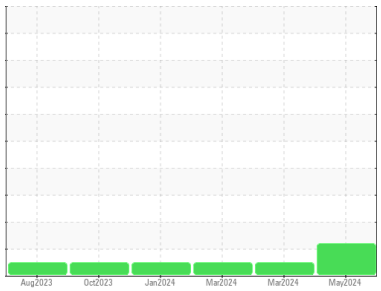
OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Machine Id
ST4704
Component
Diesel Engine
Fluid
PETRO CANADA DURON UHP 5W40 (--- LTR)

DIAGNOSIS

Recommendation
We advise that you check for faulty combustion and a possible overheat condition. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
A small degree of oil oxidation was indicated. The oil is no longer serviceable.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC0081612**	PC0082691	PC0082222
Sample Date		Client Info		**30 May 2024**	21 Mar 2024	02 Mar 2024
Machine Age	hrs	Client Info		**8455**	7371	6917
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	**26**	3	13
Chromium	ppm	ASTM D5185(m)	>20	**4**	0	2
Nickel	ppm	ASTM D5185(m)	>4	**0**	0	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)	>3	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**3**	<1	2
Lead	ppm	ASTM D5185(m)	>40	**0**	0	0
Copper	ppm	ASTM D5185(m)	>330	**<1**	<1	<1
Tin	ppm	ASTM D5185(m)	>15	**0**	0	0
Antimony	ppm	ASTM D5185(m)		**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

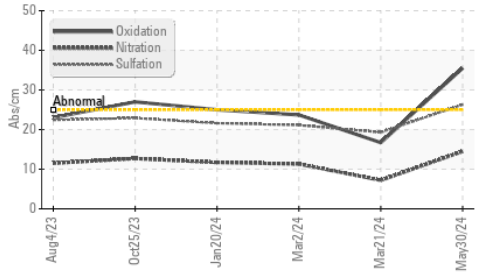
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	65	**37**	41	42
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	65	**54**	52	53
Manganese	ppm	ASTM D5185(m)	0	**<1**	0	0
Magnesium	ppm	ASTM D5185(m)	1160	**1066**	1039	1066
Calcium	ppm	ASTM D5185(m)	820	**818**	793	811
Phosphorus	ppm	ASTM D5185(m)	1160	**896**	923	948
Zinc	ppm	ASTM D5185(m)	1260	**1140**	1099	1142
Sulfur	ppm	ASTM D5185(m)	3000	**2402**	2574	2728
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**11**	1	7
Sodium	ppm	ASTM D5185(m)		**5**	3	4
Potassium	ppm	ASTM D5185(m)	>20	**<1**	0	<1

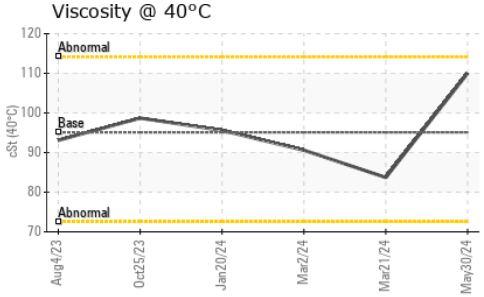
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**0.2**	0	0.1
Nitration	Abs/cm	ASTM D7624*	>20	**14.5**	7.2	11.3
Sulfation	Abs/.1mm	ASTM D7415*	>30	**26.3**	19.3	21.1

OIL ANALYSIS REPORT

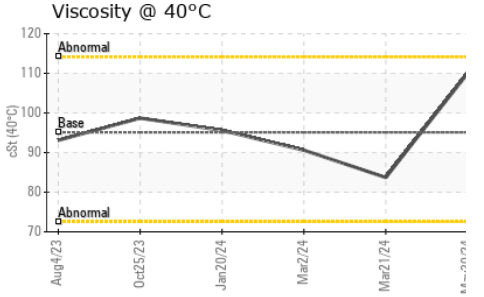
FT-IR (Direct Trend)



Viscosity @ 40°C



Viscosity @ 40°C



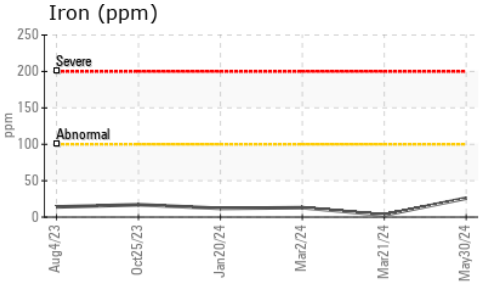
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	▲ **35.5**	16.7	23.7

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

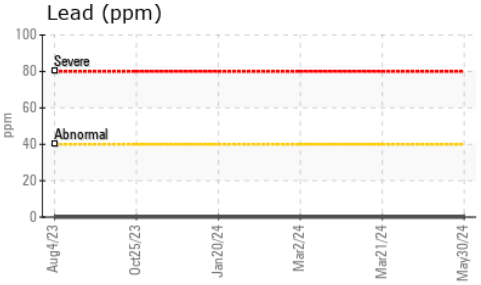
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	95.1	**110**	83.7	90.6
Visc @ 100°C	cSt	ASTM D7279(m)	14.3	**15.9**	13.8	14.6
Viscosity Index (VI)	Scale	ASTM D2270*	169	**154**	169	168

GRAPHS

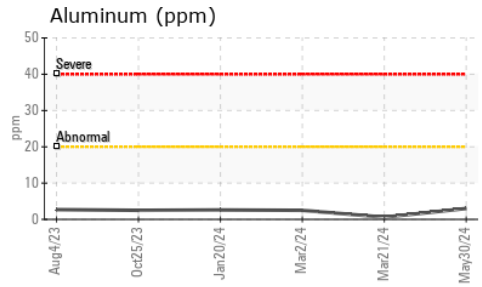
Iron (ppm)



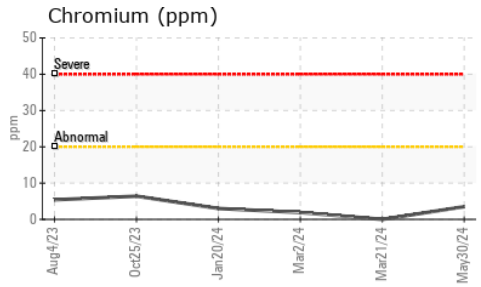
Lead (ppm)



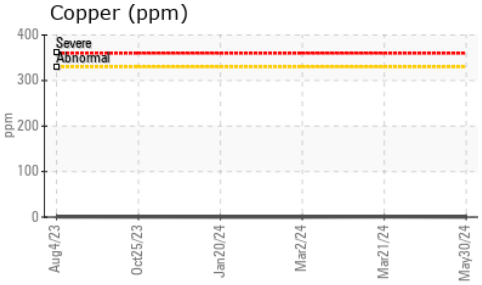
Aluminum (ppm)



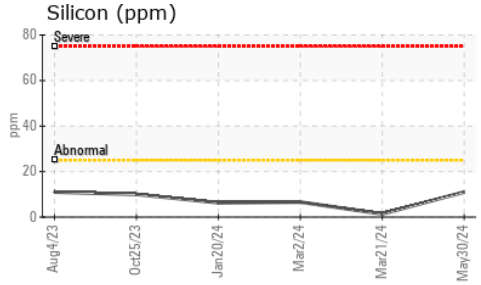
Chromium (ppm)



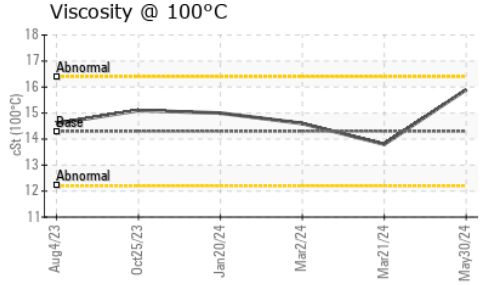
Copper (ppm)



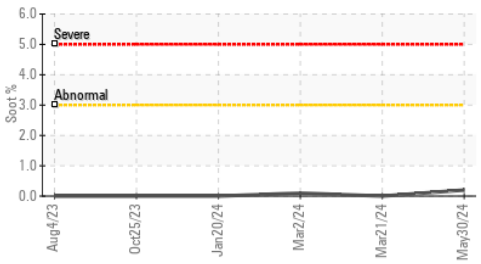
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0081612
Lab Number : 02640674
Unique Number : 5789836
Test Package : MOB 1 (Additional Tests: KV40, VI)

Received : 10 Jun 2024
Tested : 10 Jun 2024
Diagnosed : 10 Jun 2024 - Kevin Marson

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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