



Use Attainability Analysis

for

WBID 2030 Calvey Creek

Submitted by
SES, Inc.

To
Missouri Department of Natural Resources
Water Protection Program

On

November 4, 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): Calvey Creek
Missouri Water Body Identification (WBID) Number: 2030
8-digit HUC: 07140102
County(ies), Listed Upstream to Downstream: Franklin
Upstream Legal Description (from Table H): T42N R2E Sec. 13
Downstream Legal Description (from Table H): T42N R2E Sec. 4
Number of sites evaluated: 3
List all site numbers, <u>consecutively upstream to downstream</u> : 1, 2, 3
Include a Site Location Map(s). The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).

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

Facility Name(s) and Permit Number(s): Forest Hill Manor MHP MO0089877

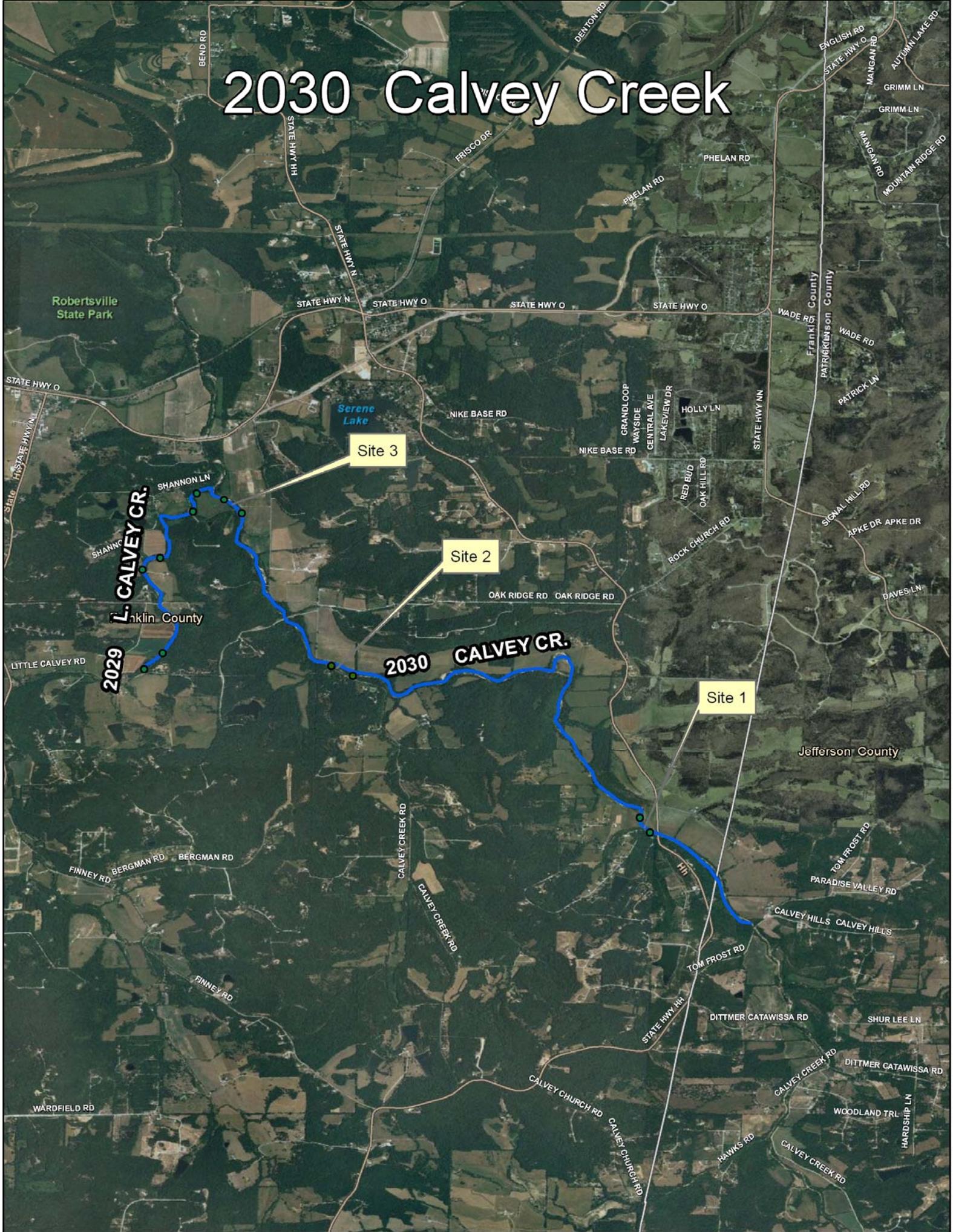
III. UAA Surveyor (please PRINT legibly)

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

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

Signed: David Bender **Date:** 10-03-08

2030 Calvey Creek



Robertsville State Park

Site 3

Site 2

Site 1

2029 CALVEY CR.

2030 CALVEY CR.

Franklin County

Jefferson County

Patrickson County

Franklin County

Serene Lake

STATE HWY O

STATE HWY N

STATE HWY O

STATE HWY O

STATE HWY O

STATE HWY NN

STATE HWY NN

LITTLE CALVEY RD

SHANNON LN

SHANNON LN

NIKE BASE RD

NIKE BASE RD

GRANDLOOP WAYSIDE CENTRAL AVE LAKEVIEW DR

HOLLY LN

RED BUD

OAK HILL RD

ROCK CHURCH RD

WADE RD

WADE RD

PATRICK LN

SENAL HILL RD

APKE DR APKE DR

DAVES LN

OAK RIDGE RD OAK RIDGE RD

FINNEY RD

BERGMAN RD

BERGMAN RD

CALVEY CREEK RD

CALVEY CREEK RD

FINNEY RD

WARDFIELD RD

CALVEY CHURCH RD CALVEY CHURCH RD

STATE HWY HH

TOM FROST RD

TOM FROST RD

HAWKS RD

CALVEY CREEK RD

CALVEY CREEK RD

DITTMER CATAWISSA RD

SHUR LEE LN

DITTMER CATAWISSA RD

WOODLAND TRL

HARDSHIP LN

CALVEY HILLS CALVEY HILLS

TOM FROST RD

PARADISE VALLEY RD

ENGLISH RD

STATE HWY O

MANGAN RD

AUTUMN LAKE RD

GRIMM LN

GRIMM LN

MANGAN RD

MOUNTAIN RIDGE RD

DEBTON RD

FRISCO DR

PHELAN RD

PHELAN RD

BEND RD

STATE HWY HH

STATE HWY N

STATE HWY O

STATE HWY O

STATE HWY O

STATE HWY O

MANGAN RD

AUTUMN LAKE RD

GRIMM LN

GRIMM LN

MANGAN RD

MOUNTAIN RIDGE RD

WADE RD

WADE RD

PATRICK LN

SENAL HILL RD

APKE DR APKE DR

DAVES LN

OAK RIDGE RD OAK RIDGE RD

FINNEY RD

BERGMAN RD

BERGMAN RD

CALVEY CREEK RD

CALVEY CREEK RD

FINNEY RD

WARDFIELD RD

CALVEY CHURCH RD CALVEY CHURCH RD

STATE HWY HH

TOM FROST RD

TOM FROST RD

HAWKS RD

CALVEY CREEK RD

CALVEY CREEK RD

DITTMER CATAWISSA RD

SHUR LEE LN

DITTMER CATAWISSA RD

WOODLAND TRL

HARDSHIP LN

CALVEY HILLS CALVEY HILLS

TOM FROST RD

PARADISE VALLEY RD

ENGLISH RD

STATE HWY O

MANGAN RD

AUTUMN LAKE RD

GRIMM LN

GRIMM LN

MANGAN RD

MOUNTAIN RIDGE RD

WADE RD

WADE RD

PATRICK LN

SENAL HILL RD

APKE DR APKE DR

DAVES LN

OAK RIDGE RD OAK RIDGE RD

FINNEY RD

BERGMAN RD

BERGMAN RD

CALVEY CREEK RD

CALVEY CREEK RD

FINNEY RD

WARDFIELD RD

CALVEY CHURCH RD CALVEY CHURCH RD

STATE HWY HH

TOM FROST RD

TOM FROST RD

HAWKS RD

CALVEY CREEK RD

CALVEY CREEK RD

DITTMER CATAWISSA RD

SHUR LEE LN

DITTMER CATAWISSA RD

WOODLAND TRL

HARDSHIP LN

CALVEY HILLS CALVEY HILLS

TOM FROST RD

PARADISE VALLEY RD

ENGLISH RD

STATE HWY O

MANGAN RD

AUTUMN LAKE RD

GRIMM LN

GRIMM LN

MANGAN RD

MOUNTAIN RIDGE RD

WADE RD

WADE RD

PATRICK LN

SENAL HILL RD

APKE DR APKE DR

DAVES LN

OAK RIDGE RD OAK RIDGE RD

FINNEY RD

BERGMAN RD

BERGMAN RD

CALVEY CREEK RD

CALVEY CREEK RD

FINNEY RD

WARDFIELD RD

CALVEY CHURCH RD CALVEY CHURCH RD

STATE HWY HH

TOM FROST RD

TOM FROST RD

HAWKS RD

CALVEY CREEK RD

CALVEY CREEK RD

DITTMER CATAWISSA RD

SHUR LEE LN

DITTMER CATAWISSA RD

WOODLAND TRL

HARDSHIP LN

CALVEY HILLS CALVEY HILLS

TOM FROST RD

PARADISE VALLEY RD

ENGLISH RD

STATE HWY O

MANGAN RD

AUTUMN LAKE RD

GRIMM LN

GRIMM LN

MANGAN RD

MOUNTAIN RIDGE RD

WADE RD

WADE RD

PATRICK LN

SENAL HILL RD

APKE DR APKE DR

DAVES LN

OAK RIDGE RD OAK RIDGE RD

FINNEY RD

BERGMAN RD

BERGMAN RD

CALVEY CREEK RD

CALVEY CREEK RD

FINNEY RD

WARDFIELD RD

CALVEY CHURCH RD CALVEY CHURCH RD

STATE HWY HH

TOM FROST RD

TOM FROST RD

HAWKS RD

CALVEY CREEK RD

CALVEY CREEK RD

DITTMER CATAWISSA RD

SHUR LEE LN

DITTMER CATAWISSA RD

WOODLAND TRL

HARDSHIP LN

CALVEY HILLS CALVEY HILLS

TOM FROST RD

PARADISE VALLEY RD

ENGLISH RD

STATE HWY O

MANGAN RD

AUTUMN LAKE RD

GRIMM LN

GRIMM LN

MANGAN RD

MOUNTAIN RIDGE RD

WADE RD

WADE RD

PATRICK LN

SENAL HILL RD

APKE DR APKE DR

DAVES LN

OAK RIDGE RD OAK RIDGE RD

FINNEY RD

BERGMAN RD

BERGMAN RD

CALVEY CREEK RD

CALVEY CREEK RD

FINNEY RD

WARDFIELD RD

CALVEY CHURCH RD CALVEY CHURCH RD

STATE HWY HH

TOM FROST RD

TOM FROST RD

HAWKS RD

CALVEY CREEK RD

CALVEY CREEK RD

DITTMER CATAWISSA RD

SHUR LEE LN

DITTMER CATAWISSA RD

WOODLAND TRL

HARDSHIP LN

CALVEY HILLS CALVEY HILLS

TOM FROST RD

PARADISE VALLEY RD

ENGLISH RD

STATE HWY O

MANGAN RD

AUTUMN LAKE RD

GRIMM LN

GRIMM LN

MANGAN RD

MOUNTAIN RIDGE RD

WADE RD

WADE RD

PATRICK LN

SENAL HILL RD

APKE DR APKE DR

DAVES LN

OAK RIDGE RD OAK RIDGE RD

FINNEY RD

BERGMAN RD

BERGMAN RD

CALVEY CREEK RD

CALVEY CREEK RD

FINNEY RD

WARDFIELD RD

CALVEY CHURCH RD CALVEY CHURCH RD

STATE HWY HH

TOM FROST RD

TOM FROST RD

HAWKS RD

CALVEY CREEK RD

CALVEY CREEK RD

DITTMER CATAWISSA RD

SHUR LEE LN

DITTMER CATAWISSA RD

WOODLAND TRL

HARDSHIP LN

CALVEY HILLS CALVEY HILLS

TOM FROST RD

PARADISE VALLEY RD

ENGLISH RD

STATE HWY O

MANGAN RD

AUTUMN LAKE RD

GRIMM LN

GRIMM LN

MANGAN RD

MOUNTAIN RIDGE RD

WADE RD

WADE RD

PATRICK LN

SENAL HILL RD

APKE DR APKE DR

DAVES LN

OAK RIDGE RD OAK RIDGE RD

FINNEY RD

BERGMAN RD

BERGMAN RD

CALVEY CREEK RD

CALVEY CREEK RD

FINNEY RD

WARDFIELD RD

CALVEY CHURCH RD CALVEY CHURCH RD

STATE HWY HH

WBID # 2030

Site # 1

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: 10/03/08 16:50	Location Description (e.g., road crossing): Hwy HH
Stream Name: Calvey Cr.	
Current Weather Conditions: Clear	Facility Name(s): Forest Hill Manor MHP
Weather Conditions for Past 10 days: 0.06 in	Permit Number(s): MO 0089877
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): 0696204	Northing (UTM Y): 4249498	Horizontal Accuracy: (EPE / FOM / PDOP) 3 Meters
Site 11	Easting (UTM X): 0696113	Northing (UTM Y): 4249658	Horizontal Accuracy: (EPE / FOM / PDOP) 6 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
59	Downstream	60	Human Tracks	61	Upstream
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

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 checked="" type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

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

<input type="checkbox"/> Roads	<input checked="" 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 type="checkbox"/> None of the above	Comments / Other:			

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

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

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 checked="" type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input 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: David Bender, Chris Schuler

Surveyor’s Signature: David Bender

Date of Survey: 10/03/08

Organization: SES, Inc.

Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Calvey Cr.</u> Waterbody ID: <u>2030</u> Site #: <u>1</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>0696204</u> UTM Y: <u>4249498</u> +/- <u>3</u> (meters) 11 UTM X: <u>0696113</u> UTM Y: <u>4249658</u> +/- <u>6</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>David Bender, Chris Schuler</u>	Dissolved Oxygen Date: <u>10/3/2008</u> Time: <u>16:50</u> Dissolved Oxygen: <u>7.8</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>16.5</u> (°C)
---	---

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	0.10	0.05	0.20	0.05	0.20	0.35	0.90	0.60	0.90	0.15	0.60	0.10	0.70	0.55	0.90	0.60	0.20	0.05	0.15	0.05	0.20	0.05
2	0.20	0.05	0.40	0.05	0.40	0.55	1.80	0.60	1.80	0.70	1.20	0.25	1.40	0.85	1.80	1.00	0.40	0.10	0.30	0.10	0.40	0.25
3	0.30	0.10	0.60	0.05	0.60	0.65	2.70	0.75	2.70	0.95	1.80	0.25	2.10	1.00	2.70	1.00	0.60	0.15	0.45	0.15	0.60	0.35
4	0.40	0.10	0.80	0.05	0.80	0.70	3.60	1.00	3.60	1.00	2.40	0.25	2.80	1.00	3.60	0.80	0.80	0.10	0.60	0.15	0.80	0.35
5	0.50	0.15	1.00	0.10	1.00	0.65	4.50	0.95	4.50	0.85	3.00	0.25	3.50	1.00	4.50	0.75	1.00	0.05	0.75	0.20	1.00	0.35
6	0.60	0.15	1.20	0.15	1.20	0.60	5.40	0.80	5.40	0.50	3.60	0.20	4.20	0.65	5.40	0.55	1.20	0.05	0.90	0.20	1.20	0.30
7	0.70	0.10	1.40	0.15	1.40	0.50	6.30	0.60	6.30	0.30	4.20	0.20	4.90	0.40	6.30	0.50	1.40	0.05	1.05	0.20	1.40	0.25
8	0.80	0.10	1.60	0.15	1.60	0.40	7.20	0.30	7.20	0.15	4.80	0.10	5.60	0.15	7.20	0.35	1.60	0.05	1.20	0.15	1.60	0.15
9	0.90	0.05	1.80	0.05	1.80	0.15	8.10	0.10	8.10	0.05	5.40	0.05	6.30	0.05	8.10	0.10	1.80	0.05	1.35	0.05	1.80	0.05
Right Bank	1.00	0.00	2.00	0.00	2.00	0.00	9.00	0.00	9.00	0.00	6.00	0.00	7.00	0.00	9.00	0.00	2.00	0.00	1.50	0.00	2.00	0.00
Feature Type	run		run		pool		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: David Bender Date: 10/3/2008



WBID # 2030

Site # 2

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: 10/03/08 17:25	Location Description (e.g., road crossing): Calvey Creek Rd.
Stream Name: Calvey Cr.	
Current Weather Conditions: Clear	Facility Name(s): Forest Hill Manor MHP
Weather Conditions for Past 10 days: 0.06 in	Permit Number(s): MO 0089877
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): 0693591	Northing (UTM Y): 4251165	Horizontal Accuracy: (EPE / FOM / PDOP) 4 Meters
Site 11	Easting (UTM X): 0693404	Northing (UTM Y): 4251270	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
62	upstream	63	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

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

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

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

% Cobble	40% Gravel	40% Sand	% Silt	% Mud/Clay	20% Bedrock
----------	------------	----------	--------	------------	-------------

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 checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

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

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: David Bender, Chris Schuler

Surveyor’s Signature: David Bender

Date of Survey: 10/03/08

Organization: SES, Inc.

Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Calvey Cr.</u> Waterbody ID: <u>2030</u> Site #: <u>2</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>0693591</u> UTM Y: <u>4251165</u> +/- <u>4</u> (meters) 11 UTM X: <u>0693404</u> UTM Y: <u>4251270</u> +/- <u>5</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>David Bender, Chris Schuler</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>10/3/2008</u> Time: <u>17:25</u> Dissolved Oxygen: <u>9.6</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>19.4</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	0.60	0.05	0.90	0.15	0.70	0.15	0.70	0.05	0.30	0.50	0.40	0.05	0.30	0.01	0.90	0.50	0.70	0.05	0.60	0.05	1.00	0.25
	2	1.20	0.20	1.80	0.20	1.40	0.15	1.40	0.15	0.60	0.20	0.80	0.10	0.60	0.05	1.80	0.20	1.40	0.15	1.20	0.20	2.00	0.60
	3	1.80	0.15	2.70	0.25	2.10	0.30	2.10	0.25	0.90	0.25	1.20	0.15	0.90	0.10	2.70	0.35	2.10	0.35	1.80	0.25	3.00	0.85
	4	2.40	0.15	3.60	0.25	2.80	0.40	2.80	0.30	1.20	0.30	1.60	0.15	1.20	0.25	3.60	0.35	2.80	0.45	2.40	0.25	4.00	0.85
	5	3.00	0.10	4.50	0.25	3.50	0.55	3.50	0.35	1.50	0.50	2.00	0.20	1.50	0.35	4.50	0.40	3.50	0.50	3.00	0.25	5.00	0.70
	6	3.60	0.10	5.40	0.50	4.20	0.65	4.20	0.45	1.80	0.35	2.40	0.20	1.80	0.30	5.40	0.50	4.20	0.55	3.60	0.30	6.00	0.75
	7	4.20	0.05	6.30	0.60	4.90	0.55	4.90	0.75	2.10	0.35	2.80	0.20	2.10	0.20	6.30	0.45	4.90	0.60	4.20	0.30	7.00	0.60
	8	4.80	0.05	7.20	0.55	5.60	0.25	5.60	0.10	2.40	0.40	3.20	0.20	2.40	0.10	7.20	0.25	5.60	0.40	4.80	0.25	8.00	0.30
	9	5.40	0.05	8.10	0.35	6.30	0.10	6.30	0.05	2.70	0.60	3.60	0.15	2.70	0.05	8.10	0.10	6.30	0.15	5.40	0.15	9.00	0.20
Right Bank		6.00	0.00	9.00	0.00	7.00	0.00	7.00	0.00	3.00	0.00	4.00	0.00	3.00	0.00	9.00	0.00	7.00	0.00	6.00	0.00	10.00	0.00
Feature Type		rifle		pool		pool		pool		run		pool		run		pool		pool		pool		pool	

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

Surveyor's Signature: David Bender Date: 10/3/2008



WBID # 2030

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 10/04/08 8:45	Location Description (e.g., road crossing): Calvey Cr. Rd.
Stream Name: Calvey Cr.	
Current Weather Conditions: Clear	Facility Name(s): Forest Hill Manor MHP
Weather Conditions for Past 10 days: 0.06 in	Permit Number(s): MO 0089877
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): 0692589	Northing (UTM Y): 4252924	Horizontal Accuracy: (EPE / FOM / PDOP) 2 Meters
Site 11	Easting (UTM X): 0692432	Northing (UTM Y): 4253075	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
64	Downstream	65	Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

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%.)

% Cobble	40% Gravel	60% Sand	% Silt	% Mud/Clay	% Bedrock
----------	------------	----------	--------	------------	-----------

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 checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

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

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: David Bender, Chris Schuler

Surveyor’s Signature: David Bender

Date of Survey: 10/03/08

Organization: SES, Inc.

Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Calvey Cr.</u> Waterbody ID: <u>2030</u> Site #: <u>3</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>0692589</u> UTM Y: <u>4252924</u> +/- <u>2</u> (meters) 11 UTM X: <u>0692432</u> UTM Y: <u>4253075</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>David Bender, Chris Schuler</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>10/3/2008</u> Time: <u>8:45</u> Dissolved Oxygen: <u>6.8</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>14.4</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	0.50	0.05	0.20	0.05	0.30	0.05	0.60	0.10	0.70	0.10	1.00	0.05	0.30	0.05	0.30	0.01	0.50	0.05	0.60	0.25
2	1.00	0.30	1.00	0.25	0.40	0.15	0.60	0.05	1.20	0.20	1.40	0.40	2.00	0.15	0.60	0.10	0.60	0.05	1.00	0.10	1.20	0.50
3	1.50	0.35	1.50	0.15	0.60	0.30	0.90	0.05	1.80	0.35	2.10	0.40	3.00	0.35	0.90	0.20	0.90	0.05	1.50	0.15	1.80	0.45
4	2.00	0.30	2.00	0.20	0.80	0.45	1.20	0.10	2.40	0.35	2.80	0.60	4.00	0.55	1.20	0.20	1.20	0.05	2.00	0.15	2.40	0.30
5	2.50	0.25	2.50	0.25	1.00	0.50	1.50	0.10	3.00	0.35	3.50	0.90	5.00	0.65	1.50	0.20	1.50	0.15	2.50	0.15	3.00	0.45
6	3.00	0.15	3.00	0.30	1.20	0.50	1.80	0.05	3.60	0.40	4.20	0.90	6.00	0.60	1.80	0.15	1.80	0.15	3.00	0.15	3.60	0.20
7	3.50	0.15	3.50	0.30	1.40	0.40	2.10	0.15	4.20	0.55	4.90	0.85	7.00	0.50	2.10	0.10	2.10	0.15	3.50	0.15	4.20	0.30
8	4.00	0.10	4.00	0.20	1.60	0.35	2.40	0.20	4.80	0.65	5.60	0.55	8.00	0.35	2.40	0.05	2.40	0.05	4.00	0.15	4.80	0.30
9	4.50	0.05	4.50	0.10	1.80	0.30	2.70	0.05	5.40	0.40	6.30	0.15	9.00	0.10	2.70	0.05	2.70	0.05	4.50	0.05	5.40	0.10
Right Bank	5.00	0.00	5.00	0.00	2.00	0.00	3.00	0.00	6.00	0.00	7.00	0.00	10.00	0.00	3.00	0.00	3.00	0.00	5.00	0.00	6.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	pool		pool		run		riffle		pool		pool		pool		pool		riffle		pool		pool	

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

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

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

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

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: David Bender

Date: 10.04.08

