



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION



Machine Id
LIEBHERR LH30M 1253-145780
Component
Diesel Engine
Fluid
PETRO CANADA DURON UHP 10W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0276605	LH0276602	---
Sample Date		Client Info		07 Feb 2024	01 Oct 2023	---
Machine Age	hrs	Client Info		1023	520	---
Oil Age	hrs	Client Info		0	520	---
Filter Age	hrs	Client Info		0	520	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				ATTENTION	ABNORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>66	5	15	---
Chromium	ppm	ASTM D5185m	>4	<1	2	---
Nickel	ppm	ASTM D5185m	>4	<1	<1	---
Titanium	ppm	ASTM D5185m		<1	1	---
Silver	ppm	ASTM D5185m	>3	0	0	---
Aluminum	ppm	ASTM D5185m	>8	2	4	---
Lead	ppm	ASTM D5185m	>10	<1	3	---
Copper	ppm	ASTM D5185m	>74	43	▲ 276	---
Tin	ppm	ASTM D5185m	>4	1	2	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

Fuel content negligible. There is no indication of any contamination in the oil.

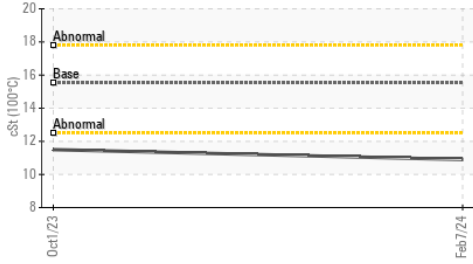
Silicon	ppm	ASTM D5185m	>15	7	10	---
Potassium	ppm	ASTM D5185m	>20	2	5	---
Fuel	%	ASTM D3524	>5	1.4	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.1	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	9.8	12.1	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.8	39.7	---
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

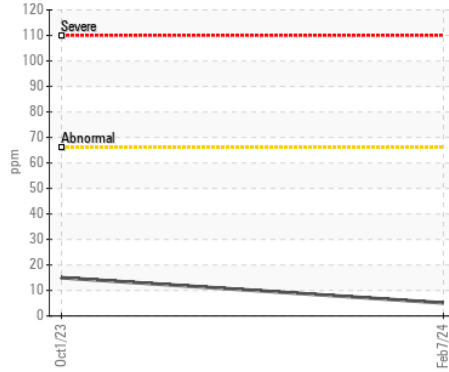
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		0	0	---
Boron	ppm	ASTM D5185m	2	107	92	---
Barium	ppm	ASTM D5185m	0	16	36	---
Molybdenum	ppm	ASTM D5185m	60	48	47	---
Manganese	ppm	ASTM D5185m	0	<1	1	---
Magnesium	ppm	ASTM D5185m	1010	874	914	---
Calcium	ppm	ASTM D5185m	1070	1302	1347	---
Phosphorus	ppm	ASTM D5185m	1150	732	746	---
Zinc	ppm	ASTM D5185m	1270	882	886	---
Sulfur	ppm	ASTM D5185m	2060	2521	2160	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.9	52.5	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.4	▲ 3.8	---
Visc @ 100°C	cSt	ASTM D445	15.52	▲ 10.9	11.5	---

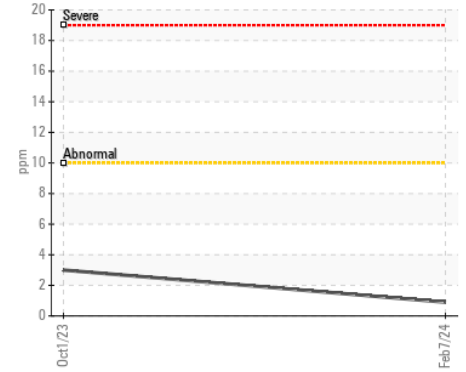
▲ Viscosity @ 100°C



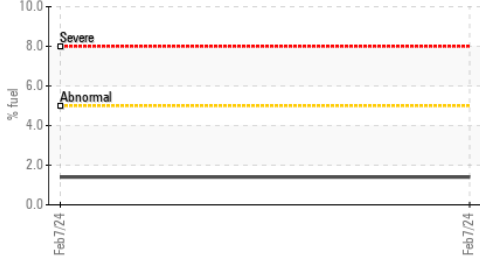
Iron (ppm)



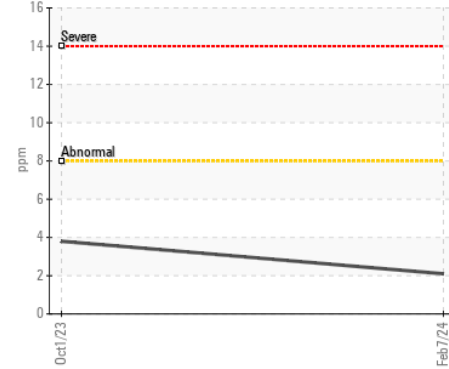
Lead (ppm)



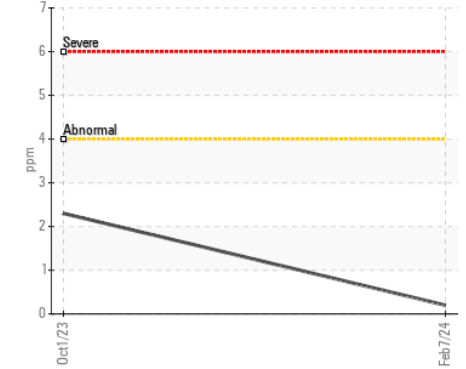
Fuel Dilution



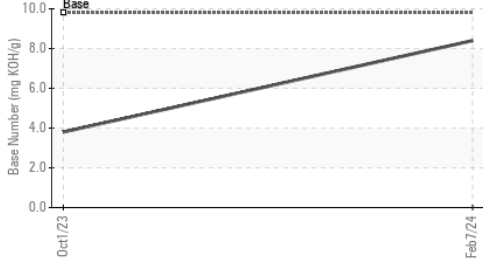
Aluminum (ppm)



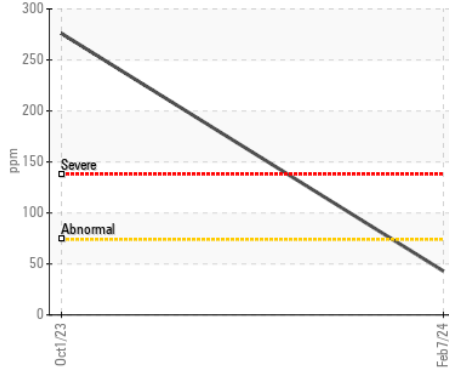
Chromium (ppm)



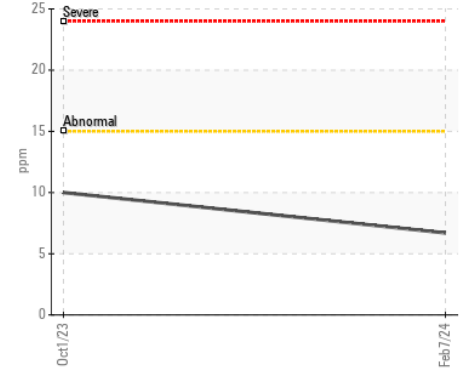
Base Number



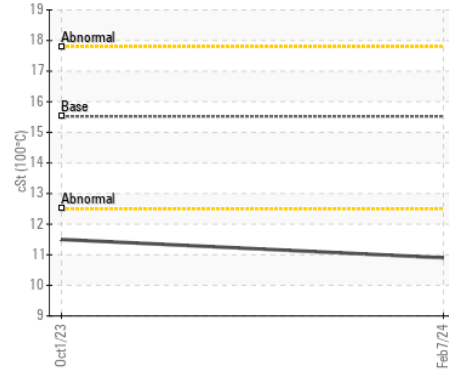
Copper (ppm)



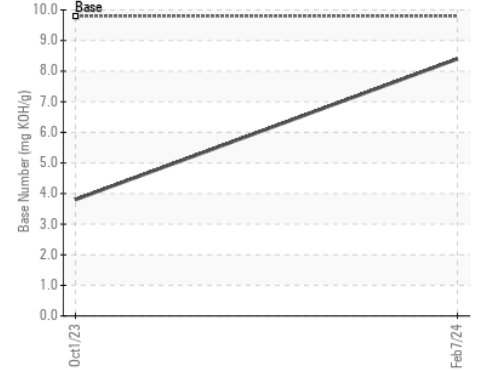
Silicon (ppm)



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0276605 **Received** : 12 Feb 2024
Lab Number : 06086552 **Tested** : 14 Feb 2024
Unique Number : 10873997 **Diagnosed** : 14 Feb 2024 - Don Baldrige
Test Package : MOBCE (Additional Tests: FuelDilution, PercentFuel, TBN)

TRAM CONSTRUCTION
 9279 E KY 8
 GARRISON, KY
 US 41141
 Contact: Service Manager

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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F: