OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
CUMMINS 8465038
Component
Diesel Engine
Fluid
MOBIL 15W40 (17 QTS)

RECOMMENDATION

The oil is near the end of it's useful service life, recommend schedule an oil change. We recommend an early resample to monitor this condition.

WEAR

Metal levels are typical for a new component breaking in.

CONTAMINATION

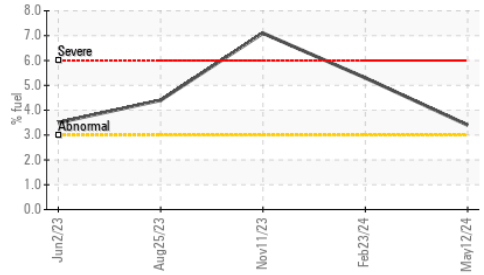
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

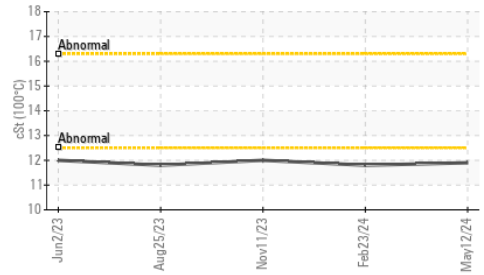
Magnesium ppm levels are abnormally high. Calcium ppm levels are abnormally low. Visc @ 100°C is abnormal. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		RPL0021092	RPL0017981	RPL0016380
Sample Date		Client Info		12 May 2024	23 Feb 2024	11 Nov 2023
Machine Age	mls	Client Info		25666	20704	14928
Oil Age	mls	Client Info		25666	20704	14928
Filter Age	mls	Client Info		25666	20704	14928
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>90	26	▲ 128	▲ 96
Chromium	ppm	ASTM D5185m	>20	<1	3	2
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	11	9
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	10	71	73
Tin	ppm	ASTM D5185m	>15	<1	1	1
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	8	▲ 34	34
Potassium	ppm	ASTM D5185m	>20	3	12	11
Fuel	%	ASTM D3524	>3.0	▲ 3.4	▲ 5.3	▲ 7.1
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	0.3	0.9	0.6
Nitration	Abs/cm	*ASTM D7624	>20	7.7	13.7	11.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.3	29.6	27.0
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m	>118	2	5	4
Boron	ppm	ASTM D5185m		13	63	116
Barium	ppm	ASTM D5185m		0	4	5
Molybdenum	ppm	ASTM D5185m		67	110	114
Manganese	ppm	ASTM D5185m		2	9	8
Magnesium	ppm	ASTM D5185m		▲ 959	683	680
Calcium	ppm	ASTM D5185m		▲ 1115	1386	1440
Phosphorus	ppm	ASTM D5185m		972	696	562
Zinc	ppm	ASTM D5185m		1229	841	796
Sulfur	ppm	ASTM D5185m		3474	2221	2120
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.2	32.0	27.0
Base Number (BN)	mg KOH/g	ASTM D2896		8.3	▲ 3.6	▲ 5.3
Visc @ 100°C	cSt	ASTM D445		▲ 11.9	▲ 11.8	▲ 12.0

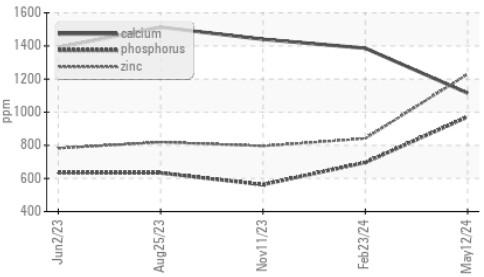
Fuel Dilution



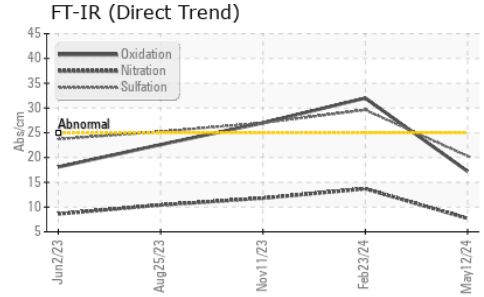
Viscosity @ 100°C



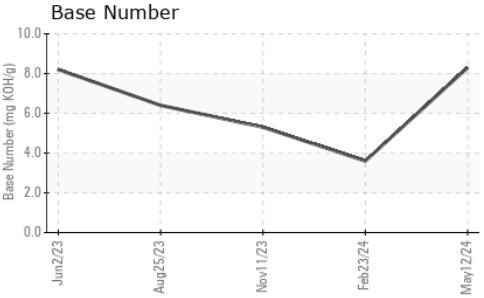
Additives



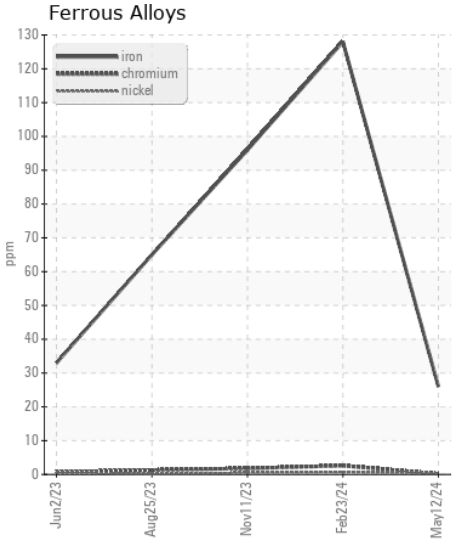
FT-IR (Direct Trend)



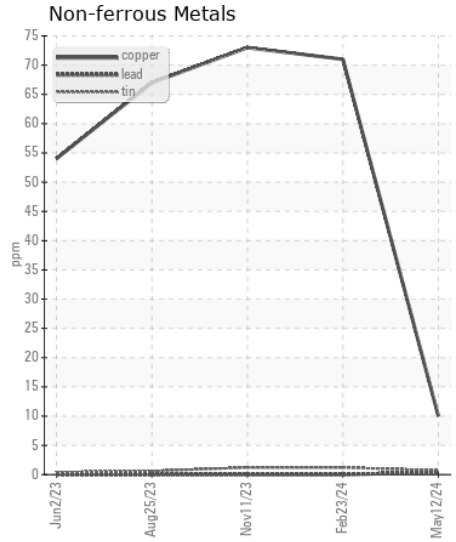
Base Number



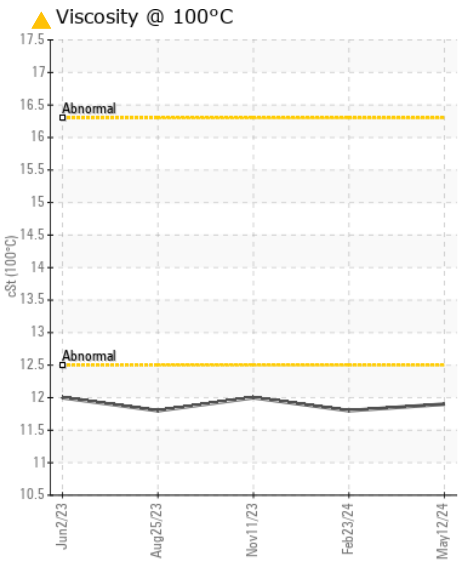
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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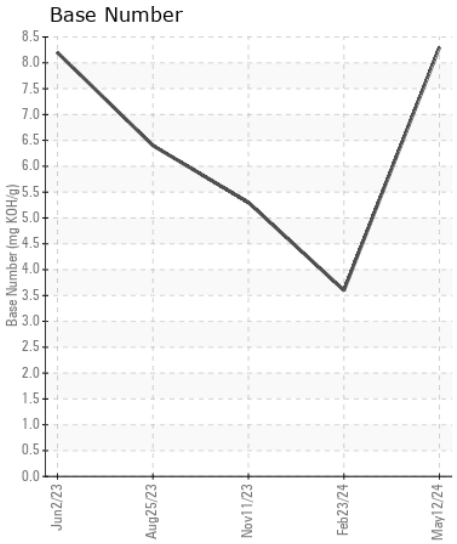

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RPL0021092
Lab Number : 06190194
Unique Number : 11046946
Test Package : FLEET (Additional Tests: PercentFuel)

Received : 24 May 2024
Tested : 30 May 2024
Diagnosed : 30 May 2024 - Wes Davis

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)

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