



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 1714 Rock Creek

Submitted by

Pickett Ray and Silver

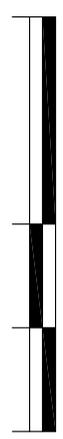
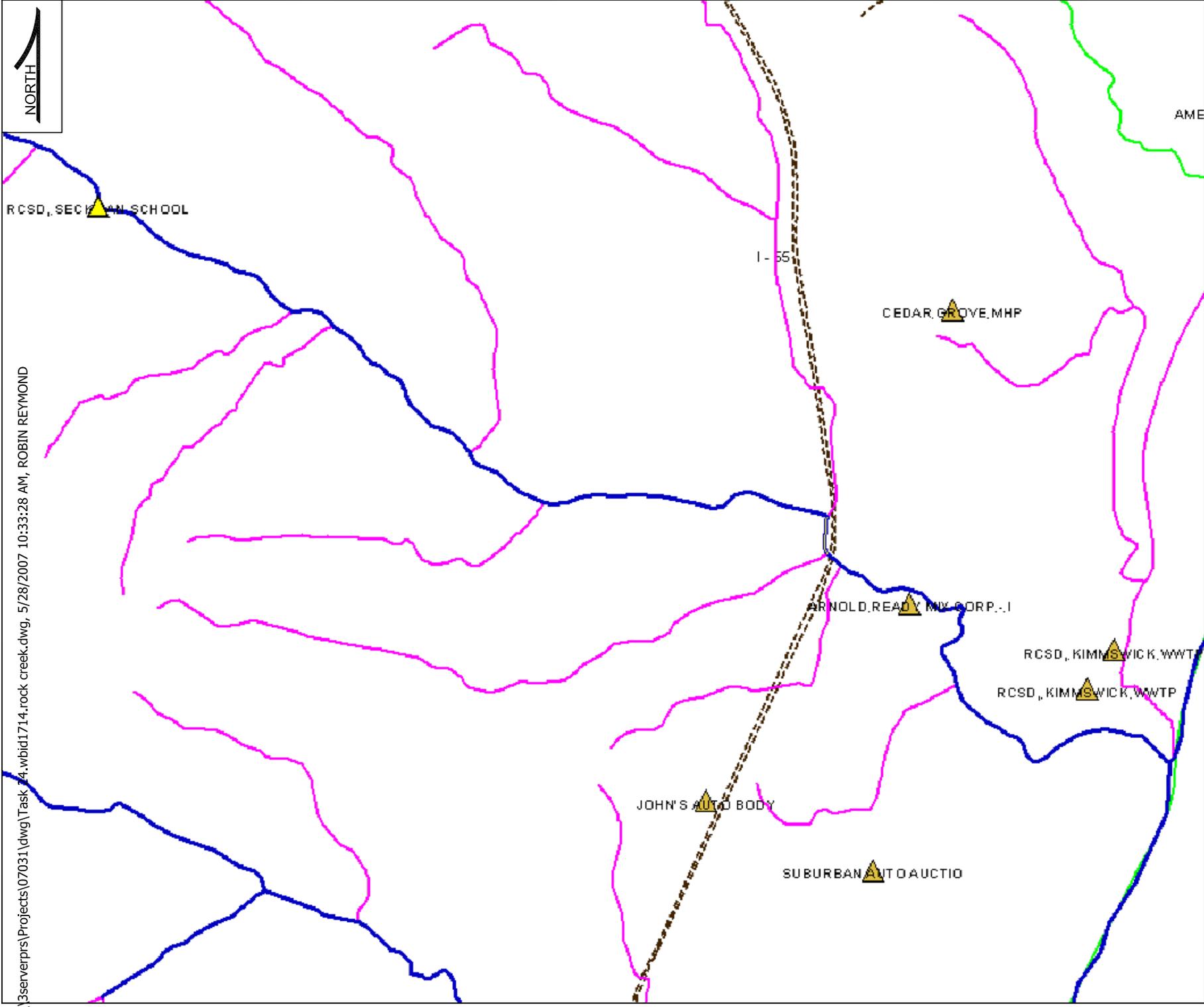
To

Missouri Department of Natural Resources

Water Protection Program

Date Received: June 5, 2007

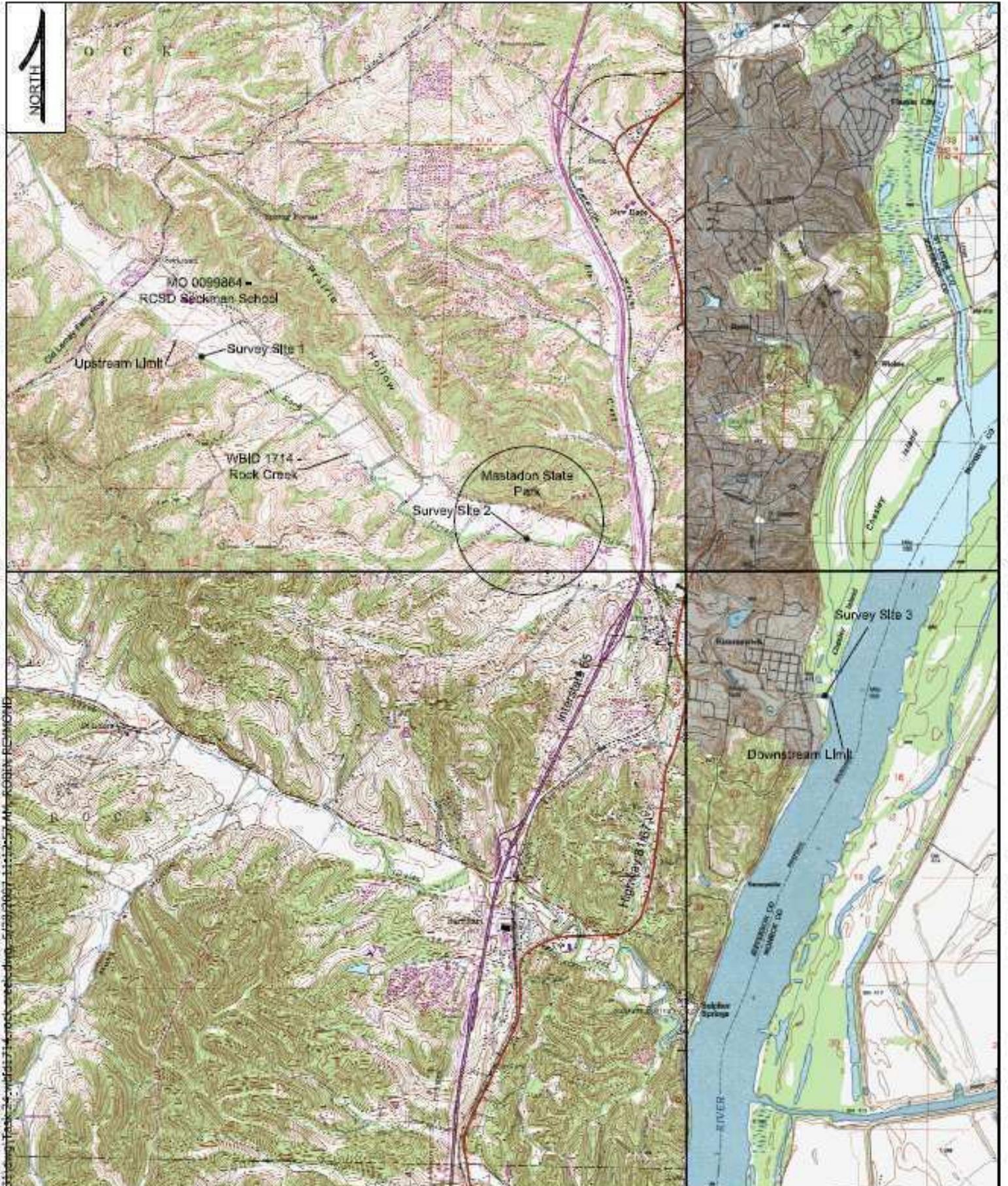
\\3serverprts\Projects\07031\Task 24\wbid1714_rock creek.dwg, 5/28/2007 10:33:28 AM, ROBIN REYMOND



GRAPHIC SCALE
Not to Scale
PRS Job Number: 07031.MODN.00E
Drawn By: RLR Date: 05-28-07
Checked By: JCV Date: 05-28-07

WBID #: 1714
Name: Rock Creek
County: Jefferson
GIS Map

PICKETT RAY & SILVER
Civil Engineers Land Surveyors Natural Resources
Address: Phone: (636) 397-1211
333 Mid Rivers Mall Drive Fax: (636) 397-1104
St. Peters, Missouri 63376 Website: www.prs3.com
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Civil Engineers Land Surveyors Natural Resources

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St. Peters, Missouri 63378
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WBID #: 1714
Name: Rock Creek
County: Jefferson
USGS Location Map



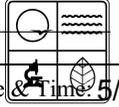
GRAPHIC SCALE
Not to Scale

PRS Job Number: 07031,MODN,00E
Drawn By: RLR Date: 05-28-07
Checked By: JCV Date: 05-28-07

WBID# 1714

Field Data Sheets for Recreational Use Stream Surveys

Site# 1



Missouri
Department of
Natural Resources

Data Sheet B - Site Characterization

(must be completed for each site)

| | |
|--|--|
| Date & Time: 4/5/2015 | Site Location Description (e.g., road crossing): downstream of Benck Road bridge |
| Personnel (Data Collectors): PRS - RR/MC | Facility Name: RCSD Seckman School |
| Current Weather Conditions: p. cloudy | Permit Number: MO 0099864 |
| Weather Conditions for Past 10 days: sun | |

Drought Conditions?: No drought ; Phase I ; Phase II ; Phase III ; Phase IV ; Unknown

Site Locations:

| LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS) | | | |
|---|--------------------------------|--|---|
| Site GPS Coordinates: UTM X: 724542.354m | | Y: 4252714.768m | |
| HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.) | | | |
| Global Positioning System (GPS) | | Interpolation | |
| Static Mode | | Topographic Map or DRG | |
| Dynamic Mode (Kinematic) | | Aerial Photograph or DOQQ | |
| Precise Positioning Service | | Satellite Imagery | |
| Signal Averaging | | Interpolation Other Real Time Differential Correction with | X |
| Real Time Differential Processing | | Post Processing | |
| HORIZONTAL ACCURACY ESTIMATE | | | |
| GPS Data Quality | | Interpolation Data Quality | |
| FOM | ± _____ Meters | Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters | |
| EPE | ± _____ Feet or ± _____ Meters | | |
| PDOP | 5.9 | | |

Photos:

| Upstream Photos | | Downstream Photos | | Other Photos | |
|----------------------------|---------------|-------------------|---------------|--------------|---------------|
| Photo ID# | Photo Purpose | Photo ID# | Photo Purpose | Photo ID# | Photo Purpose |
| See Attached Photos | | | | | |

Uses Observed*: (Uses actually observed at 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 *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds |
| <input type="checkbox"/> Boating accesses | <input type="checkbox"/> State parks | <input type="checkbox"/> National forests | <input type="checkbox"/> Nature trails | <input type="checkbox"/> Stairs/walkway |
| <input type="checkbox"/> No trespass sign | <input type="checkbox"/> Fence | <input type="checkbox"/> Steep slopes | <input type="checkbox"/> None of the above | <input checked="" type="checkbox"/> Other: High School |

Comments: **Horse Pastures**

Indications of Human Use*: (attach photos)

| | | | | | |
|---|--|---|---|--|---|
| <input checked="" type="checkbox"/> Roads | <input type="checkbox"/> Rope swings | <input checked="" type="checkbox"/> Foot paths/prints | <input type="checkbox"/> Dock/platform | <input checked="" type="checkbox"/> Livestock Watering | <input checked="" type="checkbox"/> RV / ATV Tracks |
| <input type="checkbox"/> Camping Sites | <input type="checkbox"/> Fire pit/ring | <input type="checkbox"/> NPDES Discharge | <input type="checkbox"/> Fishing Tackle | <input checked="" type="checkbox"/> Other: Graffiti | |

Comments:

* Page Two – Data Sheet B for WBID # 1714-1 :

Stream Morphology:



Upstream View Department of Natural Resources: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

| Channel Feature | Distance from access (m) | Width (m) | Length (m) | Median Depth (m) | Max. Depth (m) |
|-----------------|--------------------------|-----------|------------|------------------|----------------|
| RIFFLE | | | | | |
| RUN | | | | | |
| POOL | | | | | |

Downstream View's Physical Dimensions: Is there any water present at this view? Yes No

Approximate percentage of channel features for entire segment site If so, is there an obvious current? Yes No

Select one of the following channel features:

| Channel Feature | Distance from access (m) | Width (m) | Length (m) | Median Depth (m) | Max. Depth (m) |
|-------------------|--------------------------|-----------|------------|------------------|----------------|
| RIFFLE 20% | | | | | |
| RUN 60% | | | | | |
| POOL 20% | | | | | |

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

| | | | | | |
|-------------|-------------|--------|--------|------------|-------------|
| 15 % Cobble | 80 % Gravel | % Sand | % Silt | % Mud/Clay | 5 % Bedrock |
|-------------|-------------|--------|--------|------------|-------------|

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

5% woody vegetation on gravel bars. Slight moss/algae growth on rock substrate.

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: |

Comments: Please attach any additional comments () to this form.

*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 effect another use.

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

Surveyor's Signature: Robin Reymond Date of Survey: 5/23/07

Organization: Pickett, Ray & Silver, Inc. Position: _____

Recreational Use Attainability Analysis Field Survey Sheet



Waterbody ID: 1714 Site #: 1
 Missouri Department of Natural Resources
 Weather: cloudy 82°F
 GPS Location: UTM X: 724542.354m UTM Y: 4252714.786m
 Horizontal Accuracy Estimate (GPS Data Quality): +/- N/A (feet) PDOP: 5.9
 Average Stream Width: 10.2 (meters) Length of Survey Segment: 200 (meters)
 Field Staff: PRS - RR/MC

| Dissolved Oxygen | |
|--------------------|---------------------|
| Dissolved Oxygen: | <u>11.14</u> (mg/L) |
| Dissolved Oxygen: | _____ (% sat) |
| Specific Cond: | _____ (µS/cm) |
| Water Temperature: | <u>16.9</u> (°C) |

Transect Cross-Section

| | 01 | | 02 | | 03 | | 04 | | 05 | | 06 | | 07 | | 08 | | 09 | | 10 | | 11 | |
|--|--------------|------------|--------------|------------|--------------|------------|---------------|------------|---------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|
| | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) |
| 1 | 0 | .10 | 0.1 | .10 | 0 | .10 | 0 | .03 | 4.0 | .10 | 1.5 | .10 | 0.1 | .10 | 0 | .10 | 0 | .52 | 0.5 | .10 | 5.0 | .10 |
| 2 | .8 | .14 | .93 | .15 | .95 | .10 | 1.0 | .06 | 4.56 | .13 | 2.32 | .16 | 1.49 | .15 | 0.5 | .11 | .3 | .50 | 1.5 | .14 | 6.1 | .12 |
| 3 | 1.6 | .24 | 1.76 | .08 | 1.9 | .16 | 2.0 | .09 | 5.12 | .10 | 4.14 | .20 | 2.88 | .20 | 1.0 | .12 | .6 | .50 | 2.5 | .10 | 7.2 | .09 |
| 4 | 2.4 | .30 | 2.59 | .10 | 2.85 | .17 | 3.0 | .09 | 5.68 | .10 | 5.96 | .21 | 4.27 | .10 | 1.5 | .14 | .9 | .50 | 3.5 | .10 | 8.3 | .10 |
| 5 | 3.2 | .17 | 3.42 | .14 | 3.8 | .17 | 4.0 | .07 | 6.24 | .10 | 7.78 | .27 | 5.66 | .10 | 2.0 | .14 | 1.2 | .39 | 4.5 | .10 | 9.4 | .10 |
| 6 | 4.0 | .13 | 4.25 | .14 | 4.75 | .15 | 5.0 | .06 | 6.8 | .16 | 9.6 | .30 | 7.05 | .10 | 2.5 | .14 | 1.5 | .30 | 5.5 | .15 | 10.5 | .12 |
| 7 | 4.8 | .10 | 5.08 | .15 | 5.7 | .14 | 6.0 | .04 | 7.36 | .15 | 11.42 | .40 | 8.44 | .10 | 3.0 | .14 | 1.8 | .19 | 6.5 | .20 | 11.6 | .10 |
| 8 | 5.6 | .15 | 5.91 | .12 | 6.65 | .14 | 7.0 | .10 | 7.92 | .10 | 13.24 | .40 | 9.83 | .10 | 3.5 | .12 | 2.1 | .20 | 7.5 | .18 | 12.7 | .12 |
| 9 | 6.4 | .22 | 6.74 | .10 | 7.6 | .13 | 8.0 | .09 | 8.48 | .13 | 15.06 | .40 | 11.22 | .11 | 4.0 | .11 | 2.4 | .13 | 8.5 | .15 | 13.8 | .13 |
| 10 | 7.2 | .39 | 7.57 | .13 | 8.55 | .14 | 9.5 | .02 | 9.04 | .11 | 16.84 | .25 | 12.61 | .11 | 4.5 | .11 | 2.7 | .10 | 9.5 | .10 | 14.9 | .24 |
| 11 | 8.0 | .32 | 8.4 | .10 | 9.5 | .10 | | | 9.6 | .10 | 9.7 | .10 | 14.0 | .10 | 5.0 | .10 | 3.0 | .10 | 10.0 | .10 | 16.0 | .10 |
| Width/Median Depth | 8.0 | .17 | 9.4 | .12 | 10.0 | .14 | 9.5 | .07 | 10.0 | .10 | 10.0 | .25 | 16.0 | .10 | 8.0 | .12 | 3.5 | .30 | 12.0 | .10 | 16.0 | .10 |
| Feature Type (riffle, run, or pool) | Run | | Run | | Run | | Riffle | | Riffle | | Pool | | Run | | Run | | Pool | | run | | Run | |

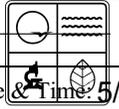
Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Signed: Robin Reymond Date: 5/23/07

WBID# 1714

Site# 2

Field Data Sheets for Recreational Use Stream Surveys



Missouri
Department of
Natural Resources

Data Sheet B - Site Characterization

(must be completed for each site)

| | |
|--|--|
| Date & Time: 4/5/2015 | Site Location Description (e.g., road crossing): Mastodon State Park |
| Personnel (Data Collectors): PRS - RR/MC | Facility Name: RCSD Seckman School |
| Current Weather Conditions: p. cloudy 85°F | Permit Number: MO 0099864 |
| Weather Conditions for Past 10 days: sun | |

Drought Conditions?: No drought ; Phase I ; Phase II ; Phase III ; Phase IV ; Unknown

Site Locations:

| LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS) | | | |
|---|--------------------------------|--|---|
| Site GPS Coordinates: UTM X: 727631.345m | | Y: 4250974.647m | |
| HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.) | | | |
| Global Positioning System (GPS) | | Interpolation | |
| Static Mode | | Topographic Map or DRG | |
| Dynamic Mode (Kinematic) | | Aerial Photograph or DOQQ | |
| Precise Positioning Service | | Satellite Imagery | |
| Signal Averaging | | Interpolation Other Real Time Differential Correction with | X |
| Real Time Differential Processing | | Post Processing | |
| HORIZONTAL ACCURACY ESTIMATE | | | |
| GPS Data Quality | | Interpolation Data Quality | |
| FOM | ± _____ Meters | Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters | |
| EPE | ± _____ Feet or ± _____ Meters | | |
| PDOP | 3.2 | | |

Photos:

| Upstream Photos | | Downstream Photos | | Other Photos | |
|----------------------------|---------------|-------------------|---------------|--------------|---------------|
| Photo ID# | Photo Purpose | Photo ID# | Photo Purpose | Photo ID# | Photo Purpose |
| See Attached Photos | | | | | |

Uses Observed*: (Uses actually observed at 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 *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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 checked="" type="checkbox"/> Playgrounds | <input type="checkbox"/> MDC conservation lands | <input checked="" type="checkbox"/> Urban areas | <input checked="" type="checkbox"/> Campgrounds |
| <input type="checkbox"/> Boating accesses | <input checked="" type="checkbox"/> State parks | <input type="checkbox"/> National forests | <input checked="" type="checkbox"/> Nature trails | <input type="checkbox"/> Stairs/walkway |
| <input type="checkbox"/> No trespass sign | <input type="checkbox"/> Fence | <input type="checkbox"/> Steep slopes | <input type="checkbox"/> None of the above | <input type="checkbox"/> Other: |

Comments:

Indications of Human Use*: (attach photos)

| | | | | | |
|--|--|---|--|---|--|
| <input type="checkbox"/> Roads | <input type="checkbox"/> Rope swings | <input checked="" type="checkbox"/> Foot paths/prints | <input type="checkbox"/> Dock/platform | <input type="checkbox"/> Livestock Watering | <input type="checkbox"/> RV / ATV Tracks |
| <input type="checkbox"/> Camping Sites | <input type="checkbox"/> Fire pit/ring | <input type="checkbox"/> NPDES Discharge | <input checked="" type="checkbox"/> Fishing Tackle | <input type="checkbox"/> Other: | |

Comments:

* Page Two – Data Sheet B for WBID # 1714-2 :

Stream Morphology:



Upstream View Department of Natural Resources: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

| Channel Feature | Distance from access (m) | Width (m) | Length (m) | Median Depth (m) | Max. Depth (m) |
|-----------------|--------------------------|-----------|------------|------------------|----------------|
| RIFFLE | | | | | |
| RUN | | | | | |
| POOL | | | | | |

Downstream View's Physical Dimensions: Is there any water present at this view? Yes No

Approximate percentage of channel features for entire segment site If so, is there an obvious current? Yes No

Select one of the following channel features:

| Channel Feature | Distance from access (m) | Width (m) | Length (m) | Median Depth (m) | Max. Depth (m) |
|-----------------|--------------------------|-----------|------------|------------------|----------------|
| RIFFLE | | | | | |
| RUN 75% | | | | | |
| POOL 25% | | | | | |

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

| | | | | | |
|-------------|-------------|-----------|--------|------------|-------------|
| 10 % Cobble | 75 % Gravel | 10 % Sand | % Silt | % Mud/Clay | 5 % Bedrock |
|-------------|-------------|-----------|--------|------------|-------------|

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

80% vegetation on sand bars

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: |

Comments: Please attach any additional comments () to this form.

*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 effect another use.

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

Surveyor's Signature: Robin Reymond Date of Survey: 5/23/07

Organization: Pickett, Ray & Silver, Inc. Position: _____

Recreational Use Attainability Analysis Field Survey Sheet



Waterbody ID: 1714 Site #: 2
 Missouri Department of Natural Resources
 Weather: cloudy 85°F
 GPS Location: 727631.345m UTM X: 4250974.647m UTM Y:
 Horizontal Accuracy Estimate (GPS Data Quality): +/- N/A (feet) PDOP: 3.2
 Average Stream Width: 7.6 (meters) Length of Survey Segment: 153 (meters)
 Field Staff: PRS - RR/MC

| Dissolved Oxygen | |
|--------------------|---------------------|
| Dissolved Oxygen: | <u>11.44</u> (mg/L) |
| Dissolved Oxygen: | _____ (% sat) |
| Specific Cond: | _____ (µS/cm) |
| Water Temperature: | <u>19.3</u> (°C) |

Transect Cross-Section

| | 01 | | 02 | | 03 | | 04 | | 05 | | 06 | | 07 | | 08 | | 09 | | 10 | | 11 | |
|-------------------------------------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|
| | Distance (m) | Depth (m) |
| 1 | 0 | .41 | 0 | .12 | 0.5 | .10 | 0 | .10 | 0 | .30 | 0 | .16 | 0 | .10 | 0 | >1 | 0 | .30 | 0.5 | .10 | 0.5 | .10 |
| 2 | 1.3 | .33 | 1.0 | .10 | .9 | .10 | .55 | .25 | .56 | .33 | .4 | .19 | .4 | .10 | .89 | >1 | 1.15 | .20 | 1.03 | .15 | 1.1 | .30 |
| 3 | 2.6 | .25 | 2.0 | .13 | 1.3 | .20 | 1.1 | .36 | 1.12 | .32 | .8 | .20 | .8 | .10 | 1.78 | >1 | 2.30 | .45 | 1.56 | .26 | 1.7 | .36 |
| 4 | 3.9 | .23 | 3.0 | .16 | 1.7 | .20 | 1.65 | .42 | 1.68 | .30 | 1.2 | .22 | 1.2 | .14 | 2.67 | >1 | 3.45 | .71 | 2.09 | .41 | 2.3 | .54 |
| 5 | 5.2 | .15 | 4.0 | .20 | 2.1 | .05 | 2.2 | .40 | 2.24 | .27 | 1.6 | .20 | 1.6 | .13 | 3.56 | >1 | 4.60 | .70 | 2.62 | .50 | 2.9 | .66 |
| 6 | 6.5 | .20 | 5.0 | .20 | 2.5 | .05 | 2.75 | .43 | 2.8 | .21 | 2.0 | .25 | 2.0 | .16 | 4.45 | >1 | 5.75 | .60 | 3.15 | .43 | 3.5 | .75 |
| 7 | 7.8 | .00 | 6.0 | .15 | 2.9 | .14 | 3.3 | .38 | 3.36 | .11 | 2.4 | .23 | 2.4 | .14 | 5.34 | >1 | 6.90 | .39 | 3.68 | .40 | 4.1 | .80 |
| 8 | 9.1 | .00 | 7.0 | .13 | 3.3 | .23 | 3.85 | .36 | 3.92 | .05 | 2.8 | .22 | 2.8 | .12 | 6.25 | >1 | 8.05 | .30 | 4.21 | .35 | 4.7 | .80 |
| 9 | 10.4 | .10 | 8.0 | .14 | 3.7 | .21 | 4.4 | .43 | 4.48 | .10 | 3.2 | .23 | 3.2 | .10 | 7.12 | >1 | 9.20 | .40 | 4.74 | .25 | 5.3 | .55 |
| 10 | 11.7 | .15 | 9.0 | .11 | 4.1 | .15 | 4.95 | .38 | 5.04 | .10 | 3.6 | .18 | 3.6 | .10 | 8.0 | >1 | 10.35 | .52 | 5.27 | .20 | 5.9 | .37 |
| 11 | 13.0 | .10 | 9.9 | .10 | 4.5 | .10 | 5.5 | .25 | 5.6 | .10 | 4.0 | .10 | 4.0 | .10 | | | 11.5 | .20 | 5.8 | .10 | 6.5 | .20 |
| Width/Median Depth | 13.3 | .15 | 10.0 | .14 | 5.0 | .14 | 5.5 | .38 | 6.0 | .21 | 6.0 | .20 | 6.0 | .10 | 8.0 | | 12.0 | .40 | 5.8 | .26 | 6.5 | .54 |
| Feature Type (riffle, run, or pool) | Run | | Run | | Run | | Pool | | Run | | Run | | Run | | Pool | | Pool | | Run | | Run | |

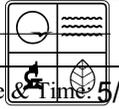
Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Signed: Robin Reymond Date: 5/23/07

WBID# 1714

Site# 3

Field Data Sheets for Recreational Use Stream Surveys



Missouri
Department of
Natural Resources

Data Sheet B - Site Characterization

(must be completed for each site)

| | |
|--|--|
| Date & Time: 4/5/15 | Site Location Description (e.g., road crossing): |
| Personnel (Data Collectors): PRS - RR/MC | Just upstream of confluence with Mississippi River |
| Current Weather Conditions: p. cloudy 85°F | Facility Name: RCSD Seckman School |
| Weather Conditions for Past 10 days: sun | Permit Number: MO 0099864 |

Drought Conditions?: No drought ; Phase I ; Phase II ; Phase III ; Phase IV ; Unknown

Site Locations:

| LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS) | | | |
|---|--------------------------------|--|---|
| Site GPS Coordinates: UTM X: 730543.088m | | Y: 4249530.062m | |
| HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.) | | | |
| Global Positioning System (GPS) | | Interpolation | |
| Static Mode | | Topographic Map or DRG | |
| Dynamic Mode (Kinematic) | | Aerial Photograph or DOQQ | |
| Precise Positioning Service | | Satellite Imagery | |
| Signal Averaging | | Interpolation Other Real Time Differential Correction with | x |
| Real Time Differential Processing | | Post Processing | |
| HORIZONTAL ACCURACY ESTIMATE | | | |
| GPS Data Quality | | Interpolation Data Quality | |
| FOM | ± _____ Meters | Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters | |
| EPE | ± _____ Feet or ± _____ Meters | | |
| PDOP | 5.1 | | |

Photos:

| Upstream Photos | | Downstream Photos | | Other Photos | |
|----------------------------|---------------|-------------------|---------------|--------------|---------------|
| Photo ID# | Photo Purpose | Photo ID# | Photo Purpose | Photo ID# | Photo Purpose |
| See Attached Photos | | | | | |

Uses Observed*: (Uses actually observed at 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 *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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

| | | | | |
|--|--------------------------------------|---|---|---|
| <input type="checkbox"/> City/county parks | <input type="checkbox"/> Playgrounds | <input type="checkbox"/> MDC conservation lands | <input type="checkbox"/> Urban areas | <input type="checkbox"/> Campgrounds |
| <input checked="" type="checkbox"/> Boating accesses | <input type="checkbox"/> State parks | <input type="checkbox"/> National forests | <input type="checkbox"/> Nature trails | <input type="checkbox"/> Stairs/walkway |
| <input type="checkbox"/> No trespass sign | <input type="checkbox"/> Fence | <input type="checkbox"/> Steep slopes | <input checked="" type="checkbox"/> None of the above | <input type="checkbox"/> Other: |

Comments:

Indications of Human Use*: (attach photos)

| | | | | | |
|---|--|---|--|---|--|
| <input checked="" type="checkbox"/> Roads | <input type="checkbox"/> Rope swings | <input checked="" type="checkbox"/> Foot paths/prints | <input checked="" type="checkbox"/> Dock/platform | <input type="checkbox"/> Livestock Watering | <input type="checkbox"/> RV / ATV Tracks |
| <input type="checkbox"/> Camping Sites | <input type="checkbox"/> Fire pit/ring | <input type="checkbox"/> NPDES Discharge | <input checked="" type="checkbox"/> Fishing Tackle | <input type="checkbox"/> Other: | |

Comments:

* Page Two – Data Sheet B for WBID # 1714-3 :

Stream Morphology:



Missouri Department of Natural Resources

Upstream View: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

| Channel Feature | Distance from access (m) | Width (m) | Length (m) | Median Depth (m) | Max. Depth (m) |
|-----------------|--------------------------|-----------|------------|------------------|----------------|
| RIFFLE | | | | | |
| RUN | | | | | |
| POOL | | | | | |

Downstream View's Physical Dimensions: Is there any water present at this view? Yes No

Approximate percentage of channel features for entire segment site If so, is there an obvious current? Yes No

Select one of the following channel features:

| Channel Feature | Distance from access (m) | Width (m) | Length (m) | Median Depth (m) | Max. Depth (m) |
|-----------------|--------------------------|-----------|------------|------------------|----------------|
| RIFFLE | | | | | |
| RUN 100% | | | | | |
| POOL | | | | | |

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

| | | | | | | | |
|----------|----------|--------|-----|--------|------------|---|-----------|
| % Cobble | % Gravel | % Sand | 100 | % Silt | % Mud/Clay | 5 | % Bedrock |
|----------|----------|--------|-----|--------|------------|---|-----------|

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

80% vegetation on sand bar

Water Characteristics*: (Mark all that apply.)

| | | | | | |
|------------------|--|--|--|--------------------------------|--|
| Odor: | <input checked="" type="checkbox"/> Sewage | <input checked="" type="checkbox"/> Musky | <input type="checkbox"/> Chemical | <input type="checkbox"/> None | <input type="checkbox"/> Other: |
| Color: | <input type="checkbox"/> Clear | <input type="checkbox"/> Green | <input type="checkbox"/> Gray | <input type="checkbox"/> Milky | <input checked="" type="checkbox"/> Other: brown-murky |
| 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 checked="" type="checkbox"/> Oil | <input checked="" type="checkbox"/> Scum | <input checked="" type="checkbox"/> Foam | <input type="checkbox"/> None | <input type="checkbox"/> Other: |

Comments: Please attach any additional comments () to this form.

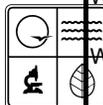
*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions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

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

Surveyor's Signature: Robin Reymond Date of Survey: 5/23/07

Organization: Pickett, Ray & Silver, Inc. Position: _____

Recreational Use Attainability Analysis Field Survey Sheet



Waterbody ID: 1714 Site #: 3
 Missouri Department of Natural Resources
 Weather: cloudy 85°F
 GPS Location: 730543.088m UTM X: 4249530.062m UTM Y:
 Horizontal Accuracy Estimate (GPS Data Quality): +/- N/A (feet) PDOP: 5.1
 Average Stream Width: 17.3 (meters) Length of Survey Segment: 300 (meters)
 Field Staff: PRS - RR/MC

| Dissolved Oxygen | |
|--------------------|--------------------|
| Dissolved Oxygen: | <u>7.09</u> (mg/L) |
| Dissolved Oxygen: | _____ (% sat) |
| Specific Cond: | _____ (µS/cm) |
| Water Temperature: | <u>24.7</u> (°C) |

Transect Cross-Section

| | 01 | | 02 | | 03 | | 04 | | 05 | | 06 | | 07 | | 08 | | 09 | | 10 | | 11 | |
|--|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|-----|----|
| | Distance (m) | Depth (m) | | |
| 1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 |
| 2 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 |
| 3 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 |
| 4 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 |
| 5 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 |
| 6 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 |
| 7 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 |
| 8 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 |
| 9 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 |
| 10 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 | | >1 |
| 11 | | | | | | | | | | | | | | | | | | | | | | |
| Width/Median Depth | 15 | | 15 | | 15 | | 15 | | 15 | | 15 | | 20 | | 20 | | 20 | | 20 | | 20 | |
| Feature Type (riffle, run, or pool) | Run | | Run | |

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Signed: Robin Reymond Date: 5/23/07

WBID# 1714



WBID 1714 – Site 1 – Transect 1 – facing upstream.



WBID 1714 – Site 1 – Transect 1 – facing downstream.



WBID 1714 – Site 1 – Transect 1 – foot path.



WBID 1714 – Site 1 – Near Transect 4 – ATV tracks.

WBID# 1714



WBID 1714 – Site 1 – near Transect 6 – pipe and hose in creek



WBID 1714 – Site 2 – Transect 1 – facing upstream.



WBID 1714 – Site 2 – Transect 1 – facing downstream.



WBID 1714 – Site 3 – Transect 1 – facing upstream.

WBID# 1714



WBID 1714 – Site 3 – Transect 1 – facing downstream to confluence with Mississippi River.