MOB I WEAR CHECK

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
1508 (S/N 3WXDDU9XX7F164995)
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- GAL)

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

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

CONTAMINATION

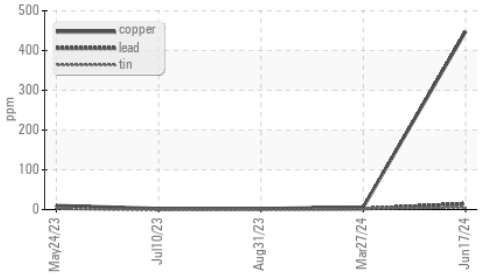
Elemental level of silicon (Si) above normal indicating ingress of seal material.

FLUID CONDITION

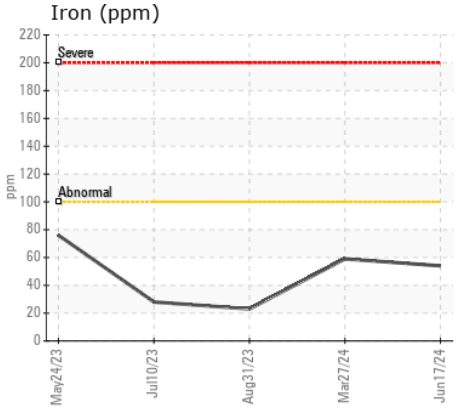
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0917134	WC0878854	WC0822277
Sample Date		Client Info		17 Jun 2024	27 Mar 2024	31 Aug 2023
Machine Age	mls	Client Info		889210	978116	879606
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>100	54	59	23
Chromium	ppm	ASTM D5185m	>20	<1	2	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	3	3	2
Lead	ppm	ASTM D5185m	>40	15	2	1
Copper	ppm	ASTM D5185m	>330	▲ 448	6	2
Tin	ppm	ASTM D5185m	>15	5	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	▲ 75	8	5
Potassium	ppm	ASTM D5185m	>20	5	6	3
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.5	0.6	0.8
Nitration	Abs/cm	*ASTM D7624	>20	7.9	9.1	7.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.2	20.4	20.1
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		5	4	5
Boron	ppm	ASTM D5185m	316	24	7	19
Barium	ppm	ASTM D5185m	0.0	0	0	0
Molybdenum	ppm	ASTM D5185m	1.2	37	50	54
Manganese	ppm	ASTM D5185m		1	<1	<1
Magnesium	ppm	ASTM D5185m	24	394	673	607
Calcium	ppm	ASTM D5185m	2292	1882	1727	1657
Phosphorus	ppm	ASTM D5185m	1064	1027	1111	977
Zinc	ppm	ASTM D5185m	1160	1206	1366	1236
Sulfur	ppm	ASTM D5185m	4996	3952	4195	3662
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.9	15.6	14.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	7.6	6.7	8.1
Visc @ 100°C	cSt	ASTM D445	15.7	13.7	14.3	14.1

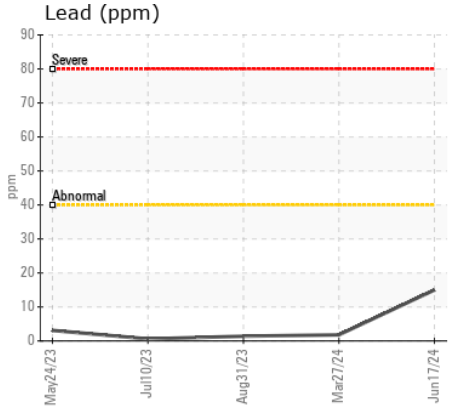
Non-ferrous Metals



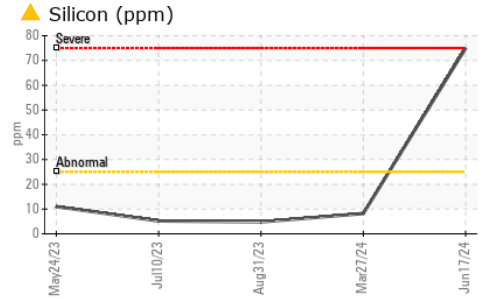
Iron (ppm)



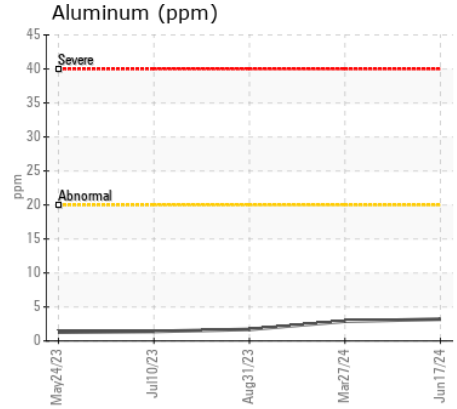
Lead (ppm)



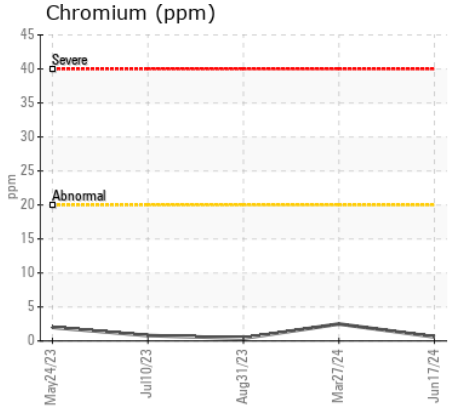
Silicon (ppm)



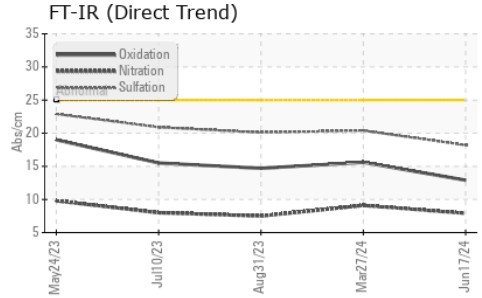
Aluminum (ppm)



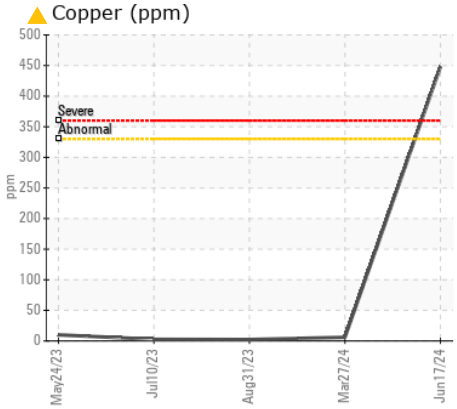
Chromium (ppm)



FT-IR (Direct Trend)



Copper (ppm)



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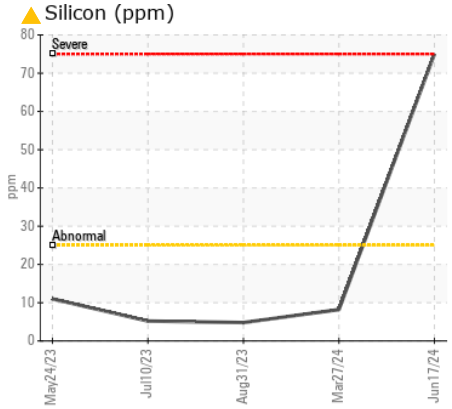
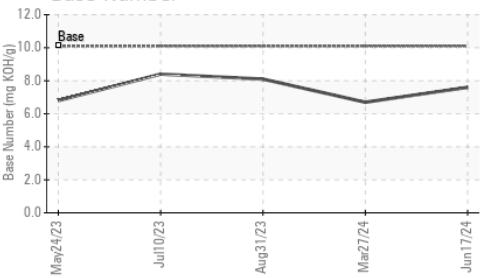
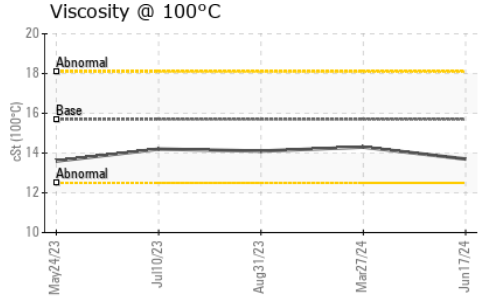


Base Number



Viscosity @ 100°C



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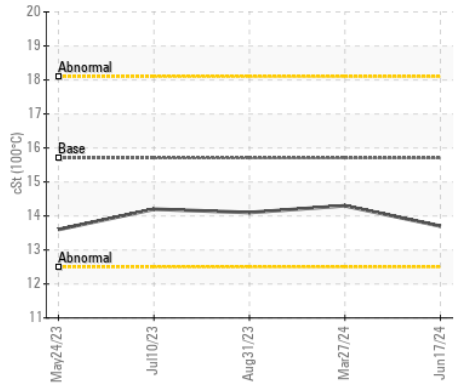

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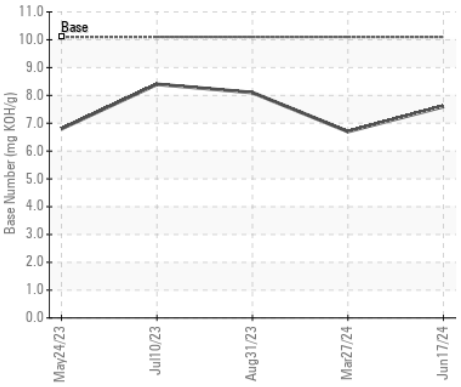

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0917134
Lab Number : 06217546
Unique Number : 11090410
Test Package : MOB 1 (Additional Tests: TBN)

Received : 21 Jun 2024
Tested : 25 Jun 2024
Diagnosed : 25 Jun 2024 - Sean Felton

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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