

Otter Creek Water Quality Standards

- Why review the 2003 EC/SAR criteria for Otter Creek
- Department's effort to demonstrate Natural
- Data collected on Otter Creek
- Approaches to Natural

Why review the 2003 EC/SAR criteria for Otter Creek

- **ARM 17.30.670(4)**

For all **tributaries** and other surface waters in the Rosebud Creek, Tongue, Powder, and Little Powder river watersheds, the monthly average numeric water quality standard for EC is 500 $\mu\text{S}/\text{cm}$ and no sample may exceed an **EC value of 500 $\mu\text{S}/\text{cm}$** . The monthly average numeric water quality standard for SAR from March 2 through October 31 is 3.0 and no sample may exceed an SAR value of 4.5. The monthly average numeric water quality standard for SAR from November 1 through March 1 is 5.0 and no sample may exceed an SAR value of 7.5.

- **2003 BER rule adoption notice (Montana Administrative Register, 4/24/03)**

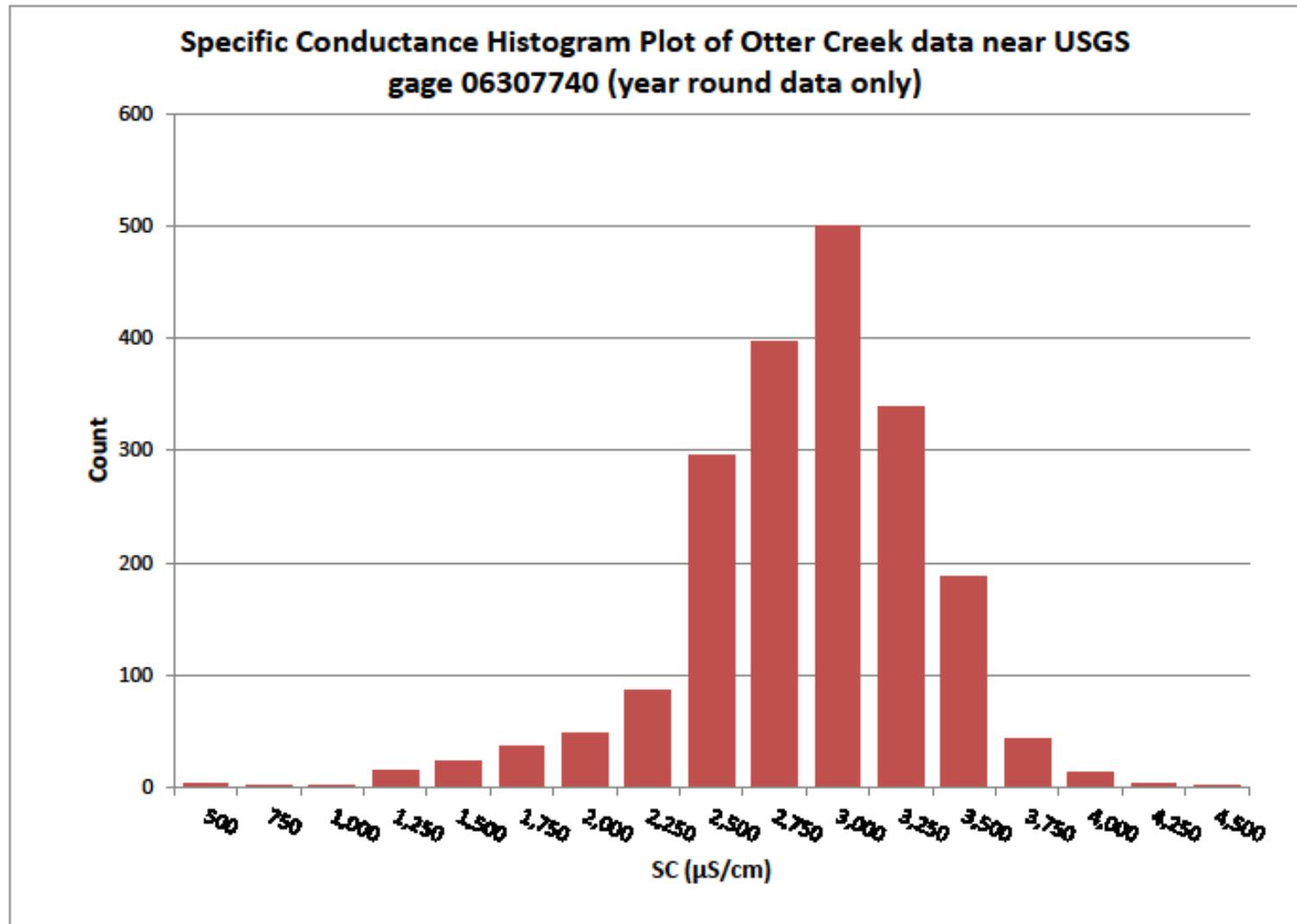
COMMENT NO. 30: Point source discharges should be allowed when such discharges contain better water quality than the ambient river conditions.

RESPONSE: The Board agrees. Section 75-5-306, MCA, generally provides that discharges are not required to treat their discharge to a purer condition than the natural conditions of the receiving water. Consequently, when the water quality standards are naturally exceeded, discharges which will not make the instream water quality worse are allowed.

Are EC/SAR values in Otter Creek “natural”?

- DEQ applied a water quality model (LSPC)
 - Calibrated and human influences removed (stock ponds, dams, urban footprint, and irrigated land)
 - **RESULT:** salinity concentrations not significantly affected by human influences
 - **CONCLUSION: existing EC/SAR values are “natural”**

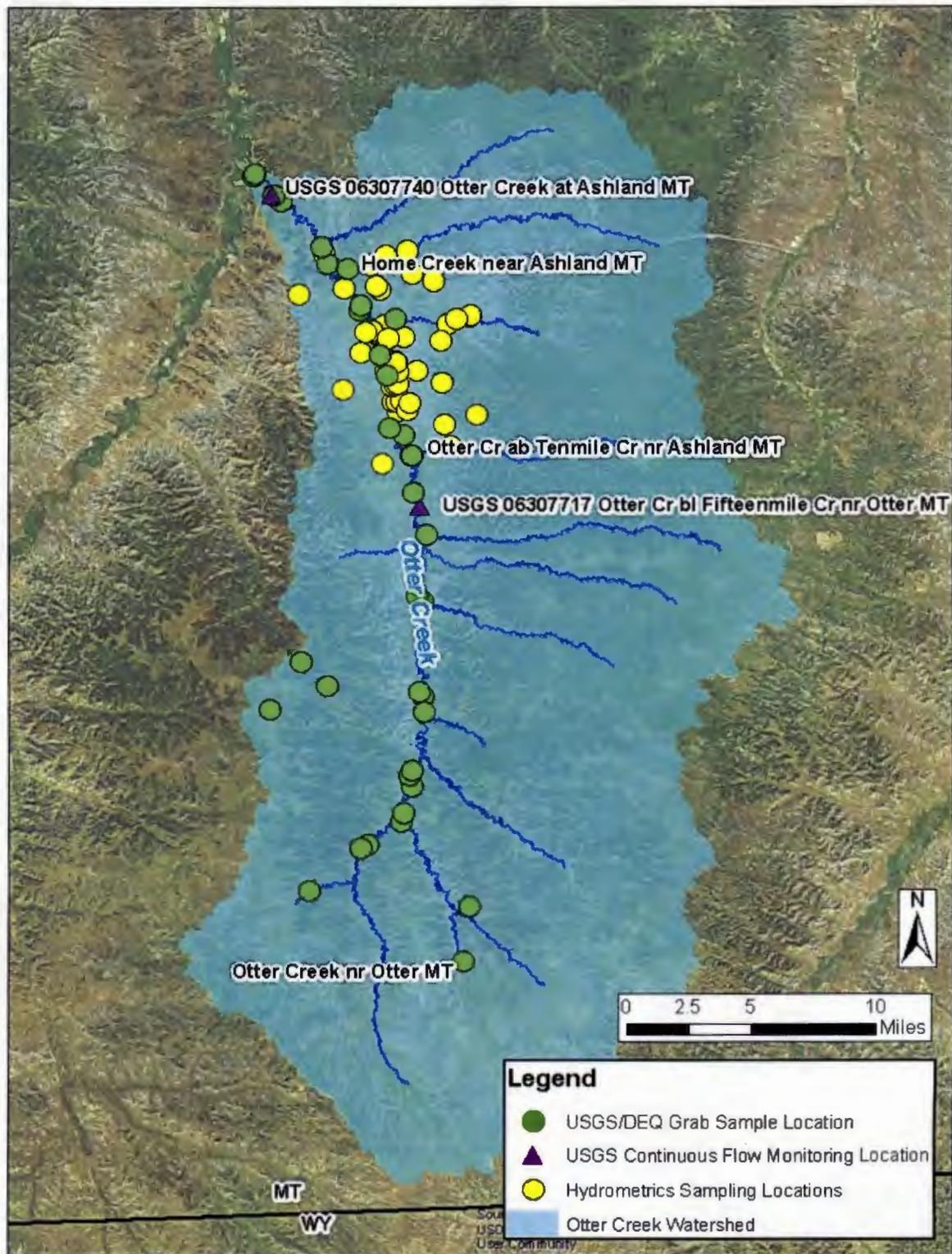
Frequency distribution of real data (NOT modeled data)



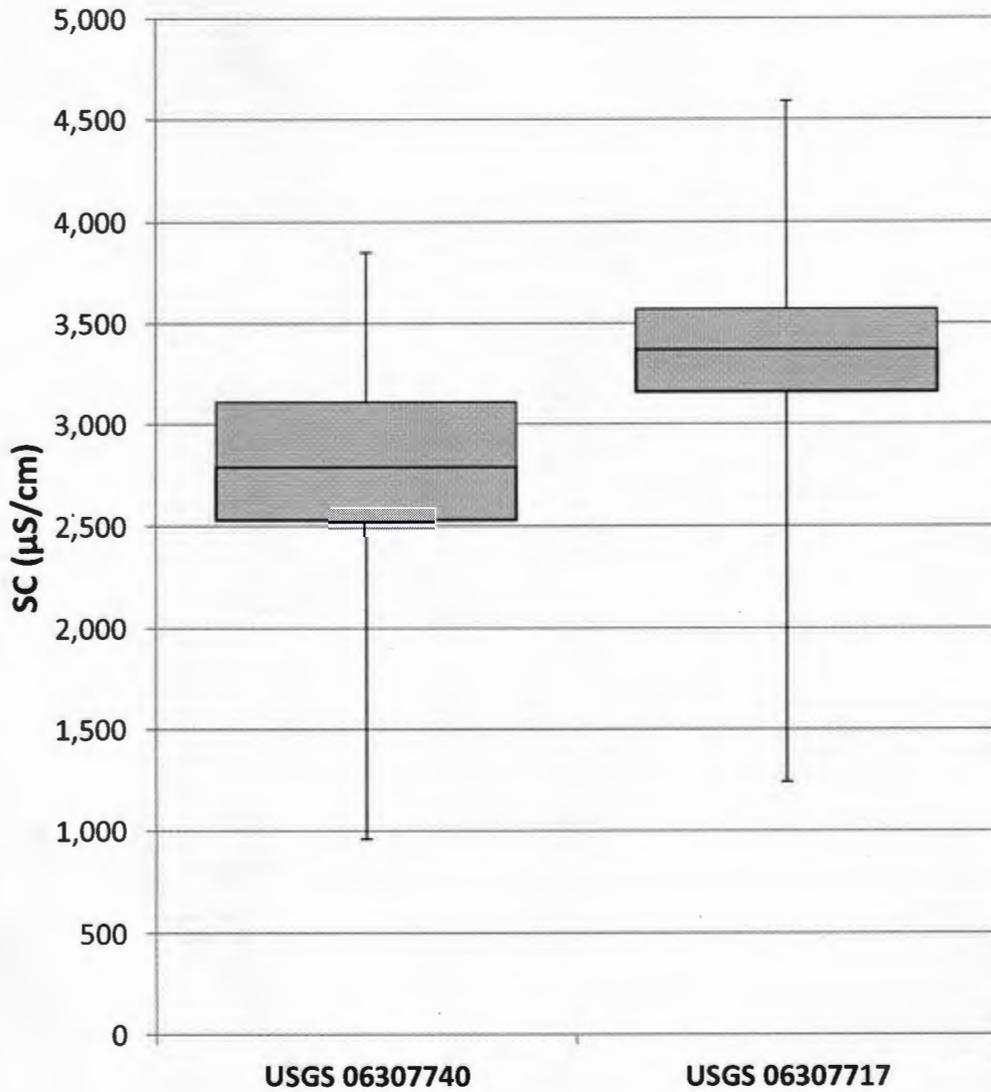
Available approaches to “Natural”

Option	Development Process	“Natural” criteria Used to Inform MPDES permit	Public Participation
75-5-306	Department	Same Criteria	Public sees WQS used during MPDES comment period
SB 325	BER Department Public	Same Criteria	Public sees the <u>Process</u> in Rule and sees the WQS during MPDES comment Period
Site Specific	BER Department Public	Same Criteria	Public sees the WQS in Rule and in the MPDES comment Period

Locations of flow and/or water quality stations in the Otter Creek watershed



**Daily data (365 days a year) from two locations
on Otter Creek, 1982-1985**



Downstream <-----> Upstream

Otter Creek Profile - Median SC Values from Grab Samples (n>=10)

