



OIL ANALYSIS REPORT

Sample Rating Trend

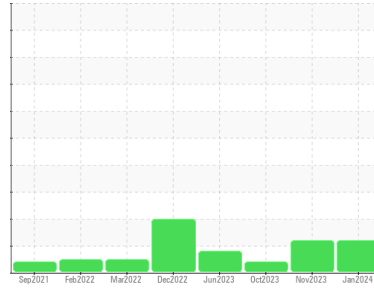
GLYCOL



Machine Id
923029-260205.1

Component
Diesel Engine

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



DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

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	GFL0109152	GFL0098276	GFL0079340
Sample Date	Client Info	25 Jan 2024	16 Nov 2023	04 Oct 2023
Machine Age	hrs	11632	11632	11508
Oil Age	hrs	600	700	330
Oil Changed	Client Info	Changed	Not Changd	N/A
Sample Status		ATTENTION	ABNORMAL	ATTENTION

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	▲ 2.4	1.6
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	15	8	6
Chromium	ppm ASTM D5185m >20	1	<1	0
Nickel	ppm ASTM D5185m >4	<1	0	0
Titanium	ppm ASTM D5185m	<1	0	<1
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >20	3	2	1
Lead	ppm ASTM D5185m >40	1	<1	0
Copper	ppm ASTM D5185m >330	<1	<1	<1
Tin	ppm ASTM D5185m >15	<1	<1	0
Vanadium	ppm ASTM D5185m	0	<1	0
Cadmium	ppm ASTM D5185m	<1	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	<1	19	45
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	94	39	36
Manganese	ppm ASTM D5185m 0	<1	0	<1
Magnesium	ppm ASTM D5185m 1010	1363	819	805
Calcium	ppm ASTM D5185m 1070	1287	1109	1112
Phosphorus	ppm ASTM D5185m 1150	1322	956	823
Zinc	ppm ASTM D5185m 1270	1732	1045	996
Sulfur	ppm ASTM D5185m 2060	4201	2767	2880

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	8	7	8
Sodium	ppm ASTM D5185m	▲ 131	3	2
Potassium	ppm ASTM D5185m >20	19	2	1
Glycol	% *ASTM D2982	NEG	NEG	NEG

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.4	0.8	0.4
Nitration	Abs/cm *ASTM D7624 >20	6.3	8.0	6.4
Sulfation	Abs/.1mm *ASTM D7415 >30	18.5	19.9	17.5

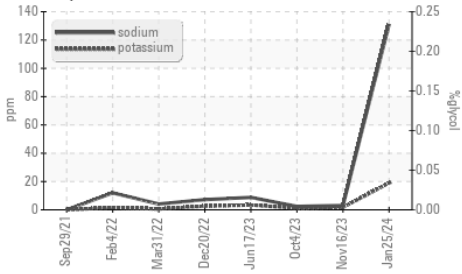
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	13.5	13.9	12.4
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.8	8.5	8.6

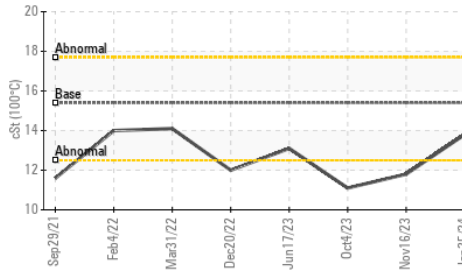


OIL ANALYSIS REPORT

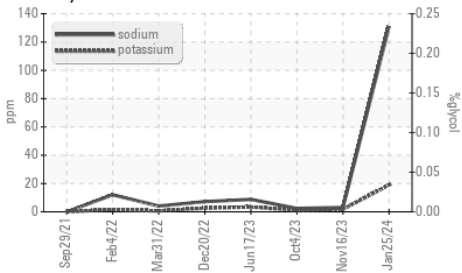
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

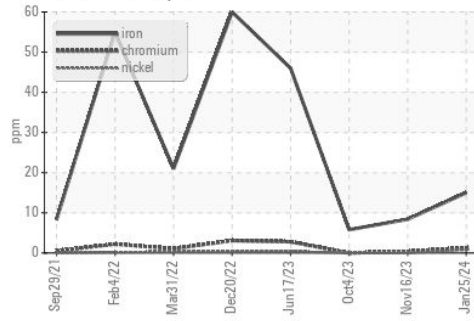


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

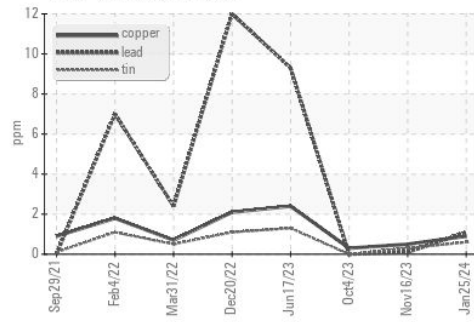
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	11.8

GRAPHS

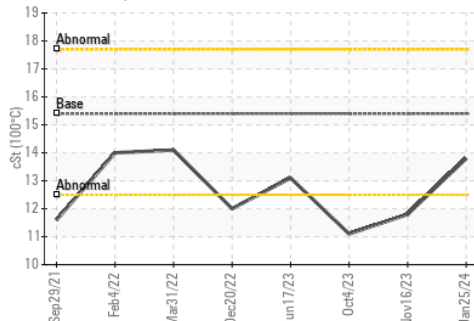
Ferrous Alloys



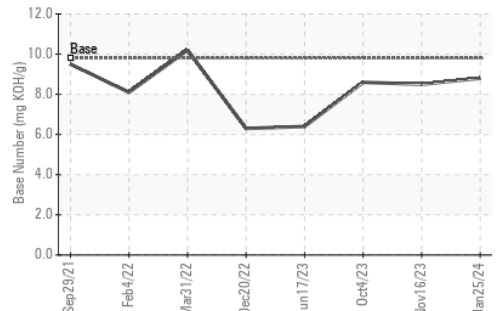
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0109152 **Received** : 02 Feb 2024
Lab Number : 06078167 **Tested** : 06 Feb 2024
Unique Number : 10860258 **Diagnosed** : 06 Feb 2024 - Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 822 - Springfield Hauling
 2120 West Bennett Street
 Springfield, MO
 US 65807
 Contact: Dennis Moore
 dennis.moore@gflenv.com
 T: (417)403-3641
 F:

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)