



# LIEBHERR

## OIL ANALYSIS REPORT

WEAR  
CONTAMINATION  
FLUID CONDITION

<b>SEVERE</b>
<b>ABNORMAL</b>
<b>NORMAL</b>



Machine Id  
**LIEBHERR L580 039482**

Component  
**Hydraulic System**

Fluid  
**PETRO CANADA HYDREX XV ALL SEASON HYDRAULIC OIL (250 LTR)**

### RECOMMENDATION

We recommend you service the filters on this component. Re-sampling is suggested to confirm test results prior to significant maintenance activities being performed. Please indicate that this is a resample on your Sample Information Form (SIF).

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0280952</b>	LH0280946	LH0218507
Sample Date		Client Info		<b>08 May 2024</b>	25 Apr 2024	01 Apr 2022
Machine Age	hrs	Client Info		<b>17219</b>	17190	13123
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>SEVERE</b>	SEVERE	SEVERE

### WEAR

Iron ppm levels are severe. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion.

PQ		ASTM D8184*		<b>0</b>	0	0
Iron	ppm	ASTM D5185(m)	>20	<b>▲ 69</b>	▲ 78	▲ 40
Chromium	ppm	ASTM D5185(m)	>10	<b>1</b>	2	2
Nickel	ppm	ASTM D5185(m)	>10	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>10	<b>0</b>	<1	<1
Lead	ppm	ASTM D5185(m)	>10	<b>0</b>	0	2
Copper	ppm	ASTM D5185(m)	>75	<b>&lt;1</b>	<1	3
Tin	ppm	ASTM D5185(m)	>10	<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

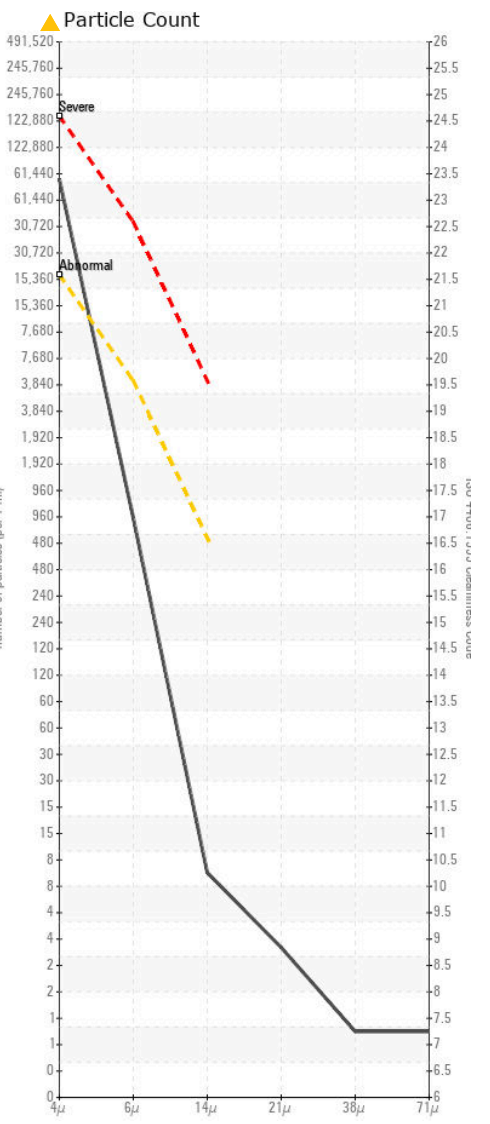
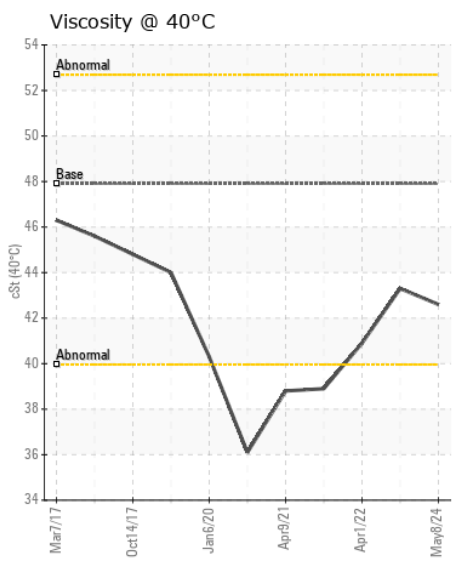
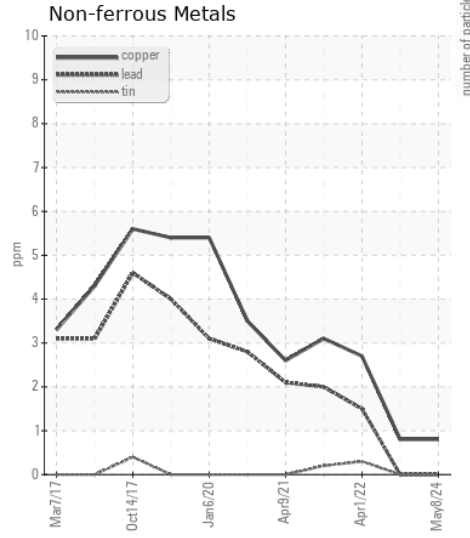
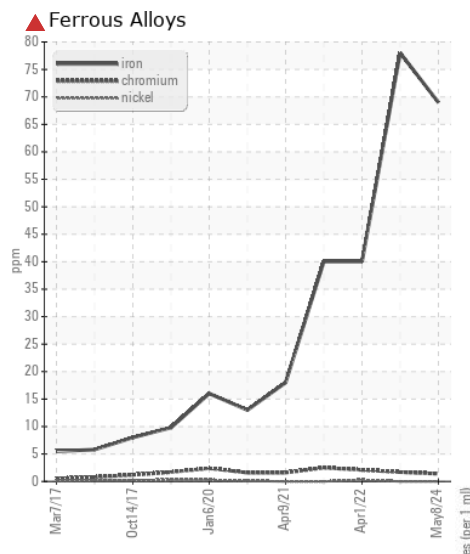
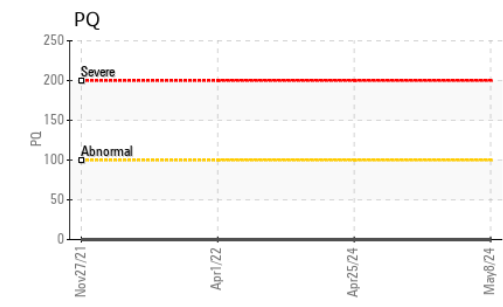
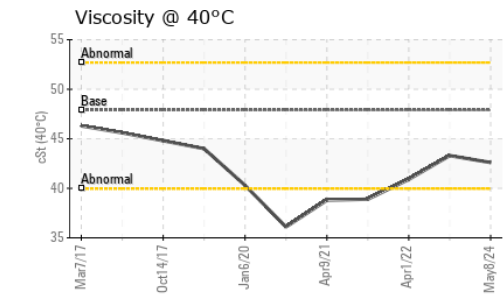
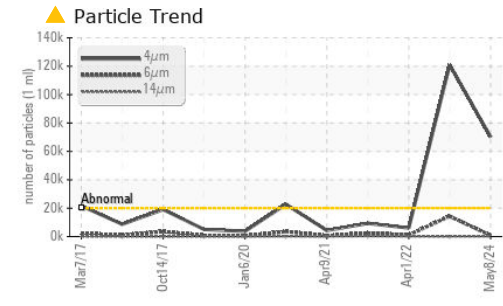
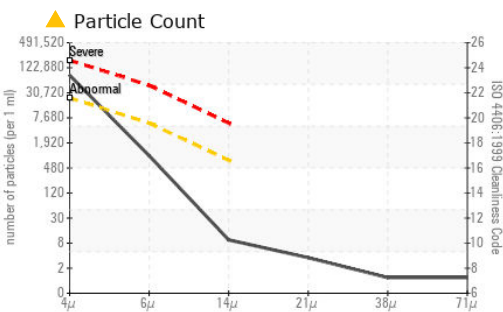
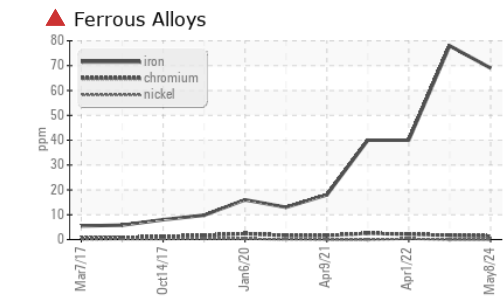
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Silicon	ppm	ASTM D5185(m)	>20	<b>2</b>	3	2
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	1
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>20000	<b>▲ 70137</b>	▲ 120884	6056
Particles >6µm		ASTM D7647	>5000	<b>831</b>	▲ 14331	1119
Particles >14µm		ASTM D7647	>640	<b>8</b>	43	120
Particles >21µm		ASTM D7647	>160	<b>3</b>	7	34
Particles >38µm		ASTM D7647	>40	<b>1</b>	1	4
Particles >71µm		ASTM D7647	>10	<b>1</b>	0	1
Oil Cleanliness		ISO 4406 (c)	>21/19/16	<b>▲ 23/17/10</b>	▲ 24/21/13	20/17/14
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Sodium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	1
Boron	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	<1	<1
Barium	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	<1	<1
Manganese	ppm	ASTM D5185(m)	1	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185(m)	0	<b>2</b>	2	2
Calcium	ppm	ASTM D5185(m)	100	<b>51</b>	57	72
Phosphorus	ppm	ASTM D5185(m)	670	<b>382</b>	399	341
Zinc	ppm	ASTM D5185(m)	850	<b>423</b>	446	401
Sulfur	ppm	ASTM D5185(m)	1600	<b>1419</b>	1441	865
Visc @ 40°C	cSt	ASTM D7279(m)	47.9	<b>42.6</b>	43.3	40.9



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : LH0280952 **Received** : 17 May 2024  
**Lab Number** : 02636377 **Tested** : 21 May 2024  
**Unique Number** : 5785539 **Diagnosed** : 21 May 2024 - Kevin Marson  
**Test Package** : MOB 1 ( Additional Tests: PQ, PrtCount )

**CLOVERDALE FUEL LTD.**  
 PO BOX 3163  
 LANGLEY, BC  
 CA V3A 4R5  
 Contact: Maintenance Manager

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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 F: