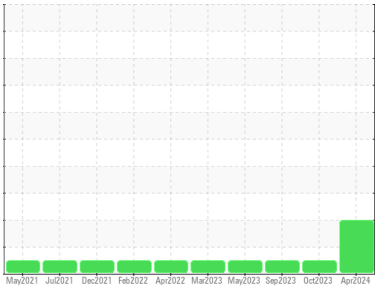
OIL ANALYSIS REPORT

Machine Id
924035-205291
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

Sample Rating Trend



DEGRADATION

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
Cylinder, crank, or cam shaft wear is indicated.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0092598**	GFL0092570	GFL0092576
Sample Date		Client Info		**24 Apr 2024**	09 Oct 2023	13 Sep 2023
Machine Age	hrs	Client Info		**4643**	3423	3233
Oil Age	hrs	Client Info		**600**	600	600
Oil Changed		Client Info		**Changed**	Oil Added	Changed
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	▲ **128**	12	3
Chromium	ppm	ASTM D5185m	>20	**1**	<1	<1
Nickel	ppm	ASTM D5185m	>5	**0**	<1	<1
Titanium	ppm	ASTM D5185m	>2	**<1**	0	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**8**	4	1
Lead	ppm	ASTM D5185m	>40	**8**	4	<1
Copper	ppm	ASTM D5185m	>330	**1**	<1	<1
Tin	ppm	ASTM D5185m	>15	**3**	1	1
Vanadium	ppm	ASTM D5185m		**0**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**3**	4	3
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**62**	62	61
Manganese	ppm	ASTM D5185m	0	**1**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**870**	921	969
Calcium	ppm	ASTM D5185m	1070	**1227**	1123	1205
Phosphorus	ppm	ASTM D5185m	1150	**1046**	1085	1072
Zinc	ppm	ASTM D5185m	1270	**1251**	1302	1283
Sulfur	ppm	ASTM D5185m	2060	**2620**	3109	3800

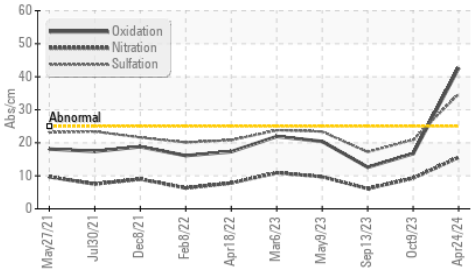
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**15**	5	5
Sodium	ppm	ASTM D5185m		**18**	5	2
Potassium	ppm	ASTM D5185m	>20	**6**	9	4

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	**1.9**	0.5	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**15.6**	9.3	6.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	**34.8**	20.9	17.2

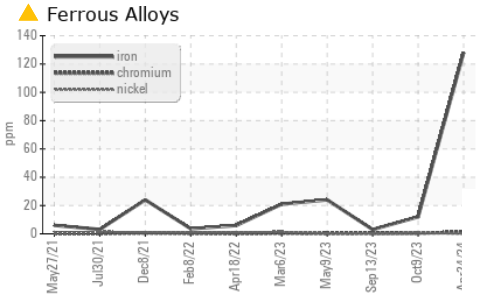
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**42.6**	16.7	12.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **1.1**	8.1	8.6

OIL ANALYSIS REPORT

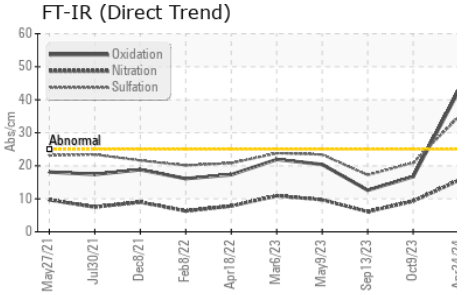
FT-IR (Direct Trend)



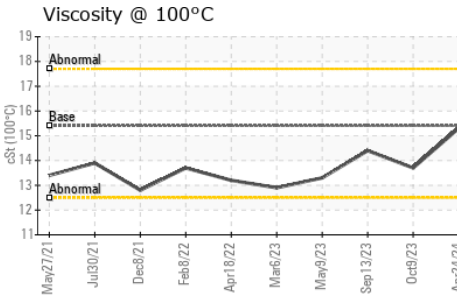
Ferrous Alloys



FT-IR (Direct Trend)



Viscosity @ 100°C

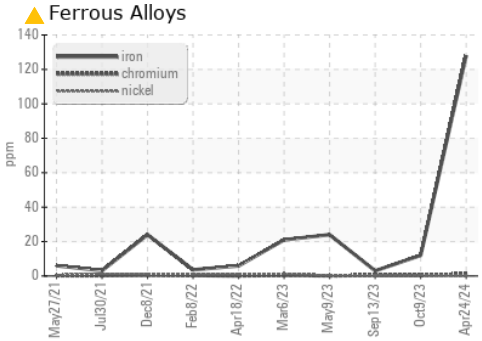


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

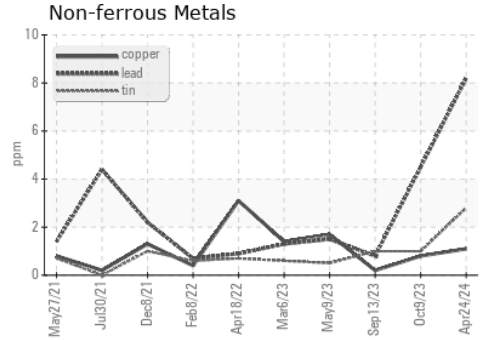
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**15.3**	13.7	14.4

GRAPHS

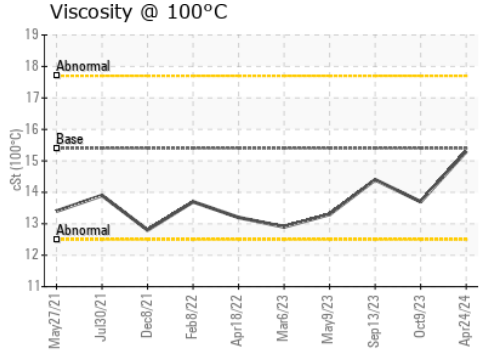
Ferrous Alloys



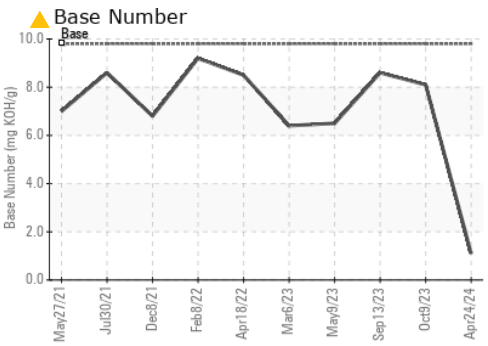
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0092598
Lab Number : 06160151
Unique Number : 10995574
Test Package : FLEET

Received : 25 Apr 2024
Tested : 29 Apr 2024
Diagnosed : 29 Apr 2024 - Sean Felton

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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