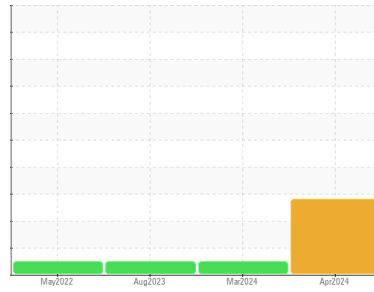




OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id

784M

Component

Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

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.

Wear

An increase in the copper level is noted. All other component wear rates are normal.

Contamination

Fuel content negligible. Elemental level of silicon (Si) above normal.

Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			GFL0116889	GFL0107697	GFL0081253
Sample Date	Client Info			18 Apr 2024	05 Mar 2024	04 Aug 2023
Machine Age	hrs	Client Info		16037	15714	14731
Oil Age	hrs	Client Info		600	600	600
Oil Changed	Client Info			Changed	N/A	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method	>0.2		NEG	NEG	NEG
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	44	11	45
Chromium	ppm	ASTM D5185m	>20	1	0	2
Nickel	ppm	ASTM D5185m	>4	<1	4	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	5	<1	5
Lead	ppm	ASTM D5185m	>40	1	0	5
Copper	ppm	ASTM D5185m	>330	159	<1	2
Tin	ppm	ASTM D5185m	>15	2	2	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	116	<1	3
Barium	ppm	ASTM D5185m	0	<1	0	0
Molybdenum	ppm	ASTM D5185m	60	107	56	73
Manganese	ppm	ASTM D5185m	0	4	0	<1
Magnesium	ppm	ASTM D5185m	1010	754	1051	1009
Calcium	ppm	ASTM D5185m	1070	1338	1180	1285
Phosphorus	ppm	ASTM D5185m	1150	804	1001	1138
Zinc	ppm	ASTM D5185m	1270	990	1315	1373
Sulfur	ppm	ASTM D5185m	2060	2655	2927	3182

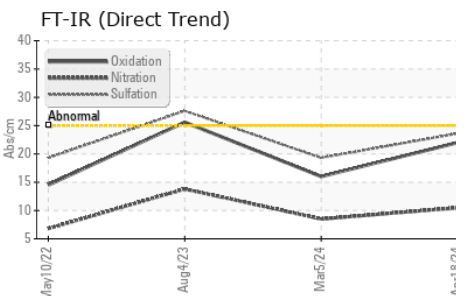
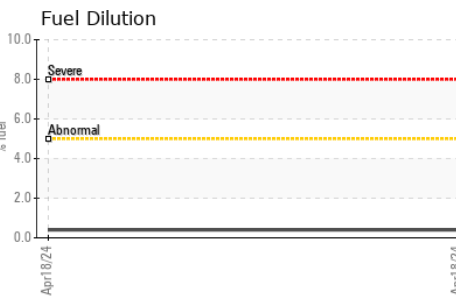
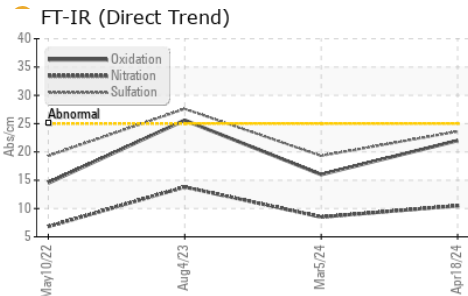
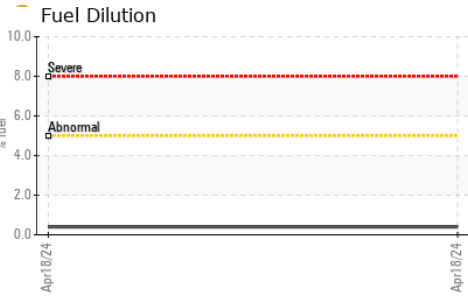
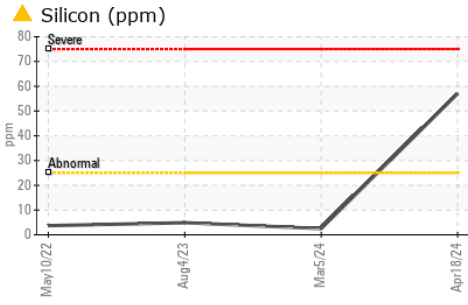
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ 57	2	5
Sodium	ppm	ASTM D5185m		3	2	18
Potassium	ppm	ASTM D5185m	>20	9	0	6
Fuel	%	ASTM D3524	>5	0.4	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.5	0.5	1.4
Nitration	Abs/cm	*ASTM D7624	>20	10.5	8.5	13.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.6	19.3	27.6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.0	16.0	25.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	6.3	7.5	5.4



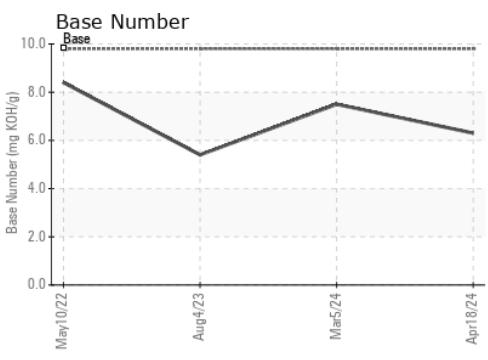
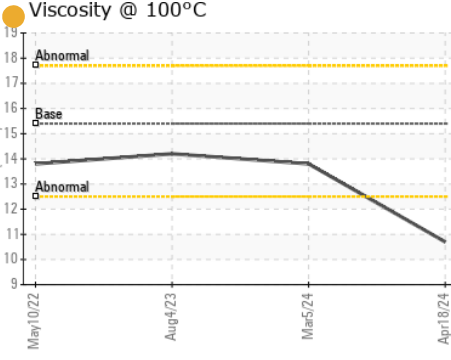
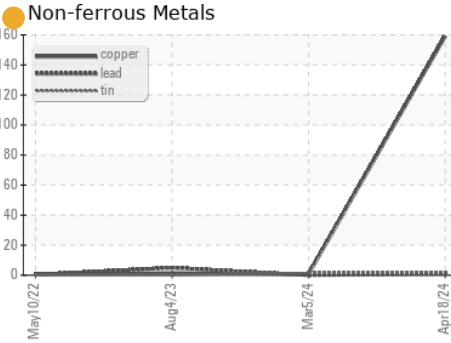
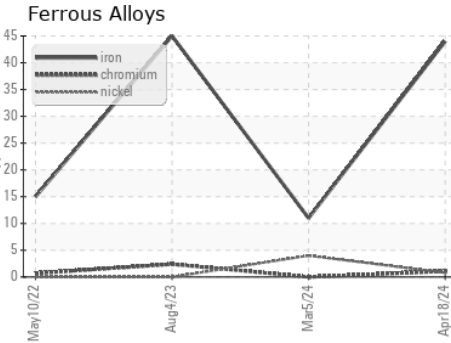
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.4	● 10.7	13.8	14.2

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0116889 **Received** : 23 Apr 2024
Lab Number : **06157504** **Tested** : 26 Apr 2024
Unique Number : 10992927 **Diagnosed** : 26 Apr 2024 - Don Baldrige
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

GFL Environmental - 465 - Pontiac
 888 Baldwin
 Pontiac, MI
 US 48340
 Contact: Ricky Matthews
 rickymathews@gflenv.com
 T: (586)825-9514
 F:

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)