



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CATERPILLAR TL943 2008 CAT
 Component
Diesel Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (3 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06077834	TR05703122	---
Sample Date		Client Info		22 Jan 2024	18 Nov 2022	---
Machine Age	hrs	Client Info		3200	3170	---
Oil Age	hrs	Client Info		30	395	---
Filter Age	hrs	Client Info		30	395	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				NORMAL	ABNORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	17	60	---
Chromium	ppm	ASTM D5185m	>20	<1	2	---
Nickel	ppm	ASTM D5185m	>2	1	4	---
Titanium	ppm	ASTM D5185m	>2	5	17	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>25	3	5	---
Lead	ppm	ASTM D5185m	>40	<1	2	---
Copper	ppm	ASTM D5185m	>330	2	5	---
Tin	ppm	ASTM D5185m	>15	0	<1	---
Vanadium	ppm	ASTM D5185m		0	<1	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

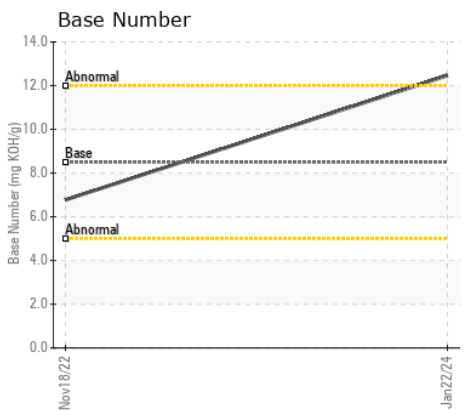
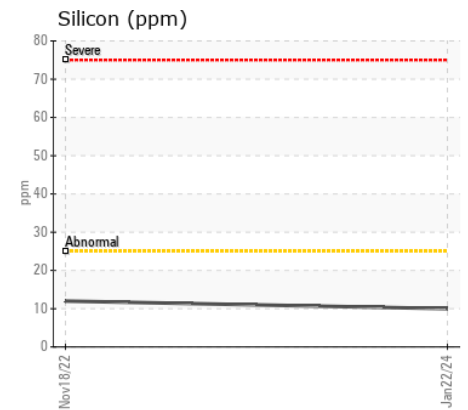
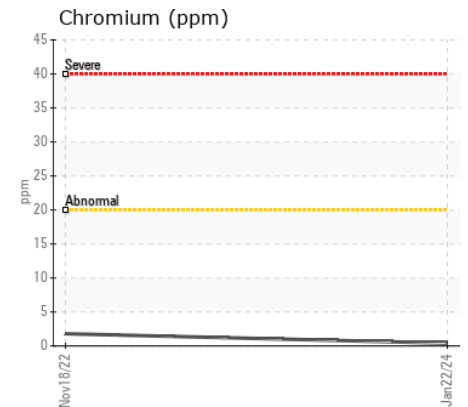
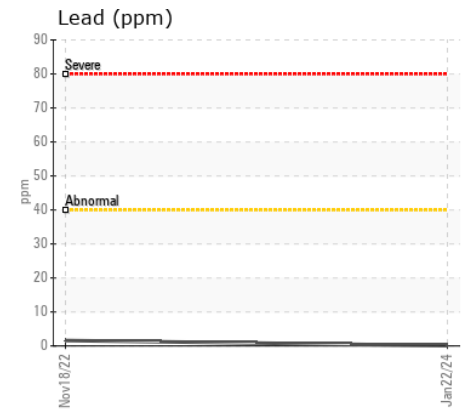
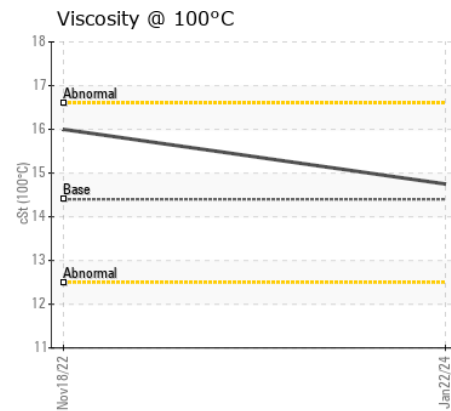
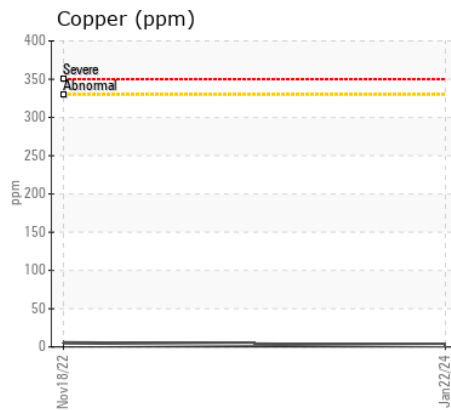
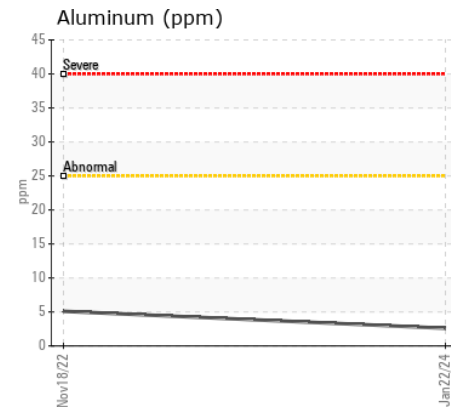
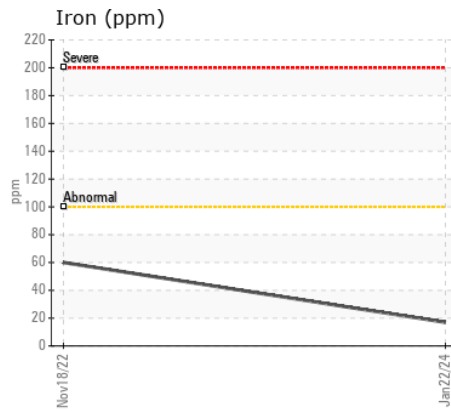
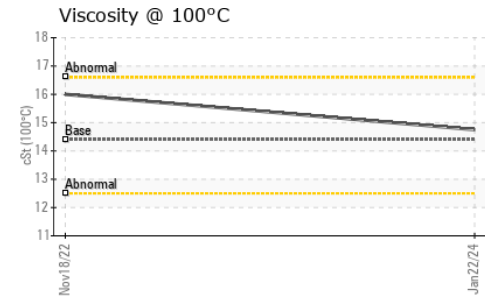
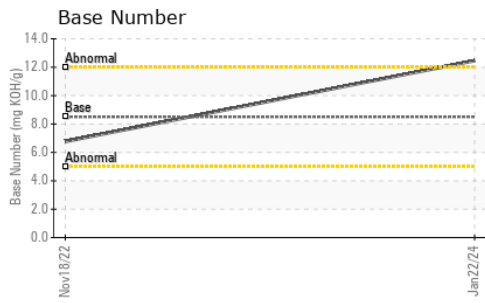
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	10	12	---
Potassium	ppm	ASTM D5185m	>20	3	0	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.8	▲ 3	---
Nitration	Abs/cm	*ASTM D7624	>20	9.4	16.8	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.0	32.9	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	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	>158	0	4	---
Boron	ppm	ASTM D5185m	250	8	37	---
Barium	ppm	ASTM D5185m	10	<1	0	---
Molybdenum	ppm	ASTM D5185m	100	96	48	---
Manganese	ppm	ASTM D5185m		<1	1	---
Magnesium	ppm	ASTM D5185m	450	118	483	---
Calcium	ppm	ASTM D5185m	3000	3310	1832	---
Phosphorus	ppm	ASTM D5185m	1150	856	914	---
Zinc	ppm	ASTM D5185m	1350	975	1171	---
Sulfur	ppm	ASTM D5185m	4250	3917	3309	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.8	30.2	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	12.46	6.77	---
Visc @ 100°C	cSt	ASTM D445	14.4	14.75	16.0	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06077834
Lab Number : 06077834
Unique Number : 10859925
Test Package : MOB 2

Received : 01 Feb 2024
Tested : 02 Feb 2024
Diagnosed : 08 Feb 2024 - Wes Davis

WEST HILLS JV
 43667 LAKE RD E
 SPRAGUE, WA
 US 99032
 Contact: RON GROGAN

To discuss this sample report, contact Customer Service at 1-800-827-0711.

* - 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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F: