

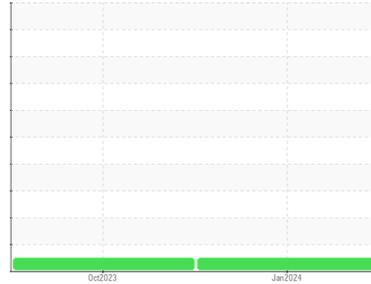
# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**CATERPILLAR 980M 6161 (S/N MK210767)**  
Component  
**Front Left Differential**  
Fluid  
**TULCO LUBSOIL TO-4 50 (--- 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

Confirm oil type. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>TO10003037</b>	TO10002789	---
Sample Date	Client Info		<b>26 Jan 2024</b>	18 Oct 2023	---
Machine Age	hrs	Client Info	<b>8990</b>	8534	---
Oil Age	hrs	Client Info	<b>756</b>	300	---
Oil Changed	Client Info		<b>Not Chngd</b>	Not Chngd	---
Sample Status			<b>NORMAL</b>	NORMAL	---

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>.2	<b>NEG</b>	NEG	---

## WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184		<b>63</b>	21	---
Iron	ppm	ASTM D5185m >500	<b>86</b>	17	---
Chromium	ppm	ASTM D5185m >3	<b>&lt;1</b>	<1	---
Nickel	ppm	ASTM D5185m >3	<b>0</b>	0	---
Titanium	ppm	ASTM D5185m >2	<b>&lt;1</b>	0	---
Silver	ppm	ASTM D5185m >2	<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m >30	<b>2</b>	1	---
Lead	ppm	ASTM D5185m >13	<b>&lt;1</b>	0	---
Copper	ppm	ASTM D5185m >103	<b>6</b>	3	---
Tin	ppm	ASTM D5185m >5	<b>&lt;1</b>	0	---
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	---
Cadmium	ppm	ASTM D5185m	<b>&lt;1</b>	0	---

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>2</b>	0	---
Barium	ppm	ASTM D5185m	<b>0</b>	0	---
Molybdenum	ppm	ASTM D5185m	<b>3</b>	1	---
Manganese	ppm	ASTM D5185m	<b>1</b>	<1	---
Magnesium	ppm	ASTM D5185m	<b>29</b>	28	---
Calcium	ppm	ASTM D5185m	<b>2781</b>	2942	---
Phosphorus	ppm	ASTM D5185m	<b>1037</b>	1020	---
Zinc	ppm	ASTM D5185m	<b>1195</b>	1236	---
Sulfur	ppm	ASTM D5185m	<b>6275</b>	6327	---

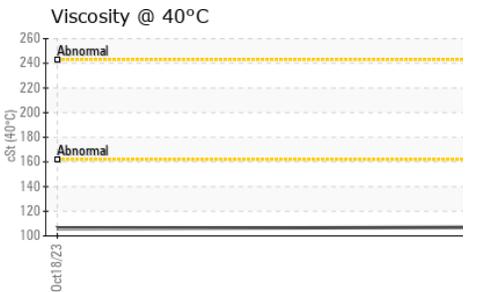
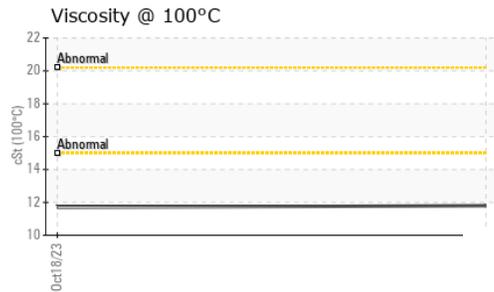
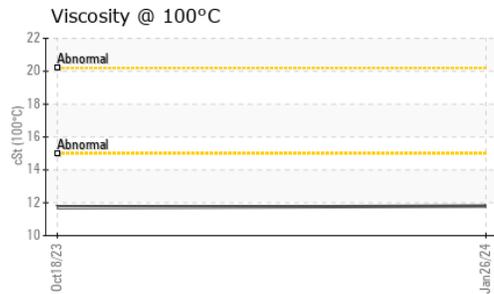
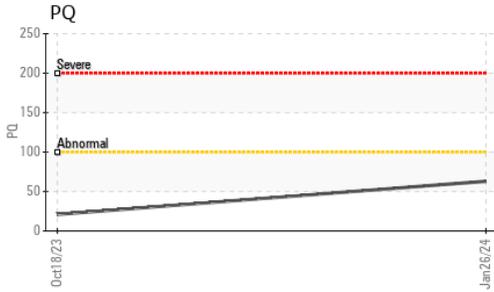
## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >100	<b>7</b>	7	---
Sodium	ppm	ASTM D5185m	<b>&lt;1</b>	0	---
Potassium	ppm	ASTM D5185m >20	<b>0</b>	0	---

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>1.53</b>	1.47	---

# OIL ANALYSIS REPORT

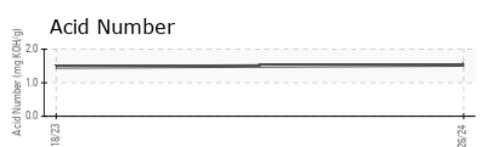
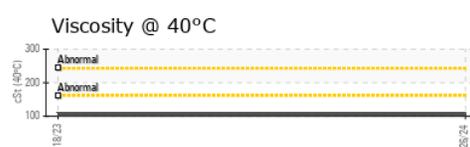
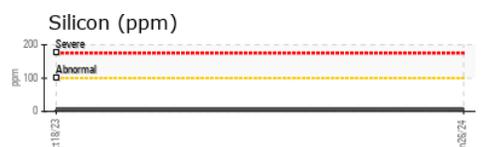
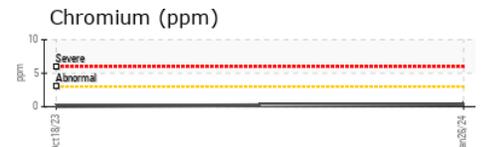
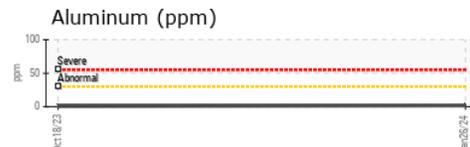


VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	<b>LIGHT</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	LIGHT	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>.2	<b>NEG</b>	NEG	---
Free Water	scalar	*Visual		<b>NEG</b>	NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	<b>107</b>	106	---
Visc @ 100°C	cSt	ASTM D445	<b>11.8</b>	11.7	---
Viscosity Index (VI)	Scale	ASTM D2270	<b>98</b>	97	---

SAMPLE IMAGES	method	limit/base	current	history1	history2	
Color				no image	no image	no image
Bottom				no image	no image	no image

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TO10003037 **Recieved** : 31 Jan 2024  
**Lab Number** : **06076417** **Diagnosed** : 02 Feb 2024  
**Unique Number** : 10858508 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 2 ( Additional Tests: KV100, PQ, VI )

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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