



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Machine Id
CATERPILLAR 297 CATERPILLAR 297
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		Y2K0001451	---	---
Sample Date		Client Info		04 Apr 2024	---	---
Machine Age	hrs	Client Info		4190	---	---
Oil Age	hrs	Client Info		245	---	---
Filter Age	hrs	Client Info		245	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		Changed	---	---
Sample Status				ABNORMAL	---	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	12	---	---
Chromium	ppm	ASTM D5185m	>20	<1	---	---
Nickel	ppm	ASTM D5185m	>2	<1	---	---
Titanium	ppm	ASTM D5185m	>2	<1	---	---
Silver	ppm	ASTM D5185m	>2	0	---	---
Aluminum	ppm	ASTM D5185m	>25	4	---	---
Lead	ppm	ASTM D5185m	>40	<1	---	---
Copper	ppm	ASTM D5185m	>330	2	---	---
Tin	ppm	ASTM D5185m	>15	<1	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

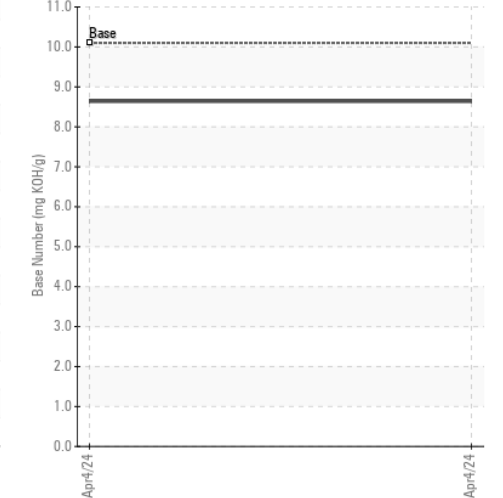
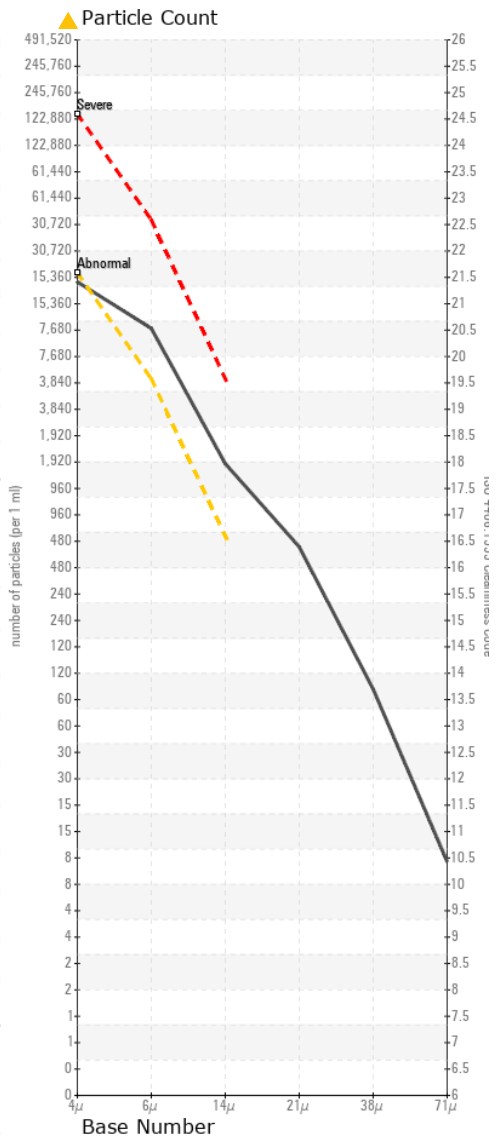
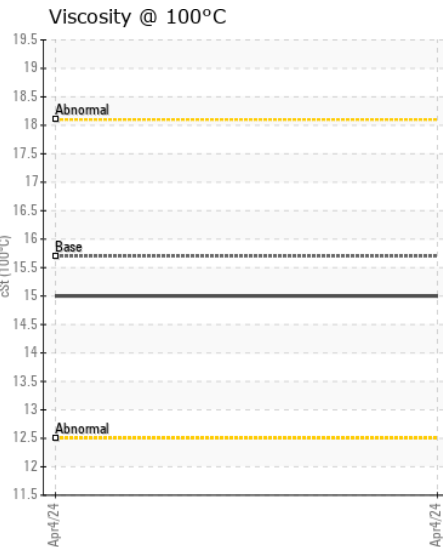
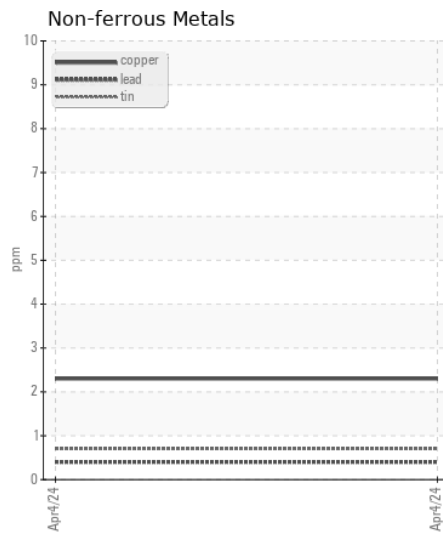
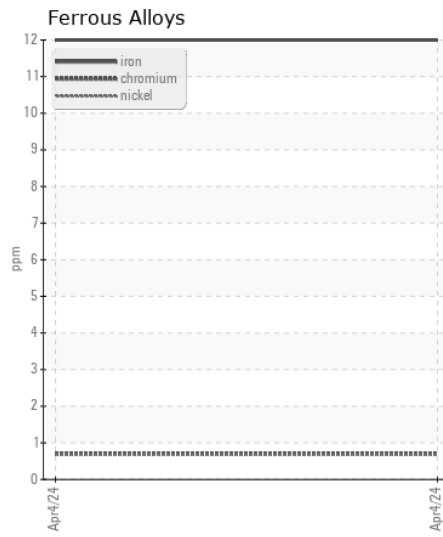
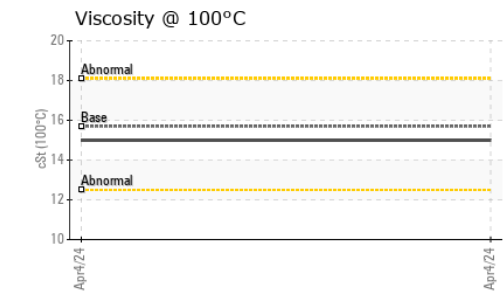
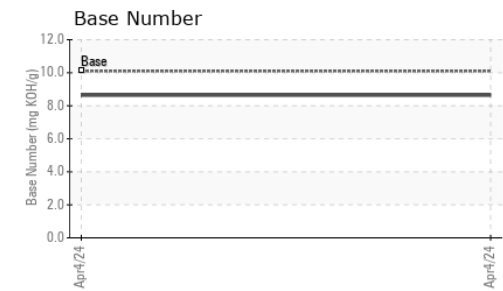
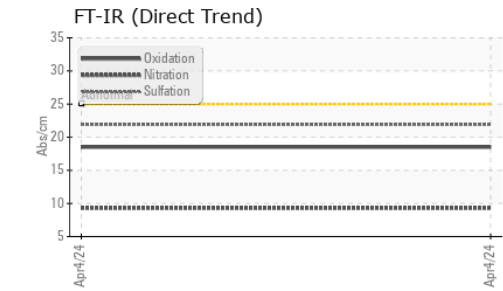
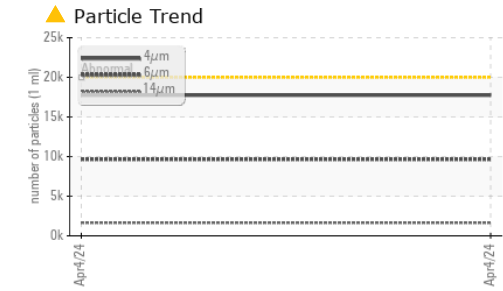
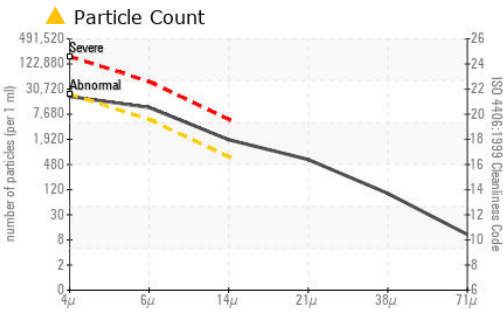
There is a high amount of particulates present in the oil.

Silicon	ppm	ASTM D5185m	>25	6	---	---
Potassium	ppm	ASTM D5185m	>20	8	---	---
Fuel		WC Method	>5	<1.0	---	---
Water	%	ASTM D6304	>0.2	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	0.5	---	---
Nitration	Abs/cm	*ASTM D7624	>20	9.3	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.9	---	---
Particles >4µm		ASTM D7647	>20000	17739	---	---
Particles >6µm		ASTM D7647	>5000	▲ 9663	---	---
Particles >14µm		ASTM D7647	>640	▲ 1645	---	---
Particles >21µm		ASTM D7647	>160	▲ 554	---	---
Particles >38µm		ASTM D7647	>40	▲ 86	---	---
Particles >71µm		ASTM D7647	>10	9	---	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ 21/20/18	---	---
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	---	---

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		8	---	---
Boron	ppm	ASTM D5185m	316	153	---	---
Barium	ppm	ASTM D5185m	0.0	<1	---	---
Molybdenum	ppm	ASTM D5185m	1.2	17	---	---
Manganese	ppm	ASTM D5185m		<1	---	---
Magnesium	ppm	ASTM D5185m	24	188	---	---
Calcium	ppm	ASTM D5185m	2292	2275	---	---
Phosphorus	ppm	ASTM D5185m	1064	1203	---	---
Zinc	ppm	ASTM D5185m	1160	1355	---	---
Sulfur	ppm	ASTM D5185m	4996	4221	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.5	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	8.64	---	---
Visc @ 100°C	cSt	ASTM D445	15.7	15.0	---	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : Y2K0001451 **Received** : 16 Apr 2024
Lab Number : 06150598 **Tested** : 18 Apr 2024
Unique Number : 10980676 **Diagnosed** : 18 Apr 2024 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: KF, PrtCount)

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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