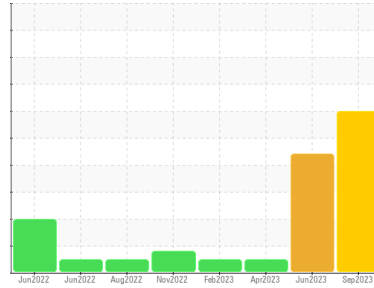




PROBLEM SUMMARY

Sample Rating Trend



SOOT

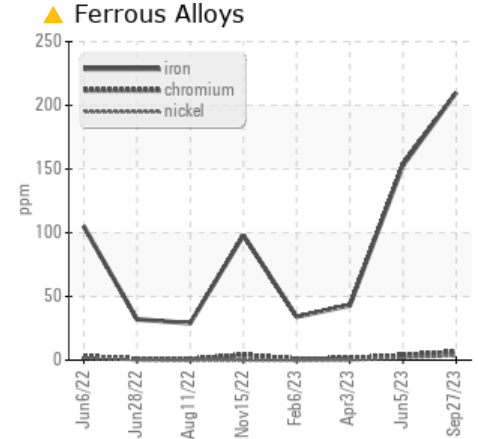
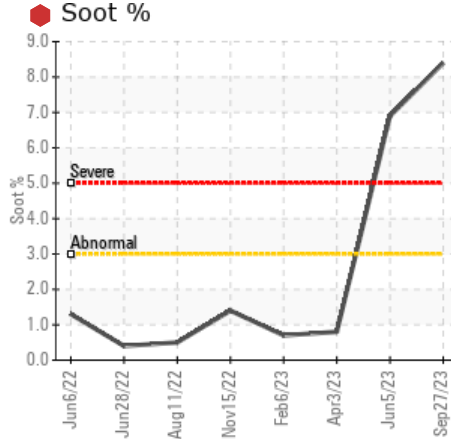
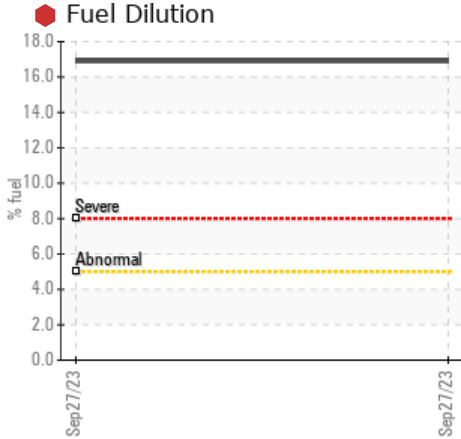


Machine Id
727150

Component
Diesel Engine

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

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check the fuel injection system. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. 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.

PROBLEMATIC TEST RESULTS

Sample Status		SEVERE	SEVERE	NORMAL
Iron	ppm ASTM D5185m >100	▲ 210	▲ 153	43
Fuel	% ASTM D3524 >5	● 16.9	<1.0	<1.0
Soot %	% *ASTM D7844 >3	● 8.4	● 6.9	0.8
Base Number (BN)	mg KOH/g ASTM D2896 9.8	▲ 0.0	▲ 0.0	5.9

Customer Id: GFL652
 Sample No.: GFL0061544
 Lab Number: 05966016
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Don Baldrige +1
don.b505@comcast.net

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	We recommend that you drain the oil and perform a filter service on this component if not already done.
Change Filter	---	---	?	We recommend that you drain the oil and perform a filter service on this component if not already done.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Alert	---	---	?	NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.
Check Combustion	---	---	?	We advise that you check for faulty combustion, plugged air filters, or aftercoolers.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS

05 Jun 2023 Diag: Don Baldrige

SOOT



We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend you service the filters on this component. 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. Cylinder, crank, or cam shaft wear is indicated. There is an abnormal amount of solids and carbon present in the oil. The oil viscosity is higher than normal. The BN level is low.

view report



03 Apr 2023 Diag: Don Baldrige

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



06 Feb 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

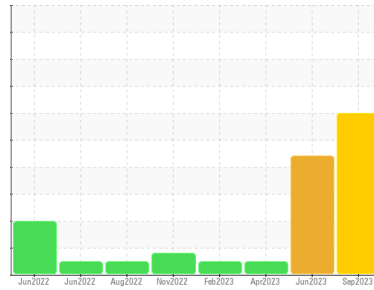
view report





OIL ANALYSIS REPORT

Sample Rating Trend



SOOT



Machine Id
727150

Component
Diesel Engine

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

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. 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.

Wear

Cylinder, crank, or cam shaft wear is indicated.

Contamination

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

Fluid Condition

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

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0061544	GFL0061511	GFL0061558
Sample Date	Client Info	27 Sep 2023	05 Jun 2023	03 Apr 2023
Machine Age	hrs	Client Info	18526	17011
Oil Age	hrs	Client Info	18526	17011
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		SEVERE	SEVERE	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >100	▲ 210	▲ 153	43
Chromium	ppm	ASTM D5185m >20	7	4	1
Nickel	ppm	ASTM D5185m >4	3	2	0
Titanium	ppm	ASTM D5185m	<1	<1	0
Silver	ppm	ASTM D5185m >3	0	0	<1
Aluminum	ppm	ASTM D5185m >20	15	8	2
Lead	ppm	ASTM D5185m >40	7	3	<1
Copper	ppm	ASTM D5185m >330	7	3	36
Tin	ppm	ASTM D5185m >15	2	<1	2
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 0	4	4	8
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	49	68	64
Manganese	ppm	ASTM D5185m 0	2	2	1
Magnesium	ppm	ASTM D5185m 1010	755	1038	829
Calcium	ppm	ASTM D5185m 1070	868	1251	1076
Phosphorus	ppm	ASTM D5185m 1150	821	1068	828
Zinc	ppm	ASTM D5185m 1270	1021	1366	1133
Sulfur	ppm	ASTM D5185m 2060	2473	3518	2041

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >25	17	9	12
Sodium	ppm	ASTM D5185m	16	8	3
Potassium	ppm	ASTM D5185m >20	5	0	2
Fuel	%	ASTM D3524 >5	16.9	<1.0	<1.0

INFRA-RED

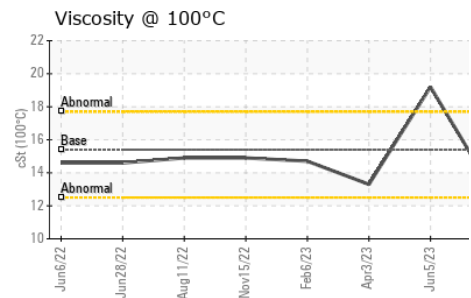
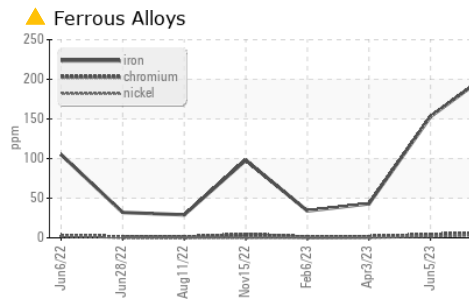
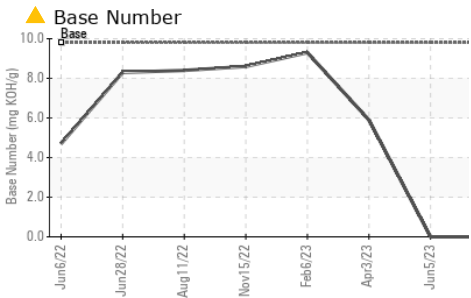
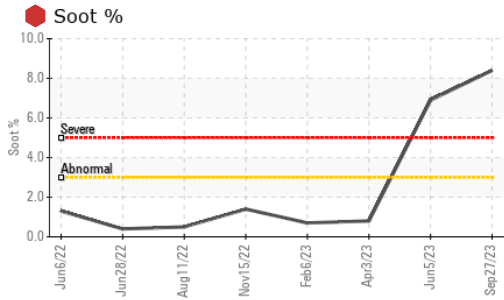
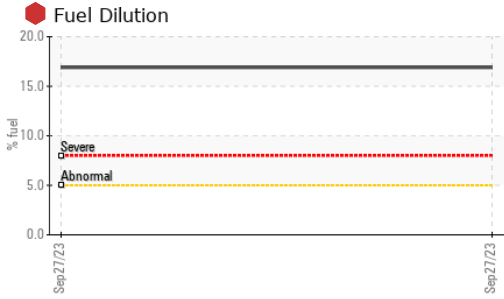
method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844 >3	8.4	6.9	0.8
Nitration	Abs/cm	*ASTM D7624 >20	37.0	24.7	9.9
Sulfation	Abs/.1mm	*ASTM D7415 >30	52.9	46.1	21.9

FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	89.6	44.6	18.5
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	▲ 0.0	▲ 0.0	5.9



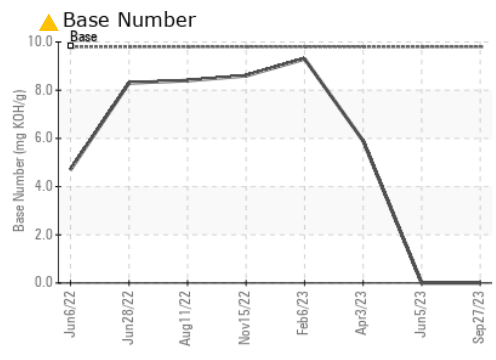
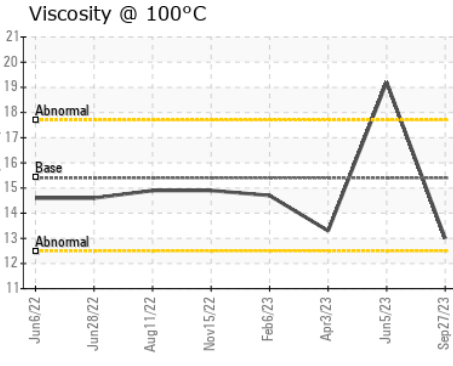
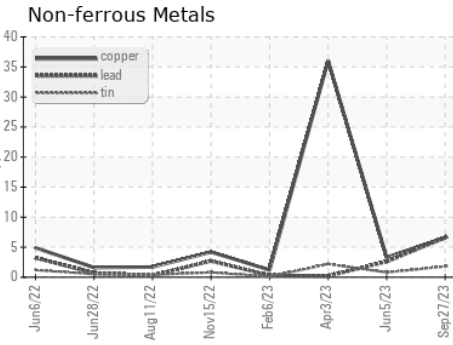
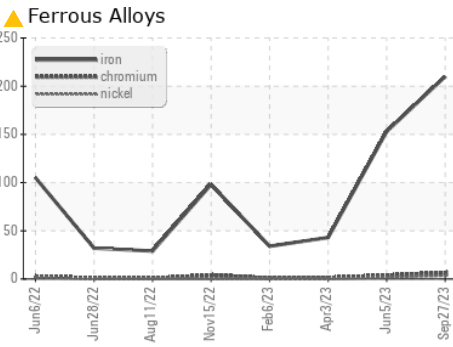
OIL ANALYSIS REPORT



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	13.0	▲ 19.2	13.3

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0061544 **Received** : 02 Oct 2023
Lab Number : 05966016 **Diagnosed** : 05 Oct 2023
Unique Number : 10672567 **Diagnostician** : Don Baldrige
Test Package : FLEET (Additional Tests: FUELDILUTION, PercentFuel)

GFL Environmental - 652 - Fredericksburg Hauling
 10954 Houser Drive
 Fredericksburg, VA
 US 22408
 Contact: WILLIAM MILO
 wmilo@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)