



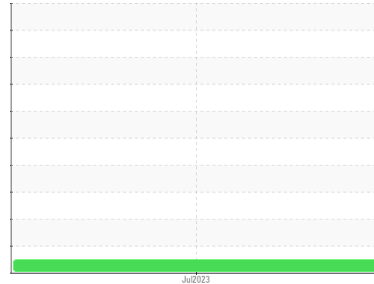
# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**DELTA VICTOR 104 MANGUSTA**  
 Machine Id  
**KONGSBERG KAMEWA STBD HPP (S/N 53403)**  
 Component  
**Starboard Hydraulic Power Pack**  
 Fluid  
**CALTEX MEROPA 68 (--- GAL)**



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>WC0713634</b>	---	---
Sample Date	Client Info	<b>09 Jul 2023</b>	---	---
Machine Age	hrs Client Info	<b>417</b>	---	---
Oil Age	hrs Client Info	<b>417</b>	---	---
Oil Changed	Client Info	<b>Not Chngd</b>	---	---
Sample Status		<b>NORMAL</b>	---	---

## WEAR METALS

method	limit/base	current	history1	history2
Iron ppm ASTM D5185m	>20	<b>16</b>	---	---
Chromium ppm ASTM D5185m	>20	<b>0</b>	---	---
Nickel ppm ASTM D5185m	>20	<b>0</b>	---	---
Titanium ppm ASTM D5185m		<b>0</b>	---	---
Silver ppm ASTM D5185m		<b>0</b>	---	---
Aluminum ppm ASTM D5185m	>20	<b>0</b>	---	---
Lead ppm ASTM D5185m	>20	<b>0</b>	---	---
Copper ppm ASTM D5185m	>20	<b>&lt;1</b>	---	---
Tin ppm ASTM D5185m	>20	<b>0</b>	---	---
Vanadium ppm ASTM D5185m		<b>0</b>	---	---
Cadmium ppm ASTM D5185m		<b>0</b>	---	---

## ADDITIVES

method	limit/base	current	history1	history2
Boron ppm ASTM D5185m	0	<b>3</b>	---	---
Barium ppm ASTM D5185m	0	<b>2</b>	---	---
Molybdenum ppm ASTM D5185m	0	<b>0</b>	---	---
Manganese ppm ASTM D5185m		<b>&lt;1</b>	---	---
Magnesium ppm ASTM D5185m	0	<b>4</b>	---	---
Calcium ppm ASTM D5185m	0	<b>21</b>	---	---
Phosphorus ppm ASTM D5185m	200	<b>367</b>	---	---
Zinc ppm ASTM D5185m	100	<b>59</b>	---	---
Sulfur ppm ASTM D5185m	3500	<b>30166</b>	---	---

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon ppm ASTM D5185m	>15	<b>3</b>	---	---
Sodium ppm ASTM D5185m		<b>5</b>	---	---
Potassium ppm ASTM D5185m	>20	<b>2</b>	---	---

## FLUID CLEANLINESS

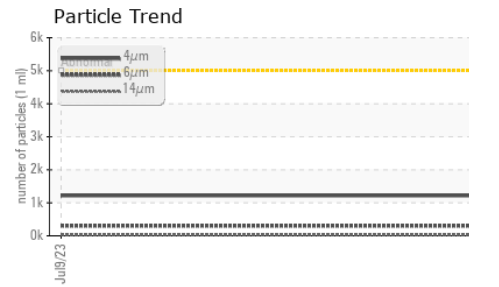
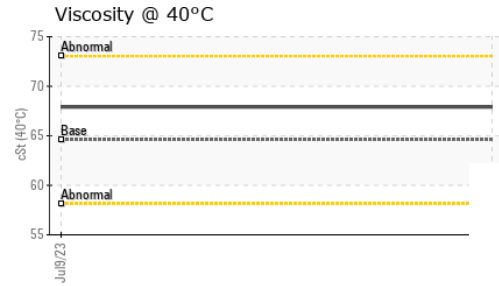
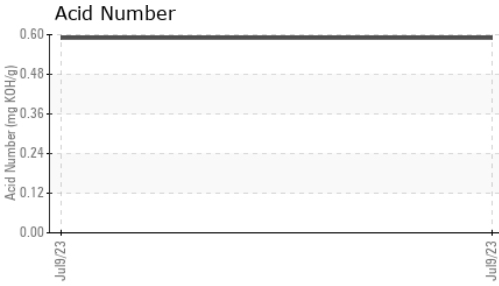
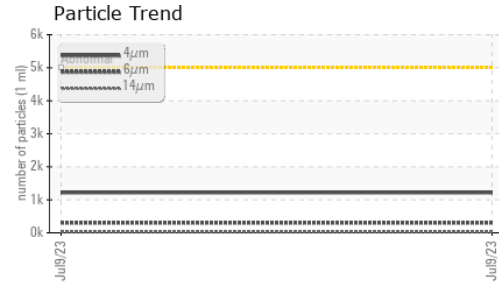
method	limit/base	current	history1	history2
Particles >4µm ASTM D7647	>5000	<b>1217</b>	---	---
Particles >6µm ASTM D7647	>1300	<b>304</b>	---	---
Particles >14µm ASTM D7647	>160	<b>25</b>	---	---
Particles >21µm ASTM D7647	>40	<b>6</b>	---	---
Particles >38µm ASTM D7647	>10	<b>1</b>	---	---
Particles >71µm ASTM D7647	>3	<b>0</b>	---	---
Oil Cleanliness ISO 4406 (c)	>19/17/14	<b>17/15/12</b>	---	---

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Acid Number (AN) mg KOH/g ASTM D8045		<b>0.59</b>	---	---



# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.05	NEG	---
Free Water	scalar	*Visual		NEG	---

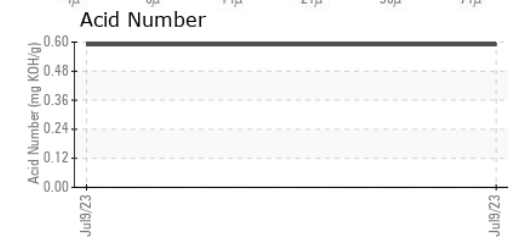
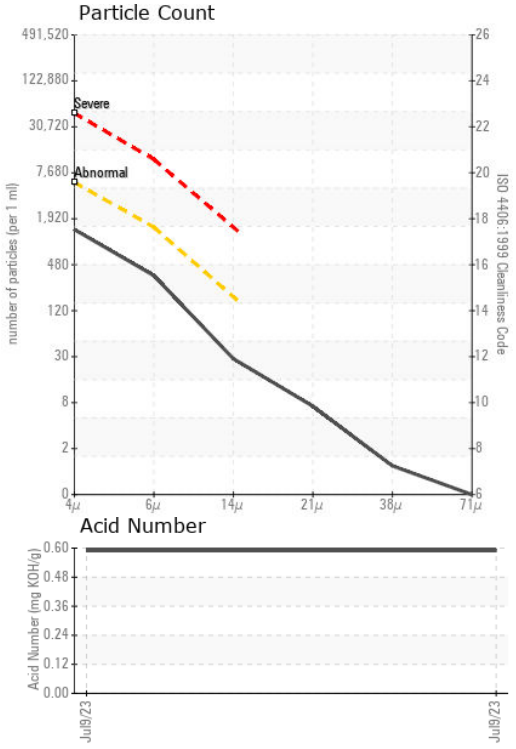
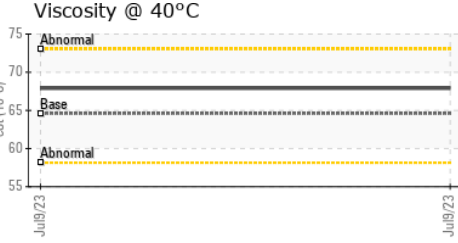
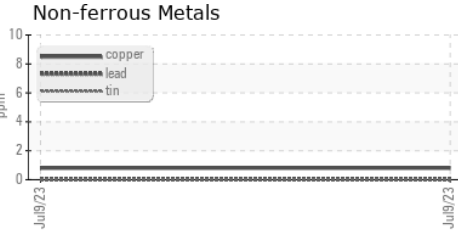
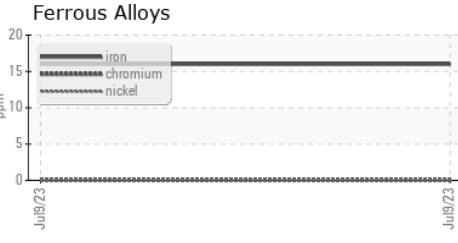
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	64.6	67.9	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color

	no image	no image
Bottom		no image

## GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : WC0713634 Received : 24 Aug 2023  
 Lab Number : 05933465 Diagnosed : 28 Aug 2023  
 Unique Number : 10618736 Diagnostician : Jonathan Hester  
 Test Package : MAR 2

**WAKESTREAM MARINE**  
 105 E BAY ST  
 HARBOR SPRINGS, MI  
 US 49740  
 Contact: JONATHAN KNOLL  
 jonathank@wsmarine.com  
 T: (561)767-0471  
 F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.  
 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.  
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)