



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0863 Little Shaver Creek

Submitted by
BWR

to

Missouri Department of Natural Resources
Water Protection Program

Date received: June 1, 2007

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): | Little Shaver Creek | | |
| Missouri Water Body Identification (WBID) Number: | 863 | | |
| 8-digit HUC: | 10300103 | County: | Pettis |
| Upstream Legal Description (from Table H): | mouth | | |
| Downstream Legal Description (from Table H): | 04,45N, 20W | | |
| Number of sites evaluated | 3 | | |
| List all sites numbers, listed consequently upstream to downstream: | 1, 2, 3 | | |

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

II. Subsegmentation (fill this section out only in cases where subsegmentation is being proposed)

| LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS) | | | |
|---|--------------------------------|--|---|
| Upstream Coordinates: | | Downstream Coordinates: | |
| UTM X | Y | UTM X | Y |
| 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 Processing | | | |
| HORIZONTAL ACCURACY ESTIMATE | | | |
| GPS Data Quality | | Interpolation Data Quality | |
| FOM | ± _____ Meters | Source Map Scale: 1:24,000 1:100,000 Other _____ | |
| EPE | ± _____ Feet or ± _____ Meters | | |
| PDOP | | ± _____ Feet or ± _____ Meters | |

III. Discharger Facility Information (list all permitted dischargers on the stream)

| | |
|------------------------------|-------------------|
| Discharger Facility Name(s): | Monsees Lake Est. |
| Discharger Permit Number(s): | MO0096831 |

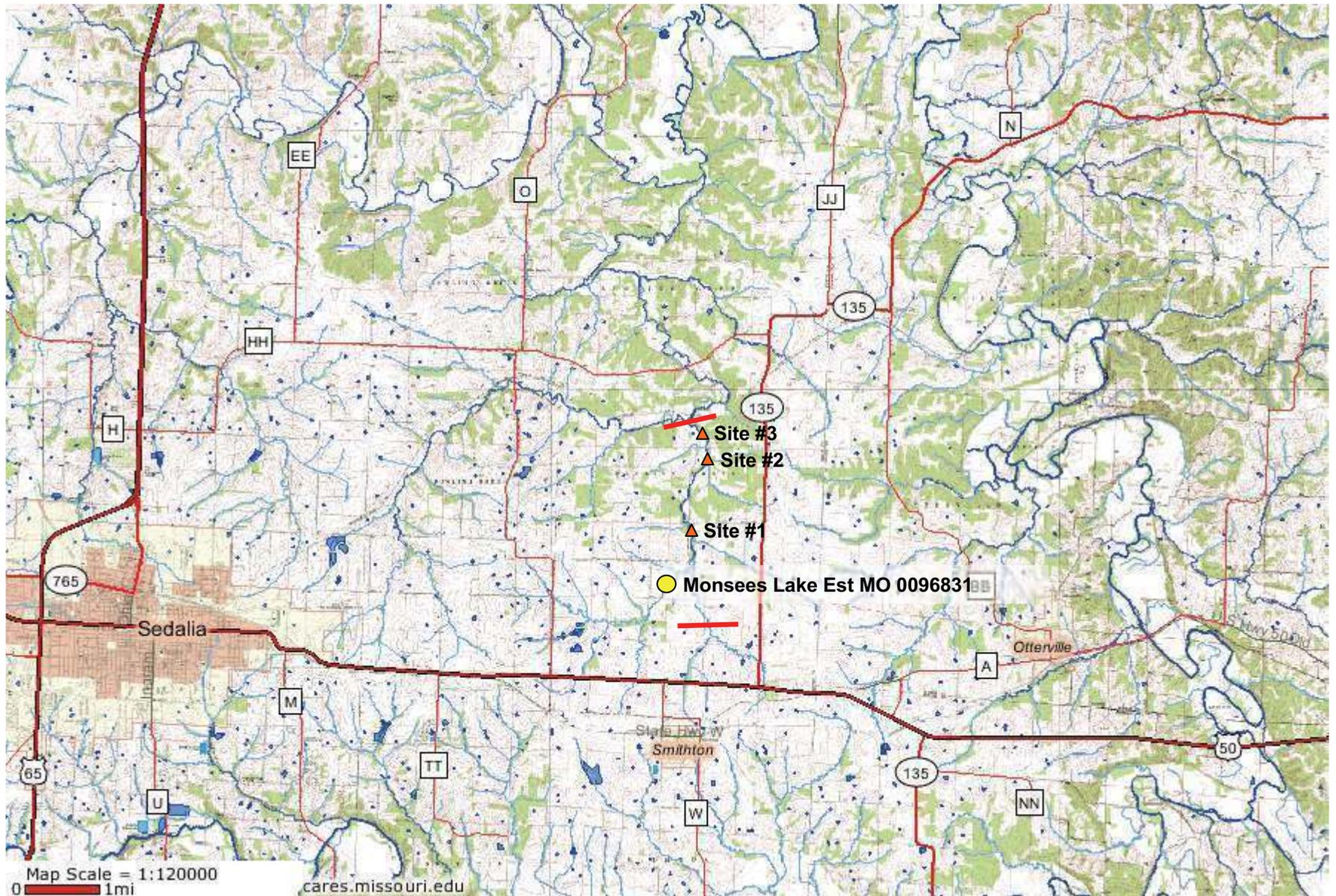
IV. UAA Surveyor (please print legibly)

| | | | |
|------------------------|---------------|-------------------|----------------|
| Name of Surveyor | Alan Mitchell | Telephone Number: | (816) 363-2696 |
| Organization/Employer: | BWR | | |
| Position: | Env. Engineer | | |

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

Signed: Alan Mitchell
February 5, 2007

Date: May 18, 2007



Little Shaver Creek
WBID #863



WBID# 863
 Site# 1

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet B - Site Characterization
 (must be completed for each site)

| | |
|---|--|
| Date & Time: <u>5/18/2007</u> | Site Location Description (c.g., road crossing): |
| Personnel (Data Collectors): <u>Alan Mitchell ^{John} Coates</u> | <u>road crossing South of Audena Rd</u> |
| Current Weather Conditions: <u>Clear</u> | Facility Name: <u>MONSIEUR LAKE EST</u> |
| Weather Conditions for Past 10 days: <u>Rainy</u> | Permit Number: <u>MD0096831</u> |
| Drought Conditions?: No drought <input 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 Locations:

| | |
|--|--|
| LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS) | |
| Site GPS Coordinates: UTM X: <u>93.08756° W</u> | Y: <u>3870636° N</u> |
| 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 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 | |

Photos:

| Upstream Photos | | Downstream Photos | | Other Photos | |
|-----------------|---------------|-------------------|---------------|--------------|---------------|
| Photo ID# | Photo Purpose | Photo ID# | Photo Purpose | Photo ID# | Photo Purpose |
| <u>14</u> | | <u>13</u> | | | |

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 checked="" type="checkbox"/> Other: <u>Cattle</u> |

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 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: Cattle pasture

Indications of Human Use*: (attach photos)

| | | | | | |
|--|--|--|---|---|--|
| <input type="checkbox"/> Roads | <input type="checkbox"/> Rope swings | <input 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 type="checkbox"/> Fishing Tackle | <input type="checkbox"/> Other: | |

Comments: No human use observed

7. Channel Feature
 RUN = 00%
 RIFFLE = 30%
 POOL = 10%

• Page Two – Data Sheet B for WBID # 863 : Site #1

Stream Morphology:

Upstream View's Physical Dimensions: 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 | 0 m | 0 | 15 m | 0.7 | 1.0 |

Downstream View's Physical Dimensions: 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 | 15 m | 1.0 | 5 m | 0.2 | 0.2 |
| RUN | | | | | |
| POOL | 0 | | | | |

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

| | | | | | |
|-------------|-------------|-----------|----------|--------------|-------------|
| 80 % Cobble | 16 % Gravel | 10 % Sand | 0 % Silt | 0 % Mud/Clay | 0 % Bedrock |
|-------------|-------------|-----------|----------|--------------|-------------|

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

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 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: |

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: David M. Jettell Date of Survey: May 18, 2007

Organization: EAE, Inc. Position: Env. Engineer

13 ON
14 UP

Data Sheet C - Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 863 Site # 1

| | Distance from Stream edge | Depth | Rank | Assigned Rank | Sorted depth |
|------------|---------------------------|-------|------|---------------|----------------------|
| Transect A | wetted width | 2.0 | | 1 | Channel Feature: |
| | 2.0 m | 0.1 | | 2 | RUN |
| | | 0.1 | | 3 | |
| | measurements | 0.1 | | 4 | Dissolved Oxygen |
| | m | 0.1 | | 5 | |
| | apart | 0.1 | | 6 | 16.3 ppm |
| | | 0.2 | | 7 | 17.7 % |
| | | 0.1 | | 8 | 22 |
| | | 0.1 | | 9 | |
| | | 2.0 | | 10 | |
| Transect B | wetted width | 2.1 | | 12 | Channel Feature: RUN |
| | 2.0 m | 2.1 | | 13 | |
| | | 2.0 | | 14 | |
| | measurements | 0.1 | | 15 | Dissolved Oxygen: |
| | m | 0.1 | | 16 | |
| | apart | 0.1 | | 17 | 16.2 ppm |
| | | 0.1 | | 18 | 18.5 % |
| | | 2.0 | | 19 | 21.8 |
| | | 2.0 | | 20 | |
| | | 2.0 | | 21 | |
| Transect C | wetted width | 2.1 | | 23 | Channel Feature: RUN |
| | 2.0 m | 0.3 | | 24 | |
| | | 0.4 | | 25 | |
| | measurements | 0.6 | | 26 | Dissolved Oxygen |
| | m | 0.8 | | | |
| | apart | 0.8 | | | 15.3 ppm |
| | | 0.4 | | | 17.3 % |
| | | 0.3 | | n | 21.6°C |
| | | 0.2 | | | |
| | | 2.1 | | | |

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.
 If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: David Mitchell Date: May 18, 2007

Organization: EAE, Inc. Position: Env. Eng.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 903

Site # 1

| | Distance from Stream edge | Depth | Rank | Assigned Rank R | Sorted depth |
|------------|---------------------------|-------|------|----------------------|--------------|
| Transect D | 1 wetted width | <0.1 | | 1 Channel Feature: | |
| | 2 4.5 m | <0.1 | | 2 RUN | |
| | 3 | 0.3 | | 3 | |
| | 4 measurements | 0.2 | | 4 Dissolved Oxygen | |
| | 5 m | 0.4 | | 5 | |
| | 6 apart | 0.4 | | 6 15.7 ppm | |
| | 7 | 0.4 | | 7 176 % | |
| | 8 | 0.3 | | 8 21.9 °C | |
| | 9 | 0.1 | | 9 | |
| | 10 | <0.1 | | 10 | |
| Transect E | 1 wetted width | <0.1 | | 12 Channel Feature: | |
| | 2 6.0 m | 0.1 | | 13 RUN | |
| | 3 | 0.1 | | 14 | |
| | 4 measurements | 0.1 | | 15 Dissolved Oxygen: | |
| | 5 0.6 m | 0.1 | | 16 | |
| | 6 apart | <0.1 | | 17 16.3 ppm | |
| | 7 | <0.1 | | 18 187 % | |
| | 8 | <0.1 | | 19 21.9 °C | |
| | 9 | <0.1 | | 20 | |
| | 10 | <0.1 | | 21 | |
| Transect F | 1 wetted width | 0.3 | | 23 Channel Feature: | |
| | 2 6.0 m | 0.4 | | 24 RUN | |
| | 3 | 0.4 | | 25 | |
| | 4 measurements | 0.4 | | 26 Dissolved Oxygen | |
| | 5 0.6 m | 0.4 | | . | |
| | 6 apart | 0.4 | | . 16.1 ppm | |
| | 7 | 0.3 | | . 181 % | |
| | 8 | 0.3 | | n 20.8 °C | |
| | 9 | 0.3 | | | |
| | 10 | 0.1 | | | |

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alan W. Mitchell

Date: May 18, 2007

Organization: EAE, Inc

Position: Env. Engineer

Data Sheet C - Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 863 Site # 1

| | Distance from Stream edge | Depth | Rank | Assigned Rank | Sorted depth |
|------------|---------------------------|-------|------|----------------------|--------------|
| Transect G | 1 wetted width | <0.1 | | 1 Channel Feature: | |
| | 2 7.0 m | 0.2 | | 2 POOL | |
| | 3 | 0.3 | | 3 | |
| | 4 measurements | 0.3 | | 4 Dissolved Oxygen: | |
| | 5 0.7 m | 0.2 | | 5 | |
| | 6 apart | 0.2 | | 6 16.5 ppm | |
| | 7 | 0.2 | | 7 18.3 % | |
| | 8 | 0.2 | | 8 20.5 | |
| | 9 | 0.1 | | 9 | |
| | 10 | <0.1 | | 10 | |
| Transect H | 1 wetted width | <0.1 | | 12 Channel Feature: | |
| | 2 4.0 m | 0.3 | | 13 RUN | |
| | 3 | 0.3 | | 14 | |
| | 4 measurements | 0.3 | | 15 Dissolved Oxygen: | |
| | 5 0.6 m | 0.3 | | 16 | |
| | 6 apart | 0.2 | | 17 16.9 ppm | |
| | 7 | 0.3 | | 18 18.5 % | |
| | 8 | 0.3 | | 19 20.5°C | |
| | 9 | 0.2 | | 20 | |
| | 10 | 0.1 | | 21 | |
| Transect I | 1 wetted width | <0.1 | | 23 Channel Feature: | |
| | 2 3.0 m | 0.2 | | 24 RUN | |
| | 3 | 0.2 | | 25 | |
| | 4 measurements | 0.2 | | 26 Dissolved Oxygen: | |
| | 5 0.1 m | 0.2 | | . | |
| | 6 apart | 0.2 | | . | |
| | 7 | 0.1 | | . | |
| | 8 | 0.1 | | n 16.1 ppm | |
| | 9 | <0.1 | | . | |
| | 10 | <0.1 | | . | |

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Mark Mitchell Date: May 18, 2007

Organization: EAE, Inc. Position: Env. Eng.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 863 Site # 1

Transect J

| Distance from Stream edge | Depth | Rank | Assigned Rank | Sorted depth |
|---------------------------|-------|------|---------------|-------------------|
| wetted width | < 0.1 | | 1 | Channel Feature : |
| 1.0 m | 0.1 | | 2 | RIFFLER |
| | 0.1 | | 3 | |
| measurements | 0.1 | | 4 | Dissolved Oxygen |
| 0.1 m | 0.1 | | 5 | |
| apart | 0.1 | | 6 | 16.4 ppm |
| | 0.1 | | 7 | 180 % |
| | 0.1 | | 8 | 19.5°C |
| | 0.1 | | 9 | |
| | < 0.1 | | 10 | |

Transect K

| | | | | |
|--------------|-----|--|----|--------------------|
| | | | 11 | |
| wetted width | < | | 12 | Channel Feature : |
| 1.0 m | < | | 13 | RIFFLER |
| | 0.1 | | 14 | |
| measurements | < | | 15 | Dissolved Oxygen : |
| 0.1 m | 0.1 | | 16 | |
| apart | 0.1 | | 17 | 16.5 ppm |
| | 0.1 | | 18 | 178 % |
| | 0.1 | | 19 | 19.2°C |
| | < | | 20 | |
| | < | | 21 | |

Transect

| | | | | |
|--------------|--|--|----|-------------------|
| wetted width | | | 23 | Channel Feature : |
| _____ m | | | 24 | |
| | | | 25 | |
| measurements | | | 26 | Dissolved Oxygen |
| _____ m | | | . | |
| apart | | | . | _____ ppm |
| | | | . | _____ % |
| | | | n | |

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alvin K. Stutchell Date: May 18, 2007

Organization: EAE, Inc. Position: Env. Engr.

WBID# 863
 Site# 2

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet B - Site Characterization
 (must be completed for each site)

| | |
|--|--|
| Date & Time: <u>3:30 PM # 5/18/2007</u> | Site Location Description (e.g., road crossing): |
| Personnel (Data Collectors): <u>David Mitchell John Casey</u> | <u>Road Crossing South of Providence Rd</u> |
| Current Weather Conditions: <u>Clear</u> | Facility Name: <u>MONSIEUR LAKE EST</u> |
| Weather Conditions for Past 10 days: <u>Rain 36 hrs ago</u> | Permit Number: <u>MD 00916831</u> |
| 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 Locations:

| | |
|--|--|
| LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS) | |
| Site GPS Coordinates: UTM X: <u>93.09119W</u> | Y: <u>38.72450° N</u> |
| HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.) | |
| Global Positioning System (GPS) | |
| Static Mode | Interpolation |
| Dynamic Mode (Kinematic) | Topographic Map or DRG |
| Precise Positioning Service | Aerial Photograph or DOQQ |
| Signal Averaging | Satellite Imagery |
| Real Time Differential Processing | Interpolation Other |
| 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 | |

Photos:

| Upstream Photos | | Downstream Photos | | Other Photos | |
|-----------------|---------------|-------------------|---------------|--------------|---------------|
| Photo ID# | Photo Purpose | Photo ID# | Photo Purpose | Photo ID# | Photo Purpose |
| <u>16</u> | | <u>15</u> | | | |

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.)
No evidence of human use

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 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: No evidence of human use

Indications of Human Use*: (attach photos)

| | | | | | |
|--|--|--|---|---|--|
| <input type="checkbox"/> Roads | <input type="checkbox"/> Rope swings | <input 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 type="checkbox"/> Fishing Tackle | <input type="checkbox"/> Other: | |

Comments:

2 Channel Feature

Run = 80%

Riffle = 20%

Pool = 0%

* Page Two - Data Sheet B for WBID # 863 : Site # 2

Stream Morphology:

Upstream View's Physical Dimensions: 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 | 200 | 10 | 200 | >1 | >1 |

Downstream View's Physical Dimensions: 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 | 200 | 4m | 10 | 0.1 | 0.2 |

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

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

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

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 checked="" type="checkbox"/> Fine sediments | <input type="checkbox"/> None | <input type="checkbox"/> Other: |
| Surface Deposit: | <input type="checkbox"/> Oil | <input 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: Paul Mitchell Date of Survey: May 18, 2007

Organization: EAE, Inc. Position: Env. Engr.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 863

Site # 2

| | Distance from Stream edge | Depth | Rank | Assigned Rank | Sorted depth |
|------------|---------------------------|-------|------|---------------|-------------------|
| Transect A | 1 wetted width | <0.1 | | 1 | Channel Feature: |
| | 2 4.5 m | 0.1 | | 2 | RUN |
| | 3 | 0.2 | | 3 | |
| | 4 measurements | 0.2 | | 4 | Dissolved Oxygen |
| | 5 0.5 m | 0.3 | | 5 | |
| | 6 apart | 0.3 | | 6 | 12.9 ppm |
| | 7 | 0.4 | | 7 | 190 % |
| | 8 | 0.3 | | 8 | 18.7°C |
| | 9 | 0.2 | | 9 | |
| | 10 | 0.1 | | 10 | |
| Transect B | 1 wetted width | <0.1 | | 12 | Channel Feature: |
| | 2 3.0 m | <0.1 | | 13 | RIFLE |
| | 3 | <0.1 | | 14 | |
| | 4 measurements | <0.1 | | 15 | Dissolved Oxygen: |
| | 5 m | 0.1 | | 16 | |
| | 6 apart | 0.1 | | 17 | 13.8 ppm |
| | 7 | 0.1 | | 18 | 150 % |
| | 8 | 0.1 | | 19 | 18.8°C |
| | 9 | 0.1 | | 20 | |
| | 10 | <0.1 | | 21 | |
| Transect C | 1 wetted width | <0.1 | | 23 | Channel Feature: |
| | 2 2.5 m | 0.1 | | 24 | RIFLE |
| | 3 | 0.1 | | 25 | |
| | 4 measurements | 0.1 | | 26 | Dissolved Oxygen |
| | 5 0.2 m | 0.1 | | . | |
| | 6 apart | 0.1 | | . | 14.0 ppm |
| | 7 | 0.1 | | . | 151 % |
| | 8 | 0.1 | | n | 18.7°C |
| | 9 | <0.1 | | | |
| | 10 | <0.1 | | | |

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alan M. Mitchell

Date: May 18, 2007

Organization: EAE, Inc.

Position: Env. Engr

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 863

Sik # 2

| | Distance from Stream edge | Depth | Rank | Assigned Rank | Sorted depth |
|------------|---------------------------|-------|------|---------------|-------------------|
| Transect D | wetted width | < 0.1 | | 1 | Channel Feature: |
| | <u>10.0 m</u> | 0.5 | | 2 | RUN |
| | | 0.7 | | 3 | |
| | measurements | 0.7 | | 4 | Dissolved Oxygen |
| | <u>1.0 m</u> | 0.6 | | 5 | |
| | apart | 0.6 | | 6 | 14.0 ppm |
| | | 0.6 | | 7 | 15.1 % |
| | | 0.5 | | 8 | 19.0 |
| | | 0.3 | | 9 | |
| | | < 0.1 | | 10 | |
| | | | 11 | | |
| Transect E | wetted width | < 0.1 | | 12 | Channel Feature: |
| | <u>10.0 m</u> | 0.5 | | 13 | RUN |
| | | 0.7 | | 14 | |
| | measurements | 0.8 | | 15 | Dissolved Oxygen: |
| | <u>1.0 m</u> | 0.9 | | 16 | |
| | apart | 0.9 | | 17 | 14.0 ppm |
| | | 0.9 | | 18 | 15.1 % |
| | | 0.8 | | 19 | 19.0 °C |
| | | 0.7 | | 20 | |
| | | < 0.1 | | 21 | |
| | | | 22 | | |
| Transect F | wetted width | < 0.1 | | 23 | Channel Feature: |
| | <u>1.1 m</u> | 0.4 | | 24 | RUN |
| | | 0.6 | | 25 | |
| | measurements | 0.7 | | 26 | Dissolved Oxygen |
| | <u>1.1 m</u> | 0.7 | | . | |
| | apart | 0.8 | | . | 14.0 ppm |
| | | 0.7 | | . | 15.0 % |
| | | 0.6 | | n | 19.2 °C |
| | | 0.4 | | | |
| | | < 0.1 | | | |

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

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Signed: [Signature]

Date: May 18, 2007

Organization: EAE, Inc.

Position: Env Eng

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 863

Site # 2

| | Distance from Stream edge | Depth | Rank | Assigned Rank | Sorted depth |
|------------|---------------------------|-------|------|---------------|-------------------|
| Transect G | wetted width | <0.1 | | 1 | Channel Feature: |
| | <u>12.0 m</u> | 0.4 | | 2 | RUN |
| | | 0.5 | | 3 | |
| | measurements | 0.6 | | 4 | Dissolved Oxygen |
| | <u>1.2 m</u> | 0.5 | | 5 | |
| | apart | 0.6 | | 6 | 14.0 ppm |
| | | 0.4 | | 7 | 15.0 % |
| | | 0.2 | | 8 | 19.3 |
| | | 0.2 | | 9 | |
| | | <0.1 | | 10 | |
| Transect H | wetted width | 0.2 | | 12 | Channel Feature: |
| | <u>12 m</u> | 0.5 | | 13 | RUN |
| | | 0.6 | | 14 | |
| | measurements | 0.8 | | 15 | Dissolved Oxygen: |
| | <u>1.2 m</u> | 0.8 | | 16 | |
| | apart | 0.7 | | 17 | 14.0 ppm |
| | | 0.6 | | 18 | 15.3 % |
| | | 0.5 | | 19 | 19.3 °C |
| | | 0.3 | | 20 | |
| | | 0.1 | | 21 | |
| Transect I | wetted width | 0.1 | | 23 | Channel Feature: |
| | <u>11 m</u> | 0.5 | | 24 | RUN |
| | | 0.7 | | 25 | |
| | measurements | 0.7 | | 26 | Dissolved Oxygen |
| | <u>1.1 m</u> | 0.7 | | | |
| | apart | 0.7 | | | 14.0 ppm |
| | | 0.5 | | | 15.4 % |
| | | 0.5 | | n | 19.3 °C |
| | | 0.3 | | | |
| | | <0.1 | | | |

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I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: David Mitchell

Date: May 18, 2007

Organization: EAE, Inc.

Position: Env. Eng.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 863

Site # 2

| | Distance from Stream edge | Depth | Rank | Assigned Rank | Sorted depth |
|------------|---------------------------|-------|------|---------------|----------------------|
| Transect J | 1 wetted width | <0.1 | | 1 | Channel Feature: RUN |
| | 2 <u>7.0 m</u> | 0.1 | | 2 | |
| | 3 | 0.2 | | 3 | |
| | 4 measurements | 0.3 | | 4 | Dissolved Oxygen |
| | 5 <u>0.7 m</u> | 0.4 | | 5 | |
| | 6 apart | 0.3 | | 6 | 14.6 ppm |
| | 7 | 0.1 | | 7 | 159.0 % |
| | 8 | 0.1 | | 8 | 19.4 |
| | 9 | 0.1 | | 9 | |
| | 10 | <0.1 | | 10 | |
| Transect K | 1 wetted width | <0.1 | | 12 | Channel Feature: RUN |
| | 2 <u>6.0 m</u> | 0.1 | | 13 | |
| | 3 | 0.2 | | 14 | |
| | 4 measurements | 0.3 | | 15 | Dissolved Oxygen: |
| | 5 <u>0.6 m</u> | 0.4 | | 16 | |
| | 6 apart | 0.3 | | 17 | 17.5 ppm |
| | 7 | 0.4 | | 18 | 150 % |
| | 8 | 0.3 | | 19 | 19.9 °C |
| | 9 | 0.3 | | 20 | |
| | 10 | 0.1 | | 21 | |
| Transect | 1 wetted width | | | 23 | Channel Feature: |
| | 2 <u> </u> m | | | 24 | |
| | 3 | | | 25 | |
| | 4 measurements | | | 26 | Dissolved Oxygen |
| | 5 <u> </u> m | | | . | |
| | 6 apart | | | . | ppm |
| | 7 | | | . | % |
| | 8 | | | n | |
| | 9 | | | | |
| | 10 | | | | |

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I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alvin S. Till

Date: May 18, 2007

Organization: EAE, Inc.

Position: Env. Engr.

WBID# 803
 Site# 3

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet B - Site Characterization
 (must be completed for each site)

| | |
|--|--|
| Date & Time: <u>5/20/07 17:30</u> | Site Location Description (e.g., road crossing): |
| Personnel (Data Collectors): <u>Aran Mitchell, Sallie Rook</u> | <u>Road Crossing, south of Providence Rd.</u> |
| Current Weather Conditions: <u>Sunny, Warm</u> | Facility Name: <u>Monsees Lake Est</u> |
| Weather Conditions for Past 10 days: <u>warm, rainy</u> | Permit Number: <u>MO00916831</u> |
| 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 Locations:

| | |
|--|--|
| LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS) | |
| Site GPS Coordinates: UTM X: <u>093.0810090W</u> | Y: <u>38.739020N</u> |
| HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.) | |
| Global Positioning System (GPS) | |
| Static Mode | Interpolation |
| Dynamic Mode (Kinematic) | Topographic Map or DRG |
| Precise Positioning Service | Aerial Photograph or DOQQ |
| Signal Averaging | Satellite Imagery |
| Real Time Differential Processing | Interpolation Other |
| 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 | |

Photos:

| Upstream Photos | | Downstream Photos | | Other Photos | |
|-----------------|---------------|-------------------|---------------|--------------|---------------|
| Photo ID# | Photo Purpose | Photo ID# | Photo Purpose | Photo ID# | Photo Purpose |
| <u>48</u> | | <u>49</u> | | | |

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 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 type="checkbox"/> Roads | <input type="checkbox"/> Rope swings | <input 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 type="checkbox"/> Fishing Tackle | <input type="checkbox"/> Other: | |

Comments: NONE

2. Channel Features

RUN = 90
RIFPLE = 10
POOL =

* Page Two - Data Sheet B for WBID # 863 : Sik #3

Stream Morphology:

Upstream View's Physical Dimensions: 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) |
|-----------------|--------------------------|-----------|------------|------------------|----------------|
| RIFPLE | | | | | |
| RUN | | | | | |
| POOL | | | | | |

Downstream View's Physical Dimensions: 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) |
|-----------------|--------------------------|-----------|------------|------------------|----------------|
| RIFPLE | | | | | |
| RUN | | | | | |
| POOL | | | | | |

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

| | | | | | |
|--------------------|-------------------|-----------------|------------------|---------------------|--------------------|
| <u>90</u> % Cobble | <u>0</u> % Gravel | <u>0</u> % Sand | <u>10</u> % Silt | <u>0</u> % Mud/Clay | <u>0</u> % Bedrock |
|--------------------|-------------------|-----------------|------------------|---------------------|--------------------|

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

significant amounts of macrophyte

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: Andie Robb Date of Survey: 5/20/07

Organization: BWP Position: Field crew

5 53

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

| | Distance from Stream edge | Depth | Rank | Assigned Rank | Sorted depth |
|--------------|---------------------------|-------|------|-------------------------|--------------|
| TRANSECT A | 1 | 0.1 | | 1 DO | |
| WETTED WIDTH | 2 | 0.2 | | 2 107 | % |
| | 3 | 0.2 | | 3 9.7 | PPM |
| 9.0 m | 4 | 0.3 | | 4 20.1 | °C |
| INTERVAL | 5 | 0.2 | | 5 | |
| 0.9 m | 6 | 0.2 | | 6 (RUN) | |
| | 7 | 0.2 | | 7 | |
| | 8 | 0.2 | | 8 | |
| | 9 | 0.2 | | 9 | |
| | 10 | 0.1 | | 10 | |
| TRANSECT B | 1 | 0.1 | | 11 | |
| WETTED WIDTH | 2 | 0.3 | | 12 | |
| | 3 | 0.7 | | 13 DO | |
| 6.0 m | 4 | 0.6 | | 14 105 | % |
| | 5 | 0.5 | | 15 9.6 | PPM |
| INTERVAL | 6 | 0.4 | | 16 20.1 20.1 | °C |
| 0.6 m | 7 | 0.2 | | 17 | |
| | 8 | 0.1 | | 18 (RUN) | |
| | 9 | <0.1 | | 19 | |
| | 10 | 0.1 | | 20 | |
| TRANSECT C | 1 | 0.1 | | 21 | |
| WETTED WIDTH | 2 | 0.5 | | 22 9.2 | PPM |
| | 3 | 0.6 | | 23 100 | % |
| 14.0 | 4 | 0.4 | | 24 20.2 | °C |
| | 5 | 0.2 | | 25 | |
| | 6 | 0.3 | | 26 (RUN) | |
| | 7 | 0.2 | | . | |
| | 8 | 0.2 | | . | |
| | 9 | 0.2 | | . | |
| | 10 | 0.2 | | n | |

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Signed: Alan J. Mitchell

Date: May 20, 2007

Organization: EAE, Inc.

Position: Env. Engr

S CS3

LITTLE
SHAWER
CREEK

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

| | Distance from Stream edge | Depth | Rank | Assigned Rank | Sorted depth |
|----------------------------------|---------------------------|-------|------|---------------|------------------------|
| TRANSECT D 14 M WETTED WIDTH | 1 | >1.0 | | 1 | DO READINGS 9.3 PPM |
| | 2 | >1.0 | | 2 | 10.3 % |
| | 3 | >1.0 | | 3 | 20.1 °C |
| | 4 | >1.0 | | 4 | (RUN) |
| | 5 | 0.8 | | 5 | |
| | 6 | 0.6 | | 6 | |
| | 7 | 0.6 | | 7 | |
| | 8 | 0.5 | | 8 | |
| | 9 | 0.5 | | 9 | |
| | 10 | 0.3 | | 10 | DO READINGS |
| TRANSECT E 5.0 M WETTED WIDTH | 1 | 0.2 | | 11 | 9.3 PPM |
| | 2 | 0.2 | | 12 | 10.3 % |
| | 3 | 0.2 | | 13 | 20.2 °C |
| | 4 | 0.6 | | 14 | (RUN) |
| | 5 | 0.8 | | 15 | |
| | 6 | 0.8 | | 16 | |
| | 7 | 0.6 | | 17 | |
| | 8 | 0.4 | | 18 | |
| | 9 | 0.3 | | 19 | |
| | 10 | 0.1 | | 20 | DO READINGS |
| TRANSECT F 8.0 M | 1 | 0.1 | | 21 | 9.8 PPM |
| | 2 | <0.1 | | 22 | 10.9 % |
| | 3 | <0.1 | | 23 | 20.3 °C |
| | 4 | <0.1 | | 24 | (RUN) |
| | 5 | <0.1 | | 25 | |
| | 6 | 0.1 | | 26 | |
| | 7 | <0.1 | | . | |
| | 8 | <0.1 | | . | |
| | 9 | <0.1 | | n | |
| | 10 | <0.1 | | . | |

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Signed: Mark W. Johnson

Date: May 20, 2007

Organization: EAE, Inc.

Position: Env. Eng.

5 (53)

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

| | Distance from Stream edge | Depth | Rank | Assigned Rank | Sorted depth |
|---------------------|---------------------------|-------|------|---------------|--------------|
| TRANSVERSE 10.0 | 1 | 0.2 | | 1 | DO READINGS |
| | 2 | 0.2 | | 2 | 9.7 PPM |
| | 3 | 0.1 | | 3 | 110 % |
| | 4 | 0.1 | | 4 | 20.3 °C |
| | 5 | 0.1 | | 5 | |
| | 6 | 0.1 | | 6 | RIFFLE |
| | 7 | 0.1 | | 7 | |
| | 8 | 0.1 | | 8 | |
| | 9 | <0.1 | | 9 | |
| | 10 | <0.1 | | 10 | |
| TRANSECT H 8.0 | 1 | <0.1 | | 11 | DO READINGS |
| | 2 | <0.1 | | 12 | 10.08 PPM |
| | 3 | <0.1 | | 13 | 112 % |
| | 4 | <0.1 | | 14 | 20.3 °C |
| | 5 | <0.1 | | 15 | |
| | 6 | <0.1 | | 16 | RUN |
| | 7 | 0.1 | | 17 | |
| | 8 | 0.1 | | 18 | |
| | 9 | 0.2 | | 19 | |
| | 10 | 0.3 | | 20 | |
| TRANSECT I 10.0m | 1 | 0.1 | | 21 | |
| | 2 | 0.1 | | 22 | DO READINGS |
| | 3 | 0.1 | | 23 | 9.7 PPM |
| | 4 | 0.1 | | 24 | 107 % |
| | 5 | 0.1 | | 25 | 20.3 °C |
| | 6 | 0.2 | | 26 | |
| | 7 | 0.2 | | | RIFFLE |
| | 8 | 0.1 | | | |
| | 9 | 0.2 | | | |
| | 10 | 0.1 | | | |

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Signed: Christie Mitchell

Date: May 20, 2007

Organization: EAF, Inc.

Position: Env. Eng.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

| Distance from Stream edge | Depth | Rank | Assigned Rank | Sorted depth |
|---------------------------|-------|------|---------------|--------------|
| TRANSECT J | | | | |
| (6.5m) 1 | 0.1 | | 1 DO READING | |
| WETTED 2 | 0.2 | | 2 10.0 | FTM |
| W 3 | 0.3 | | 3 11.2 | B |
| 4 | 0.3 | | 4 20.3 | C |
| 5 | 0.3 | | 5 | |
| 6 | 0.3 | | 6 RUN | |
| 7 | 0.4 | | 7 | |
| 8 | 0.4 | | 8 | |
| 9 | 0.3 | | 9 | |
| 10 | 0.2 | | 10 | |
| TRANSECT K | | | | |
| WETTED 1 | 0.4 | | 12 DO READING | |
| W 2 | 0.7 | | 13 9.5 | FTM |
| (5.0) 3 | 0.7 | | 14 10.3 | FTM |
| 4 | 0.7 | | 15 20.3 | B |
| 5 | 0.7 | | 16 | |
| 6 | 0.5 | | 17 RUN | |
| 7 | 0.4 | | 18 | |
| 8 | 0.2 | | 19 | |
| 9 | 0.2 | | 20 | |
| 10 | 0.1 | | 21 | |
| | | | 22 | |
| | | | 23 | |
| | | | 24 | |
| | | | 25 | |
| | | | 26 | |
| | | | n | |

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Signed: Julie Robb Date: 5/20/07
 Organization: BWR Position: Field crew



Upstream (Site 1) of Little Shaver Creek



Downstream (Site 1) of Little Shaver Creek



Upstream (Site 2) of Little Shaver Creek



Downstream (Site 2) of Little Shaver Creek



Upstream (Site 3) of Little Shaver Creek



Downstream (Site 3) of Little Shaver Creek

Field Data Sheet for Recreational Use Stream Survey

Data Sheet D—Recreational Use Interview

Stream Name LITTLE SHAVER (WBID # 863)

I. Introduction

Date & Time (include AM or PM): 4:00 pm 5-04-07

Interviewed: In person By phone By mail

(NOTE: If you are an Interviewee filling out this form to mail back to DNR, proceed to Question #1.)

Interviewee selected because (e.g., house next to stream; standing by stream, etc.) PROPERTY OWNER

Interviewer introduction to Interviewee: "My name is _____, I work for _____ (name of your employer) _____, and I am collecting information on how people use _____ (name of the stream) _____."

ASK:

1.) Are you willing to respond to a survey about this stream? (It will just take a few minutes.)

Yes No If yes, list contact information for the interviewee below:

Legal name: Thomas F. Smith
Current mailing address: 24652 ARATOR RD SMITHTON
Daytime phone number: (460) 4 543-5472 65350
E-mail address (optional):

2.a.) Do you live in this area? Yes No

If yes, how many years? 40 yrs

2.b.) If you don't live nearby, are you still familiar with this stream? Yes No

If yes, how many years?

If no, thank the individual for taking the time to talk to you and conclude the interview.

3.) Are you familiar with this particular stretch of the stream? (show them the map, pointing out local landmarks such as roads, bridges, property lines) Yes No

If yes, proceed to "II. Personal Use?".

If no, proceed to Section V.

II. Personal Use?

1.) Have you or your family personally used the stream for recreation since November 28, 1975?

Yes No

If yes, proceed to #3.

If no, proceed to #2.

2.a.) List reasons stream not used.

WATER IS USUALLY LOW

2.b.) Proceed to "III. Witnessed Use?".

3.) How do you use the stream?

| <i>Whole Body Contact Recreation</i> | | | |
|--------------------------------------|---------------------------------|---|---------------------------------------|
| Swimming <input type="checkbox"/> | Tubing <input type="checkbox"/> | Snorkeling/Skin Diving <input type="checkbox"/> | Water Skiing <input type="checkbox"/> |

If Interviewee (or family) used the stream for WBCR since Nov. 28, 1975, ask:

4.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

4.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

| <i>Secondary Contact Recreation</i> | | | | |
|-------------------------------------|---------------------------------|----------------------------------|-----------------------------------|---------------------------------------|
| Fishing <input type="checkbox"/> | Wading <input type="checkbox"/> | Boating <input type="checkbox"/> | Trapping <input type="checkbox"/> | Other: <input type="checkbox"/> List: |

If Interviewee (or family) used the stream for SCR since Nov. 28, 1975, ask:

4.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

4.d.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

III. Witnessed Use?

1.) Have you observed others using this stream for recreation since Nov. 28, 1975? Yes No
 If yes, proceed to #2.
 If no, proceed to, "IV. Anecdotal Use?".

2.) What kinds of uses have you witnessed?

| <i>Whole Body Contact Recreation</i> | | | |
|--------------------------------------|---------------------------------|---|---------------------------------------|
| Swimming <input type="checkbox"/> | Tubing <input type="checkbox"/> | Snorkeling/Skin Diving <input type="checkbox"/> | Water Skiing <input type="checkbox"/> |

If Interviewee witnessed WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol). _____

Secondary Contact Recreation

Fishing Wading Boating Trapping Other: List:

If Interviewee witnessed SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.d.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol). _____

IV. Anecdotal Use?

1.) Have you heard about anyone using this stream since Nov. 28, 1975 for recreation – not seen or done yourself, but just heard about it? Yes No

If yes, proceed to #2.

If no, thank the individual for taking the time to talk to you and conclude the interview.

2.) What kind of uses have you heard about?

Whole Body Contact Recreation

Swimming Tubing Snorkeling/Skin Diving Water Skiing

If Interviewee heard of WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

Secondary Contact Recreation

Fishing Wading Boating Trapping Other: List:

If Interviewee heard of SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.d.) Where, exactly? Describe specific location *and mark on the* (See map requirements in the protocol). _____

V. Others to Contact?

Can you recommend someone else we could contact that knows the stream? Yes No
If yes, that person's contact info (name, address, phone, directions?) _____

JOHN HAMMON, 5-STAR MFG HWY # 50
(E. of Sedalia)

If no, thank the individual for taking the time to talk to you and conclude the interview.

VI. Additional Comments

1.) From the Interviewee: _____

2.) From the Interviewer: _____

VII. Information on Interviewer

Has interviewer been trained by Missouri DNR to conduct UAA Interviews?

Yes No If yes, how (check all that apply):

Workshop? (if so, enter date): _____

On-line training seminar? _____

Followed Interview Instruction Sheets? _____

Other _____

Interviewer Information:

Signature: _____

Printed Name: _____

Employer (where applicable): _____

Interviewer's phone #: _____ E-mail: _____

Field Data Sheet for Recreational Use Stream Survey

Data Sheet D—Recreational Use Interview

Stream Name LITTLE SHAVER (WBID # 863)

I. Introduction

Date & Time (include AM or PM): _____

Interviewed: In person By phone By mail

(NOTE: If you are an Interviewee filling out this form to mail back to DNR, proceed to Question #1.)

Interviewee selected because (e.g., house next to stream; standing by stream, etc.) _____

Interviewer introduction to Interviewee: "My name is _____, I work for __ (name of your employer) ____, and I am collecting information on how people use __ (name of the stream) ____."

ASK:

1.) Are you willing to respond to a survey about this stream? (It will just take a few minutes.)

Yes No If yes, list contact information for the interviewee below:

Legal name: Shelle Weaver
Current mailing address: 32455 PROVIDENCE RD. SMITHTON MO.
Daytime phone number: (660) 343-5365
E-mail address (optional): 65350

2.a.) Do you live in this area? Yes No

If yes, how many years?

2.b.) If you don't live nearby, are you still familiar with this stream? Yes No

If yes, how many years?

If no, thank the individual for taking the time to talk to you and conclude the interview.

3.) Are you familiar with this particular stretch of the stream? (show them the map, pointing out local landmarks such as roads, bridges, property lines) Yes No

If yes, proceed to "II. Personal Use?".

If no, proceed to Section V.

II. Personal Use?

1.) Have you or your family personally used the stream for recreation since November 28, 1975?

Yes No

If yes, proceed to #3.

If no, proceed to #2.

2.a.) List reasons stream not used.

2.b.) Proceed to "III. Witnessed Use?".

3.) How do you use the stream?

| <i>Whole Body Contact Recreation</i> | | | |
|--------------------------------------|---------------------------------|---|---------------------------------------|
| Swimming <input type="checkbox"/> | Tubing <input type="checkbox"/> | Snorkeling/Skin Diving <input type="checkbox"/> | Water Skiing <input type="checkbox"/> |

If Interviewee (or family) used the stream for WBCR since Nov. 28, 1975, ask:

4.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

4.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

| <i>Secondary Contact Recreation</i> | | | | |
|-------------------------------------|---------------------------------|----------------------------------|-----------------------------------|---------------------------------------|
| Fishing <input type="checkbox"/> | Wading <input type="checkbox"/> | Boating <input type="checkbox"/> | Trapping <input type="checkbox"/> | Other: <input type="checkbox"/> List: |

If Interviewee (or family) used the stream for SCR since Nov. 28, 1975, ask:

4.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

4.d.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

III. Witnessed Use?

1.) Have you observed others using this stream for recreation since Nov. 28, 1975? Yes No

If yes, proceed to #2.

If no, proceed to, "IV. Anecdotal Use?"

2.) What kinds of uses have you witnessed?

| <i>Whole Body Contact Recreation</i> | | | |
|--------------------------------------|---------------------------------|---|---------------------------------------|
| Swimming <input type="checkbox"/> | Tubing <input type="checkbox"/> | Snorkeling/Skin Diving <input type="checkbox"/> | Water Skiing <input type="checkbox"/> |

If Interviewee witnessed WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol). _____

Secondary Contact Recreation

Fishing | Wading | Boating | Trapping | Other: List: _____

If Interviewee witnessed SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.d.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol). _____

IV. Anecdotal Use?

1.) Have you heard about anyone using this stream since Nov. 28, 1975 for recreation – not seen or done yourself, but just heard about it? Yes No

If yes, proceed to #2.

If no, thank the individual for taking the time to talk to you and conclude the interview.

2.) What kind of uses have you heard about?

Whole Body Contact Recreation

Swimming | Tubing | Snorkeling/Skin Diving | Water Skiing

If Interviewee heard of WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

Secondary Contact Recreation

Fishing Wading Boating Trapping Other: List:

If Interviewee heard of SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.d.) Where, exactly? Describe specific location *and mark on the* (See map requirements in the protocol). _____

V. Others to Contact?

Can you recommend someone else we could contact that knows the stream? Yes No
If yes, that person's contact info (name, address, phone, directions?) _____

If no, thank the individual for taking the time to talk to you and conclude the interview.

VI. Additional Comments

1.) From the Interviewee: _____

2.) From the Interviewer: _____

VII. Information on Interviewer

Has interviewer been trained by Missouri DNR to conduct UAA Interviews?

Yes No If yes, how (check all that apply):

Workshop? (if so, enter date): _____

On-line training seminar? _____

Followed Interview Instruction Sheets? _____

Other _____

Interviewer Information:

Signature: _____

Printed Name: _____

Employer (where applicable): _____

Interviewer's phone #: _____ E-mail: _____