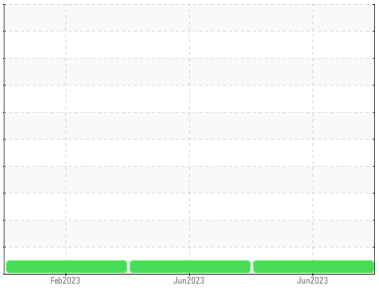
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
423079
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

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

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.

SAMPLE INFORMATION		method	limit/base	current	history 1	history 2
Sample Number		Client Info		**GFL0084593**	GFL0084759	GFL0068453
Sample Date		Client Info		**22 Jun 2023**	15 Jun 2023	15 Feb 2023
Machine Age	mls	Client Info		**144593**	18840	132570
Oil Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**Not Changd**	Changed	Not Changd
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>80	**6**	33	12
Chromium	ppm	ASTM D5185m	>5	**<1**	2	<1
Nickel	ppm	ASTM D5185m	>2	**0**	<1	<1
Titanium	ppm	ASTM D5185m		**0**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>30	**1**	3	1
Lead	ppm	ASTM D5185m	>30	**0**	8	2
Copper	ppm	ASTM D5185m	>150	**4**	32	22
Tin	ppm	ASTM D5185m	>5	**<1**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

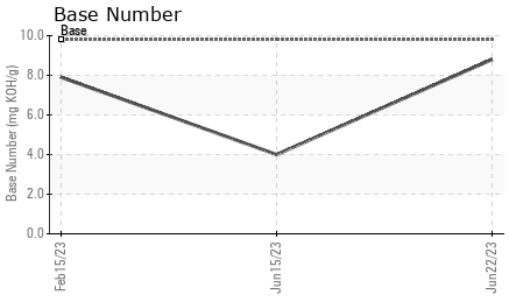
ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	0	**37**	5	33
Barium	ppm	ASTM D5185m	0	**0**	7	0
Molybdenum	ppm	ASTM D5185m	60	**48**	61	53
Manganese	ppm	ASTM D5185m	0	**<1**	5	3
Magnesium	ppm	ASTM D5185m	1010	**590**	612	568
Calcium	ppm	ASTM D5185m	1070	**1572**	1794	1642
Phosphorus	ppm	ASTM D5185m	1150	**764**	784	732
Zinc	ppm	ASTM D5185m	1270	**946**	1043	982
Sulfur	ppm	ASTM D5185m	2060	**2904**	2566	2647

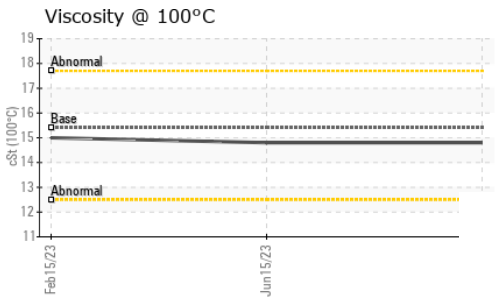
CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m	>20	**4**	13	10
Sodium	ppm	ASTM D5185m		**6**	33	24
Potassium	ppm	ASTM D5185m	>20	**<1**	8	7

INFRA-RED		method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844	>3	**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**7.1**	12.8	7.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.8**	24.6	19.5

FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.7**	22.8	16.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**8.8**	4.0	7.9

OIL ANALYSIS REPORT



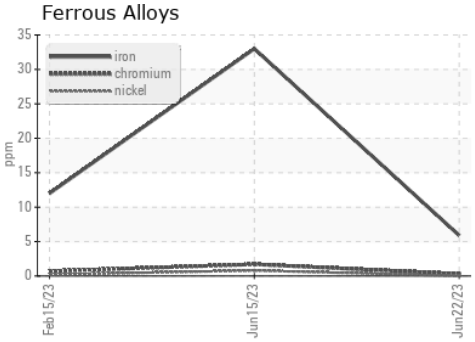


VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

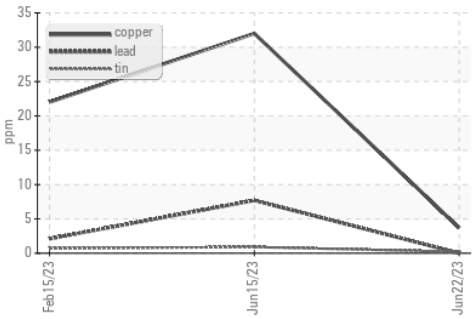
FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	15.4	**14.8**	14.8	15.0

GRAPHS

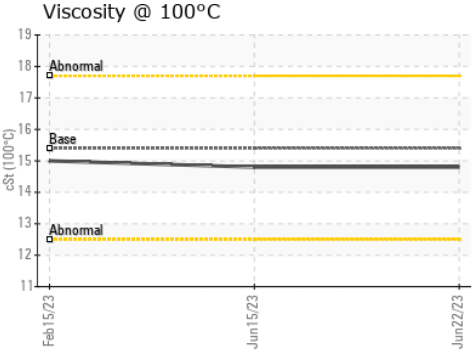
Ferrous Alloys



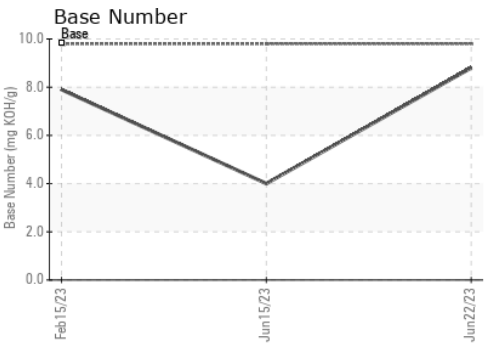
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0084593
Lab Number : 05884927
Unique Number : 10535410
Test Package : FLEET

Received : 27 Jun 2023
Diagnosed : 30 Jun 2023
Diagnostician : Don Baldridge

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)

GFL Environmental - 856 - Houston South
8515 Highway 6 South
Houston, TX
US 77083
Contact: KEITH ROWALD
krowald@gflenv.com
T: (303)641-3906
F: