Appendix I: Dissolved Oxygen Modeling Worksheet (QUAL2E)

Dissolved Oxygen Modeling Worksheet (QUAL2E)

Model Parameter	Units	Value	Notes
In-stream Flow	cfs	0.18	Observed data on 07/28/99
Incremental Flow	cfs/mi^2	0.04	Observed data on 07/28/99
Inflow Temperature	C and F	21.7 C 71 F	Observed data on 07/28/99
Saturation DO	mg/L	6.3	Based on observed temperature on 07/28/99 and assuming the average elevation of the watershed is 6500'
Organic N	mg/L	0.2	Observed data on 07/28/99
NH_3 N	mg/L	0.1	Observed data on 07/28/99
NO_2 N	mg/L	0.1	Observed data on 07/28/99
5 day CBOD	mg/L	2.0	Assumption based on observations at Rio Chama on 6/3/1969 (Please refer text for more details)
Groundwater DO	mg/L	2.0	Assumption based on EPA guidance (EPA, 1991) for sandy bottom stream. (Please refer text for more details)
Atmospheric pressure	inch. Hg	24	Based on nearby meteorological observations (Please refer text for more details)
Carbonaceous Biochemical Oxygen Deoxygenation Rate	1/day	0.1	Default model parameters based on US EPA guidance (US EPA 1985) and QUAL2E user's manual (Brown and Barnwell 1987)
Organic Nitrogen Hydrolysis	1/day	0.1	Default model parameters based on US EPA guidance (US EPA 1985) and QUAL2E user's manual (Brown and Barnwell 1987)
Ammonia Oxidation Rate	1/day	0.25	Default model parameters based on US EPA guidance (US EPA 1985) and QUAL2E user's manual (Brown and Barnwell 1987)
Nitrite Oxidation Rate	1/day	2.05	Default model parameters based on US EPA guidance (US EPA 1985) and QUAL2E user's manual (Brown and Barnwell 1987)
Current critical SOD	$g\ m^{-2}d^{-1}$	0.86	Assuming sand bottom stream. (Please refer text for more details)