



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
910 (S/N KCB74101)
 Component
Diesel Engine
 Fluid
SHELL ROTELLA T 15W40 (--- QTS)

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.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0917135	WC0613710	---
Sample Date		Client Info		17 Jun 2024	12 Jan 2023	---
Machine Age	mls	Client Info		311155	262614	---
Oil Age	mls	Client Info		0	0	---
Filter Age	mls	Client Info		0	0	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				ABNORMAL	NORMAL	---

WEAR

Cylinder, crank, or cam shaft wear is indicated. Bearing and/or bushing wear is indicated.

Iron	ppm	ASTM D5185m	>100	▲ 166	20	---
Chromium	ppm	ASTM D5185m	>20	2	1	---
Nickel	ppm	ASTM D5185m	>4	<1	0	---
Titanium	ppm	ASTM D5185m		<1	<1	---
Silver	ppm	ASTM D5185m	>3	0	0	---
Aluminum	ppm	ASTM D5185m	>20	● 4	<1	---
Lead	ppm	ASTM D5185m	>40	▲ 51	<1	---
Copper	ppm	ASTM D5185m	>330	95	3	---
Tin	ppm	ASTM D5185m	>15	4	<1	---
Vanadium	ppm	ASTM D5185m		<1	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

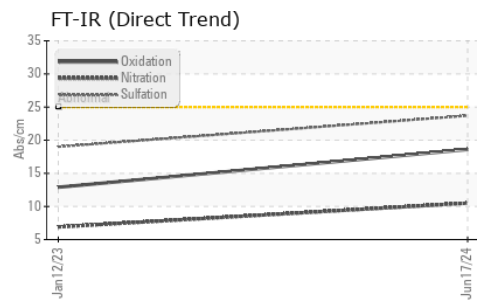
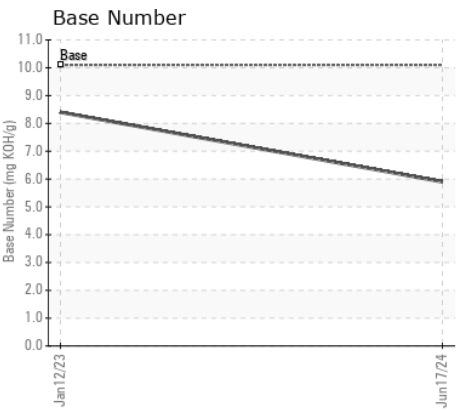
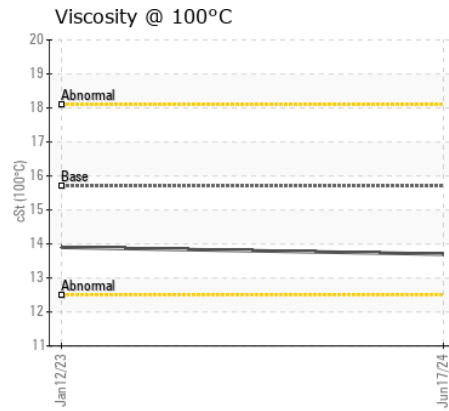
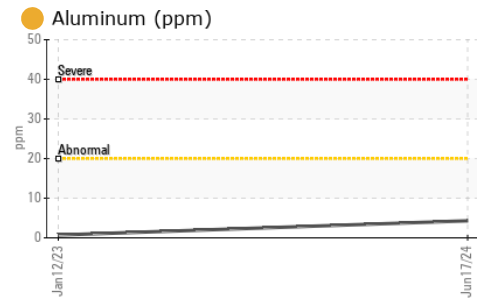
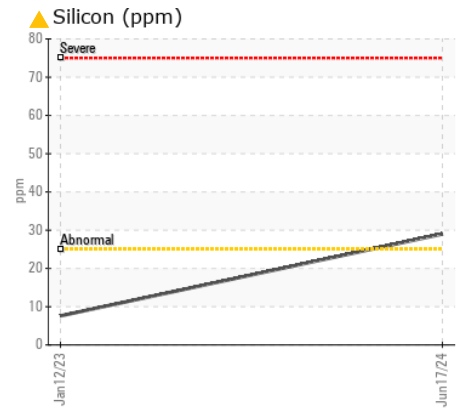
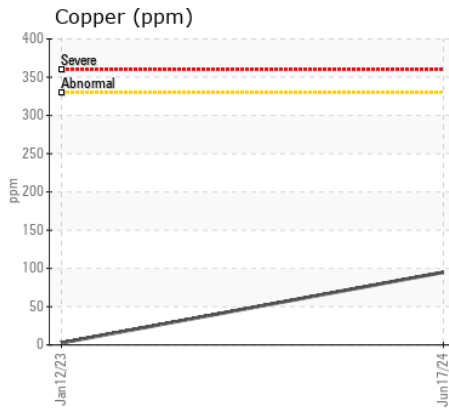
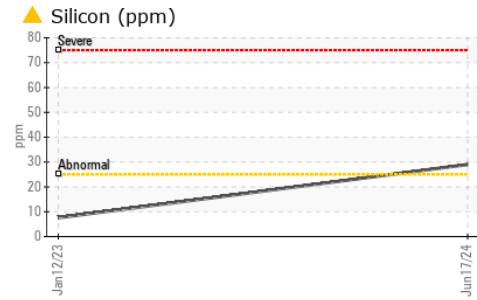
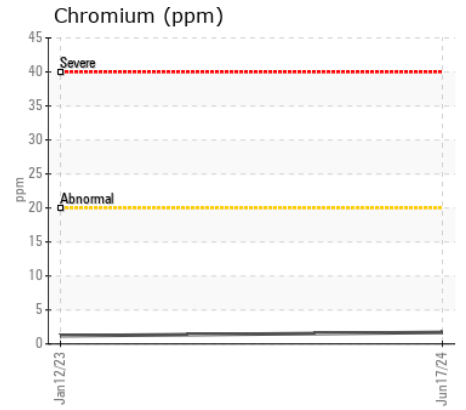
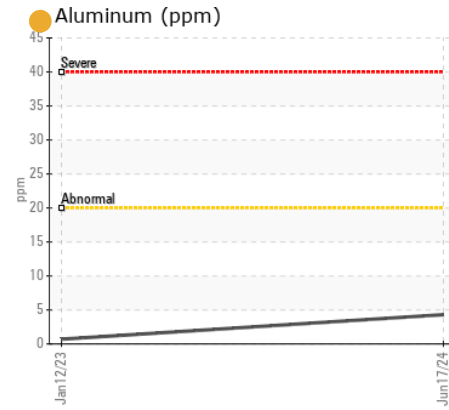
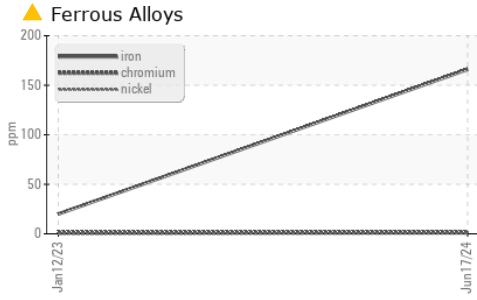
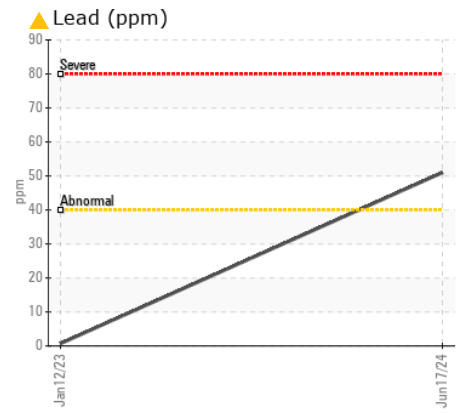
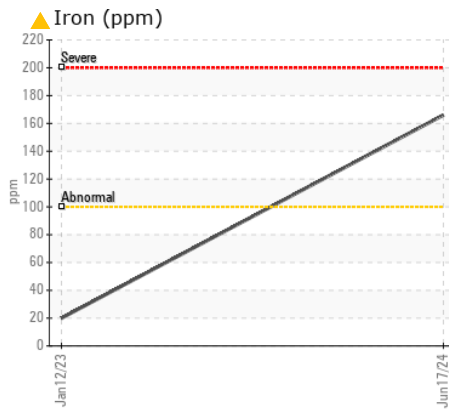
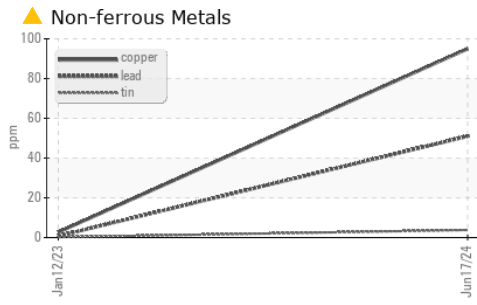
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>25	▲ 29	8	---
Potassium	ppm	ASTM D5185m	>20	11	2	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	1.6	0.9	---
Nitration	Abs/cm	*ASTM D7624	>20	10.5	6.9	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.7	19.0	---
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	>0.2	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		14	<1	---
Boron	ppm	ASTM D5185m	316	8	38	---
Barium	ppm	ASTM D5185m	0.0	0	0	---
Molybdenum	ppm	ASTM D5185m	1.2	62	56	---
Manganese	ppm	ASTM D5185m		2	<1	---
Magnesium	ppm	ASTM D5185m	24	902	667	---
Calcium	ppm	ASTM D5185m	2292	1242	1152	---
Phosphorus	ppm	ASTM D5185m	1064	984	907	---
Zinc	ppm	ASTM D5185m	1160	1286	1066	---
Sulfur	ppm	ASTM D5185m	4996	2954	2795	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.6	12.9	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	5.9	8.4	---
Visc @ 100°C	cSt	ASTM D445	15.7	13.7	13.9	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0917135 **Received** : 21 Jun 2024
Lab Number : 06217642 **Tested** : 25 Jun 2024
Unique Number : 11090506 **Diagnosed** : 25 Jun 2024 - Don Baldrige
Test Package : MOB 1 (Additional Tests: TBN)

JOHNSON BREEDERS
 3425 HWY 117N
 ROSE HILL, NC
 US 28458

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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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