

FACT SHEET

Appendix D

New River WPCP

NPDES Permit No. GA0048470

Chronic Water Quality Criteria (WQC_{Chronic}) - Metals:

Metal	K _{PO}	α	f _D	Number of samples	Average effluent C _T (μg/L)	Instream C _D (μg/L)	WQC _{Chronic} (μg/L)	WQC _{Chronic} (adjusted) ⁽¹⁾ (μg/L)	Action needed?
Arsenic	4.80.E+05	-0.729	0.00	0	0.0	0.0	150	75	no
Cadmium	4.00.E+06	-1.131	0.000	0	0.0	0.0	0.19	0.09	no
Chromium III	3.36.E+06	-0.930	0.00	0	0.0	0.0	17	9	no
Chromium VI	3.36.E+06	-0.930	0.00	0	0.0	0.0	11	5.5	no
Copper	1.04.E+06	-0.744	0.00	0	0.0	0.00	2.0	1.0	no
Lead	2.80.E+06	-0.800	0.00	0	0.0	0.0	0.3	0.2	no
Mercury	---	---	---	6	0.0019	0.0017	0.0068	0.0034	no
Nickel	4.90.E+05	-0.572	0.00	0	0.0	0.0	12	5.8	no
Selenium	---	---	---	0	0.0	0.0	5.0	2.5	no
Zinc	1.25.E+06	-0.704	0.00	0	0.0	0.0	26.3	13.2	no

$$f_D = \frac{1}{1 + K_{PO} \times TSS_{instream} (mg/L)^{(1+\alpha)} \times 10^{-6}}$$

$$Instream C_D = \frac{Effluent C_T (mg/L) \times f_D}{DF} \quad mg/L$$

Total Recoverable Metal Effluent Limit

Metal	C _S (μg/L)	Chronic C _T (μg/L)	Chronic C _T (lb/day)	Acute C _T (μg/L)	Acute C _T (lb/day)
Arsenic	0.0	N/A	N/A	N/A	N/A
Cadmium	0.0	N/A	N/A	N/A	N/A
Chromium III	0.0	N/A	N/A	N/A	N/A
Chromium VI	0.0	N/A	N/A	N/A	N/A
Copper	0.0	N/A	N/A	N/A	N/A
Lead	0.0	N/A	N/A	N/A	N/A
Mercury	0.0	N/A	N/A	N/A	N/A
Nickel	0.0	N/A	N/A	N/A	N/A
Selenium	0.0	N/A	N/A	N/A	N/A
Zinc	0.0	N/A	N/A	N/A	N/A

NOTES:

- Chronic and acute total recoverable metal effluent concentration (C_T) from EPA 823-B-96-007, June 1996, page 33:

$$Chronic C_T = \frac{\frac{WQC_{Chronic}}{f_D} \times (Q_E + 7Q_{10}) - (7Q_{10} \times C_S)}{Q_E}$$

$$Acute C_T = \frac{\frac{WQC_{Acute}}{f_D} \times (Q_E + 1Q_{10}) - (1Q_{10} \times C_S)}{Q_E}$$

⁽¹⁾ The "adjusted" WQC is the WQC applicable to a pollutant based on the number of samples used in the analysis. In accordance with Georgia EPD's *NPDES Reasonable Potential Procedures*, January 2003, when less than 10 samples are used, the effluent concentration shall be compared to 50% of the acute WQC. The chronic WQC is always compared to 50% of the WQC.