VALUE(S) ADDED 7-24-85

FACT SHEET REVISED _____

VALUE(S) REMOVED _____

Date: July 26, 1984

Surface Water Quality Standard Documentation

Chemical: Iron

C.A.S, No.(s): NA

Basis (Human/Aquatic): Aquatic

Standard by Water Classification:

	ug/l	Notes
Classes AA,AA-s;A;A-s;B;C	300	J
Class D	300	K
Classes SA;SB;SC;I		
Class SD		

Remarks:

Summary of Information

1. NAS/NAE. 1973. Water Quality Criteria 1972. National Academy of Sciences, National Academy of Engineering, USEPA, Ecol. Res. Ser., EPA - R3-73-033 Wash., D.C. 594 pp.
   - Characteristic red stains and deposits of hydrated ferric oxide (iron floc) do not manifest themselves in public water supplies at less than 0.3 mg/l iron.

2. EPA. 1976. Quality criteria for water. EPA 440/9-76-023. USEPA., Wash., D.C. 256 pp
   - criterion: "1.0 mg/l for freshwater aquatic life."
   - basis not explicitly stated.

3. Smith et al. 1979. Iron. Pages 121-125 In: A Review of the EPA Red Book: Quality criteria for water. Thurston et al. (Eds.) Water Quality Section, Amer. Fish. Soc., Bethesda, MD.
   - authors believe 1.0 mg/l is unsubstantiated, does not consider the adverse impacts of the formation of iron flocs, and that EPA should conduct a more extensive review of up-to-date literature.

4. IJC. 1978. Group 2 proposed new and revised water quality objectives. International Joint Commission, Regional Office, Windsor, Ont., 195 pp.
- criterion: "Concentrations of total iron in an unfiltered water sample should not exceed 300 micrograms per litre to protect aquatic life."
- based on the conclusion that ferric hydroxide floc should not form at concentrations less than 300 ug/l.
- detailed the adverse impacts of iron floc directly on aquatic life as well as on habitat.

Standard Derivation

The deleterious effects of iron floc have been documented. The standard of 300 ug/l total iron should be adopted for all freshwater classes to prevent iron floc formation.