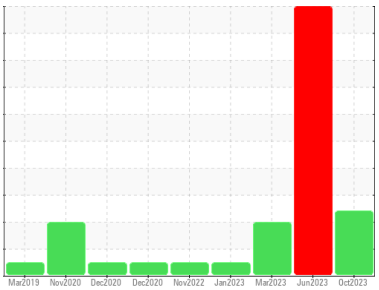
PROBLEM SUMMARY

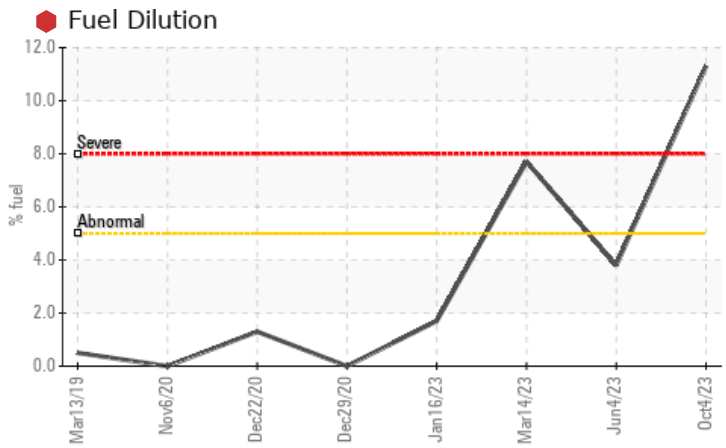
Sample Rating Trend

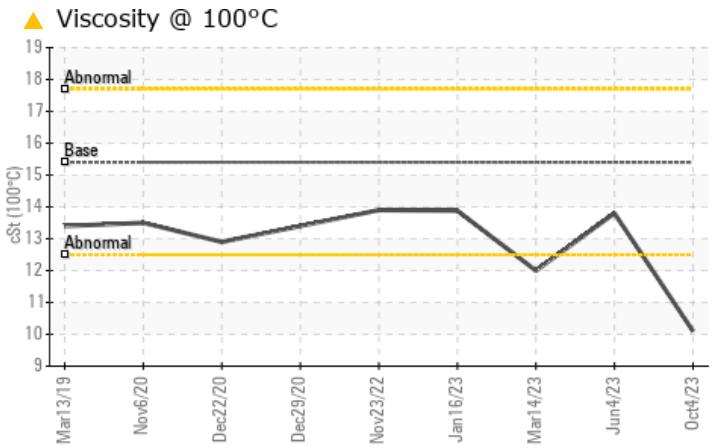


FUEL

Machine Id
729050-361419
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY





RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	ABNORMAL
Fuel	%	ASTM D3524	>5	**11.3**	3.8	7.7
Visc @ 100°C	cSt	ASTM D445	15.4	**10.1**	13.8	12.0

Customer Id: GFL821
Sample No.: GFL0090156
Lab Number: 05972498
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

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 and perform a filter service on this component if not already done.
Change Filter	---	---	?	We recommend that you drain the oil and perform a filter service on this component if not already 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

04 Jun 2023 Diag: Doug Bogart

GLYCOL

We advise that you check for the source of the coolant leak. 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. NOTE: High contamination level in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.All component wear rates are normal. Sodium and/or potassium levels are high. Test for glycol is positive. Light fuel dilution occurring. The oil is no longer serviceable due to the presence of contaminants.

view report

14 Mar 2023 Diag: Angela Borella

WEAR

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.An increase in the iron level is noted. All other component wear rates are normal. Tests confirm the presence of fuel 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

16 Jan 2023 Diag: Wes Davis

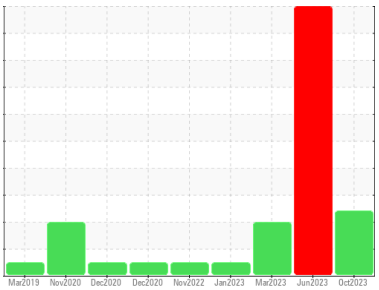
NORMAL

Resample at the next service interval to monitor. No other corrective action is recommended at this time. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. Light fuel dilution occurring. No other contaminants were detected in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
729050-361419
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 and perform a filter service on this component if not already 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.

Fluid Condition
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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0090156**	GFL0076796	GFL0051318
Sample Date		Client Info		**04 Oct 2023**	04 Jun 2023	14 Mar 2023
Machine Age	hrs	Client Info		**20847**	20736	0
Oil Age	hrs	Client Info		**150**	200	20450
Oil Changed		Client Info		**Not Changd**	Not Changd	Changed
Sample Status				**SEVERE**	SEVERE	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**27**	47	▲ 55
Chromium	ppm	ASTM D5185m	>20	**<1**	3	2
Nickel	ppm	ASTM D5185m	>4	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	<1	0
Aluminum	ppm	ASTM D5185m	>20	**8**	<1	2
Lead	ppm	ASTM D5185m	>40	**<1**	10	3
Copper	ppm	ASTM D5185m	>330	**3**	6	1
Tin	ppm	ASTM D5185m	>15	**0**	1	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**5**	21	1
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**51**	140	51
Manganese	ppm	ASTM D5185m	0	**<1**	<1	1
Magnesium	ppm	ASTM D5185m	1010	**780**	891	838
Calcium	ppm	ASTM D5185m	1070	**864**	1011	928
Phosphorus	ppm	ASTM D5185m	1150	**853**	1004	861
Zinc	ppm	ASTM D5185m	1270	**1054**	1325	1105
Sulfur	ppm	ASTM D5185m	2060	**2932**	3914	2864

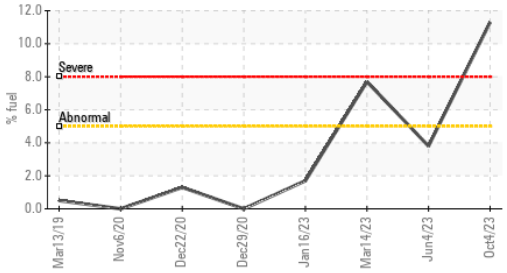
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**8**	9	6
Sodium	ppm	ASTM D5185m		**39**	▲ 952	8
Potassium	ppm	ASTM D5185m	>20	**7**	▲ 186	1
Fuel	%	ASTM D3524	>5	● **11.3**	▲ 3.8	▲ 7.7
Glycol	%	*ASTM D2982		**NEG**	● 0.10	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.9**	0.5	1.1
Nitration	Abs/cm	*ASTM D7624	>20	**7.7**	13.3	10.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.1**	16.3	20.9

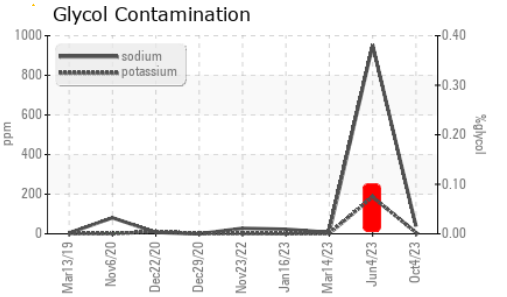
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**15.6**	18.0	16.8
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**7.8**	▲ 19.7	8.7

OIL ANALYSIS REPORT

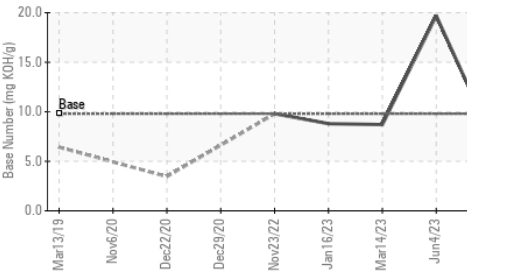
Fuel Dilution



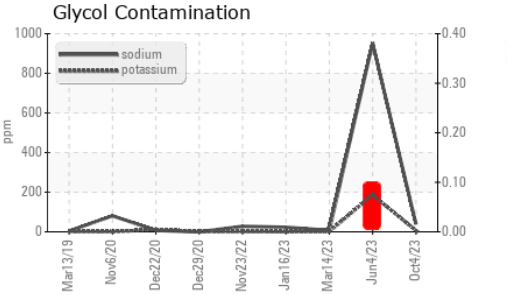
Glycol Contamination



Base Number



Glycol Contamination

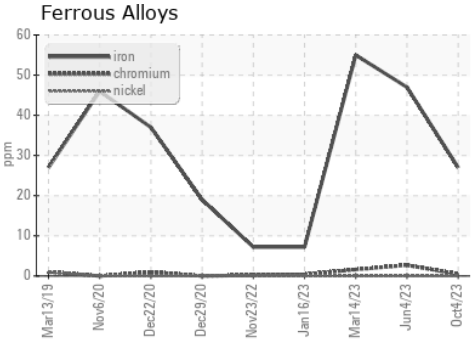


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

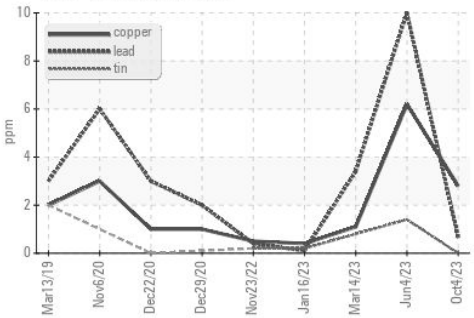
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **10.1**	13.8	▲ 12.0

GRAPHS

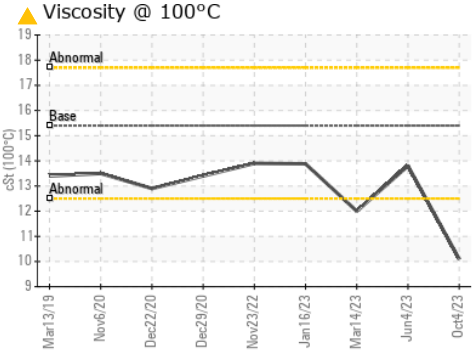
Ferrous Alloys



Non-ferrous Metals



▲ Viscosity @ 100°C



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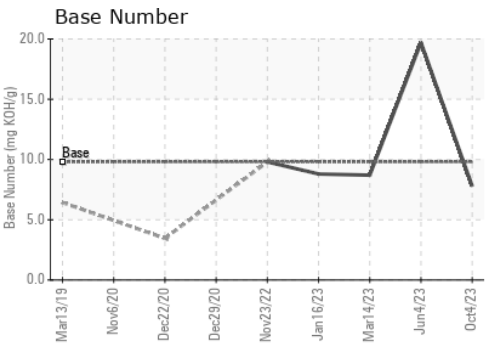

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0090156 **Received** : 09 Oct 2023
Lab Number : 05972498 **Diagnosed** : 11 Oct 2023
Unique Number : 10684448 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

Certificate L2367

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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