



WEAR	ATTENTION
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
KLEEMAN KT80 0771

Component
Diesel Engine

Fluid
{not provided} (--- QTS)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0194703	JR0194337	---
Sample Date		Client Info		08 Jan 2024	20 Dec 2023	---
Machine Age	hrs	Client Info		0	3371	---
Oil Age	hrs	Client Info		0	0	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		N/A	N/A	---
Filter Changed		Client Info		N/A	N/A	---
Sample Status				ABNORMAL	SEVERE	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	82	255	---
Chromium	ppm	ASTM D5185m	>20	6	15	---
Nickel	ppm	ASTM D5185m	>4	2	4	---
Titanium	ppm	ASTM D5185m		1	2	---
Silver	ppm	ASTM D5185m	>3	0	0	---
Aluminum	ppm	ASTM D5185m	>20	29	92	---
Lead	ppm	ASTM D5185m	>40	<1	<1	---
Copper	ppm	ASTM D5185m	>330	4	11	---
Tin	ppm	ASTM D5185m	>15	1	2	---
Vanadium	ppm	ASTM D5185m		0	<1	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

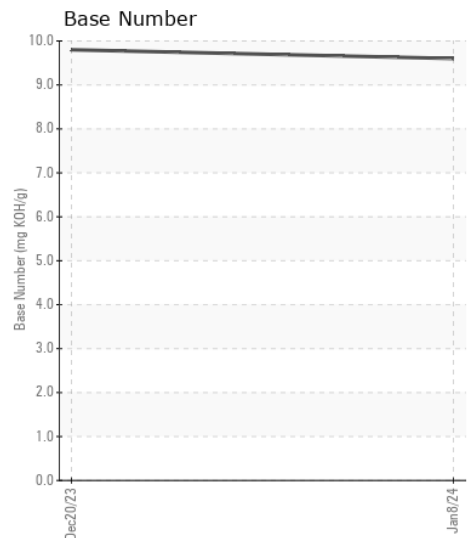
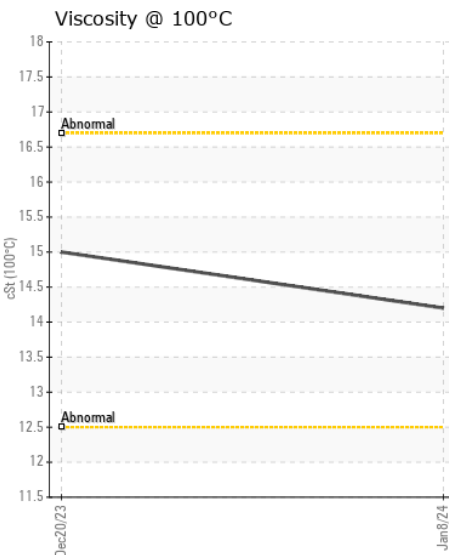
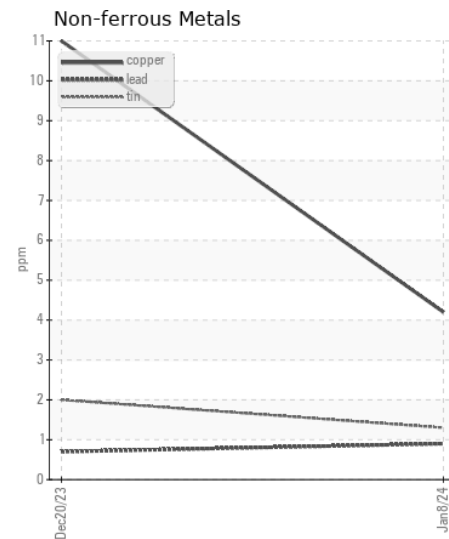
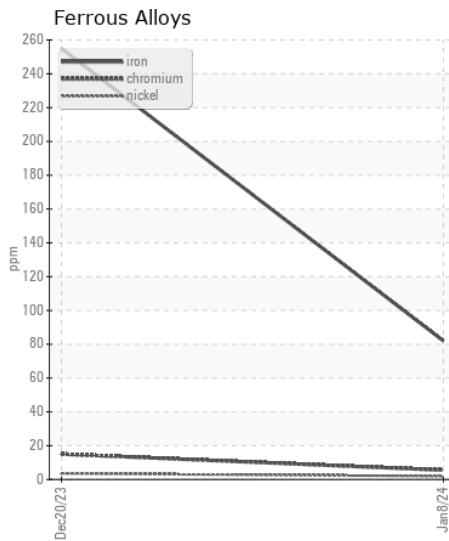
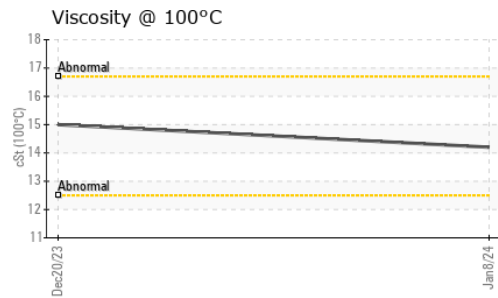
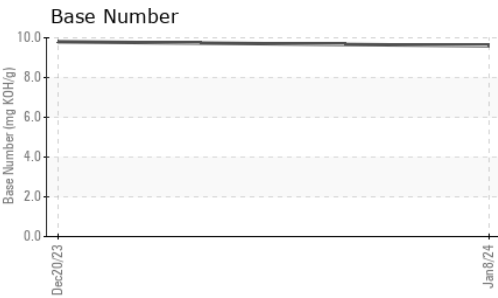
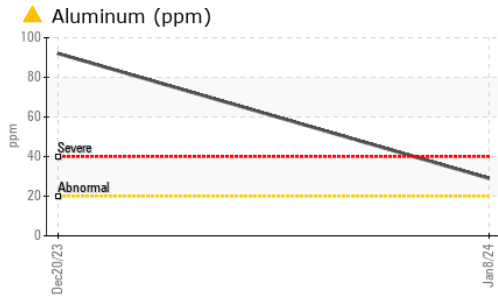
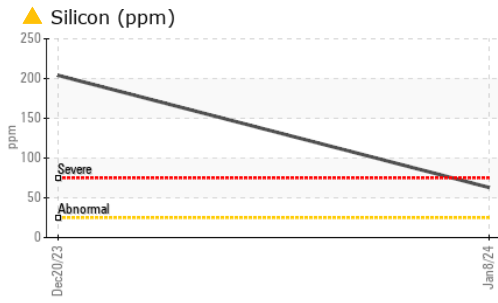
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>25	63	204	---
Potassium	ppm	ASTM D5185m	>20	7	19	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.3	1	---
Nitration	Abs/cm	*ASTM D7624	>20	8.8	13.7	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.1	27.0	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	---

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		3	19	---
Boron	ppm	ASTM D5185m		266	202	---
Barium	ppm	ASTM D5185m		0	<1	---
Molybdenum	ppm	ASTM D5185m		242	265	---
Manganese	ppm	ASTM D5185m		2	3	---
Magnesium	ppm	ASTM D5185m		801	849	---
Calcium	ppm	ASTM D5185m		1423	1487	---
Phosphorus	ppm	ASTM D5185m		799	931	---
Zinc	ppm	ASTM D5185m		1061	1136	---
Sulfur	ppm	ASTM D5185m		3173	3007	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.7	26.6	---
Base Number (BN)	mg KOH/g	ASTM D2896		9.6	9.8	---
Visc @ 100°C	cSt	ASTM D445		14.2	15.0	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0194703 **Received** : 09 Jan 2024
Lab Number : 06055183 **Diagnosed** : 10 Jan 2024
Unique Number : 10821132 **Diagnostician** : Don Baldrige
Test Package : CONST (Additional Tests: TBN)

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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)