



Meeting Minutes
Big Dry Creek Watershed Association

Date/Time: December 3, 2007, 1:00 to 3:00 p.m.

Location: Broomfield Water Treatment Plant, 4395 W. 144th Avenue

Topic: Progress Reports

1. Big Dry Creek Selenium Study:

- The Big Dry Creek selenium study is complete and is serving as the basis for proposed ambient-based selenium standards for Big Dry Creek in the upcoming December 10, 2007 Water Quality Control Commission (WQCC) Hearing. The report can be downloaded off of the Big Dry Creek website and all subsequent rebuttal materials can be downloaded off of the WQCC website.¹
- Jane Clary provided an overview of the study findings, which indicate that natural sources of selenium due to groundwater in contact with selenium-bearing geologic formations are the primary source of selenium in the watershed. In general, Standley Lake and wastewater treatment plant discharges dilute instream selenium concentrations.

2. Big Dry Creek Dry Weather E. coli Sampling

- Five dry weather sampling events have been completed for the reach of stream between 112th and 128th Avenues. This area is primarily open space surrounded by residential areas. Three samples rounds were collected in April and two in October/November.
- One illicit connection upstream of sample location bdc1.5 was identified and removed during the early summer as a result of the dry weather

¹ The WQCC approved an ambient based seasonal standard for selenium at the hearing on December 10, 2007, before these meeting minutes were distributed.

sampling. E. coli concentrations at this outfall were below stream standards in the fall sampling events.

- One outfall (W-1) with low flows (1-3 gpm) near 112th Ave. has elevated bacteria and is being further investigated. Instream flows downstream of this outfall generally meet stream standards, so the outfall is not anticipated to be significant in terms of its influence on instream concentrations; nonetheless, it is being investigated further.
- Outfalls containing underdrain/groundwater discharges generally had undetectable bacteria concentrations.
- The geometric mean values for all of the outfalls except W-6 (which was corrected) and W-1 (being investigated) met the instream standard.
- The geometric mean for Ranch Creek (W-15), a tributary to Big Dry Creek, approached the instream standard, with spring samples below the standard and fall samples above the standard.
- Five beaver dam areas were sampled with variable results relative to stream standards. The upper beaver dam locations generally met stream standards whereas locations between 120th Ave. and 128th Ave. did not.
- Several charts were also presented showing instream geometric mean E. coli concentrations from 2003-2007. Areas with elevated E. coli include two locations in the Open Space area and one location in the agricultural area (bdc6.0).
- Geometric mean WWTP grab samples collected from the Broomfield and Westminster WWTP discharges as part of synoptic sample events during 2003-2007 were well below the stream standard and lower than any instream locations.
- As part of group discussion, it was noted that a dog park is planned in the open space in the vicinity of 128th. It will be important that pet waste disposal containers be provided in this area, along with good maintenance.
- Next steps for continued E. coli work were discussed by the group and include the following:
 - a. Further investigation of one storm outfall (W-1) with elevated E. coli in trickling flows (mentioned above).
 - b. Completion of a similar dry weather sampling study between bdc2.0 and bdc3.0.

- c. Completion of a written report on findings to date.
- d. Continued participation in the statewide effort being conducted by the E. coli work group regarding E. coli TMDLs.

3. Potential Revisions to Instream Monitoring Program

a. Existing instream monitoring program:

1. A handout was provided summarizing the current instream monitoring program constituents, locations and frequencies, along with the rationale for inclusion.
2. The majority of the sampling program was retained; however the following needed changes were identified:
 - Reduce selenium sample frequency to quarterly, consistent with other metals.
 - Consider removal of the mercury monitoring due to the limited value of the test method currently being used and the high cost of the more accurate test method. Lesa Julian agreed to provide the instream mercury monitoring data at 120th Avenue using the more expensive test method at lower detection limits as an alternative measure of mercury instream. Follow-up emails will be needed to obtain concurrence regarding the adequacy of this monitoring location.
 - Reduce boron sampling frequency to quarterly.
 - Eliminate BOD and molybdenum sampling.

b. New water quality probes at Broomfield gages (on agenda, but did not discuss)

c. The revised sampling analysis constituents and frequencies are attached to these meeting minutes and will be incorporated into the sampling and analysis plan.

4. Update on E. coli Work Group

- a. The E. coli Work Group is gradually moving forward and various BDCWA Board members continue to participate. Jane Clary will be completing some work under a grant to the Colorado Stormwater Council to help support the Work Group's efforts. A \$10,000 grant was awarded to the Stormwater Council from the Colorado Watershed Protection fund.

5. Update on Eagle Scout Wildlife Survey

- a. Geoffrey Crowley's Eagle Scout project is complete. Jane provided several copies of a written report that summarizes wildlife observations along the creek between 112th Ave. and I-25. Observation points corresponded to Big Dry Creek sampling locations. Geoffrey presented his findings at a lunchtime seminar at Wright Water Engineers. Shelley wrote a letter on behalf of BDCWA commending his efforts. Jane completed his Eagle Scout evaluation form and served as one of his project sponsors.
- b. Map/brochure: As part of Geoffrey's project, he completed a wildlife brochure and a "Where's Wildlife?" map of the area. Copies were provided at the meeting and will be posted to the BDCWA website.

6. Status of Biological Work

- a. Tami Schneck reported that a review draft biological report should be available next week.
- b. With regard to 2008 sample locations for the fall, Tami has significant concerns regarding the influence of beaver dams on the bdc1.5 sampling location in particular. The area is currently ponded so deeply that site characteristics have changed from riffle-run to pool. As a result, sampling at bdc1.5 may not be conducted in the fall 2008 if this reach remains ponded by beaver dams. If this is the case, then sampling further downstream at bdc1.5c would be conducted.
- c. Although selenium fish tissue sampling has been budgeted for fall 2008, it is possible that this will be discontinued if an ambient-based stream standard is assigned to the creek.
- d. Periphyton sampling may be an additional monitoring task later in 2008, depending on progression of nutrient criteria for streams and rivers.

7. Open Discussion on 2008 Priorities

- a. Continuation of E. coli dry weather sampling was identified as the top priority for 2008. The reach between bdc2.0 (128th Ave.) and bdc3.0 (I-25) will be targeted.

8. Other

- a. Paul Dill, landowner at 3300 E. 160th Ave. and son of Glenda Ira, provided photos of high flows experienced on April 23-24, 2007. This property was identified as the "Ira Property" in the Lower Big Dry Creek Hydrologic Study (WWE 2005). The photos were passed around the

table at the meeting and will be forwarded to drainage engineers at the local governments that participated in the 2005 study.

- b. The next Watershed Association meeting will be held in March 2008 (exact date to be determined) and will focus on results of annual water quality monitoring.

Feel free to contact Jane Clary, Watershed Coordinator, with questions or comments regarding these meeting minutes (303-480-1700 or clary@wrightwater.com).

Attendance at December 3, 2007 BDCWA Meeting

Last Name	First Name	Organization Name
Bauer	David	Weld County
Burke	John	City of Westminster
Byers	Robin	Attorney at Law
Carter	David	City of Westminster
Clary	Jane	Wright Water Engineers, Inc.
Dill	Paul	Landowner at 3300 160 th Ave. (Glenda Ira Property)
Fabisiak	Mary	City of Westminster
Hubbard	Laura	City of Broomfield-Environmental Lab
Julian	Lesa	City of Broomfield
Meyer	Dave	City of Westminster
Schneck	Tami	Aquatics Associates
Stanley	Shelley	City of Northglenn

**Big Dry Creek Revised Monitoring
Constituents and Frequencies for 2008**

Constituent	Frequency
ALKALINITY, TOTAL	Monthly
BORON, TOTAL	Quarterly
CALCIUM	Monthly
CALCIUM AS CaCO ₃	Monthly
CARBON, TOTAL ORGANIC	Monthly
CHLORIDE	Monthly
CHLOROPHYLL-a	Monthly
CHLOROPHYLL- a, CORRECTED	Monthly
CONDUCTANCE, SPECIFIC	Monthly
E. COLI	Monthly
FLOW, STREAM	Monthly
MAGNESIUM	Monthly
NITROGEN, AMMONIA	Monthly
NITROGEN, NITRITE (NO ₂)	Monthly
NITROGEN, NO ₃ +NO ₂	Monthly
OXYGEN, DISSOLVED	Monthly
pH	Monthly
PHOSPHOROUS, TPO ₄ (HACH)	Monthly
PHOSPHORUS, ORTHOPHOSPHATE AS P	Monthly
POTASSIUM	Monthly
SODIUM	Monthly
SULFATE	Monthly
TDS	Monthly
TEMPERATURE, WATER	Monthly
TSS	Monthly
TURBIDITY	Monthly
METALS	
ARSENIC	Quarterly
CADMIUM	Quarterly
CHROMIUM	Quarterly
COPPER	Quarterly
CYANIDE, TOTAL	Quarterly
IRON	Monthly
LEAD	Quarterly
MANGANESE	Quarterly
MERCURY (<i>EPA method 1631e</i>)	Quarterly @ 120th only
NICKEL	Quarterly
SELENIUM	Quarterly
SILVER	Quarterly
ZINC	Quarterly