


OWQScreen-SVersion
3.35

Using the implementation criteria in OAC 785:46, Subchapter 11, the temperature increase (delta-T) above a regulatory ambient temperature (which is dependent on type of aquatic community) at the mixing zone boundary is calculated. If delta-T exceeds 2.8 deg C, a WLA and permit limits are required. A 52 deg C antidegradation restriction is imposed where necessary.

Temperature**GLENPOOL PIPELINE
BREAKOUTSTATION**

Outfall	Temperature Data and Criteria	
Is discharge to the Arkansas River between Red Rock Creek and Keystone Reservoir?	NO	
T ₉₅ , 95th percentile daily maximum effluent temp for period of record (deg C)	28.9	T _{max} may be substituted for T ₉₅ if no suitable daily maximum effluent temperature distribution is available. If T ₉₅ and T _{max} are both left undefined, it is assumed that there is no thermal component to the discharge and thus no temperature screen is performed.
T _{max} , highest daily maximum effluent temp for period of record (deg C)	28.9	
T _c , Temperature criterion (deg C)	32.24	For Warm Water Aquatic Community (WWAC)
T _a , Regulatory ambient (critical) temperature (deg C)	29.44	
Antidegradation criteria: Is T _{max} > 52 deg C? *	NO	
T ₉₅ - T _a (deg C)	-0.55	

Outfall	Calculation of Temperature Increase at Mixing Zone Boundary, WLA and LTA			
	Equation	Value (deg C)	delta-T > 2.8 deg C?	RP Flag
delta-T (max temp incr at edge of temp MZ in deg C)	$\text{delta-T} = 1.94 Q^* (T_{95} - T_a) / (1 + Q^*)$	-0.031	NO	
WLA _T (deg C)				
LTA _T (deg C)	$\text{LTA} = \text{WLA} \times \text{EXP}(0.5 \text{ LN}(1 + \text{CV}^2 / 7))$			

Outfall	Table 13: Determination of Temperature Permit Limits			
No. of samples per week (N)	Equations (subject to antidegradation restriction)	Temperature Limits		52 deg C antideg restriction applicable? *
		deg C	deg F	
Monthly Avg Limit * =	$\text{LTA}_T \times \text{EXP}((1.645 (\text{LN}(1 + \text{CV}^2 / (4 N)))^{1/2} - 0.5 \text{ LN}(1 + \text{CV}^2 / (4 N))))$			
Weekly Avg Limit * =	$\text{LTA}_T \times \text{EXP}((1.645 (\text{LN}(1 + \text{CV}^2 / N))^{1/2} - 0.5 \text{ LN}(1 + \text{CV}^2 / N))))$			
Daily Max Limit * =				

* If T_{max}, MAL_T or WAL_T exceeds the 52 deg C temperature antidegradation criterion, a daily max limit of 52 deg C is required.

Q* Flow Ratios	Q* (Temp)
Type Facility: INDUS	0.02970