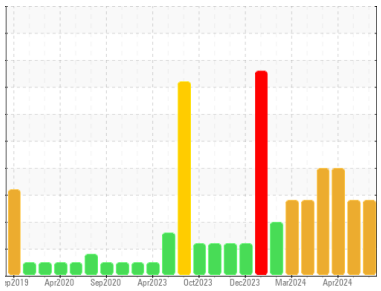
PROBLEM SUMMARY

Area
(83J3TW)
Machine Id
229035-632119
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

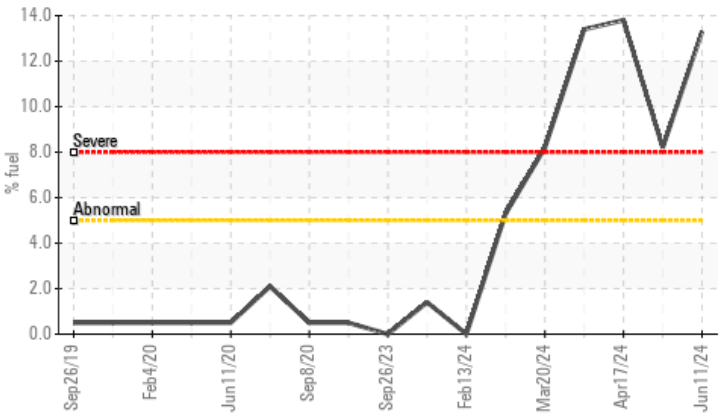
Sample Rating Trend



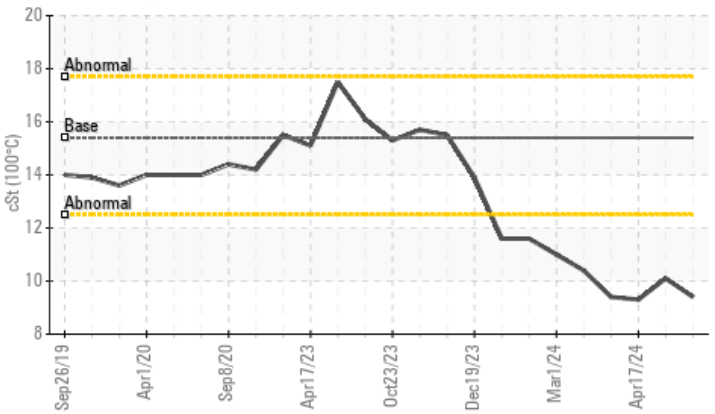
FUEL

COMPONENT CONDITION SUMMARY

Fuel Dilution



Viscosity @ 100°C



RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	SEVERE
Fuel	%	ASTM D3524	>5	▲ **13.3**	▲ 8.2	▲ 13.8
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **9.4**	▲ 10.1	▲ 9.3

Customer Id: GFL837
Sample No.: GFL0122890
Lab Number: 06212972
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

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

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS

FUEL

17 May 2024 Diag: Wes Davis

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

view report

FUEL

17 Apr 2024 Diag: Don Baldridge

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a high amount of fuel present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

view report

FUEL

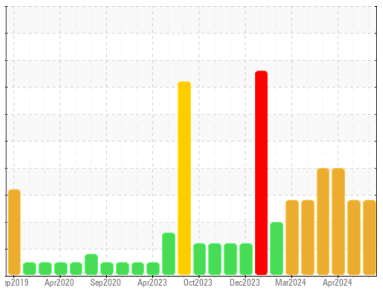
16 Apr 2024 Diag: Jonathan Hester

We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a high amount of fuel present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Area
(83J3TW)
Machine Id
229035-632119
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation
We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

▲ Contamination
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

▲ Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0122890**	GFL0122814	GFL0118807
Sample Date		Client Info		**11 Jun 2024**	17 May 2024	17 Apr 2024
Machine Age	hrs	Client Info		**11107**	10966	10802
Oil Age	hrs	Client Info		**11693**	164	10401
Oil Changed		Client Info		**Not Changd**	N/A	Changed
Sample Status				**SEVERE**	SEVERE	SEVERE

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	>100	**26**	15	55
Chromium	ppm	ASTM D5185m	>20	**1**	<1	2
Nickel	ppm	ASTM D5185m	>4	**<1**	0	1
Titanium	ppm	ASTM D5185m		**<1**	0	1
Silver	ppm	ASTM D5185m	>3	**<1**	0	<1
Aluminum	ppm	ASTM D5185m	>20	**3**	3	5
Lead	ppm	ASTM D5185m	>40	**<1**	0	<1
Copper	ppm	ASTM D5185m	>330	**15**	14	79
Tin	ppm	ASTM D5185m	>15	**<1**	<1	2
Vanadium	ppm	ASTM D5185m		**<1**	0	<1
Cadmium	ppm	ASTM D5185m		**<1**	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**27**	42	8
Barium	ppm	ASTM D5185m	0	**1**	0	13
Molybdenum	ppm	ASTM D5185m	60	**48**	50	46
Manganese	ppm	ASTM D5185m	0	**1**	1	5
Magnesium	ppm	ASTM D5185m	1010	**916**	971	645
Calcium	ppm	ASTM D5185m	1070	**749**	789	1162
Phosphorus	ppm	ASTM D5185m	1150	**957**	963	900
Zinc	ppm	ASTM D5185m	1270	**1076**	1141	1050
Sulfur	ppm	ASTM D5185m	2060	**2938**	3438	2681

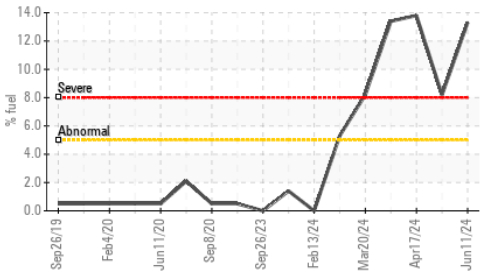
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**8**	8	▲ 36
Sodium	ppm	ASTM D5185m		**4**	4	2
Potassium	ppm	ASTM D5185m	>20	**3**	3	8
Fuel	%	ASTM D3524	>5	▲ **13.3**	▲ 8.2	▲ 13.8

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.5**	0.3	0.7
Nitration	Abs/cm	*ASTM D7624	>20	**9.9**	8.5	10.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.9**	19.9	21.9

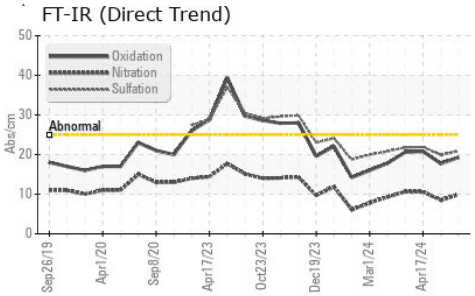
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**19.3**	17.7	20.8
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**7.5**	8.5	7.0

OIL ANALYSIS REPORT

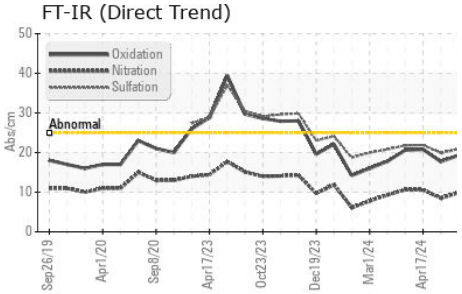
Fuel Dilution



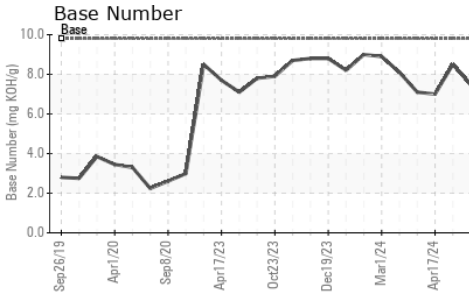
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Base Number

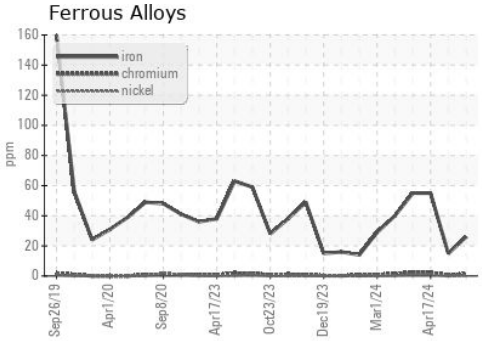


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

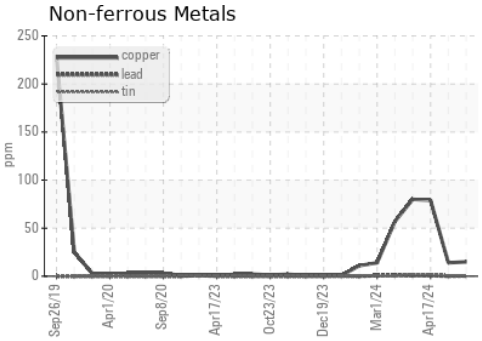
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **9.4**	▲ 10.1	▲ 9.3

GRAPHS

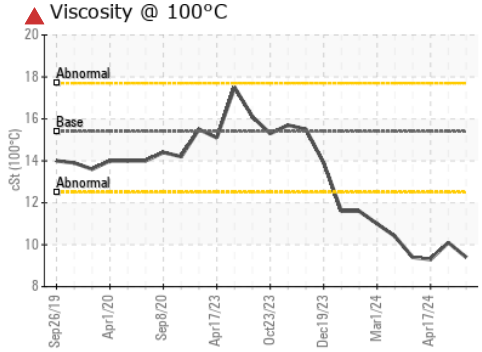
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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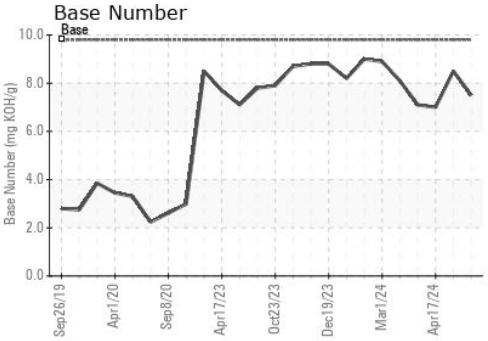

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0122890
Lab Number : 06212972
Unique Number : 11085836
Test Package : FLEET (Additional Tests: PercentFuel)

Received : 17 Jun 2024
Tested : 20 Jun 2024
Diagnosed : 20 Jun 2024 - Wes Davis

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)

GFL Environmental - 837 - Harrison TS
22820 S State Route 291
Harrisonville, MO
US 64701
Contact: SARA PATRICK
spatrick@gflenv.com
T:
F:

Report Id: GFL837 [WUSCAR] 06212972 (Generated: 06/21/2024 10:57:25) Rev: 1

Submitted By: JEREMY BROWN