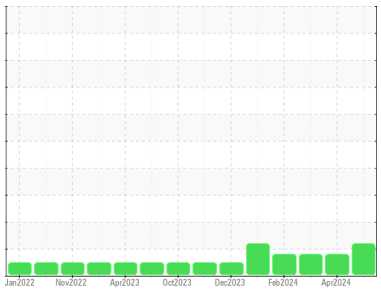
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
411027
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0109400**	GFL0109241	GFL0109254
Sample Date		Client Info		**12 Apr 2024**	01 Apr 2024	01 Mar 2024
Machine Age	hrs	Client Info		**6598**	6475	6348
Oil Age	hrs	Client Info		**527**	149	622
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

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	**14**	11	9
Chromium	ppm	ASTM D5185m	>20	**1**	<1	1
Nickel	ppm	ASTM D5185m	>4	**0**	0	<1
Titanium	ppm	ASTM D5185m		**18**	19	18
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**4**	4	4
Lead	ppm	ASTM D5185m	>40	**<1**	0	<1
Copper	ppm	ASTM D5185m	>330	**1**	1	1
Tin	ppm	ASTM D5185m	>15	**<1**	0	<1
Vanadium	ppm	ASTM D5185m		**0**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**15**	15	20
Barium	ppm	ASTM D5185m	0	**<1**	0	0
Molybdenum	ppm	ASTM D5185m	60	**43**	44	42
Manganese	ppm	ASTM D5185m	0	**<1**	0	<1
Magnesium	ppm	ASTM D5185m	1010	**702**	790	745
Calcium	ppm	ASTM D5185m	1070	**1096**	1162	1009
Phosphorus	ppm	ASTM D5185m	1150	**921**	971	928
Zinc	ppm	ASTM D5185m	1270	**1061**	1189	1093
Sulfur	ppm	ASTM D5185m	2060	**2797**	3581	3062

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**4**	3	4
Sodium	ppm	ASTM D5185m		**3**	3	4
Potassium	ppm	ASTM D5185m	>20	**10**	8	7
Fuel	%	ASTM D3524	>5	▲ **7.6**	▲ 6.4	▲ 5.8

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.1**	0.9	0.6
Nitration	Abs/cm	*ASTM D7624	>20	**9.0**	8.4	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.2**	19.8	19.3

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**15.1**	14.7	14.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**8.1**	8.4	8.1

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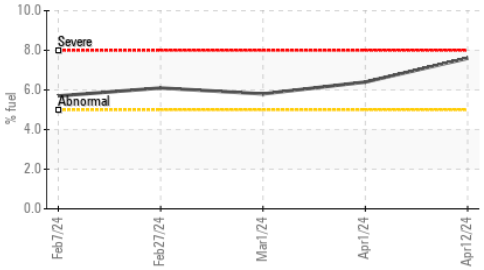
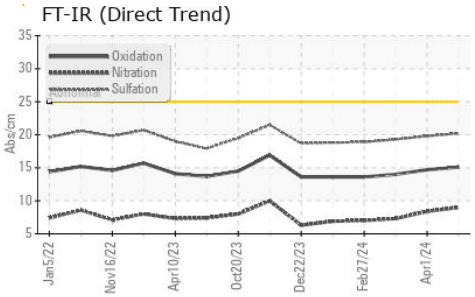
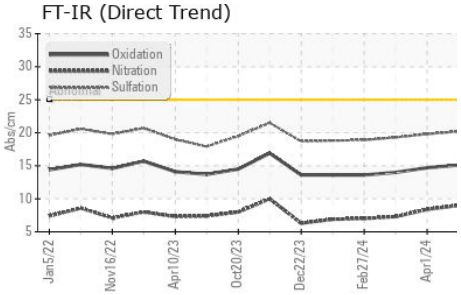
▲ Fuel Dilution



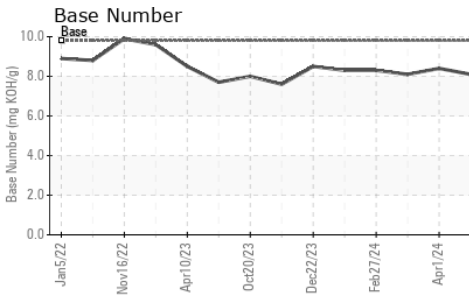
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Base Number

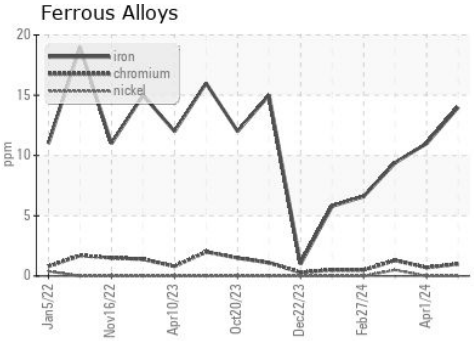


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

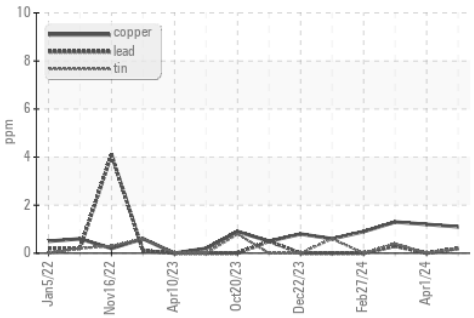
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **12.1**	12.7	12.8

GRAPHS

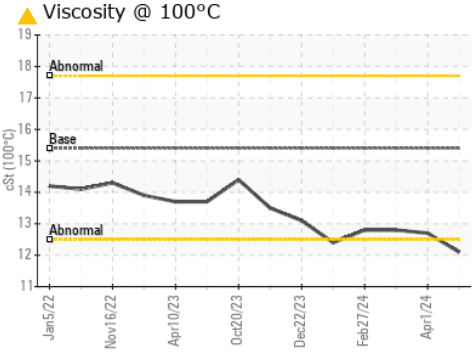
Ferrous Alloys



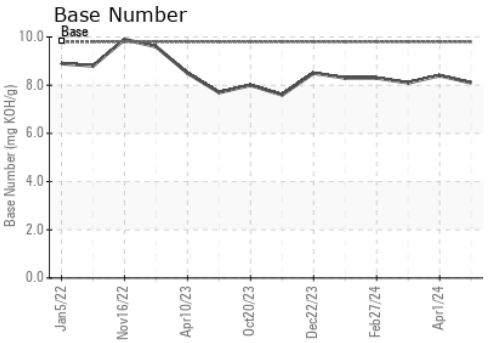
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0109400
Lab Number : 06148482
Unique Number : 10978560
Test Package : FLEET (Additional Tests: PercentFuel)

Received : 15 Apr 2024
Tested : 17 Apr 2024
Diagnosed : 17 Apr 2024 - Wes Davis

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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