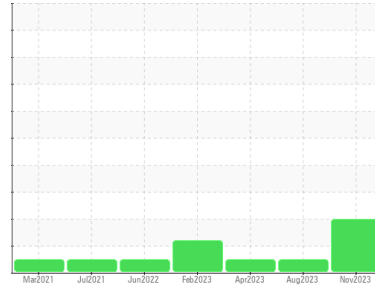




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
35160

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 40 (--- QTS)

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of particulates present 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		KL0012124	KL0012002	KLM2339301
Sample Date	Client Info		11 Nov 2023	02 Aug 2023	09 Apr 2023
Machine Age	mls	Client Info	107423	103621	102198
Oil Age	mls	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			ATTENTION	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
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

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>65	9	6	4
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>3	0	0	0
Titanium	ppm	ASTM D5185m	>5	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>35	4	2	<1
Lead	ppm	ASTM D5185m	>10	<1	0	0
Copper	ppm	ASTM D5185m	>180	18	12	7
Tin	ppm	ASTM D5185m	>8	2	<1	<1
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	250	57	88	108
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	61	61	61
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	1097	1034	1079
Calcium	ppm	ASTM D5185m	3000	1145	1089	1097
Phosphorus	ppm	ASTM D5185m	1150	1109	1037	1051
Zinc	ppm	ASTM D5185m	1350	1355	1249	1288
Sulfur	ppm	ASTM D5185m	4250	3717	4146	4277

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>15	5	4	4
Sodium	ppm	ASTM D5185m	>216	5	4	3
Potassium	ppm	ASTM D5185m	>20	5	3	2

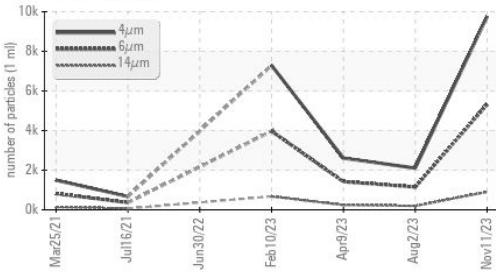
INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	>3	0.7	0.3	0.2
Nitration	Abs/cm	*ASTM D7624	>20	7.9	6.2	6.0
Sulfation	Abs./1mm	*ASTM D7415	>30	20.9	18.8	19.2

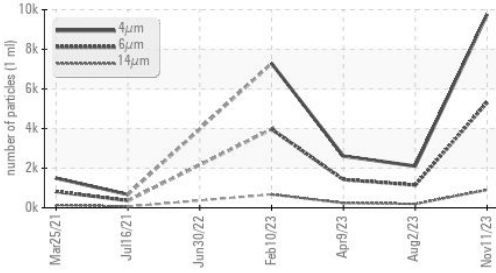


OIL ANALYSIS REPORT

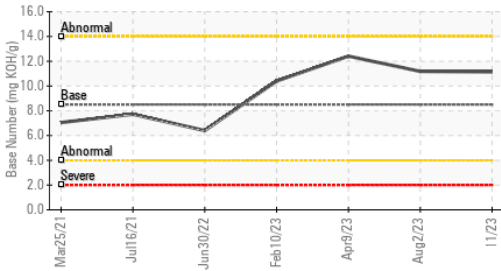
▲ Particle Trend



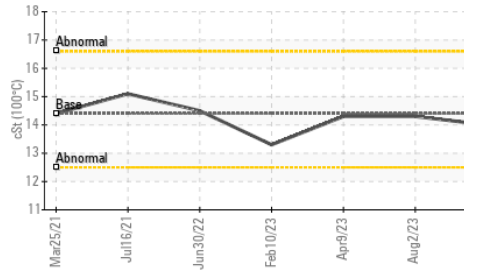
▲ Particle Trend



Base Number



Viscosity @ 100°C



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		9761	2105	2610
Particles >6µm	ASTM D7647	>5000	▲ 5317	1147	1422
Particles >14µm	ASTM D7647	>640	▲ 905	195	242
Particles >21µm	ASTM D7647	>160	▲ 305	66	82
Particles >38µm	ASTM D7647	>40	▲ 47	10	13
Particles >71µm	ASTM D7647	>10	5	1	1
Oil Cleanliness	ISO 4406 (c)	>19/16	▲ 20/17	17/15	18/15

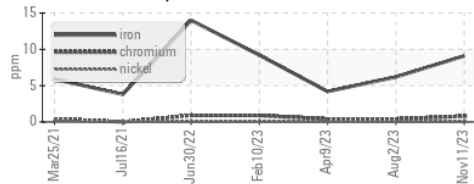
FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414	>25	16.1	14.2	14.3
Base Number (BN)	mg KOH/g ASTM D2896	8.5	11.14	11.18	12.41

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

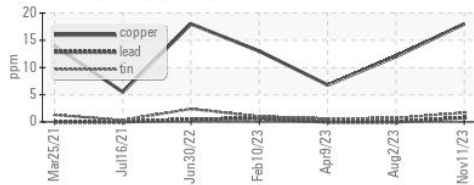
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt ASTM D445	14.4	14.0	14.3	14.3

GRAPHS

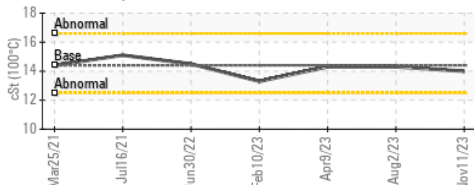
Ferrous Alloys



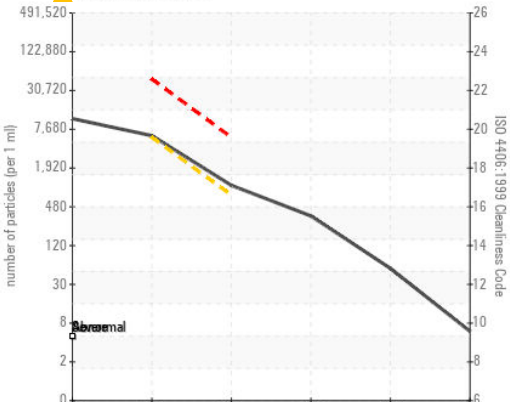
Non-ferrous Metals



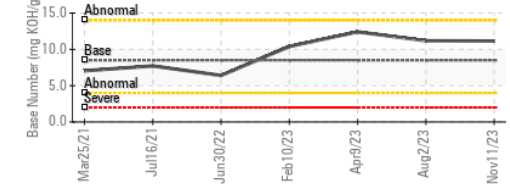
Viscosity @ 100°C



▲ Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : KL0012124 Received : 20 Nov 2023
 Lab Number : 06013447 Diagnosed : 23 Nov 2023
 Unique Number : 10752591 Diagnostician : Don Baldrige
 Test Package : MOB 2 (Additional Tests: PrtCount)

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 F:

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)