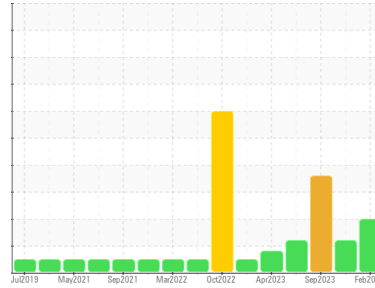




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
401024

Component
Diesel Engine

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

DIAGNOSIS

Recommendation

Check for low coolant level. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. No other corrective action is recommended at this time.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring. Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. 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 acceptable for the time in service (see recommendation).

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		GFL0112414	GFL0099582	GFL0091615
Sample Date	Client Info		15 Feb 2024	21 Nov 2023	13 Sep 2023
Machine Age	hrs	Client Info	20083	537126	0
Oil Age	hrs	Client Info	619	0	0
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			ATTENTION	ATTENTION	ATTENTION

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 D5185(m)	>110	30	26	36
Chromium	ppm	ASTM D5185(m)	>4	1	1	2
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)	>2	0	<1	0
Aluminum	ppm	ASTM D5185(m)	>25	5	4	4
Lead	ppm	ASTM D5185(m)	>45	<1	<1	2
Copper	ppm	ASTM D5185(m)	>85	<1	<1	1
Tin	ppm	ASTM D5185(m)	>4	0	0	0
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	0	<1	1	1
Barium	ppm	ASTM D5185(m)	0	0	<1	0
Molybdenum	ppm	ASTM D5185(m)	60	64	65	61
Manganese	ppm	ASTM D5185(m)	0	0	0	<1
Magnesium	ppm	ASTM D5185(m)	1010	883	915	870
Calcium	ppm	ASTM D5185(m)	1070	1020	1022	940
Phosphorus	ppm	ASTM D5185(m)	1150	958	948	934
Zinc	ppm	ASTM D5185(m)	1270	1112	1151	1057
Sulfur	ppm	ASTM D5185(m)	2060	2424	2389	2257
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

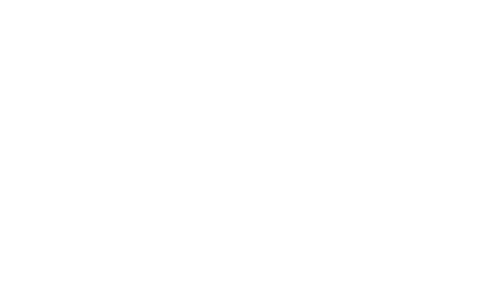
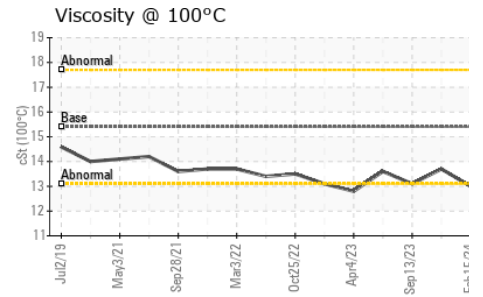
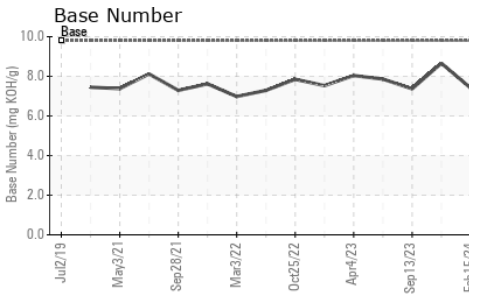
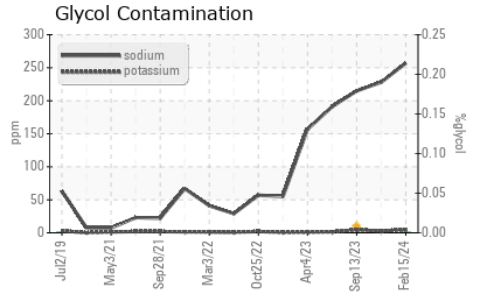
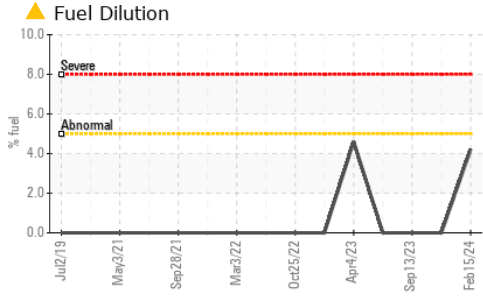
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>30	5	5	7
Sodium	ppm	ASTM D5185(m)		▲ 257	▲ 228	▲ 215
Potassium	ppm	ASTM D5185(m)	>20	4	3	4
Fuel	%	ASTM D7593*	>5	▲ 4.2	<1.0	<1.0
Glycol	%	ASTM D7922*		0.0	0.0	▲ 0.013

INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>3	0.9	0.7	0.7
Nitration	Abs/cm	ASTM D7624*	>20	11.6	10.8	12.0
Sulfation	Abs./1mm	ASTM D7415*	>30	23.4	22.4	24.4



OIL ANALYSIS REPORT

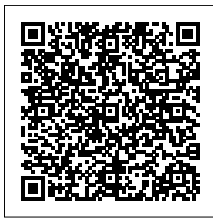
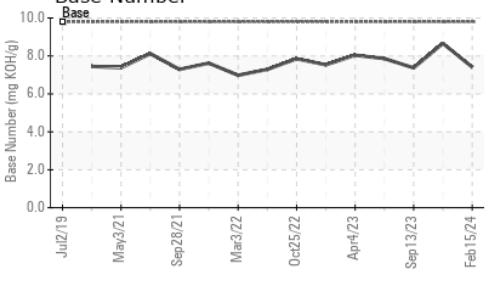
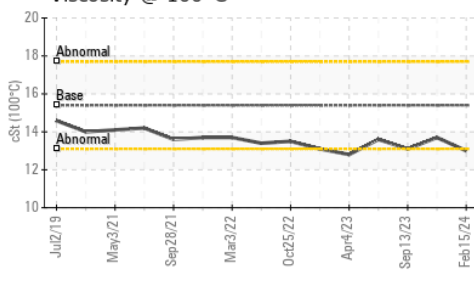
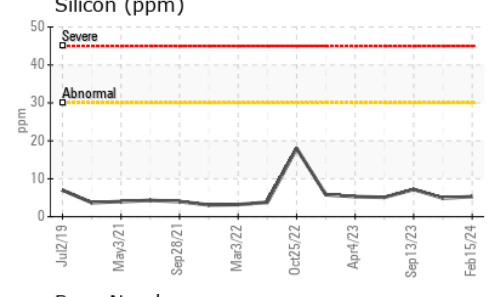
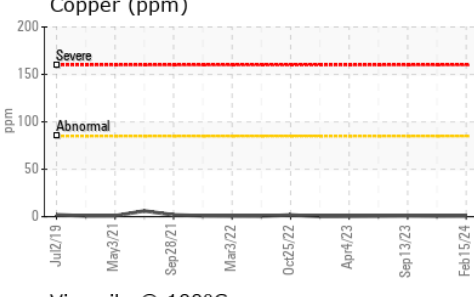
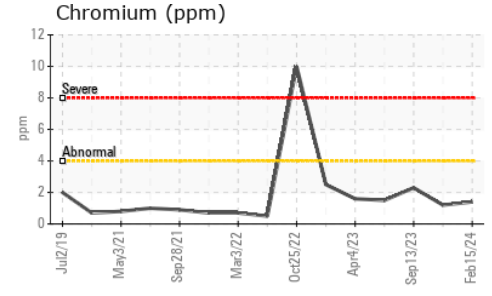
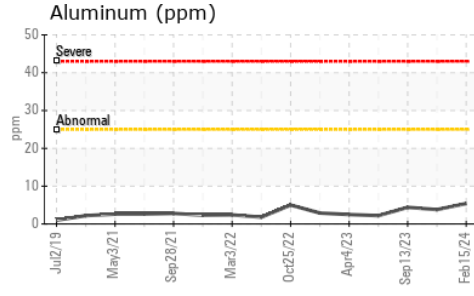
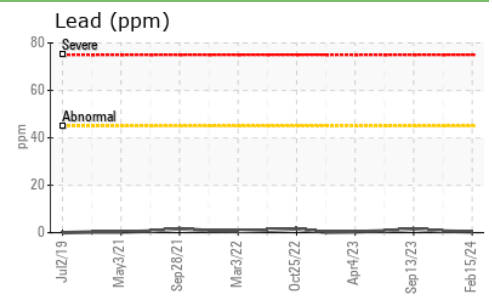
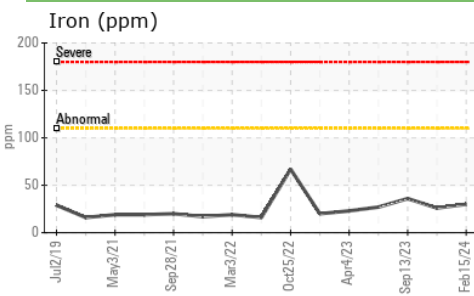


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	19.5	19.7	24.8
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	7.41	8.66	7.37

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	13.0	13.7	13.1

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0112414
Lab Number : 02616964
Unique Number : 5734074
Test Package : MOB 2 (Additional Tests: FuelDilution, Glycol, PercentFuel)
Received : 21 Feb 2024
Tested : 22 Feb 2024
Diagnosed : 22 Feb 2024 - Kevin Marson

GFL Environmental - 550 - Rocky View County
 220 Carmek Blvd
 Rocky View County, AB
 CA T1X 1X1
 Contact: GFL Calgary
 calgarymaintenance@gflenv.com
 T: (403)369-6163

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.