



Machine Id
8978
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (20 LTR)

RECOMMENDATION

Check for low coolant level. We advise that you monitor for an abnormal oil pressure drop and noise. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0113177	GFL0090552	GFL0077485
Sample Date		Client Info		22 Feb 2024	20 Sep 2023	24 Apr 2023
Machine Age	kms	Client Info		163602	155657	151059
Oil Age	kms	Client Info		0	0	0
Filter Age	kms	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	NORMAL	MARGINAL

WEAR

Lead ppm levels are severe. Tin, aluminum, iron and nickel ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Exhaust valve wear is indicated. Piston wear is indicated. Bearing wear is indicated. Slide bearing wear is indicated.

PQ		ASTM D8184*		19	---	0
Iron	ppm	ASTM D5185(m)	>90	▲ 139	23	▲ 90
Chromium	ppm	ASTM D5185(m)	>20	16	<1	3
Nickel	ppm	ASTM D5185(m)	>2	▲ 3	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	<1	0	<1
Silver	ppm	ASTM D5185(m)	>2	0	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	▲ 28	3	6
Lead	ppm	ASTM D5185(m)	>40	▲ 164	1	3
Copper	ppm	ASTM D5185(m)	>330	45	<1	2
Tin	ppm	ASTM D5185(m)	>15	▲ 17	<1	2
Vanadium	ppm	ASTM D5185(m)		0	0	<1

CONTAMINATION

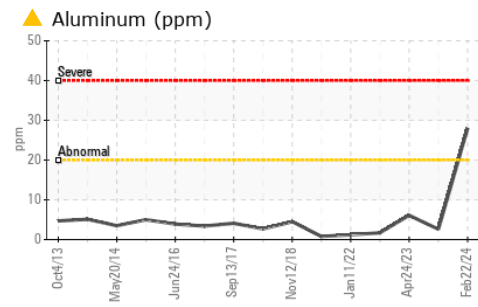
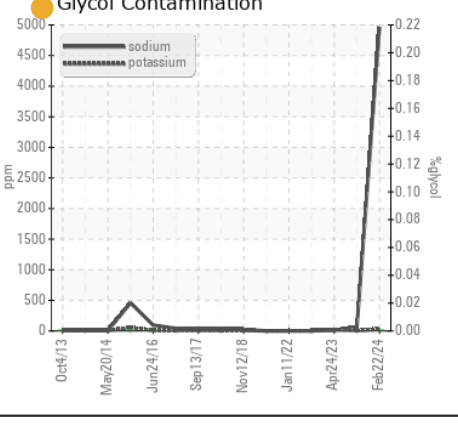
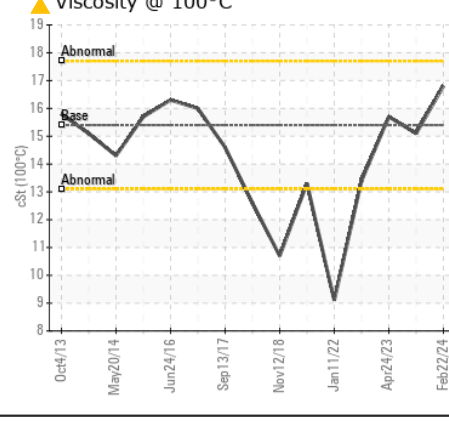
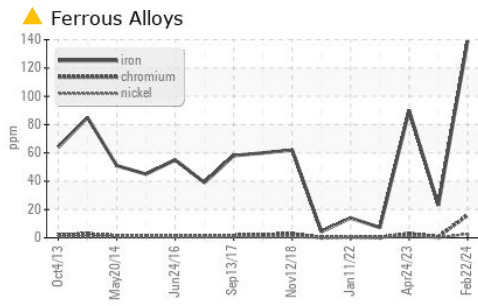
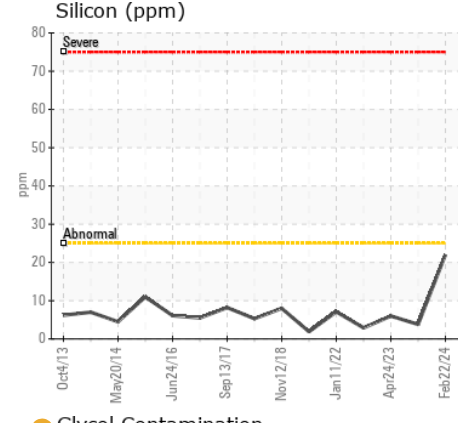
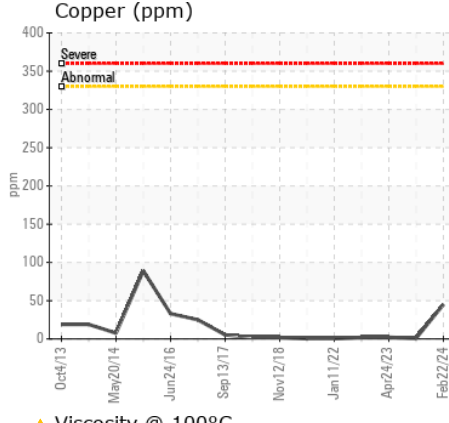
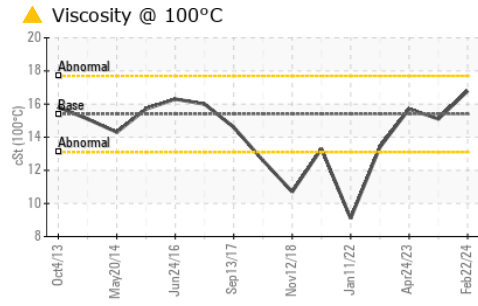
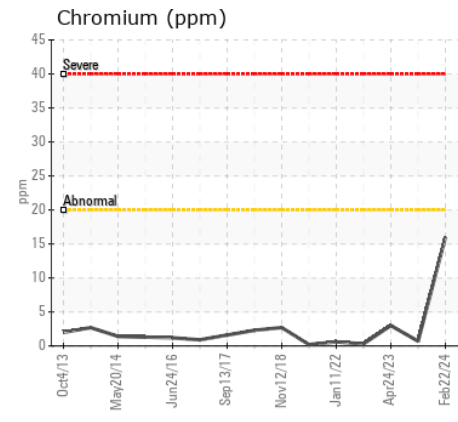
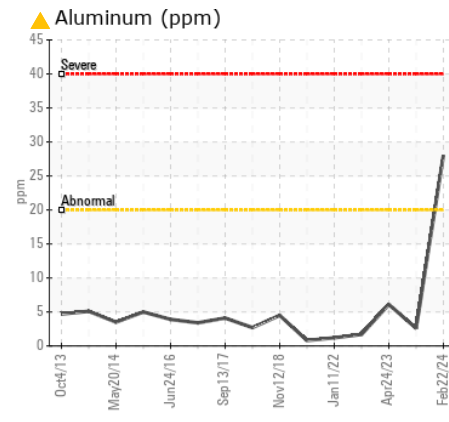
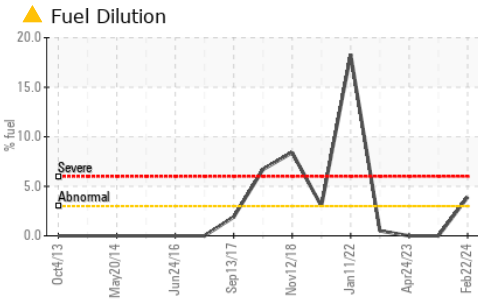
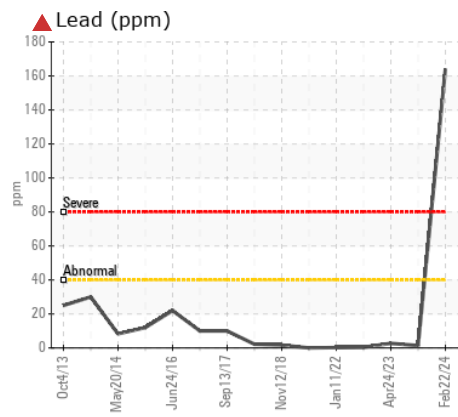
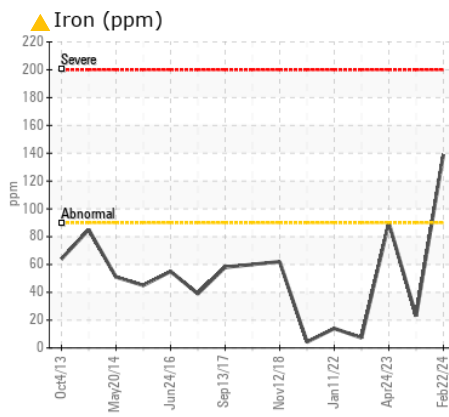
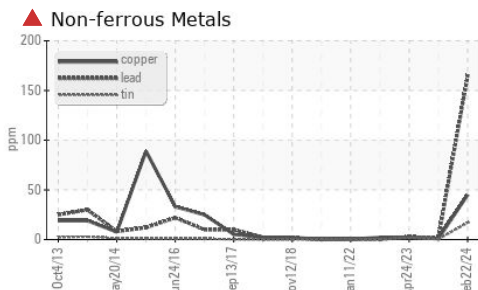
There is a moderate amount of fuel present in the oil. Water treatment chemicals present, indicating slow coolant leak. Tests confirm the presence of fuel in the oil. Test for glycol is negative.

Silicon	ppm	ASTM D5185(m)	>25	22	4	6
Potassium	ppm	ASTM D5185(m)	>20	32	3	23
Fuel	%	ASTM D7593*	>3.0	▲ 3.9	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	ASTM D7922*		0.0	NEG	0.0
Soot %	%	ASTM D7844*	>6	3.5	0.7	2.8
Nitration	Abs/cm	ASTM D7624*	>20	29.0	6.8	14.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	36.1	19.9	27.8
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

Viscosity of sample indicates oil is within SAE 50 range, advise investigate. The oil is no longer serviceable as a result of the abnormal and/or severe wear. The condition of the oil is acceptable for the time in service (see recommendation).

Sodium	ppm	ASTM D5185(m)		● 4961	65	11
Boron	ppm	ASTM D5185(m)	0	3	2	4
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	62	58	69
Manganese	ppm	ASTM D5185(m)	0	3	0	<1
Magnesium	ppm	ASTM D5185(m)	1010	909	961	1128
Calcium	ppm	ASTM D5185(m)	1070	1029	1054	1275
Phosphorus	ppm	ASTM D5185(m)	1150	954	988	1199
Zinc	ppm	ASTM D5185(m)	1270	1158	1168	1371
Sulfur	ppm	ASTM D5185(m)	2060	2630	2471	2528
Oxidation	Abs/.1mm	ASTM D7414*	>25	25.7	13.9	24.0
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	▲ 16.8	15.1	15.7



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0113177
Lab Number : 02618567
Unique Number : 5735677
Test Package : MOB 1 (Additional Tests: FUELDILUTION, Glycol, PercentFuel, PQ)

GFL Environmental - 225 - COT(D2)
 20 Brydon Drive
 Etobicoke, ON
 CA M9W 5R6
 Contact: Rick Philip
 rphilip@gflenv.com
 T: (416)745-8080
 F:

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.