



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0940 Dry Creek

Submitted by

MEC Water Resources

To

Missouri Department of Natural Resources

Water Protection Program

On

October 17, 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):	Dry Creek
Missouri Water Body Identification (WBID) Number:	0940
8-digit HUC:	10300104
County(ies), Listed Upstream to Downstream:	Saline, Saline
Upstream Legal Description (from Table H):	11, 48N, 21W
Downstream Legal Description (from Table H):	Mouth
Number of sites evaluated:	3
List all site numbers, <u>consecutively upstream to downstream</u> :	Site 1, Site 2, Site 3
Include a Site Location Map(s). The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).	

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

Facility Name(s) and Permit Number(s):	Break Time Conv. # 3068 – MO 0110591 Lazy Days Campground – MO 0128678
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III. UAA Surveyor (please **PRINT** legibly)

Name of Surveyor:	Sonathan Witte, Cody Luebbering	Telephone Number:	(573) 443-4100
Organization/Employer:	MEC Water Resources Inc.		

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

Signed: Cody Luebbering Date: 9-16-08
RWC 9-16-08

WBID # 0940

Site # 01

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: <u>8-21-08</u> <u>15:30</u>	Location Description (e.g., road crossing): <u>at I-70 crossing</u>
Stream Name: <u>Dry Creek</u>	
Current Weather Conditions: <u>80°F, Mostly Cloudy</u>	Facility Name(s): <u>Break Time Conv. #3068, Lazy Days Campground.</u>
Weather Conditions for Past 10 days: <u>.7 inch rainfall</u>	Permit Number(s): <u>MO 0110591</u> <u>MO 0128678</u>
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): <u>483105</u>	Northing (UTM Y): <u>4312444</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6.2</u> Meters
Site 11	Easting (UTM X): <u>483064</u>	Northing (UTM Y): <u>4312600</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>17.7</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>940-01-005</u>	<u>DN Stream</u>	<u>940-01-006</u>	<u>UP Stream</u>		

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 Data Sheet D- Recreational Use Interview when conducting interviews.)

N/A

Stream Name & WBID # Dry Creek 0940
 Site # 01

Date of Survey 8-21-08

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: <u>pasture</u>
Comments: <u>Riparian ~ 40m</u>				

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

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

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

<u>50</u> % Cobble	<u>10</u> % Gravel	<u>15</u> % Sand	<u>15</u> % Silt	<u>5</u> % Mud/Clay	<u>5</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>Az grasses</u>
<u>Algal growth common</u>

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 type="checkbox"/> Clear	<input type="checkbox"/> Green	<input checked="" type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

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

Stream Name & WBID # Dry Creek 0940
Site # 01

Date of Survey 8-21-08

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)
		N/A			

Comments: (Please record any additional comments here.)

N/A

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

Printed Names of Personnel Collecting Data: Jonathan Witte, Cody Luebbering

Surveyor's Signature: Cody Luebbering Date of Survey: 8-21-08

Organization: MEL Water Resources Inc. Position: Water Quality Scientist I

RWC 9-16-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Dry Creek</u> Waterbody ID: <u>940</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>483105</u> UTM Y: <u>4312444</u> +/- <u>6.2</u> (meters) 11 UTM X: <u>483064</u> UTM Y: <u>4312600</u> +/- <u>17.7</u> (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>JW, CL</u>	Dissolved Oxygen Date: <u>8/21/2008</u> Time: <u>15:30</u> Dissolved Oxygen: <u>7.99</u> (mg/L) Dissolved Oxygen: <u>89.5</u> (% sat) Specific Cond: <u>296.7</u> (µS/cm) Water Temperature: <u>20.8</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	0.44	0.06	0.40	0.10	0.45	0.01	0.31	0.02	0.39	0.10	0.30	0.44	0.33	0.04	0.25	0.01	0.29	0.01	0.34	0.11	0.54	0.02
2	0.88	0.08	0.80	0.10	0.90	0.01	0.62	0.03	0.78	0.13	0.60	0.56	0.66	0.02	0.50	0.01	0.58	0.02	0.68	0.31	1.08	0.01
3	1.32	0.07	1.20	0.16	1.35	0.04	0.93	0.04	1.17	0.16	0.90	0.53	0.99	0.04	0.75	0.04	0.87	0.04	1.02	0.52	1.62	0.02
4	1.76	0.05	1.60	0.11	1.80	0.01	1.24	0.05	1.56	0.20	1.20	0.53	1.32	0.02	1.00	0.01	1.16	0.07	1.36	0.61	2.16	0.00
5	2.20	0.10	2.00	0.03	2.25	0.00	1.55	0.09	1.95	0.30	1.50	0.35	1.65	0.03	1.25	0.01	1.45	0.00	1.70	0.55	2.70	0.00
6	2.64	0.16	2.40	0.02	2.70	0.01	1.86	0.07	2.34	0.25	1.80	0.30	1.98	0.04	1.50	0.03	1.74	0.01	2.04	0.53	3.24	0.00
7	3.08	0.21	2.80	0.07	3.15	0.01	2.17	0.10	2.73	0.10	2.10	0.20	2.31	0.09	1.75	0.02	2.03	0.03	2.38	0.43	3.78	0.08
8	3.52	0.13	3.20	0.02	3.60	0.01	2.48	0.05	3.12	0.06	2.40	0.09	2.64	0.10	2.00	0.02	2.32	0.06	2.72	0.25	4.32	0.06
9	3.96	0.11	3.60	0.01	4.05	0.01	2.79	0.07	3.51	0.03	2.70	0.04	2.97	0.09	2.25	0.04	2.61	0.02	3.06	0.12	4.86	0.03
Right Bank	4.40	0.00	4.00	0.00	4.50	0.00	3.10	0.00	3.90	0.00	3.00	0.00	3.30	0.00	2.50	0.00	2.90	0.00	3.40	0.00	5.40	0.00
Feature Type <small>(riffle, run, or pool)</small>	Run		Riffle		Riffle		Riffle		Run		Pool		Run		Riffle		Riffle		Pool		Run	

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: _____ Date: 8/21/2008

WBID # 440

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: <u>8.21.08</u> <u>1505</u>	Location Description (e.g., road crossing):
Stream Name: <u>Dry Creek</u>	<u>at rd. 201 crossing</u>
Current Weather Conditions: <u>80°F, Mostly Cloudy</u>	Facility Name(s): <u>Break Time Conj. # 3068</u> <u>Lazy Days Campground</u>
Weather Conditions for Past 10 days: <u>.7 inch rainfall</u>	Permit Number(s): <u>MO 0110591</u> <u>MO 0128678</u>
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): <u>482690</u>	Northing (UTM Y): <u>4313257</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>23.0</u> Meters
Site 11	Easting (UTM X): <u>482575</u>	Northing (UTM Y): <u>4313355</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6.4</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>940-02-003</u>	<u>Up Stream</u>	<u>940-02-004</u>	<u>Dn Stream</u>		

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 *Data Sheet D- Recreational Use Interview* when conducting interviews.)

N/A

Stream Name & WBID # Dry Creek 940
 Site # 02

Date of Survey 8-21-08

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>pasture</u>
Comments: <p style="text-align: center;">None Riparian ~ 25m</p>				

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

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

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

<u>50</u> % Cobble	<u>10</u> % Gravel	<u>10</u> % Sand	<u>10</u> % Silt	<u>5</u> % Mud/Clay	<u>15</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>Aq. grasses</u> <u>Algal growth common</u>
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Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: <u>algae</u>
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.

Stream Name & WBID # Dry Creek 0940
Site # 02

Date of Survey 8-21-08

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)
		N/A			

Comments: (Please record any additional comments here.)

N/A

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

Printed Names of Personnel Collecting Data: Jonathan Witte, Cody Luebbering

Surveyor's Signature: Cody Luebbering Date of Survey: 8-21-08

Organization: MEC Water Resources Inc. Position: Water Quality Scientist

RWC 9-16-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Dry Creek</u> Waterbody ID: <u>940</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>482690</u> UTM Y: <u>4313257</u> +/- <u>23</u> (meters) 11 UTM X: <u>482575</u> UTM Y: <u>4313355</u> +/- <u>6.4</u> (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>JW, CL</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>8/21/2008</u> Time: <u>15:05</u> Dissolved Oxygen: <u>7.67</u> (mg/L) Dissolved Oxygen: <u>90.2</u> (% sat) Specific Cond: <u>418.7</u> (µS/cm) Water Temperature: <u>23</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		0.26	0.01	0.35	0.02	0.28	0.09	0.44	0.13	0.11	0.10	0.44	0.05	0.53	0.17	0.72	0.09	0.30	0.07	0.21	0.03	0.04	0.01
2		0.52	0.00	0.70	0.00	0.56	0.10	0.88	0.19	0.22	0.00	0.88	0.05	1.06	0.39	1.44	0.31	0.60	0.18	0.42	0.01	0.08	0.01
3		0.78	0.01	1.05	0.00	0.84	0.12	1.32	0.28	0.33	0.00	1.32	0.04	1.59	0.50	2.16	0.40	0.90	0.20	0.63	0.01	0.12	0.01
4		1.04	0.00	1.40	0.03	1.12	0.11	1.76	0.32	0.44	0.01	1.76	0.03	2.12	0.44	2.88	0.44	1.20	0.16	0.84	0.02	0.16	0.02
5		1.30	0.01	1.75	0.10	1.40	0.12	2.20	0.32	0.55	0.02	2.20	0.03	2.65	0.43	3.60	0.42	1.50	0.14	1.05	0.05	0.20	0.01
6		1.56	0.00	2.10	0.12	1.68	0.16	2.64	0.29	0.66	0.04	2.64	0.06	3.18	0.42	4.32	0.41	1.80	0.07	1.26	0.08	0.24	0.01
7		1.82	0.03	2.45	0.00	1.96	0.14	3.08	0.27	0.77	0.03	3.08	0.04	3.71	0.27	5.04	0.23	2.10	0.04	1.47	0.06	0.28	0.01
8		2.08	0.08	2.80	0.00	2.24	0.12	3.52	0.25	0.88	0.02	3.52	0.06	4.24	0.18	5.76	0.22	2.40	0.08	1.68	0.04	0.32	0.01
9		2.34	0.02	3.15	0.02	2.52	0.14	3.96	0.25	0.99	0.01	3.96	0.03	4.77	0.15	6.48	0.17	2.70	0.01	1.89	0.02	0.36	0.01
Right Bank		2.60	0.00	3.50	0.00	2.80	0.00	4.40	0.00	1.10	0.00	4.40	0.00	5.30	0.00	7.20	0.00	3.00	0.00	2.10	0.00	0.40	0.00
Feature Type <small>(riffle, run, or pool)</small>		Riffle		Riffle		Run		Run		Riffle		Run		Run		Run		Run		Riffle		Riffle	

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: _____ Date: 8/21/2008

WBID # 0940

Site # 03

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: <u>8-21-08 14:40</u>	Location Description (e.g., road crossing): <u>at U.S. 65 crossing</u>
Stream Name: <u>Dry Creek</u>	
Current Weather Conditions: <u>80°F, Mostly Cloudy</u>	Facility Name(s): <u>Break Time Conv. # 3048 Lazy Days Campground</u>
Weather Conditions for Past 10 days: <u>7 inch rainfall</u>	Permit Number(s): <u>MO 0110591 MO 0128678</u>
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): <u>482566</u>	Northing (UTM Y): <u>4314020</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5.8</u> Meters
Site 11	Easting (UTM X): <u>482456</u>	Northing (UTM Y): <u>4314127</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5.2</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>940-03-001</u>	<u>Dn Stream</u>	<u>940-03-002</u>	<u>Up Stream</u>		

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 Data Sheet D- Recreational Use Interview when conducting interviews.)

N/A

Stream Name & WBID # Dry Creek 0940

Date of Survey 8-21-08

Site # 03

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>pasture</u>
Comments: <p style="text-align: center;">N/A</p>				

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

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

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

<u>60</u> % Cobble	<u>20</u> % Gravel	<u>10</u> % Sand	<u>5</u> % Silt	<u>5</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Few aq. grasses

Algal growth common

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: <u>algae</u>
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.

Stream Name & WBID # Dry Creek 0940

Date of Survey 8-21-08

Site # 03

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)
		N/A			

Comments: (Please record any additional comments here.)

N/A

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

Printed Names of Personnel Collecting Data: Jonathan Witte, Cody Luebbering

Surveyor's Signature: Cody Luebbering Date of Survey: 8-21-08

Organization: MEC Water Resources Inc. Position: Water Quality Scientist

RLC 9-16-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Dry Creek</u> Waterbody ID: <u>940</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>482566</u> UTM Y: <u>4314020</u> +/- _____ (meters) 11 UTM X: <u>482453</u> UTM Y: <u>4314127</u> +/- _____ (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>JW, CL</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>8/21/2008</u> Time: <u>14:40</u> Dissolved Oxygen: <u>10.9</u> (mg/L) Dissolved Oxygen: <u>132.6</u> (% sat) Specific Cond: <u>508</u> (µS/cm) Water Temperature: <u>24.8</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	
	1	0.00	0.00	0.21	0.06	0.44	0.19	0.56	0.08	0.14	0.02	0.13	0.10	0.21	0.02	0.15	0.01	0.05	0.01	0.40	0.02	0.25	0.04
	2	0.00	0.00	0.42	0.10	0.88	0.22	1.12	0.10	0.28	0.06	0.26	0.01	0.42	0.04	0.30	0.02	0.10	0.02	0.80	0.06	0.50	0.06
	3	0.00	0.00	0.63	0.11	1.32	0.37	1.68	0.27	0.42	0.06	0.39	0.01	0.63	0.06	0.45	0.01	0.15	0.01	1.20	0.07	0.75	0.11
	4	0.00	0.00	0.84	0.10	1.76	0.55	2.24	0.29	0.56	0.08	0.52	0.02	0.84	0.05	0.60	0.02	0.20	0.02	1.60	0.11	1.00	0.04
	5	0.00	0.00	1.05	0.10	2.20	0.55	2.80	0.40	0.70	0.09	0.65	0.01	1.05	0.02	0.75	0.03	0.25	0.00	2.00	0.10	1.25	0.07
	6	0.00	0.00	1.26	0.10	2.64	0.62	3.36	0.43	0.84	0.09	0.78	0.02	1.26	0.01	0.90	0.04	0.30	0.01	2.40	0.16	1.50	0.09
	7	0.00	0.00	1.47	0.04	3.08	0.44	3.92	0.40	0.98	0.11	0.91	0.01	1.47	0.01	1.05	0.03	0.35	0.03	2.80	0.17	1.75	0.04
	8	0.00	0.00	1.68	0.02	3.52	0.31	4.48	0.33	1.12	0.10	1.04	0.01	1.68	0.03	1.20	0.02	0.40	0.02	3.20	0.18	2.00	0.04
	9	0.00	0.00	1.89	0.02	3.96	0.11	5.04	0.16	1.26	0.04	1.17	0.01	1.89	0.02	1.35	0.02	0.45	0.02	3.60	0.12	2.25	0.02
Right Bank		0.00	0.00	2.10	0.00	4.40	0.00	5.60	0.00	1.40	0.00	1.30	0.00	2.10	0.00	1.50	0.00	0.50	0.00	4.00	0.00	2.50	0.00
Feature Type <small>(riffle, run, or pool)</small>		Dry		Run		Pool		Pool		Run		Riffle		Riffle		Riffle		Riffle		Run		Riffle	

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: _____ Date: 8/21/2008



