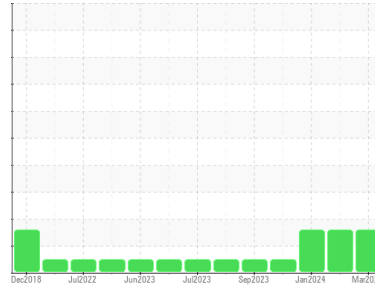




OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id
929082-260353

Component
Diesel Engine

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

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Elemental level of silicon (Si) above normal.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		GFL0104958	GFL0088135	GFL0104917
Sample Date	Client Info		01 Mar 2024	30 Jan 2024	03 Jan 2024
Machine Age	mls	Client Info	137301	136467	10987
Oil Age	mls	Client Info	0	0	2282
Oil Changed	Client Info		Changed	Not Changd	Changed
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

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 >100	13	15	9
Chromium	ppm	ASTM D5185m >20	1	<1	<1
Nickel	ppm	ASTM D5185m >4	<1	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >20	2	<1	1
Lead	ppm	ASTM D5185m >40	<1	0	1
Copper	ppm	ASTM D5185m >330	1	1	1
Tin	ppm	ASTM D5185m >15	2	0	<1
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	0	0	<1
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	54	60	56
Manganese	ppm	ASTM D5185m 0	<1	<1	<1
Magnesium	ppm	ASTM D5185m 1010	923	933	903
Calcium	ppm	ASTM D5185m 1070	1027	1078	991
Phosphorus	ppm	ASTM D5185m 1150	915	1014	1050
Zinc	ppm	ASTM D5185m 1270	1192	1296	1184
Sulfur	ppm	ASTM D5185m 2060	3259	2976	2935

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	▲ 31	▲ 34	▲ 34
Sodium	ppm	ASTM D5185m	5	3	3
Potassium	ppm	ASTM D5185m >20	1	0	0

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.3	0.3	0.8
Nitration	Abs/cm	*ASTM D7624 >20	8.2	7.9	9.3
Sulfation	Abs/.1mm	*ASTM D7415 >30	19.5	19.2	20.9

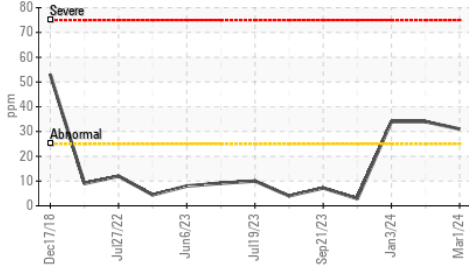
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	15.8	15.4	17.4
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	7.7	7.8	7.3

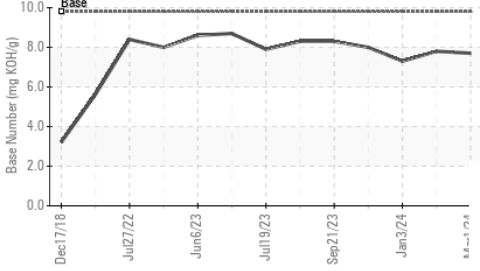


OIL ANALYSIS REPORT

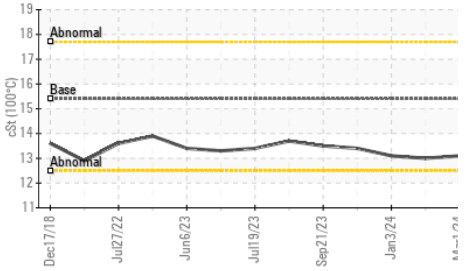
▲ Silicon (ppm)



Base Number



Viscosity @ 100°C

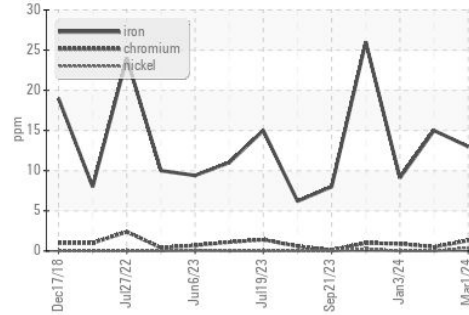


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

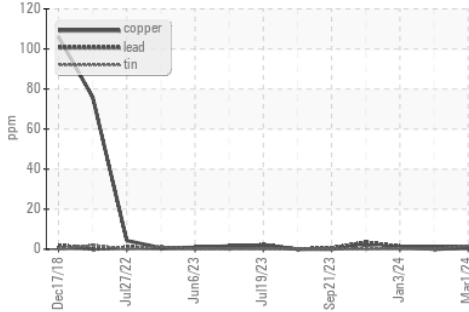
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.1	13.0

GRAPHS

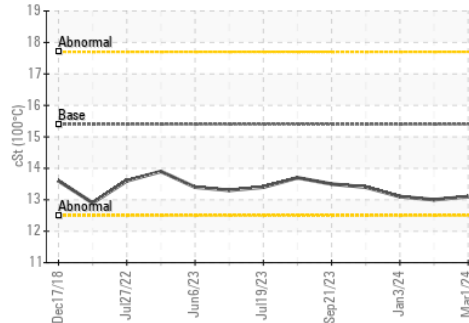
Ferrous Alloys



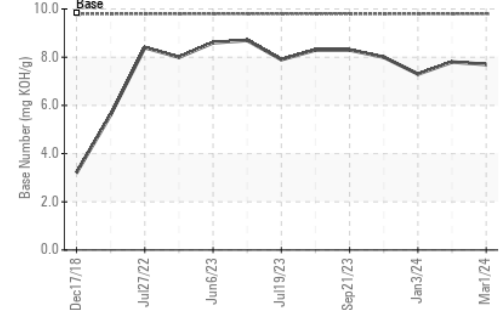
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0104958
Lab Number : 06131550
Unique Number : 10951015
Test Package : FLEET

Received : 28 Mar 2024
Tested : 28 Mar 2024
Diagnosed : 02 Apr 2024 - Don Baldrige

GFL Environmental - 820 - Joplin Hauling
 3700 West 7th Street
 Joplin, MO
 US 64801

Contact: James Jarrett
 jjarrett@gflenv.com

T: (417)310-2802

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)

F: