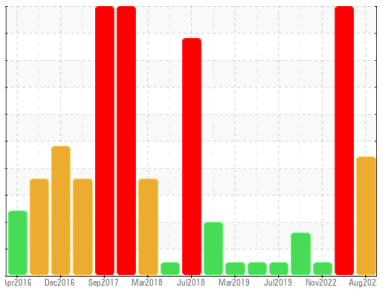
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
1150
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (22 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

Chromium and iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Ring wear is indicated.

Contamination

There is a high amount of fuel present in the oil. Light concentration of carbon/soot present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

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		**GFL0090578**	GFL0072823	GFL0064112
Sample Date		Client Info		**30 Aug 2023**	04 Mar 2023	20 Nov 2022
Machine Age	hrs	Client Info		**41409**	3447	15897
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	N/A	N/A
Sample Status				**SEVERE**	SEVERE	NORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	0	---
Iron	ppm	ASTM D5185(m)	>127	▲ **144**	⬢ 267	15
Chromium	ppm	ASTM D5185(m)	>3	▲ **4**	⬢ 8	<1
Nickel	ppm	ASTM D5185(m)	>30	**1**	3	<1
Titanium	ppm	ASTM D5185(m)	>2	**0**	<1	<1
Silver	ppm	ASTM D5185(m)	>2	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>59	**11**	36	5
Lead	ppm	ASTM D5185(m)	>29	**4**	7	0
Copper	ppm	ASTM D5185(m)	>135	**2**	4	2
Tin	ppm	ASTM D5185(m)	>2	**0**	<1	0
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)	2	**2**	9	150
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	50	**52**	55	4
Manganese	ppm	ASTM D5185(m)	0	**<1**	2	<1
Magnesium	ppm	ASTM D5185(m)	950	**809**	823	66
Calcium	ppm	ASTM D5185(m)	1050	**862**	1095	1994
Phosphorus	ppm	ASTM D5185(m)	995	**885**	986	986
Zinc	ppm	ASTM D5185(m)	1180	**994**	1090	1027
Sulfur	ppm	ASTM D5185(m)	2600	**2092**	2312	2796
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>18	**5**	10	4
Sodium	ppm	ASTM D5185(m)		**2**	3	2
Potassium	ppm	ASTM D5185(m)	>20	**<1**	2	6
Fuel	%	ASTM D7593*	>2.0	⬢ **7.4**	▲ 4.7	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	▲ **4.6**	⬢ 6	0.7
Nitration	Abs/cm	ASTM D7624*	>20	**16.2**	20.6	7.6
Sulfation	Abs/.1mm	ASTM D7415*	>30	**35.4**	40.1	23.5

OIL ANALYSIS REPORT

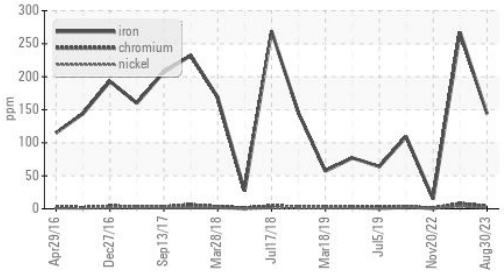
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**26.8**	30.4	18.3

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

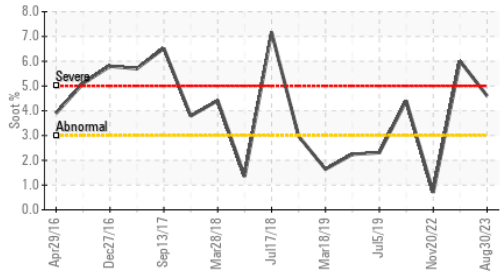
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	12.00	**11.6**	13.4	13.7

GRAPHS

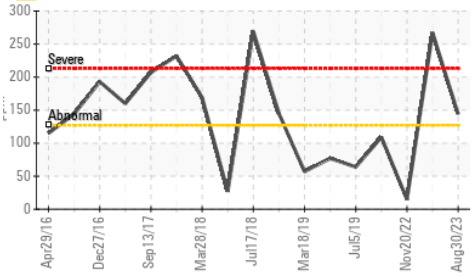
Ferrous Alloys



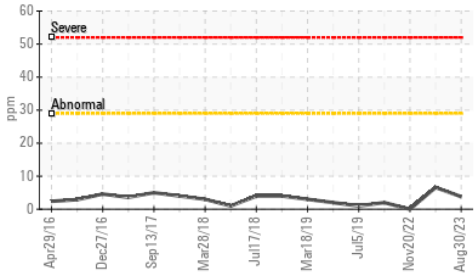
Soot %



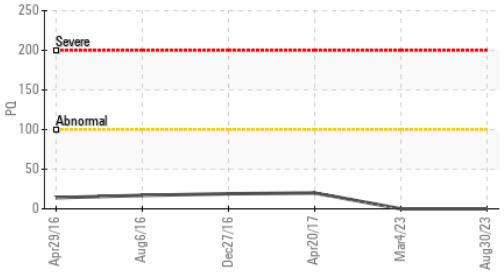
Iron (ppm)



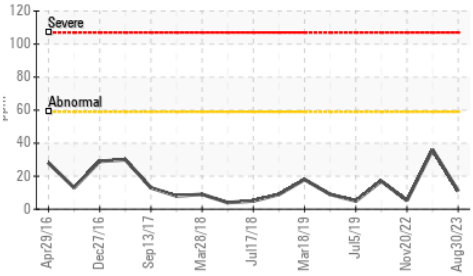
Lead (ppm)



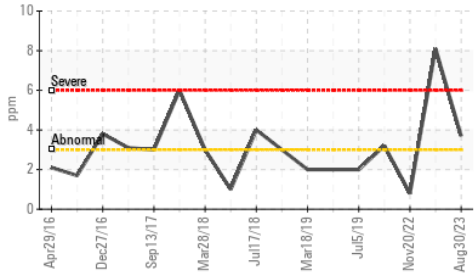
PQ



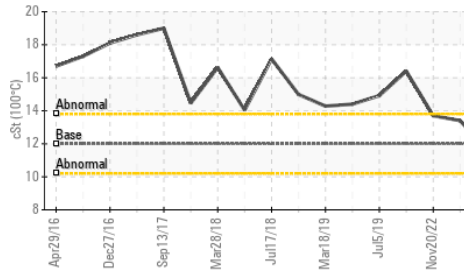
Aluminum (ppm)



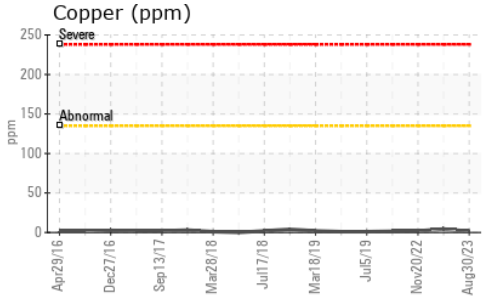
Chromium (ppm)



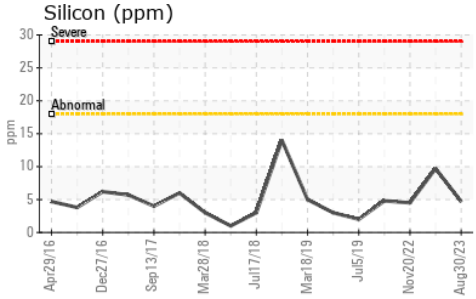
Viscosity @ 100°C



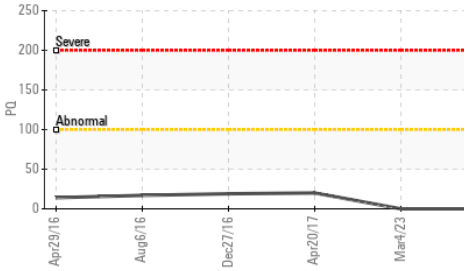
Copper (ppm)



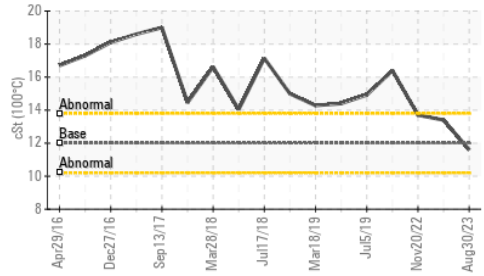
Silicon (ppm)



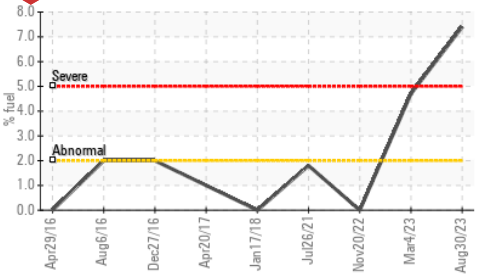
PQ



Viscosity @ 100°C



Fuel Dilution



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 550 - Rocky View County**
Sample No. : GFL0090578 **Received** : 08 Sep 2023 220 Carmek Blvd
Lab Number : 02581113 **Diagnosed** : 11 Sep 2023 Rocky View County, AB
Unique Number : 5642178 **Diagnostician** : Kevin Marson CA T1X 1X1
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, PQ) 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