



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CUMMINS CAPTAIN JEFF IRBY
 Component
Port Main Engine
 Fluid
KENDALL SUPER-D XA 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		HRE0000255	HRE0000271	---
Sample Date		Client Info		17 Jun 2024	05 Jun 2024	---
Machine Age	hrs	Client Info		33302	33292	---
Oil Age	hrs	Client Info		260	250	---
Filter Age	hrs	Client Info		260	250	---
Oil Changed		Client Info		Not Changd	Not Changd	---
Filter Changed		Client Info		Not Changd	Not Changd	---
Sample Status				NORMAL	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	4	4	---
Chromium	ppm	ASTM D5185m	>8	<1	<1	---
Nickel	ppm	ASTM D5185m	>2	0	0	---
Titanium	ppm	ASTM D5185m	>3	56	63	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>15	2	3	---
Lead	ppm	ASTM D5185m	>18	<1	<1	---
Copper	ppm	ASTM D5185m	>80	<1	<1	---
Tin	ppm	ASTM D5185m	>14	0	<1	---
Vanadium	ppm	ASTM D5185m		<1	<1	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

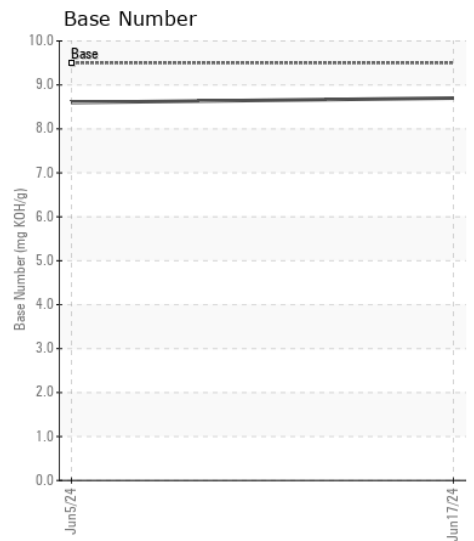
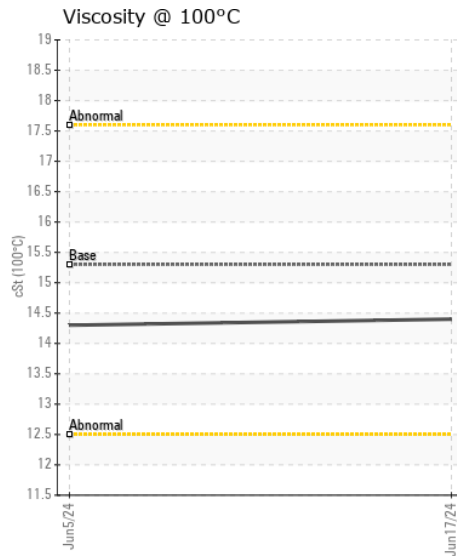
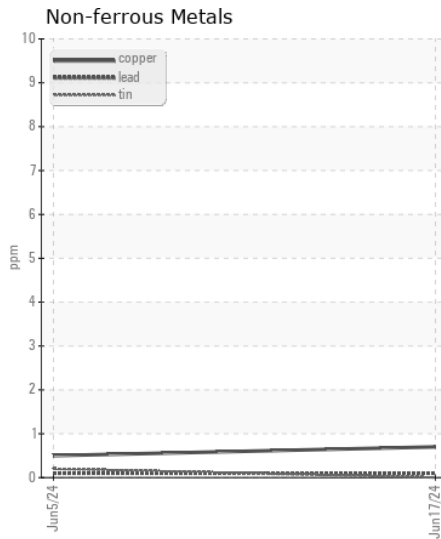
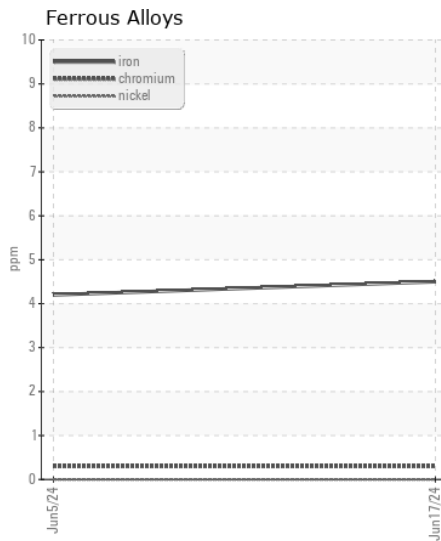
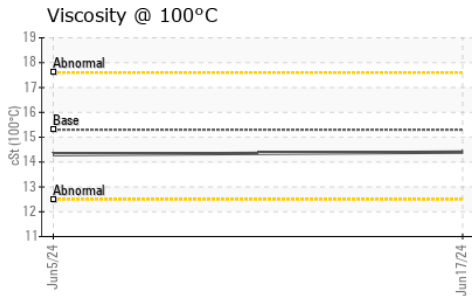
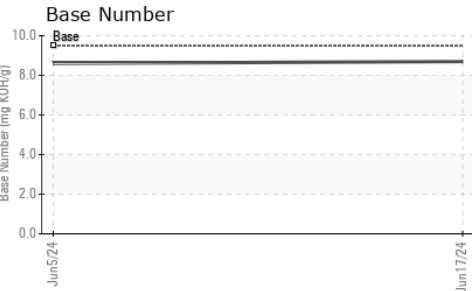
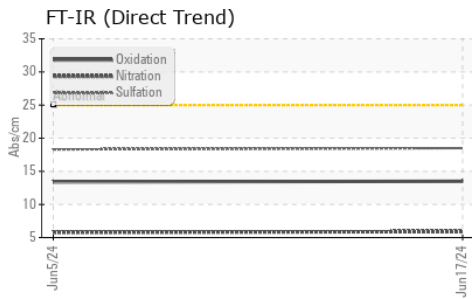
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	6	7	---
Potassium	ppm	ASTM D5185m	>20	3	4	---
Fuel		WC Method	>4.0	<1.0	<1.0	---
Water		WC Method	>0.1	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844		0	0	---
Nitration	Abs/cm	*ASTM D7624	>20	5.9	5.8	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.5	18.3	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	---

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.

Sodium	ppm	ASTM D5185m	>75	2	4	---
Boron	ppm	ASTM D5185m	50	123	159	---
Barium	ppm	ASTM D5185m		0	0	---
Molybdenum	ppm	ASTM D5185m		27	34	---
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m	270	315	344	---
Calcium	ppm	ASTM D5185m	1900	1748	1919	---
Phosphorus	ppm	ASTM D5185m	1000	985	931	---
Zinc	ppm	ASTM D5185m	1260	1183	1193	---
Sulfur	ppm	ASTM D5185m	3400	3718	3936	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.5	13.4	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.5	8.7	8.6	---
Visc @ 100°C	cSt	ASTM D445	15.3	14.4	14.3	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HRE0000255
Lab Number : 06216466
Unique Number : 11089330
Test Package : FLEET

Received : 20 Jun 2024
Tested : 22 Jun 2024
Diagnosed : 23 Jun 2024 - Don Baldrige

SUPERIOR MARINE
 201 KELLY LANE
 CHESAPEAKE, OH
 US 45619

Contact: DARRELL KEARNS
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 T:
 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)