

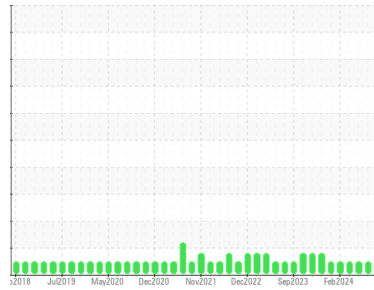


OIL ANALYSIS REPORT



Machine Id
CATERPILLAR D10T 15105049 (S/N CATOD10TCRJG01495)
 Component
Diesel Engine
 Fluid
ROYAL PURPLE MOTOR OIL 15W40 (--- GAL)

Sample Rating Trend



NORMAL

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

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	RP0040756	RP0040782	RP0036963
Sample Date	Client Info	13 Jun 2024	22 May 2024	22 Apr 2024
Machine Age	hrs	28529	28263	27993
Oil Age	hrs	1940	1674	1404
Oil Changed	Client Info	Changed	Not Changd	Not Changd
Sample Status		NORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	<1.0	<1.0
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	84	80	69
Chromium	ppm ASTM D5185m >20	2	2	1
Nickel	ppm ASTM D5185m >2	<1	<1	0
Titanium	ppm ASTM D5185m >2	<1	<1	0
Silver	ppm ASTM D5185m >2	<1	1	0
Aluminum	ppm ASTM D5185m >25	3	2	2
Lead	ppm ASTM D5185m >40	6	3	<1
Copper	ppm ASTM D5185m >330	130	160	165
Tin	ppm ASTM D5185m >15	<1	1	0
Vanadium	ppm ASTM D5185m	<1	<1	0
Cadmium	ppm ASTM D5185m	<1	<1	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	<1	0	<1
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 100	99	100	103
Manganese	ppm ASTM D5185m	2	1	1
Magnesium	ppm ASTM D5185m 60	14	22	25
Calcium	ppm ASTM D5185m 3050	2530	2218	2510
Phosphorus	ppm ASTM D5185m 1050	790	766	811
Zinc	ppm ASTM D5185m 1200	1056	967	1023

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	5	6	4
Sodium	ppm ASTM D5185m	2	1	1
Potassium	ppm ASTM D5185m >20	6	3	0
Water	% ASTM D6304 >0.2	NEG	NEG	NEG

INFRA-RED

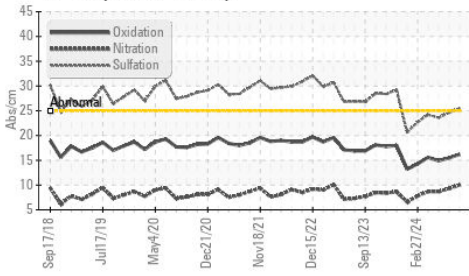
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	1.6	1.4	1.2
Nitration	Abs/cm *ASTM D7624 >20	10.0	9.3	8.7
Sulfation	Abs/.1mm *ASTM D7415 >30	25.5	24.6	23.6

FLUID DEGRADATION

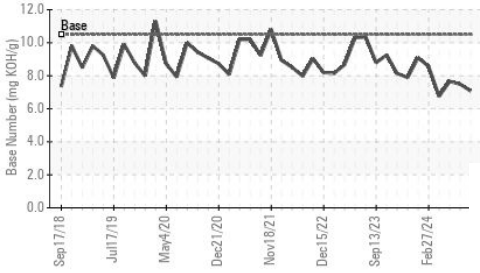
method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	16.2	15.5	14.9
Base Number (BN)	mg KOH/g ASTM D2896 10.5	7.08	7.49	7.66

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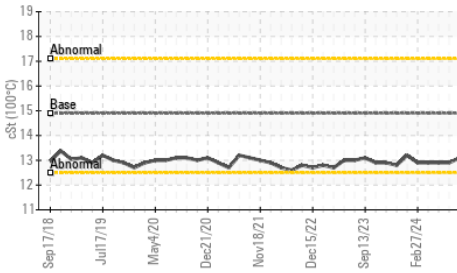
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

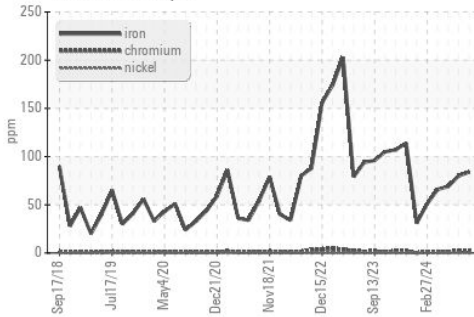


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

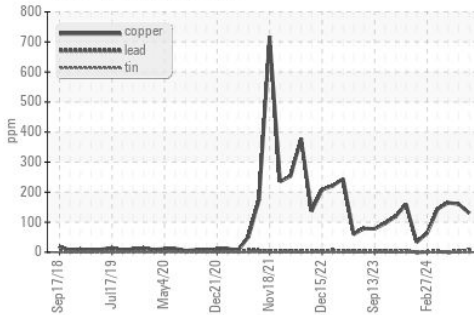
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.9	13.1	12.9

GRAPHS

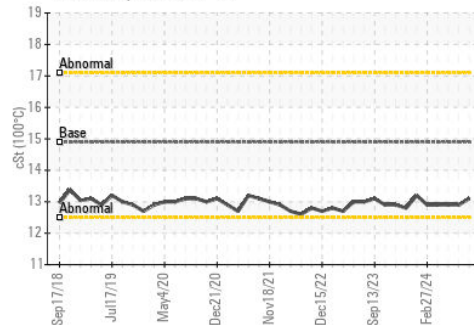
Ferrous Alloys



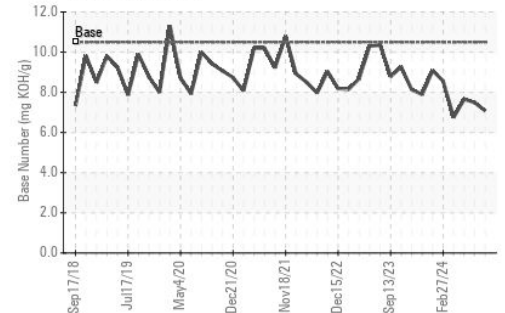
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RP0040756
Lab Number : 06218416
Unique Number : 11096613
Test Package : IND 2 (Additional Tests: FT-IR, KV100, TBN)

Received : 24 Jun 2024
Tested : 25 Jun 2024
Diagnosed : 25 Jun 2024 - Sean Felton

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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)