



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>MARGINAL</b>
FLUID CONDITION	<b>ABNORMAL</b>

Machine Id  
**1853**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0870690</b>	---	---
Sample Date		Client Info		<b>08 Dec 2023</b>	---	---
Machine Age	mls	Client Info		<b>4243</b>	---	---
Oil Age	mls	Client Info		<b>0</b>	---	---
Filter Age	mls	Client Info		<b>0</b>	---	---
Oil Changed		Client Info		<b>Not Chngd</b>	---	---
Filter Changed		Client Info		<b>Not Chngd</b>	---	---
Sample Status				<b>ABNORMAL</b>	---	---

## WEAR

Metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>100	<b>51</b>	---	---
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	---	---
Nickel	ppm	ASTM D5185m	>4	<b>&lt;1</b>	---	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	---	---
Silver	ppm	ASTM D5185m	>3	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185m	>20	<b>12</b>	---	---
Lead	ppm	ASTM D5185m	>40	<b>0</b>	---	---
Copper	ppm	ASTM D5185m	>330	<b>29</b>	---	---
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	---	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	---	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	---	---

## CONTAMINATION

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Light fuel dilution occurring.

Silicon	ppm	ASTM D5185m	>25	<b>29</b>	---	---
Potassium	ppm	ASTM D5185m	>20	<b>44</b>	---	---
Fuel	%	ASTM D3524	>5	<b>▲ 2.0</b>	---	---
Water		WC Method	>0.2	<b>NEG</b>	---	---
Glycol		WC Method		<b>NEG</b>	---	---
Soot %	%	*ASTM D7844	>3	<b>0.3</b>	---	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.6</b>	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.2</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>	---	---

## FLUID CONDITION

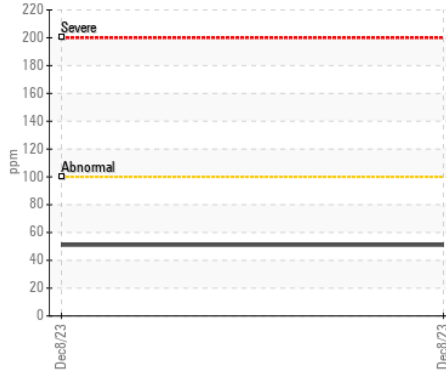
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	<b>7</b>	---	---
Boron	ppm	ASTM D5185m	250	<b>41</b>	---	---
Barium	ppm	ASTM D5185m	10	<b>10</b>	---	---
Molybdenum	ppm	ASTM D5185m	100	<b>47</b>	---	---
Manganese	ppm	ASTM D5185m		<b>4</b>	---	---
Magnesium	ppm	ASTM D5185m	450	<b>726</b>	---	---
Calcium	ppm	ASTM D5185m	3000	<b>1134</b>	---	---
Phosphorus	ppm	ASTM D5185m	1150	<b>745</b>	---	---
Zinc	ppm	ASTM D5185m	1350	<b>856</b>	---	---
Sulfur	ppm	ASTM D5185m	4250	<b>2351</b>	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>18.2</b>	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>8.5</b>	---	---
Visc @ 100°C	cSt	ASTM D445	14.4	<b>▲ 11.2</b>	---	---

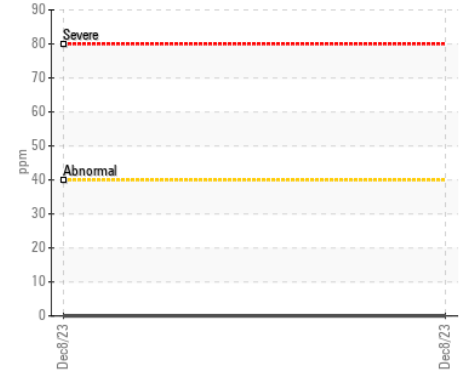
▲ Viscosity @ 100°C



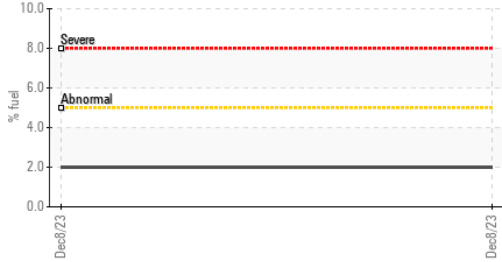
Iron (ppm)



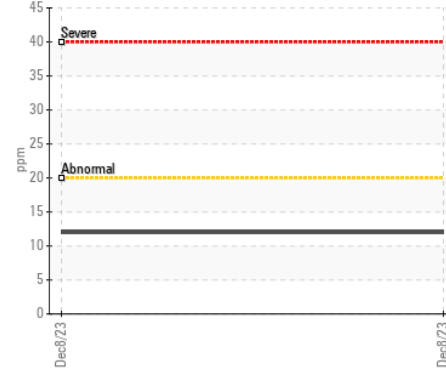
Lead (ppm)



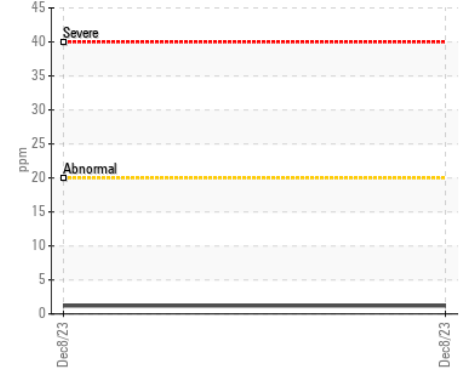
▲ Fuel Dilution



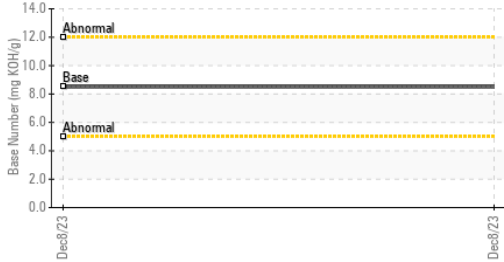
Aluminum (ppm)



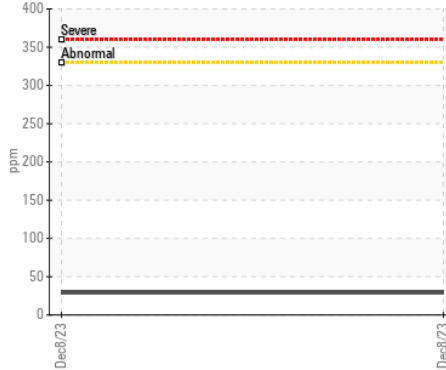
Chromium (ppm)



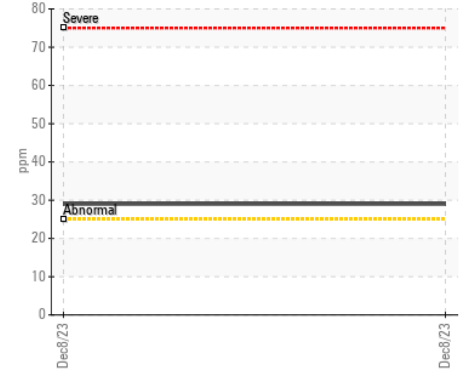
Base Number



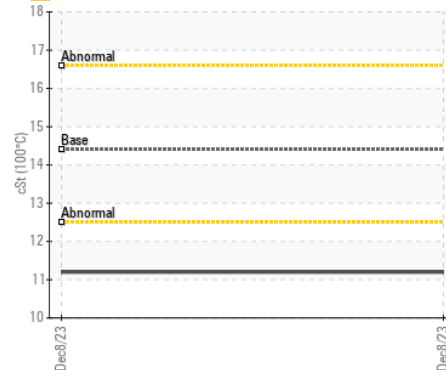
Copper (ppm)



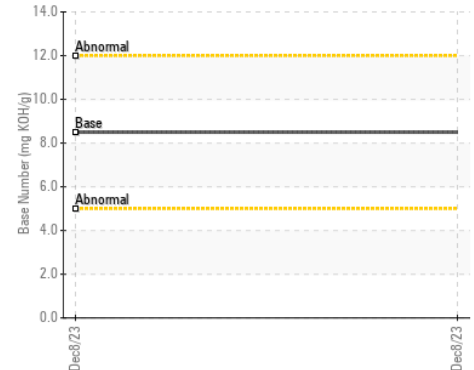
Silicon (ppm)



▲ Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0870690 **Received** : 12 Jan 2024  
**Lab Number** : 06059811 **Diagnosed** : 16 Jan 2024  
**Unique Number** : 10831193 **Diagnostician** : Wes Davis  
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, PercentFuel, TBN )

**WAKE COUNTY PUBLIC SCHOOL SYSTEM**  
 1551 ROCK QUARRY ROAD  
 RALEIGH, NC  
 US 27610  
 Contact: DEVIN WEBER  
 dweber@wcpss.net  
 T: (919)856-8076  
 F: x:

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)