



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
CATERPILLAR 236 LS-103 (S/N 4YZ06590)
 Component
Diesel Engine
 Fluid
CITGO CITGARD 700 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0909458	WC0705367	WC04950714
Sample Date		Client Info		21 Jun 2024	05 Dec 2022	06 Apr 2020
Machine Age	hrs	Client Info		4648	4247	0
Oil Age	hrs	Client Info		500	1000	0
Filter Age	hrs	Client Info		500	500	0
Oil Changed		Client Info		Not Chngd	Changed	N/A
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	23	17	12
Chromium	ppm	ASTM D5185m	>20	2	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	1	2
Lead	ppm	ASTM D5185m	>40	<1	2	1
Copper	ppm	ASTM D5185m	>330	1	1	<1
Tin	ppm	ASTM D5185m	>15	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

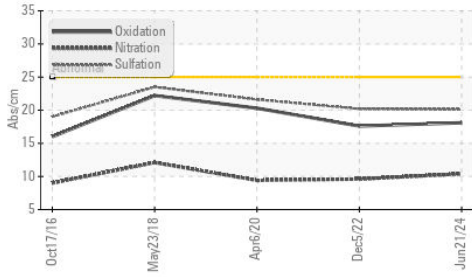
Silicon	ppm	ASTM D5185m	>25	4	0	2
Potassium	ppm	ASTM D5185m	>20	6	9	8
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	10.4	9.6	9.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.1	20.2	21.6
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

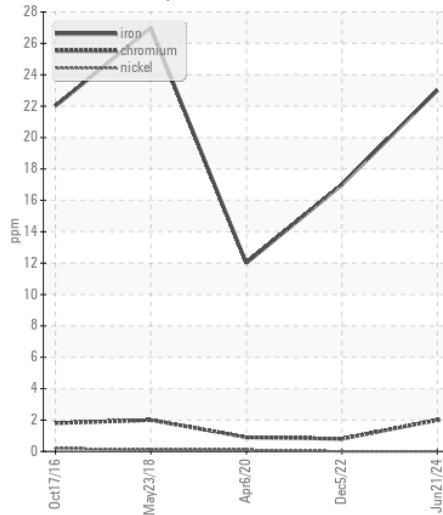
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		70	31	25
Boron	ppm	ASTM D5185m	20	3	11	34
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	59	89	65	40
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	783	992	745	492
Calcium	ppm	ASTM D5185m	1238	1329	1465	1697
Phosphorus	ppm	ASTM D5185m	949	1088	1062	761
Zinc	ppm	ASTM D5185m	1116	1308	1280	857
Sulfur	ppm	ASTM D5185m	2909	3628	3196	1675
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.1	17.6	20.3
Base Number (BN)	mg KOH/g	ASTM D2896	10	9.4	9.3	10
Visc @ 100°C	cSt	ASTM D445	15.2	14.6	15.2	13.8

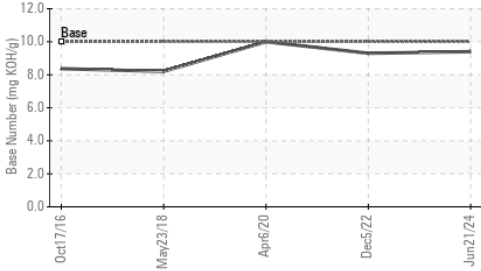
FT-IR (Direct Trend)



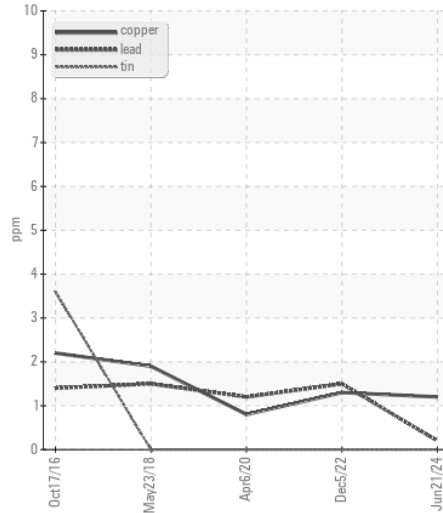
Ferrous Alloys



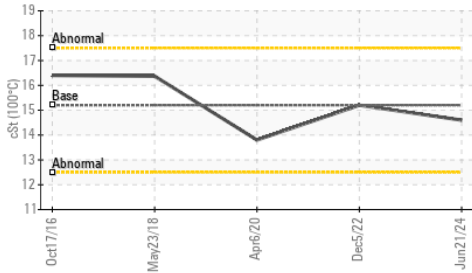
Base Number



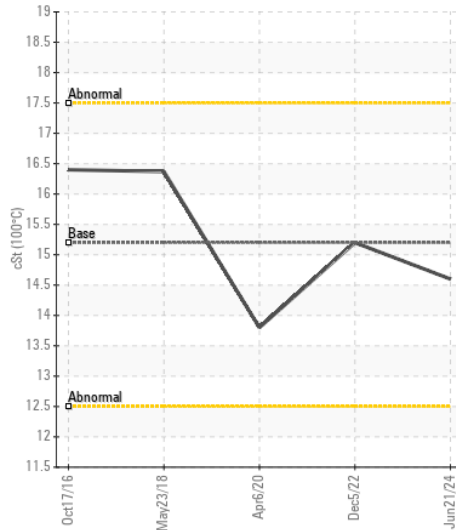
Non-ferrous Metals



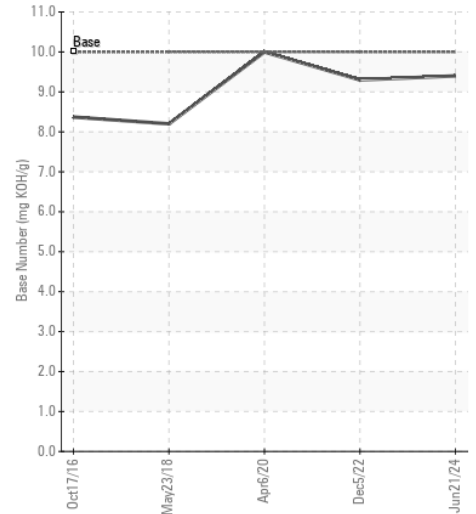
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0909458
Lab Number : 06235504
Unique Number : 11124338
Test Package : FLEET

Received : 15 Jul 2024
Tested : 15 Jul 2024
Diagnosed : 15 Jul 2024 - Wes Davis

E.C. PACE CO.
 1811 HOLLINS RD.
 ROANOKE, VA
 US 24012

Contact: RANDY DUNNIGAN
 rdunnigan@ecpace.com

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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