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LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL

Machine Id
116431-1217
Component
Diesel Engine
Fluid
PETRO CANADA 10W40 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

WEAR

All component wear rates are normal.

CONTAMINATION

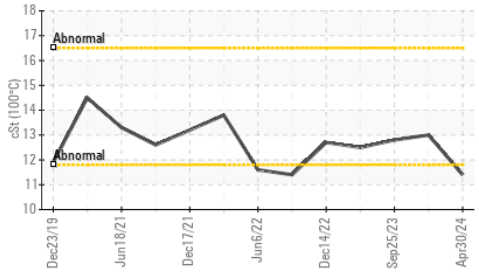
Light fuel dilution occurring. No other contaminants were detected in the oil.

FLUID CONDITION

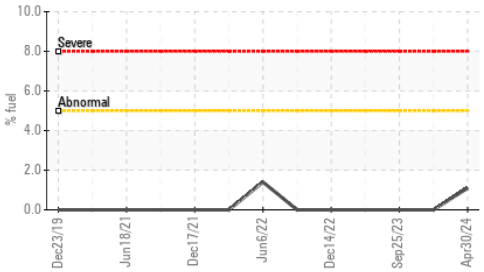
Calcium ppm levels are abnormally low. Visc @ 100°C is abnormally low. Viscosity of sample indicates oil is within SAE 30 range, advise investigate.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**LH0278857**	LH0277753	LH0270562
Sample Date		Client Info		**30 Apr 2024**	08 Jan 2024	25 Sep 2023
Machine Age	hrs	Client Info		**8543**	8104	7608
Oil Age	hrs	Client Info		**0**	0	0
Filter Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	Changed
Filter Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	NORMAL	NORMAL
Iron	ppm	ASTM D5185(m)	>100	**4**	4	5
Chromium	ppm	ASTM D5185(m)	>5	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>5	**0**	0	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)	>3	**0**	0	<1
Aluminum	ppm	ASTM D5185(m)	>15	**1**	1	2
Lead	ppm	ASTM D5185(m)	>30	**0**	<1	1
Copper	ppm	ASTM D5185(m)	>125	**<1**	<1	3
Tin	ppm	ASTM D5185(m)	>5	**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Silicon	ppm	ASTM D5185(m)	>60	**6**	6	7
Potassium	ppm	ASTM D5185(m)	>20	**0**	<1	0
Fuel	%	ASTM D7593*	>5	**1.1**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG
Soot %	%	ASTM D7844*	>3	**0**	0	0
Nitration	Abs/cm	ASTM D7624*	>20	**10.6**	8.8	8.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	**20.4**	19.0	19.1
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Sodium	ppm	ASTM D5185(m)	>20	**4**	1	2
Boron	ppm	ASTM D5185(m)		**30**	6	1
Barium	ppm	ASTM D5185(m)		**0**	0	<1
Molybdenum	ppm	ASTM D5185(m)		**58**	57	59
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)		**1086**	925	976
Calcium	ppm	ASTM D5185(m)		**844**	1132	1127
Phosphorus	ppm	ASTM D5185(m)		**973**	1000	1021
Zinc	ppm	ASTM D5185(m)		**1170**	1162	1244
Sulfur	ppm	ASTM D5185(m)		**2632**	2715	2622
Oxidation	Abs/.1mm	ASTM D7414*	>25	**20.2**	16.7	16.3
Visc @ 100°C	cSt	ASTM D7279(m)		▲ **11.4**	13.0	12.8

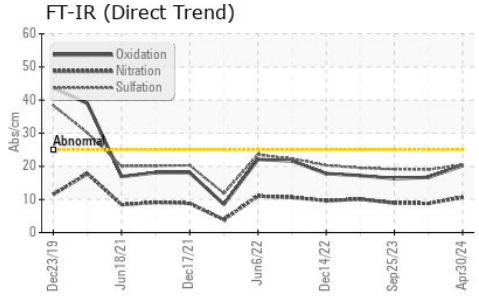
Viscosity @ 100°C



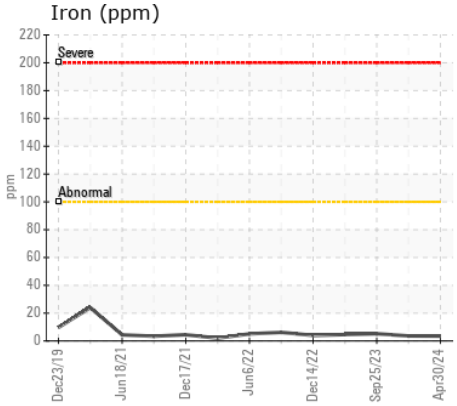
Fuel Dilution



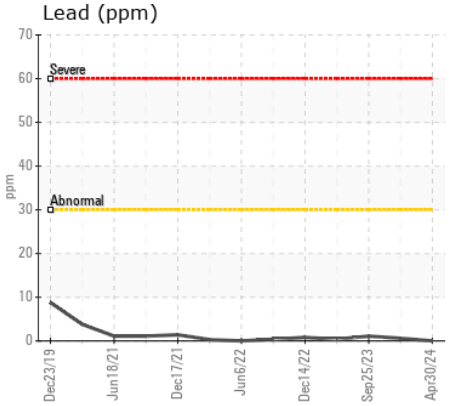
FT-IR (Direct Trend)



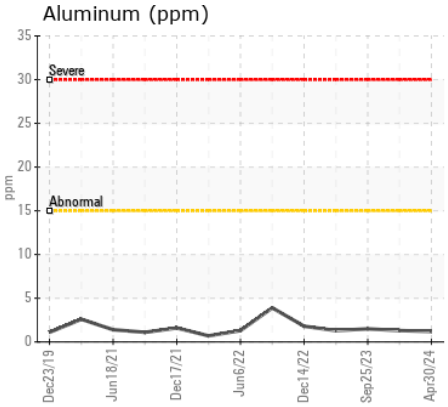
Iron (ppm)



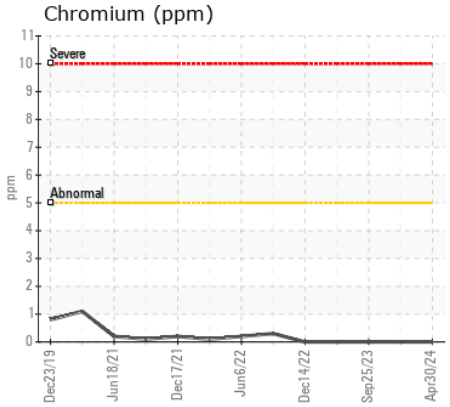
Lead (ppm)



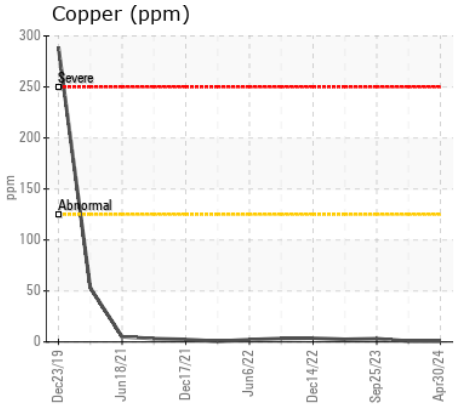
Aluminum (ppm)



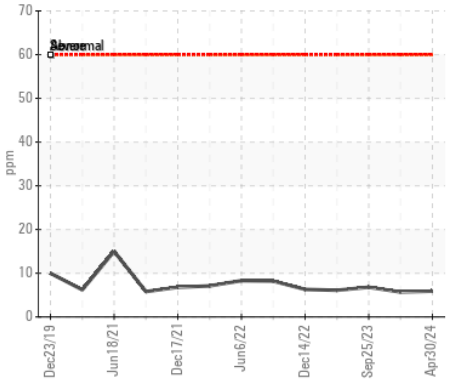
Chromium (ppm)



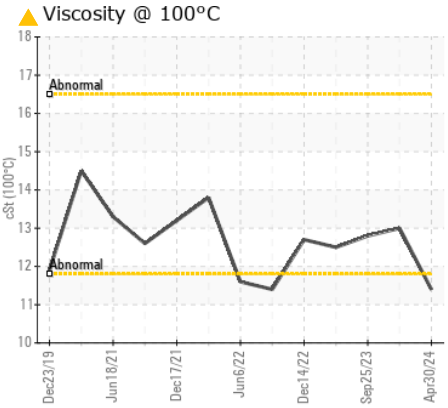
Copper (ppm)



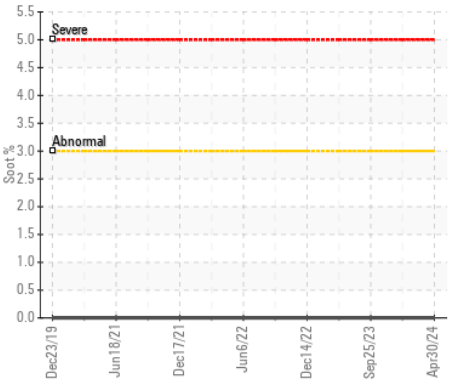
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0278857 **Received** : 07 May 2024
Lab Number : 02633848 **Tested** : 08 May 2024
Unique Number : 5775001 **Diagnosed** : 08 May 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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