

Date: April 2, 2004
Subject: Premier Chemicals variance

Based on calculations from the Blountstown USGS gage on the Apalachicola River the estimated 7Q10 for the Gulf County Canal (GCC) at Premier is 468 cfs (contained in the results of the 1998 Mixing Zone Dye Study). The flow of the GCC is estimated to be 7.5 percent of the flow of the Apalachicola River at Blountstown. The dye study was conducted during neap tide conditions and with the GCC at a low flow (710 cfs).

The GCC at Primer is 300 feet wide and 10 feet deep for a cross-sectional area of 3,000 square feet.

The estimated 7Q10 of the GCC at Primer is 468 cfs. This flow would have a velocity of 0.156 ft/s or 0.0476 m/s.

Based on information in the original variance criteria for acute toxicity 62-302.500(1)a(4) must be met within 45 meters of the point of discharge (POD). Criteria for 62-4.244(3)(a) must be met within 30 meters. Both of these distances are within the barge turning basin.

The POD occurs into a barge turning basin off of the GCC. The results of the dye study were used to determine the dilution characteristics of the barge basin and the GCC.

The turning basin is 6 feet deep (1.83 meters), 120 meters (393.4 feet) long and 55 meters (180 feet) wide (length and width estimated from GIS data).

3.4:1 dilution at mouth of turning basin (point of intersection with GCC).

Discharge 10.6 MGD = 16.4 cfs

For dilution Vs distance see page 21 of dye report

The CMC is ½ the final acute value

LC50 = 53.8 (53 percent)

At 7Q10 (0.156 f/s, 0.04758 m/s) travels 9.36 ft/minute or 2.855 meters/minute in one hour 171.288 meters