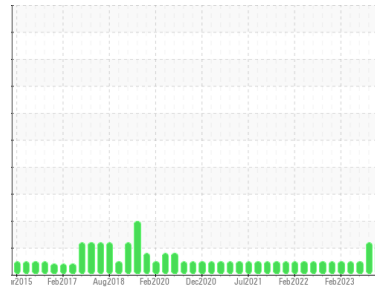




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Area
(71052P)
Machine Id
10541
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (10 GAL)

DIAGNOSIS

Recommendation

We advise that you check for possible coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0113935	GFL0093748	GFL0079017
Sample Date	Client Info	20 May 2024	02 Feb 2024	16 Aug 2023
Machine Age	hrs	15003	14412	13537
Oil Age	hrs	0	13537	13124
Oil Changed	Client Info	Not Changed	Changed	Changed
Sample Status		ABNORMAL	ABNORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >3.0	<1.0	<1.0	<1.0
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >75	39	22	37
Chromium	ppm ASTM D5185m >5	2	<1	2
Nickel	ppm ASTM D5185m >4	<1	<1	0
Titanium	ppm ASTM D5185m >2	<1	0	0
Silver	ppm ASTM D5185m >2	<1	<1	0
Aluminum	ppm ASTM D5185m >15	3	3	2
Lead	ppm ASTM D5185m >25	3	<1	<1
Copper	ppm ASTM D5185m >100	1	1	4
Tin	ppm ASTM D5185m >4	<1	<1	0
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	10	12	3
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	93	69	68
Manganese	ppm ASTM D5185m 0	<1	<1	<1
Magnesium	ppm ASTM D5185m 1010	965	959	948
Calcium	ppm ASTM D5185m 1070	1116	1010	1059
Phosphorus	ppm ASTM D5185m 1150	997	1100	1049
Zinc	ppm ASTM D5185m 1270	1295	1287	1262
Sulfur	ppm ASTM D5185m 2060	3341	3073	3122

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	21	9	11
Sodium	ppm ASTM D5185m	▲ 812	▲ 235	146
Potassium	ppm ASTM D5185m >20	11	4	4
Glycol	% *ASTM D2982	NEG	NEG	0.0

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >6	1	0.8	1.5
Nitration	Abs/cm *ASTM D7624 >20	11.0	9.0	11.5
Sulfation	Abs/.1mm *ASTM D7415 >30	22.5	20.9	22.8

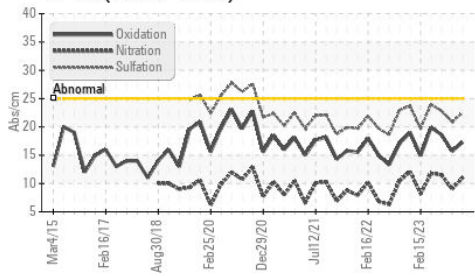
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	17.3	15.7	18.6
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.7	8.9	8.0

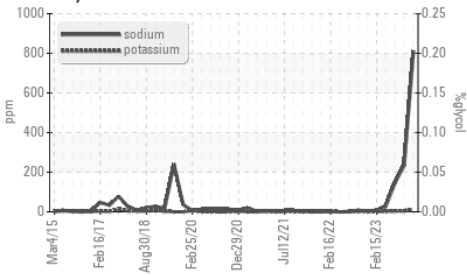


OIL ANALYSIS REPORT

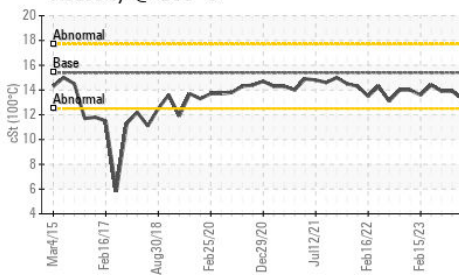
FT-IR (Direct Trend)



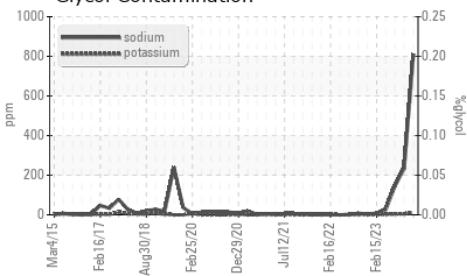
Glycol Contamination



Viscosity @ 100°C



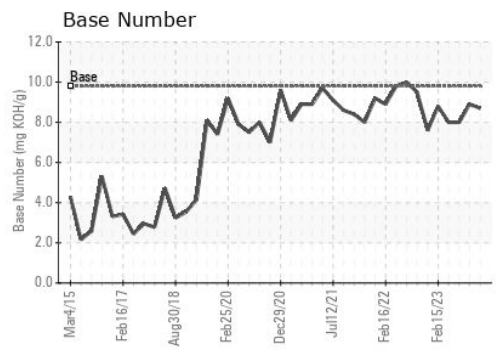
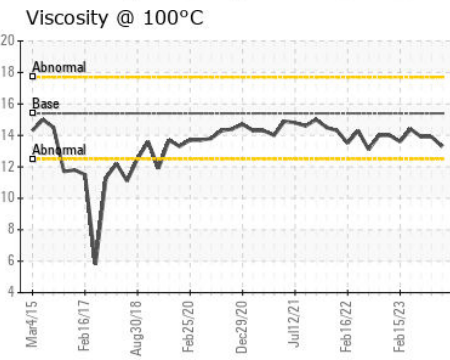
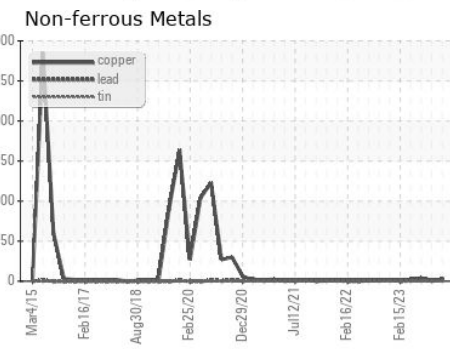
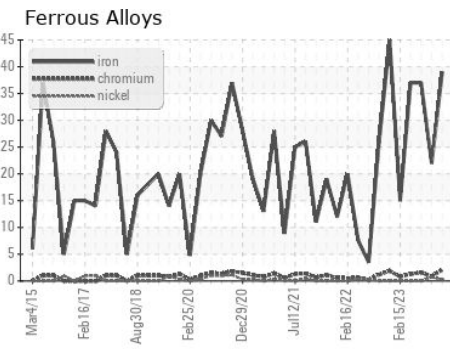
Glycol Contamination



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	13.3	13.9

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0113935 **Received** : 22 May 2024
Lab Number : **06188556** **Tested** : 28 May 2024
Unique Number : 11045308 **Diagnosed** : 28 May 2024 - Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 029 - Wytheville
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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)