

Machine Id
4535
Component
Front Diesel Engine
Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (22 LTR)

RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0099538	GFL0084281	GFL0070739
Sample Date		Client Info		26 Dec 2023	19 Jul 2023	07 Mar 2023
Machine Age	kms	Client Info		301017	282398	9154
Oil Age	kms	Client Info		0	0	279
Filter Age	kms	Client Info		0	0	279
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	ABNORMAL	ABNORMAL

WEAR

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

PQ	UOM	Method	Limit/Abn	Current	History1	History2
PQ		ASTM D8184*		0	2	---
Iron	ppm	ASTM D5185(m)	>127	281	212	60
Chromium	ppm	ASTM D5185(m)	>3	3	4	3
Nickel	ppm	ASTM D5185(m)	>30	1	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	<1
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>59	11	8	9
Lead	ppm	ASTM D5185(m)	>29	6	7	4
Copper	ppm	ASTM D5185(m)	>135	3	5	7
Tin	ppm	ASTM D5185(m)	>2	<1	1	2
Vanadium	ppm	ASTM D5185(m)		0	<1	0

CONTAMINATION

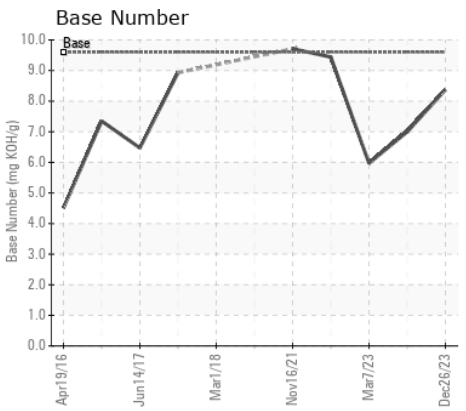
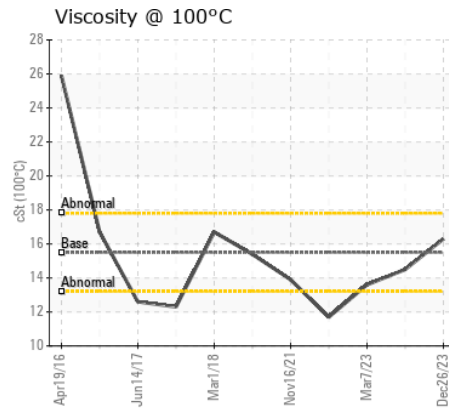
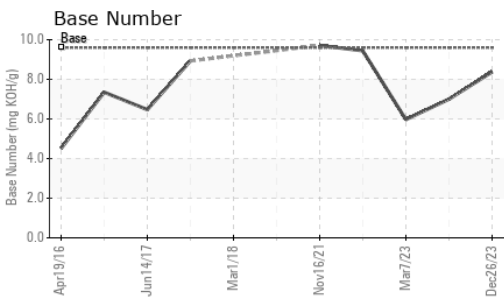
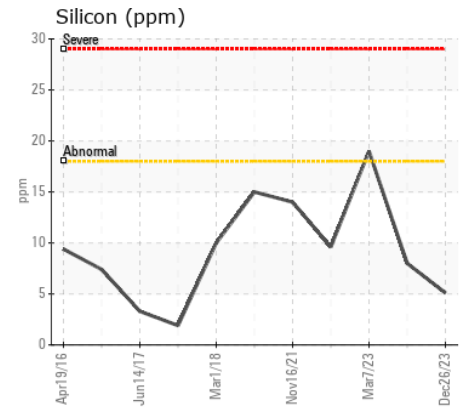
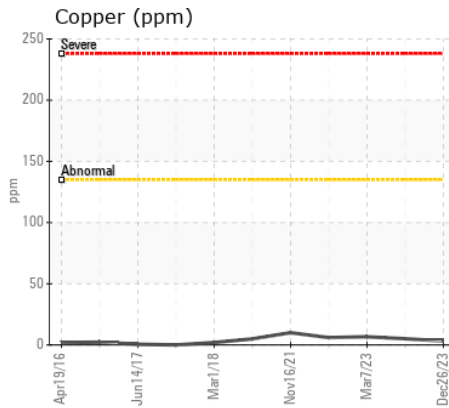
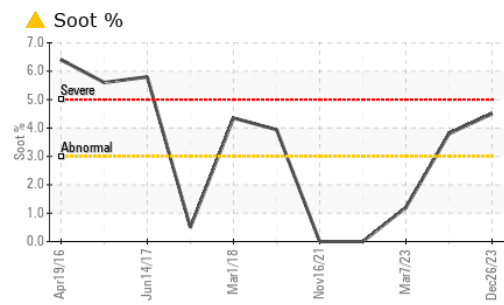
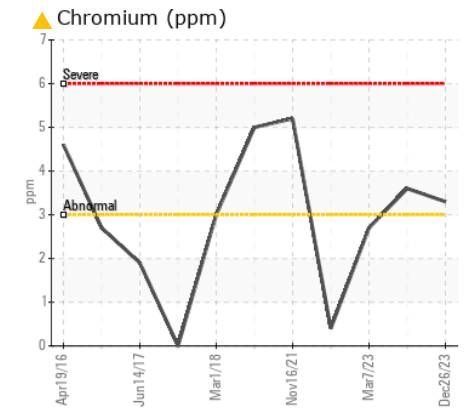
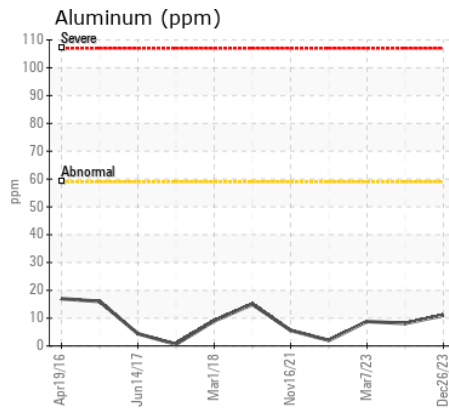
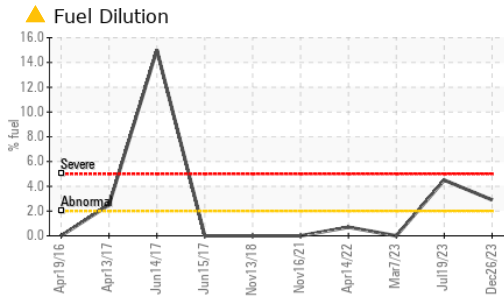
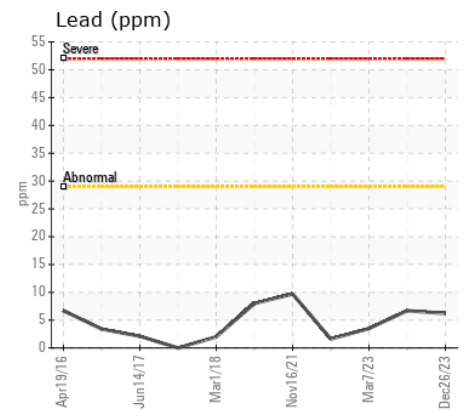
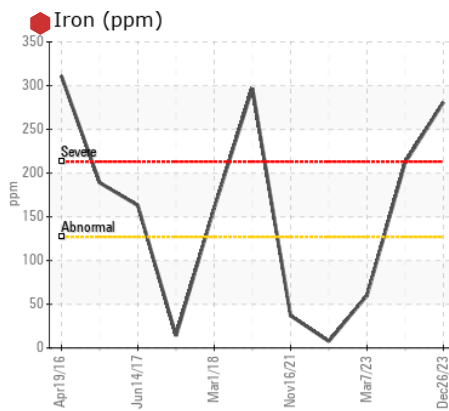
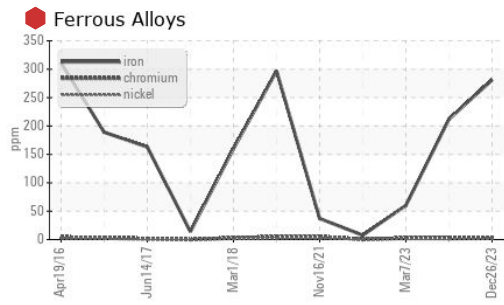
There is a moderate amount of fuel present in the oil. Light concentration of carbon/soot present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185(m)	>18	5	8	19
Potassium	ppm	ASTM D5185(m)	>20	1	1	3
Fuel	%	ASTM D7593*	>2.0	2.9	4.5	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	4.5	3.8	1.2
Nitration	Abs/cm	ASTM D7624*	>20	15.8	14.1	9.2
Sulfation	Abs/.1mm	ASTM D7415*	>30	32.4	31.0	24.3
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		1	2	3
Boron	ppm	ASTM D5185(m)	1	2	2	5
Barium	ppm	ASTM D5185(m)	1	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	56	53	57
Manganese	ppm	ASTM D5185(m)	1	2	2	<1
Magnesium	ppm	ASTM D5185(m)	1010	865	851	851
Calcium	ppm	ASTM D5185(m)	1070	993	907	1057
Phosphorus	ppm	ASTM D5185(m)	1150	891	924	1005
Zinc	ppm	ASTM D5185(m)	1270	1092	1047	1085
Sulfur	ppm	ASTM D5185(m)	2060	2237	2049	2379
Oxidation	Abs/.1mm	ASTM D7414*	>25	27.2	24.1	16.8
Base Number (BN)	mg KOH/g	ASTM D2896*	9.6	8.37	7.00	5.97
Visc @ 100°C	cSt	ASTM D7279(m)	15.5	16.3	14.5	13.6



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 550 - Rocky View County
Sample No. : GFL0099538 **Received** : 04 Jan 2024
Lab Number : 02606447 **Diagnosed** : 08 Jan 2024
Unique Number : 5707533 **Diagnostician** : Kevin Marson
Test Package : MOB 2 (Additional Tests: PercentFuel, PQ)
 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.
 Contact: GFL Calgary calgarymaintenance@gflenv.com
 T: (403)369-6163