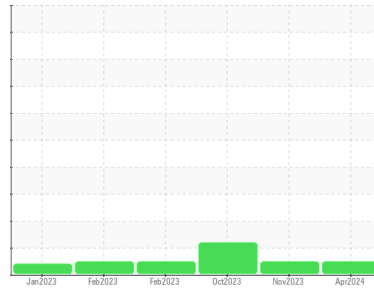




OIL ANALYSIS REPORT

Area
(62A1N76) TALLASSEE
 Machine Id
924017-142594
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

Sample Rating Trend



NORMAL



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	history1	history2
Sample Number	Client Info			GFL0092431	GFL0079715	GFL0092429
Sample Date	Client Info			03 Apr 2024	08 Nov 2023	18 Oct 2023
Machine Age	hrs	Client Info		1082	722	427954
Oil Age	hrs	Client Info		1082	722	0
Oil Changed	Client Info			Not Chngd	N/A	N/A
Sample Status				NORMAL	NORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>3.0		<1.0	2.2	▲ 4.1
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	4	7	56
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	1	5
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	<1	2	8
Lead	ppm	ASTM D5185m	>40	0	0	2
Copper	ppm	ASTM D5185m	>330	7	1	4
Tin	ppm	ASTM D5185m	>15	0	<1	1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	15	17	49
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	66	54	69
Manganese	ppm	ASTM D5185m	0	0	<1	1
Magnesium	ppm	ASTM D5185m	1010	1041	834	336
Calcium	ppm	ASTM D5185m	1070	1172	987	1230
Phosphorus	ppm	ASTM D5185m	1150	1142	951	760
Zinc	ppm	ASTM D5185m	1270	1362	1150	986
Sulfur	ppm	ASTM D5185m	2060	4231	2883	2778

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	4	4	15
Sodium	ppm	ASTM D5185m		1	2	6
Potassium	ppm	ASTM D5185m	>20	0	<1	2

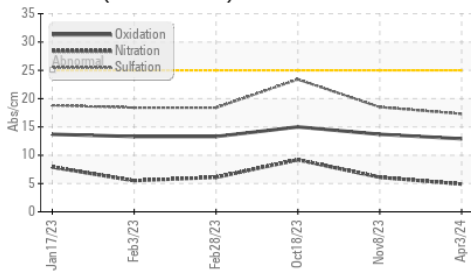
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	0.1	0.4	1.7
Nitration	Abs/cm	*ASTM D7624	>20	4.9	6.1	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.3	18.5	23.4

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.9	13.7	15.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.9	8.6	4.6

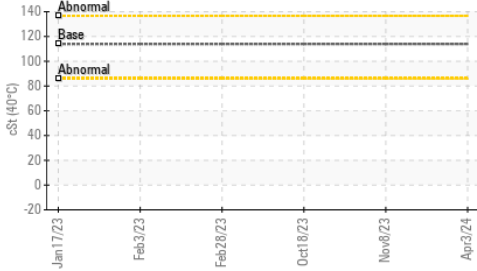


OIL ANALYSIS REPORT

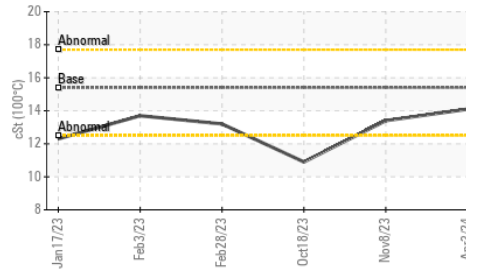
FT-IR (Direct Trend)



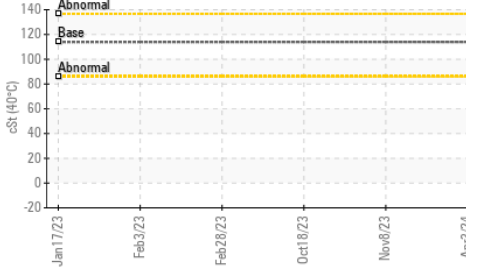
Viscosity @ 40°C



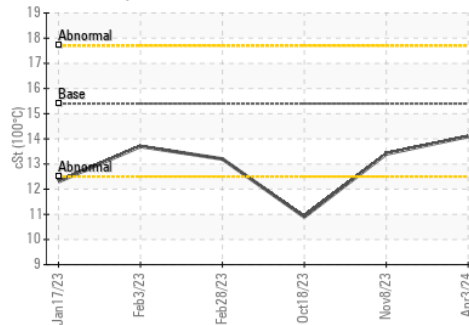
Viscosity @ 100°C



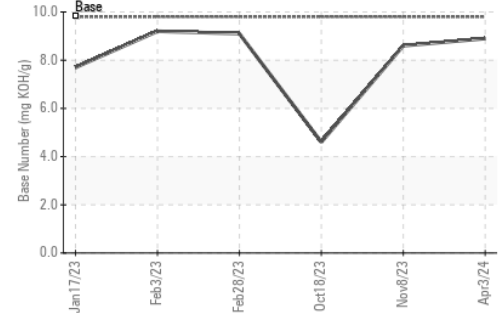
Viscosity @ 40°C



Viscosity @ 100°C



Base Number

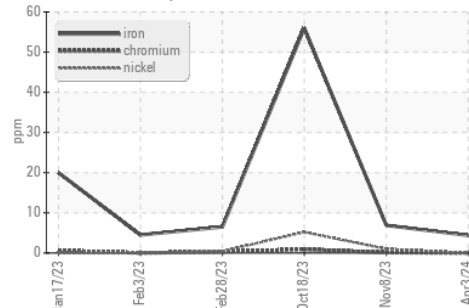


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

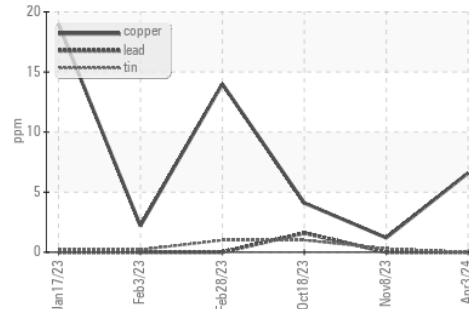
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	13.4 ▲ 10.9

GRAPHS

Ferrous Alloys



Non-ferrous Metals



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0092431

Lab Number : 06139722

Unique Number : 10964530

Test Package : FLEET (Additional Tests: KV40, VI)

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)

Received : 05 Apr 2024

Tested : 06 Apr 2024

Diagnosed : 07 Apr 2024 - Don Baldrige

GFL Environmental - 172 - Montgomery-Alexander City-Tallahassee

Multiple Sites

Montgomery, AL

US 36108

Contact: RICHARD HATFIELD

rhatfield@gflenv.com

T:

F: