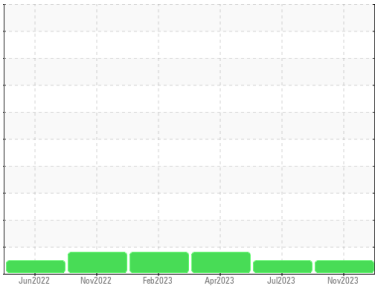
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
35173
Component
Diesel Engine
Fluid
NOT GIVEN (--- QTS)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear
All component wear rates are normal.

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		**KL0012120**	KL0012013	KLM2339436
Sample Date		Client Info		**10 Nov 2023**	25 Jul 2023	07 Apr 2023
Machine Age	mls	Client Info		**34032**	26770	21961
Oil Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**NORMAL**	NORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
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	**18**	12	44
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	2
Nickel	ppm	ASTM D5185m	>4	**0**	0	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	<1	<1
Aluminum	ppm	ASTM D5185m	>20	**5**	4	12
Lead	ppm	ASTM D5185m	>40	**1**	0	0
Copper	ppm	ASTM D5185m	>330	**86**	71	▲ 330
Tin	ppm	ASTM D5185m	>15	**1**	<1	4
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

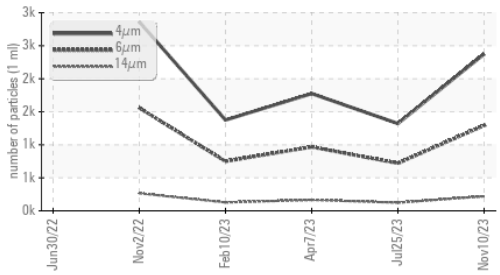
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**31**	79	15
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**61**	63	17
Manganese	ppm	ASTM D5185m		**<1**	<1	3
Magnesium	ppm	ASTM D5185m		**842**	855	876
Calcium	ppm	ASTM D5185m		**1379**	1352	1327
Phosphorus	ppm	ASTM D5185m		**1054**	1052	823
Zinc	ppm	ASTM D5185m		**1284**	1244	975
Sulfur	ppm	ASTM D5185m		**3172**	4118	3153

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**6**	4	8
Sodium	ppm	ASTM D5185m		**3**	3	5
Potassium	ppm	ASTM D5185m	>20	**8**	6	27
Fuel	%	ASTM D3524	>5	**<1.0**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.4**	0.2	0.6
Nitration	Abs/cm	*ASTM D7624	>20	**10.3**	7.6	12.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.8**	19.0	24.1

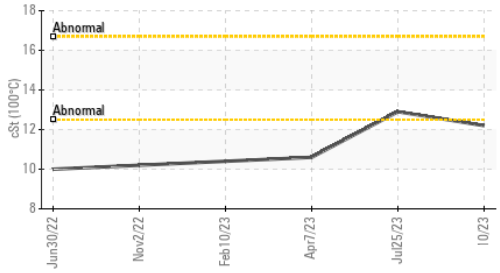
OIL ANALYSIS REPORT

Particle Trend

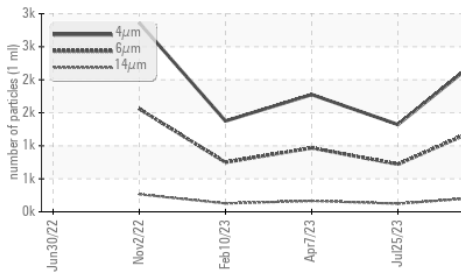


Fuel Dilution

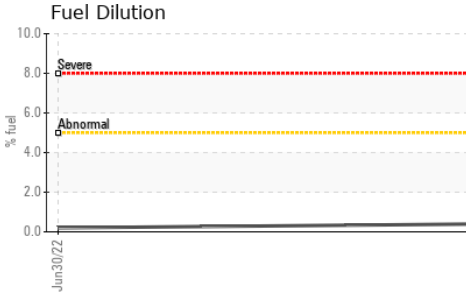
Viscosity @ 100°C



Particle Trend



Fuel Dilution



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**2374**	1322	1775
Particles >6µm		ASTM D7647	>5000	**1293**	720	967
Particles >14µm		ASTM D7647	>640	**220**	123	165
Particles >21µm		ASTM D7647	>160	**74**	41	55
Particles >38µm		ASTM D7647	>40	**11**	6	9
Particles >71µm		ASTM D7647	>10	**1**	1	1
Oil Cleanliness		ISO 4406 (c)	>19/16	**17/15**	17/14	17/15

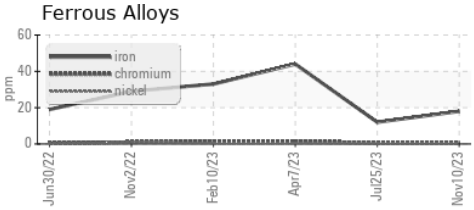
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.9**	15.0	20.8
Base Number (BN)	mg KOH/g	ASTM D2896		**9.82**	10.76	8.62

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

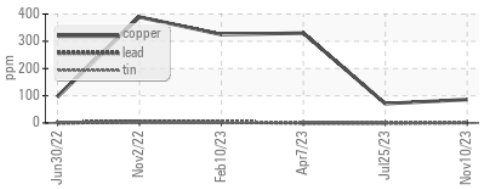
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**12.2**	12.9	10.6

GRAPHS

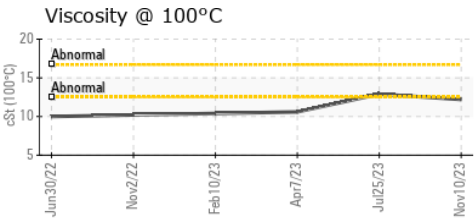
Ferrous Alloys



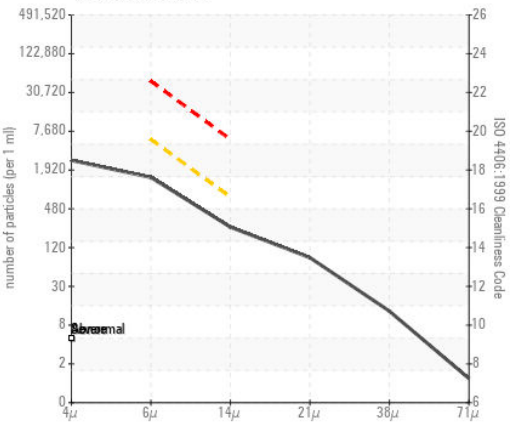
Non-ferrous Metals



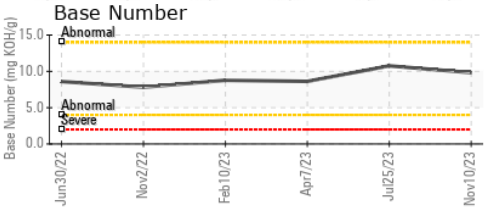
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012120 **Received** : 20 Nov 2023
Lab Number : 06013453 **Diagnosed** : 23 Nov 2023
Unique Number : 10752597 **Diagnostician** : Don Baldridge
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel, 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)

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