



# OIL ANALYSIS REPORT

Area  
**MINING**  
Machine Id  
**ME-117 CATERPILLAR 980M KRS00356**  
Component  
**Diesel Engine**  
Fluid  
**SHELL RIMULA SUPER SAE 15W40 (--- GAL)**

## Sample Rating Trend



FUEL



### DIAGNOSIS

#### Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

#### Wear

All component wear rates are normal.

#### Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

#### 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 oil is no longer serviceable due to the presence of contaminants.

### SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0920007</b>	---	---
Sample Date	Client Info		<b>01 Apr 2024</b>	---	---
Machine Age	hrs	Client Info	<b>11592</b>	---	---
Oil Age	hrs	Client Info	<b>500</b>	---	---
Oil Changed	Client Info		<b>Changed</b>	---	---
Sample Status			<b>ABNORMAL</b>	---	---

### CONTAMINATION

	method	limit/base	current	history1	history2
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>5</b>	---	---
Chromium	ppm	ASTM D5185m >20	<b>0</b>	---	---
Nickel	ppm	ASTM D5185m >2	<b>&lt;1</b>	---	---
Titanium	ppm	ASTM D5185m >2	<b>0</b>	---	---
Silver	ppm	ASTM D5185m >2	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185m >25	<b>2</b>	---	---
Lead	ppm	ASTM D5185m >40	<b>2</b>	---	---
Copper	ppm	ASTM D5185m >330	<b>2</b>	---	---
Tin	ppm	ASTM D5185m >15	<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	<b>37</b>	---	---
Barium	ppm	ASTM D5185m	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185m	<b>36</b>	---	---
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	---	---
Magnesium	ppm	ASTM D5185m	<b>476</b>	---	---
Calcium	ppm	ASTM D5185m 2840	<b>1598</b>	---	---
Phosphorus	ppm	ASTM D5185m 1150	<b>906</b>	---	---
Zinc	ppm	ASTM D5185m 1270	<b>1075</b>	---	---
Sulfur	ppm	ASTM D5185m 2829	<b>3288</b>	---	---

### CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>3</b>	---	---
Sodium	ppm	ASTM D5185m	<b>4</b>	---	---
Potassium	ppm	ASTM D5185m >20	<b>&lt;1</b>	---	---
Fuel	%	ASTM D3524 >5	<b>▲ 5.1</b>	---	---

### INFRA-RED

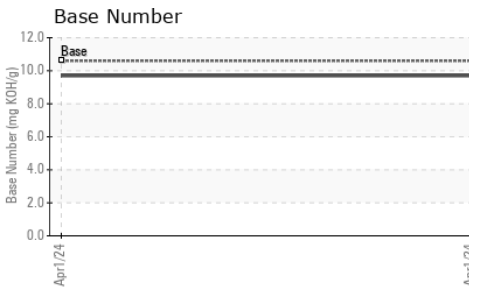
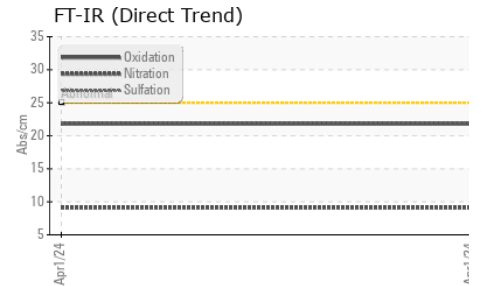
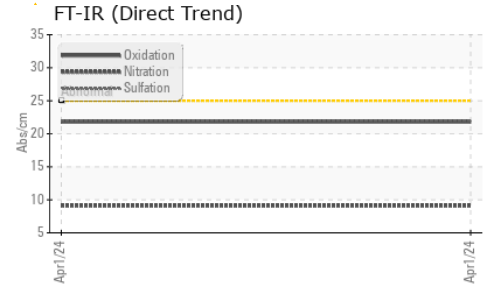
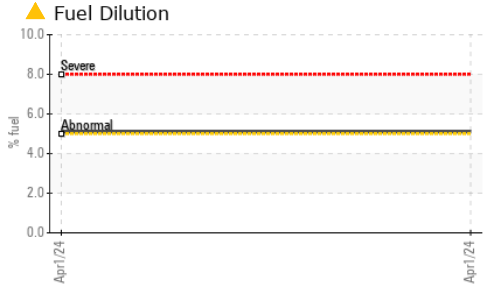
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	<b>0.2</b>	---	---
Nitration	Abs/cm	*ASTM D7624 >20	<b>9.1</b>	---	---
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>22.0</b>	---	---

### FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>21.8</b>	---	---
Base Number (BN)	mg KOH/g	ASTM D2896 10.6	<b>9.7</b>	---	---



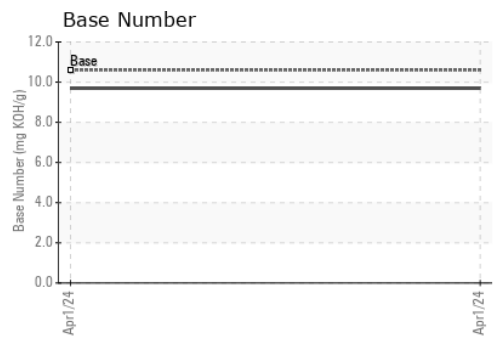
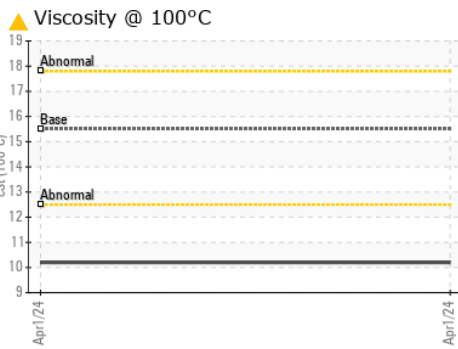
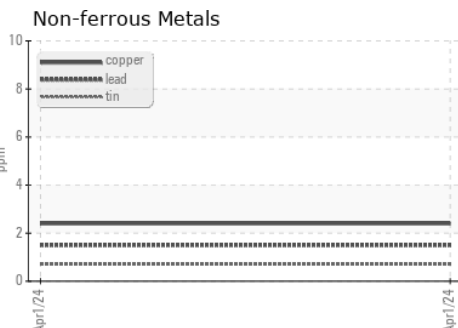
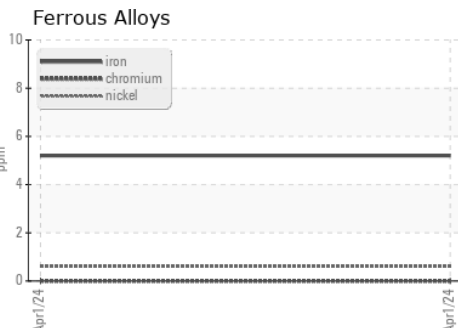
# OIL ANALYSIS REPORT



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	>0.2	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.5	▲ 10.2	---

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0920007 **Received** : 05 Apr 2024  
**Lab Number** : 06139631 **Tested** : 09 Apr 2024  
**Unique Number** : 10964439 **Diagnosed** : 09 Apr 2024 - Wes Davis  
**Test Package** : CONST ( Additional Tests: FuelDilution, PercentFuel, TBN )

**COVIA - MENOMONIE - 852**  
 N5628 580TH STREET  
 MENOMONIE, WI  
 US 54751  
 Contact: Jeremy Wagner  
 jeremy.wagner@coviacorp.com  
 T: (715)235-0942  
 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)