



WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
149563
 Component
Diesel Engine
 Fluid
VALVOLINE 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		IL0036581	IL0035058	IL0034291
Sample Date		Client Info		08 May 2024	06 Feb 2024	01 Nov 2023
Machine Age	mls	Client Info		293334	269756	245992
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	44	36	40
Chromium	ppm	ASTM D5185m	>20	2	<1	1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	▲ 36	10	9
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	2	1	1
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
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.

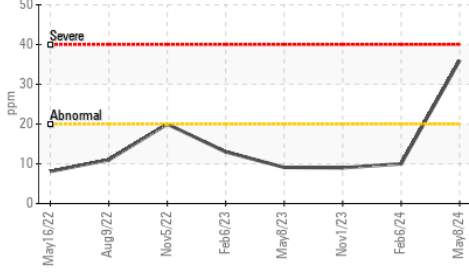
Silicon	ppm	ASTM D5185m	>25	8	6	8
Potassium	ppm	ASTM D5185m	>20	10	23	24
Fuel		WC Method	>5	<1.0	<1.0	1.4
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.9	0.4	0.5
Nitration	Abs/cm	*ASTM D7624	>20	13.2	12.6	13.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.9	26.7	26.1
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

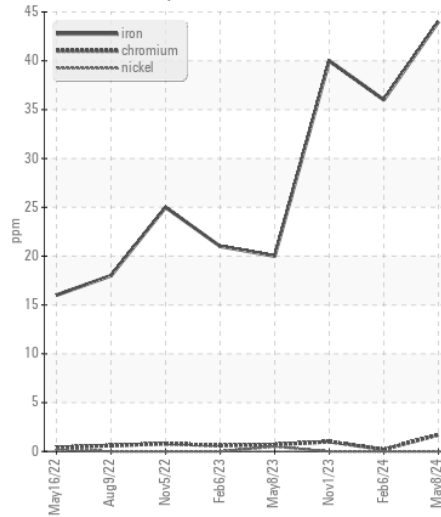
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		3	0	5
Boron	ppm	ASTM D5185m	39	26	31	14
Barium	ppm	ASTM D5185m	1	0	25	0
Molybdenum	ppm	ASTM D5185m	49	69	76	100
Manganese	ppm	ASTM D5185m	1	<1	0	<1
Magnesium	ppm	ASTM D5185m	616	842	639	775
Calcium	ppm	ASTM D5185m	1554	1499	1444	1482
Phosphorus	ppm	ASTM D5185m	899	905	907	848
Zinc	ppm	ASTM D5185m	1069	1063	1060	1097
Sulfur	ppm	ASTM D5185m	2624	2977	2952	2512
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.9	24.7	23.9
Base Number (BN)	mg KOH/g	ASTM D2896	6.9	7.0	4.7	5.1
Visc @ 100°C	cSt	ASTM D445	13.6	13.3	13.0	12.0

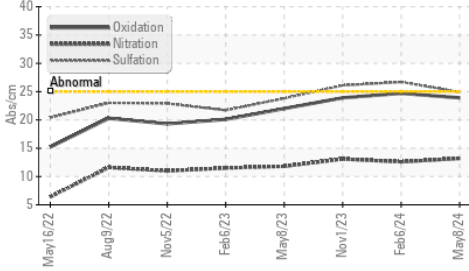
▲ Aluminum (ppm)



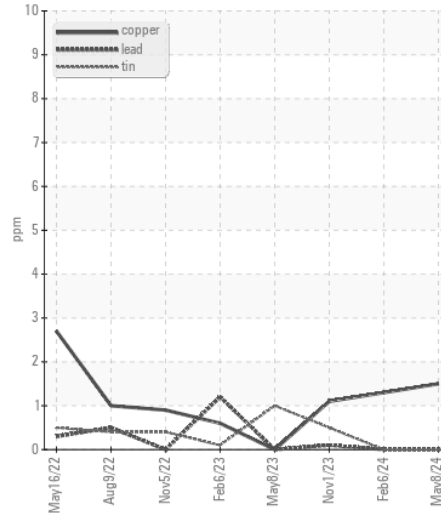
Ferrous Alloys



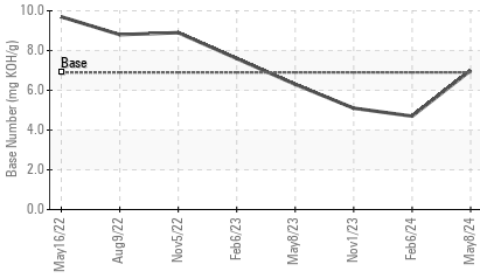
FT-IR (Direct Trend)



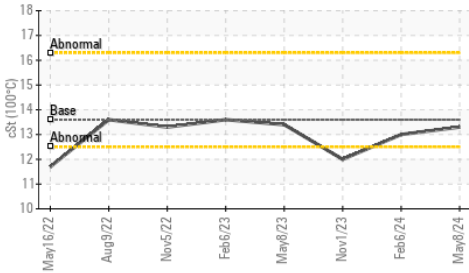
Non-ferrous Metals



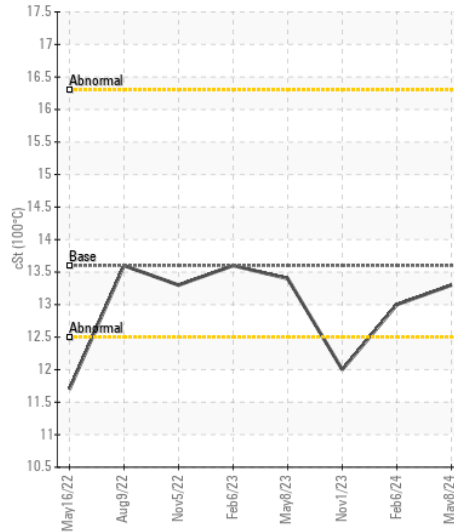
Base Number



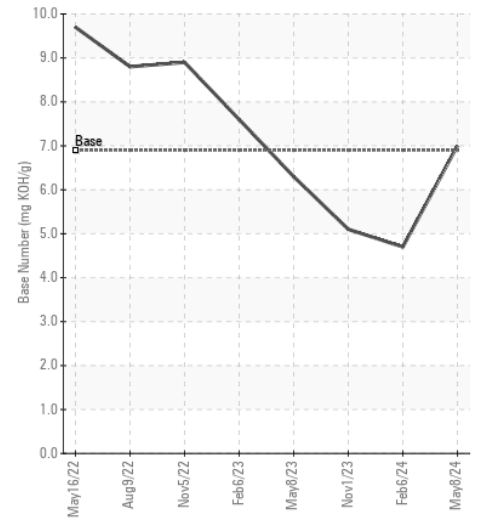
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : IL0036581
Lab Number : 06193561
Unique Number : 11050313
Test Package : FLEET

Received : 29 May 2024
Tested : 30 May 2024
Diagnosed : 30 May 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)