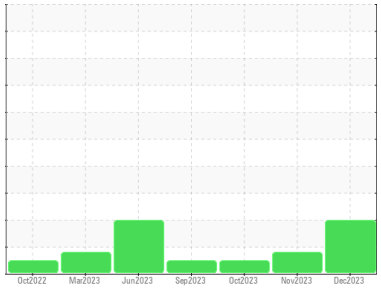
OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Machine Id
423031-402164
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Wear

All component wear rates are normal.

Contamination

There is an abnormal amount of solids and carbon present in the oil.

Fluid Condition

The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0077268**	GFL0093556	GFL0077239
Sample Date		Client Info		**19 Dec 2023**	22 Nov 2023	07 Oct 2023
Machine Age	hrs	Client Info		**44821**	44646	44329
Oil Age	hrs	Client Info		**663**	458	141
Oil Changed		Client Info		**Changed**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
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 D5185m	>120	**49**	32	17
Chromium	ppm	ASTM D5185m	>20	**2**	1	<1
Nickel	ppm	ASTM D5185m	>5	**0**	0	0
Titanium	ppm	ASTM D5185m	>2	**3**	<1	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**3**	2	0
Lead	ppm	ASTM D5185m	>40	**4**	2	1
Copper	ppm	ASTM D5185m	>330	**2**	2	<1
Tin	ppm	ASTM D5185m	>15	**<1**	0	<1
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**4**	0	<1
Barium	ppm	ASTM D5185m	0	**0**	0	<1
Molybdenum	ppm	ASTM D5185m	60	**56**	58	62
Manganese	ppm	ASTM D5185m	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**868**	985	885
Calcium	ppm	ASTM D5185m	1070	**1003**	1054	1026
Phosphorus	ppm	ASTM D5185m	1150	**904**	925	1001
Zinc	ppm	ASTM D5185m	1270	**1100**	1286	1207
Sulfur	ppm	ASTM D5185m	2060	**2640**	2980	3279

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**11**	8	9
Sodium	ppm	ASTM D5185m		**2**	<1	0
Potassium	ppm	ASTM D5185m	>20	**2**	1	2
Fuel	%	ASTM D3524	>3.0	**<1.0**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	▲ **5.2**	▲ 4	1.5
Nitration	Abs/cm	*ASTM D7624	>20	**13.0**	10.1	5.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**29.6**	26.0	18.9

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.1**	15.7	12.2
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	6.2	8.1

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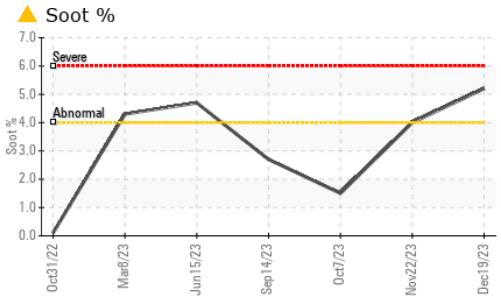
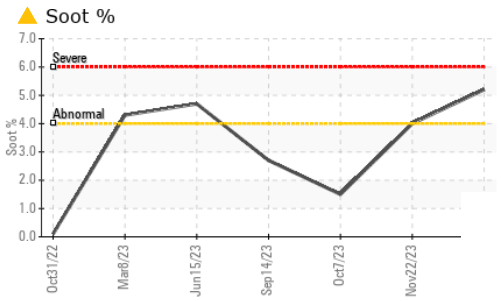
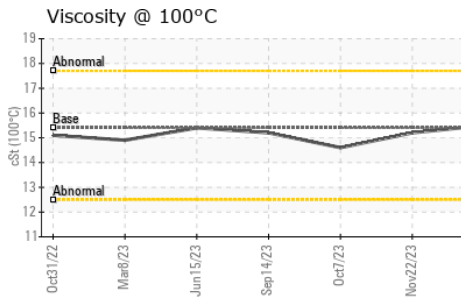


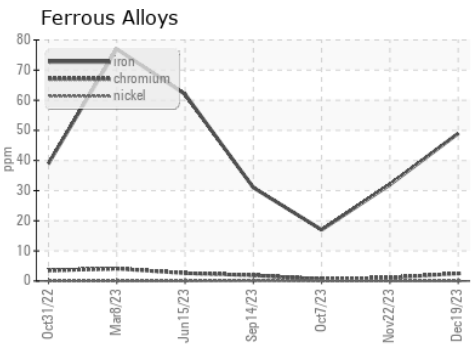


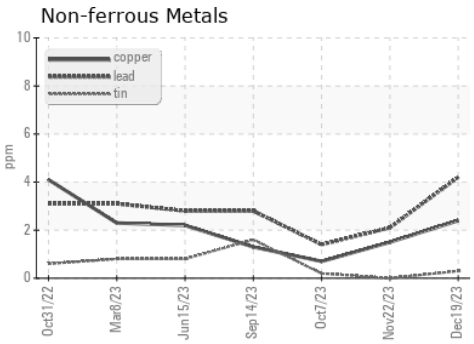


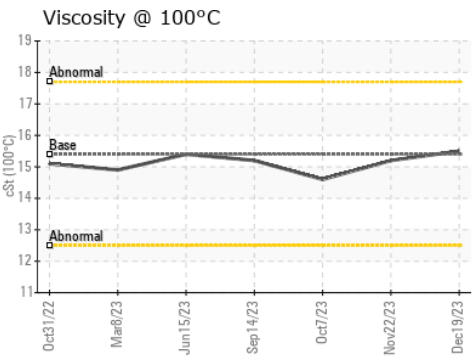
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

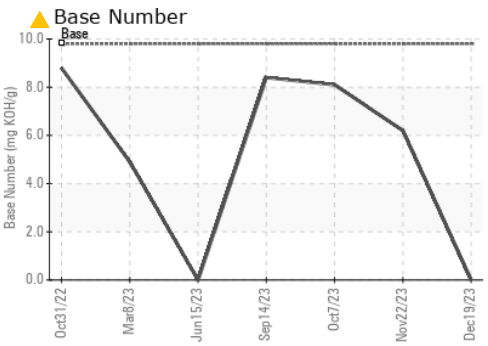
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**15.5**	15.2	14.6

GRAPHS









Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0077268 **Recieved** : 20 Dec 2023
Lab Number : 06040320 **Diagnosed** : 22 Dec 2023
Unique Number : 10795549 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: FT-IR(Diff), FuelDilution)

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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