



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
INTERNATIONAL KH560472

Component
Diesel Engine

Fluid
VALVOLINE 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		IL0028401	IL05911775	IL05782804
Sample Date		Client Info		02 Feb 2024	18 Jul 2023	03 Feb 2023
Machine Age	mls	Client Info		227331	206836	187456
Oil Age	mls	Client Info		0	163198	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	N/A
Filter Changed		Client Info		Changed	N/A	N/A
Sample Status				ATTENTION	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	51	69	▲ 108
Chromium	ppm	ASTM D5185m	>20	<1	1	2
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	8	12
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	2	2
Tin	ppm	ASTM D5185m	>15	0	<1	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

Fuel content negligible. There is no indication of any contamination in the oil.

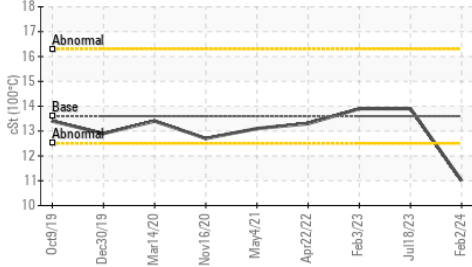
Silicon	ppm	ASTM D5185m	>25	8	7	11
Potassium	ppm	ASTM D5185m	>20	4	5	6
Fuel	%	ASTM D3524	>5	1.5	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.8	1.1	1.4
Nitration	Abs/cm	*ASTM D7624	>20	11.8	14.5	16.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.5	28.5	31.9
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

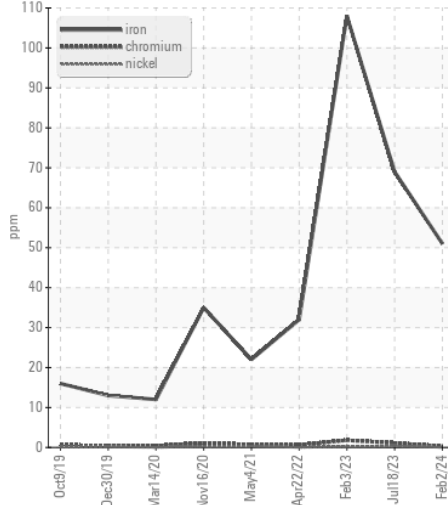
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		2	3	4
Boron	ppm	ASTM D5185m	39	46	35	27
Barium	ppm	ASTM D5185m	1	0	0	0
Molybdenum	ppm	ASTM D5185m	49	85	69	83
Manganese	ppm	ASTM D5185m	1	0	<1	1
Magnesium	ppm	ASTM D5185m	616	612	737	916
Calcium	ppm	ASTM D5185m	1554	1295	1350	1637
Phosphorus	ppm	ASTM D5185m	899	803	802	919
Zinc	ppm	ASTM D5185m	1069	996	1039	1162
Sulfur	ppm	ASTM D5185m	2624	2393	2541	3296
Oxidation	Abs/.1mm	*ASTM D7414	>25	20.8	29.6	33.0
Base Number (BN)	mg KOH/g	ASTM D2896	6.9	5.3	5.3	4.8
Visc @ 100°C	cSt	ASTM D445	13.6	▲ 11.0	13.9	13.9

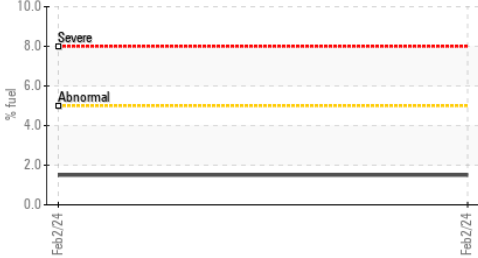
▲ Viscosity @ 100°C



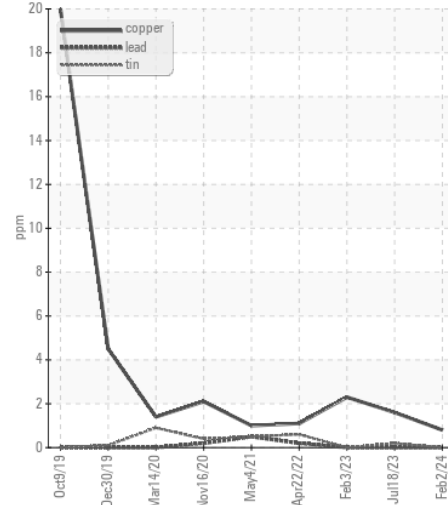
Ferrous Alloys



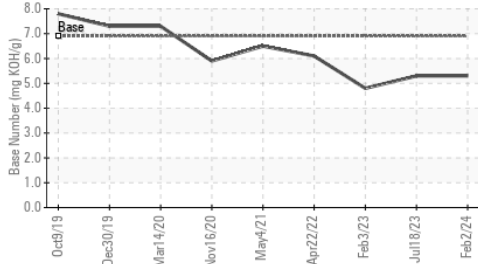
Fuel Dilution



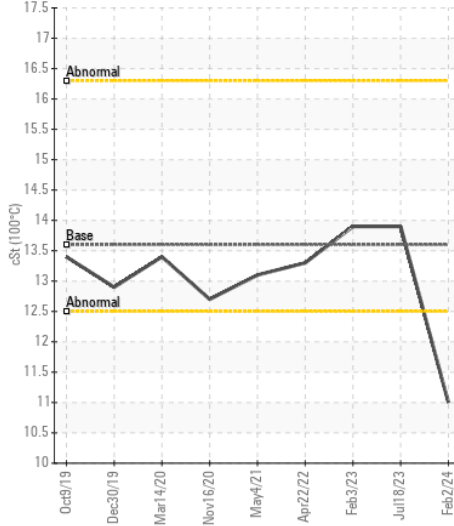
Non-ferrous Metals



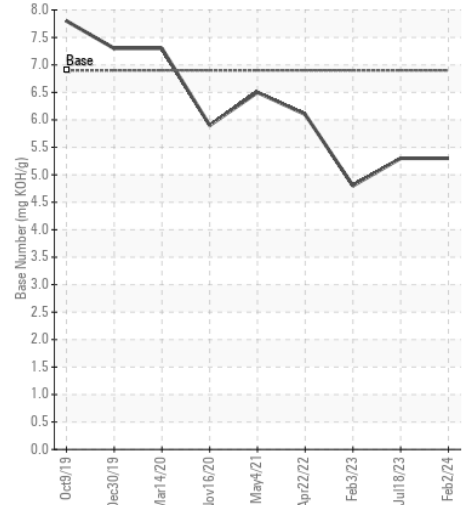
Base Number



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : IL0028401

Lab Number : 06084608

Unique Number : 10872053

Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

Received : 09 Feb 2024

Tested : 13 Feb 2024

Diagnosed : 13 Feb 2024 - Jonathan Hester

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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)