



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
109565
 Component
Diesel Engine
 Fluid
SHELL ROTELLA T 15W40 (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		IL0032945	IL0032764	IL0027556
Sample Date		Client Info		14 May 2024	27 Oct 2023	28 Apr 2023
Machine Age	mls	Client Info		111286	94693	91082
Oil Age	mls	Client Info		16593	3611	13686
Filter Age	mls	Client Info		16593	3611	13686
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	22	19	41
Chromium	ppm	ASTM D5185m	>20	<1	<1	2
Nickel	ppm	ASTM D5185m	>2	<1	<1	1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	29	27	64
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	<1	1	1
Tin	ppm	ASTM D5185m	>15	0	0	1
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

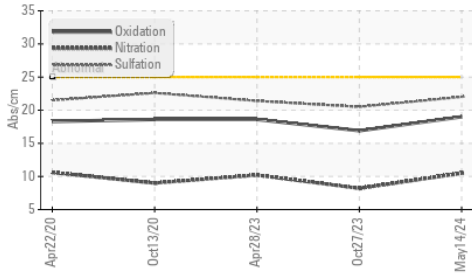
Silicon	ppm	ASTM D5185m	>25	5	6	8
Potassium	ppm	ASTM D5185m	>20	71	81	171
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	0.4	0.3	0.5
Nitration	Abs/cm	*ASTM D7624	>20	10.5	8.2	10.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	20.5	21.4
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

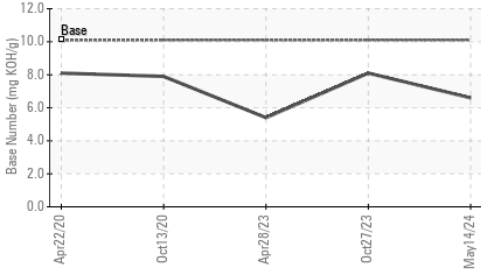
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		4	0	4
Boron	ppm	ASTM D5185m	316	73	135	105
Barium	ppm	ASTM D5185m	0.0	0	5	0
Molybdenum	ppm	ASTM D5185m	1.2	33	25	18
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	24	340	149	103
Calcium	ppm	ASTM D5185m	2292	2030	1932	2126
Phosphorus	ppm	ASTM D5185m	1064	1104	963	1019
Zinc	ppm	ASTM D5185m	1160	1340	1131	1267
Sulfur	ppm	ASTM D5185m	4996	3907	3231	4196
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.0	16.9	18.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	6.6	8.1	5.4
Visc @ 100°C	cSt	ASTM D445	15.7	13.4	13.7	12.0

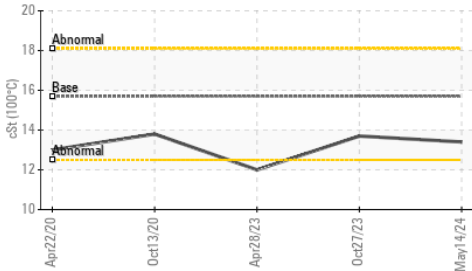
FT-IR (Direct Trend)



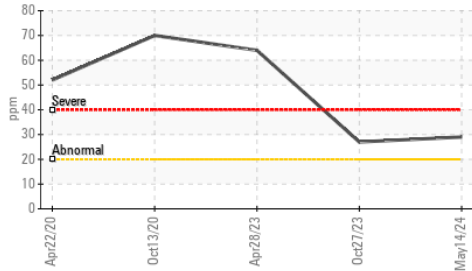
Base Number



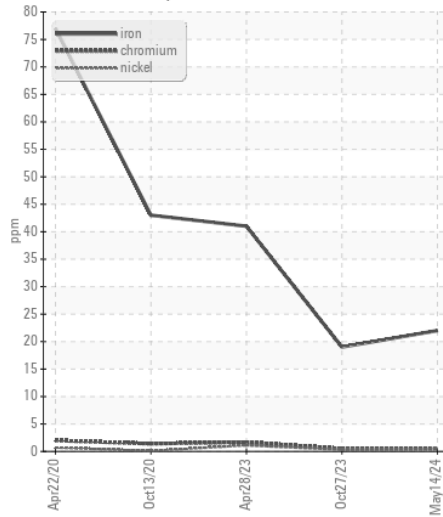
Viscosity @ 100°C



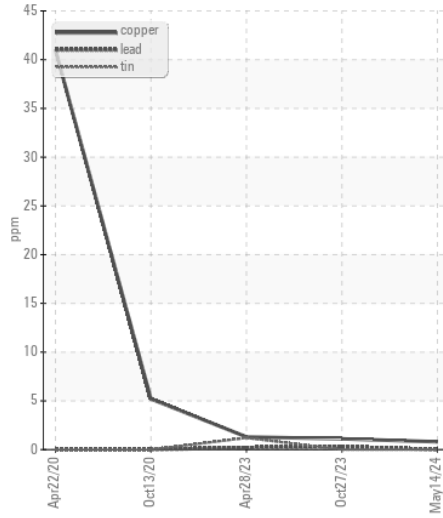
Aluminum (ppm)



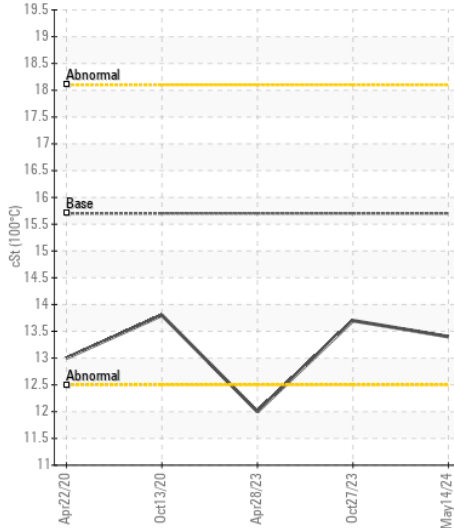
Ferrous Alloys



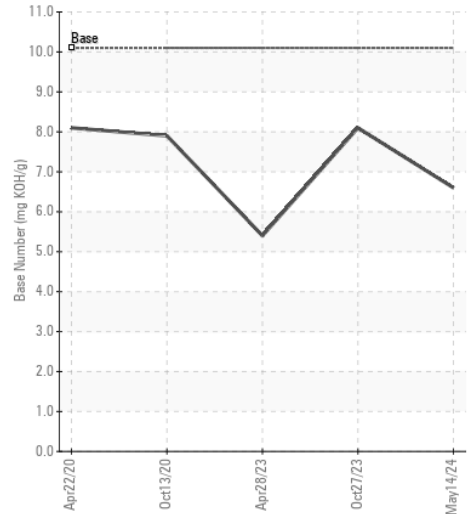
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : IL0032945

Lab Number : 06219357

Unique Number : 11097554

Test Package : FLEET

Received : 25 Jun 2024

Tested : 25 Jun 2024

Diagnosed : 25 Jun 2024 - Wes Davis

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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)