



WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
8112
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0107287	GFL0057879	GFL0057874
Sample Date		Client Info		27 Feb 2024	15 Mar 2023	09 Feb 2023
Machine Age	hrs	Client Info		16004	14896	14783
Oil Age	hrs	Client Info		600	600	555
Filter Age	hrs	Client Info		600	600	555
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

Iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated.

PQ		ASTM D8184*	>65	0	---	---
Iron	ppm	ASTM D5185(m)	>80	▲ 83	11	38
Chromium	ppm	ASTM D5185(m)	>5	4	<1	2
Nickel	ppm	ASTM D5185(m)	>2	1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)	>30	5	1	3
Lead	ppm	ASTM D5185(m)	>30	2	<1	3
Copper	ppm	ASTM D5185(m)	>150	5	<1	1
Tin	ppm	ASTM D5185(m)	>5	1	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0

CONTAMINATION

There is no indication of any contamination in the oil.

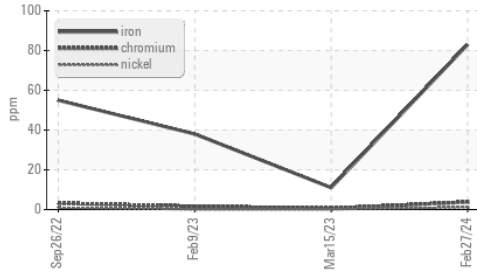
Silicon	ppm	ASTM D5185(m)	>20	14	4	6
Potassium	ppm	ASTM D5185(m)	>20	3	<1	3
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	0.9	0.1	0.6
Nitration	Abs/cm	ASTM D7624*	>20	11.4	7.5	12.2
Sulfation	Abs/.1mm	ASTM D7415*	>30	25.0	19.0	23.9
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

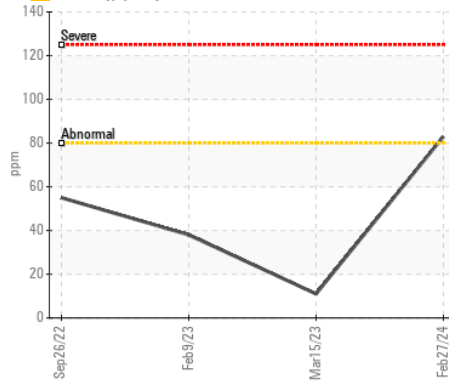
Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		9	5	10
Boron	ppm	ASTM D5185(m)	0	13	17	13
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	79	61	64
Manganese	ppm	ASTM D5185(m)	0	4	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	430	936	979
Calcium	ppm	ASTM D5185(m)	1070	1834	1059	1123
Phosphorus	ppm	ASTM D5185(m)	1150	1035	1024	1049
Zinc	ppm	ASTM D5185(m)	1270	1220	1133	1212
Sulfur	ppm	ASTM D5185(m)	2060	2851	2478	2323
Oxidation	Abs/.1mm	ASTM D7414*	>25	21.4	15.3	23.2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	14.3	13.4	13.2

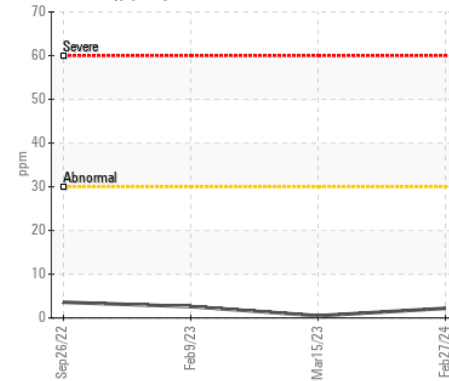
▲ Ferrous Alloys



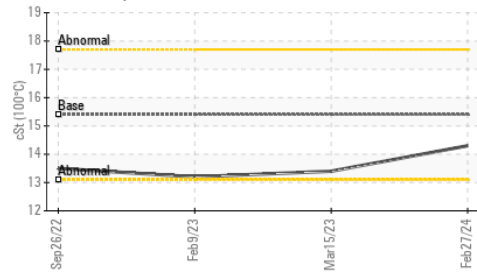
▲ Iron (ppm)



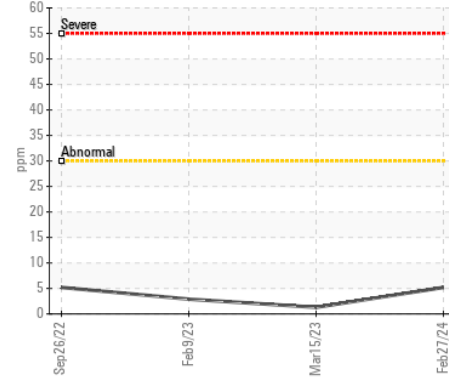
Lead (ppm)



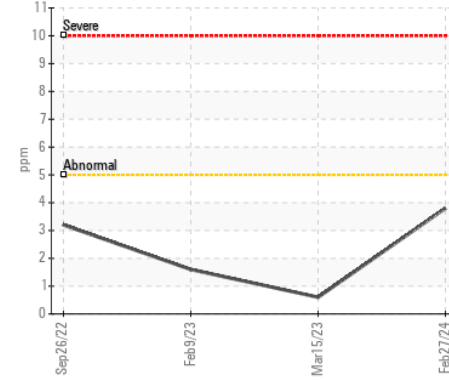
Viscosity @ 100°C



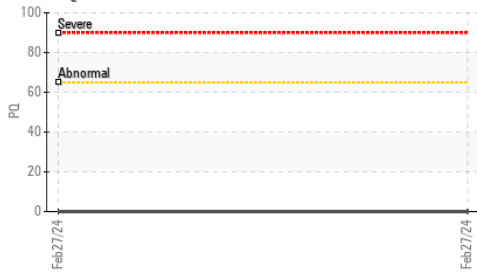
Aluminum (ppm)



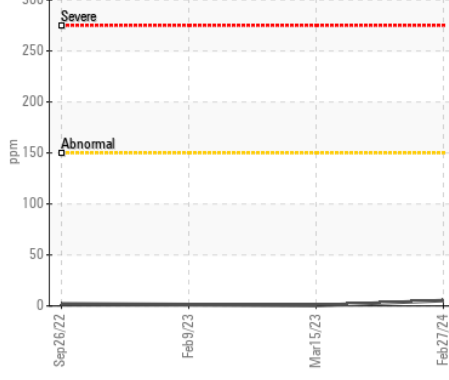
Chromium (ppm)



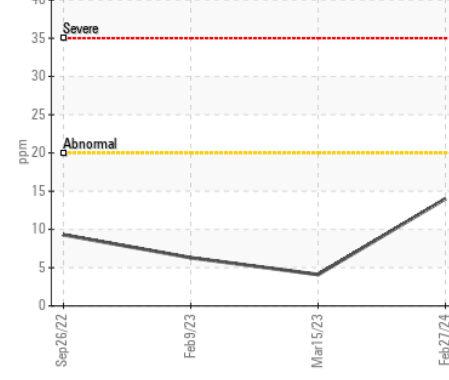
PQ



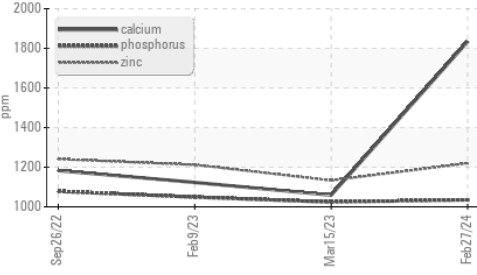
Copper (ppm)



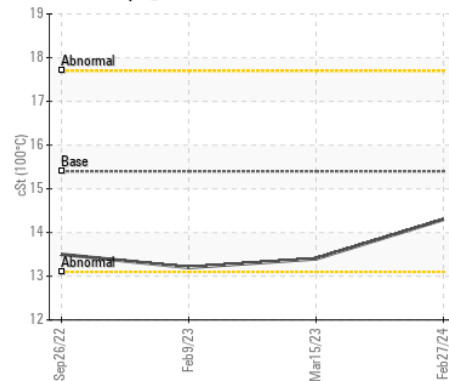
Silicon (ppm)



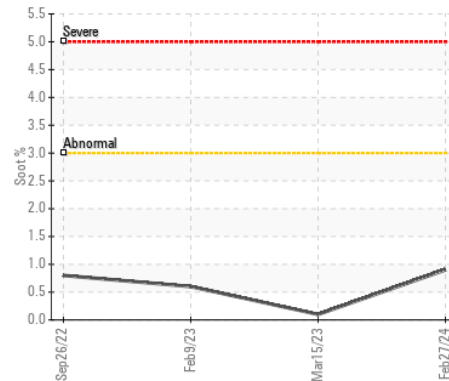
Additives



Viscosity @ 100°C



Soot %



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 250 - Sault Ste Marie Hauling + MRF
Sample No. : GFL0107287 **Received** : 29 Feb 2024 86 Sackville Rd,
Lab Number : 02618859 **Tested** : 29 Feb 2024 Sault Ste. Marie, ON
Unique Number : 5735969 **Diagnosed** : 29 Feb 2024 - Kevin Marson CA P6B 4T6
Test Package : MOB 1 (Additional Tests: PQ) Contact: Mike Pelletier
 To discuss this sample report, contact Customer Service at 1-800-268-2131. mpelletier@gflenv.com
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (705)945-7554
 Validity of results and interpretation are based on the sample and information as supplied. F: (705)945-7857