



Machine Id
427087-402443
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already done. Resample at the next service interval to monitor. (Customer Sample Comment: Engine oil sample)

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0100552	GFL0103951	GFL0065233
Sample Date		Client Info		08 Jan 2024	29 Dec 2023	19 Jan 2023
Machine Age	hrs	Client Info		18356	328962	326297
Oil Age	hrs	Client Info		18356	328962	413
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Chngd	Changed	Changed
Filter Changed		Client Info		Not Chngd	Changed	Changed
Sample Status				SEVERE	ABNORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	5	19	8
Chromium	ppm	ASTM D5185m	>20	0	0	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	4	<1
Lead	ppm	ASTM D5185m	>40	<1	8	<1
Copper	ppm	ASTM D5185m	>330	12	51	2
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

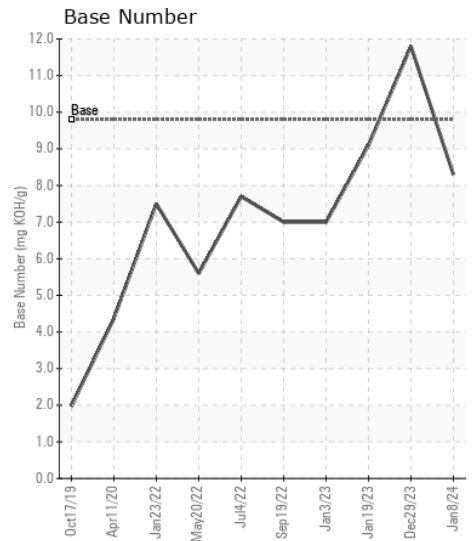
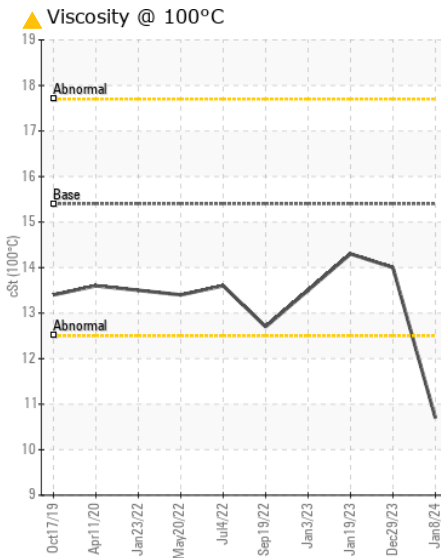
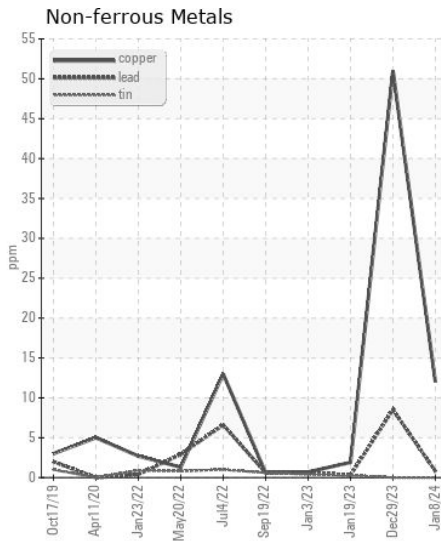
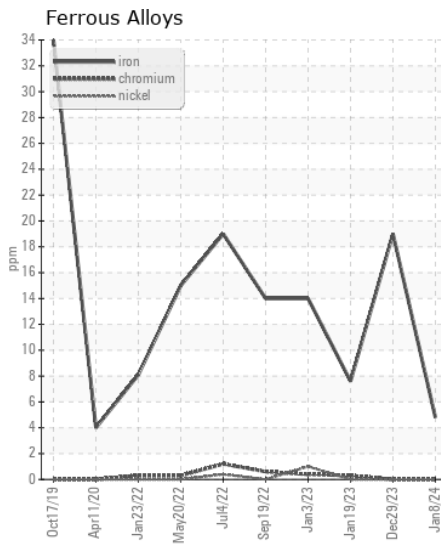
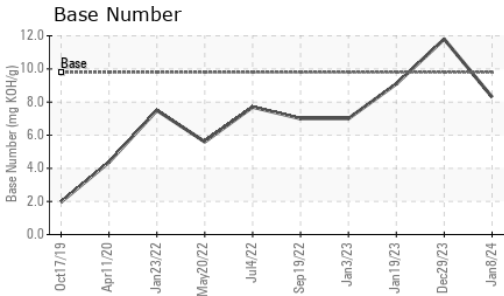
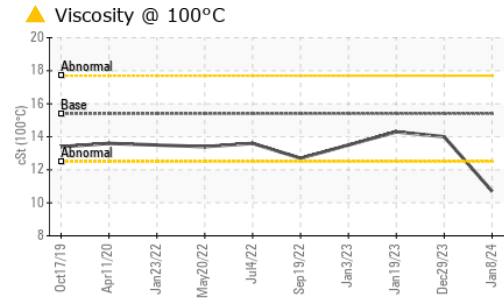
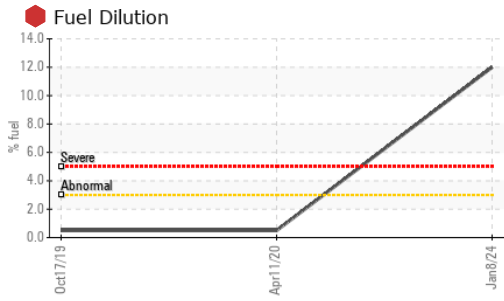
There is a high amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>25	7	15	6
Potassium	ppm	ASTM D5185m	>20	23	▲ 166	2
Fuel	%	ASTM D3524	>3.0	12.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>4	0.1	0.1	0.4
Nitration	Abs/cm	*ASTM D7624	>20	5.1	5.1	5.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.6	20.1	18.2
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		19	▲ 118	<1
Boron	ppm	ASTM D5185m	0	34	240	0
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	55	100	62
Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Magnesium	ppm	ASTM D5185m	1010	723	366	965
Calcium	ppm	ASTM D5185m	1070	1056	963	1089
Phosphorus	ppm	ASTM D5185m	1150	940	1009	1085
Zinc	ppm	ASTM D5185m	1270	1105	1209	1275
Sulfur	ppm	ASTM D5185m	2060	2866	3330	3225
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.2	14.0	13.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.3	11.8	9.1
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 10.7	14.0	14.3



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0100552 **Received** : 12 Jan 2024
Lab Number : 06059972 **Diagnosed** : 16 Jan 2024
Unique Number : 10831354 **Diagnostician** : Don Baldrige
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

GFL Environmental - 865 - East Mount Hauling
 7213 East Mount Houston Road
 Houston, TX
 US 77050
 Contact: Jose Gonzalez
 jgonzalez2@gflenv.com

Certificate L2367
 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)