

MEMORANDUM

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From C.Q. OLSEN

Ref.

Subject..... ARSENIC SUPPRESSION.....

ABSTRACT: To use a constant amount of FeCl_3 with varying amounts of $(\text{NH}_4)_2\text{CO}_3$ on COMBINED samples of thickness #6, #11 and #13 to evaluate the use of $(\text{NH}_4)_2\text{CO}_3$ as an arsenic suppressant and as a substitute for NH_4OH

PROCEDURE: Samples were taken from thickeners #6, #11, #13 and combined for testing. The tested sample volume of the combined thickeners was 2000 ml with 2.5 grams of FeCl_3 added. These samples were agitated and then varying amounts of $(\text{NH}_4)_2\text{CO}_3$ were added to the samples and agitated again. After this final agitation the samples were analyzed for pH, Cu, Fe, and As.

DATA	pH	ppmCu	ppmFe	ppmAs
#6 thickener	6.4	ND	15.8	41
#11 thickener	4.7	ND	124	150
#13 thickener	6.2	ND	5.8	200
Combination	6.1	ND	39	92
Combination (theo)	?	ND	44.5	97
Combination + FeCl ₃	2.6	.05	316	88

N.B. - Combination Ratio's #6= 70, #11 = 35, #13 = 20

125 125 125

- below all samples 2000 ml with 2.5 grams FeCl_3 (or 238 ppmFe)

AMOUNT (NH ₄) ₂ CO ₃ (g)	pH	ppmCu	ppmFe	ppmAs
1	2.8	.05	122	45.5
2	5.4	ND	38	9.3
3	6.0	ND	20	8.0
5	6.6	ND	6.1	9.0

CONCLUSIONS: the above results tend to show that with the use of $(\text{NH}_4)_2\text{CO}_3$ and FeCl_3 a low level of arsenic can be attained at a low pH's.