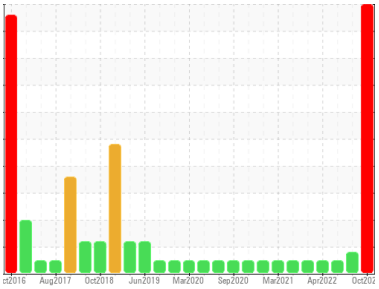
PROBLEM SUMMARY

Sample Rating Trend

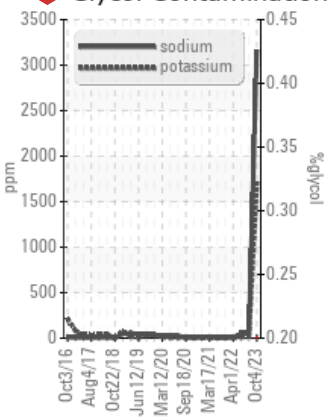


GLYCOL

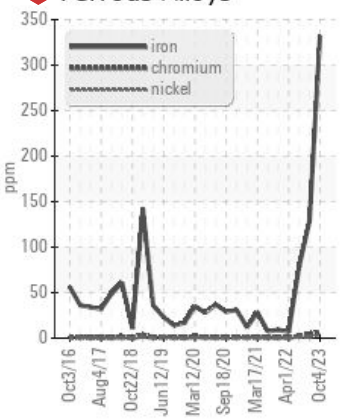
Machine Id
10649
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (10 GAL)

COMPONENT CONDITION SUMMARY

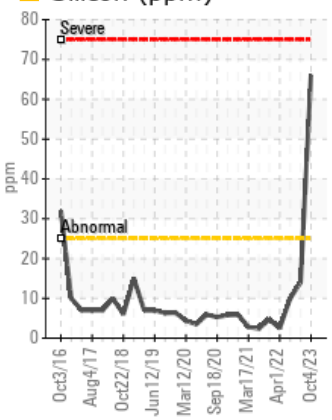
Glycol Contamination



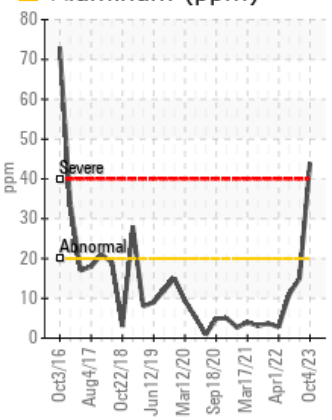
Ferrous Alloys



Silicon (ppm)



Aluminum (ppm)



RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	NORMAL
Iron	ppm	ASTM D5185m	>100	**332**	129	79
Aluminum	ppm	ASTM D5185m	>20	**44**	15	11
Silicon	ppm	ASTM D5185m	>25	**66**	14	10
Sodium	ppm	ASTM D5185m		**3162**	60	51
Potassium	ppm	ASTM D5185m	>20	**1685**	14	12
Glycol	%	*ASTM D2982		**0.20**	NEG	NEG

Customer Id: GFL005
Sample No.: GFL0092695
Lab Number: 05981125
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	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

17 May 2023 Diag: Sean Felton

WEAR

No corrective action is recommended at this time. Resample at the next service interval to monitor.Cylinder, crank, or cam shaft wear is indicated. There is no indication of any contamination 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

31 Jan 2023 Diag: Wes Davis

NORMAL

Resample at the next service interval to monitor.Metal levels are typical for a new component breaking in. There is no indication of any contamination 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

01 Apr 2022 Diag: Wes Davis

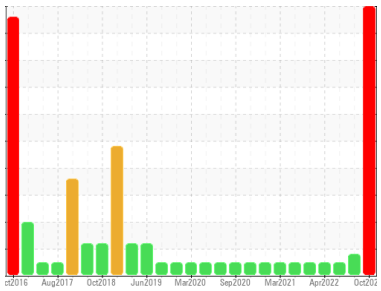
NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination 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



GLYCOL

Machine Id
10649
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (10 GAL)

DIAGNOSIS

Recommendation
We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
Cylinder, crank, or cam shaft wear is indicated.

Contamination
Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition
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		**GFL0092695**	GFL0072341	GFL0072355
Sample Date		Client Info		**04 Oct 2023**	17 May 2023	31 Jan 2023
Machine Age	hrs	Client Info		**13006**	10315	198
Oil Age	hrs	Client Info		**562**	10315	0
Oil Changed		Client Info		**Changed**	N/A	N/A
Sample Status				**SEVERE**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**332**	129	79
Chromium	ppm	ASTM D5185m	>20	**7**	5	3
Nickel	ppm	ASTM D5185m	>4	**3**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**44**	15	11
Lead	ppm	ASTM D5185m	>40	**5**	3	2
Copper	ppm	ASTM D5185m	>330	**22**	5	3
Tin	ppm	ASTM D5185m	>15	**1**	<1	<1
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**11**	6	3
Barium	ppm	ASTM D5185m	0	**11**	0	0
Molybdenum	ppm	ASTM D5185m	60	**195**	65	61
Manganese	ppm	ASTM D5185m	0	**4**	2	<1
Magnesium	ppm	ASTM D5185m	1010	**632**	972	872
Calcium	ppm	ASTM D5185m	1070	**1065**	1185	1186
Phosphorus	ppm	ASTM D5185m	1150	**863**	1084	912
Zinc	ppm	ASTM D5185m	1270	**1009**	1354	1222
Sulfur	ppm	ASTM D5185m	2060	**2792**	3393	3197

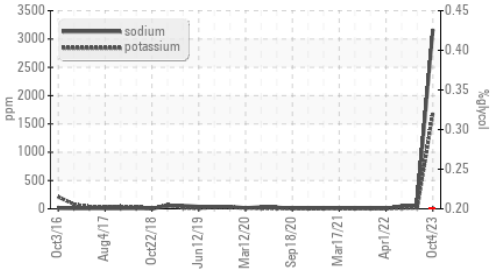
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**66**	14	10
Sodium	ppm	ASTM D5185m		**3162**	60	51
Potassium	ppm	ASTM D5185m	>20	**1685**	14	12
Glycol	%	*ASTM D2982		**0.20**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.5**	2.4	1.5
Nitration	Abs/cm	*ASTM D7624	>20	**23.3**	17.8	14.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	**30.3**	34.1	26.8

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**22.6**	34.8	23.2
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**15.6**	5.0	5.4

OIL ANALYSIS REPORT

Glycol Contamination

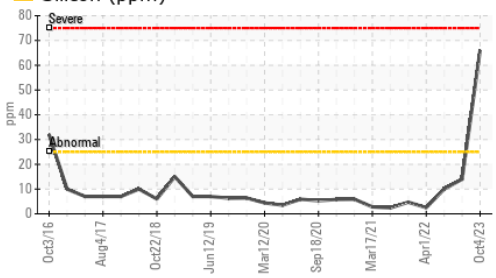


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

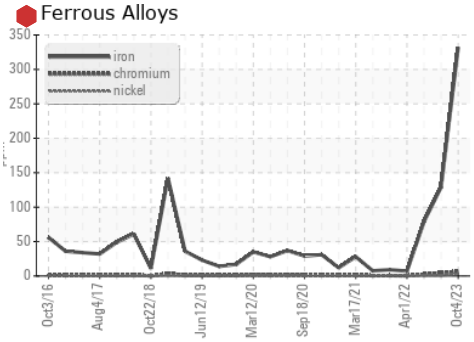
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**14.6**	14.6	13.7

GRAPHS

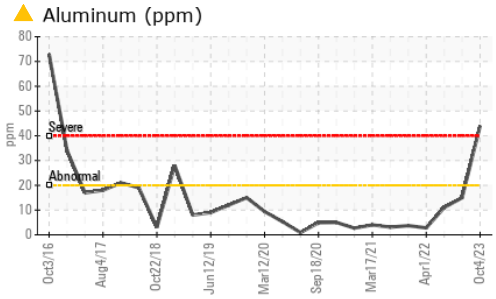
Silicon (ppm)



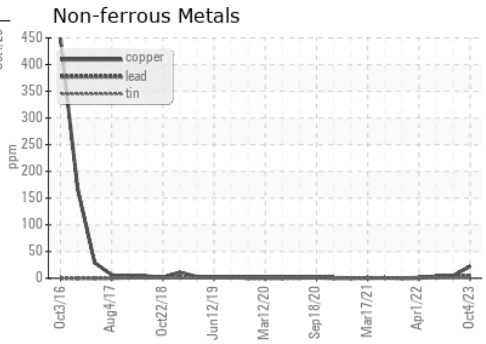
Ferrous Alloys



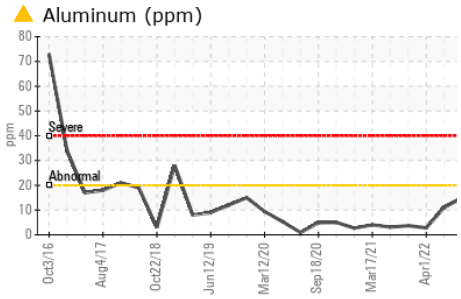
Aluminum (ppm)



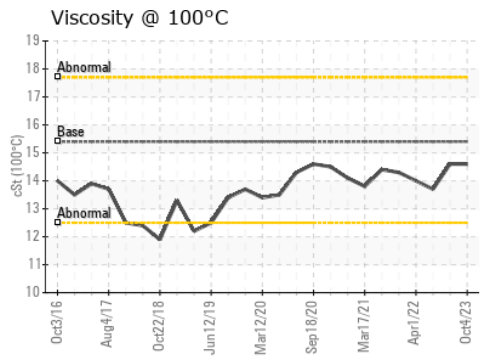
Non-ferrous Metals



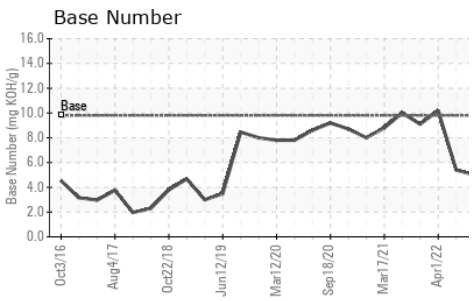
Aluminum (ppm)



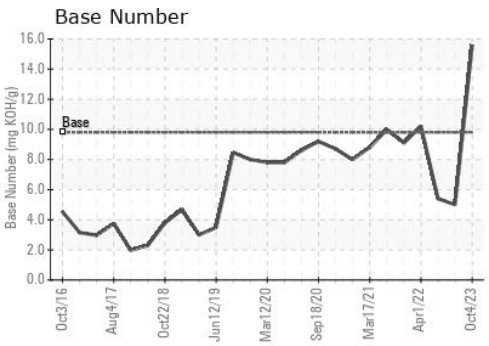
Viscosity @ 100°C



Base Number



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0092695 **Received** : 17 Oct 2023
Lab Number : 05981125 **Diagnosed** : 19 Oct 2023
Unique Number : 10698420 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

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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