

# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**EMD 202**

Component  
**Diesel Engine**

Fluid  
**RED GIANT LOCOMOTIVE EO 20W40 (--- 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>PCA0092751</b>	---	---
Sample Date	Client Info	<b>05 Dec 2023</b>	---	---
Machine Age	hrs Client Info	<b>0</b>	---	---
Oil Age	hrs Client Info	<b>0</b>	---	---
Oil Changed	Client Info	<b>N/A</b>	---	---
Sample Status		<b>NORMAL</b>	---	---

## CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >4	<b>&lt;1.0</b>	---	---
Water	WC Method >0.20	<b>NEG</b>	---	---
Glycol	WC Method	<b>NEG</b>	---	---

## WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	<b>7</b>	---	---
Chromium	ppm ASTM D5185m >15	<b>&lt;1</b>	---	---
Nickel	ppm ASTM D5185m >5	<b>0</b>	---	---
Titanium	ppm ASTM D5185m	<b>0</b>	---	---
Silver	ppm ASTM D5185m >2	<b>0</b>	---	---
Aluminum	ppm ASTM D5185m >10	<b>1</b>	---	---
Lead	ppm ASTM D5185m >75	<b>0</b>	---	---
Copper	ppm ASTM D5185m >90	<b>6</b>	---	---
Tin	ppm ASTM D5185m >30	<b>2</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	<b>44</b>	---	---
Barium	ppm ASTM D5185m	<b>0</b>	---	---
Molybdenum	ppm ASTM D5185m	<b>42</b>	---	---
Manganese	ppm ASTM D5185m	<b>&lt;1</b>	---	---
Magnesium	ppm ASTM D5185m	<b>11</b>	---	---
Calcium	ppm ASTM D5185m	<b>3238</b>	---	---
Phosphorus	ppm ASTM D5185m 0	<b>12</b>	---	---
Zinc	ppm ASTM D5185m 0	<b>0</b>	---	---
Sulfur	ppm ASTM D5185m 1900	<b>2814</b>	---	---

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >17	<b>3</b>	---	---
Sodium	ppm ASTM D5185m	<b>3</b>	---	---
Potassium	ppm ASTM D5185m >20	<b>0</b>	---	---

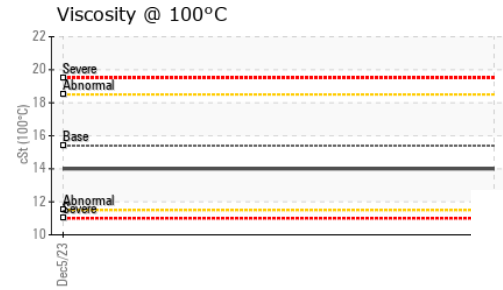
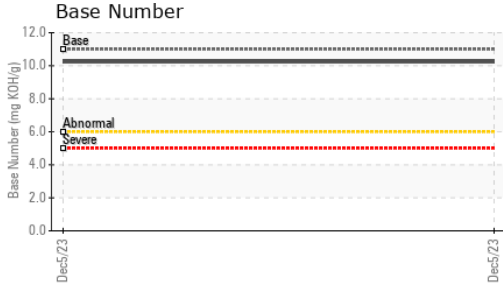
## INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	<b>0.5</b>	---	---
Nitration	Abs/cm *ASTM D7624 >20	<b>8.0</b>	---	---
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>14.7</b>	---	---

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>6.8</b>	---	---
Base Number (BN)	mg KOH/g ASTM D2896 11	<b>10.24</b>	---	---

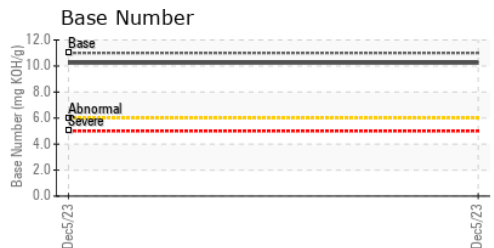
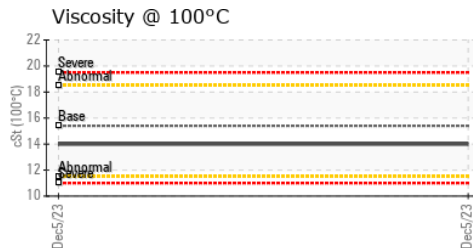
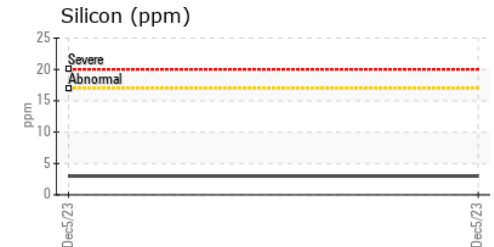
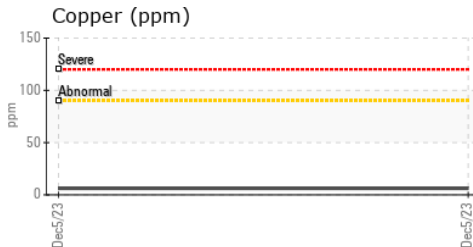
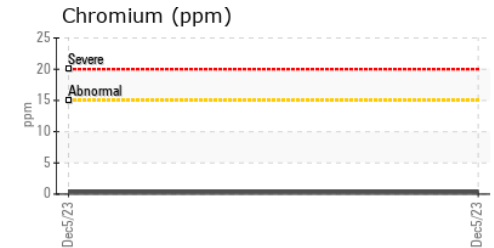
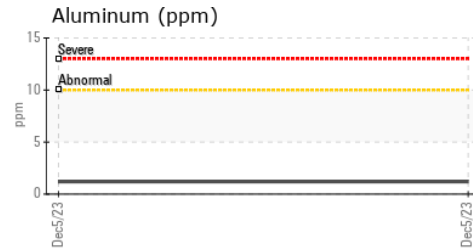
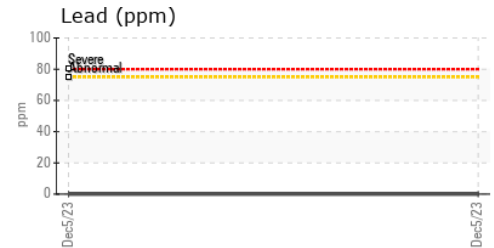
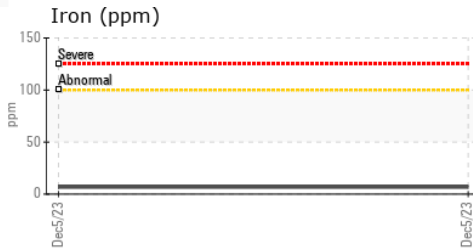
# OIL ANALYSIS REPORT



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	>0.20	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	<b>14.0</b>	---

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0092751 **Recieved** : 13 Dec 2023  
**Lab Number** : **06033647** **Diagnosed** : 15 Dec 2023  
**Unique Number** : 10783438 **Diagnostician** : Wes Davis  
**Test Package** : MOB 2

**U.S. SUGAR CORP**  
 1731 S W.C. OWEN AVENUE  
 CLEWISTON, FL  
 US 33440-3032  
 Contact: MAT RUDD  
 mrudd@ussugar.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)

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F: