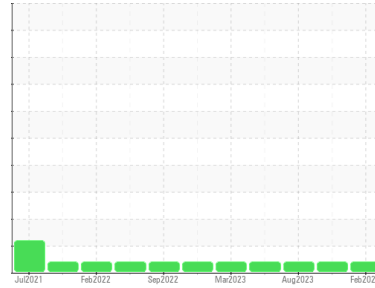




OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Machine Id
225067-20

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

DIAGNOSIS

▲ Recommendation

Oil and filter change at the time of sampling has been noted. 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 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		GFL0091981	GFL0091967	GFL0091965
Sample Date	Client Info		21 Feb 2024	21 Nov 2023	29 Aug 2023
Machine Age	hrs	Client Info	4144	3968	3847
Oil Age	hrs	Client Info	176	600	226
Oil Changed		Client Info	N/A	Changed	N/A
Sample Status			ATTENTION	ATTENTION	ATTENTION

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<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 >150	15	30	25
Chromium	ppm	ASTM D5185m >10	<1	1	1
Nickel	ppm	ASTM D5185m >10	0	<1	0
Titanium	ppm	ASTM D5185m >2	0	0	0
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >15	2	5	6
Lead	ppm	ASTM D5185m >25	3	9	5
Copper	ppm	ASTM D5185m >45	2	6	4
Tin	ppm	ASTM D5185m >5	1	2	1
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	2	3	3
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	56	63	59
Manganese	ppm	ASTM D5185m 0	<1	<1	<1
Magnesium	ppm	ASTM D5185m 1010	866	943	975
Calcium	ppm	ASTM D5185m 1070	984	1129	1087
Phosphorus	ppm	ASTM D5185m 1150	959	1112	1079
Zinc	ppm	ASTM D5185m 1270	1109	1243	1334
Sulfur	ppm	ASTM D5185m 2060	2737	2543	3840

CONTAMINANTS

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

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	7.7	9.8	8.6
Sulfation	Abs/.1mm	*ASTM D7415 >30	19.2	20.6	19.3

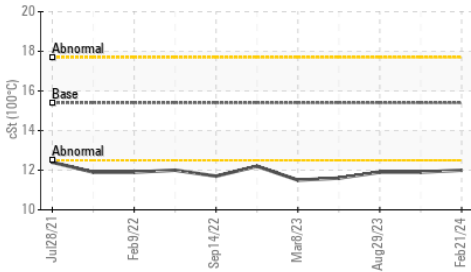
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	16.3	19.8	17.5
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	8.6	8.0	8.1

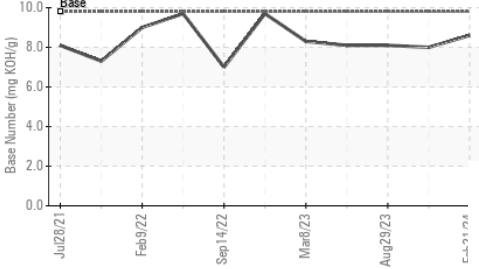


OIL ANALYSIS REPORT

▲ Viscosity @ 100°C



Base Number

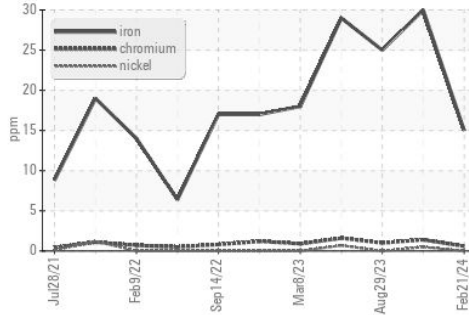


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

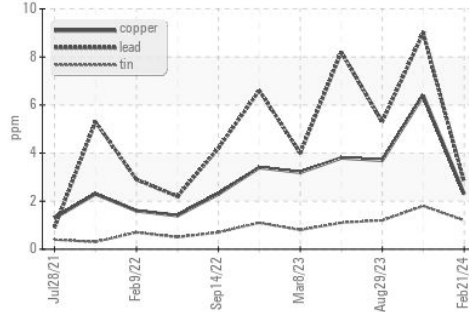
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 12.0	▲ 11.9	▲ 11.9

GRAPHS

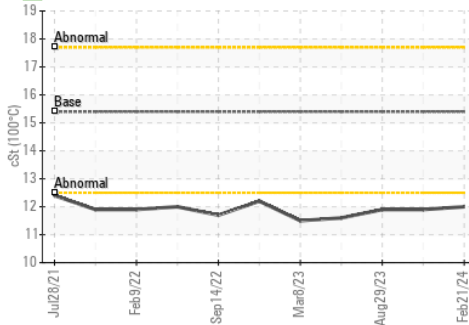
Ferrous Alloys



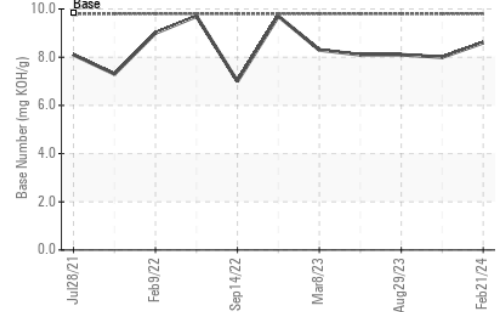
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0091981
Lab Number : 06096825
Unique Number : 10889678
Test Package : FLEET

Received : 22 Feb 2024
Tested : 23 Feb 2024
Diagnosed : 23 Feb 2024 - Sean Felton

GFL Environmental - 683 - Ruckersville Hauling
 261 INDUSTRIAL DR
 Ruckersville, VA
 US 22698

Contact: Jaf Finney
 jfinney@gflenv.com
 T: (434)990-4972

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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