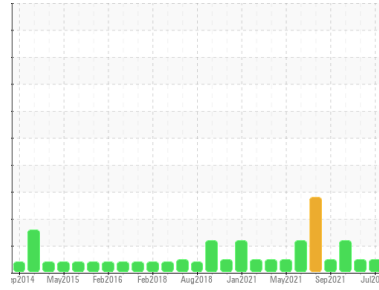




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id

2416

Component

Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring. No other contaminants were detected 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	GFL0072226	GFL0046025	GFL0038186
Sample Date	Client Info	17 Jul 2023	11 Feb 2022	13 Dec 2021
Machine Age	mls	Client Info	368117	368117
Oil Age	mls	Client Info	24154	368117
Oil Changed	Client Info	Changed	N/A	N/A
Sample Status		NORMAL	NORMAL	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >100	10	6	41
Chromium	ppm	ASTM D5185m >20	<1	<1	<1
Nickel	ppm	ASTM D5185m >2	<1	<1	<1
Titanium	ppm	ASTM D5185m	0	<1	1
Silver	ppm	ASTM D5185m >2	0	0	<1
Aluminum	ppm	ASTM D5185m >25	5	2	9
Lead	ppm	ASTM D5185m >40	<1	<1	<1
Copper	ppm	ASTM D5185m >330	2	2	5
Tin	ppm	ASTM D5185m >15	<1	<1	<1
Antimony	ppm	ASTM D5185m	---	0	0
Vanadium	ppm	ASTM D5185m	0	0	<1
Cadmium	ppm	ASTM D5185m	0	0	<1

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 0	8	6	8
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	59	54	57
Manganese	ppm	ASTM D5185m 0	<1	<1	<1
Magnesium	ppm	ASTM D5185m 1010	815	963	866
Calcium	ppm	ASTM D5185m 1070	1048	1103	1093
Phosphorus	ppm	ASTM D5185m 1150	918	1044	947
Zinc	ppm	ASTM D5185m 1270	1109	1191	1113
Sulfur	ppm	ASTM D5185m 2060	3103	2783	2485

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >25	6	4	21
Sodium	ppm	ASTM D5185m	2	1	6
Potassium	ppm	ASTM D5185m >20	1	<1	1
Fuel	%	ASTM D3524 >6.0	3.8	<1.0	▲ 5.2

INFRA-RED

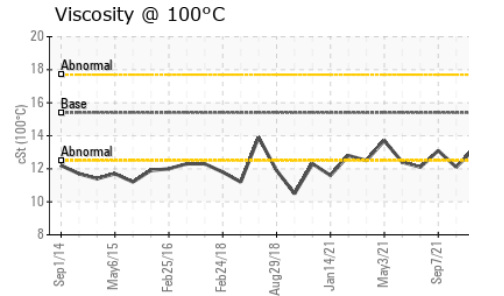
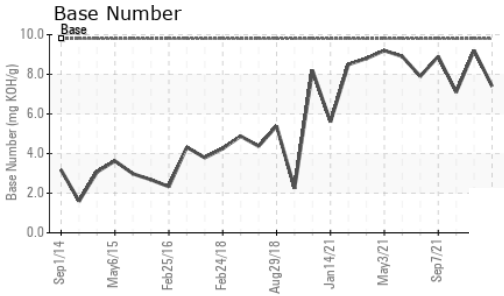
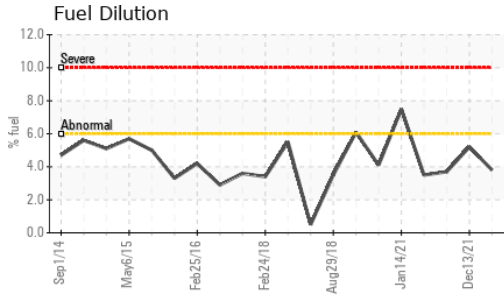
method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844 >3	0.2	0.2	0.3
Nitration	Abs/cm	*ASTM D7624 >20	8.8	7.2	9.2
Sulfation	Abs/.1mm	*ASTM D7415 >30	19.4	19.6	19.9

FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	16.8	16.2	17
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	7.4	9.2	7.1



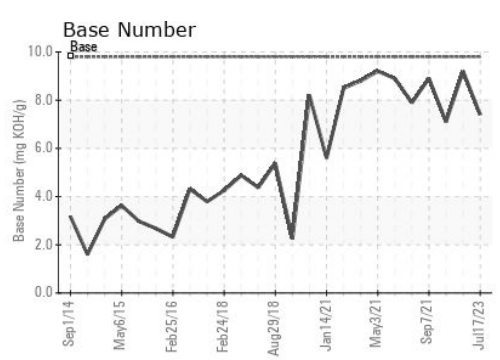
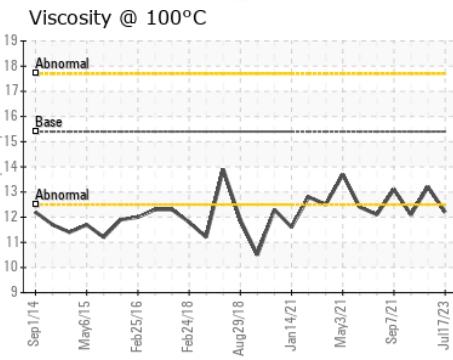
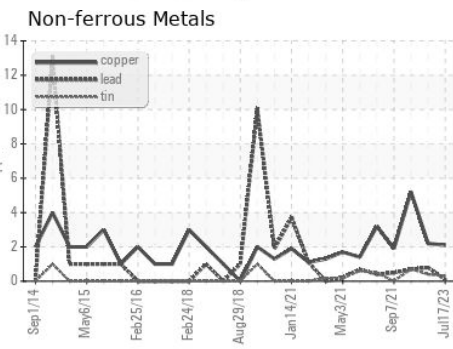
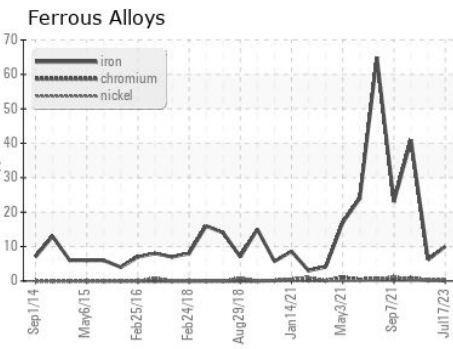
OIL ANALYSIS REPORT



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	12.2	13.2 ▲ 12.1

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0072226 **Received** : 19 Jul 2023
Lab Number : 05902804 **Diagnosed** : 21 Jul 2023
Unique Number : 10564160 **Diagnostician** : Wes Davis
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

GFL Environmental - 004 - Newport - Central Coast
 427 Roberts Road
 Newport, NC
 US 28570
 Contact: Marquis Williams
 marquis.williams@gflenv.com
 T:
 F: (252)223-6010

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)