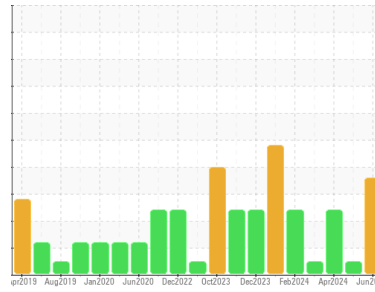




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Area
(29KK9A)
 Machine Id
721020-361648
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the fuel injection system. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. There is a moderate amount of fuel present in the oil.

Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0120205	GFL0117226	GFL0114069
Sample Date	Client Info	04 Jun 2024	13 May 2024	16 Apr 2024
Machine Age	hrs	29426	29310	29160
Oil Age	hrs	0	0	0
Oil Changed	Client Info	Not Changed	Not Changed	Not Changed
Sample Status		ABNORMAL	NORMAL	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	60	3	37
Chromium	ppm ASTM D5185m >20	3	0	1
Nickel	ppm ASTM D5185m >4	<1	0	0
Titanium	ppm ASTM D5185m	<1	0	0
Silver	ppm ASTM D5185m >3	<1	0	0
Aluminum	ppm ASTM D5185m >20	11	<1	7
Lead	ppm ASTM D5185m >40	4	0	<1
Copper	ppm ASTM D5185m >330	3	0	<1
Tin	ppm ASTM D5185m >15	<1	0	<1
Vanadium	ppm ASTM D5185m	0	0	<1
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	4	6	0
Barium	ppm ASTM D5185m 0	0	<1	0
Molybdenum	ppm ASTM D5185m 60	69	52	61
Manganese	ppm ASTM D5185m 0	<1	<1	<1
Magnesium	ppm ASTM D5185m 1010	912	831	929
Calcium	ppm ASTM D5185m 1070	1140	979	1149
Phosphorus	ppm ASTM D5185m 1150	1077	928	1025
Zinc	ppm ASTM D5185m 1270	1207	1108	1182
Sulfur	ppm ASTM D5185m 2060	2975	3230	3485

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	13	2	8
Sodium	ppm ASTM D5185m	▲ 158	3	▲ 71
Potassium	ppm ASTM D5185m >20	▲ 139	0	▲ 59
Fuel	% ASTM D3524 >2.0	▲ 4.4	<1.0	<1.0
Glycol	% *ASTM D2982	NEG	NEG	NEG

INFRA-RED

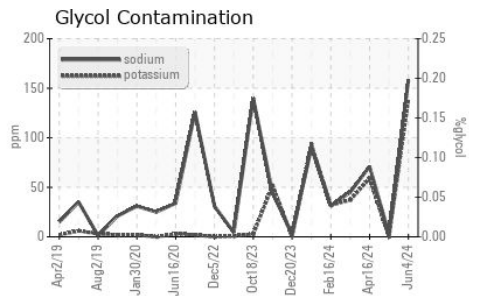
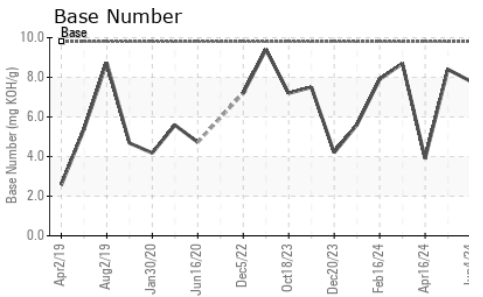
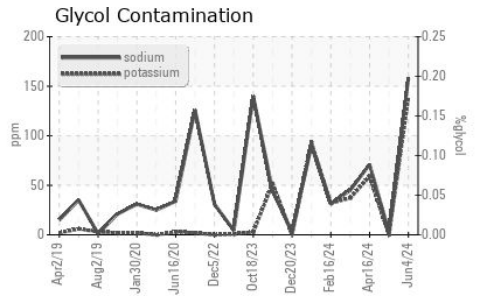
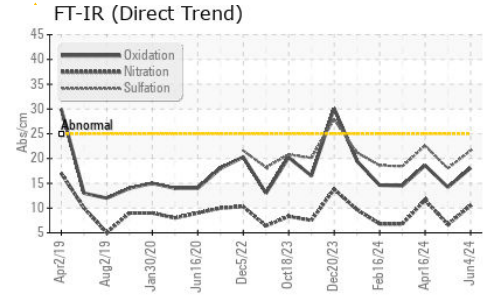
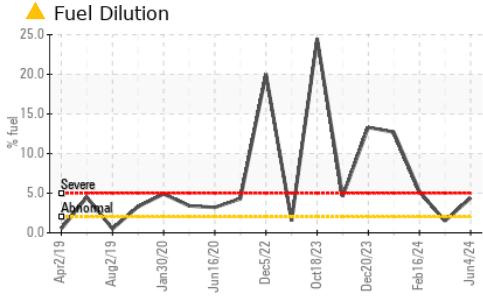
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.7	0.2	0
Nitration	Abs/cm *ASTM D7624 >20	10.5	6.7	11.6
Sulfation	Abs/.1mm *ASTM D7415 >30	21.6	18.0	22.6

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	18.1	14.2	18.6
Base Number (BN)	mg KOH/g ASTM D2896 9.8	7.8	8.4	3.9



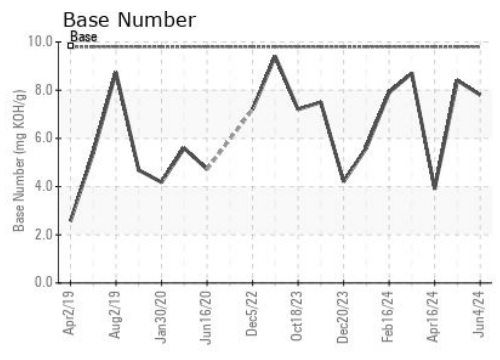
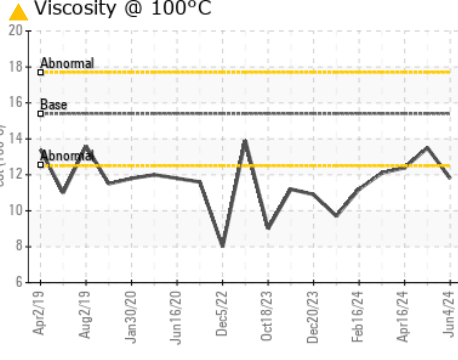
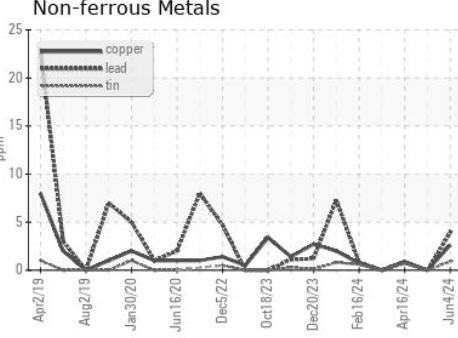
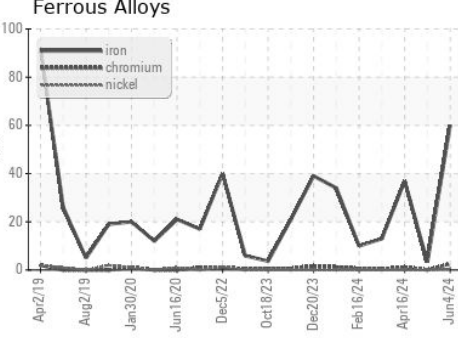
OIL ANALYSIS REPORT



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	▲ 11.8	13.5	12.4

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0120205
Lab Number : 06202319
Unique Number : 11069780
Test Package : FLEET (Additional Tests : FuelDilution, Glycol, PercentFuel)

GFL Environmental - 823 - Central Missouri Hauling
 24461 Oak Grove Lane
 Sedalia, MO
 US 65301

Received : 06 Jun 2024
Tested : 11 Jun 2024
Diagnosed : 11 Jun 2024 - Jonathan Hester
 Contact: Terry Randolph
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