



Machine Id
428066
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0108433	GFL0056867	GFL0042180
Sample Date		Client Info		11 Jan 2024	09 Aug 2022	08 Feb 2022
Machine Age	kms	Client Info		781993	745300	744113
Oil Age	kms	Client Info		0	0	0
Filter Age	kms	Client Info		0	0	0
Oil Changed		Client Info		N/A	Changed	N/A
Filter Changed		Client Info		N/A	Changed	N/A
Sample Status				ABNORMAL	ABNORMAL	SEVERE

WEAR

Iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated.

PQ	UOM	Method	Limit/Abn	Current	History1	History2
PQ		ASTM D8184*		12	---	9
Iron	ppm	ASTM D5185(m)	>100	▲ 108	54	▲ 111
Chromium	ppm	ASTM D5185(m)	>20	1	0	1
Nickel	ppm	ASTM D5185(m)	>4	<1	0	<1
Titanium	ppm	ASTM D5185(m)		0	<1	0
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	3	3	4
Lead	ppm	ASTM D5185(m)	>40	16	4	29
Copper	ppm	ASTM D5185(m)	>330	2	<1	3
Tin	ppm	ASTM D5185(m)	>15	<1	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0

CONTAMINATION

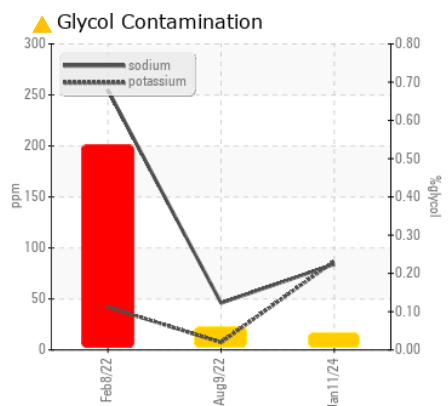
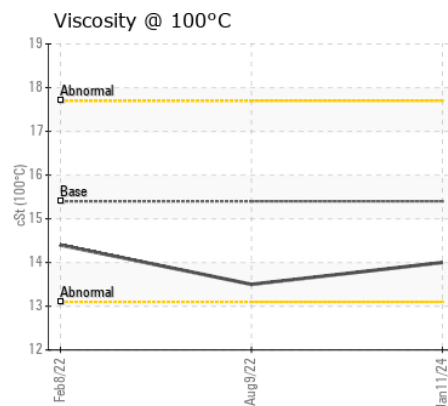
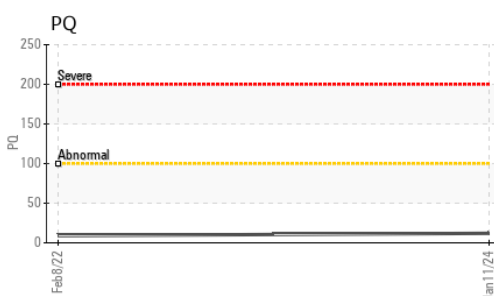
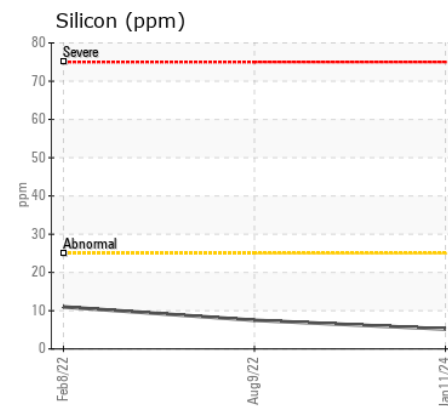
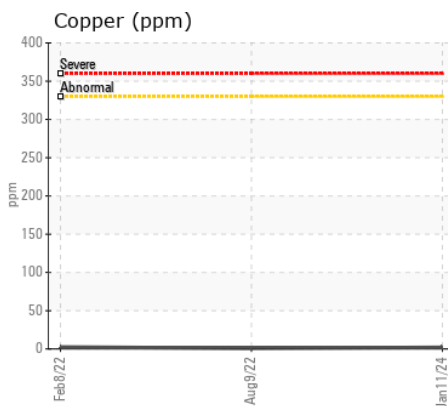
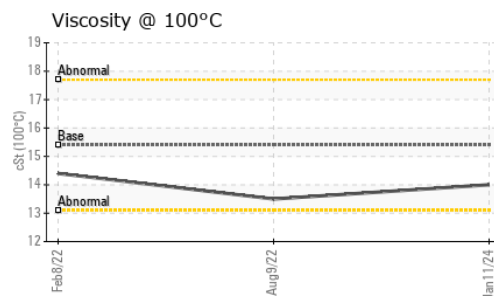
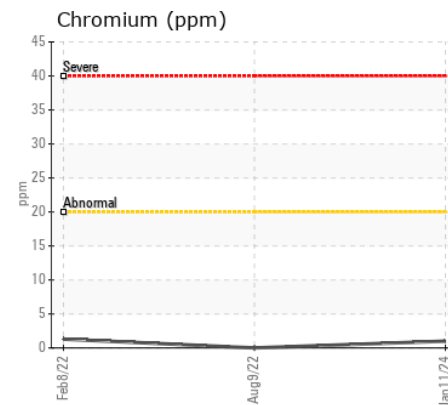
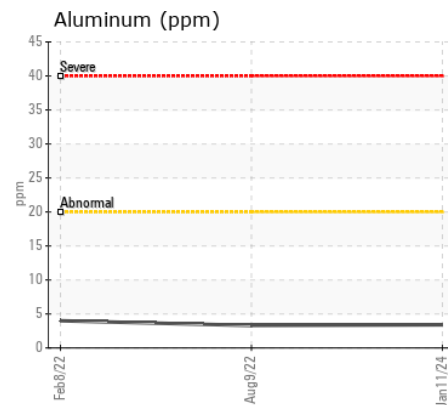
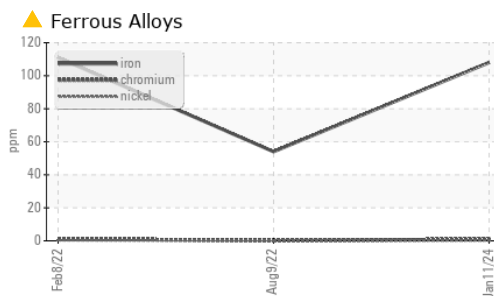
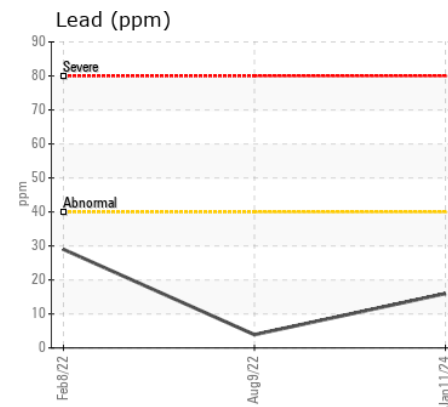
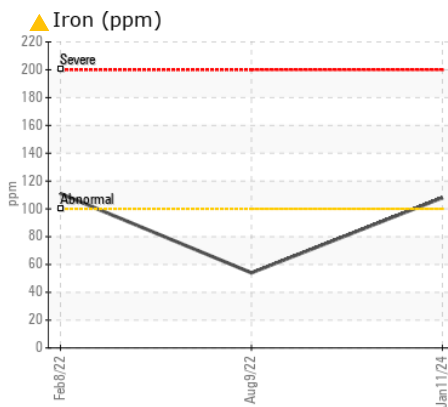
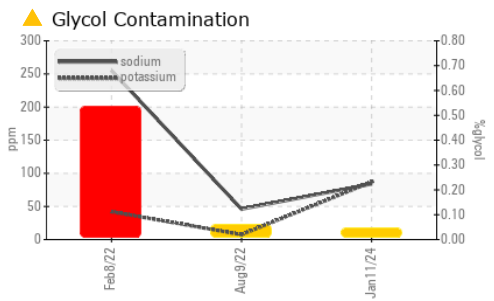
Test for glycol is positive. There is a moderate concentration of glycol present in the oil.

Silicon	ppm	ASTM D5185(m)	>25	5	8	11
Potassium	ppm	ASTM D5185(m)	>20	▲ 87	▲ 7	▲ 42
Fuel		WC Method	>2.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	ASTM D7922*		▲ 0.044	▲ 0.059	■ 0.534
Soot %	%	ASTM D7844*	>3	0.8	0	0.8
Nitration	Abs/cm	ASTM D7624*	>20	11.9	6.8	13.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	23.8	23.0	24.2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		▲ 84	▲ 46	▲ 255
Boron	ppm	ASTM D5185(m)	0	6	249	28
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	75	105	92
Manganese	ppm	ASTM D5185(m)	0	<1	<1	1
Magnesium	ppm	ASTM D5185(m)	1010	985	605	762
Calcium	ppm	ASTM D5185(m)	1070	1144	1405	1412
Phosphorus	ppm	ASTM D5185(m)	1150	1035	668	819
Zinc	ppm	ASTM D5185(m)	1270	1203	762	942
Sulfur	ppm	ASTM D5185(m)	2060	2571	2078	2361
Oxidation	Abs/.1mm	ASTM D7414*	>25	20.3	15.8	19.5
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	14.0	13.5	14.4



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 252 - GTA Hauling**
Sample No. : GFL0108433 **Received** : 12 Jan 2024 **3668 Weston Road**
Lab Number : 02608366 **Diagnosed** : 15 Jan 2024 **North York, ON**
Unique Number : 5709452 **Diagnostician** : Kevin Marson **CA M9L 1W2**
Test Package : MOB 1 (Additional Tests: PQ) **Contact: Amanda Cipollone**
acipollone@gflenv.com

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.