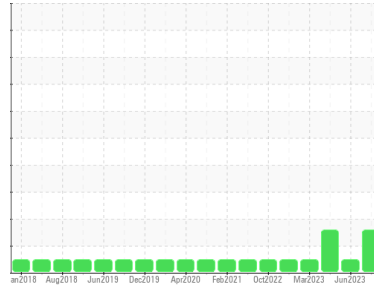




OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
801052
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (22 LTR)

DIAGNOSIS

Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear

Aluminum ppm levels are noted. All other component wear rates are normal.

Contamination

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition

The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL	GFL0086496	GFL0086505
Sample Date	Client Info	05 Sep 2023	23 Jun 2023	14 Jun 2023
Machine Age	hrs	Client Info	12988	12913
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	N/A	Not Changd	Changed
Sample Status		ABNORMAL	NORMAL	ABNORMAL

CONTAMINATION

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

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185(m) >80	46	15	41
Chromium	ppm ASTM D5185(m) >5	3	1	3
Nickel	ppm ASTM D5185(m) >2	<1	<1	<1
Titanium	ppm ASTM D5185(m)	<1	<1	<1
Silver	ppm ASTM D5185(m) >3	0	0	0
Aluminum	ppm ASTM D5185(m) >30	7	3	7
Lead	ppm ASTM D5185(m) >30	0	0	0
Copper	ppm ASTM D5185(m) >150	2	<1	2
Tin	ppm ASTM D5185(m) >5	0	0	0
Antimony	ppm ASTM D5185(m)	0	0	<1
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	2	3	5
Barium	ppm ASTM D5185(m) 0	0	0	0
Molybdenum	ppm ASTM D5185(m) 60	59	58	58
Manganese	ppm ASTM D5185(m) 0	<1	<1	<1
Magnesium	ppm ASTM D5185(m) 1010	968	969	922
Calcium	ppm ASTM D5185(m) 1070	1069	1030	1124
Phosphorus	ppm ASTM D5185(m) 1150	1024	1064	1027
Zinc	ppm ASTM D5185(m) 1270	1207	1187	1205
Sulfur	ppm ASTM D5185(m) 2060	2416	2569	2496
Lithium	ppm ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >20	▲ 22	10	▲ 21
Sodium	ppm ASTM D5185(m)	11	6	13
Potassium	ppm ASTM D5185(m) >20	4	2	4

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% ASTM D7844* >3	0.4	0	0.3
Nitration	Abs/cm ASTM D7624* >20	10.0	6.0	9.2
Sulfation	Abs/.1mm ASTM D7415* >30	22.2	18.4	20.0

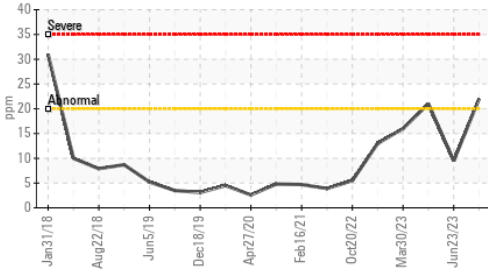
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm ASTM D7414* >25	17.1	13.9	16.4

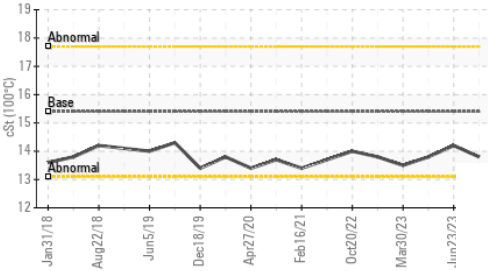


OIL ANALYSIS REPORT

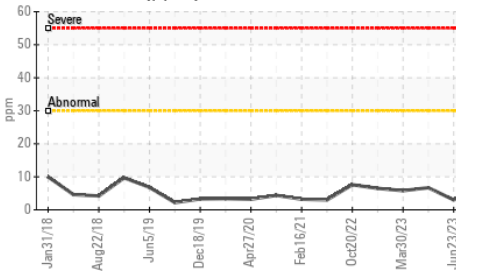
▲ Silicon (ppm)



Viscosity @ 100°C



Aluminum (ppm)

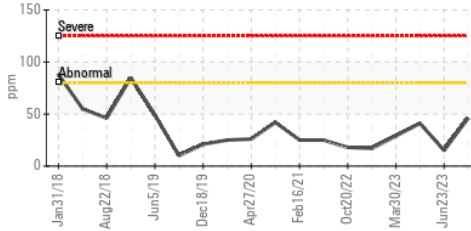


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	VLITE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	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

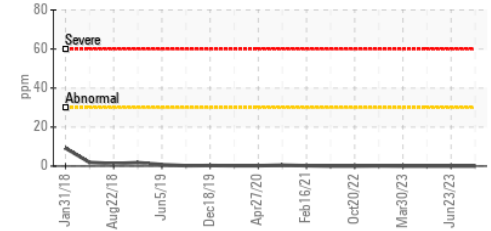
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	13.8	14.2

GRAPHS

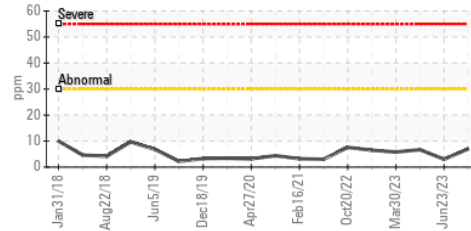
Iron (ppm)



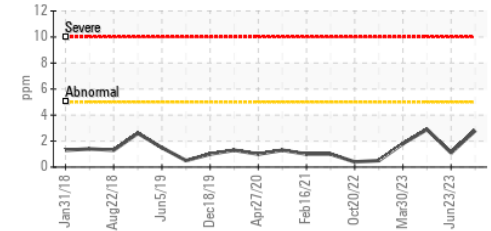
Lead (ppm)



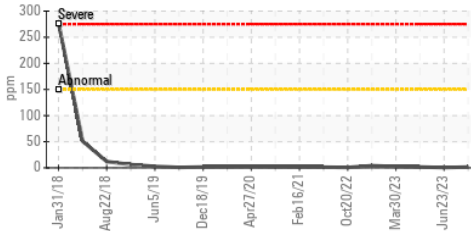
Aluminum (ppm)



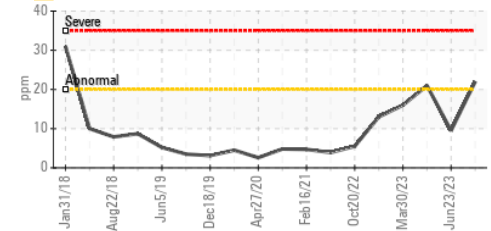
Chromium (ppm)



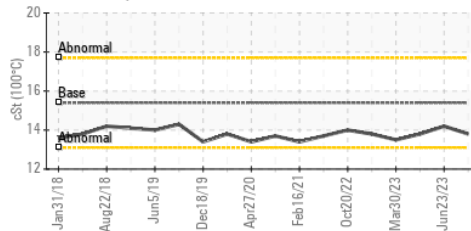
Copper (ppm)



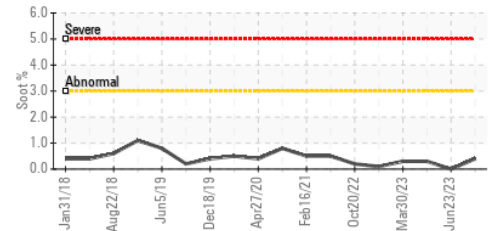
▲ Silicon (ppm)



Viscosity @ 100°C



Soot %



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL **Received** : 06 Sep 2023
Lab Number : 02580567 **Diagnosed** : 06 Sep 2023
Unique Number : 5633627 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: Visual)

GFL Environmental - 217 - Aurora
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 F: (905)713-2445

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.