



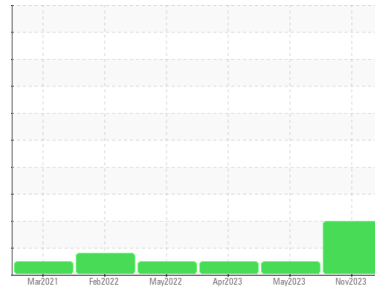
OIL ANALYSIS REPORT

Sample Rating Trend

DEGRADATION



Machine Id
831001
 Component
Natural Gas Engine
 Fluid
PETRO CANADA DURON SHP 10W30 (--- LTR)



DIAGNOSIS

Recommendation

We advise that you check for faulty combustion and a possible overheat condition. We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. The fluid was specified as PETRO CANADA DURON SHP 10W30, however, a fluid match indicates that this fluid is SAE 15W40 Diesel Engine Oil. Please confirm the oil type and grade on your next sample.

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. Viscosity of sample indicates oil is within SAE 15W40 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0101742	GFL0059981	GFL0077966
Sample Date	Client Info	29 Nov 2023	18 May 2023	01 Apr 2023
Machine Age	hrs	6880	4878	5780
Oil Age	hrs	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		ABNORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.1	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185(m) >50	23	17	21
Chromium	ppm ASTM D5185(m) >4	1	1	1
Nickel	ppm ASTM D5185(m) >2	1	<1	1
Titanium	ppm ASTM D5185(m)	0	<1	<1
Silver	ppm ASTM D5185(m) >3	0	0	0
Aluminum	ppm ASTM D5185(m) >9	18	21	12
Lead	ppm ASTM D5185(m) >30	8	2	3
Copper	ppm ASTM D5185(m) >35	1	1	1
Tin	ppm ASTM D5185(m) >4	<1	<1	<1
Antimony	ppm ASTM D5185(m)	0	0	<1
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) 2	10	10	9
Barium	ppm ASTM D5185(m) 0	<1	0	0
Molybdenum	ppm ASTM D5185(m) 50	64	59	61
Manganese	ppm ASTM D5185(m) 0	<1	1	1
Magnesium	ppm ASTM D5185(m) 950	701	644	652
Calcium	ppm ASTM D5185(m) 1050	1897	1952	1930
Phosphorus	ppm ASTM D5185(m) 995	841	862	864
Zinc	ppm ASTM D5185(m) 1180	1081	1050	1034
Sulfur	ppm ASTM D5185(m) 2600	2154	2169	2218
Lithium	ppm ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >+100	5	5	4
Sodium	ppm ASTM D5185(m)	11	3	9
Potassium	ppm ASTM D5185(m) >20	33	30	23
Glycol	% ASTM D7922*	0.0	---	---

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% ASTM D7844*	0	0	0
Nitration	Abs/cm ASTM D7624*	13.7	12.5	12.5
Sulfation	Abs/.1mm ASTM D7415*	29.6	27.1	26.7

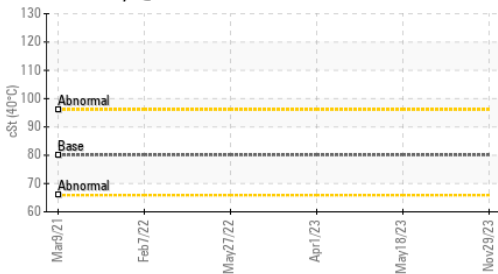
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs.1mm ASTM D7414*	>25 ▲ 26.0	22.5	22.5



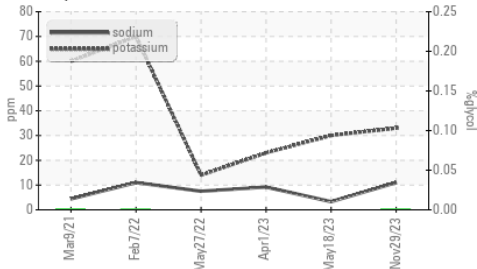
OIL ANALYSIS REPORT

▲ Viscosity @ 40°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	---	---
Precipitate	scalar	Visual*	NONE	---	---
Silt	scalar	Visual*	NONE	---	---
Debris	scalar	Visual*	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	---	---
Appearance	scalar	Visual*	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG
Free Water	scalar	Visual*	---	NEG	NEG

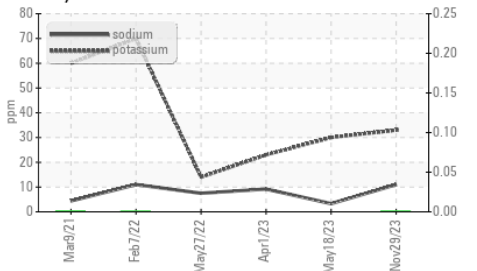
● Glycol Contamination



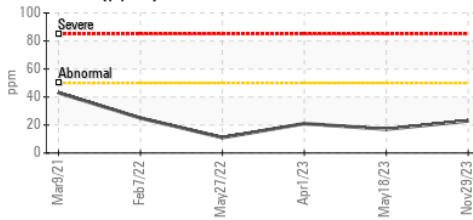
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	80.1 ▲ 126	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	12.00 ▲ 15.6	15.6	15.4
Viscosity Index (VI)	Scale	ASTM D2270*	144	---	---

GRAPHS

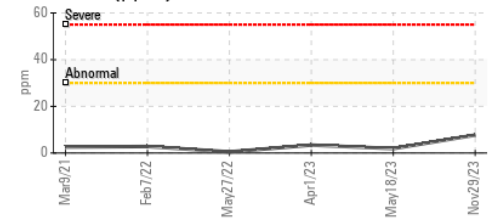
● Glycol Contamination



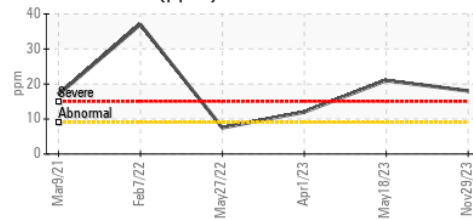
● Iron (ppm)



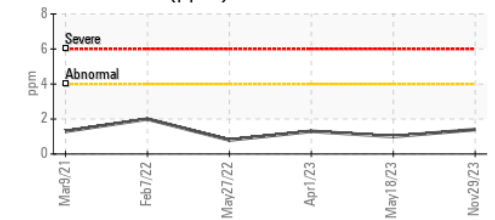
● Lead (ppm)



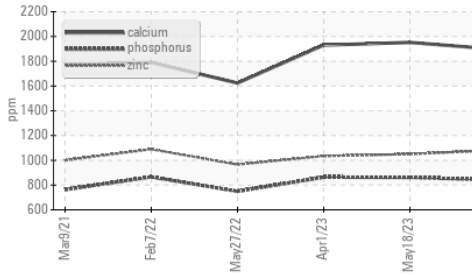
● Aluminum (ppm)



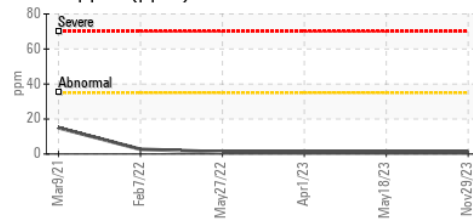
● Chromium (ppm)



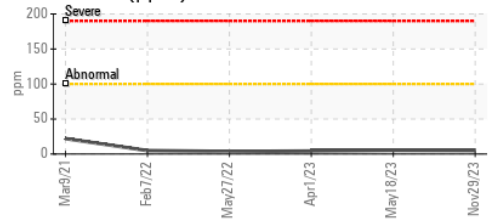
● Additives



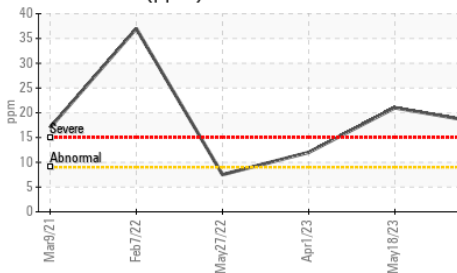
● Copper (ppm)



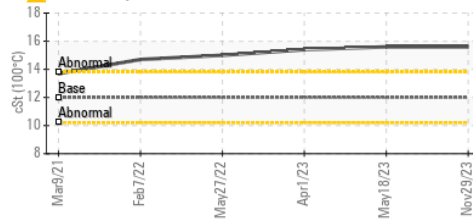
● Silicon (ppm)



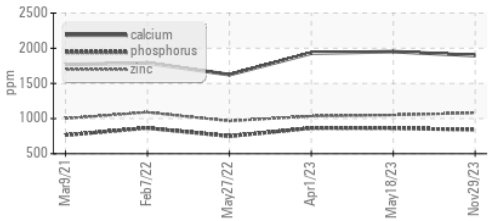
● Aluminum (ppm)



▲ Viscosity @ 100°C



● Additives



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 554 - Edmonton SW
Sample No. : GFL0101742
Lab Number : 02602125
Unique Number : 5695210
Test Package : MOB 1 (Additional Tests: Glycol, KV40, VI, Visual)

Received : 11 Dec 2023
Diagnosed : 12 Dec 2023
Diagnostician : 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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