



WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Area
(GRM7782)
Machine Id
725055-870022
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. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0117802	GFL0117792	GFL0083453
Sample Date		Client Info		07 May 2024	02 May 2024	14 Aug 2023
Machine Age	hrs	Client Info		19522	221242	18484
Oil Age	hrs	Client Info		0	221242	18484
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Not Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	NORMAL

WEAR

Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>90	▲ 173	▲ 183	41
Chromium	ppm	ASTM D5185m	>20	5	5	2
Nickel	ppm	ASTM D5185m	>2	2	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	● 12	● 11	8
Lead	ppm	ASTM D5185m	>40	3	4	0
Copper	ppm	ASTM D5185m	>330	123	106	90
Tin	ppm	ASTM D5185m	>15	3	2	1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

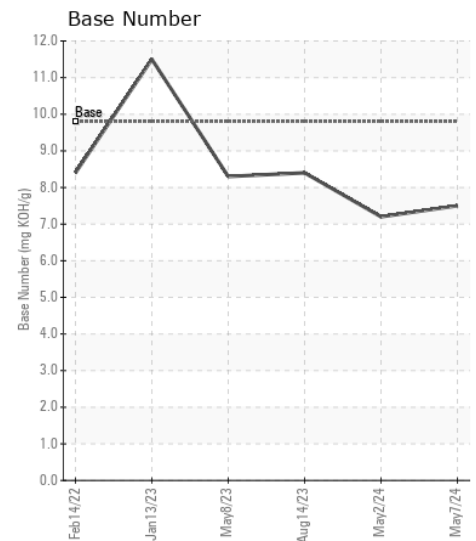
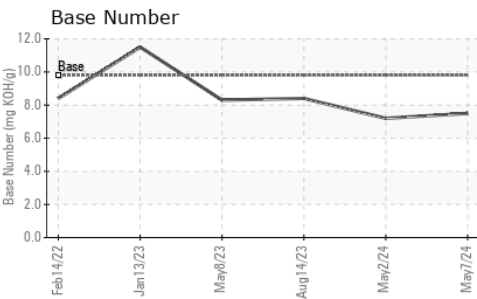
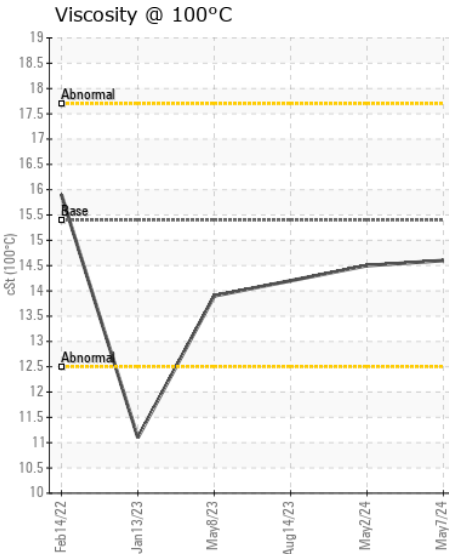
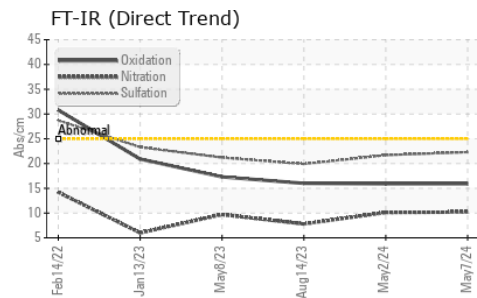
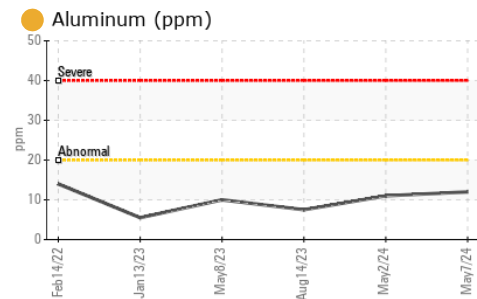
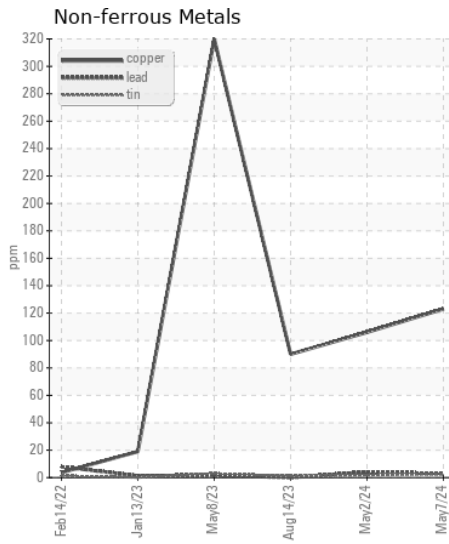
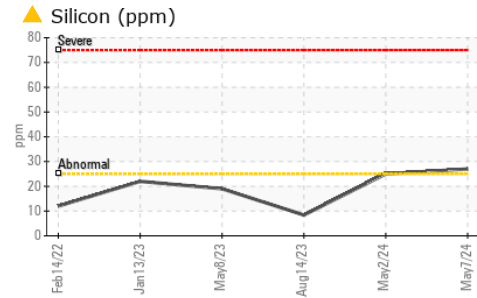
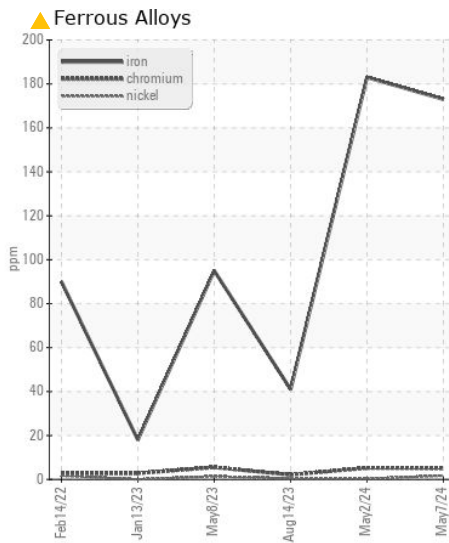
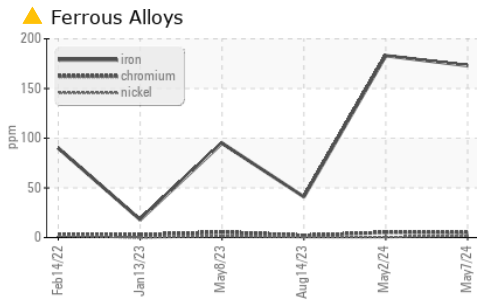
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>25	▲ 27	▲ 25	8
Potassium	ppm	ASTM D5185m	>20	29	22	3
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	>6	1.6	1.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	10.2	10.1	7.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.3	21.7	19.9
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		40	35	12
Boron	ppm	ASTM D5185m	0	5	0	3
Barium	ppm	ASTM D5185m	0	<1	<1	0
Molybdenum	ppm	ASTM D5185m	60	73	72	64
Manganese	ppm	ASTM D5185m	0	8	8	1
Magnesium	ppm	ASTM D5185m	1010	899	1064	1071
Calcium	ppm	ASTM D5185m	1070	1112	1236	1285
Phosphorus	ppm	ASTM D5185m	1150	1005	1135	1132
Zinc	ppm	ASTM D5185m	1270	1259	1421	1437
Sulfur	ppm	ASTM D5185m	2060	3252	3696	3729
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.9	15.9	16.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.5	7.2	8.4
Visc @ 100°C	cSt	ASTM D445	15.4	14.6	14.5	14.2



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0117802
Lab Number : 06178171
Unique Number : 11029497
Test Package : FLEET

Received : 13 May 2024
Tested : 14 May 2024
Diagnosed : 15 May 2024 - Sean Felton

GFL Environmental - 865 - East Mount Hauling
 7213 East Mount Houston Road
 Houston, TX
 US 77050
 Contact: Saul Castillo
 saul.castillo@gflenv.com

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)

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