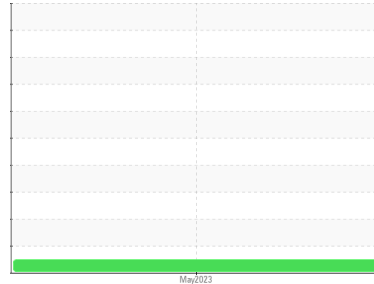


Area  
**PULSION EQUIPMENT**  
Machine Id  
**MAN MAIN ENGINE (CAL010) (S/N 1063737)**  
Component  
**Main Engine**  
Fluid  
**MOBIL MOBILGARD 412 (6000 LTR)**



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MOB 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid. this testkit includes BN to determine the suitability of the oil for continued use.

### Wear

Component wear rates appear to be normal (unconfirmed).

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

The condition of the oil is acceptable for the time in service (unconfirmed).

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>PC0011647</b>	---	---
Sample Date	Client Info		<b>01 May 2023</b>	---	---
Machine Age	hrs	Client Info	<b>18963</b>	---	---
Oil Age	hrs	Client Info	<b>18963</b>	---	---
Oil Changed	Client Info		<b>Not Chngd</b>	---	---
Sample Status			<b>NORMAL</b>	---	---

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<b>&lt;1.0</b>	---	---
Water	WC Method	>0.2	<b>NEG</b>	---	---
Glycol	WC Method		<b>NEG</b>	---	---

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >50	<b>5</b>	---	---
Chromium	ppm	ASTM D5185(m) >10	<b>0</b>	---	---
Nickel	ppm	ASTM D5185(m) >2	<b>0</b>	---	---
Titanium	ppm	ASTM D5185(m) >3	<b>0</b>	---	---
Silver	ppm	ASTM D5185(m) >2	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185(m) >20	<b>2</b>	---	---
Lead	ppm	ASTM D5185(m) >20	<b>0</b>	---	---
Copper	ppm	ASTM D5185(m) >15	<b>4</b>	---	---
Tin	ppm	ASTM D5185(m) >10	<b>&lt;1</b>	---	---
Antimony	ppm	ASTM D5185(m)	<b>&lt;1</b>	---	---
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	---	---

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	<b>1</b>	---	---
Barium	ppm	ASTM D5185(m) 0	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	---	---
Manganese	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	---	---
Magnesium	ppm	ASTM D5185(m) 18	<b>27</b>	---	---
Calcium	ppm	ASTM D5185(m) 6350	<b>6263</b>	---	---
Phosphorus	ppm	ASTM D5185(m) 200	<b>235</b>	---	---
Zinc	ppm	ASTM D5185(m) 380	<b>358</b>	---	---
Sulfur	ppm	ASTM D5185(m) 6950	<b>4833</b>	---	---
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	---	---

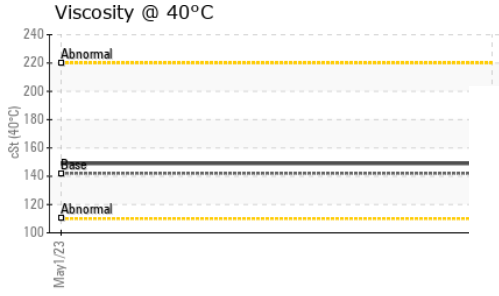
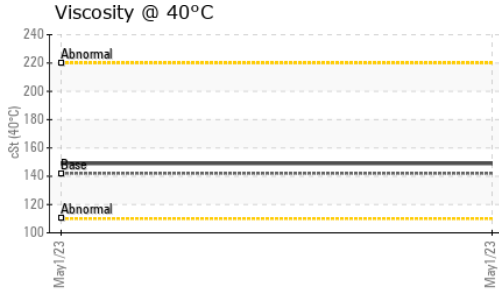
## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >20	<b>7</b>	---	---
Sodium	ppm	ASTM D5185(m) >75	<b>3</b>	---	---
Potassium	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	---	---

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >1.5	<b>0.3</b>	---	---
Nitration	Abs/cm	ASTM D7624* >20	<b>9.0</b>	---	---
Sulfation	Abs./1mm	ASTM D7415* >30	<b>16.6</b>	---	---

# OIL ANALYSIS REPORT

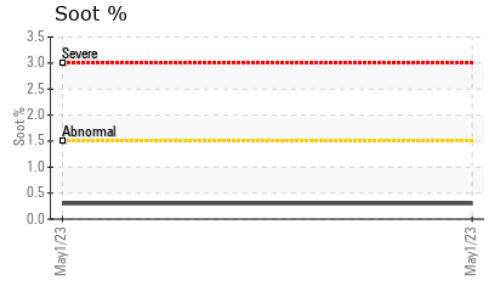
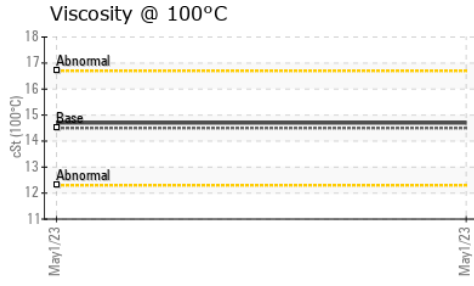
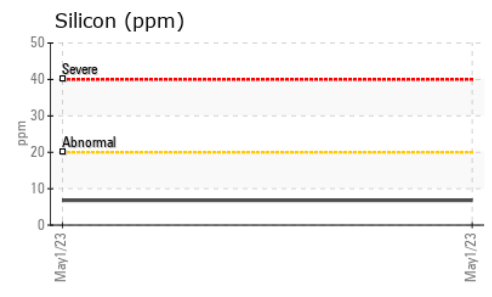
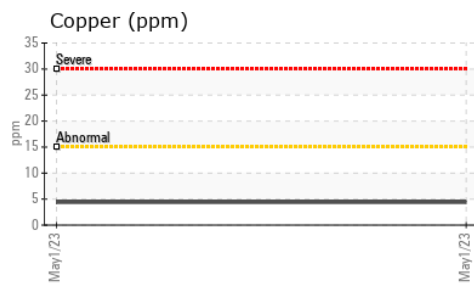
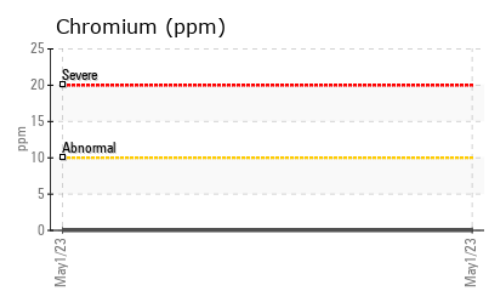
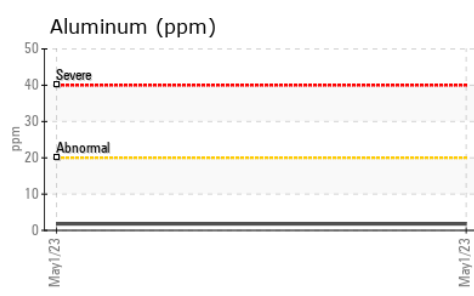
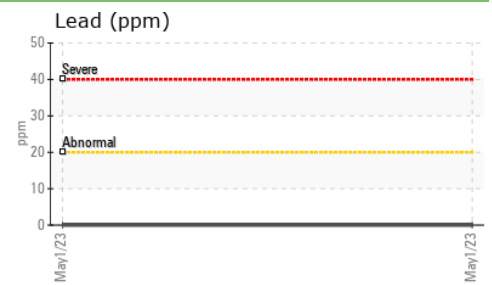
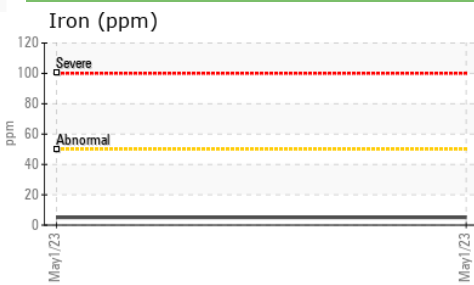


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>7.0</b>	---	---

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	---	---
Free Water	scalar	Visual*		<b>NEG</b>	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	142	<b>149</b>	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	14.5	<b>14.7</b>	---	---
Viscosity Index (VI)	Scale	ASTM D2270*	100	<b>97</b>	---	---

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **Ocean Choice International - MV Calvert**  
**Sample No.** : PC0011647 **Received** : 24 May 2023 1315 Topsail Rd, P.O. Box 8190  
**Lab Number** : **02559187** **Diagnosed** : 24 May 2023 St. John's, NL  
**Unique Number** : 5580227 **Diagnostician** : Wes Davis CA A1B 3N4  
**Test Package** : MOB 1 ( Additional Tests: KV40, VI ) Contact: Calvert Engine Control Room  
 calvertengine@oceanchoice.com

To discuss this sample report, contact Customer Service at 1-800-268-2131. T:  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. F:  
 Validity of results and interpretation are based on the sample and information as supplied.