



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 3115 Main Ditch

Submitted by
Olsson Associates

To
Missouri Department of Natural Resources
Water Protection Program

On
October 14, 2008

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A – Water Body Identification

I. Water Body Information (for water body being surveyed)

Water Body Name (from USGS 7.5' quad): Main Ditch
Missouri Water Body Identification (WBID) Number: 3115
8-digit HUC: 08020204
County(ies), Listed Upstream to Downstream: Stoddard, Dunklin
Upstream Legal Description (from Table H): 20, 24N, 10E
Downstream Legal Description (from Table H): 19, 23N, 10E
Number of sites evaluated: 4
List all site numbers, <u>consecutively upstream to downstream</u> : 3115-1, 3115-2, 3115-3, 3115-4
Include a Site Location Map(s). The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).

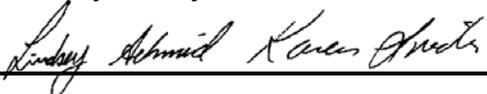
II. Facility Information (list all permitted discharges to this water body segment)

Facility Name(s) and Permit Number(s): N/a

III. UAA Surveyor (please **PRINT** legibly)

Name of Surveyor: Lindsey Schmid / Karen Snider	Telephone Number: 417-890-8802
Organization/Employer: Olsson Associates	

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

Signed:  Date: 09-19-08

WBID # 3115

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 09-19-08 8:50 P.M.	Location Description (e.g., road crossing): CR 664
Stream Name: Main Ditch	
Current Weather Conditions: Mostly cloudy / cool	Facility Name(s): N/A
Weather Conditions for Past 10 days: 1.92" @ Arcadia	Permit Number(s): N/A
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 765689	Northing (UTM Y): 4066065	Horizontal Accuracy: (EPE / FOM / PDOP) 160 ft. Meters
Site 11	Easting (UTM X): 767587	Northing (UTM Y): 4065914	Horizontal Accuracy: (EPE / FOM / PDOP) 40 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3115-1-A	Upstream looking down	3115-1-B	Bridge construction	3115-1-C	Downstream looking up
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: Farm land
Comments:				

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

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

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

% Cobble	% Gravel	% Sand	% Silt	100% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

DRY BED

Water Characteristics*: (Mark all that apply.)

Odor: N/A	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color: N/A	<input 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: N/A	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

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

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

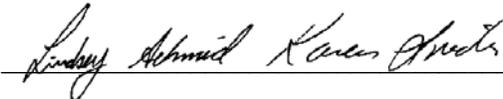
Comments: (Please record any additional comments here.)

Bridge construction at beginning of site.

Dry upstream from construction.

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

Printed Names of Personnel Collecting Data: Lindsey Schmid / Karen Snider

Surveyor's Signature:  Date of Survey: 09-19-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u> Main Ditch </u> Waterbody ID: <u> 3115 </u> Site #: <u> 1 </u> Estimated Channel Incision: <u> 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> 765689 </u> UTM Y: <u> 4066065 </u> +/- <u> 160 ft. </u> (meters) 11 UTM X: <u> 767587 </u> UTM Y: <u> 4065914 </u> +/- <u> 40 ft. </u> (meters) Average Stream Width: <u> 2.5 </u> (meters) Length of Survey Segment: <u> 150 </u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u> Lindsey Schmid / Karen Snider </u>	<p align="center">Dissolved Oxygen</p> Date: <u> 9/19/2008 </u> Time: <u> 8:50 p.m. </u> Dissolved Oxygen: <u> * </u> (mg/L) Dissolved Oxygen: <u> * </u> (% sat) Specific Cond: <u> * </u> (µS/cm) Water Temperature: <u> * </u> (°C) *DRY
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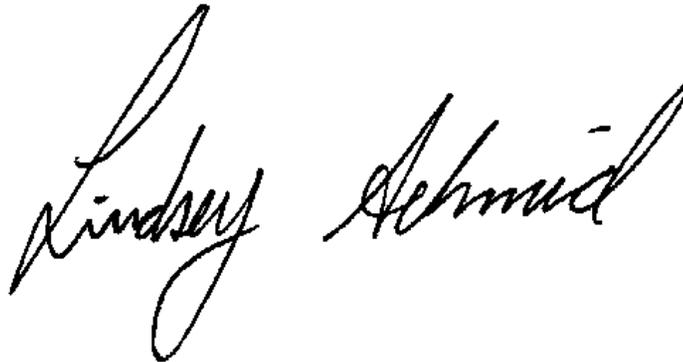
Transect Cross-Section

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	0.16	0.00	0.11	0.00	0.13	0.00	0.17	0.00	0.26	0.00	0.18	0.00	0.21	0.00	0.35	0.00	0.34	0.00	0.43	0.00	0.46	0.00
2	0.32	0.00	0.22	0.00	0.26	0.00	0.34	0.00	0.52	0.00	0.36	0.00	0.42	0.00	0.70	0.00	0.68	0.00	0.86	0.00	0.92	0.00
3	0.48	0.00	0.33	0.00	0.39	0.00	0.51	0.00	0.78	0.00	0.54	0.00	0.63	0.00	1.05	0.00	1.02	0.00	1.29	0.00	1.38	0.00
4	0.64	0.00	0.44	0.00	0.52	0.00	0.68	0.00	1.04	0.00	0.72	0.00	0.84	0.00	1.40	0.00	1.36	0.00	1.72	0.00	1.84	0.00
5	0.80	0.00	0.55	0.00	0.65	0.00	0.85	0.00	1.30	0.00	0.90	0.00	1.05	0.00	1.75	0.00	1.70	0.00	2.15	0.00	2.30	0.00
6	0.96	0.00	0.66	0.00	0.78	0.00	1.02	0.00	1.56	0.00	1.08	0.00	1.26	0.00	2.10	0.00	2.04	0.00	2.58	0.00	2.76	0.00
7	1.12	0.00	0.77	0.00	0.91	0.00	1.19	0.00	1.82	0.00	1.26	0.00	1.47	0.00	2.45	0.00	2.38	0.00	3.01	0.00	3.22	0.00
8	1.28	0.00	0.88	0.00	1.04	0.00	1.36	0.00	2.08	0.00	1.44	0.00	1.68	0.00	2.80	0.00	2.72	0.00	3.44	0.00	3.68	0.00
9	1.44	0.00	0.99	0.00	1.17	0.00	1.53	0.00	2.34	0.00	1.62	0.00	1.89	0.00	3.15	0.00	3.06	0.00	3.87	0.00	4.14	0.00
Right Bank	1.60	0.00	1.10	0.00	1.30	0.00	1.70	0.00	2.60	0.00	1.80	0.00	2.10	0.00	3.50	0.00	3.40	0.00	4.30	0.00	4.60	0.00
Feature Type <small>(riffle, run, or pool)</small>	DRY	DRY																				

MAXIMUM 0.00
 MEDIAN 0.00

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

Surveyor's Signature:



WBID # 3115

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 09-18-08 6:15 p.m.	Location Description (e.g., road crossing): CR 672
Stream Name: Main Ditch	
Current Weather Conditions: sunny / warm	Facility Name(s): N/A
Weather Conditions for Past 10 days: 1.92" @ Arcadia	Permit Number(s): N/A
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 767175	Northing (UTM Y): 4064439	Horizontal Accuracy: (EPE / FOM / PDOP) 61 ft. Meters
Site 11	Easting (UTM X): 767179	Northing (UTM Y): 4064343	Horizontal Accuracy: (EPE / FOM / PDOP) 41 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3115-2-A	Upstream looking down	3115-2-B	Downstream looking up		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: Farm land
Comments:				

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

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

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

% Cobble	% Gravel	% Sand	% Silt	100% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Overgrown with plants, grass Some underwater plants
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Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input checked="" type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input 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 checked="" type="checkbox"/> Other: BROWN
Bottom Deposit:	<input checked="" 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:

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

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

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

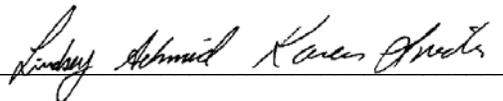
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Lindsey Schmid / Karen Snider

Surveyor's Signature:  Date of Survey: 09-18-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u> Main Ditch </u> Waterbody ID: <u> 3115 </u> Site #: <u> 2 </u> Estimated Channel Incision: <u> 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> 767175 </u> UTM Y: <u> 4064439 </u> +/- <u> 61 ft. </u> (meters) 11 UTM X: <u> 767179 </u> UTM Y: <u> 4064343 </u> +/- <u> 41 ft. </u> (meters) Average Stream Width: <u> 2.4 </u> (meters) Length of Survey Segment: <u> 150 </u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u> Lindsey Schmid / Karen Snider </u>	<p align="center">Dissolved Oxygen</p> Date: <u> 9/18/2008 </u> Time: <u> 6:15 p.m. </u> Dissolved Oxygen: <u> 3.72 </u> (mg/L) Dissolved Oxygen: <u> 43.6 </u> (% sat) Specific Cond: <u> 543 </u> (µS/cm) Water Temperature: <u> 21.6 </u> (°C)
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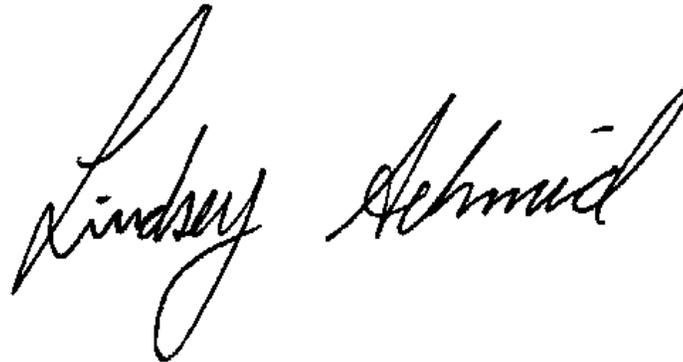
Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.37	0.26	0.07	0.05	0.16	0.05	0.29	0.14	0.14	0.09	0.19	0.10	0.25	0.20	0.23	0.17	0.26	0.10	0.28	0.22	0.36	0.17
2	0.74	0.31	0.14	0.05	0.32	0.05	0.58	0.12	0.28	0.09	0.38	0.13	0.50	0.22	0.46	0.20	0.52	0.12	0.56	0.23	0.72	0.24
3	1.11	0.30	0.21	0.05	0.48	0.05	0.87	0.12	0.42	0.06	0.57	0.15	0.75	0.23	0.69	0.22	0.78	0.16	0.84	0.24	1.08	0.29
4	1.48	0.30	0.28	0.05	0.64	0.05	1.16	0.13	0.56	0.11	0.76	0.17	1.00	0.24	0.92	0.21	1.04	0.19	1.12	0.24	1.44	0.30
5	1.85	0.30	0.35	0.05	0.80	0.05	1.45	0.11	0.70	0.11	0.95	0.16	1.25	0.25	1.15	0.21	1.30	0.15	1.40	0.21	1.80	0.30
6	2.22	0.32	0.42	0.05	0.96	0.05	1.74	0.10	0.84	0.10	1.14	0.14	1.50	0.24	1.38	0.20	1.56	0.14	1.68	0.20	2.16	0.24
7	2.59	0.33	0.49	0.05	1.12	0.05	2.03	0.09	0.98	0.13	1.33	0.13	1.75	0.19	1.61	0.18	1.82	0.10	1.96	0.19	2.52	0.21
8	2.96	0.33	0.56	0.05	1.28	0.05	2.32	0.07	1.12	0.12	1.52	0.10	2.00	0.19	1.84	0.16	2.08	0.08	2.24	0.19	2.88	0.18
9	3.33	0.32	0.63	0.05	1.44	0.05	2.61	0.06	1.26	0.12	1.71	0.10	2.25	0.13	2.07	0.13	2.34	0.08	2.52	0.16	3.24	0.08
Right Bank	3.70	0.00	0.70	0.00	1.60	0.00	2.90	0.00	1.40	0.00	1.90	0.00	2.50	0.00	2.30	0.00	2.60	0.00	2.80	0.00	3.60	0.00
Feature Type <small>(riffle, run, or pool)</small>	RUN																					

MAXIMUM 0.33
 MEDIAN 0.13

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

Surveyor's Signature:



WBID # 3115

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 09-18-08 4:40 P.M.	Location Description (e.g., road crossing): Road crossing CR 684
Stream Name: Main Ditch	
Current Weather Conditions: sunny / hot	Facility Name(s): N/A
Weather Conditions for Past 10 days: 1.92" @ Arcadia	Permit Number(s): N/A
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 766758	Northing (UTM Y): 4059563	Horizontal Accuracy: (EPE / FOM / PDOP) 36 ft. Meters
Site 11	Easting (UTM X): 766700	Northing (UTM Y): 4059433	Horizontal Accuracy: (EPE / FOM / PDOP) 57 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3115-3-A	Upstream looking down	3115-3-B	Downstream looking up	3115-3-C	Bridge
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: Farm land
Comments:				

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

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

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

% Cobble	% Gravel	10% Sand	10% Silt	80% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Grass 20% coverage of green algae

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input checked="" type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input 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 checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" 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:

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

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Lindsey Schmid / Karen Snider

Surveyor's Signature: *Lindsey Schmid Karen Snider* Date of Survey: 09-18-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u> Main Ditch </u> Waterbody ID: <u> 3115 </u> Site #: <u> 3 </u> Estimated Channel Incision: <u> 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> 766758 </u> UTM Y: <u> 4059563 </u> +/- <u> 36 </u> ft. (meters) 11 UTM X: <u> 766700 </u> UTM Y: <u> 4059433 </u> +/- <u> 57 </u> ft. (meters) Average Stream Width: <u> 4.5 </u> (meters) Length of Survey Segment: <u> 150 </u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u> Lindsey Schmid / Karen Snider </u>	<p align="center">Dissolved Oxygen</p> Date: <u> 9/18/2008 </u> Time: <u> 4:40 p.m. </u> Dissolved Oxygen: <u> 12.28 </u> (mg/L) Dissolved Oxygen: <u> 154.7 </u> (% sat) Specific Cond: <u> 423 </u> (µS/cm) Water Temperature: <u> 27 </u> (°C)
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Transect Cross-Section

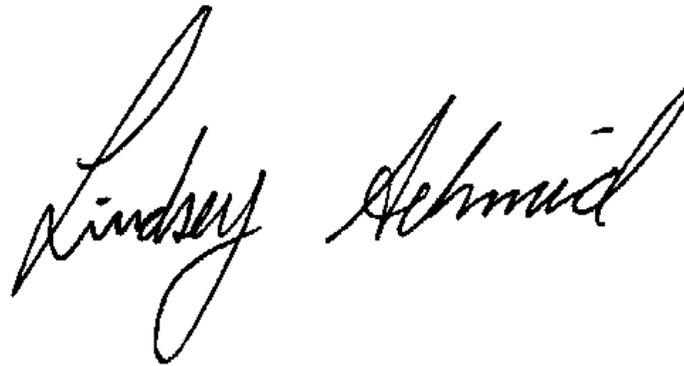
Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.81	0.18	0.32	0.19	0.38	0.15	0.35	0.10	0.49	0.06	0.41	0.09	0.42	0.08	0.56	0.12	0.58	0.14	0.62	0.16	0.59	0.13
2	1.62	0.26	0.64	0.20	0.76	0.11	0.70	0.12	0.98	0.06	0.82	0.10	0.84	0.08	1.12	0.14	1.16	0.15	1.24	0.17	1.18	0.16
3	2.43	0.39	0.96	0.18	1.14	0.06	1.05	0.09	1.47	0.09	1.23	0.09	1.26	0.08	1.68	0.11	1.74	0.16	1.86	0.18	1.77	0.17
4	3.24	0.48	1.28	0.19	1.52	0.05	1.40	0.13	1.96	0.08	1.64	0.09	1.68	0.07	2.24	0.09	2.32	0.12	2.48	0.18	2.36	0.19
5	4.05	0.54	1.60	0.21	1.90	0.05	1.75	0.16	2.45	0.10	2.05	0.10	2.10	0.07	2.80	0.11	2.90	0.12	3.10	0.21	2.95	0.18
6	4.86	0.40	1.92	0.30	2.28	0.08	2.10	0.19	2.94	0.08	2.46	0.11	2.52	0.08	3.36	0.13	3.48	0.11	3.72	0.19	3.54	0.18
7	5.67	0.10	2.24	0.27	2.66	0.09	2.45	0.23	3.43	0.10	2.87	0.12	2.94	0.07	3.92	0.09	4.06	0.13	4.34	0.21	4.13	0.18
8	6.48	0.13	2.56	0.24	3.04	0.11	2.80	0.20	3.92	0.15	3.28	0.16	3.36	0.06	4.48	0.11	4.64	0.18	4.96	0.22	4.72	0.20
9	7.29	0.11	2.88	0.21	3.42	0.11	3.15	0.18	4.41	0.15	3.69	0.15	3.78	0.07	5.04	0.12	5.22	0.22	5.58	0.22	5.31	0.20
Right Bank	8.10	0.00	3.20	0.00	3.80	0.00	3.50	0.00	4.90	0.00	4.10	0.00	4.20	0.00	5.60	0.00	5.80	0.00	6.20	0.00	5.90	0.00
Feature Type <small>(riffle, run, or pool)</small>	RUN																					

MAXIMUM 0.54

MEDIAN 0.12

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

Surveyor's Signature:



WBID # 3115

Site # 4

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 09-18-08 5:15 p.m.	Location Description (e.g., road crossing):
Stream Name: Main Ditch	HWY MM road crossing
Current Weather Conditions: sunny hot	Facility Name(s): N/A
Weather Conditions for Past 10 days: 1.92" @ Arcadia	Permit Number(s): N/A
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 765700	Northing (UTM Y): 4057105	Horizontal Accuracy: (EPE / FOM / PDOP) 52 ft. Meters
Site 11	Easting (UTM X): 765654	Northing (UTM Y): 4056983	Horizontal Accuracy: (EPE / FOM / PDOP) 40 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3115-4-A	Upstream looking down/bridge	3115-4-B	Downstream looking up		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Site # 4

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: Farm land
Comments:				

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

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

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

% Cobble	% Gravel	% Sand	% Silt	100% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Underwater plants 20% Trace amounts of green algae

Water Characteristics*: (Mark all that apply.)

Odor:	<input checked="" type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input 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 checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input checked="" 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 checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

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

Site # 4

Field Data Sheets for Recreational Use Stream Surveys

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

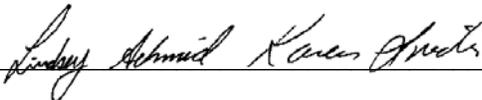
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Lindsey Schmid / Karen Snider

Surveyor's Signature:  Date of Survey: 09-18-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u> Main Ditch </u> Waterbody ID: <u> 3115 </u> Site #: <u> 4 </u> Estimated Channel Incision: <u> 0.2 </u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u> 765700 </u> UTM Y: <u> 4057105 </u> +/- <u> 52 </u> ft. (meters) 11 UTM X: <u> 765654 </u> UTM Y: <u> 4056983 </u> +/- <u> 40 </u> ft. (meters) Average Stream Width: <u> 3 </u> (meters) Length of Survey Segment: <u> 150 </u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u> Lindsey Schmid / Karen Snider </u>	<p align="center">Dissolved Oxygen</p> Date: <u> 9/18/2008 </u> Time: <u> 5:20 p.m. </u> Dissolved Oxygen: <u> 9.54 </u> (mg/L) Dissolved Oxygen: <u> 116.9 </u> (% sat) Specific Cond: <u> 938 </u> (µS/cm) Water Temperature: <u> 25.5 </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	0.42	0.08	0.54	0.09	0.20	0.16	0.42	0.15	0.37	0.12	0.54	0.15	0.32	0.52	0.30	0.05	0.24	0.05	0.21	0.08	0.14	0.05
2	0.84	0.07	1.08	0.11	0.40	0.17	0.84	0.14	0.74	0.12	1.08	0.19	0.64	0.40	0.60	0.05	0.48	0.05	0.42	0.08	0.28	0.05
3	1.26	0.09	1.62	0.18	0.60	0.25	1.26	0.13	1.11	0.22	1.62	0.24	0.96	0.36	0.90	0.05	0.72	0.05	0.63	0.09	0.42	0.05
4	1.68	0.12	2.16	0.19	0.80	0.26	1.68	0.13	1.48	0.34	2.16	0.26	1.28	0.24	1.20	0.05	0.96	0.05	0.84	0.12	0.56	0.05
5	2.10	0.11	2.70	0.18	1.00	0.26	2.10	0.16	1.85	0.38	2.70	0.24	1.60	0.11	1.50	0.05	1.20	0.05	1.05	0.11	0.70	0.05
6	2.52	0.12	3.24	0.19	1.20	0.23	2.52	0.21	2.22	0.44	3.24	0.22	1.92	0.13	1.80	0.05	1.44	0.05	1.26	0.10	0.84	0.05
7	2.94	0.18	3.78	0.20	1.40	0.18	2.94	0.25	2.59	0.49	3.78	0.24	2.24	0.18	2.10	0.05	1.68	0.05	1.47	0.09	0.98	0.05
8	3.36	0.17	4.32	0.18	1.60	0.13	3.36	0.26	2.96	0.56	4.32	0.19	2.56	0.16	2.40	0.05	1.92	0.05	1.68	0.06	1.12	0.05
9	3.78	0.24	4.86	0.18	1.80	0.07	3.78	0.25	3.33	0.62	4.86	0.18	2.88	0.11	2.70	0.05	2.16	0.05	1.89	0.05	1.26	0.05
Right Bank	4.20	0.00	5.40	0.00	2.00	0.00	4.20	0.00	3.70	0.00	5.40	0.00	3.20	0.00	3.00	0.00	2.40	0.00	2.10	0.00	1.40	0.00
Feature Type <small>(riffle, run, or pool)</small>	RUN																					

MAXIMUM 0.62

MEDIAN 0.12

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

Surveyor's Signature:

