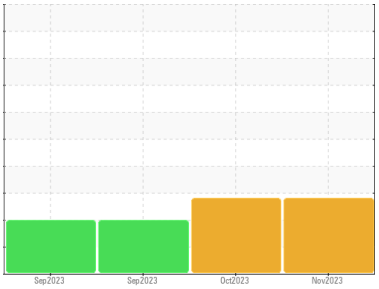
PROBLEM SUMMARY

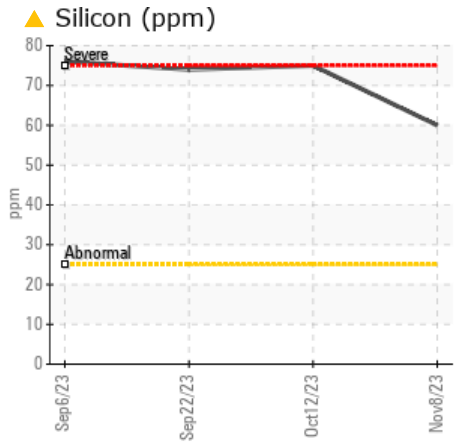
Area
166
Machine Id
414062
Component
1 Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

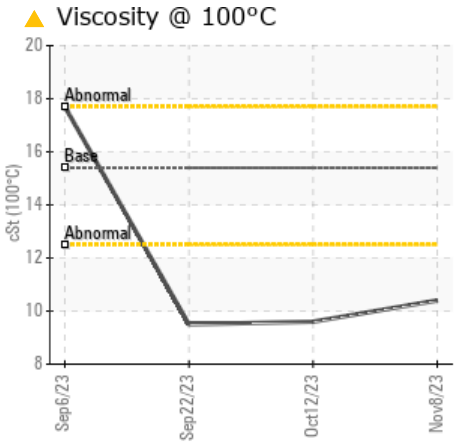
Sample Rating Trend

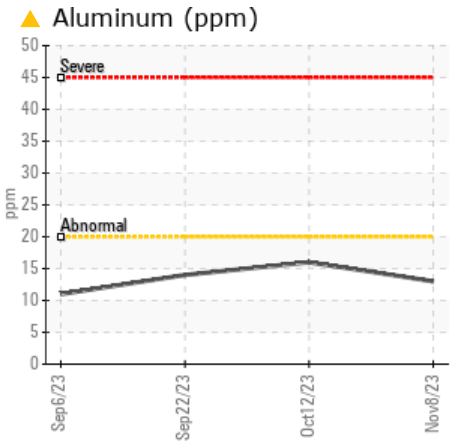


DIRT

COMPONENT CONDITION SUMMARY







RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL
Aluminum	ppm	ASTM D5185m	>20	▲ **13**	▲ 16	14
Silicon	ppm	ASTM D5185m	>25	▲ **60**	▲ 75	▲ 74
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **10.4**	▲ 9.6	▲ 9.5

Customer Id: GFL166
Sample No.: GFL0100234
Lab Number: 06005194
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldridge +1
don.b505@comcast.net

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Check Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.

HISTORICAL DIAGNOSIS

12 Oct 2023 Diag: Don Baldridge

DIRT

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor.All component wear rates are normal. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

view report

22 Sep 2023 Diag: Jonathan Hester

DIRT

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of seal material. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

view report

06 Sep 2023 Diag: Jonathan Hester

DIRT

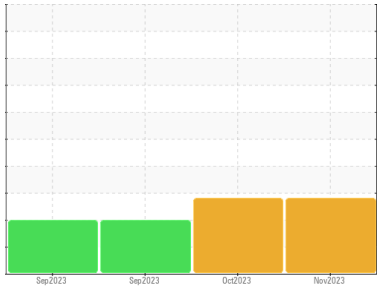
No corrective action is recommended at this time. Resample at the next service interval to monitor.Metal levels are typical for a new component breaking in. Elemental level of silicon (Si) above normal indicating ingress of seal material. The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

OIL ANALYSIS REPORT

Area
166
Machine Id
414062
Component
1 Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Rating Trend



DIRT

DIAGNOSIS

Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0100234**	GFL0081214	GFL0087876
Sample Date		Client Info		**08 Nov 2023**	12 Oct 2023	22 Sep 2023
Machine Age	hrs	Client Info		**10133**	7810	5541
Oil Age	hrs	Client Info		**600**	600	600
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	**28**	30	25
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>5	**1**	<1	<1
Titanium	ppm	ASTM D5185m	>2	**<1**	<1	0
Silver	ppm	ASTM D5185m	>2	**2**	<1	<1
Aluminum	ppm	ASTM D5185m	>20	▲ **13**	▲ 16	14
Lead	ppm	ASTM D5185m	>40	**<1**	<1	0
Copper	ppm	ASTM D5185m	>330	**186**	140	68
Tin	ppm	ASTM D5185m	>15	**3**	3	3
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**199**	285	350
Barium	ppm	ASTM D5185m	0	**1**	0	0
Molybdenum	ppm	ASTM D5185m	60	**111**	127	130
Manganese	ppm	ASTM D5185m	0	**4**	4	4
Magnesium	ppm	ASTM D5185m	1010	**731**	696	675
Calcium	ppm	ASTM D5185m	1070	**1322**	1409	1411
Phosphorus	ppm	ASTM D5185m	1150	**747**	683	670
Zinc	ppm	ASTM D5185m	1270	**853**	818	831
Sulfur	ppm	ASTM D5185m	2060	**2376**	2613	2744

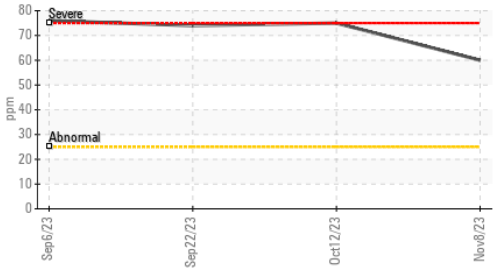
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **60**	▲ 75	▲ 74
Sodium	ppm	ASTM D5185m		**<1**	4	3
Potassium	ppm	ASTM D5185m	>20	**38**	42	34
Fuel	%	ASTM D3524	>3.0	**<1.0**	<1.0	0.2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	**0.2**	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	**8.2**	8.0	7.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**24.1**	24.6	25.8

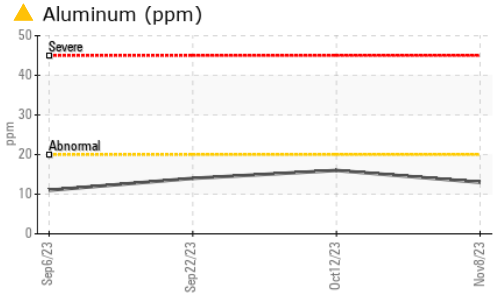
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**20.9**	21.5	21.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**8.5**	8.3	9.4

OIL ANALYSIS REPORT

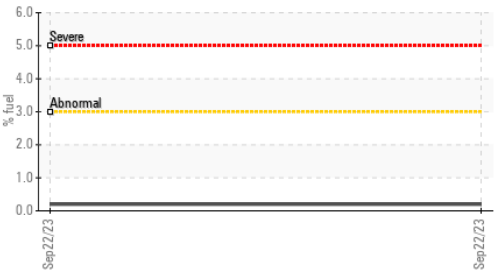
Silicon (ppm)



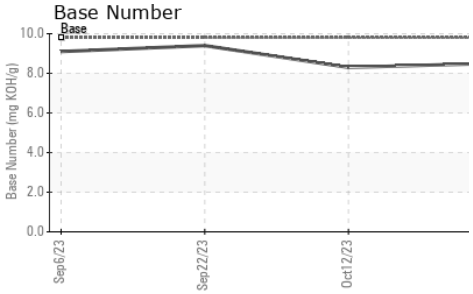
Aluminum (ppm)



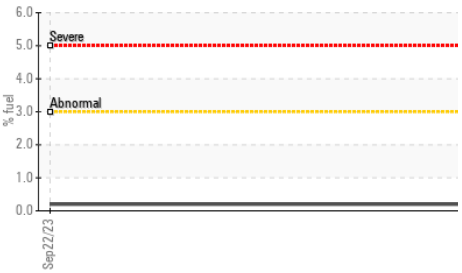
Fuel Dilution



Base Number



Fuel Dilution

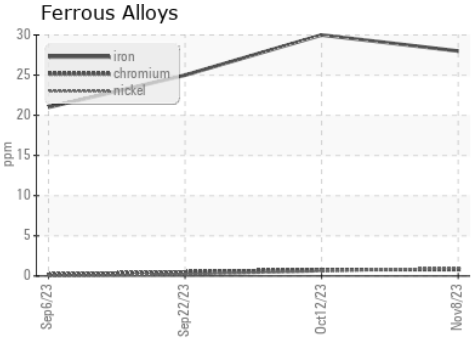


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

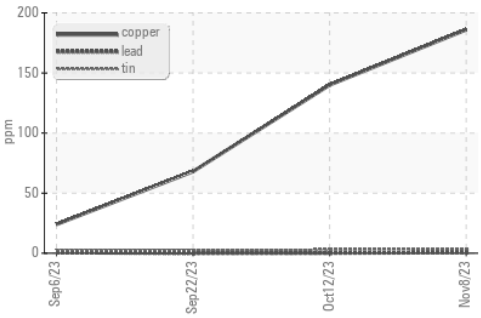
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **10.4**	▲ 9.6	▲ 9.5

GRAPHS

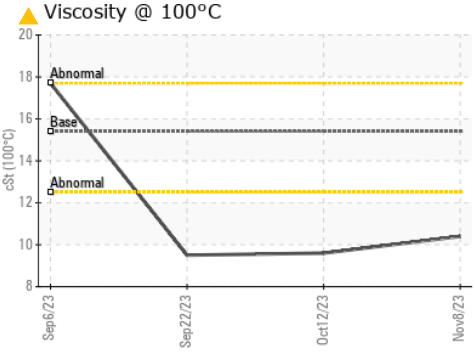
Ferrous Alloys



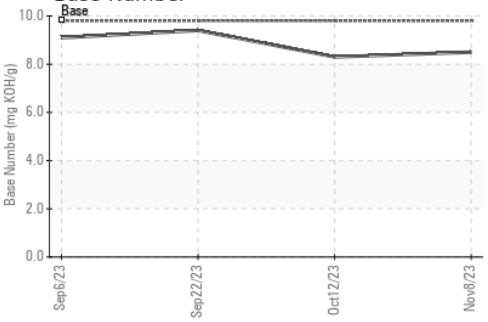
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0100234 **Received** : 13 Nov 2023
Lab Number : 06005194 **Diagnosed** : 15 Nov 2023
Unique Number : 10738956 **Diagnostician** : Don Baldridge
Test Package : FLEET (Additional Tests: 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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