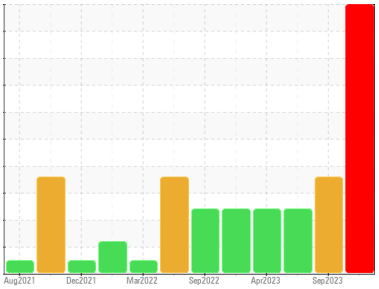
PROBLEM SUMMARY

Machine Id
921043-205220
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (9 GAL)

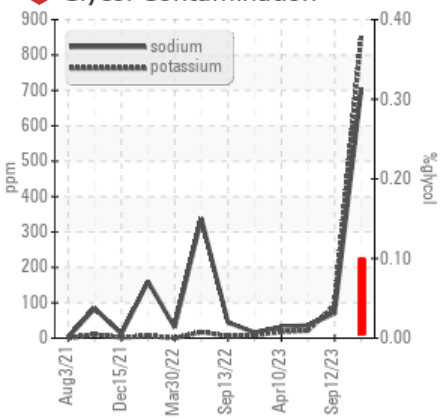
Sample Rating Trend



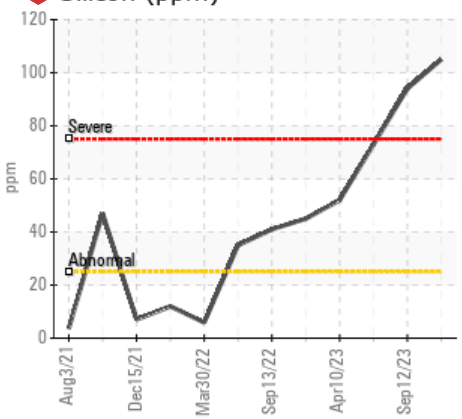
GLYCOL

COMPONENT CONDITION SUMMARY

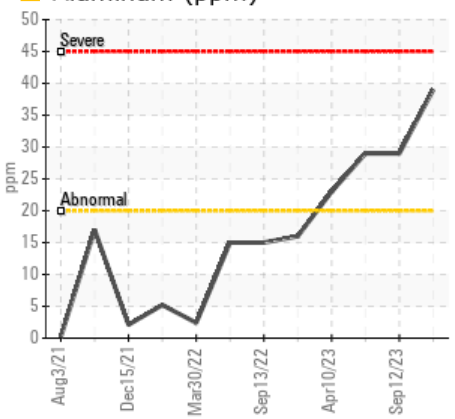
Glycol Contamination



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. 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	ABNORMAL	ABNORMAL
Aluminum	ppm	ASTM D5185m	>20	▲ **39**	▲ 29	▲ 29
Silicon	ppm	ASTM D5185m	>25	⬢ **105**	▲ 94	▲ 73
Sodium	ppm	ASTM D5185m		▲ **704**	70	36
Potassium	ppm	ASTM D5185m	>20	▲ **855**	▲ 93	21
Glycol	%	*ASTM D2982		⬢ **0.10**	NEG	NEG

Customer Id: GFL894
Sample No.: GFL0093547
Lab Number: 06009394
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 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

12 Sep 2023 Diag: Jonathan Hester

DIRT

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.All component wear rates are normal. Sodium and/or potassium levels are high. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Test for glycol is negative. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

24 Apr 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. Oil and filter change at the time of sampling has been noted. 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 BN result indicates that there is suitable alkalinity remaining in the oil.

view report

10 Apr 2023 Diag: Don Baldridge

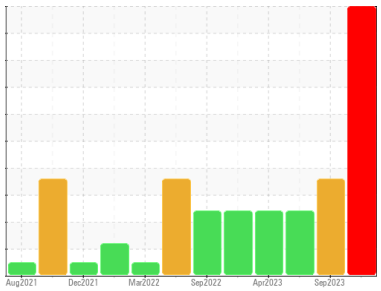
DIRT

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. 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 BN result indicates that there is suitable alkalinity remaining in the oil.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
921043-205220
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (9 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. 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

Sodium and/or potassium levels are high. Test for glycol is positive. 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		**GFL0093547**	GFL0078387	GFL0077284
Sample Date		Client Info		**15 Nov 2023**	12 Sep 2023	24 Apr 2023
Machine Age	hrs	Client Info		**26536**	26171	25368
Oil Age	hrs	Client Info		**404**	803	586
Oil Changed		Client Info		**Not Changd**	Changed	Changed
Sample Status				**SEVERE**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	**73**	57	66
Chromium	ppm	ASTM D5185m	>20	**7**	4	3
Nickel	ppm	ASTM D5185m	>5	**<1**	1	8
Titanium	ppm	ASTM D5185m	>2	**2**	2	2
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	▲ **39**	▲ 29	▲ 29
Lead	ppm	ASTM D5185m	>40	**4**	1	0
Copper	ppm	ASTM D5185m	>330	**12**	5	7
Tin	ppm	ASTM D5185m	>15	**2**	<1	<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	**2**	2	2
Barium	ppm	ASTM D5185m	0	**5**	0	0
Molybdenum	ppm	ASTM D5185m	60	**222**	108	63
Manganese	ppm	ASTM D5185m	0	**1**	1	2
Magnesium	ppm	ASTM D5185m	1010	**861**	1256	905
Calcium	ppm	ASTM D5185m	1070	**1015**	1452	1101
Phosphorus	ppm	ASTM D5185m	1150	**933**	1328	932
Zinc	ppm	ASTM D5185m	1270	**1111**	1655	1238
Sulfur	ppm	ASTM D5185m	2060	**2601**	4533	3155

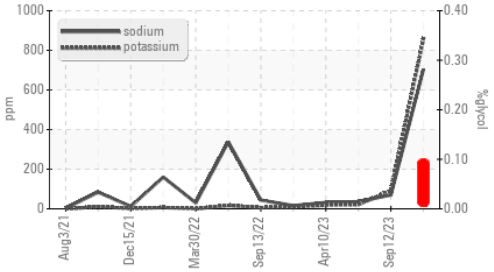
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	● **105**	▲ 94	▲ 73
Sodium	ppm	ASTM D5185m		▲ **704**	70	36
Potassium	ppm	ASTM D5185m	>20	▲ **855**	▲ 93	21
Glycol	%	*ASTM D2982		● **0.10**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	**0.7**	0	1.2
Nitration	Abs/cm	*ASTM D7624	>20	**13.8**	7.7	10.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.5**	21.8	19.5

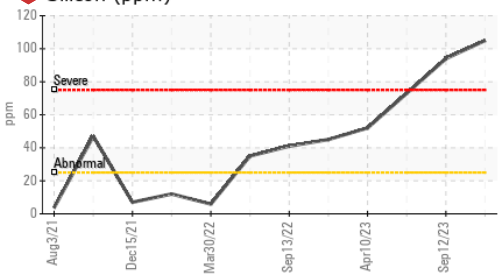
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.6**	16.1	15.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**11.8**	9.2	5.9

OIL ANALYSIS REPORT

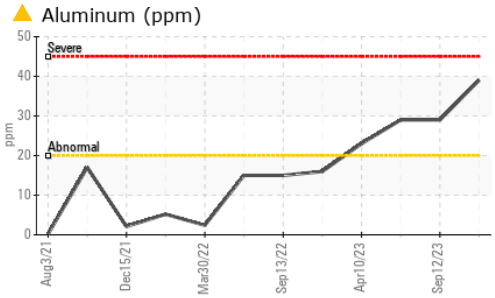
Glycol Contamination



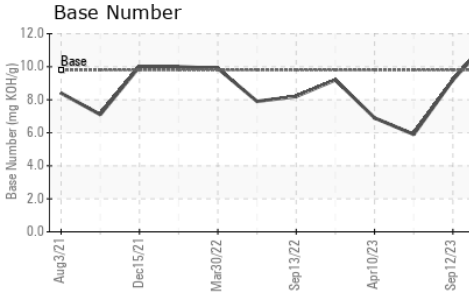
Silicon (ppm)



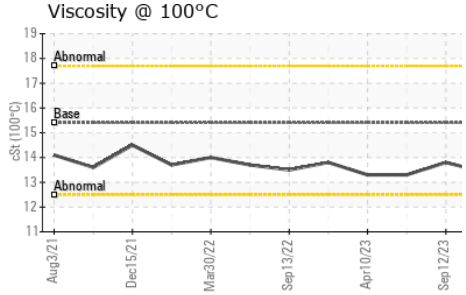
Aluminum (ppm)



Base Number



Viscosity @ 100°C

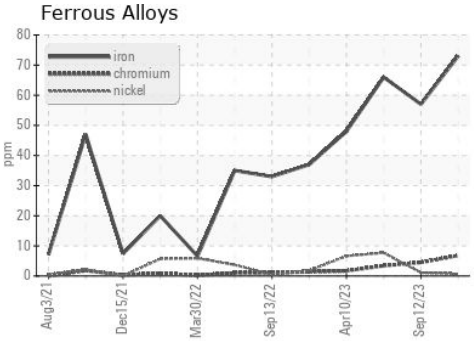


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

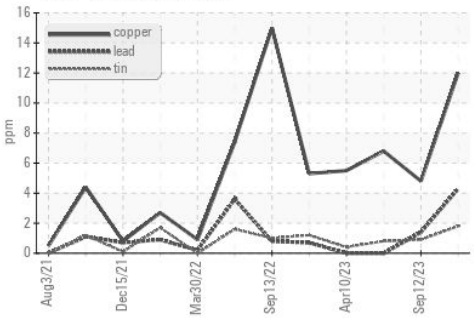
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**13.4**	13.8	13.3

GRAPHS

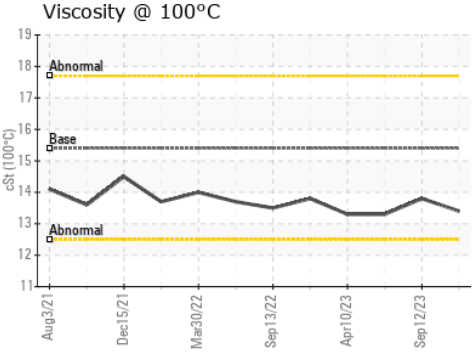
Ferrous Alloys



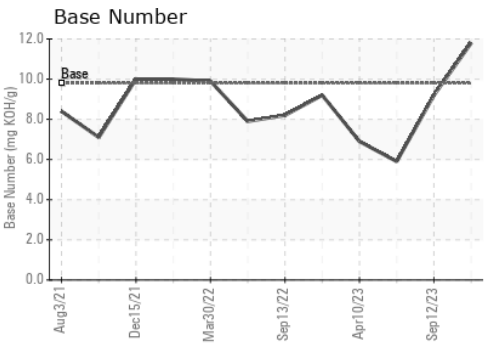
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0093547 **Received** : 16 Nov 2023
Lab Number : 06009394 **Diagnosed** : 21 Nov 2023
Unique Number : 10743156 **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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