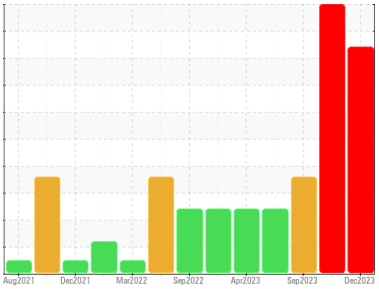
PROBLEM SUMMARY

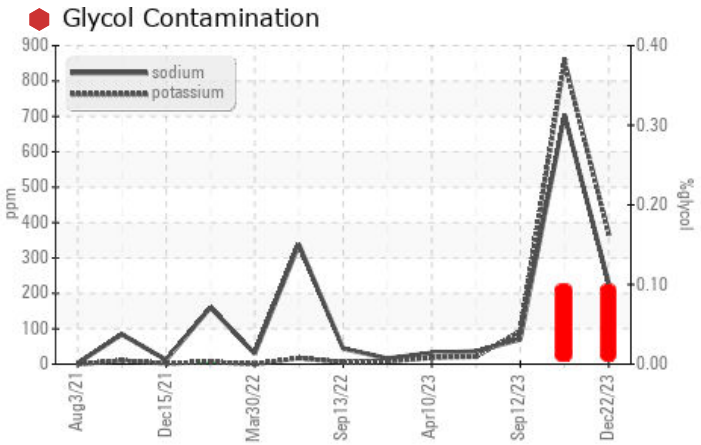
Machine Id
921043-205220
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (9 GAL)

Sample Rating Trend



GLYCOL

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. 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**	SEVERE	ABNORMAL
Sodium	ppm	ASTM D5185m		▲ **228**	▲ 704	70
Potassium	ppm	ASTM D5185m	>20	▲ **368**	▲ 855	▲ 93
Glycol	%	*ASTM D2982		⬢ **0.10**	⬢ 0.10	NEG

Customer Id: GFL894
Sample No.: GFL0093565
Lab Number: 06044299
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 Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

15 Nov 2023 Diag: Jonathan Hester

GLYCOL

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.All component wear rates are normal. 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. 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

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

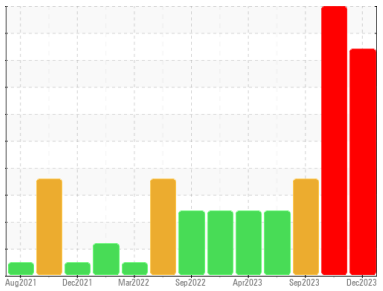
DIRT

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

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. Oil and filter change at the time of sampling has been noted. 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.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0093565**	GFL0093547	GFL0078387
Sample Date		Client Info		**22 Dec 2023**	15 Nov 2023	12 Sep 2023
Machine Age	hrs	Client Info		**26728**	26536	26171
Oil Age	hrs	Client Info		**557**	404	803
Oil Changed		Client Info		**Changed**	Not Changd	Changed
Sample Status				**SEVERE**	SEVERE	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	**11**	73	57
Chromium	ppm	ASTM D5185m	>20	**1**	7	4
Nickel	ppm	ASTM D5185m	>5	**<1**	<1	1
Titanium	ppm	ASTM D5185m	>2	**19**	2	2
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**7**	▲ 39	▲ 29
Lead	ppm	ASTM D5185m	>40	**0**	4	1
Copper	ppm	ASTM D5185m	>330	**14**	12	5
Tin	ppm	ASTM D5185m	>15	**<1**	2	<1
Vanadium	ppm	ASTM D5185m		**<1**	<1	<1
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**9**	2	2
Barium	ppm	ASTM D5185m	0	**1**	5	0
Molybdenum	ppm	ASTM D5185m	60	**97**	222	108
Manganese	ppm	ASTM D5185m	0	**<1**	1	1
Magnesium	ppm	ASTM D5185m	1010	**667**	861	1256
Calcium	ppm	ASTM D5185m	1070	**1058**	1015	1452
Phosphorus	ppm	ASTM D5185m	1150	**993**	933	1328
Zinc	ppm	ASTM D5185m	1270	**1101**	1111	1655
Sulfur	ppm	ASTM D5185m	2060	**3018**	2601	4533

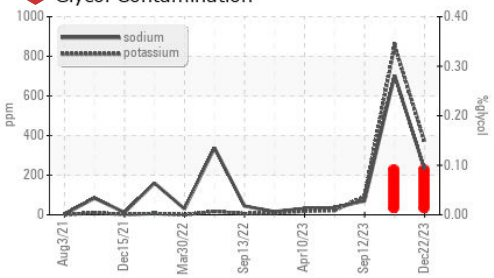
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**20**	⬢ 105	▲ 94
Sodium	ppm	ASTM D5185m		▲ **228**	▲ 704	70
Potassium	ppm	ASTM D5185m	>20	▲ **368**	▲ 855	▲ 93
Glycol	%	*ASTM D2982		⬢ **0.10**	⬢ 0.10	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	**0.2**	0.7	0
Nitration	Abs/cm	*ASTM D7624	>20	**7.2**	13.8	7.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	**18.4**	21.5	21.8

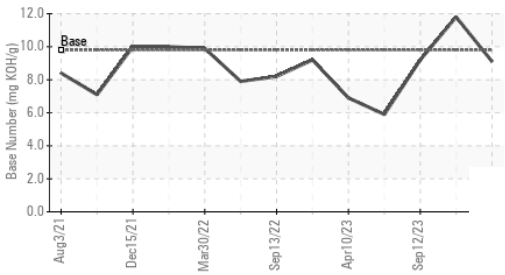
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**14.3**	16.6	16.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**9.1**	11.8	9.2

OIL ANALYSIS REPORT

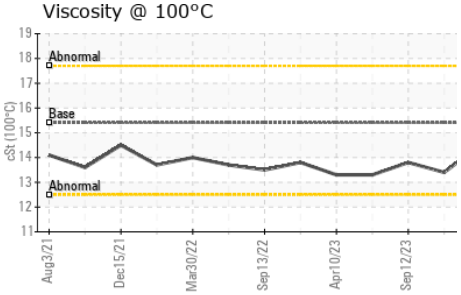
Glycol Contamination



Base Number



Viscosity @ 100°C

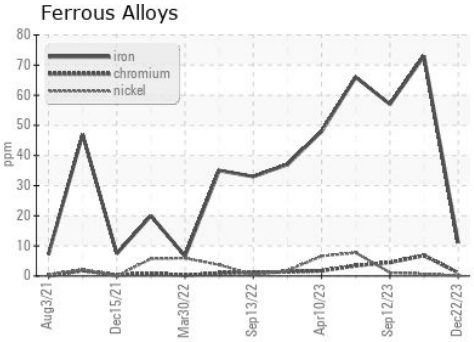


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

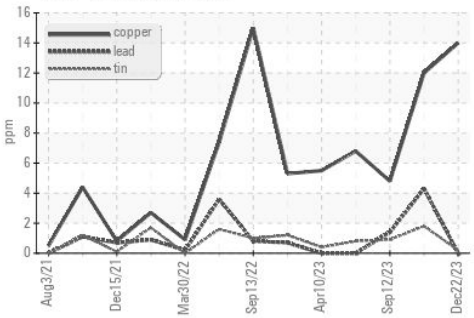
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**14.5**	13.4	13.8

GRAPHS

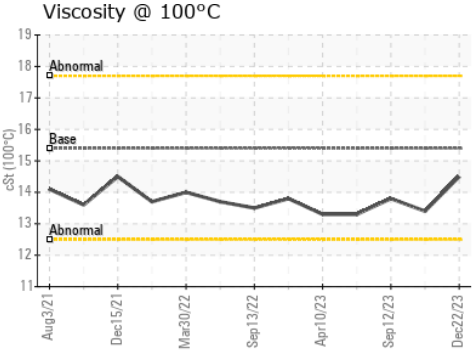
Ferrous Alloys



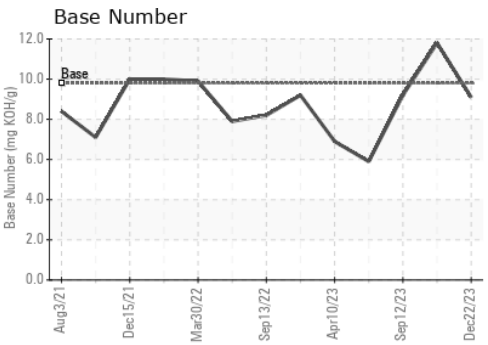
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0093565
Lab Number : 06044299
Unique Number : 10804907
Test Package : FLEET

Recieved : 26 Dec 2023
Diagnosed : 27 Dec 2023
Diagnostician : Jonathan Hester

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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Report Id: GFL894 [WUSCAR] 06044299 (Generated: 12/28/2023 16:38:49) Rev: 1

Submitted By: Andy Smith