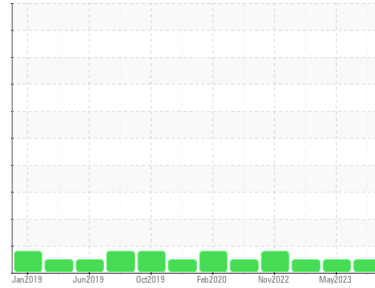




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
923032-260314

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	GFL0087216	GFL0083818	GFL0055670
Sample Date	Client Info	06 Jul 2023	31 May 2023	30 Nov 2022
Machine Age	hrs	2463	2284	1887
Oil Age	hrs	0	0	600
Oil Changed	Client Info	Not Chngd	Not Chngd	Changed
Sample Status		NORMAL	NORMAL	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	38	16	19
Chromium	ppm ASTM D5185m >4	2	1	2
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	3	2
Lead	ppm ASTM D5185m >45	3	<1	<1
Copper	ppm ASTM D5185m >85	8	2	72
Tin	ppm ASTM D5185m >4	<1	0	<1
Vanadium	ppm ASTM D5185m	0	0	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history 1	history 2
Boron	ppm ASTM D5185m 0	5	1	3
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	66	52	63
Manganese	ppm ASTM D5185m 0	1	<1	<1
Magnesium	ppm ASTM D5185m 1010	998	899	991
Calcium	ppm ASTM D5185m 1070	1150	1002	1145
Phosphorus	ppm ASTM D5185m 1150	1080	962	1062
Zinc	ppm ASTM D5185m 1270	1333	1224	1278
Sulfur	ppm ASTM D5185m 2060	3633	3541	3636

CONTAMINANTS

method	limit/base	current	history 1	history 2
Silicon	ppm ASTM D5185m >30	10	4	4
Sodium	ppm ASTM D5185m	69	2	1
Potassium	ppm ASTM D5185m >20	2	<1	<1

INFRA-RED

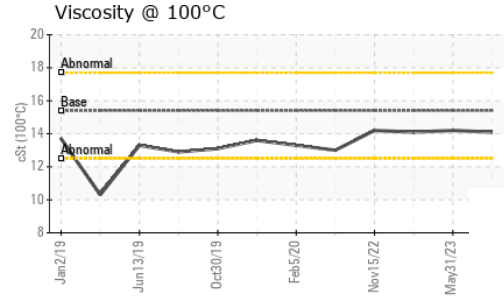
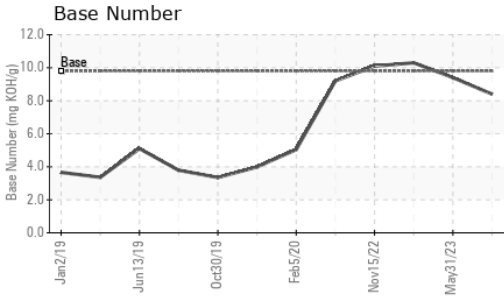
method	limit/base	current	history 1	history 2
Soot %	% *ASTM D7844 >3	1.8	0.6	0.7
Nitration	Abs/cm *ASTM D7624 >20	12.7	6.4	7.3
Sulfation	Abs/.1mm *ASTM D7415 >30	25.3	19.4	20.8

FLUID DEGRADATION

method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm *ASTM D7414 >25	19.4	14.0	15.3
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.4	9.4	10.3



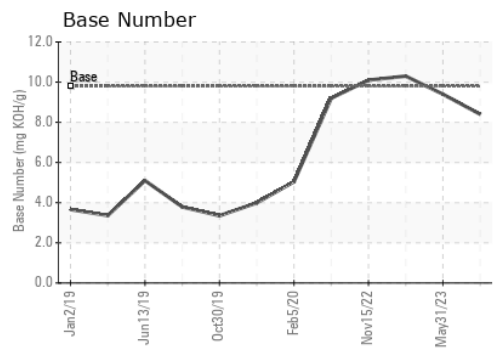
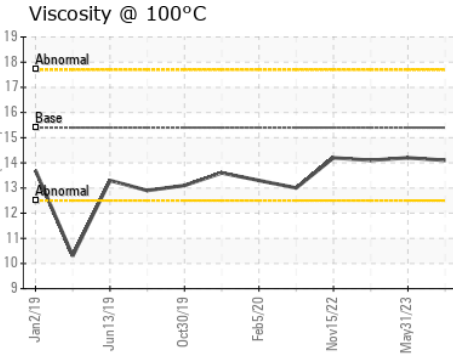
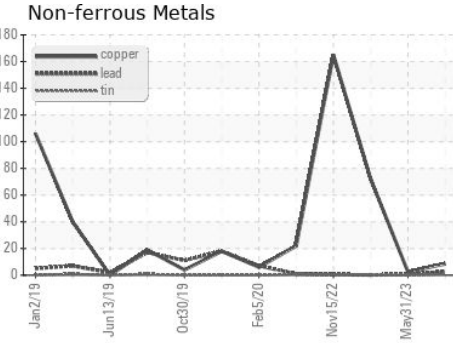
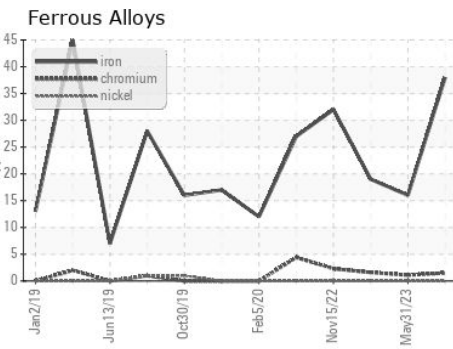
OIL ANALYSIS REPORT



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	14.1	14.2	14.1

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0087216 **Received** : 10 Jul 2023
Lab Number : **05893190** **Diagnosed** : 11 Jul 2023
Unique Number : 10549000 **Diagnostician** : Wes Davis
Test Package : FLEET

GFL Environmental - 836 - Kansas City Hauling
 7801 East Truman Road
 Kansas City, MO
 US 64126
 Contact: Robert Hart
 rhart@gflenv.com
 T: (580)461-1509
 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)