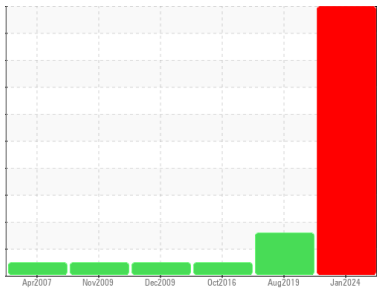
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
FINN 510
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (2 GAL)

DIAGNOSIS

▲ Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

▲ Wear

Piston, ring and cylinder wear is indicated.

▲ Contamination

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition

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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**RW0005050**	RW0000205	RWM2284967
Sample Date		Client Info		**30 Jan 2024**	19 Aug 2019	20 Oct 2016
Machine Age	hrs	Client Info		**3211**	2952	2688
Oil Age	hrs	Client Info		**98**	42	148
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>2.1	**<1.0**	<1.0	<1.0
Water		WC Method	>0.21	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>51	▲ **123**	38	30
Chromium	ppm	ASTM D5185m	>11	▲ **34**	14	9
Nickel	ppm	ASTM D5185m	>5	**1**	0	<1
Titanium	ppm	ASTM D5185m		**2**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>31	● **35**	12	9
Lead	ppm	ASTM D5185m	>26	**0**	2	0
Copper	ppm	ASTM D5185m	>26	**10**	2	1
Tin	ppm	ASTM D5185m	>4	**<1**	7	0
Antimony	ppm	ASTM D5185m		**---**	0	0
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**2**	14	13
Barium	ppm	ASTM D5185m	10	**<1**	0	0
Molybdenum	ppm	ASTM D5185m	100	**59**	63	58
Manganese	ppm	ASTM D5185m		**3**	1	<1
Magnesium	ppm	ASTM D5185m	450	**970**	882	770
Calcium	ppm	ASTM D5185m	3000	**1128**	1178	1552
Phosphorus	ppm	ASTM D5185m	1150	**949**	963	988
Zinc	ppm	ASTM D5185m	1350	**1258**	1175	1256
Sulfur	ppm	ASTM D5185m	4250	**2956**	2716	2914

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>22	▲ **125**	▲ 29	20
Sodium	ppm	ASTM D5185m	>158	**0**	3	6
Potassium	ppm	ASTM D5185m	>20	**4**	5	<1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	0.1	0
Nitration	Abs/cm	*ASTM D7624	>20	**8.3**	8.2	5.
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.8**	19.2	14.

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.5**	15.5	9.
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**10.94**	10.3	11.63

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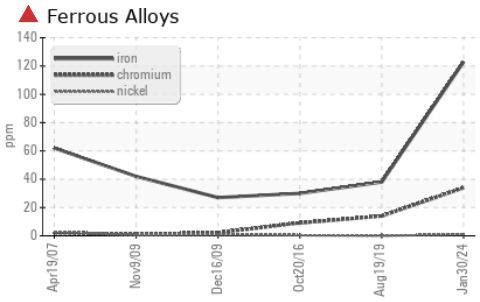
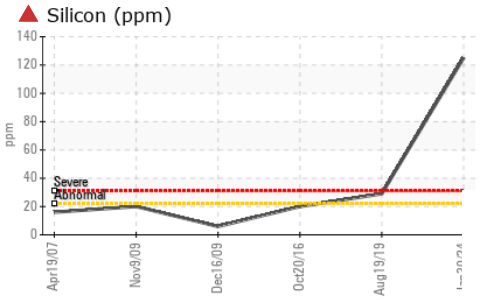
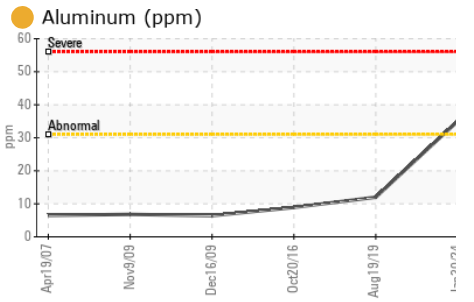
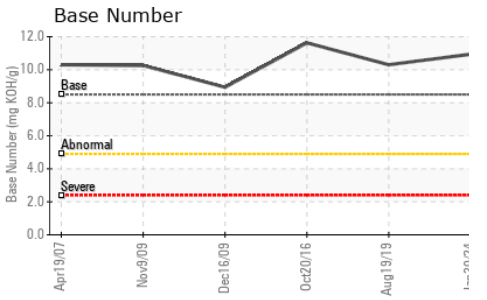
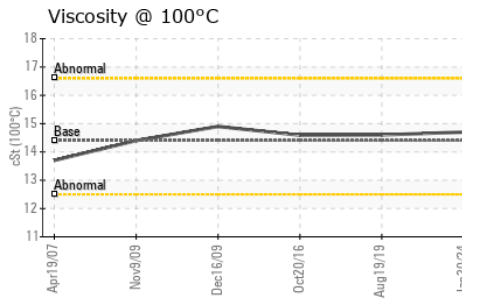






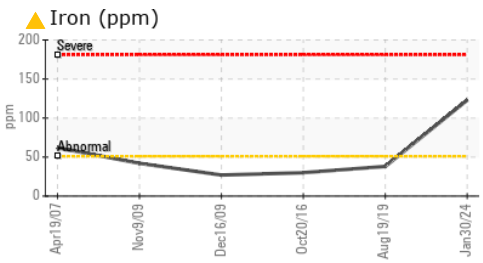


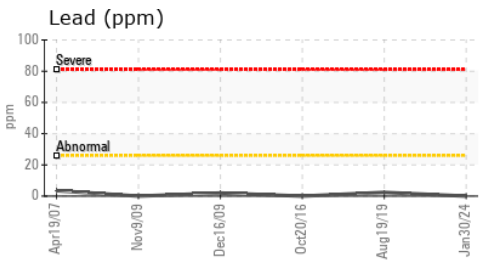


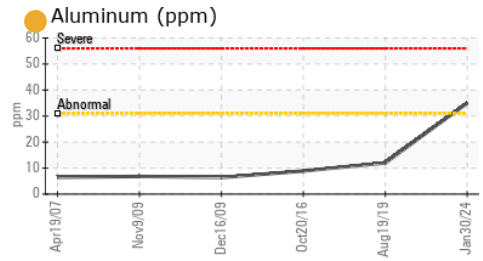
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.21	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

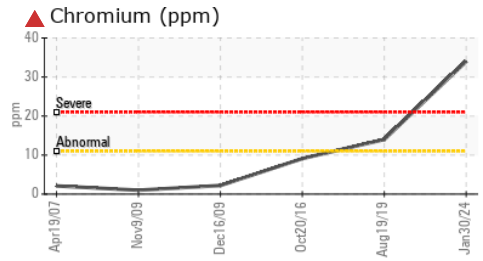
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**14.7**	14.6	14.59

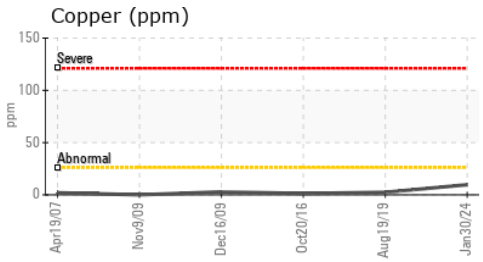
GRAPHS

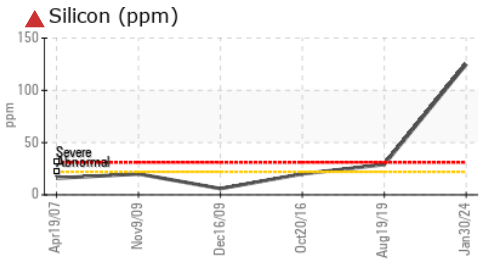


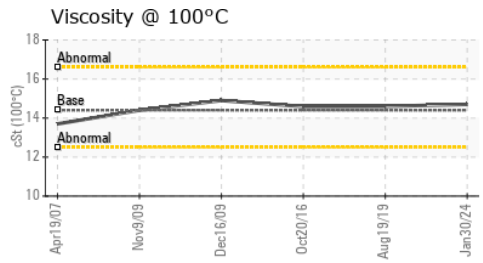


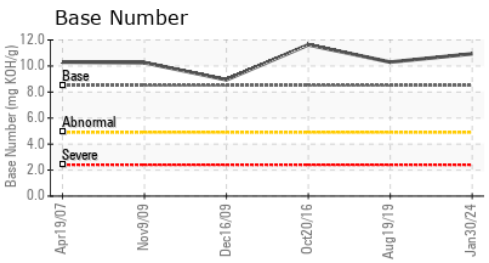












Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RW0005050
Lab Number : 06101125
Unique Number : 10899355
Test Package : MOB 2

Received : 26 Feb 2024
Tested : 28 Feb 2024
Diagnosed : 28 Feb 2024 - Jonathan Hester

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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