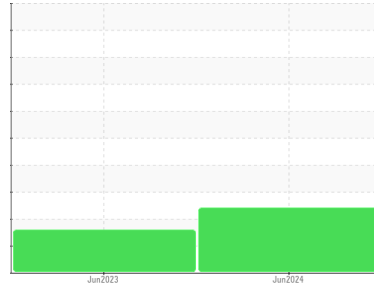




# OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id  
**KENWORTH T800 3911 (S/N KCB65452)**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL ROTELLA T 15W40 (--- 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. Resample at the next service interval to monitor.

### Wear

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 oil is no longer serviceable as a result of the abnormal and/or severe wear.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0917141</b>	WC0613616	---
Sample Date	Client Info		<b>10 Jun 2024</b>	14 Jun 2023	---
Machine Age	mls	Client Info	<b>119780</b>	1187702	---
Oil Age	mls	Client Info	<b>0</b>	0	---
Oil Changed	Client Info		<b>Changed</b>	N/A	---
Sample Status			<b>ABNORMAL</b>	ABNORMAL	---

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<b>&lt;1.0</b>	<1.0	---
Water	WC Method	>0.2	<b>NEG</b>	NEG	---
Glycol	WC Method		<b>NEG</b>	NEG	---

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	<b>32</b>	19	---
Chromium	ppm	ASTM D5185m >20	<b>2</b>	<1	---
Nickel	ppm	ASTM D5185m >4	<b>&lt;1</b>	<1	---
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	---
Silver	ppm	ASTM D5185m >3	<b>&lt;1</b>	0	---
Aluminum	ppm	ASTM D5185m >20	<b>3</b>	2	---
Lead	ppm	ASTM D5185m >40	<b>3</b>	5	---
Copper	ppm	ASTM D5185m >330	<b>▲ 794</b>	6	---
Tin	ppm	ASTM D5185m >15	<b>3</b>	<1	---
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	---
Cadmium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	---

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 316	<b>19</b>	21	---
Barium	ppm	ASTM D5185m 0.0	<b>&lt;1</b>	0	---
Molybdenum	ppm	ASTM D5185m 1.2	<b>38</b>	56	---
Manganese	ppm	ASTM D5185m	<b>2</b>	<1	---
Magnesium	ppm	ASTM D5185m 24	<b>378</b>	890	---
Calcium	ppm	ASTM D5185m 2292	<b>1845</b>	1434	---
Phosphorus	ppm	ASTM D5185m 1064	<b>1035</b>	1062	---
Zinc	ppm	ASTM D5185m 1160	<b>1169</b>	1308	---
Sulfur	ppm	ASTM D5185m 4996	<b>3547</b>	3624	---

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>▲ 79</b>	<b>▲ 36</b>	---
Sodium	ppm	ASTM D5185m	<b>9</b>	2	---
Potassium	ppm	ASTM D5185m >20	<b>7</b>	4	---

## INFRA-RED

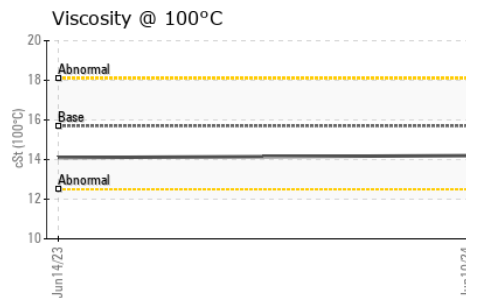
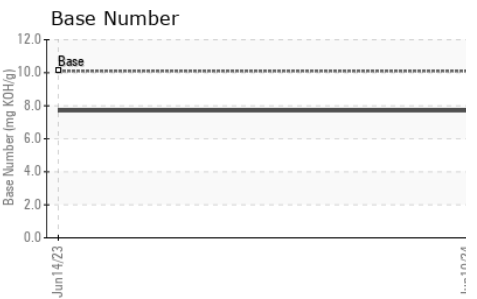
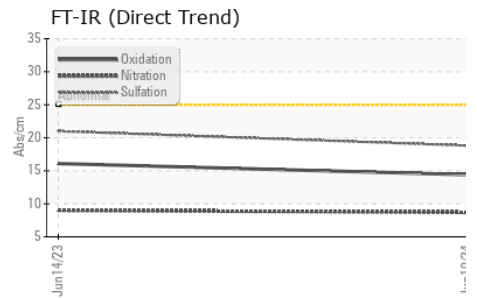
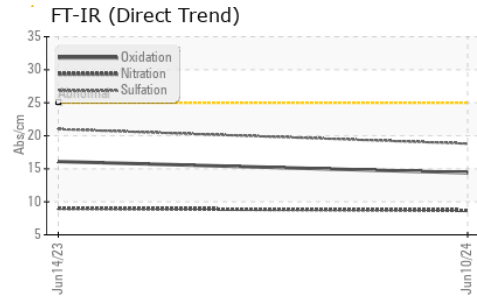
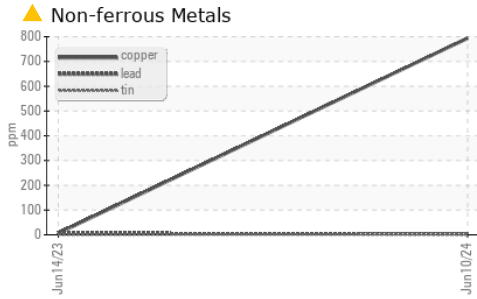
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	<b>0.3</b>	0.7	---
Nitration	Abs/cm	*ASTM D7624 >20	<b>8.7</b>	9.0	---
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>18.8</b>	21.0	---

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>14.4</b>	16.1	---
Base Number (BN)	mg KOH/g	ASTM D2896 10.1	<b>7.7</b>	7.7	---



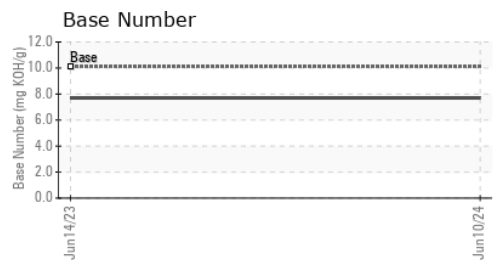
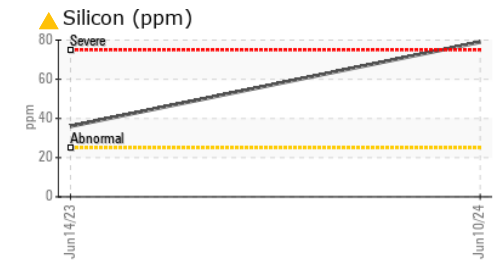
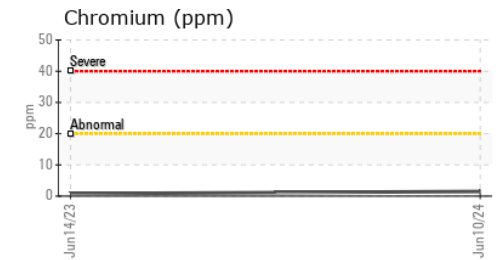
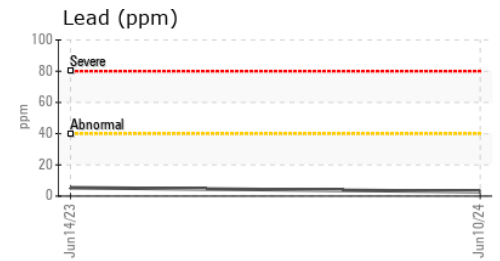
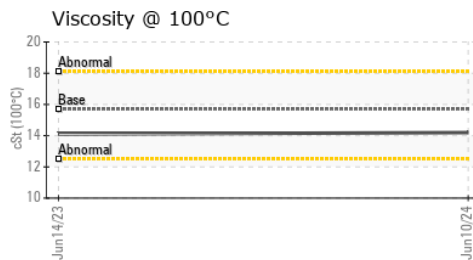
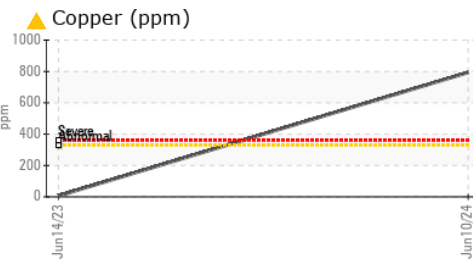
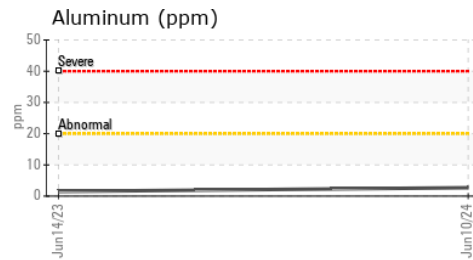
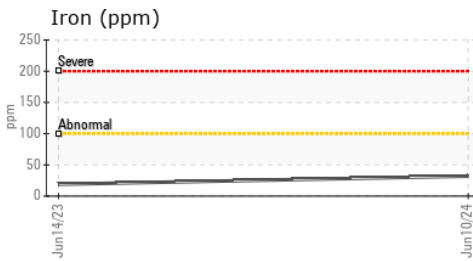
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.7	14.2	14.1

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0917141 **Received** : 17 Jun 2024  
**Lab Number** : 06213032 **Tested** : 19 Jun 2024  
**Unique Number** : 11085896 **Diagnosed** : 19 Jun 2024 - Angela Borella  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**JOHNSON BREEDERS**  
 3425 HWY 117N  
 ROSE HILL, NC  
 US 28458  
 Contact: GREG JONES  
 gregory.jones@houseofraeford.com  
 T: (910)289-6884  
 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)