



LIEBHERR

OIL ANALYSIS REPORT

WEAR	MARGINAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR T282C L2-6514 (S/N 532-4317)

Component
Diesel Engine

Fluid
PETRO CANADA 15W40 (240 LTR)

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. We suspect that the abnormal contaminant(s) is the result of incorrect sampling technique. **DISCLAIMER:** Interpretation of laboratory tests is based on sample, as received from client. Source of sample and sampling technique cannot be verified. Please contact your representative for information regarding the proper sampling kits for your service. **NOTE:** We recommend using MOB 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid, this testkit includes BN to determine the suitability of the oil for continued use.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number				LH0146228	LH0135086	LH0135036
Sample Date				22 Aug 2019	27 Jun 2019	08 May 2019
Machine Age	hrs			40405	39447	38560
Oil Age	hrs			0	0	0
Filter Age	hrs			0	0	0
Oil Changed				Changed	Changed	Changed
Filter Changed				Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

Light concentration of visible metal present. All other component wear rates are normal. Component wear rates appear to be normal (unconfirmed).

Iron	ppm	ASTM D5185(m)	>100	4	8	11
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>5	0	0	<1
Titanium	ppm	ASTM D5185(m)		<1	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>15	1	1	1
Lead	ppm	ASTM D5185(m)	>30	1	<1	<1
Copper	ppm	ASTM D5185(m)	>125	15	2	2
Tin	ppm	ASTM D5185(m)	>5	<1	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual	NONE	▲ VLITE	---	---
Yellow Metal	scalar	Visual	NONE	NONE	---	---

CONTAMINATION

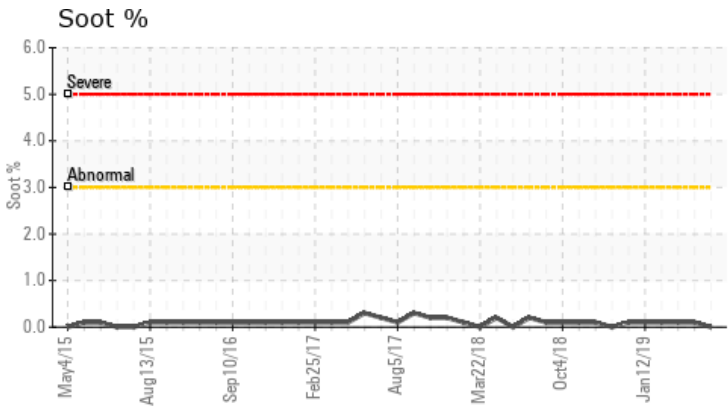
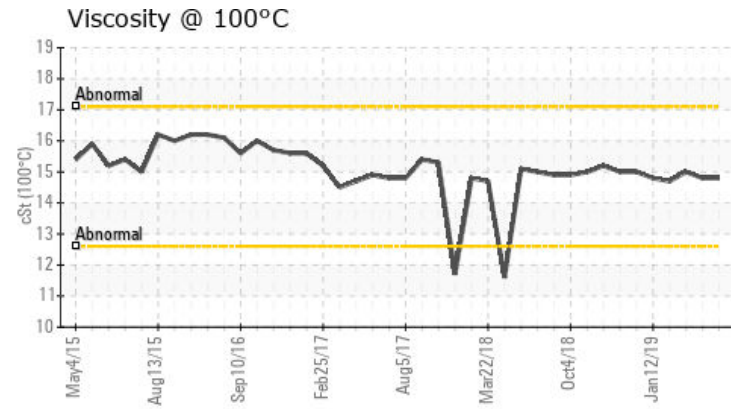
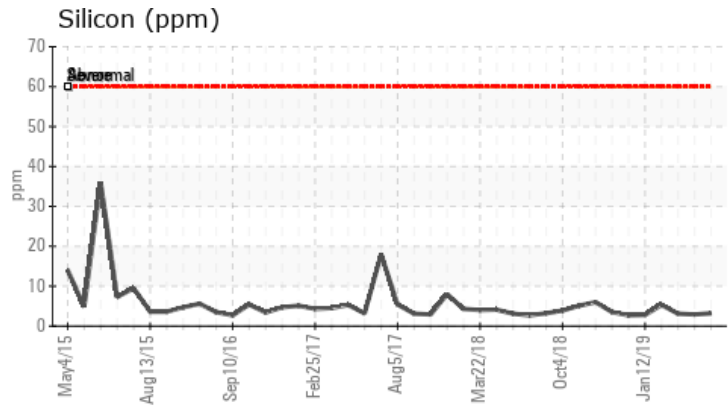
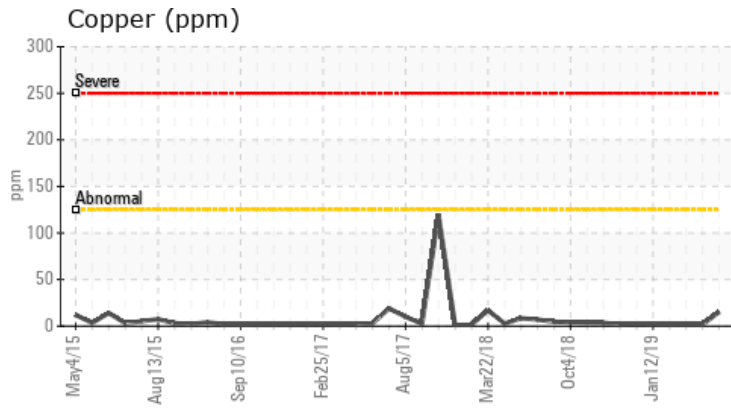
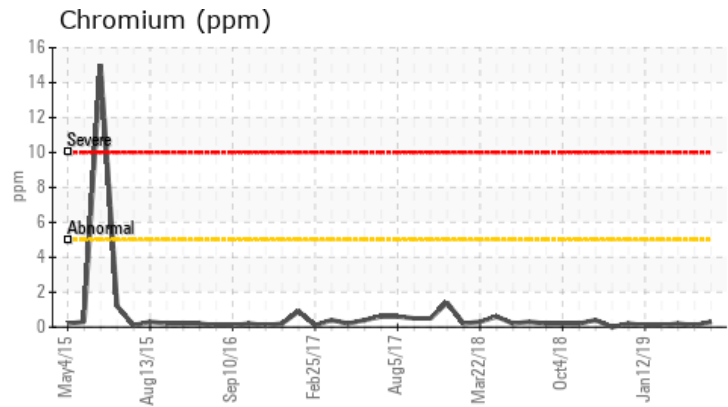
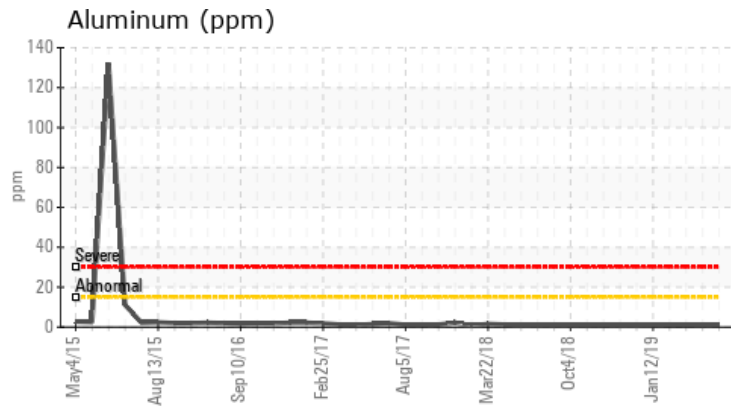
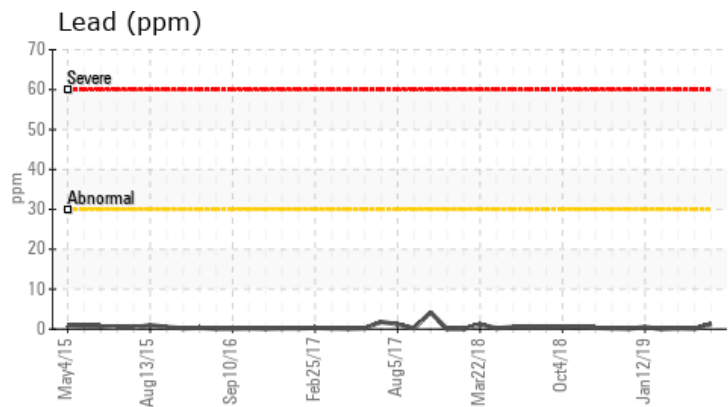
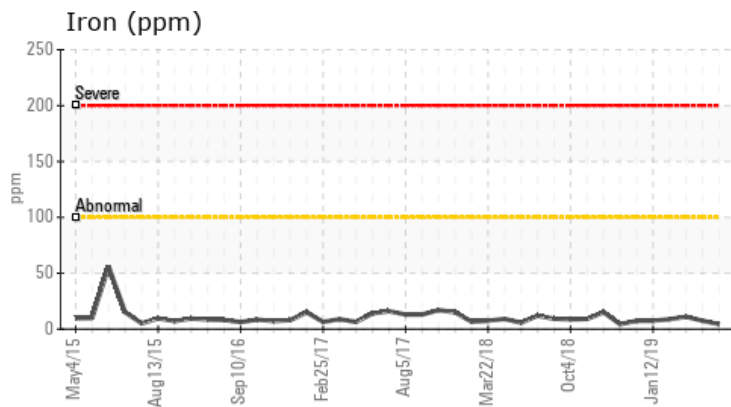
Light concentration of visible dirt/debris present in the oil.

Silicon	ppm	ASTM D5185(m)	>60	3	3	3
Potassium	ppm	ASTM D5185(m)	>20	1	<1	0
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7686	>3	0	0.1	0.1
Nitration	Abs/cm	ASTM D7624	>20	6.7	7.7	8.5
Sulfation	Abs/.1mm	ASTM D7415	>30	21.0	21.2	21.2
Silt	scalar	Visual	NONE	NONE	---	---
Debris	scalar	Visual	NONE	▲ LIGHT	---	---
Sand/Dirt	scalar	Visual	NONE	NONE	---	---
Appearance	scalar	Visual	NORML	NORML	---	---
Odor	scalar	Visual	NORML	NORML	---	---
Emulsified Water	scalar	Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

The condition of the oil is acceptable for the time in service (unconfirmed).

Sodium	ppm	ASTM D5185(m)		<1	1	1
Boron	ppm	ASTM D5185(m)		2	1	2
Barium	ppm	ASTM D5185(m)		<1	0	0
Molybdenum	ppm	ASTM D5185(m)		61	59	62
Manganese	ppm	ASTM D5185(m)		<1	<1	<1
Magnesium	ppm	ASTM D5185(m)		1013	1004	1044
Calcium	ppm	ASTM D5185(m)		1078	1080	1106
Phosphorus	ppm	ASTM D5185(m)		1073	1059	1067
Zinc	ppm	ASTM D5185(m)		1261	1268	1319
Sulfur	ppm	ASTM D5185(m)		2664	2707	2756
Oxidation	Abs/.1mm	ASTM D7414	>25	15.3	16.0	17.5
Visc @ 100°C	cSt	ASTM D7279(m)		14.8	14.8	15.0



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC1234567 **Received** : 29 Aug 2019
Lab Number : **01234567** **Diagnosed** : 30 Aug 2019
Unique Number : 12345678 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: Visual)
 To discuss this sample report, contact Customer Service at 1-800-268-2131.
 (m) Denotes a modified test method, (e) Denotes a test conducted using an external laboratory.

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