



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL



Machine Id
LIEBHERR HS8100 184996
Component
Diesel Engine
Fluid
PETRO CANADA SUPREME 5W30 (55 LTR)

RECOMMENDATION

We advise that you check for faulty combustion and a possible overheat condition. Check for low coolant level. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

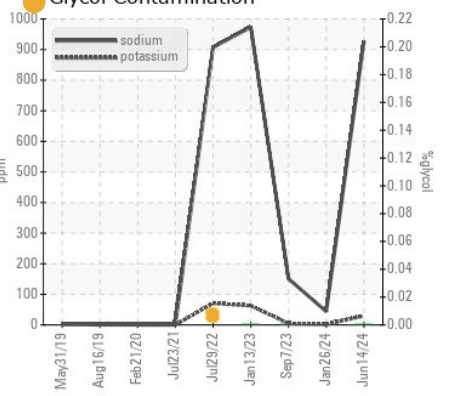
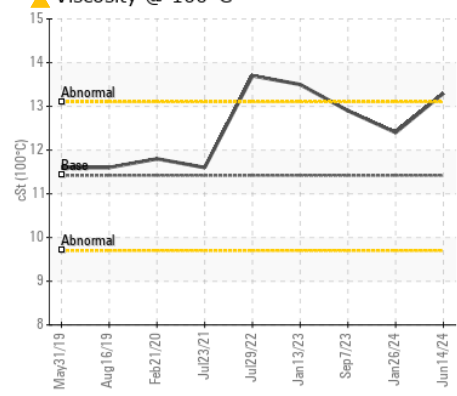
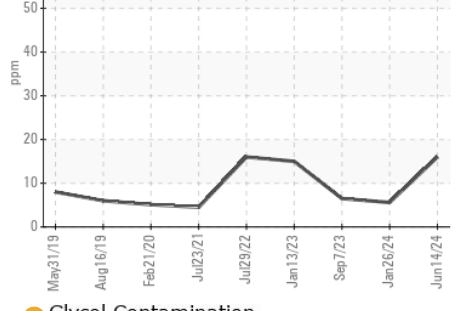
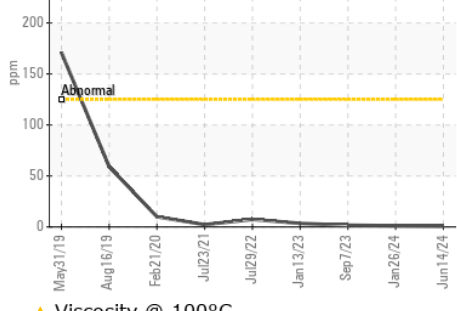
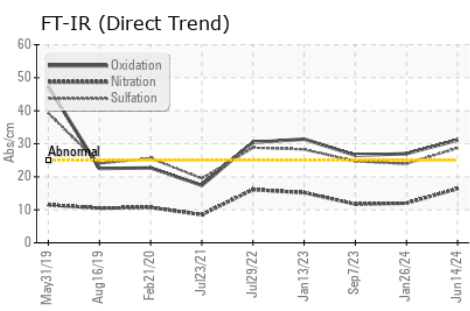
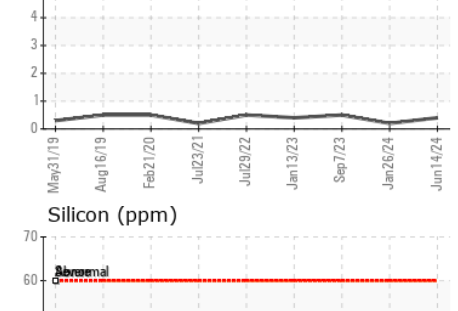
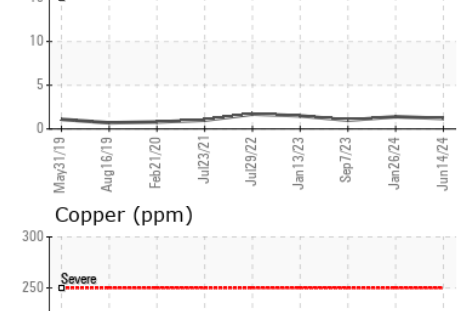
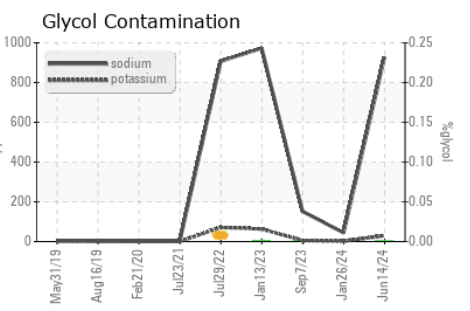
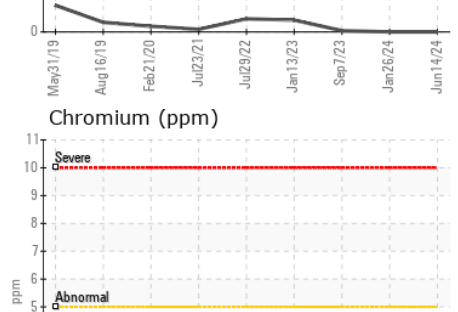
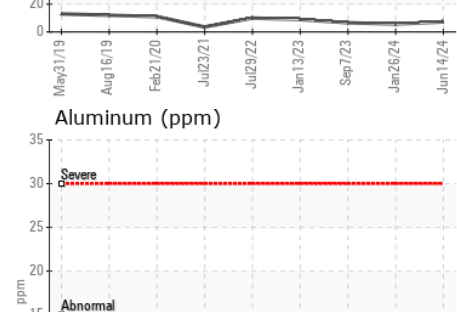
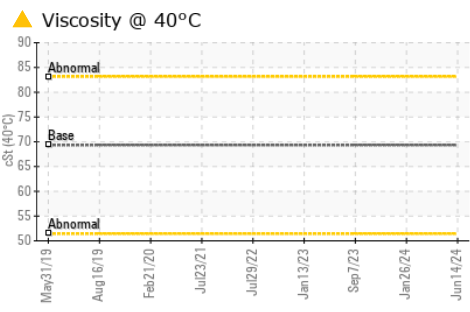
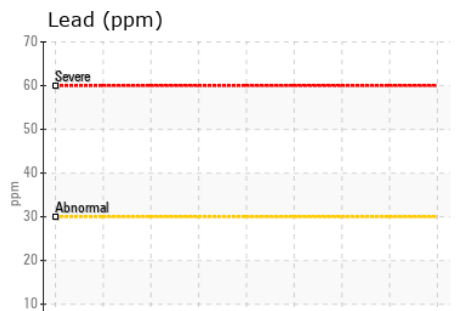
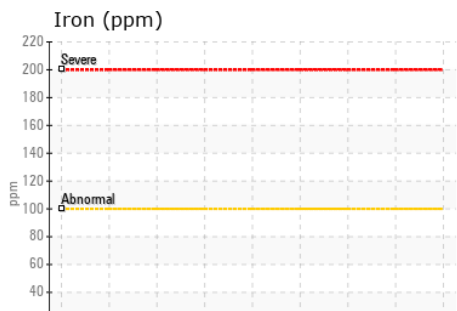
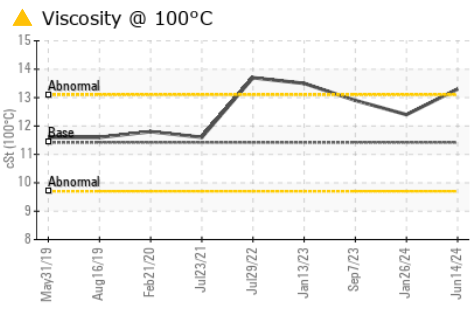
CONTAMINATION

Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. There is no indication of any contamination in the oil.

FLUID CONDITION

A small degree of oil oxidation was indicated. Viscosity of sample indicates oil is within SAE 5W40 range, advise investigate. The oil is no longer serviceable. The condition of the oil is acceptable for the time in service (see recommendation).

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0289340	LH0284978	LH0256990
Sample Date		Client Info		14 Jun 2024	26 Jan 2024	07 Sep 2023
Machine Age	hrs	Client Info		13040	12043	11071
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	NORMAL	NORMAL
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Iron	ppm	ASTM D5185(m)	>100	7	6	7
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>5	0	<1	0
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)	>3	0	0	<1
Aluminum	ppm	ASTM D5185(m)	>15	1	1	1
Lead	ppm	ASTM D5185(m)	>30	0	0	<1
Copper	ppm	ASTM D5185(m)	>125	<1	1	2
Tin	ppm	ASTM D5185(m)	>5	0	<1	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
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Silicon	ppm	ASTM D5185(m)	>60	16	6	6
Potassium	ppm	ASTM D5185(m)	>20	30	2	5
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	ASTM D7922*		0.0	NEG	0.0
Soot %	%	ASTM D7844*	>3	0	0	0
Nitration	Abs/cm	ASTM D7624*	>20	16.4	12.0	11.7
Sulfation	Abs/.1mm	ASTM D7415*	>30	28.7	23.9	24.7
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
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Sodium	ppm	ASTM D5185(m)		927	44	151
Boron	ppm	ASTM D5185(m)	186	14	27	20
Barium	ppm	ASTM D5185(m)	<1	<1	0	0
Molybdenum	ppm	ASTM D5185(m)	79	144	64	63
Manganese	ppm	ASTM D5185(m)	0	<1	0	<1
Magnesium	ppm	ASTM D5185(m)	578	1037	1144	1199
Calcium	ppm	ASTM D5185(m)	1002	862	849	879
Phosphorus	ppm	ASTM D5185(m)	745	853	1001	1108
Zinc	ppm	ASTM D5185(m)	837	1178	1206	1294
Sulfur	ppm	ASTM D5185(m)	2502	2753	2824	2739
Oxidation	Abs/.1mm	ASTM D7414*	>25	31.1	27.0	26.5
Visc @ 40°C	cSt	ASTM D7279(m)	69.33	84.6	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	11.42	13.3	12.4	12.9
Viscosity Index (VI)	Scale	ASTM D2270*	159	158	---	---



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0289340 **Received** : 18 Jun 2024
Lab Number : 02642499 **Tested** : 18 Jun 2024
Unique Number : 5800038 **Diagnosed** : 19 Jun 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: Glycol, KV40, VI, Visual)

HIGGS & HIGGS
 RR # 4
 ST THOMAS, ON
 CA N5P 3S8
 Contact: Bernie Higgs

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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