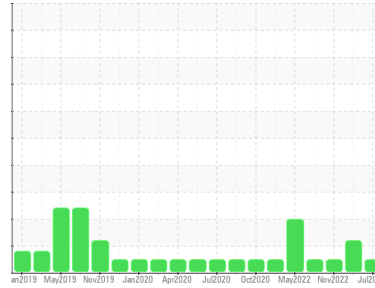




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
923034-260317

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	history 1	history 2
Sample Number	Client Info	GFL0087217	GFL0070422	GFL0055653
Sample Date	Client Info	06 Jul 2023	21 Apr 2023	15 Nov 2022
Machine Age	hrs	20148	19820	19389
Oil Age	hrs	0	0	300
Oil Changed	Client Info	Not Changed	Not Changd	Not Changed
Sample Status		NORMAL	ATTENTION	NORMAL

CONTAMINATION

method	limit/base	current	history 1	history 2
Fuel	WC Method >5	<1.0	<1.0	<1.0
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history 1	history 2
Iron	ppm ASTM D5185m >110	39	26	27
Chromium	ppm ASTM D5185m >4	2	<1	<1
Nickel	ppm ASTM D5185m >2	0	0	0
Titanium	ppm ASTM D5185m	0	0	0
Silver	ppm ASTM D5185m >2	0	0	0
Aluminum	ppm ASTM D5185m >25	7	4	4
Lead	ppm ASTM D5185m >45	3	0	2
Copper	ppm ASTM D5185m >85	8	7	12
Tin	ppm ASTM D5185m >4	<1	0	<1
Vanadium	ppm ASTM D5185m	0	<1	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history 1	history 2
Boron	ppm ASTM D5185m 0	5	7	4
Barium	ppm ASTM D5185m 0	0	0	2
Molybdenum	ppm ASTM D5185m 60	66	64	63
Manganese	ppm ASTM D5185m 0	1	<1	<1
Magnesium	ppm ASTM D5185m 1010	1004	971	896
Calcium	ppm ASTM D5185m 1070	1146	1151	1107
Phosphorus	ppm ASTM D5185m 1150	1086	1032	980
Zinc	ppm ASTM D5185m 1270	1338	1310	1198
Sulfur	ppm ASTM D5185m 2060	3650	3356	3196

CONTAMINANTS

method	limit/base	current	history 1	history 2
Silicon	ppm ASTM D5185m >30	11	9	5
Sodium	ppm ASTM D5185m	70	▲ 84	25
Potassium	ppm ASTM D5185m >20	3	0	3

INFRA-RED

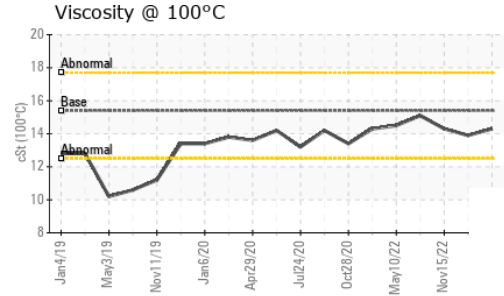
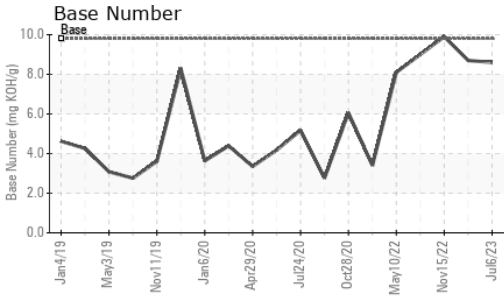
method	limit/base	current	history 1	history 2
Soot %	% *ASTM D7844 >3	1.9	1.2	2.1
Nitration	Abs/cm *ASTM D7624 >20	12.6	9.6	12.1
Sulfation	Abs/.1mm *ASTM D7415 >30	24.9	21.4	25.8

FLUID DEGRADATION

method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm *ASTM D7414 >25	19.2	16.5	19.1
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.6	8.7	9.9



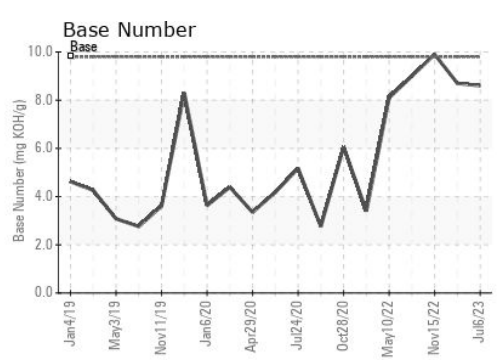
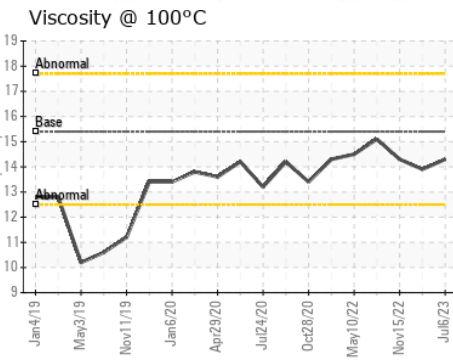
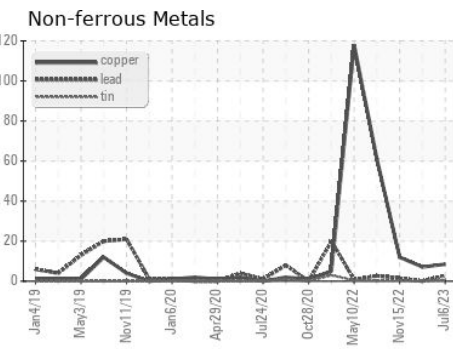
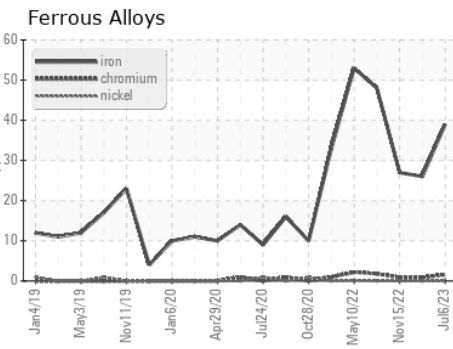
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history 1	history 2
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	history 1	history 2	
Visc @ 100°C	cSt	ASTM D445	15.4	14.3	13.9	14.3

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0087217 **Received** : 10 Jul 2023
Lab Number : **05893191** **Diagnosed** : 11 Jul 2023
Unique Number : 10549001 **Diagnostician** : Wes Davis
Test Package : FLEET

GFL Environmental - 837 - Harrison TS
 22820 S State Route 291
 Harrisonville, MO
 US 64701
 Contact: Robert Hart

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)

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 F: