



# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id

**LIEBHERR 39**

Component

**Diesel Engine**

Fluid

**SHELL ROTELLA T3 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>PE0003210</b>	---	---
Sample Date	Client Info			<b>10 Jun 2024</b>	---	---
Machine Age	hrs	Client Info		<b>500</b>	---	---
Oil Age	hrs	Client Info		<b>500</b>	---	---
Oil Changed	Client Info			<b>N/A</b>	---	---
Sample Status				<b>NORMAL</b>	---	---

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	<b>20</b>	---	---
Chromium	ppm	ASTM D5185m	>5	<b>2</b>	---	---
Nickel	ppm	ASTM D5185m	>5	<b>2</b>	---	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	---	---
Silver	ppm	ASTM D5185m	>3	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185m	>15	<b>3</b>	---	---
Lead	ppm	ASTM D5185m	>30	<b>&lt;1</b>	---	---
Copper	ppm	ASTM D5185m	>125	<b>&lt;1</b>	---	---
Tin	ppm	ASTM D5185m	>5	<b>&lt;1</b>	---	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	---	---
Cadmium	ppm	ASTM D5185m		<b>0</b>	---	---

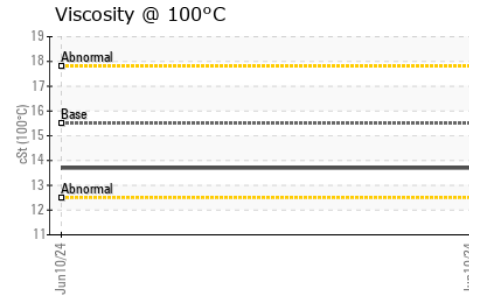
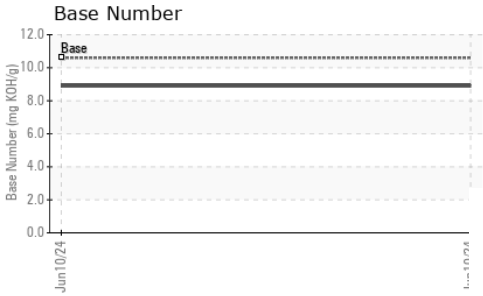
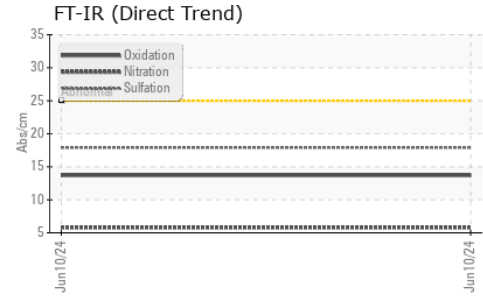
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	10	<b>0</b>	---	---
Barium	ppm	ASTM D5185m	0	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185m	10	<b>57</b>	---	---
Manganese	ppm	ASTM D5185m		<b>3</b>	---	---
Magnesium	ppm	ASTM D5185m	10	<b>906</b>	---	---
Calcium	ppm	ASTM D5185m	2600	<b>1031</b>	---	---
Phosphorus	ppm	ASTM D5185m	1050	<b>1003</b>	---	---
Zinc	ppm	ASTM D5185m	1250	<b>1172</b>	---	---
Sulfur	ppm	ASTM D5185m	3900	<b>3196</b>	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>60	<b>6</b>	---	---
Sodium	ppm	ASTM D5185m		<b>1</b>	---	---
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	---	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.8</b>	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>17.9</b>	---	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.7</b>	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.6	<b>8.9</b>	---	---

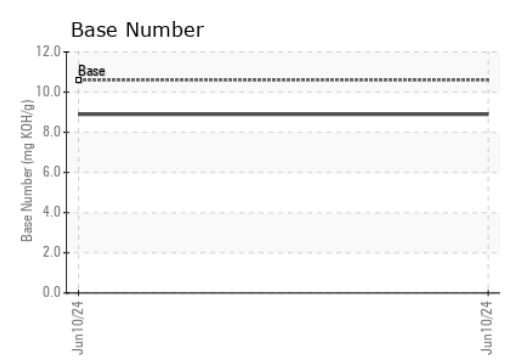
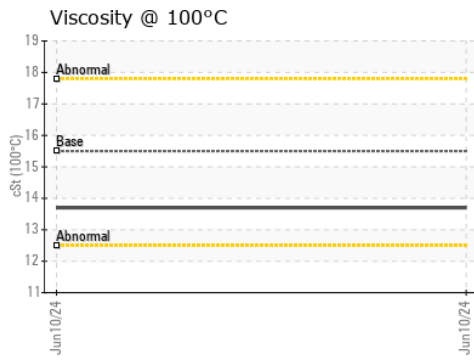
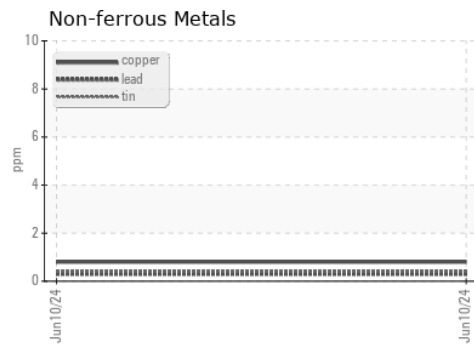
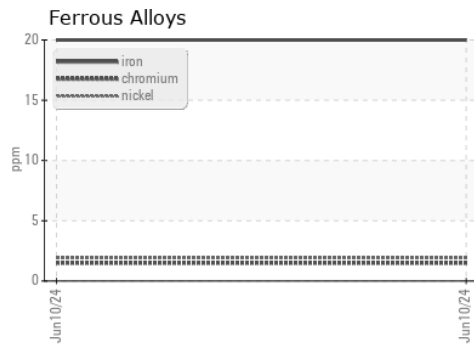
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VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	<b>LIGHT</b>	---	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	---	---
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	---	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	---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

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.5	<b>13.7</b>	---	---

### GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PE0003210      **Received** : 13 Jun 2024  
**Lab Number** : **06208492**      **Tested** : 14 Jun 2024  
**Unique Number** : 11075953      **Diagnosed** : 14 Jun 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN )

**SNELL CRANE**  
 333 RONLEE LANE NW  
 OLYMPIA, WA  
 US 98502  
 Contact: CHAD DAWSON  
 chaddawson@snellcrane.com

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)