

Use Attainability Analysis
for
WBID 0424 Little Blue River

Submitted by
SES Inc.

to
Missouri Department of Natural Resources
Water Protection Program

Date received: November 14, 2007

Field Data Sheets for Recreation 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): Little Blue River	
Missouri Water Body Identification (WBID) Number: 424	
8 digit HUC code: 10300101	County: Jackson
Upstream Legal Description (from Table H): T47N R33W Sec 35	
Downstream Legal Description (from Table H): T47N R32W Sec 19	
Number of sites evaluated: 3	
List all site numbers, listed consequentially upstream to downstream: 1,2,3	

Site Locations Map(s): Attach a map of the entire segment with assessment sites clearly labeled. Mark any other items that may be of interest.

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

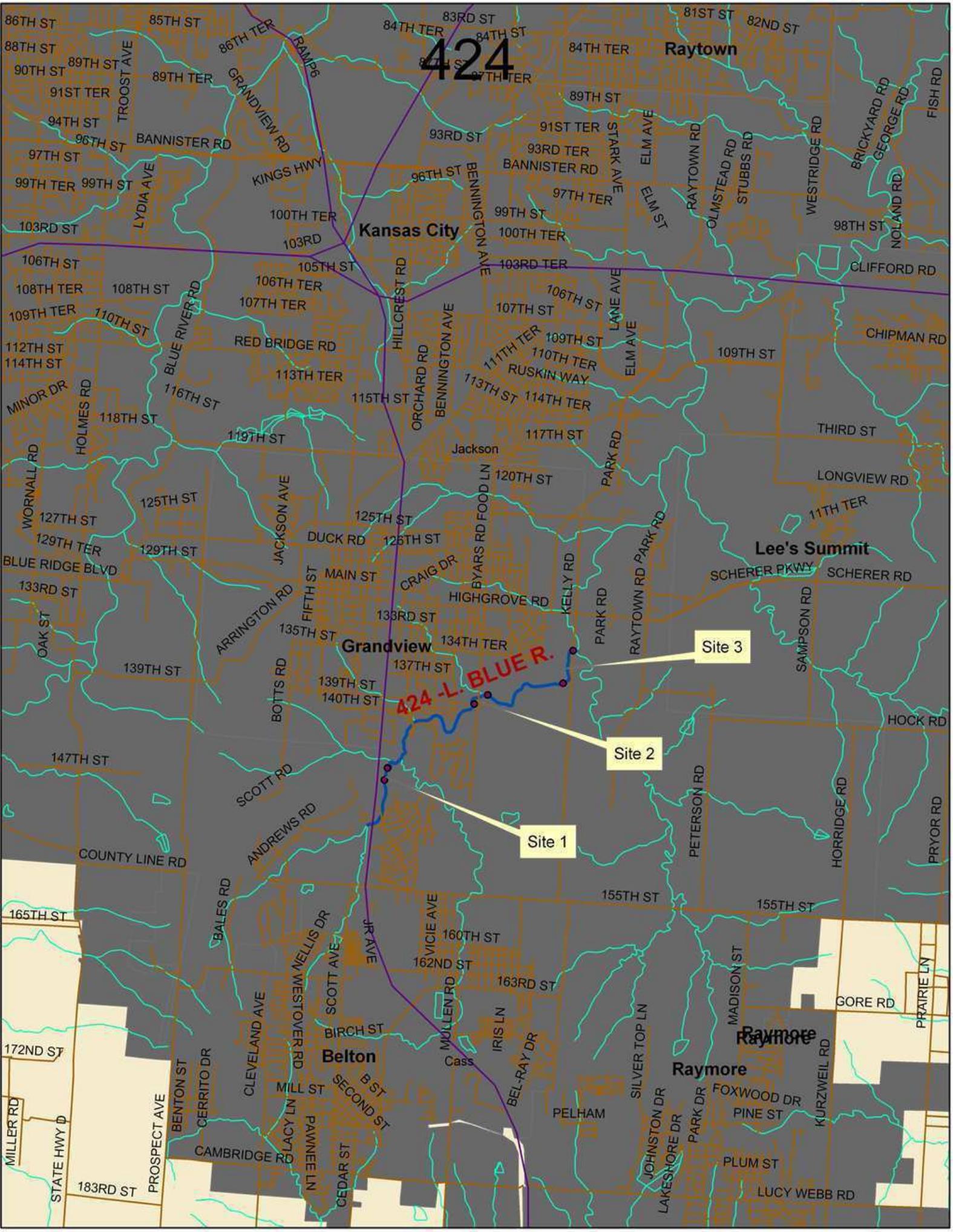
Facility Name(s) and Permit Number(s): Caravan Ingredients Co. MO 0121746

III. UAA Surveyor (please print legibly)

Name of Surveyor: Aaron Ball	Telephone Number: (913)307-0046
Organization/Employer: SES, Inc.	

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

Signed: Aaron Ball **Date:** 11.09.07



424

424 - L. BLUE R.

Site 3

Site 2

Site 1

Raytown

Kansas City

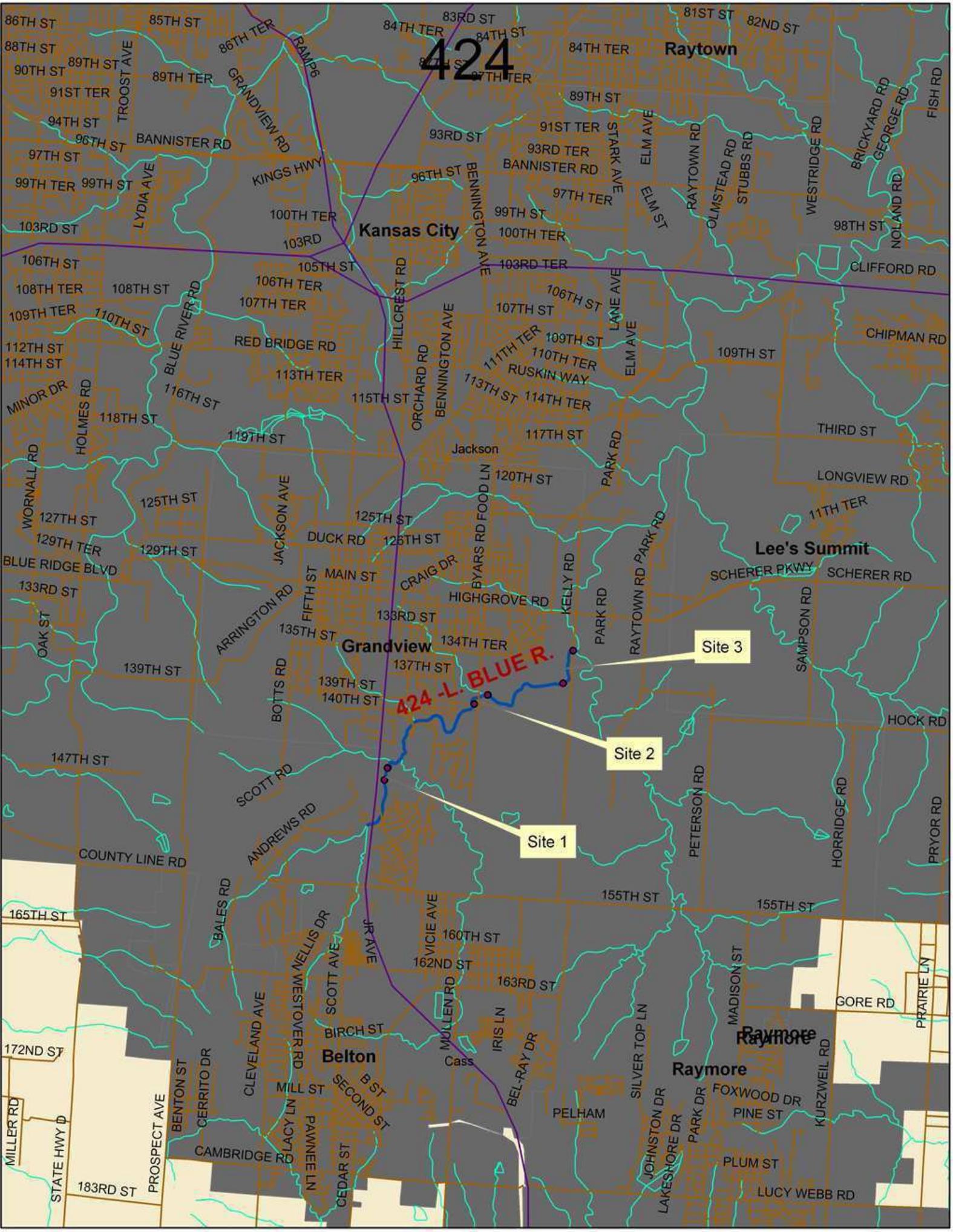
Grandview

Lee's Summit

Belton

Raymore

Raymore



WBID # 424
 Site # 1

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10/24/07 7:54	Site Location Description (e.g. road crossing):
Personnel: Aaron Ball, Drew Dodson	ST Hwy 150
Current Weather Conditions: clear	Facility Name: Caravan Ingredients Co.
Weather conditions for the past 10 days: 2.85 inches	Permit Number: MO 0121746
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0367573	4302322		5.4	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0367625	4302521		6.0	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3	Upstream	4	Downstream	5	Picnic table, parking lot
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:

<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:				

WBID # 424
 Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<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/walkways
<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: Highway 71, picnic table, parking lot. Access point at "Gail's Harley Davidson."

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/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

comments/other: trash

Substrate:

% Cobble	% Gravel 80	% Sand	% Silt 20	% Mud/Clay	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

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:

WBID # 424
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

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)
pool	60	6	7	7	1

Comments: (Please record any additional comments here.)

none

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

Surveyor's Signature: Aaron Ball Date of Survey: 10/24/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>424</u> Site #: <u>1</u> Estimated Channel Incision: <u>2.0</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>0367573</u> UTM Y: <u>4302322</u> +/- <u>5.4</u> (meters) 11 UTM X: <u>0367625</u> UTM Y: <u>4302521</u> +/- <u>6</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>Aaron Ball, Drew Dodson</u>	Dissolved Oxygen Date: <u>10/24/07</u> Time: <u>7:58</u> Dissolved Oxygen: <u>10.3</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>10.1</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	0.6	0.10	0.5	0.10	0.3	0.15	0.6	0.20	0.1	0.10	0.1	0.10	0.2	0.05	0.3	0.10	0.6	0.10	0.4	0.10	0.5	0.20	
2	1.2	0.10	1.0	0.20	0.6	0.25	1.2	0.50	0.2	0.10	0.2	0.10	0.4	0.10	0.6	0.10	1.2	0.30	0.7	0.20	1.0	0.30	
3	1.8	0.15	1.5	0.25	0.9	0.20	1.8	0.60	0.3	0.15	0.3	0.15	0.6	0.10	0.9	0.20	1.8	0.30	1.1	0.30	1.5	0.45	
4	2.4	0.05	2.0	0.30	1.2	0.20	2.4	0.60	0.4	0.15	0.4	0.15	0.8	0.10	1.2	0.20	2.4	0.00	1.4	0.40	2.0	0.40	
5	3.0	0.10	2.5	0.40	1.5	0.15	3.0	0.75	0.5	0.10	0.5	0.15	1.0	0.15	1.5	0.25	3.0	0.20	1.8	0.40	2.5	0.30	
6	3.6	0.20	3.0	0.40	1.8	0.20	3.6	0.75	0.6	0.10	0.6	0.10	1.2	0.15	1.8	0.25	3.6	0.55	2.1	0.30	3.0	0.20	
7	4.2	0.10	3.5	0.40	2.1	0.15	4.2	0.55	0.7	0.10	0.7	0.10	1.4	0.20	2.1	0.20	4.2	0.70	2.5	0.30	3.5	0.15	
8	4.8	0.30	4.0	0.25	2.4	0.10	4.8	0.50	0.8	0.10	0.8	0.05	1.6	0.10	2.4	0.20	4.8	0.50	2.8	0.10	4.0	0.15	
9	5.4	0.10	4.5	0.20	2.7	0.10	5.4	0.35	0.9	0.10	0.9	0.05	1.8	0.10	2.7	0.10	5.4	0.20	3.2	0.10	4.5	0.10	
Right Bank	6.0	0.00	5.0	0.00	3.0	0.00	6.0	0.00	1.0	0.00	1.0	0.00	2.0	0.00	3.0	0.00	6.0	0.00	3.5	0.00	5.0	0.00	
Feature Type <small>(riffle, run, or pool)</small>	pool		pool		pool		pool		riffle		riffle		riffle		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 0.01 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball Date: 11.09.07

WBID # 424
 Site # 2

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10/24/07 8:28	Site Location Description (e.g. road crossing):
Personnel: Aaron Ball, Drew Dodson	Byars Rd.
Current Weather Conditions:	Facility Name: Caravan Ingredients Co.
Weather conditions for the past 10 days: 2.85 inches	Permit Number: MO 0121746
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0369088	4303602		4.2	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0369316	4303758		6.9	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
6	Upstream	7	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:

<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:				

WBID # 424
 Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<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/walkways
<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:

none

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/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

comments/other:

none

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
70	10		10		10

Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					Murky
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:

WBID # 424
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

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

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

Comments: (Please record any additional comments here.)

none

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

Surveyor's Signature: Aaron Ball Date of Survey: 10/24/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>424</u> Site #: <u>2</u> Estimated Channel Incision: <u>1.0</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>0369088</u> UTM Y: <u>4303602</u> +/- <u>4.2</u> (meters) 11 UTM X: <u>0369316</u> UTM Y: <u>4303758</u> +/- <u>6.9</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>Aaron Ball, Drew Dodson</u>	Dissolved Oxygen Date: <u>10/24/07</u> Time: <u>8:30</u> Dissolved Oxygen: <u>10.3</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>10.4</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	0.5	0.35	0.4	0.05	1.9	0.40	1.0	0.20	0.5	0.10	0.5	0.25	0.6	0.30	0.7	0.30	0.9	0.25	0.4	0.15	0.5	0.10	
2	1.0	0.40	0.8	0.10	3.8	0.00	2.0	0.10	1.0	0.10	1.0	0.20	1.2	0.30	1.4	0.40	1.8	0.35	0.8	0.10	1.0	0.20	
3	1.5	0.35	1.2	0.15	5.7	0.10	3.0	0.20	1.5	0.20	1.5	0.25	1.8	0.30	2.1	0.35	2.7	0.40	1.2	0.10	1.5	0.20	
4	2.0	0.40	1.6	0.20	7.6	0.00	4.0	0.05	2.0	0.20	2.0	0.20	2.4	0.30	2.8	0.35	3.6	0.45	1.6	0.10	2.0	0.25	
5	2.5	0.45	2.0	0.20	9.5	0.30	5.0	0.05	2.5	0.15	2.5	0.20	3.0	0.30	3.5	0.35	4.5	0.45	2.0	0.10	2.5	0.20	
6	3.0	0.40	2.4	0.20	11.4	0.20	6.0	0.20	3.0	0.15	3.0	0.20	3.6	0.30	4.2	0.40	5.4	0.40	2.4	0.10	3.0	0.25	
7	3.5	0.40	2.8	0.20	13.3	0.30	7.0	0.10	3.5	0.10	3.5	0.20	4.2	0.30	4.9	0.30	6.3	0.40	2.8	0.10	3.5	0.20	
8	4.0	0.30	3.2	0.20	15.2	0.30	8.0	0.20	4.0	0.15	4.0	0.15	4.8	0.20	5.6	0.30	7.2	0.35	3.2	0.10	4.0	0.20	
9	4.5	0.20	3.6	0.15	17.1	0.20	9.0	0.15	4.5	0.10	4.5	0.10	5.4	0.20	6.3	0.25	8.1	0.25	3.6	0.10	4.5	0.20	
Right Bank	5.0	0.00	4.0	0.00	19.0	0.00	10.0	0.00	5.0	0.00	5.0	0.00	6.0	0.00	7.0	0.00	9.0	0.00	4.0	0.00	5.0	0.00	
Feature Type <small>(riffle, run, or pool)</small>	pool		riffle		pool		riffle		riffle		pool		pool		pool		pool		riffle		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 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball Date: 11.09.07

WBID # 424
 Site # 3

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10/24/07 9:35	Site Location Description (e.g. road crossing):
Personnel: Aaron Ball, Drew Dodson	Across field from Corp. of Engineers land
Current Weather Conditions: clear	Facility Name: Caravan Ingredients Co.
Weather conditions for the past 10 days: 2.85 inches	Permit Number: MO 0121746
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0370588	4303953		7.2	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0370757	4304502		4.5	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
8	Downstream	9	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:

<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:				

WBID # 424
 Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<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/walkways
<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: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/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
comments/other: foot bridge				

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
50	30		10		10

Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: Murky
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:

WBID # 424
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

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

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

Comments: (Please record any additional comments here.)

none

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

Surveyor's Signature: Aaron Ball Date of Survey: 10/24/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>424</u> Site #: <u>3</u> Estimated Channel Incision: <u>2.0</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>0370588</u> UTM Y: <u>4303953</u> +/- <u>7.2</u> (meters) 11 UTM X: <u>0370757</u> UTM Y: <u>4304502</u> +/- <u>4.5</u> (meters) Average Stream Width: <u>15</u> (meters) Length of Survey Segment: <u>300</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Aaron Ball, Drew Dodson</u>	Dissolved Oxygen
	Date: <u>10/24/07</u> Time: <u>9:40</u>
	Dissolved Oxygen: <u>10.1</u> (mg/L)
	Dissolved Oxygen: _____ (% sat)
	Specific Cond: _____ (µS/cm)
	Water Temperature: <u>10.9</u> (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1.0	0.30	1.0	0.10	0.5	0.10	1.0	0.15	0.9	0.10	0.6	0.10	0.3	0.10	1.3	0.40	1.3	0.40	1.5	0.55	1.5	0.40
2	2.0	0.50	2.0	0.20	1.0	0.20	2.0	0.45	1.8	0.10	1.2	0.00	0.6	0.10	2.6	0.70	2.6	0.40	3.0	0.85	3.0	0.60
3	3.0	0.55	3.0	0.30	1.5	0.30	3.0	0.30	2.7	0.10	1.8	0.05	0.9	0.15	3.9	0.80	3.9	0.35	4.5	1.00	4.5	0.70
4	4.0	0.55	4.0	0.25	2.0	0.35	4.0	0.30	3.6	0.25	2.4	0.05	1.2	0.15	5.2	0.90	5.2	0.40	6.0	1.00	6.0	0.70
5	5.0	0.45	5.0	0.15	2.5	0.30	5.0	0.25	4.5	0.40	3.0	0.10	1.5	0.30	6.5	0.90	6.5	0.50	7.5	1.00	7.5	0.60
6	6.0	0.45	6.0	0.20	3.0	0.30	6.0	0.20	5.4	0.30	3.6	0.15	1.8	0.25	7.8	0.80	7.8	0.60	9.0	1.00	9.0	0.60
7	7.0	0.30	7.0	0.20	3.5	0.20	7.0	0.20	6.3	0.30	4.2	0.20	2.1	0.15	9.1	0.80	9.1	0.85	10.5	1.00	10.5	0.50
8	8.0	0.35	8.0	0.10	4.0	0.15	8.0	0.20	7.2	0.25	4.8	0.20	2.4	0.10	10.4	0.80	10.4	0.95	12.0	0.80	12.0	0.60
9	9.0	0.40	9.0	0.10	4.5	0.05	9.0	0.15	8.1	0.10	5.4	0.30	2.7	0.05	11.7	0.45	11.7	0.80	13.5	0.40	13.5	0.95
Right Bank	10.0	0.00	10.0	0.00	5.0	0.00	10.0	0.00	9.0	0.00	6.0	0.00	3.0	0.00	13.0	0.00	13.0	0.00	15.0	0.00	15.0	0.00
Feature Type <small>(riffle, run, or pool)</small>	pool		riffle		riffle		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 0.01 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball Date: 11.09.07

WBID# 0424



Site# 1 Photo ID# 3, Upstream



Site# 1 Photo ID# 4, Downstream



Site# 1 Photo ID# 5, Picnic table / parking lot



Site# 2 Photo ID# 6, Upstream

WBID# 0424



Site# 2 Photo ID# 7, Downstream



Site# 3 Photo ID# 8, Downstream



Site# 3 Photo ID# 9, Upstream