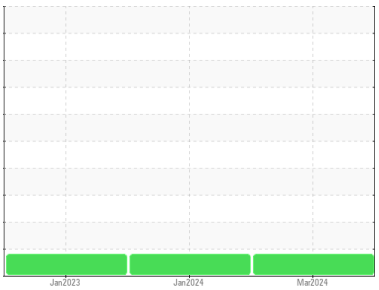
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
R202-F-01
Component
Diesel Engine
Fluid
{not provided} (--- GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core).

Contamination
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

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		**KL0014223**	KL0014045	KLMFA11980
Sample Date		Client Info		**29 Mar 2024**	05 Jan 2024	26 Jan 2023
Machine Age	hrs	Client Info		**45371**	45297	44946
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	MARGINAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**47**	58	17
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**<1**	1	0
Titanium	ppm	ASTM D5185m		**<1**	<1	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	2	2
Lead	ppm	ASTM D5185m	>40	**2**	3	<1
Copper	ppm	ASTM D5185m	>330	▲ **426**	▲ 623	4
Tin	ppm	ASTM D5185m	>15	**<1**	1	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

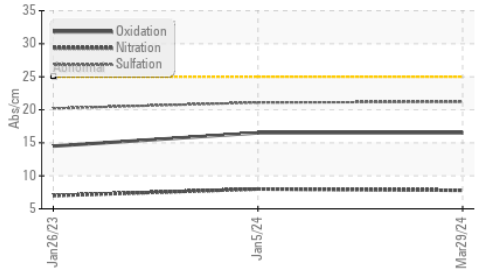
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**321**	245	318
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**71**	67	74
Manganese	ppm	ASTM D5185m		**0**	<1	<1
Magnesium	ppm	ASTM D5185m		**306**	313	337
Calcium	ppm	ASTM D5185m		**1307**	1242	1324
Phosphorus	ppm	ASTM D5185m		**960**	882	823
Zinc	ppm	ASTM D5185m		**1012**	970	1019
Sulfur	ppm	ASTM D5185m		**3458**	3426	3478

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**2**	5	3
Sodium	ppm	ASTM D5185m		**<1**	2	0
Potassium	ppm	ASTM D5185m	>20	**3**	2	0
Fuel	%	ASTM D3524	>5	**<1.0**	2.7	▲ 3.6
Glycol	%	*ASTM D2982		**NEG**	0.0	NEG

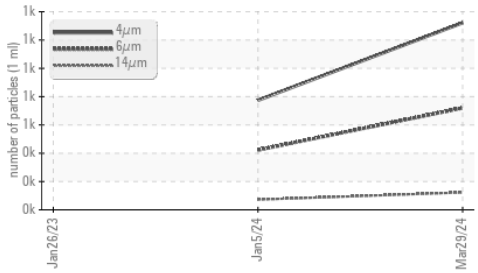
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.4**	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	**7.8**	8.0	7.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.2**	21.1	20.2

OIL ANALYSIS REPORT

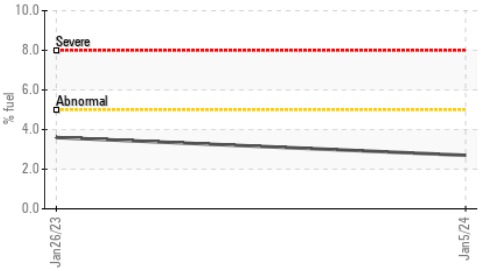
FT-IR (Direct Trend)



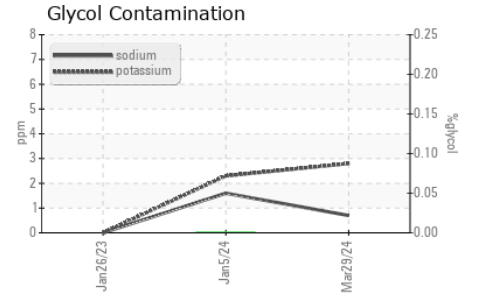
Particle Trend



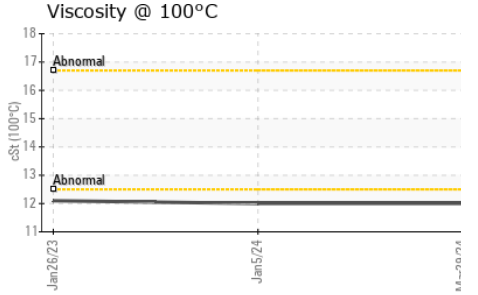
Fuel Dilution



Glycol Contamination



Viscosity @ 100°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**1322**	774	---
Particles >6µm		ASTM D7647	>5000	**720**	422	---
Particles >14µm		ASTM D7647	>640	**123**	72	---
Particles >21µm		ASTM D7647	>160	**41**	24	---
Particles >38µm		ASTM D7647	>40	**6**	4	---
Particles >71µm		ASTM D7647	>10	**1**	0	---
Oil Cleanliness		ISO 4406 (c)	>19/16	**17/14**	16/13	---

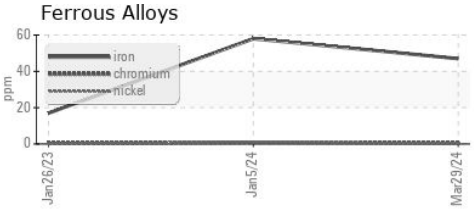
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.5**	16.5	14.5
Base Number (BN)	mg KOH/g	ASTM D2896		**6.31**	6.23	8.4

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

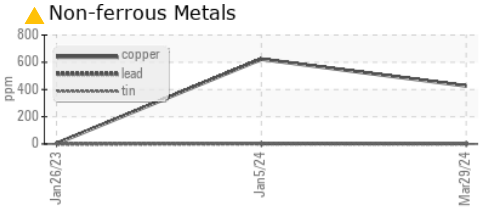
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**12.0**	12.0	12.1

GRAPHS

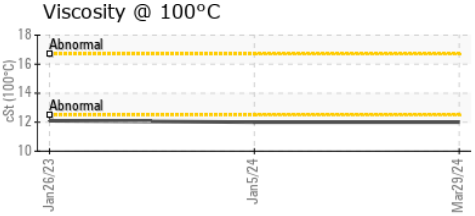
Ferrous Alloys



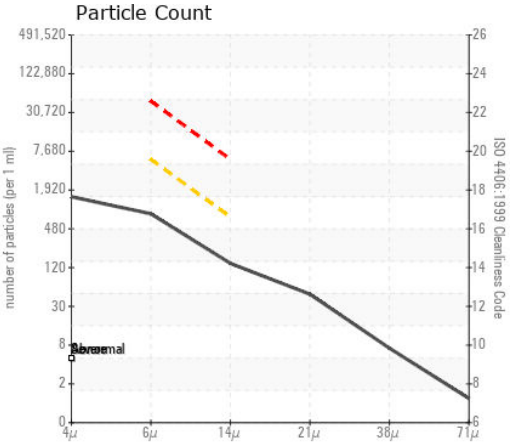
Non-ferrous Metals



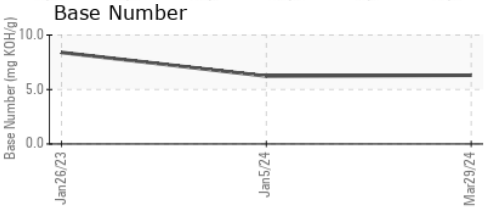
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0014223 **Received** : 10 Apr 2024
Lab Number : 06145359 **Tested** : 15 Apr 2024
Unique Number : 10970167 **Diagnosed** : 15 Apr 2024 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: FuelDilution, Glycol, PrtCount)

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)

STRATEGY LATERAL
PO BOX 80543
MIDLAND, TX
US 76065
Contact: KIRK WADE
KIRK.WADE@STRATEGYLATERAL.COM
T:
F: