9-8-06 ENTERED DES MOINES 1-1-5

DATE RECEIVED	FACILITY NAME	COUNTY NO.	PROGRAM AREA CODE	FACILITY TYPE CODE	SUBJECT AREA CODE
12/3/86	4 DES MOINES ICA	5 77	6 CP	7 C05	8 332 (VOC) ACTIVATED SLUDGE DESIGN BASIS

18B.4.4.1

RULE REFERENCE	DESIGN STANDARD REFERENCE	DECISION / DATE	APPEAL ACTION / DATE
567-64.2(9)a	10 18B 4.4.1	11 Approved 3/6/87.	12

ENGINEER	VARIANCE RULE
13 DONAHUE ASSOC/METCALF & EDDY	14 567-64.2(9)c

15. DESCRIPTION OF VARIANCE REQUESTED:

EQUIVALENCE TO DESIGN LOAD AND AIR REQUIREMENTS FOR ACTIVATED SLUDGE. REQUESTS TO USE A DESIGN BASIS OF 1.2 #O_2/#BOD AT MAX DAY BOD AND 4.6 #O_2/#TKN AT MAX 30 DAY TKN RATHER THAN STANDARD'S 1.1 #O_2/#BOD AT MAX DAY + 50% OF DIFFERENCE BETWEEN MAX DAY AND PEAK 4-HOUR PLUS 4.6 #O_2/#TKN AT MAX DAY TKN

16. ENGINEERS JUSTIFICATION:
DESIGN LOADS FOR BOD_5 AND AMMONIA ARE EQUIVALENT TO THE LOADS REQUIRED IN THE DESIGN STANDARDS.
DESIGN AIR AMOUNTS ARE EQUIVALENT IN EFFECTIVENESS TO THE DESIGN STANDARD REQUIREMENT
- 4 HR PEAK DATA NOT AVAILABLE. DM'S MAX DAY LOADS ARE CONSERVATIVELY HIGH. SHOULD BE EQUIVALENT TO 4 HR PEAK.
- PEAK BOD AND TKN LOADS DO NOT OCCUR SAME DAY.
- 1.2 #O_2/#BOD IS MORE CONSERVATIVE THAN STD BUT IS MORE APPROPRIATE FOR THE PROPOSED PROCESS.

17. DEPARTMENTS JUSTIFICATION: THE STANDARD AS WRITTEN IS AMBIGUOUS, MIXING ORGANIC LOAD AND FLOW IN DESCRIBING A PEAKING OF ORGANIC LOAD. THE JOINT VENTURE HAS USED A FACTOR OF 1.2 #O_2/# MAX DAY BOD_5 INSTEAD = 1.1 #O_2/# MAX DAY BOD_5 CALLED FOR IN THE DESIGN STANDARDS (w 9% SAFETY FACTOR). THE PEAK AMMONIA LOADS AND PEAK DAY BOD_5 LOADS HAVE BEEN DOCUMENTED TO NOT OCCUR ON THE SAME DAY. THE PEAK DAY TO AVERAGE DAY ORGANIC LOAD IS 5:1 WHICH IS HIGHER THAN TYPICAL (1.5:1). THE PROPOSAL IS EQUIVALENT OR BETTER THAN DESIGN STANDARD

18. PRECEDENTS USED: NONE

19. a. STAFF REVIEWER: ROGER SCHLETZBAUM
b. SUPERVISOR:
c. AUTHORIZED BY: Daniel McCallister 3/6/87