



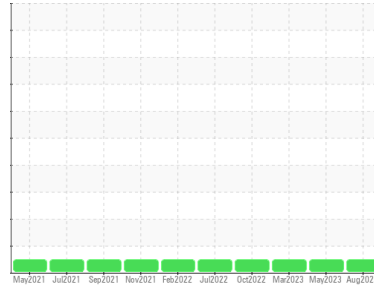
OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
4689M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		GFL0086655	GFL0081376	GFL0073886
Sample Date	Client Info		07 Aug 2023	22 May 2023	15 Mar 2023
Machine Age	hrs	Client Info	13304	12694	12168
Oil Age	hrs	Client Info	12694	600	11027
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			NORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	<1.0
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >80	26	42	38
Chromium	ppm	ASTM D5185m >5	2	2	1
Nickel	ppm	ASTM D5185m >2	<1	<1	0
Titanium	ppm	ASTM D5185m	0	<1	0
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >30	2	4	5
Lead	ppm	ASTM D5185m >30	0	0	0
Copper	ppm	ASTM D5185m >150	<1	2	2
Tin	ppm	ASTM D5185m >5	<1	<1	0
Vanadium	ppm	ASTM D5185m	0	0	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	0	0	0
Molybdenum	ppm	ASTM D5185m 60	56	59	56
Manganese	ppm	ASTM D5185m 0	<1	<1	<1
Magnesium	ppm	ASTM D5185m 1010	932	971	876
Calcium	ppm	ASTM D5185m 1070	1028	1052	988
Phosphorus	ppm	ASTM D5185m 1150	987	1008	912
Zinc	ppm	ASTM D5185m 1270	1245	1291	1186
Sulfur	ppm	ASTM D5185m 2060	3188	3296	2842

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	10	13	16
Sodium	ppm	ASTM D5185m	7	8	7
Potassium	ppm	ASTM D5185m >20	1	<1	<1

INFRA-RED

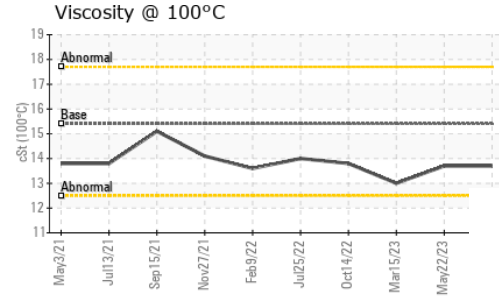
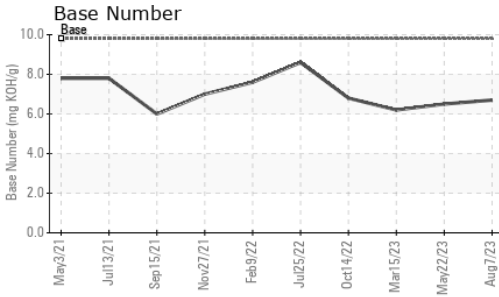
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.9	1	0.9
Nitration	Abs/cm	*ASTM D7624 >20	9.7	10.5	9.9
Sulfation	Abs/.1mm	*ASTM D7415 >30	21.0	22.9	22.0

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	17.8	19.9	18.4
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	6.7	6.5	6.2



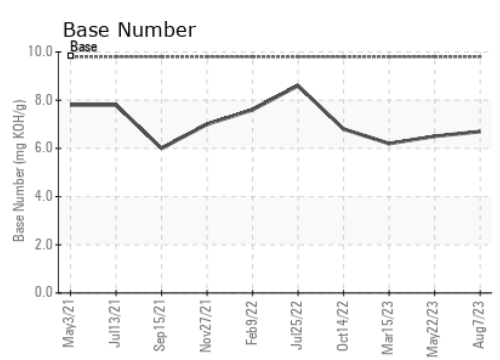
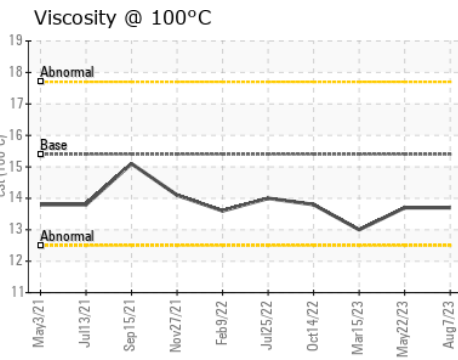
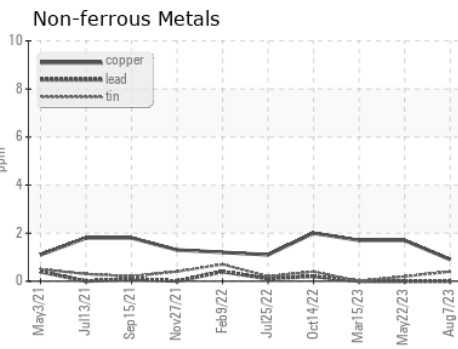
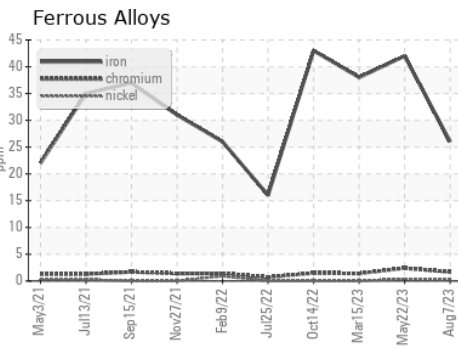
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.7	13.0

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0086655 **Received** : 09 Aug 2023
Lab Number : 05919633 **Diagnosed** : 09 Aug 2023
Unique Number : 10591547 **Diagnostician** : Wes Davis
Test Package : FLEET

GFL Environmental - 415 - Michigan East
 6200 Elmridge
 Sterling Heights, MI
 US 48313
 Contact: Frank Wolak
 fwolak@gflenv.com
 T: (586)825-9514
 F:

Certificate L2367
 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)