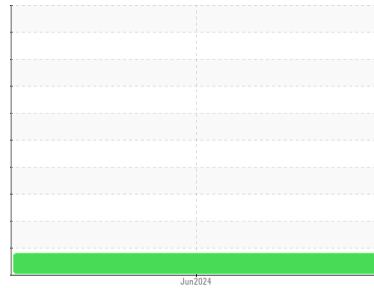


OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id

CUMMINS CAPTAIN JEFF IRBY

Component

Starboard Genset

Fluid

KENDALL SUPER-D XA 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

▲ Wear

The iron level is abnormal. All other component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			HRE0000280	---	---
Sample Date	Client Info			05 Jun 2024	---	---
Machine Age	hrs	Client Info		4920	---	---
Oil Age	hrs	Client Info		500	---	---
Oil Changed	Client Info			Not Chngd	---	---
Sample Status				ABNORMAL	---	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>4.0		<1.0	---	---
Water	WC Method	>0.1		NEG	---	---
Glycol	WC Method			NEG	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	▲ 53	---	---
Chromium	ppm	ASTM D5185m	>4	1	---	---
Nickel	ppm	ASTM D5185m	>2	<1	---	---
Titanium	ppm	ASTM D5185m		51	---	---
Silver	ppm	ASTM D5185m	>5	0	---	---
Aluminum	ppm	ASTM D5185m	>12	2	---	---
Lead	ppm	ASTM D5185m	>17	3	---	---
Copper	ppm	ASTM D5185m	>70	11	---	---
Tin	ppm	ASTM D5185m	>15	2	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
Cadmium	ppm	ASTM D5185m		0	---	---

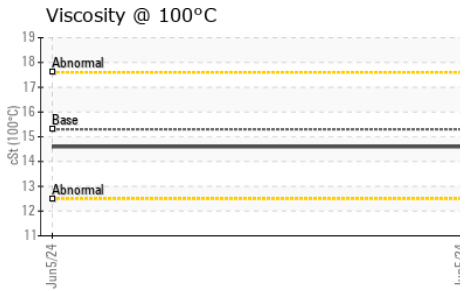
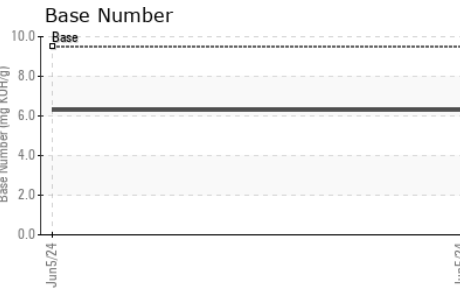
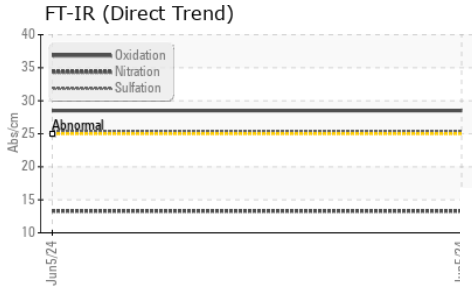
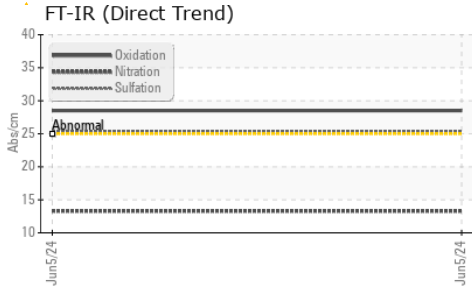
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	50	57	---	---
Barium	ppm	ASTM D5185m		0	---	---
Molybdenum	ppm	ASTM D5185m		10	---	---
Manganese	ppm	ASTM D5185m		2	---	---
Magnesium	ppm	ASTM D5185m	270	382	---	---
Calcium	ppm	ASTM D5185m	1900	1688	---	---
Phosphorus	ppm	ASTM D5185m	1000	681	---	---
Zinc	ppm	ASTM D5185m	1260	988	---	---
Sulfur	ppm	ASTM D5185m	3400	2831	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	8	---	---
Sodium	ppm	ASTM D5185m		26	---	---
Potassium	ppm	ASTM D5185m	>20	10	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		0.6	---	---
Nitration	Abs/cm	*ASTM D7624	>20	13.3	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.3	---	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	28.5	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.5	6.3	---	---

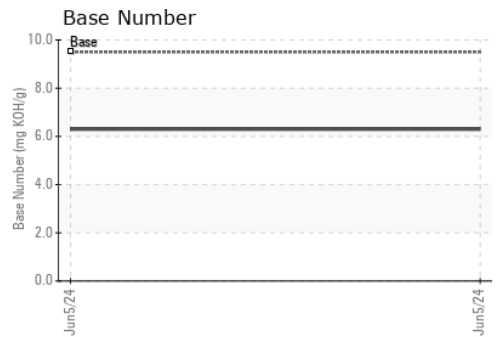
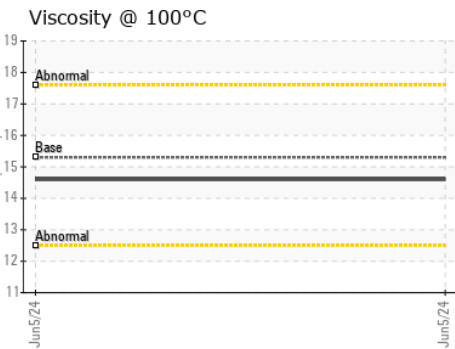
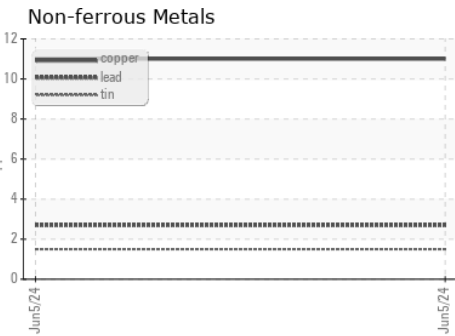
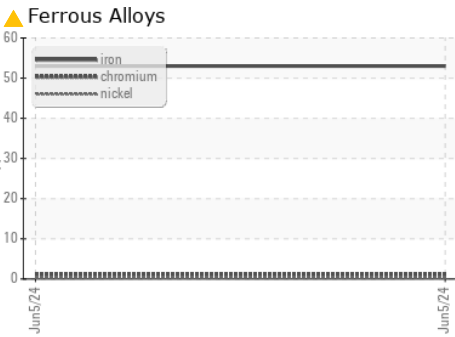
OIL ANALYSIS REPORT



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	>0.1	NEG	---	---
Free Water	scalar	*Visual		NEG	---	---

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.3	14.6	---	---

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HRE0000280
Lab Number : 06203833
Unique Number : 11071294
Test Package : FLEET

Received : 07 Jun 2024
Tested : 12 Jun 2024
Diagnosed : 12 Jun 2024 - Angela Borella

SUPERIOR MARINE
 201 KELLY LANE
 CHESAPEAKE, OH
 US 45619

Contact: DARRELL KEARNS
 darrellkearns@superiormarineinc.com

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)

T:
F: