



Machine Id
4685M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

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		GFL0108872	GFL0101466	GFL0089111
Sample Date		Client Info		19 Mar 2024	06 Dec 2023	22 Nov 2023
Machine Age	hrs	Client Info		16608	15765	15636
Oil Age	hrs	Client Info		16608	15628	12065
Filter Age	hrs	Client Info		0	15628	12065
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Filter Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	78	75	65
Chromium	ppm	ASTM D5185m	>5	4	7	6
Nickel	ppm	ASTM D5185m	>2	1	3	2
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	9	11	8
Lead	ppm	ASTM D5185m	>30	0	0	0
Copper	ppm	ASTM D5185m	>150	1	3	2
Tin	ppm	ASTM D5185m	>5	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

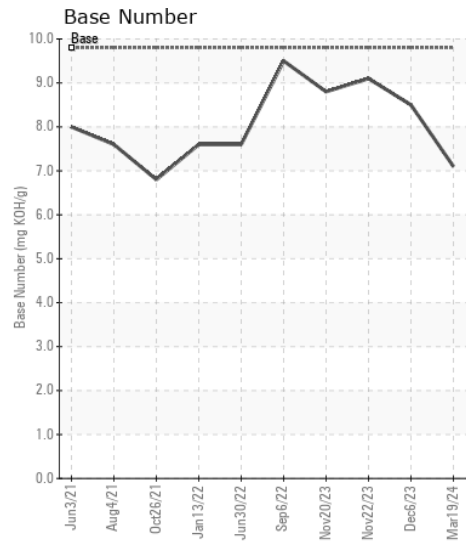
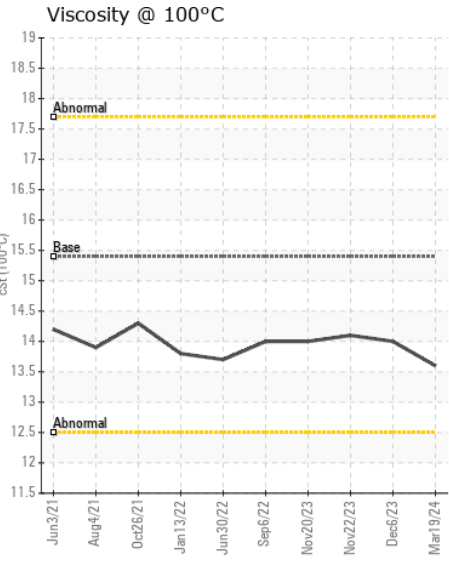
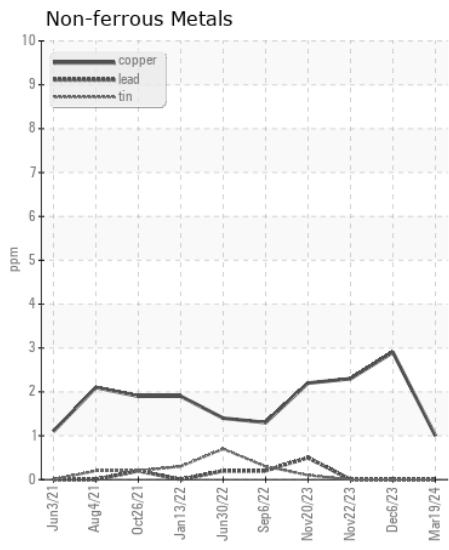
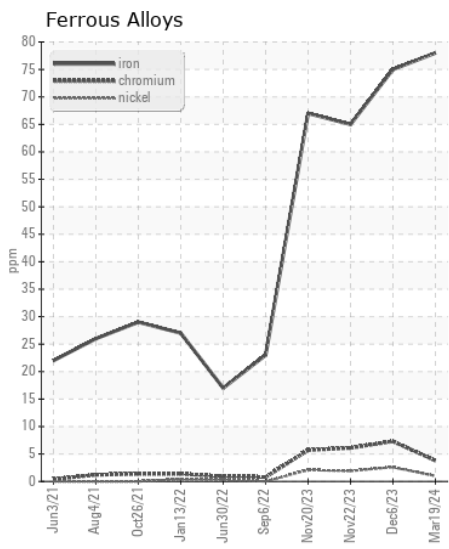
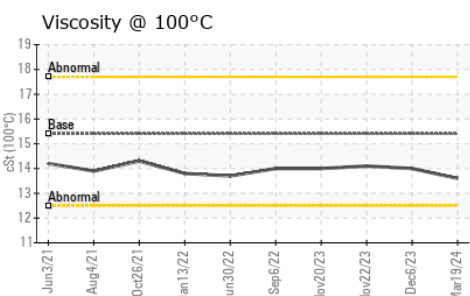
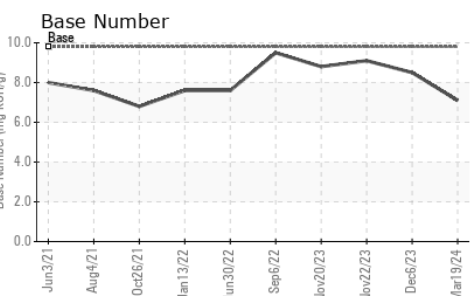
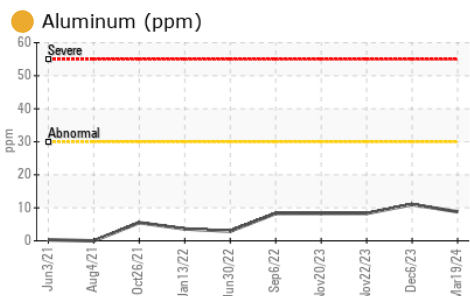
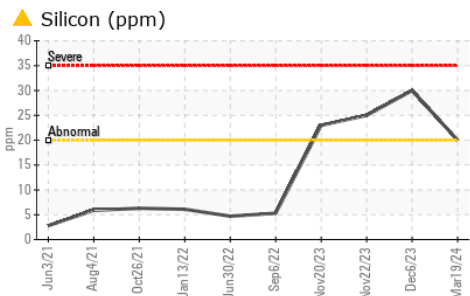
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>20	20	30	25
Potassium	ppm	ASTM D5185m	>20	1	3	2
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	0.4	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	10.1	7.3	6.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.2	18.8	18.7
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 suitable for further service.

Sodium	ppm	ASTM D5185m		5	8	6
Boron	ppm	ASTM D5185m	0	<1	2	0
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	60	58	59
Manganese	ppm	ASTM D5185m	0	0	1	<1
Magnesium	ppm	ASTM D5185m	1010	1017	954	1038
Calcium	ppm	ASTM D5185m	1070	1156	1113	1149
Phosphorus	ppm	ASTM D5185m	1150	1050	1004	960
Zinc	ppm	ASTM D5185m	1270	1322	1273	1371
Sulfur	ppm	ASTM D5185m	2060	3317	2930	3147
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.4	15.5	14.8
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.1	8.5	9.1
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	14.0	14.1



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0108872
Lab Number : 06124613
Unique Number : 10938764
Test Package : FLEET
Received : 21 Mar 2024
Tested : 22 Mar 2024
Diagnosed : 23 Mar 2024 - Don Baldrige

GFL Environmental - 415 - Michigan East
 6200 Elmridge
 Sterling Heights, MI
 US 48313
 Contact: Frank Wolak
 fwolak@gflenv.com
 T: (586)825-9514
 F:

Certificate L2367
 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)