



WEAR	NORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	NORMAL



Machine Id
923016
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0113970	GFL0113989	GFL0080364
Sample Date		Client Info		22 May 2024	12 Mar 2024	07 Dec 2023
Machine Age	hrs	Client Info		22351	21974	21435
Oil Age	hrs	Client Info		377	539	21435
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				MARGINAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	8	18	12
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>5	<1	0	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	1	0	0
Aluminum	ppm	ASTM D5185m	>20	9	13	9
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	4	1	2
Tin	ppm	ASTM D5185m	>15	1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

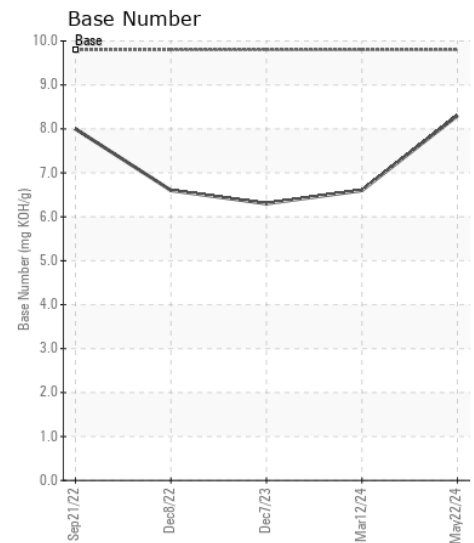
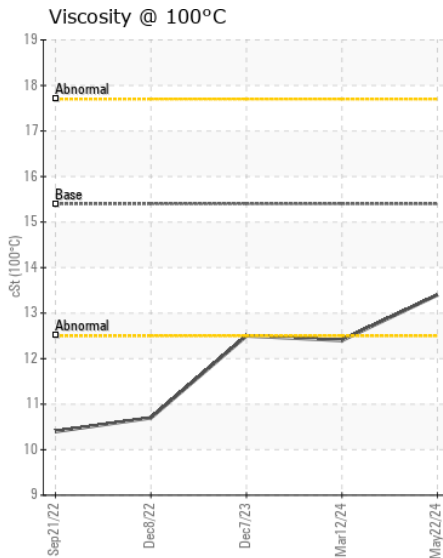
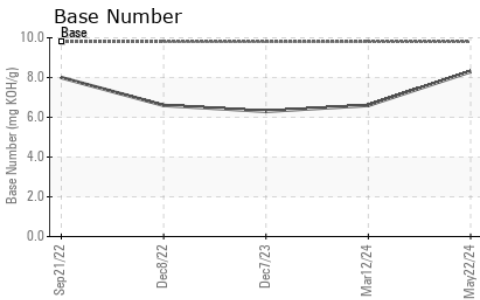
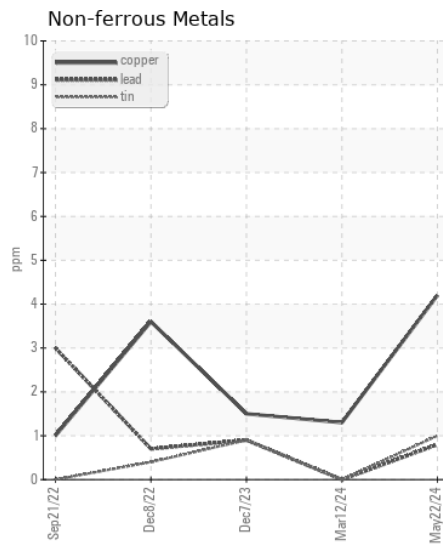
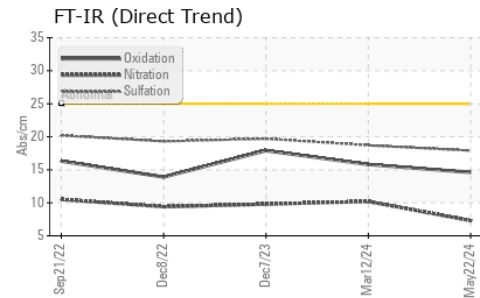
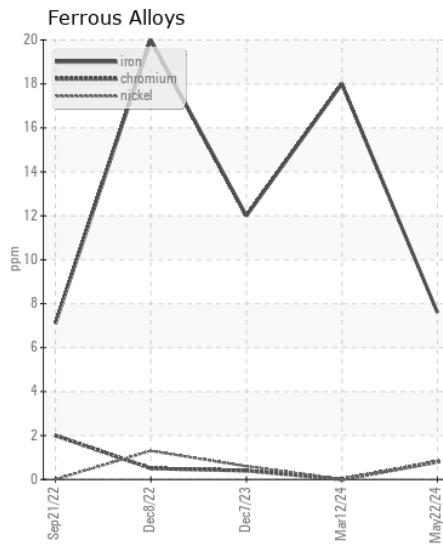
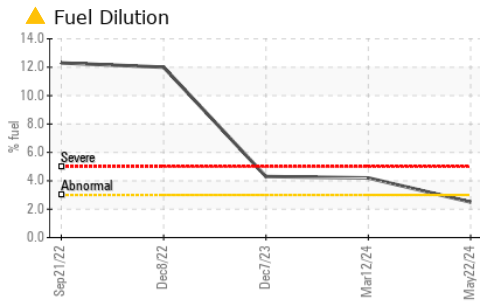
Light fuel dilution occurring.

Silicon	ppm	ASTM D5185m	>25	5	4	6
Potassium	ppm	ASTM D5185m	>20	2	0	7
Fuel	%	ASTM D3524	>3.0	▲ 2.5	▲ 4.2	▲ 4.3
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>4	0.2	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	7.3	10.2	9.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.9	18.7	19.7
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		3	3	35
Boron	ppm	ASTM D5185m	0	1	0	1
Barium	ppm	ASTM D5185m	0	<1	0	0
Molybdenum	ppm	ASTM D5185m	60	58	55	60
Manganese	ppm	ASTM D5185m	0	<1	0	<1
Magnesium	ppm	ASTM D5185m	1010	950	947	951
Calcium	ppm	ASTM D5185m	1070	1037	1056	1031
Phosphorus	ppm	ASTM D5185m	1150	1004	975	979
Zinc	ppm	ASTM D5185m	1270	1225	1217	1213
Sulfur	ppm	ASTM D5185m	2060	3264	3512	3101
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.6	15.8	17.9
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.3	6.6	6.3
Visc @ 100°C	cSt	ASTM D445	15.4	13.4	12.4	12.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0113970 **Received** : 28 May 2024
Lab Number : 06191870 **Tested** : 29 May 2024
Unique Number : 11048622 **Diagnosed** : 30 May 2024 - Sean Felton
Test Package : FLEET (Additional Tests: PercentFuel)

GFL Environmental - 932 - Muskego HC
 W144 S6400 College Ct.
 Muskego, WI
 US 53150
 Contact: Brian Schlomann
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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)