

Daisy,

Do you know what Air Station  
is doing on this

Jubair

MARY Wheat said they did not  
plan to send it. I recommended  
you give Col. Carter a copy  
of it. D. Sluzge

10

Make a copy of all attached for us.

Julian  
done  
attached  
5 Apr 83

NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS DIVISION  
MARINE CORPS BASE  
CAMP LEJEUNE, NORTH CAROLINA 28542

4-5-83

Date

From: Director

To: BMO

Subj: MCAS(H)NR Storm Drain Sample  
1. analysis (Fuel Farm Area)

attached bootleg copy is provide  
for your info. See 4 b. Page 2  
which pertain to boiler blow-down

Julian





DEPARTMENT OF THE NAVY  
NAVAL AIR REWORK FACILITY  
MARINE CORPS AIR STATION  
CHERRY POINT, NORTH CAROLINA 28533

IN REPLY REFER TO:  
342/GLA:rkb  
11 February 1983  
Page 1 of 3

MATERIALS ENGINEERING LABORATORY REPORT NR. 0247-83

Subj: Fluid samples removed from ditch after a hydrocarbon spill at MCAS(H)  
New River, NC; analysis of

1. Samples Submitted: Seven (7) samples were submitted by the Fuel Division of the Supply Department MCAS(H) New River, NC in connection with the subject spill. Three (3) of the samples were unmarked and, based on conversations with Fuel Division personnel, were designated as:

SAMPLE #1 - Ditch  
SAMPLE #2 - Ditch  
SAMPLE #3 - Ditch

Marked samples were designated as:

SAMPLE #4 - Drain  
SAMPLE #5 - Rapid Jet Point 3 JP-5  
SAMPLE #6 - Boiler  
SAMPLE #7 - Ditch Water

2. Purpose: To identify contamination to aid in identifying the source of the contamination.

3. Procedure: Samples Nrs. 1 through 5 appeared to be petroleum distillate and ditch water. The petroleum distillate was separated from the water, filtered, and subjected to physical tests used in petroleum analysis as well as analysis by infrared (IR) spectrophotometer. Sample Nr. 6 was subjected to qualitative analysis to identify ion constituents, both using classic chemical means as well as X-Ray fluorescence. Sample Nr. 7 had a small emulsified layer which was separated and analyzed by infrared spectrophotometry and the water was analyzed qualitatively, as was done with Sample Nr. 6 above.

4. Results:

a. Samples Nrs. 1 through 5 were found by IR analysis to be petroleum distillates. The results of physical tests are as follows:



SAMPLE	COLOR	API GRAVITY	FLASH POINT	VISCOSITY 100°F	INITIAL BOILING PT.	10%	50%	90%	END POINT	RESIDUE	GUM mg/100 ml
1	Dark Brown	42.0°	128°F	1.52cs	404°F	410°F	430°F	470°F	558°F	1.5%	460
2	Dark Brown	42.0°	155°F	1.69cs	404°F	410°F	430°F	470°F	558°F	1.5%	560
3	Dark Brown	42.0°	167°F	1.62cs	410°F	415°F	432°F	470°F	540°F	1.6%	36.8
4	Dark Brown	41.8°	160°F	1.33cs	390°F	392°F	418°F	462°F	531°F	1.4%	83.0
5	Yellow	41.8°	167°F	1.75cs	438°F	438°F	452°F	482°F	552°F	1.5%	23.8

The physical characteristics were compared to the characteristics of MIL-T-5624 JP-5 jet fuel; VV-F-800 Diesel fuel, both Grades DF-1 and DF-2; VV-K-220 deodorized kerosene; Dry Cleaning (Stoddard) Solvent P-D-680, Types I and II; and Burner Fuel Oil, VV-F-815, Grades 1 and 2. The above results most nearly fit the characteristics of Grade 1 Fuel Oil or JP-5 jet fuel, especially the former, which is often sold commercially as kerosene. From the gum results it was determined that all samples were contaminated with a dark bituminous-like substance. This was identified by infrared analysis as similar to Cosmoline 1112 which is qualified under MIL-C-16173, Grade 4 corrosion preventive compound that is widely used on military equipment and is generally removed with kerosene type solvents as well as hot water or steam.

b. Sample Nr. 6 was found to contain the ions of sodium, phosphate, sulfate, chloride, silicate, and gave a strong indication of calcium carbonate. The pH was 14.0. All of these are typical of boiler water and, with the strong indication of calcium carbonate (the principle cause of water hardness), it is conjectured that this may have been from boiler blow-down operations which is done to remove hardness and salts that can cause boiler deposits.

c. Sample Nr. 7. The water portion had a pH of 6 to 7 and contained the ions of sodium, calcium, magnesium, carbonate, silicate, sulfate, and chloride. This is all typical of ground or tap water. Infrared analysis of the emulsion layer was identified as similar to Cosmoline 1112 and water.



5. Conclusions: It is concluded from these results that hydrocarbon contamination, related with Sample Nrs. 1 through 5 and Sample Nr. 7, was from cleaning equipment which had been preserved with MIL-C-16176, Grade 4 corrosion preventive compound, and Sample Nr. 6 was from boiler operations.

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Copy to:  
JAG MCAS(H) NEW RIVER (Maj. Robinson)



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Make a copy <sup>of all attached</sup> for us.

Julian

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