

**UIN 081D1ED**

**Diesel Engine**

**Unit No.** Serena

**Unit:**  
**Make**  
**Model**  
**Serial No.**  
**Site** Eddie Reeves

**Compartment:**

**Name** Port Generator Engine  
**Make** Northern Lights  
**Model**  
**Serial No.** 8434-45514C  
**Capacity:** 0.0 Ltrs

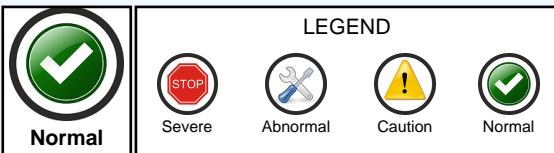
**Customer:**  
 TWO STAR MARITIME  
 4725 Thornton Ave  
 Fremont CA 94536  
 USA

**DIAGNOSIS**

Engine wear levels appear satisfactory for first sample. Silicon level (dirt/sealant material) satisfactory. Water content acceptable. Viscosity within specified operating range. Action: Resample next service interval to monitor and establish wear trend.

**ANALYST:** Jon.Sowers

**LEGEND**



Normal Severe Abnormal Caution Normal

<b>DATE SAMPLED</b>	24-Jul-20
<b>DATE RECEIVED</b>	25-Aug-20
<b>DATE REPORTED</b>	18-Sep-20
LAB NO.	42021538010
SIF NO.	25501781
TIME ON UNIT	5960
TIME ON OIL	170
OIL BRAND	Shell
OIL TYPE	Rotella T4 Tri P (CK4)
OIL GRADE	SAE 15W40
OIL ADDED	
FILTER	Not Applicable
OIL CHANGED	Not Provided
WO NUMBER	

**Metals (ppm)**

Iron (Fe)	4
Chromium (Cr)	<1
Lead (Pb)	<1
Copper (Cu)	<1
Tin (Sn)	<1
Aluminium (Al)	<1
Nickel (Ni)	<1
Silver (Ag)	<1
Titanium (Ti)	<1
Vanadium (V)	<1

**Contaminants (ppm)**

Silicon (Si)	4
Sodium (Na)	4
Potassium (K)	5
Coolant	No

**Additives (ppm)**

Magnesium (Mg)	56
Calcium (Ca)	2142
Barium (Ba)	<1
Phosphorus (P)	1040
Zinc (Zn)	1247
Molybdenum (Mo)	9
Boron (B)	167

**Contaminants**

Water (%)	<0.05
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**Physical Tests**

Viscosity (cSt 100C)	14.8
Fuel (%)	<1
Soot (%) Infrared	0.3

**Physical / Chemical**

Base Number (mgKOH/g)	7.6
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**U.S. Laboratories**

<b>Atlanta, Georgia - 420</b> 5300 OakBrook Parkway Building 200 Suite 245 Norcross, GA 30093 800.394.3669	<b>Valley View, Ohio - 410</b> 6180 Halle Dr. Suite D Valley View, OH 44125 800.726.5400
<b>Kansas City, Kansas - 430</b> 935 Sunshine Road Kansas City, KS 66115 800.332.8055	<b>Phoenix, Arizona - 440</b> 3319 West Earll Drive Phoenix, AZ 85017 800.445.7930

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**Canadian Laboratories**

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Burlington, ON L7L5Y7  
905 332 9559

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877.835.8437

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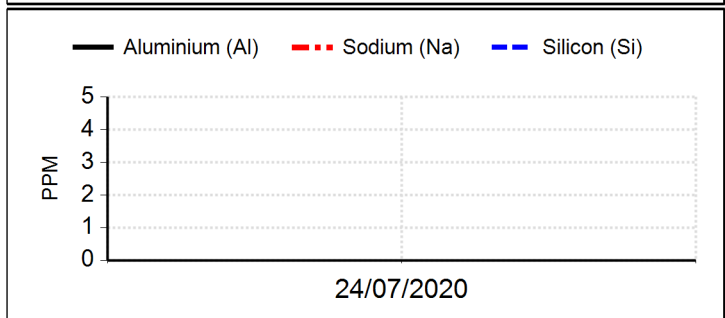
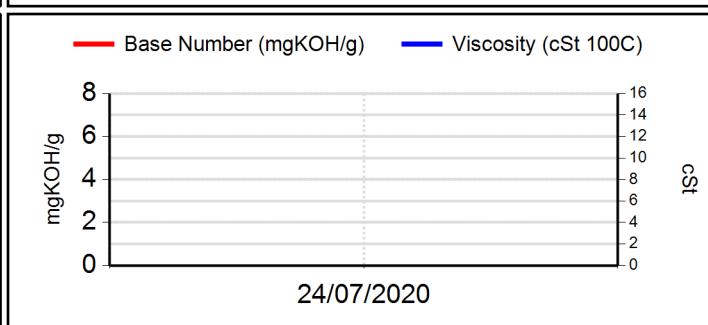
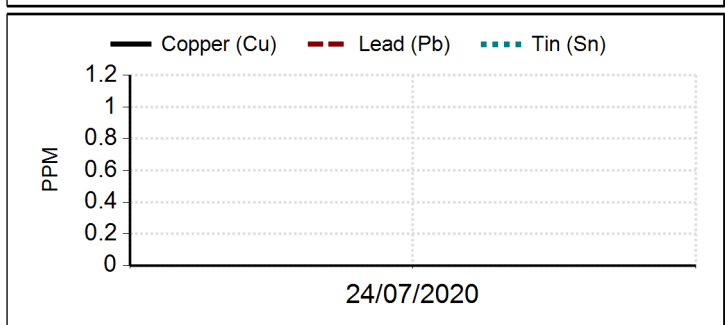
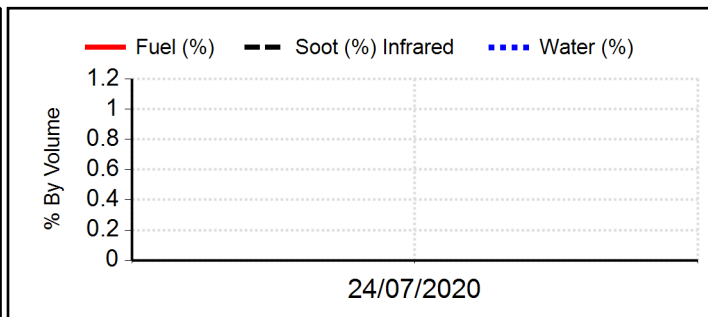
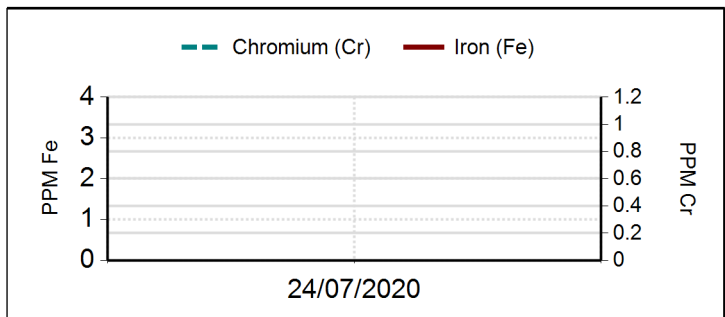
Wellington

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Kuala Lumpur, Singapore



Filter Image

Filter patch test is not performed Contact laboratory for more information

*Since services are based on samples and information supplied by others, and since corrective actions, if any, are necessarily taken by others, these services are rendered without any warranty or liability of any kind beyond the actual amount paid to ALS Tribology for the services. Reported recommendations are based on interpretations of the generated test results and historical data. Certain test results appearing in this report may have been tested at other ALS laboratories within the Tribology divisional network.*

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