



Machine Id
414046
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0105546	GFL0101105	GFL0087073
Sample Date		Client Info		19 Feb 2024	19 Dec 2023	29 Nov 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>110	37	24	18
Chromium	ppm	ASTM D5185m	>4	1	<1	<1
Nickel	ppm	ASTM D5185m	>2	3	<1	1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>2	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>25	10	11	8
Lead	ppm	ASTM D5185m	>45	4	<1	<1
Copper	ppm	ASTM D5185m	>85	▲ 198	▲ 126	47
Tin	ppm	ASTM D5185m	>4	3	2	2
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

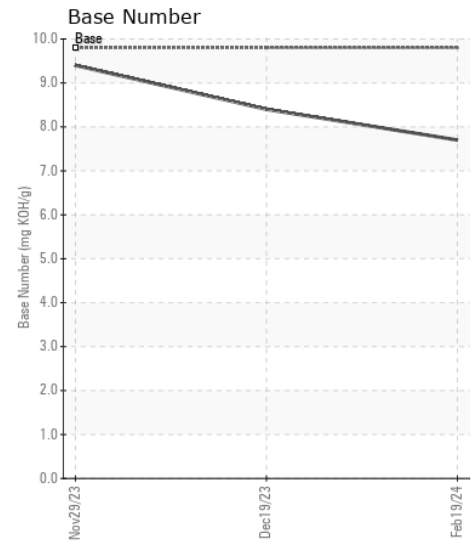
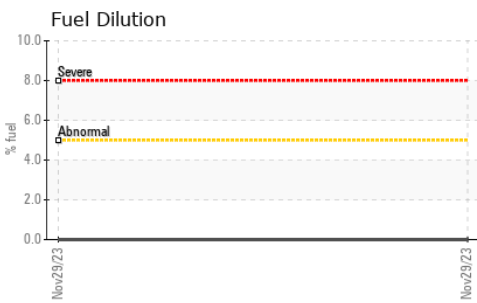
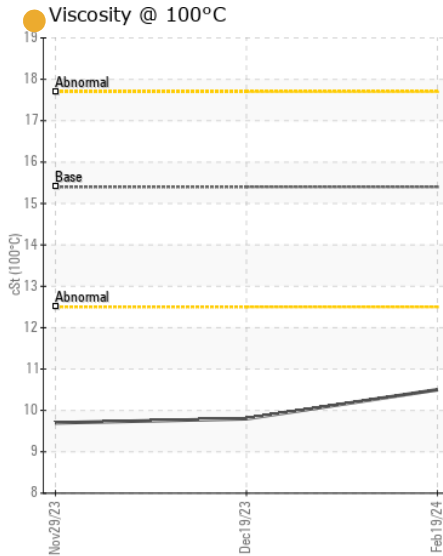
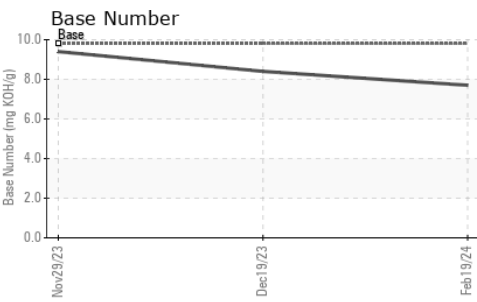
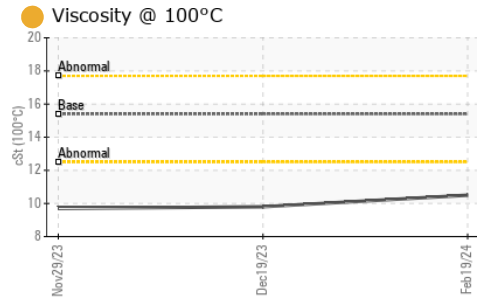
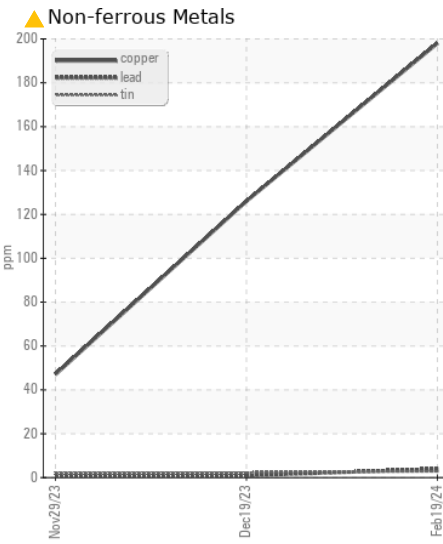
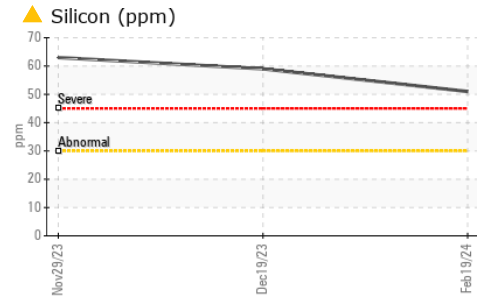
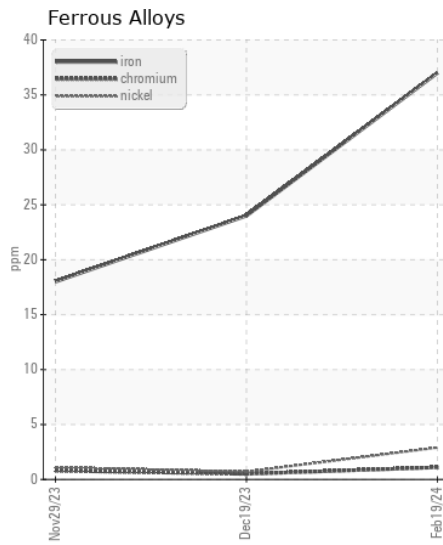
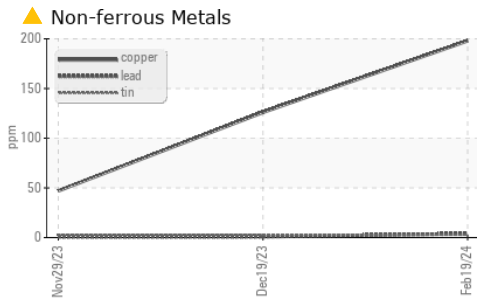
Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>30	▲ 51	▲ 59	▲ 63
Potassium	ppm	ASTM D5185m	>20	19	20	14
Fuel	%	ASTM D3524	>5	<1.0	<1.0	0.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	9.4	8.6	6.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.1	25.6	26.0
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

FLUID CONDITION

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		2	2	3
Boron	ppm	ASTM D5185m	0	178	302	372
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	118	131	118
Manganese	ppm	ASTM D5185m	0	5	3	4
Magnesium	ppm	ASTM D5185m	1010	860	682	662
Calcium	ppm	ASTM D5185m	1070	1637	1514	1398
Phosphorus	ppm	ASTM D5185m	1150	853	689	691
Zinc	ppm	ASTM D5185m	1270	1066	787	812
Sulfur	ppm	ASTM D5185m	2060	2813	2311	2152
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.1	22.4	20.8
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.7	8.4	9.4
Visc @ 100°C	cSt	ASTM D445	15.4	● 10.5	● 9.8	● 9.7



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0105546 **Received** : 29 Feb 2024
Lab Number : 06104114 **Tested** : 01 Mar 2024
Unique Number : 10902344 **Diagnosed** : 02 Mar 2024 - Don Baldrige
Test Package : FLEET (Additional Tests: FuelDilution)

GFL Environmental - 846 - Mayfield Hauling
 3426 State Route 45
 Mayfield, KY
 US 42066
 Contact: Jack Lindsey
 jack.lindsey@gflenv.com
 T: (270)970-3690
 F:

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)