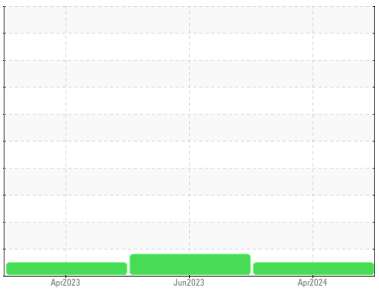
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
2324
Component
Diesel Engine
Fluid
ROYAL PURPLE MOTOR OIL 15W40 (--- QTS)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear
All component wear rates are normal.

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.

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		**WC0719987**	WC0720115	WC0719710
Sample Date		Client Info		**07 Apr 2024**	09 Jun 2023	24 Apr 2023
Machine Age	mls	Client Info		**169835**	0	84003
Oil Age	mls	Client Info		**50000**	100000	50000
Oil Changed		Client Info		**Not Changd**	Changed	Not Changd
Sample Status				**NORMAL**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	0.2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**86**	▲ 108	67
Chromium	ppm	ASTM D5185m	>20	**3**	6	4
Nickel	ppm	ASTM D5185m	>4	**<1**	2	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**43**	76	45
Lead	ppm	ASTM D5185m	>40	**0**	<1	1
Copper	ppm	ASTM D5185m	>330	**69**	191	164
Tin	ppm	ASTM D5185m	>15	**1**	4	3
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**0**	1	3
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	100	**17**	62	56
Manganese	ppm	ASTM D5185m		**1**	3	2
Magnesium	ppm	ASTM D5185m	60	**242**	922	863
Calcium	ppm	ASTM D5185m	3050	**2254**	1652	1486
Phosphorus	ppm	ASTM D5185m	1050	**1007**	991	913
Zinc	ppm	ASTM D5185m	1200	**1174**	1254	1195
Sulfur	ppm	ASTM D5185m	12500	**3113**	2441	2262

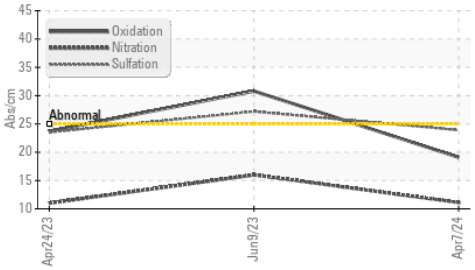
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**11**	10	7
Sodium	ppm	ASTM D5185m		**2**	4	3
Potassium	ppm	ASTM D5185m	>20	**118**	158	94

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1**	1.5	0.9
Nitration	Abs/cm	*ASTM D7624	>20	**11.1**	16.0	11.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	**23.9**	27.2	23.5

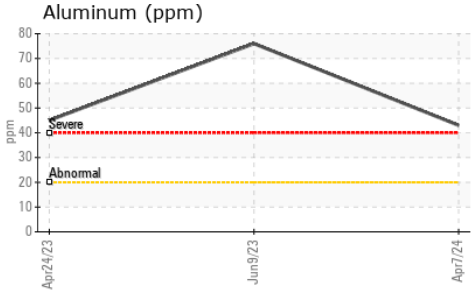
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**19.1**	30.8	23.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	**5.4**	5.4	6.4

OIL ANALYSIS REPORT

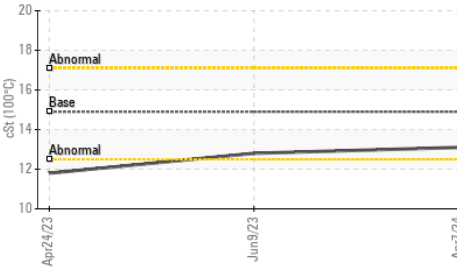
FT-IR (Direct Trend)



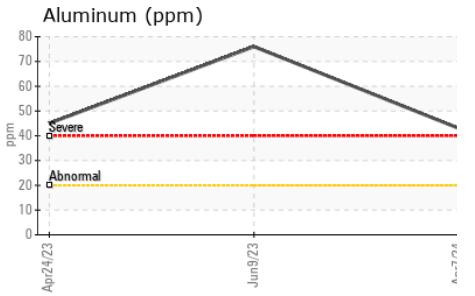
Aluminum (ppm)



Viscosity @ 100°C



Aluminum (ppm)

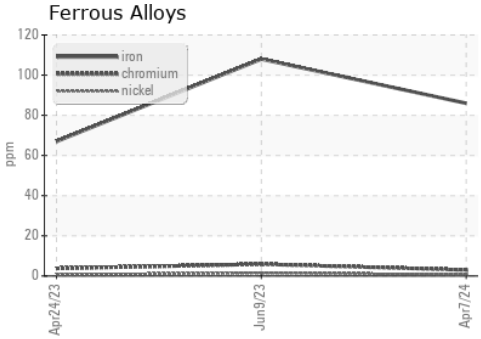


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

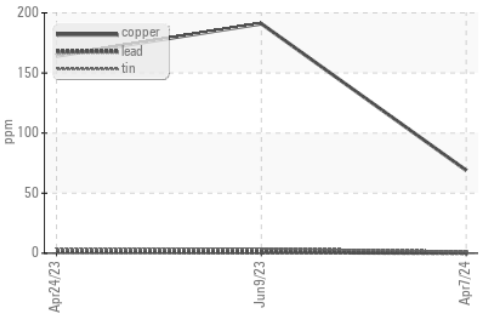
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.9	**13.1**	12.8	11.8

GRAPHS

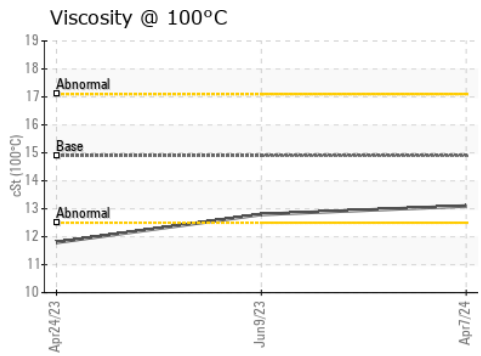
Ferrous Alloys



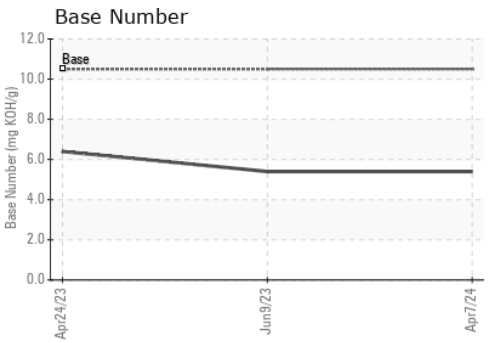
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0719987
Lab Number : 06174830
Unique Number : 11020883
Test Package : FLEET

Received : 09 May 2024
Tested : 10 May 2024
Diagnosed : 10 May 2024 - Wes Davis

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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