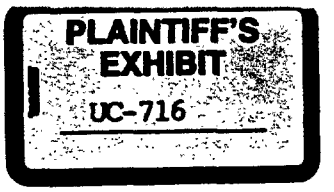

Preliminary Information
Subject to Later Verification
or Review

Informal Report
Author: B. L. Ingalls
Date: April 28, 1978
Report No. 2198-59

OIL ABSORPTION PROPERTIES OF NGSV 1/8-INCH PELLETS

"Calidria" Asbestos
Metals Division
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Niagara Falls, New York

SUMMARY

NGSV pellets immersed in No. 2 diesel oil for periods ranging from 5 minutes to 20 hours demonstrated oil adsorption values in the order of 0.50 to 0.57 grams of oil per gram of NGSV. The pellets appeared to be thoroughly wetted within 5 minutes.

The pellets lost approximately 10% to 25% of the oil contained after exposures to laboratory ambient conditions at ~50% RH and 20-25°C for periods over one to twelve weeks. The pellet still appeared saturated after a week's exposure. A noticeable color change was evident after three months; however, there was no evidence of dry material. The results demonstrated that relatively uniform saturation can be achieved within approximately 5 minutes. The data further indicate that loss of oil due to evaporation should be minimal for most conditions anticipated in end use application.

INTRODUCTION

Montello, Inc. is currently investigating the merits of an oil-wetted NGSV (1/8-inch SVB pellet) for the purpose of dust control in drilling fluids application. Concurrent with these investigations, evaluation of the oil absorption properties of NGSV were performed in our laboratory. Results are reported herein.

DISCUSSION

No. 2 diesel oil was used for the purpose of these tests. Montello is currently evaluating the pros and cons of various oil products and a specific material has yet to be selected.

The 1/8-inch pellets were oil wetted by total submersion for predetermined periods of time. The pellets were placed on a 28 mesh screen and suspended in the oil bath for periods of 5 minutes, 30 minutes, 2 hours,and 20 hours, respectively. After soaking the allotted time, the screen was removed from the bath and the pellets allowed to drain for a period of 15 minutes. The wetted pellets were then transferred to tared aluminum trays and weighed. Oil loss due to evaporation was determined over extended periods of exposure to laboratory ambient conditions (~50% RH @ 20-25°C).

The oil absorption properties of NGSV pellets as a function of submersion time are shown in Table I. The results show immersion time to be a relatively insignificant factor with regards to oil absorption within the limits tested; i.e., 5 minutes to 20 hours. There was a slight increase in oil absorption over the first 30 minutes; however, the difference was marginal considering the limitations of the test. All the samples appeared to be thoroughly wetted within 5 minutes.

Shelf stability of the wetted products in terms of weight loss due to evaporation are shown in Table II. Total weights of the wetted products decreased by 11.5 to 14.5% over three months' exposure, which represents approximately a 25% loss of the absorbed oil due to evaporation. The pellets were somewhat less dark in color; however, there was no evidence of dry material. Exposure over the period of a week, which is probably more realistic from an end use standpoint, demonstrated oil losses on the order of 10%. The pellets after one week's exposure still appeared dark and oil saturated. Exposure test results are further illustrated graphically in Figure 1.

The results demonstrate that relatively uniform saturation can be achieved within ~5 minutes. Loss of oil due to evaporation should be minimal for most conditions anticipated in end use application.

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BLI/rmm
Attachments

TABLE I

OIL ABSORPTION ON NGSV

Sample	Soak Time	g Oil/ g NGSV	% Oil (by weight)
I	5 Minutes	0.504	50.4%
II	30 Minutes	0.553	55.3%
III	2 Hours	0.535	53.5%
IV	20 Hours	0.565	56.5%

TABLE II

PERCENT TOTAL WEIGHT LOSS OF OIL WETTED NGSV PRODUCTS WITH TIME
(Exposed to Laboratory Ambient Conditions*)

Sample	Initial % Oil (by weight)	Percent Weight Loss After					
		24 Hrs	48 Hrs	1 Wk	3 Wks	7 Wks	12 Wks
I	50.4	0.5	2.0	4.5	7.0	10.0	11.5
II	55.3	1.0	2.5	5.0	9.0	11.0	13.0
III	53.5	1.5	3.0	5.5	9.5	13.0	14.5
IV	56.5	2.5	3.0	5.5	9.0	11.5	14.0

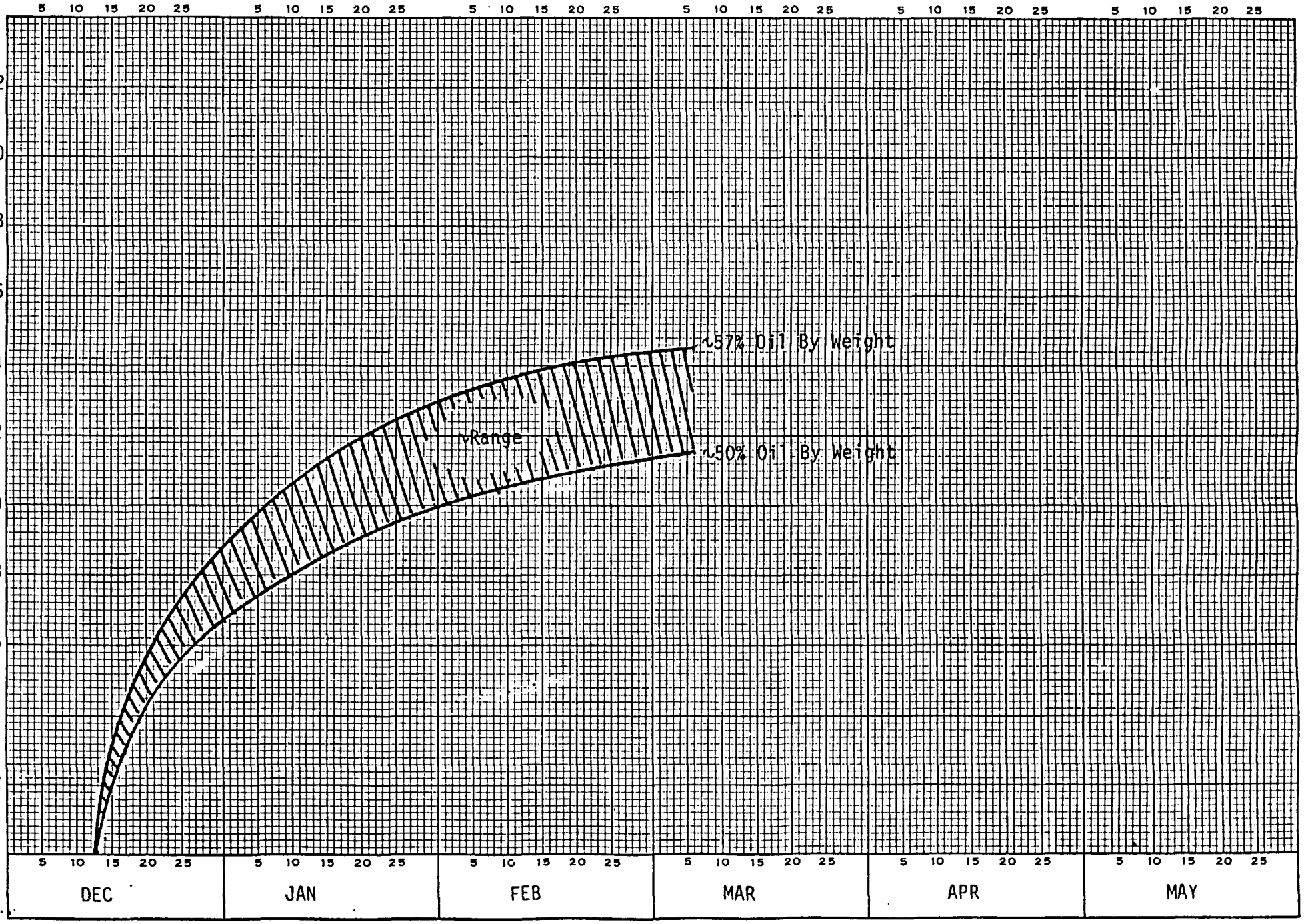
*Laboratory conditions of 50% RH, 20-25°C.

K&E 6 MONTHS BY DAYS X 120 DIVISIONS KEUFFEL & ESSER CO. 46 2610 MADE IN U.S.A.

FIGURE I

PERCENT WEIGHT LOSS

No. 2 Diesel Oil Wetted NGSV (50-57% Oil by Wt.)



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