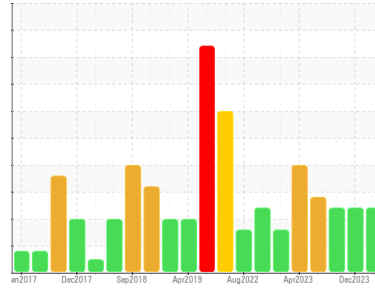




OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area
[MIDDLE]
 Machine Id
4555

Component
Diesel Engine
 Fluid

PETRO CANADA DURON XL SYN BLEND 15W40 (23 LTR)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		GFL0099534	GFL0099587	GFL0091647
Sample Date	Client Info		12 Dec 2023	12 Dec 2023	03 Oct 2023
Machine Age	kms	Client Info	1374137	674137	614354
Oil Age	kms	Client Info	39444	39444	0
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			SEVERE	SEVERE	SEVERE

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >100	56	56	17
Chromium	ppm	ASTM D5185(m) >20	2	2	<1
Nickel	ppm	ASTM D5185(m) >4	<1	<1	0
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m) >3	0	0	<1
Aluminum	ppm	ASTM D5185(m) >20	3	3	2
Lead	ppm	ASTM D5185(m) >40	6	6	3
Copper	ppm	ASTM D5185(m) >330	2	2	<1
Tin	ppm	ASTM D5185(m) >15	<1	1	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) 1	2	2	3
Barium	ppm	ASTM D5185(m) 1	0	0	<1
Molybdenum	ppm	ASTM D5185(m) 60	42	42	51
Manganese	ppm	ASTM D5185(m) 1	0	0	0
Magnesium	ppm	ASTM D5185(m) 1010	663	666	805
Calcium	ppm	ASTM D5185(m) 1070	735	734	882
Phosphorus	ppm	ASTM D5185(m) 1150	700	703	856
Zinc	ppm	ASTM D5185(m) 1270	822	817	1014
Sulfur	ppm	ASTM D5185(m) 2060	1767	1767	2190
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

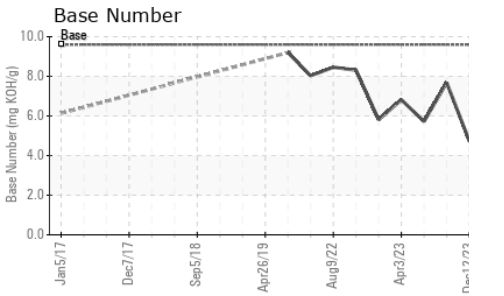
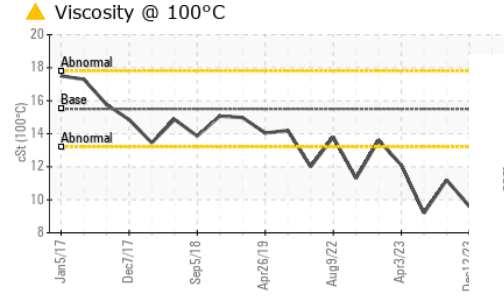
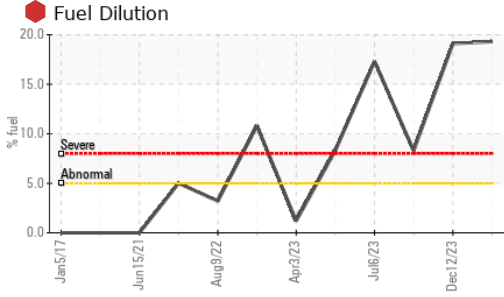
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >25	7	8	7
Sodium	ppm	ASTM D5185(m)	6	6	2
Potassium	ppm	ASTM D5185(m) >20	1	2	0
Fuel	%	ASTM D7593* >5	19.3	19.1	8.3

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >3	1.6	1.6	0.6
Nitration	Abs/cm	ASTM D7624* >20	13.5	13.5	9.5
Sulfation	Abs/.1mm	ASTM D7415* >30	27.1	27.2	23.7



OIL ANALYSIS REPORT

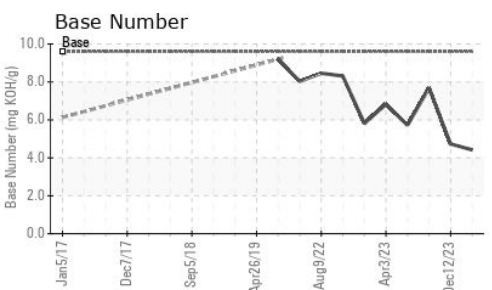
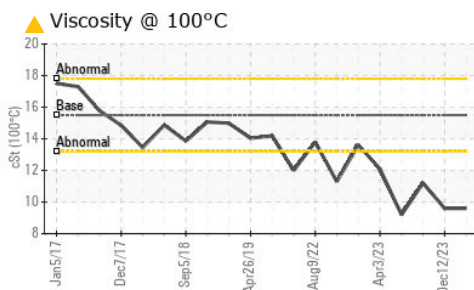
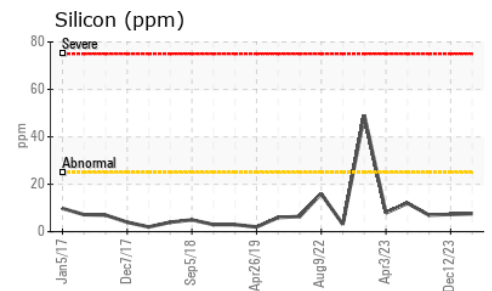
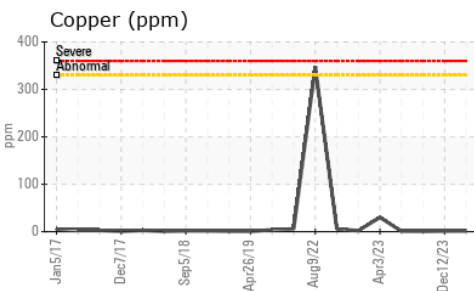
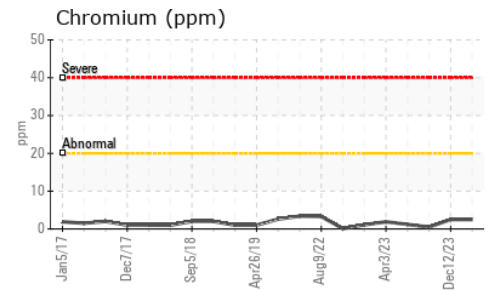
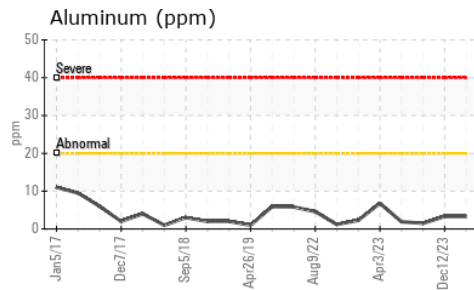
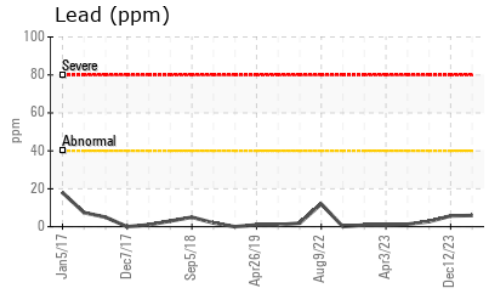
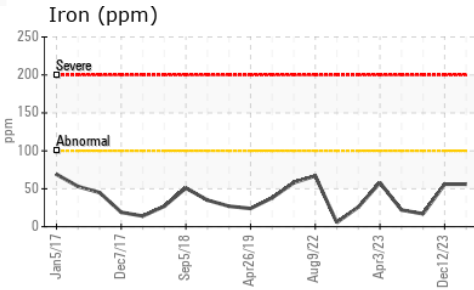


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	29.2	29.2	24.7
Base Number (BN)	mg KOH/g	ASTM D2896*	9.6	4.42	4.73	7.68

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	▲ 9.6	▲ 9.6	▲ 11.2

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 550 - Rocky View County
Sample No. : GFL0099534 **Received** : 20 Dec 2023 220 Carmek Blvd
Lab Number : **02604318** **Diagnosed** : 22 Dec 2023 Rocky View County, AB
Unique Number : 5697403 **Diagnostician** : Kevin Marson CA T1X 1X1
Test Package : MOB 2 (Additional Tests: PercentFuel) Contact: GFL Calgary
 To discuss this sample report, contact Customer Service at 1-800-268-2131. calgarymaintenance@gflenv.com
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T:
 Validity of results and interpretation are based on the sample and information as supplied. F: (403)369-6163