

CITY OF CORNELIA WATER POLLUTION CONTROL PLANT'S IMPACT ON SOUTH FORK LITTLE MUD CREEK TRIBUTARY TO MUD CREEK

The W.P.C.P. performed the following test on the South Fork of Little Mud creek both above and below the plant's effluent discharge point. The City's sample point for above was approximately 200 yards above the effluent discharge point. The City's sample point for below was approximately ¼ of a mile below the City's effluent discharge point. The above sample point is in a shaded wooded buffer area on both sides of creek. The below sample point is where South J Warren road passes over the creek in the middle of a cow pasture with no or little buffer zone/shade on either side.

Parameter	Above Plant	Below Plant	City Effluent Same Day or Week	City 12 Month Average Eff.
D.O.	10.9 mg/l	10.4 mg/l	9.5 mg/l	8.2 mg/l
PH	6.9 SU's	7.7 SU's	7.7 SU's	7.4 mg/l
TSS	1.2 mg/l	1.35 mg/l	1.4 mg/l	3.1 mg/l
BOD	1.73 mg/l	2.16 mg/l	2.6 mg/l	1.6 mg/l
Ammonia(NH3)	.05 mg/l	.05 mg/l	.07 mg/l	.4 mg/l
Phosphorous(TP)	(BDL)	1.35 mg/l	2.65 mg/l	1.7 mg/l
Fecal	11 per 100/ml	11 per 100/ml	13 per 100/ml	16 per 100/ml
Temperature	7.1* C	12.1* C	16.0* C	N/A
Turbidity	3 NTU's	6 NTU's	5 NTU's	3.9 NTU's
Total Residual Chlorine	(BDL) Below Detection Limit	(BDL)	(BDL)	(BDL)

Based on the above testing by the City's W.P.C.P. lab the data suggest that the W.P.C.P. has very little impact on the receiving waters of the South Fork Little Mud Creek Watershed. The City however does recognize two areas that need improvement. #1 the City has a new phosphorous limit that will take effect on August 10, 2009 for an effluent limitation of 1.1 mg/l. The City is currently under an upgrade construction which will help the City to meet this new requirement. The W.P.C.P. construction should be complete by the end of April of 2009 and will begin trials for products used with our new phosphorous removal equipment to help meet new requirements to reduce the residual phosphorous and its impact on the watershed. The W.P.C.P. estimates to be able to remove the phosphorous down to below .5 mg/l or less than 50% of our permit parameter for phosphorous. #2 the City has also got a future upgrade project in the works which will add four more aeration basins to the eight existing basins to help remove ammonia during the nitrification process. This upgrade is scheduled for January of 2010 and should be completed by June of 2010. The City is currently reducing the ammonia in its effluent to 33% of the allowed permit limitation of 1.5 mg/l. With the future upgrade the City estimates to be able to remove ammonia to 15% of its permit limit.

The following chart was constructed by the Chestatee-Chattahoochee Resource Conservation and Development Council during their evaluation of Mud and Little Mud Creeks for a Watershed Assessment and Protection Plan finished in 2007. The City has submitted a copy of this watershed assessment and protection plan as well as one for the Soquee watershed developed by Duncan Hughes. These two watershed assessment and protection plans encompasses the City of Cornelia and are being reviewed by the Georgia EPD for acceptance for the City's watershed assessment and protection plan.

Constituent	Units	# sample	Station Min	12030031 Mean	Mud Creek Max	Station Min	12030041 Mean	L.M. Creek Max
Alkalinity (CaCO3)	Mg/l	22	11	22	46	8	14	33
BOD	Mg/l	24	3.0	3.0	3.0	3.1	3.1	3.1
E- Coli	MPN	32	80	866	11,000	41	484	3,300
Hardness Ca+Mg	Mg/l	24	18	49	120	12	20	40
Ammonia (NH3)	Mg/l	24	.03	.07	.016	.03	.10	.38
Nitrite + Nitrate as (N)	Mg/l	24	.69	5.13	14.0	.26	.79	1.1
D.O.	Mg/l	39	7.8	9.8	13.7	7.8	9.9	13.7
PH	S.U.'s	23	6.9	7.2	7.7	6.7	7.0	7.5
Phosphorous as (P)	Mg/l	24	.08	.21	.70	.02	.07	.34
TSS	Mg/l	24	1	17	220	1	14	110
Specific Conductance	Umho/cm	24	53	172	440	45	54	88
Turbidity	NTU	24	2.9	17.9	220	2.5	16.2	190
Fecal Coliform	MPN	33	70	1,359	17,000	20	836	7,900
Carbon, Total Organic	Mg/l	24	1.1	2.6	8.5	1.1	2.3	7.2

Based on the statistics provided in the Mud and Little Mud Creeks Watershed Assessment and Protection Plan by Chestatee-Chattahoochee Resource Conservation Development Council the City of Cornelia's W.P.C.P. has little or no impact upon its receiving waters. Little Mud Creek's data is considerable better than Mud Creek's data and the W.P.C.P. discharges into Little Mud Creek. The data was collected several miles downstream of where the W.P.C.P. discharges into Little Mud Creek near Alto. Again the only two parameters the W.P.C.P. does not have better numbers on are the phosphorous and ammonia. Since this data was collected well below the discharge limits for the W.P.C.P. effluent outfall it shows clearly that even at the present discharge data for the past 12 months at the City's W.P.C.P. that the stream is very capable of handling those numbers. However as was stated above the City is in the process to decrease its loading for ammonia and phosphorous even more to its receiving stream of Little Mud Creek.