90	0.20	4.20	0.40	4.90	0.40
	8	4.00	0.10	5.60	0.40	7.20	0.00	4.80	0.20	5.60	0.10	4.00	0.20	5.60	0.10	6.40	0.30	5.60	0.20	4.80	0.20	5.60	0.30
	9	4.50	0.10	6.30	0.40	8.10	0.20	5.40	0.15	6.30	0.05	4.50	0.20	6.30	0.10	7.20	0.40	6.30	0.20	5.40	0.30	6.30	0.15
Right Bank		5.00	0.00	7.00	0.00	9.00	0.00	6.00	0.00	7.00	0.00	5.00	0.00	7.00	0.00	8.00	0.00	7.00	0.00	6.00	0.00	7.00	0.00
Feature Type		run		run		run		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: Aaron Ball Date: 5.23.08

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: 4.17.08 13:40	Location Description (e.g., road crossing):
Stream Name: Clear Creek	North off of 174th St.
Current Weather Conditions: cloudy, light precipitation	Facility Name(s): Park Estates
Weather Conditions for Past 10 days: 3.37 inches	Permit Number(s): MO 0126004
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): 0378905	Northing (UTM Y): 4363455	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters
Site 11	Easting (UTM X): 0378917	Northing (UTM Y): 4363297	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
83	upstream, T11	84	downstream, T1	85	rookery at 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.)				

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	45% Gravel	55% 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 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.

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 Aaron Ball

Surveyor’s Signature: Aaron Ball

Date of Survey: 4.17.08

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>390</u> Site #: <u>6</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>0378905</u> UTM Y: <u>4363455</u> +/- <u>5</u> (meters) 11 UTM X: <u>0378917</u> UTM Y: <u>4363297</u> +/- <u>5</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 Aaron Ball</u>	Dissolved Oxygen Date: <u>4.17.08</u> Time: <u>13:40</u> Dissolved Oxygen: <u>10.2</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>13.7</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	0
1		0.50	0.10	0.70	0.05	0.70	0.05	0.40	0.10	0.50	0.05	0.60	0.10	0.80	0.15	0.70	0.10	0.80	0.05	0.60	0.10	0.60	0.05
2		1.00	0.10	1.40	0.00	1.40	0.05	0.80	0.15	1.00	0.10	1.20	0.15	1.60	0.10	1.40	0.10	1.60	0.05	1.20	0.05	1.20	0.10
3		1.50	0.05	2.10	0.10	2.10	0.05	1.20	0.15	1.50	0.00	1.80	0.10	2.40	0.00	2.10	0.10	2.40	0.10	1.80	0.05	1.80	0.10
4		2.00	0.05	2.80	0.15	2.80	0.05	1.60	0.05	2.00	0.05	2.40	0.10	3.20	0.00	2.80	0.10	3.20	0.10	2.40	0.10	2.40	0.20
5		2.50	0.10	3.50	0.15	3.50	0.00	2.00	0.10	2.50	0.10	3.00	0.10	4.00	0.10	3.50	0.20	4.00	0.10	3.00	0.20	3.00	0.20
6		3.00	0.10	4.20	0.10	4.20	0.00	2.40	0.10	3.00	0.10	3.60	0.10	4.80	0.15	4.20	0.20	4.80	0.10	3.60	0.20	3.60	0.20
7		3.50	0.10	4.90	0.10	4.90	0.10	2.80	0.15	3.50	0.10	4.20	0.10	5.60	0.10	4.90	0.20	5.60	0.15	4.20	0.15	4.20	0.20
8		4.00	0.10	5.60	0.10	5.60	0.10	3.20	0.20	4.00	0.15	4.80	0.10	6.40	0.10	5.60	0.10	6.40	0.10	4.80	0.10	4.80	0.15
9		4.50	0.10	6.30	0.05	6.30	0.10	3.60	0.20	4.50	0.15	5.40	0.10	7.20	0.05	6.30	0.05	7.20	0.10	5.40	0.05	5.40	0.10
Right Bank		5.00	0.05	7.00	0.05	7.00	0.20	4.00	0.20	5.00	0.20	6.00	0.10	8.00	0.20	7.00	0.05	8.00	0.20	6.00	0.10	6.00	0.10
Feature Type <small>(riffle, run, or pool)</small>		run		run		run		run		run		run		run		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: _____

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: 4.17.08 13:05	Location Description (e.g., road crossing):
Stream Name: Clear Creek	Nation Road
Current Weather Conditions: cloudy, light precipitation	Facility Name(s): Park Estates
Weather Conditions for Past 10 days: 3.37 inches	Permit Number(s): MO 0126004
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): 0380148	Northing (UTM Y): 4362459	Horizontal Accuracy: (EPE / FOM / PDOP) 2 Meters
Site 11	Easting (UTM X): 0380344	Northing (UTM Y): 4362391	Horizontal Accuracy: (EPE / FOM / PDOP) 3 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
81	upstream, T11	82	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 #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 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	5% Gravel	95% 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

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 #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.)

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: 4.17.08

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>390</u> Site #: <u>7</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>0380148</u> UTM Y: <u>4362459</u> +/- <u>2</u> (meters) 11 UTM X: <u>0380344</u> UTM Y: <u>4362391</u> +/- <u>3</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 Aaron Ball</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4.17.08</u> Time: <u>13:05</u> Dissolved Oxygen: <u>11.8</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>13.6</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	0.80	0.10	0.60	0.35	0.80	0.25	0.70	0.05	0.70	0.05	0.50	0.25	0.60	0.05	0.80	0.05	0.50	0.20	0.60	0.15	0.60	0.10
	2	1.60	0.15	1.20	0.20	1.60	0.10	1.40	0.10	1.40	0.05	1.00	0.25	1.20	0.10	1.60	0.05	1.00	0.30	1.20	0.10	1.20	0.15
	3	2.40	0.05	1.80	0.30	2.40	0.20	2.10	0.10	2.10	0.10	1.50	0.20	1.80	0.05	2.40	0.10	1.50	0.25	1.80	0.10	1.80	0.30
	4	3.20	0.10	2.40	0.20	3.20	0.20	2.80	0.15	2.80	0.10	2.00	0.15	2.40	0.10	3.20	0.05	2.00	0.20	2.40	0.15	2.40	0.25
	5	4.00	0.15	3.00	0.15	4.00	0.20	3.50	0.05	3.50	0.15	2.50	0.10	3.00	0.10	4.00	0.05	2.50	0.20	3.00	0.15	3.00	0.25
	6	4.80	0.20	3.60	0.10	4.80	0.15	4.20	0.15	4.20	0.20	3.00	0.10	3.60	0.15	4.80	0.05	3.00	0.15	3.60	0.15	3.60	0.15
	7	5.60	0.10	4.20	0.10	5.60	0.15	4.90	0.15	4.90	0.15	3.50	0.05	4.20	0.10	5.60	0.05	3.50	0.10	4.20	0.15	4.20	0.05
	8	6.40	0.10	4.80	0.10	6.40	0.15	5.60	0.05	5.60	0.15	4.00	0.05	4.80	0.15	6.40	0.15	4.00	0.10	4.80	0.10	4.80	0.05
	9	7.20	0.10	5.40	0.10	7.20	0.10	6.30	0.15	6.30	0.15	4.50	0.05	5.40	0.05	7.20	0.30	4.50	0.05	5.40	0.10	5.40	0.10
Right Bank		8.00	0.10	6.00	0.10	8.00	0.05	7.00	0.15	7.00	0.20	5.00	0.05	6.00	0.15	8.00	0.15	5.00	0.05	6.00	0.10	6.00	0.05
Feature Type		run		run		run		run		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: _____

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: 4.17.08 12:30	Location Description (e.g., road crossing): Highway 33
Stream Name: Clear Creek	
Current Weather Conditions: cloudy, light precipitation	Facility Name(s): Park Estates
Weather Conditions for Past 10 days: 3.37 inches	Permit Number(s): MO 0126004
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): 0382020	Northing (UTM Y): 4361469	Horizontal Accuracy: (EPE / FOM / PDOP)	5 Meters
Site 11	Easting (UTM X): 0382187	Northing (UTM Y): 4361346	Horizontal Accuracy: (EPE / FOM / PDOP)	4 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
79	downstream, T1	80	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 #8

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 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	5% Gravel	95% 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

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 #8

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 Aaron Ball

Surveyor’s Signature: Aaron Ball

Date of Survey: 4.17.08

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>390</u> Site #: <u>8</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>0382020</u> UTM Y: <u>4361469</u> +/- <u>5</u> (meters) 11 UTM X: <u>0382187</u> UTM Y: <u>4361346</u> +/- <u>4</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 Aaron Ball</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4.17.08</u> Time: <u>12:30</u> Dissolved Oxygen: <u>9.6</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>13.3</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	0.60	0.25	0.80	0.15	0.70	0.10	0.90	0.10	0.60	0.20	0.70	0.10	0.80	0.05	0.50	0.10	0.70	0.10	0.70	0.10	0.80	0.20
	2	1.20	0.10	1.60	0.20	1.40	0.10	1.80	0.15	1.20	0.20	1.40	0.25	1.60	0.05	1.00	0.10	1.40	0.10	1.40	0.15	1.60	0.15
	3	1.80	0.20	2.40	0.15	2.10	0.20	2.70	0.20	1.80	0.20	2.10	0.15	2.40	0.05	1.50	0.15	2.10	0.10	2.10	0.10	2.40	0.20
	4	2.40	0.20	3.20	0.10	2.80	0.20	3.60	0.10	2.40	0.30	2.80	0.20	3.20	0.05	2.00	0.15	2.80	0.10	2.80	0.10	3.20	0.20
	5	3.00	0.25	4.00	0.10	3.50	0.20	4.50	0.10	3.00	0.20	3.50	0.20	4.00	0.10	2.50	0.20	3.50	0.10	3.50	0.20	4.00	0.15
	6	3.60	0.25	4.80	0.10	4.20	0.10	5.40	0.15	3.60	0.20	4.20	0.20	4.80	0.05	3.00	0.20	4.20	0.15	4.20	0.20	4.80	0.15
	7	4.20	0.20	5.60	0.10	4.90	0.10	6.30	0.25	4.20	0.15	4.90	0.15	5.60	0.05	3.50	0.25	4.90	0.20	4.90	0.20	5.60	0.10
	8	4.80	0.20	6.40	0.10	5.60	0.10	7.20	0.10	4.80	0.10	5.60	0.10	6.40	0.25	4.00	0.25	5.60	0.20	5.60	0.20	6.40	0.10
	9	5.40	0.20	7.20	0.10	6.30	0.10	8.10	0.10	5.40	0.15	6.30	0.10	7.20	0.20	4.50	0.25	6.30	0.25	6.30	0.20	7.20	0.05
Right Bank		6.00	0.20	8.00	0.15	7.00	0.20	9.00	0.05	6.00	0.10	7.00	0.10	8.00	0.20	5.00	0.25	7.00	0.20	7.00	0.35	8.00	0.05
Feature Type		run		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: Aaron Ball Date: _____

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: 4.17.08 11:00	Location Description (e.g., road crossing):
Stream Name: Clear Creek	Hall Road
Current Weather Conditions: cloudy, light precipitation	Facility Name(s): Park Estates
Weather Conditions for Past 10 days: 3.37 inches	Permit Number(s): MO 0126004
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): 0383133	Northing (UTM Y): 4360372	Horizontal Accuracy: (EPE / FOM / PDOP)	5 Meters
Site 11	Easting (UTM X): 1383347	Northing (UTM Y): 4360422	Horizontal Accuracy: (EPE / FOM / PDOP)	5 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
77	upstream, T11	78	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 #9

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 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	5% Gravel	95% 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

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.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Clear Creek</u> Waterbody ID: <u>390</u> Site #: <u>9</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>0383133</u> UTM Y: <u>4360372</u> +/- <u>5</u> (meters) 11 UTM X: <u>0383347</u> UTM Y: <u>4360422</u> +/- <u>5</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 Aaron Ball</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4.17.08</u> Time: <u>11:00</u> Dissolved Oxygen: <u>1.1</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>13.1</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	0.70	0.40	0.50	0.20	0.50	0.20	0.60	0.15	0.40	0.05	0.60	0.10	0.80	0.05	0.50	0.30	0.50	0.20	0.60	0.05	0.50	0.10
2	1.40	0.20	1.00	0.20	1.00	0.25	1.20	0.20	0.80	0.10	1.20	0.10	1.60	0.50	1.00	0.30	1.00	0.20	1.20	0.05	1.00	0.10
3	2.10	0.20	1.50	0.20	1.50	0.20	1.80	0.20	1.20	0.10	1.80	0.10	2.40	0.20	1.50	0.30	1.50	0.15	1.80	0.10	1.50	0.15
4	2.80	0.15	2.00	0.15	2.00	0.20	2.40	0.20	1.60	0.20	2.40	0.10	3.20	0.20	2.00	0.20	2.00	0.20	2.40	0.20	2.00	0.20
5	3.50	0.20	2.50	0.10	2.50	0.20	3.00	0.20	2.00	0.25	3.00	0.10	4.00	0.20	2.50	0.20	2.50	0.20	3.00	0.30	2.50	0.20
6	4.20	0.15	3.00	0.15	3.00	0.20	3.60	0.20	2.40	0.30	3.60	0.15	4.80	0.20	3.00	0.20	3.00	0.20	3.60	0.20	3.00	0.35
7	4.90	0.15	3.50	0.20	3.50	0.15	4.20	0.20	2.80	0.35	4.20	0.20	5.60	0.10	3.50	0.20	3.50	0.25	4.20	0.20	3.50	0.30
8	5.60	0.15	4.00	0.15	4.00	0.10	4.80	0.20	3.20	0.40	4.80	0.30	6.40	0.10	4.00	0.20	4.00	0.30	4.80	0.25	4.00	0.30
9	6.30	0.15	4.50	0.15	4.50	0.10	5.40	0.20	3.60	0.30	5.40	0.30	7.20	0.10	4.50	0.10	4.50	0.30	5.40	0.30	4.50	0.30
Right Bank	7.00	0.20	5.00	0.40	5.00	0.10	6.00	0.10	4.00	0.20	6.00	0.40	8.00	0.15	5.00	0.10	5.00	0.20	6.00	0.30	5.00	0.20
Feature Type <small>(riffle, run, or pool)</small>	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: _____

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: 4.17.08 10:20	Location Description (e.g., road crossing): Highway 92
Stream Name: Clear Creek	
Current Weather Conditions: cloudy, light precipitation	Facility Name(s): Park Estates
Weather Conditions for Past 10 days: 3.37 inches	Permit Number(s): MO 0126004
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): 0383998	Northing (UTM Y): 4358999	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters
Site 11	Easting (UTM X): 0384086	Northing (UTM Y): 4355471	Horizontal Accuracy: (EPE / FOM / PDOP) 4 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
75	upstream, T11	76	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 #10

Field Data Sheets for Recreational Use Stream Surveys

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

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

<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 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	% Gravel	100% 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

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.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Clear Creek</u> Waterbody ID: <u>390</u> Site #: <u>10</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>0383998</u> UTM Y: <u>4358999</u> +/- <u>5</u> (meters) 11 UTM X: <u>0384086</u> UTM Y: <u>4358471</u> +/- <u>4</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>	Dissolved Oxygen Date: <u>4.17.08</u> Time: <u>10:20</u> Dissolved Oxygen: <u>1.9</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>13.3</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	0
	1	0.70	0.40	0.70	0.45	1.10	0.20	0.90	0.30	1.20	0.35	1.00	0.10	0.80	0.05	0.90	0.25	1.00	0.25	0.80	0.10	1.10	0.30
	2	1.40	0.15	1.40	0.45	2.20	0.20	1.80	0.30	2.40	0.30	2.00	0.10	1.60	0.10	1.80	0.20	2.00	0.40	1.60	0.20	2.20	0.35
	3	2.10	0.20	2.10	0.45	3.30	0.20	2.70	0.10	3.60	0.30	3.00	0.10	2.40	0.10	2.70	0.20	3.00	0.40	2.40	0.20	3.30	0.25
	4	2.80	0.30	2.80	0.50	4.40	0.30	3.60	0.10	4.80	0.25	4.00	0.20	3.20	0.10	3.60	0.20	4.00	0.40	3.20	0.20	4.40	0.25
	5	3.50	0.25	3.50	0.40	5.50	0.35	4.50	0.25	6.00	0.20	5.00	0.20	4.00	0.20	4.50	0.20	5.00	0.30	4.00	0.20	5.50	0.25
	6	4.20	0.30	4.20	0.35	6.60	0.20	5.40	0.20	7.20	0.10	6.00	0.15	4.80	0.30	5.40	0.20	6.00	0.25	4.80	0.20	6.60	0.25
	7	4.90	0.30	4.90	0.20	7.70	0.20	6.30	0.20	8.40	0.10	7.00	0.15	5.60	0.30	6.30	0.20	7.00	0.10	5.60	0.50	7.70	0.15
	8	5.60	0.30	5.60	0.15	8.80	0.20	7.20	0.20	9.60	0.15	8.00	0.20	6.40	0.30	7.20	0.20	8.00	0.25	6.40	0.50	8.80	0.20
	9	6.30	0.20	6.30	0.10	9.90	0.20	8.10	0.20	10.80	0.10	9.00	0.20	7.20	0.35	8.10	0.20	9.00	0.30	7.20	0.80	9.90	0.25
Right Bank		7.00	0.05	7.00	0.10	11.00	0.25	9.00	0.25	12.00	0.05	10.00	0.25	8.00	0.30	9.00	0.15	10.00	0.20	8.00	0.70	11.00	0.30
Feature Type		run		run		run		run		run		run		run		run		run		run/pool		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: _____

WBID# 0390 Clear Creek



Site# 1 Photo ID# 7 Downstream, T01



Site# 1 Photo ID# 8, Upstream, T11



Site#2 Photo ID# 10, Upstream, T11



Site# 2 Photo ID# 9 Downstream, T01

Camera malfunction has pictures dated incorrectly all pictures are from 4/14/2008

WBID# 0390 Clear Creek



Site# 3 Photo ID# 40 Downstream, T01



Site# 3 Photo ID# 41, Upstream, T11



Site#4 Photo ID# 39, Upstream, T11



Site# 4 Photo ID# 38 Downstream, T01

WBID# 0390 Clear Creek



Site# 5 Photo ID# 36 Downstream, T01



Site# 5 Photo ID# 37, Upstream, T11



Site# 6 Photo ID# 83, Upstream, T11



Site# 6 Photo ID# 84 Downstream, T01

Camera malfunction has pictures dated incorrectly all pictures are from 4/14/2008

WBID# 0390 Clear Creek



Site# 7 Photo ID# 82 Downstream, T01



Site# 7 Photo ID# 81, Upstream, T11



Site# 8 Photo ID# 80, Upstream, T11



Site# 8 Photo ID# 79 Downstream, T01

Camera malfunction has pictures dated incorrectly all pictures are from 4/14/2008

WBID# 0390 Clear Creek



Site# 9 Photo ID# 78 Downstream, T01



Site# 9 Photo ID# 77, Upstream, T11



Site# 10 Photo ID# 75, Upstream, T11



Site# 10 Photo ID# 76 Downstream, T01

Camera malfunction has pictures dated incorrectly all pictures are from 4/14/2008