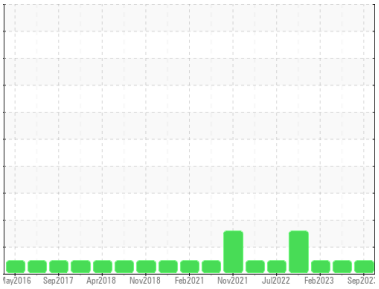
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
4498
Component
Front Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (37 LTR)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

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 condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0084340**	GFL0077628	GFL0063761
Sample Date		Client Info		**06 Sep 2023**	11 May 2023	07 Feb 2023
Machine Age	hrs	Client Info		**19640**	195402	18733
Oil Age	hrs	Client Info		**600**	195402	687
Oil Changed		Client Info		**Changed**	N/A	Changed
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	**<1.0**	<1.0	<1.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	**45**	16	34
Chromium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	**1**	<1	1
Titanium	ppm	ASTM D5185(m)		**<1**	<1	<1
Silver	ppm	ASTM D5185(m)	>2	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>25	**5**	2	4
Lead	ppm	ASTM D5185(m)	>40	**2**	<1	2
Copper	ppm	ASTM D5185(m)	>330	**13**	2	4
Tin	ppm	ASTM D5185(m)	>15	**<1**	<1	1
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	**4**	2	2
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**60**	58	60
Manganese	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**959**	938	945
Calcium	ppm	ASTM D5185(m)	1070	**1067**	1081	1114
Phosphorus	ppm	ASTM D5185(m)	1150	**1007**	1049	1043
Zinc	ppm	ASTM D5185(m)	1270	**1184**	1142	1179
Sulfur	ppm	ASTM D5185(m)	2060	**2301**	2562	2433
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**12**	6	15
Sodium	ppm	ASTM D5185(m)		**41**	21	29
Potassium	ppm	ASTM D5185(m)	>20	**5**	1	2
Glycol	%	ASTM D7922*		**0.0**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**0.6**	0.1	0.1
Nitration	Abs/cm	ASTM D7624*	>20	**8.6**	7.9	9.4
Sulfation	Abs/.1mm	ASTM D7415*	>30	**21.5**	19.0	22.2

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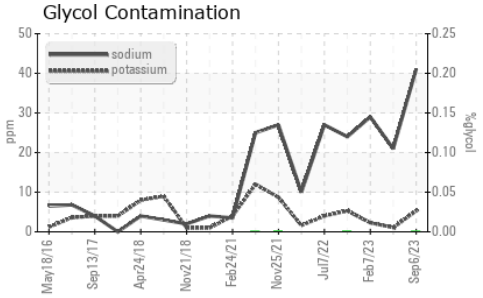
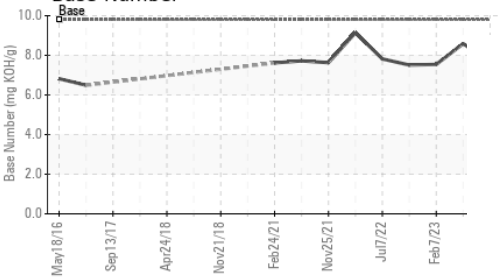
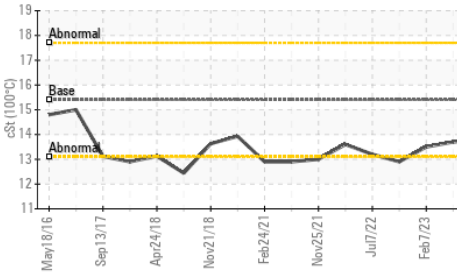
Glycol Contamination



Base Number



Viscosity @ 100°C



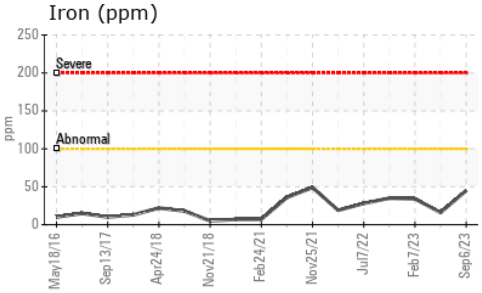
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**16.7**	15.4	17.5
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	**7.67**	8.59	7.54

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

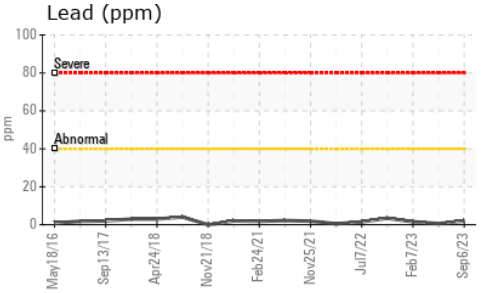
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	**13.8**	13.7	13.5

GRAPHS

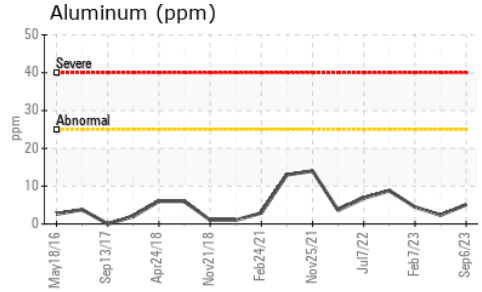
Iron (ppm)



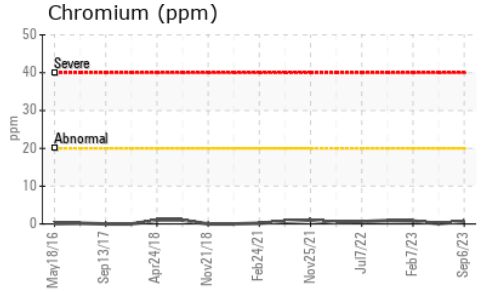
Lead (ppm)



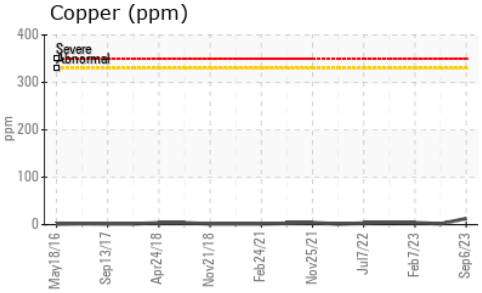
Aluminum (ppm)



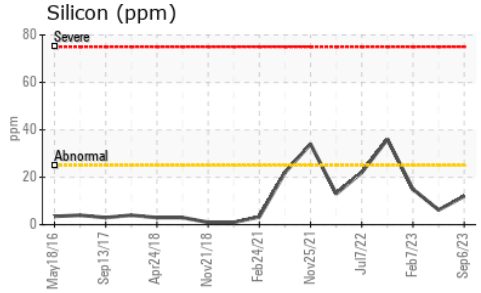
Chromium (ppm)



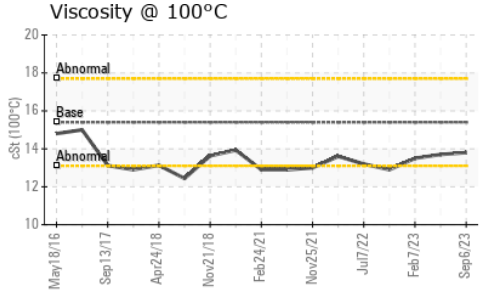
Copper (ppm)



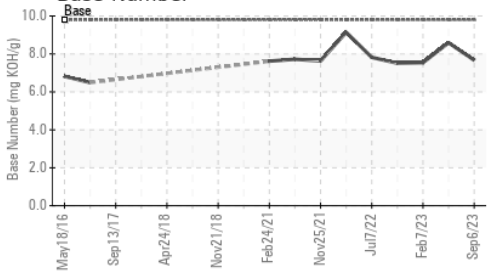
Silicon (ppm)



Viscosity @ 100°C



Base Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 550 - Rocky View County**
Sample No. : GFL0084340 **Received** : 12 Sep 2023 220 Carmek Blvd
Lab Number : 02581704 **Diagnosed** : 14 Sep 2023 Rocky View County, AB
Unique Number : 5642769 **Diagnostician** : Wes Davis CA T1X 1X1
Test Package : MOB 2 (Additional Tests: Glycol) 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