



Area
(34718UA)
Machine Id
828100
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. 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. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0108328	GFL0098187	GFL0083923
Sample Date		Client Info		06 Jan 2024	12 Dec 2023	04 Oct 2023
Machine Age	hrs	Client Info		12030	11870	11424
Oil Age	hrs	Client Info		12030	11870	11424
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	ABNORMAL	SEVERE

WEAR

Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>100	▲ 132	72	▲ 112
Chromium	ppm	ASTM D5185m	>20	8	4	4
Nickel	ppm	ASTM D5185m	>4	4	2	2
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	16	10	0
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	4	2	2
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

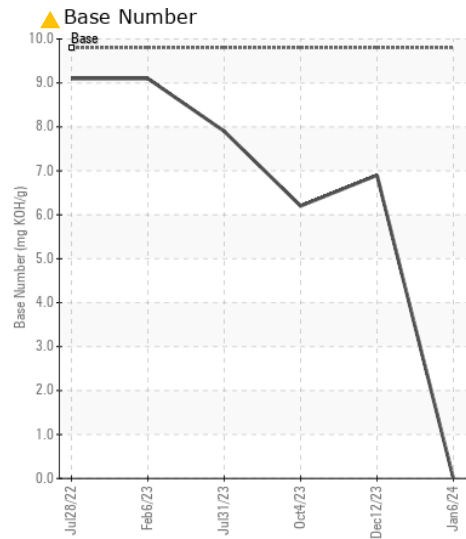
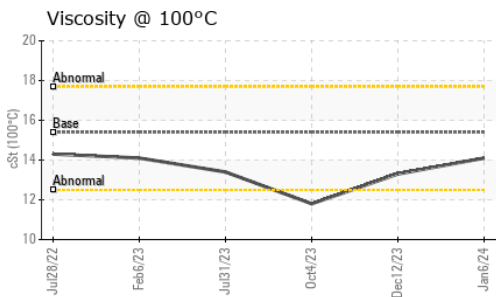
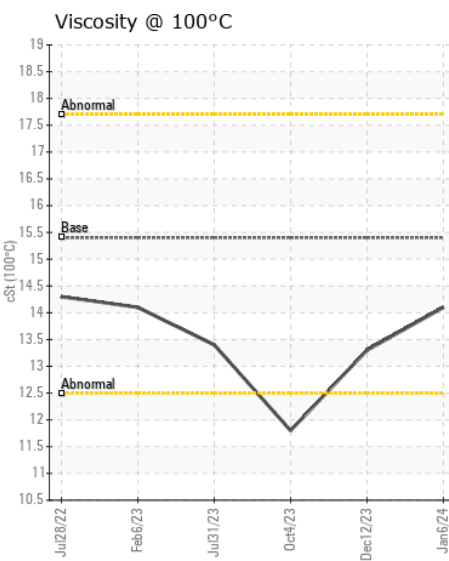
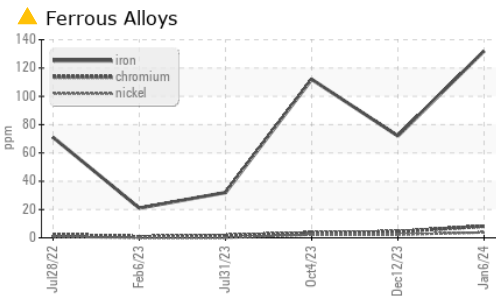
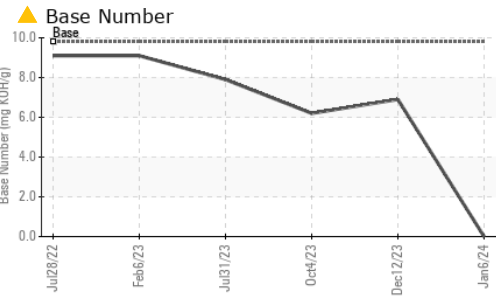
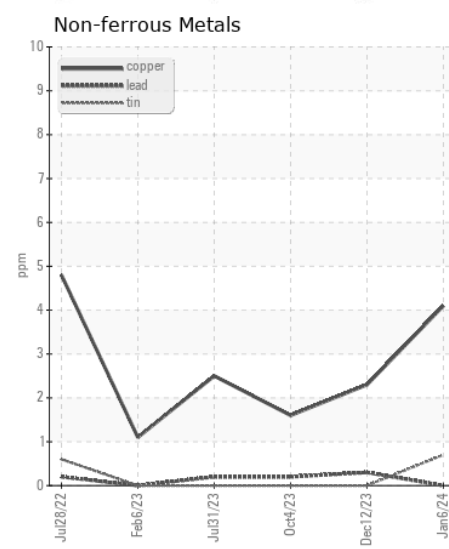
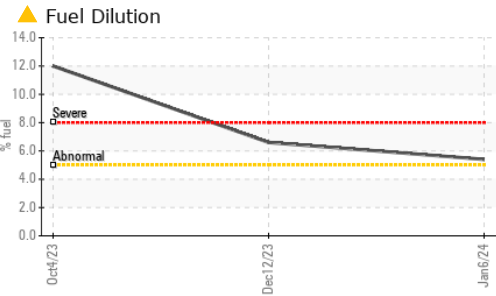
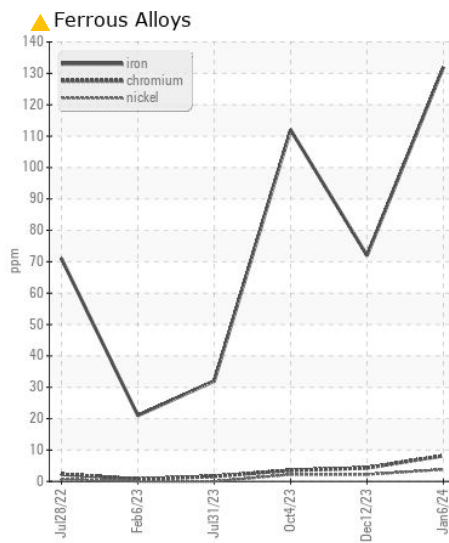
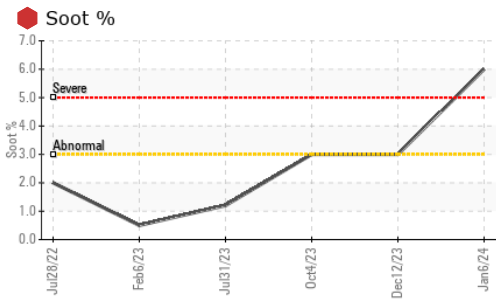
There is an abnormal amount of solids and carbon present in the oil.
There is a moderate amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>25	9	5	9
Potassium	ppm	ASTM D5185m	>20	12	10	21
Fuel	%	ASTM D3524	>5	▲ 5.4	▲ 6.6	◆ 12.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	◆ 6	3	3
Nitration	Abs/cm	*ASTM D7624	>20	21.1	11.0	11.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	37.6	23.7	24.5
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

The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		8	3	3
Boron	ppm	ASTM D5185m	0	10	12	4
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	58	52	51
Manganese	ppm	ASTM D5185m	0	2	<1	1
Magnesium	ppm	ASTM D5185m	1010	863	910	791
Calcium	ppm	ASTM D5185m	1070	991	1086	925
Phosphorus	ppm	ASTM D5185m	1150	988	1008	880
Zinc	ppm	ASTM D5185m	1270	1139	1131	1080
Sulfur	ppm	ASTM D5185m	2060	2634	2910	2576
Oxidation	Abs/.1mm	*ASTM D7414	>25	32.0	15.8	18.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ 0.0	6.9	6.2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	13.3	▲ 11.8



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0108328 **Received** : 12 Jan 2024
Lab Number : 06060086 **Diagnosed** : 16 Jan 2024
Unique Number : 10831468 **Diagnostician** : Doug Bogart
Test Package : FLEET (Additional Tests: PercentFuel)

GFL Environmental - 652 - Fredericksburg Hauling
 10954 Houser Drive
 Fredericksburg, VA
 US 22408
 Contact: WILLIAM MILO
 wmilo@gflenv.com
 T:
 F:

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)