

LUBCARE™

LUBRICATION OIL Analysis Report

Vessel Name : **Confidential**
 Customer : **Confidential**
 Equipment : **Main Engine**
 Sampling Point : **After Purifier**

Vessel IMO : XXXXXXX
 Report Date : April 3, 2013
 Rep. Ref. No : XXXXXXXXX-XXX

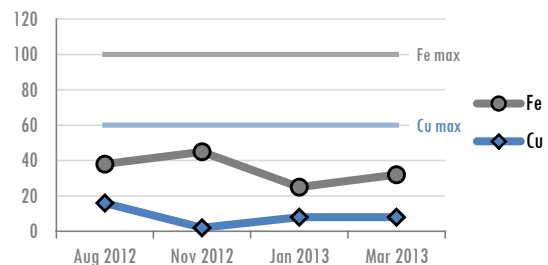
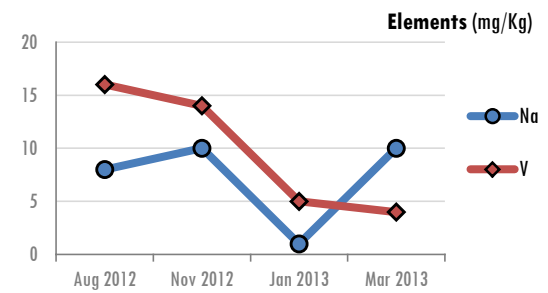
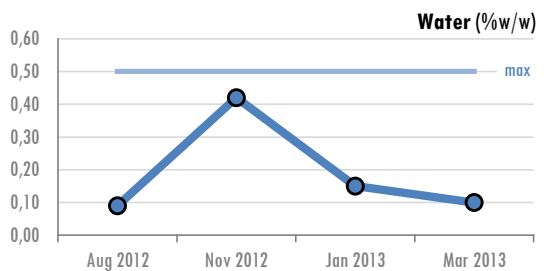
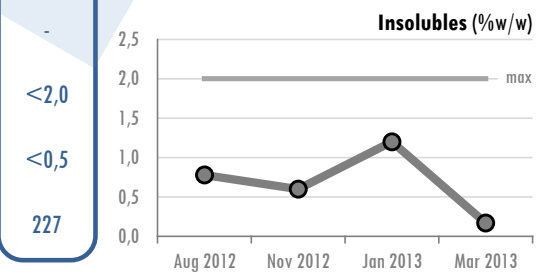
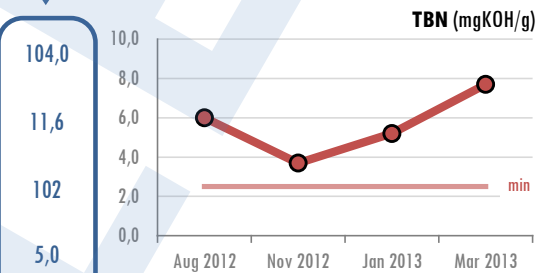
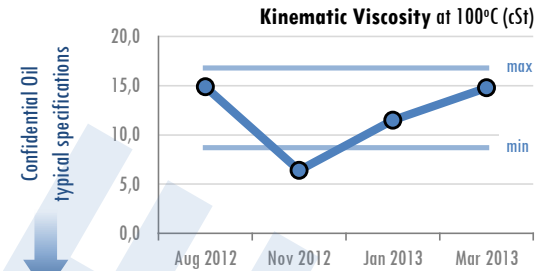


RESULTS

Date Sampled	March 6, 2013	
Port Sampled	Baltimore (U.S.A.)	
Oil Brand Name	Confidential	
Lubricant Life (Hours)	1.874	
Equipment Life (Hours)	15.000	
Kinematic Viscosity at 40°C	cSt	105,5
<small>ASTM D7042</small>		
Kinematic Viscosity at 100°C	cSt	14,8
<small>ASTM D7042</small>		
Viscosity Index	98	
<small>ASTM D2270</small>		
Total Base Number (TBN)	mgKOH/g	7,7
<small>ASTM D2896</small>		
Total Acid Number (TAN)	mgKOH/g	-
<small>ASTM D664</small>		
Insolubles (In Hexane)	% w/w	0,17
<small>ASTM D4055 mod.</small>		
Water (Suspended)	% w/w	0,10
<small>ASTM D6304</small>		
Flash Point (Closed Cup)	°C	>200
<small>ASTM D93</small>		
Wear & Contaminant Elements (ASTM D5185)		
Iron Fe	mg/Kg	32
Sodium Na	mg/Kg	10
Vanadium V	mg/Kg	4
Nickel Ni	mg/Kg	1
Copper Cu	mg/Kg	8
Aluminium Al	mg/Kg	1
Silicon Si	mg/Kg	5
Lead Pb	mg/Kg	Not Detected
Chromium Cr	mg/Kg	Not Detected
Tin Sn	mg/Kg	4
Magnesium Mg	mg/Kg	10

HISTORY

	Jan 2013	Nov 2012	Aug 2012
Surabaya (Indonesia)	Surabaya (Indonesia)	At Sea	Baltimore (U.S.A.)
Confidential	Confidential	Confidential	Confidential
Lubricant Life (Hours)	1.654	1.210	984
Equipment Life (Hours)	14.156	13.526	11.523
Kinematic Viscosity at 40°C	102,6	88,1	103,4
<small>ASTM D7042</small>			
Kinematic Viscosity at 100°C	11,5	6,4	14,9
<small>ASTM D7042</small>			
Viscosity Index	101	98	100
<small>ASTM D2270</small>			
Total Base Number (TBN)	5,2	3,7	6,0
<small>ASTM D2896</small>			
Total Acid Number (TAN)	-	-	-
<small>ASTM D664</small>			
Insolubles (In Hexane)	1,20	0,60	0,78
<small>ASTM D4055 mod.</small>			
Water (Suspended)	0,15	0,42	0,09
<small>ASTM D6304</small>			
Flash Point (Closed Cup)	>200	>200	>200
<small>ASTM D93</small>			
Wear & Contaminant Elements (ASTM D5185)			
Iron Fe	25	45	38
Sodium Na	1	10	8
Vanadium V	5	14	16
Nickel Ni	Not Detected	2	1
Copper Cu	8	2	16
Aluminium Al	1	2	1
Silicon Si	5	4	2
Lead Pb	1	Not Detected	2
Chromium Cr	Not Detected	1	1
Tin Sn	3	4	6
Magnesium Mg	8	22	18



Confidential Oil
typical specifications

104,0
11,6
102
5,0
-
<2,0
<0,5
227

COMMENTS

As water and insoluble contents are moderate, the separator efficiency can not be expected higher.

Spectroscopy analysis did not show evidence of significant wear.

Oil suitable for further use.