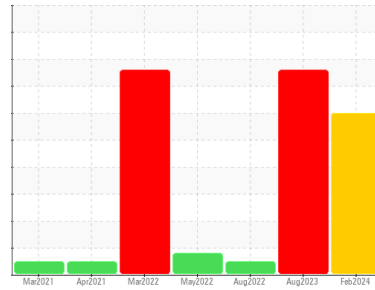




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
501030

Component
Diesel Engine

Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear

Aluminum ppm levels are severe. Piston wear is indicated.

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 oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		GFL0099568	GFL0084357	GFL0057776
Sample Date	Client Info		07 Feb 2024	28 Aug 2023	11 Aug 2022
Machine Age	hrs	Client Info	21312	178494	675
Oil Age	hrs	Client Info	0	0	675
Oil Changed	Client Info		N/A	Changed	Changed
Sample Status			SEVERE	SEVERE	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	<1.0
Water	WC Method	>0.2	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	0.0

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>100	30	66	11
Chromium	ppm	ASTM D5185(m)	>20	2	4	<1
Nickel	ppm	ASTM D5185(m)	>4	2	2	0
Titanium	ppm	ASTM D5185(m)		0	<1	<1
Silver	ppm	ASTM D5185(m)	>3	<1	<1	<1
Aluminum	ppm	ASTM D5185(m)	>20	88	153	23
Lead	ppm	ASTM D5185(m)	>40	2	6	0
Copper	ppm	ASTM D5185(m)	>330	13	35	4
Tin	ppm	ASTM D5185(m)	>15	<1	2	<1
Antimony	ppm	ASTM D5185(m)		0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	<1	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)	1	9	150	6
Barium	ppm	ASTM D5185(m)	1	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	63	79	57
Manganese	ppm	ASTM D5185(m)	1	<1	2	<1
Magnesium	ppm	ASTM D5185(m)	1010	911	465	917
Calcium	ppm	ASTM D5185(m)	1070	1182	1409	1138
Phosphorus	ppm	ASTM D5185(m)	1150	990	1011	964
Zinc	ppm	ASTM D5185(m)	1270	1224	1231	1176
Sulfur	ppm	ASTM D5185(m)	2060	2212	2163	2548
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

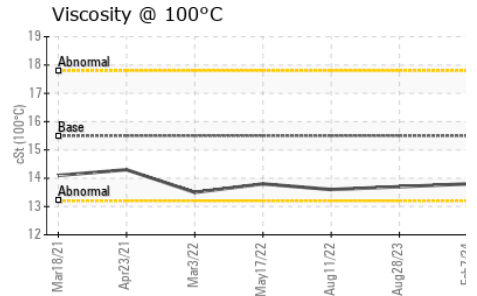
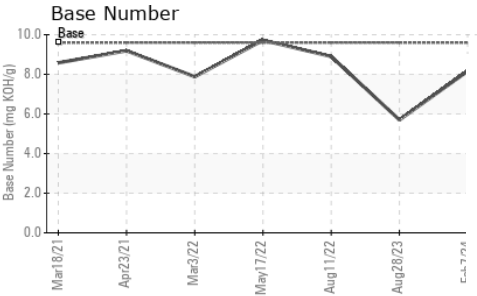
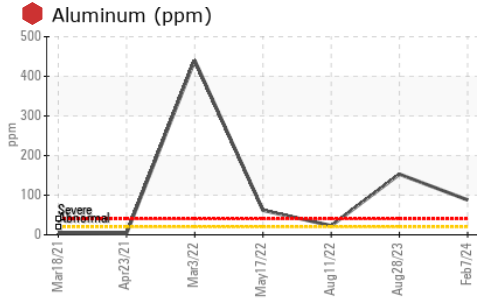
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	16	36	6
Sodium	ppm	ASTM D5185(m)		2	3	2
Potassium	ppm	ASTM D5185(m)	>20	2	4	8

INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>3	0.7	0.7	0.3
Nitration	Abs/cm	ASTM D7624*	>20	9.8	8.1	6.9
Sulfation	Abs./1mm	ASTM D7415*	>30	21.8	23.5	19.8



OIL ANALYSIS REPORT

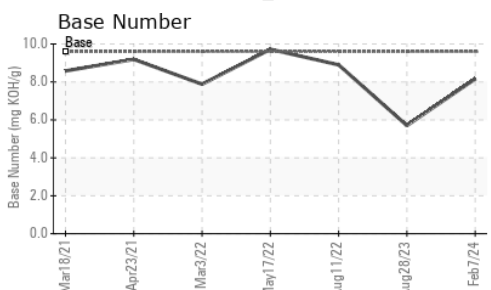
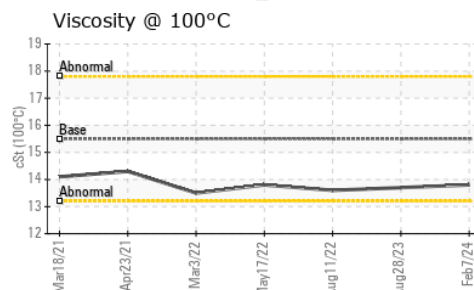
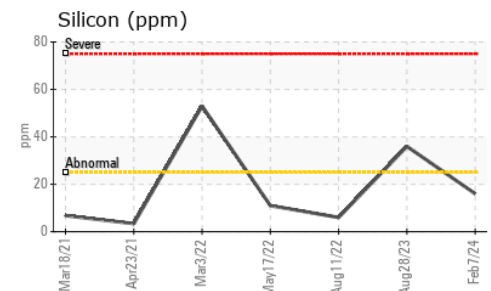
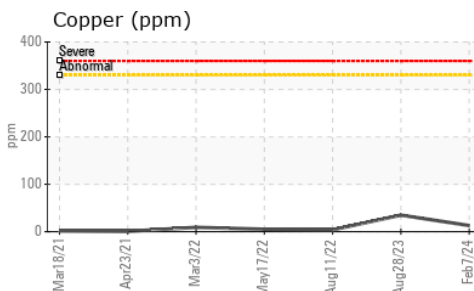
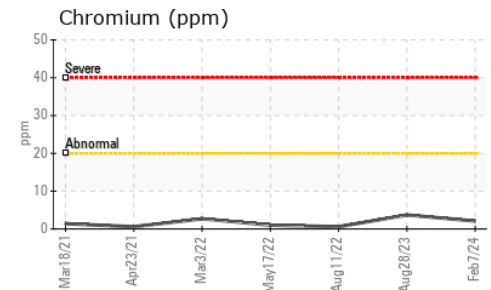
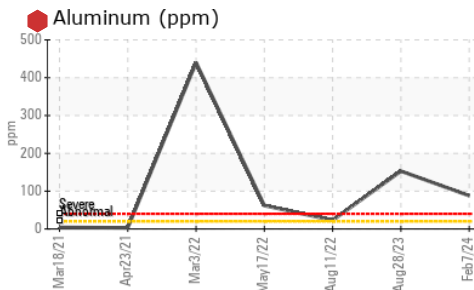
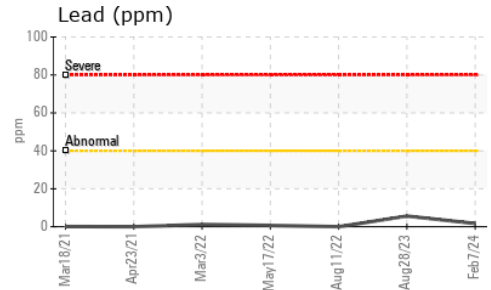
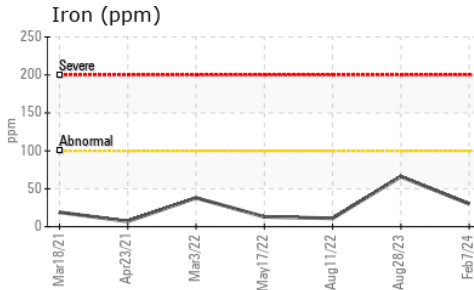


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	18.0	16.0	14.6
Base Number (BN)	mg KOH/g	ASTM D2896*	9.6	8.16	5.70	8.90

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)	15.5	13.8	13.7	13.6

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0099568
Lab Number : 02615269
Unique Number : 5724364
Test Package : MOB 2
Received : 13 Feb 2024
Tested : 14 Feb 2024
Diagnosed : 14 Feb 2024 - Kevin Marson

GFL Environmental - 550 - Rocky View County
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 Rocky View County, AB
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 Contact: GFL Calgary
 calgarymaintenance@gflenv.com
 T:
 F: (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.