



WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Machine Id
423011-4659
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0110417	GFL0091898	GFL0112758
Sample Date		Client Info		10 Jul 2024	31 May 2024	02 Mar 2024
Machine Age	hrs	Client Info		37334	37115	36960
Oil Age	hrs	Client Info		382	37115	34985
Filter Age	hrs	Client Info		382	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

Piston, ring and cylinder wear is indicated.

Iron	ppm	ASTM D5185m	>120	▲ 118	2	2
Chromium	ppm	ASTM D5185m	>20	8	<1	0
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	▲ 45	3	1
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	40	<1	0
Tin	ppm	ASTM D5185m	>15	6	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

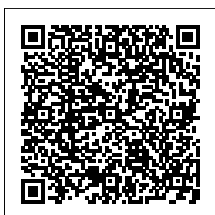
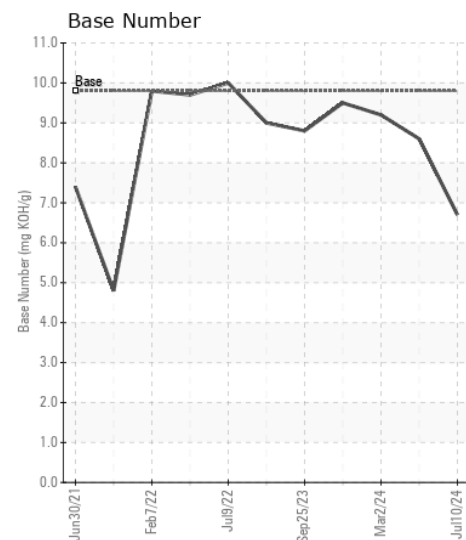
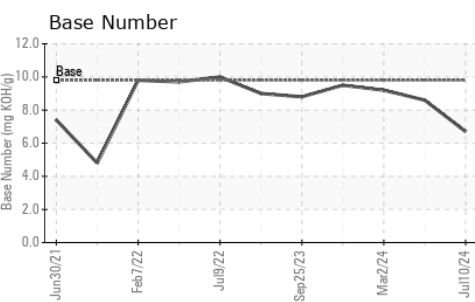
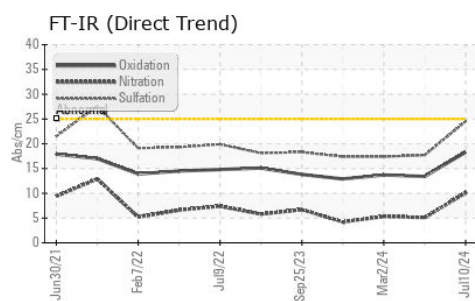
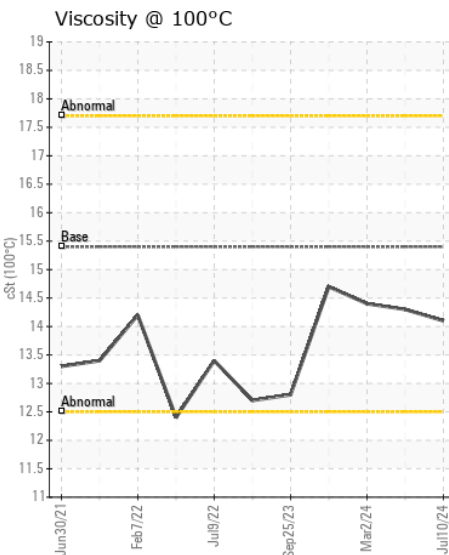
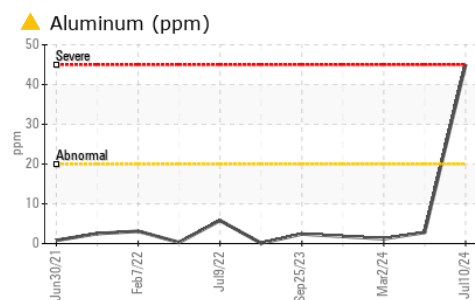
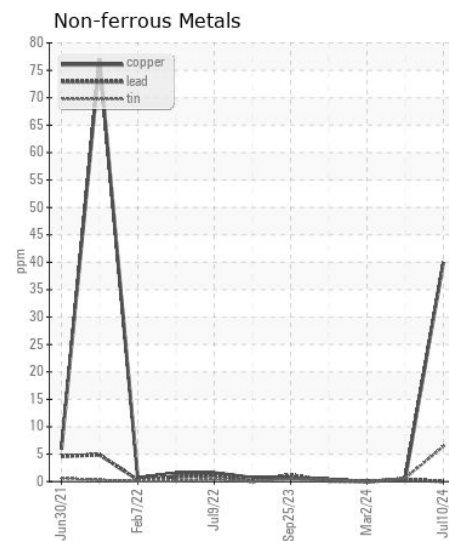
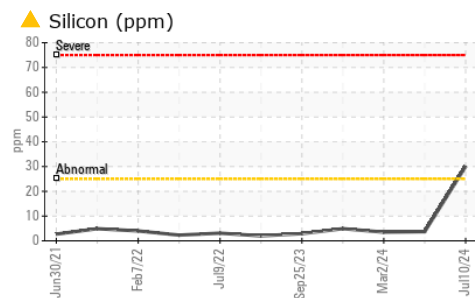
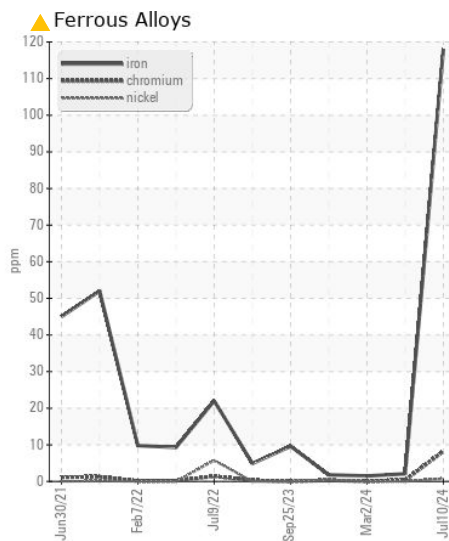
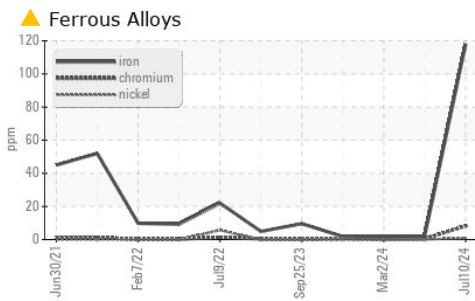
Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>25	▲ 30	4	4
Potassium	ppm	ASTM D5185m	>20	18	3	0
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>4	1.2	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	10.1	5.1	5.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.5	17.7	17.4
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
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 condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		51	0	0
Boron	ppm	ASTM D5185m	0	53	1	0
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	87	58	57
Manganese	ppm	ASTM D5185m	0	4	0	<1
Magnesium	ppm	ASTM D5185m	1010	675	905	945
Calcium	ppm	ASTM D5185m	1070	1314	1135	1008
Phosphorus	ppm	ASTM D5185m	1150	1014	1111	1032
Zinc	ppm	ASTM D5185m	1270	1239	1193	1207
Sulfur	ppm	ASTM D5185m	2060	3277	3417	2953
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.3	13.4	13.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	6.7	8.6	9.2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	14.3	14.4



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0110417
 Lab Number : 06238784
 Unique Number : 11127618
 Test Package : FLEET

Received : 17 Jul 2024
 Tested : 17 Jul 2024
 Diagnosed : 18 Jul 2024 - Sean Felton

GFL Environmental - 044 - Elizabeth City
 657 Old US 17
 Elizabeth City, NC
 US 27909
 Contact: TOM BAIRD
 tom.baird@gflenv.com
 T: (252)562-2645
 F: (252)264-4411

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)