

OIL ANALYSIS REPORT

Sample Rating Trend

VISCOSITY

Machine Id MTU STBD GEARBOX

Starboard Gearbox Fluid SAE 15W40 (--- LTR)

DIAGNOSIS

A 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.

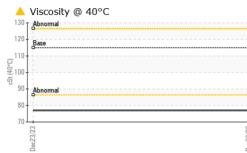
Fluid Condition

Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The condition of the oil is acceptable for the time in service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WA0019256		
Sample Date		Client Info		23 Dec 2023		
Machine Age	hrs	Client Info		600		
Oil Age	hrs	Client Info		150		
Oil Changed		Client Info		Not Changd		
Sample Status				ABNORMAL		
CONTAMINATIO	N	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>200	8		
Chromium	ppm	ASTM D5185(m)	>10	0		
Nickel	ppm	ASTM D5185(m)	>10	<1		
Titanium	ppm	ASTM D5185(m)		1		
Silver	ppm	ASTM D5185(m)		0		
Aluminum	ppm	ASTM D5185(m)	>25	5		
Lead	ppm	ASTM D5185(m)	>50	2		
Copper	ppm	ASTM D5185(m)	>200	31		
Tin	ppm	ASTM D5185(m)	>10	<1		
Antimony	ppm	ASTM D5185(m)	>5	0		
Vanadium	ppm	ASTM D5185(m)		0		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	ppm	ASTM D5185(m)		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		166		
Barium	ppm	ASTM D5185(m)		0		
Molybdenum	ppm	ASTM D5185(m)		4		
Manganese	ppm	ASTM D5185(m)		0		
Magnesium	ppm	ASTM D5185(m)		94		
Calcium	ppm	ASTM D5185(m)		2099		
Phosphorus	ppm	ASTM D5185(m)		952		
Zinc	ppm	ASTM D5185(m)		1059		
Sulfur	ppm	ASTM D5185(m)		3473		
Lithium	ppm	ASTM D5185(m)		<1		
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>50	3		
Sodium	ppm	ASTM D5185(m)	>57	3		
Potassium	ppm	ASTM D5185(m)	>20	8		



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		
חמריק/דק	Appearance	scalar	Visual*	NORML	NORML		
	Odor	scalar	Visual*	NORML	NORML		
	Emulsified Water	scalar	Visual*	>0.2	NEG		
	Free Water	scalar	Visual*		NEG		
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 40°C	cSt	ASTM D7279(m)	115	▲ 77.0		
	SAMPLE IMAG	ES	method	limit/base	current	history1	history2
	Color					no image	no image
	Bottom					no image	no image
	GRAPHS						1
	Iron (ppm)				Lead (ppm)		
	500 T			20	Severe		
udd 2	100 - 0						
	Abnormal			톱 100	Abnormal		
-2	200 - Abnormal				Automati		
-2	0						
-2	Abnormal				Automati		
	Aluminum (ppm	.)		Dec23/23	Chromium (p	pm)	
1	Aluminum (ppm	.)		Dec23/23	Chromium (p	ıpm)	
1	Aluminum (ppm)		Dec23/23	Chromium (p	ıpm)	
1	Aluminum (ppm)		10 11 11 11	Chromium (p	ıpm)	
1	Aluminum (ppm)		10 11 11 11	Chromium (p	ıpm)	
1	Aluminum (ppm)		1 Dec23323 1 D b m 1 1	Chromium (p	ıpm)	
1 wdd	Aluminum (ppm)		Dec23/23 Dec23/23 Dec23/23 Dec23/23 Dec23/23	Chromium (p		
1 udd	Aluminum (ppm)		Dec232323	Chromium (p		
1 udd 6 4	Aluminum (ppm)		Dec23/23 Dec23/23 Dec23/23 Dec23/23 Dec23/23	Chromium (p		
1 udd 6 ud	Aluminum (ppm)		Dec23/23	Chromium (p		
1 wdd 6 wd	Aluminum (ppm)		Dec23/23	Chromium (p		
1 111111 6	Aluminum (ppm	•)		31 21 11 151 151 151 151 151 151 151	Chromium (p		
1 wdd 6 wdd 2	Aluminum (ppm			Dec23/23 Dec	Chromium (p Severe Abnormal Silicon (ppm) Severe Abnormal EXERCISE Abnormal Ab		
1 udd 6 4 2	Aluminum (ppm)			Dec232323 Dec23232 Dec2323232 Dec2323232 Dec2323232 Dec23232 Dec2323232 Dec23232 Dec23232 Dec23232 Dec2323232 Dec2323232 Dec23232 Dec23232 Dec2323232 Dec2323232 Dec23232 Dec23232 Dec23232 Dec23232 Dec23232 Dec23232 Dec2323232 Dec2323232 Dec23232	Chromium (p		
1 udd 6 4 2	Aluminum (ppm			Dec23/23 Dec	Chromium (p	15	
1 wdd 6 4 2	Aluminum (ppm Aluminum (ppm beere Abnormal Copper (ppm) Copper (ppm) Abnormal A			3000 bec33/23 bec3/20 bec3/20 bec3/20 bec3/20 bec3/20 bec3/20 bec3/20 bec3/20 bec3/2	Chromium (p Chromium (p Severe Silicon (ppm) Severe Abnormal EXERCISE Additives	15	
1 mdd 6 4 wdd 2 ()-(Aluminum (ppm)			Dec23323 Dec2332 Dec23323 Dec2332 Dec23323 Dec23323 Dec2332 Dec23323 Dec23323 Dec2332 Dec23323 Dec23323 Dec2332 Dec23323 Dec23323 Dec23323 Dec23323 Dec2332 Dec23323	Chromium (p Severe Abnormal Silicon (ppm) Severe Abnormal CZECZZA Abnormal CZECZZA Abnormal CZECZZA Abnormal CZECZZA Abnormal CZECZZA CLINE CZECZZA CZECZZA CLINE CZECZZA CZ	15	
1 udd 6 4 2 (3-0+)153 r er	Aluminum (ppm Aluminum (ppm beere Abnormal Copper (ppm) Copper (ppm) Abnormal A	C	d : 02 ed : 03	Dec23/23 Dec23/	Chromium (p Severe Abnormal Silicon (ppm) Severe Abnormal EZEZZAG Additives	¹⁵ Canadia 93 CLARK`S	n Coast Gua BOUNDRY : HARBOUR, I CA BOW 1 ervice Manac

To discuss this sample r Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

CALA

ISO 17025:2017 Accredited Laboratory

F: