



# WEAR CHECK

## OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id  
**CATERPILLAR PACIFIC CHALLENGER**  
Component  
**Port Main Engine**  
Fluid  
**MOBIL 15W40 (60 GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor. ( Customer Sample Comment:  
Top Up Amount: 2 GAL )

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>KL0011779</b>	KL0011803	KL0011794
Sample Date		Client Info		<b>16 Apr 2024</b>	19 Mar 2024	12 Feb 2024
Machine Age	hrs	Client Info		<b>4700</b>	4200	3639
Oil Age	hrs	Client Info		<b>1500</b>	1000	500
Filter Age	hrs	Client Info		<b>500</b>	500	500
Oil Changed		Client Info		<b>Oil Added</b>	Oil Added	Oil Added
Filter Changed		Client Info		<b>Changed</b>	Changed	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>12</b>	8	6
Chromium	ppm	ASTM D5185m	>8	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	1	2
Lead	ppm	ASTM D5185m	>18	<b>3</b>	4	3
Copper	ppm	ASTM D5185m	>80	<b>7</b>	6	4
Tin	ppm	ASTM D5185m	>14	<b>1</b>	2	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

There is no indication of any contamination in the oil.

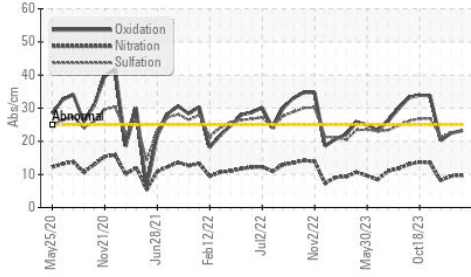
Silicon	ppm	ASTM D5185m	>20	<b>4</b>	3	2
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	2	4
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.2</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.7</b>	9.5	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.1</b>	22.4	21.3
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

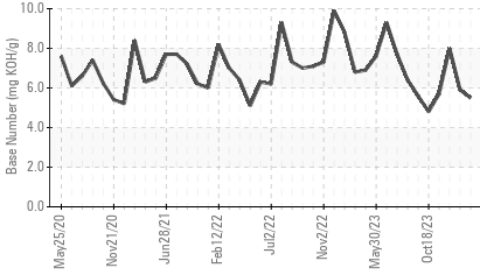
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>118	<b>3</b>	2	<1
Boron	ppm	ASTM D5185m		<b>60</b>	78	92
Barium	ppm	ASTM D5185m		<b>0</b>	0	10
Molybdenum	ppm	ASTM D5185m		<b>13</b>	15	15
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>395</b>	383	315
Calcium	ppm	ASTM D5185m		<b>1788</b>	2023	1747
Phosphorus	ppm	ASTM D5185m		<b>899</b>	821	848
Zinc	ppm	ASTM D5185m		<b>973</b>	1009	941
Sulfur	ppm	ASTM D5185m		<b>4095</b>	4303	3821
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>23.2</b>	22.5	20.2
Base Number (BN)	mg KOH/g	ASTM D2896		<b>5.5</b>	5.9	8.0
Visc @ 100°C	cSt	ASTM D445		<b>14.2</b>	14.1	13.9

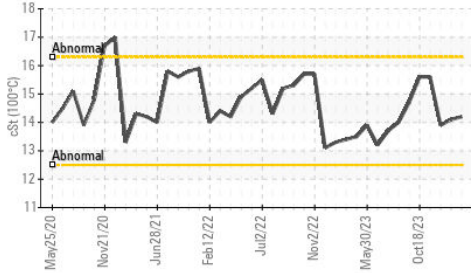
**FT-IR (Direct Trend)**



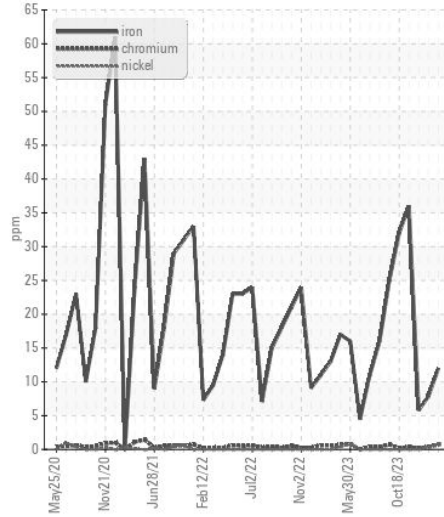
**Base Number**



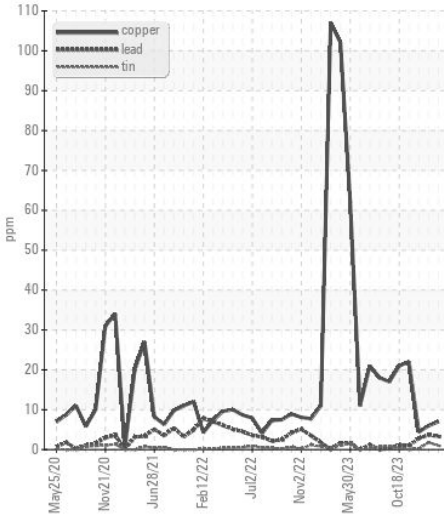
**Viscosity @ 100°C**



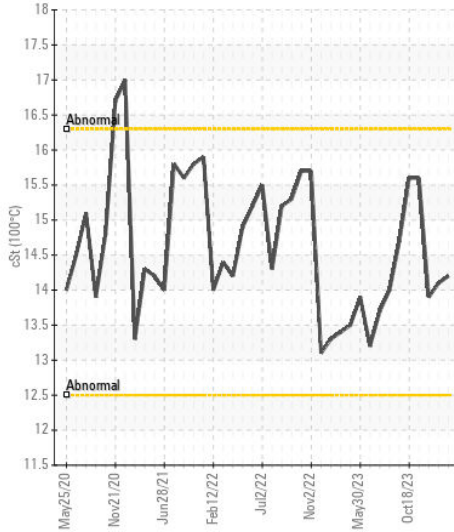
**Ferrous Alloys**



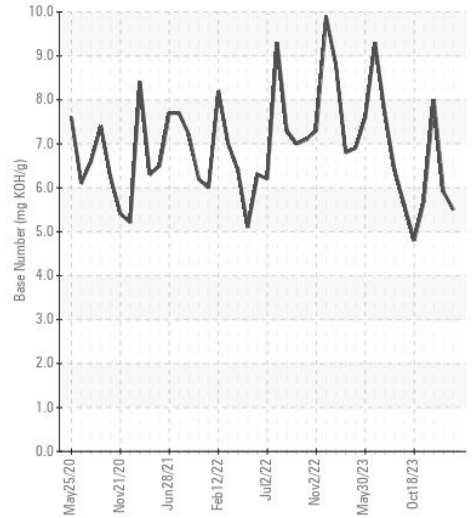
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0011779  
**Lab Number** : 06161072  
**Unique Number** : 10996495  
**Test Package** : FLEET  
**Received** : 25 Apr 2024  
**Tested** : 26 Apr 2024  
**Diagnosed** : 29 Apr 2024 - Don Baldrige

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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)