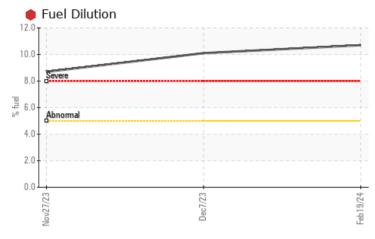


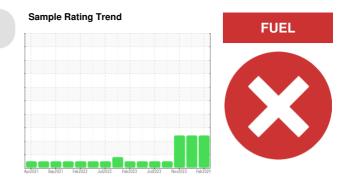
PROBLEM SUMMARY

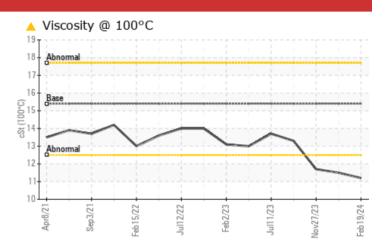
Machine Id 911020-1379

Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (46 QTS)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS						
Sample Status				SEVERE	SEVERE	SEVERE
Fuel	%	ASTM D3524	>5	• 10.7	• 10.1	8.7
Visc @ 100°C	cSt	ASTM D445	15.4	A 11.2	1 1.5	11.7

Customer Id: GFL622 Sample No.: GFL0110276 Lab Number: 06097480 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

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

RECOMMENDED ACTIONS						
Action	Status	Date	Done By	Description		
Resample			?	We recommend an early resample to monitor this condition.		
Check Fuel/injector System			?	We advise that you check the fuel injection system.		

HISTORICAL DIAGNOSIS



07 Dec 2023 Diag: Wes Davis

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.



view report

27 Nov 2023 Diag: Jonathan Hester



We advise that you check the fuel injection system. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a high amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.







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.







OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

911020-1379 Component

Diesel Engine Fluic

PETRO CANADA DURON SHP 15W40 (46 QTS)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. The oil 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

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

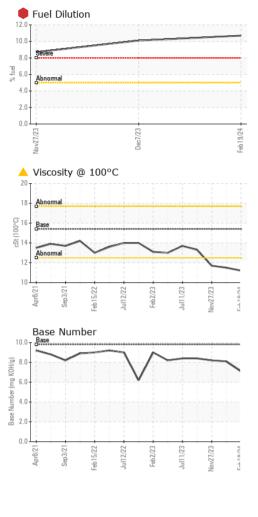
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0110276	GFL0102821	GFL0103065
Sample Date		Client Info		19 Feb 2024	07 Dec 2023	27 Nov 2023
Machine Age	hrs	Client Info		9749	9148	9082
Oil Age	hrs	Client Info		601	580	477
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				SEVERE	SEVERE	SEVERE
CONTAMINATIO	ON	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	14	9	6
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	4	4
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	<1	0	0
Tin	ppm	ASTM D5185m	>15	<1	0	<1
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	7	3	4
Barium	ppm ppm	ASTM D5185m	0	0	0	0
Barium Molybdenum		ASTM D5185m ASTM D5185m	0 60	0 53	0 56	0 57
Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	0 53 <1	0 56 0	0 57 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 53 <1 748	0 56 0 798	0 57 <1 869
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 53 <1 748 908	0 56 0 798 909	0 57 <1 869 967
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	0 53 <1 748 908 823	0 56 0 798 909 904	0 57 <1 869 967 973
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270	0 53 <1 748 908 823 1000	0 56 0 798 909 904 1076	0 57 <1 869 967 973 1176
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 53 <1 748 908 823	0 56 0 798 909 904 1076 2687	0 57 <1 869 967 973 1176 2856
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 53 <1 748 908 823 1000 2403 current	0 56 0 798 909 904 1076 2687 history1	0 57 <1 869 967 973 1176 2856 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 53 <1 748 908 823 1000 2403 <u>current</u> 2	0 56 0 798 909 904 1076 2687 <u>history1</u> 2	0 57 <1 869 967 973 1176 2856 history2 3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 53 <1 748 908 823 1000 2403 <u>current</u> 2 2 2	0 56 0 798 909 904 1076 2687 history1 2 3	0 57 <1 869 967 973 1176 2856 history2 3 2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	0 53 <1 748 908 823 1000 2403 <u>current</u> 2 2 2 1	0 56 0 798 909 904 1076 2687 history1 2 3 6	0 57 <1 869 967 973 1176 2856 history2 3 2 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel	ppm	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >5	0 53 <1 748 908 823 1000 2403 current 2 2 2 1 1 10.7	0 56 0 798 909 904 1076 2687 history1 2 3 6 6	0 57 <1 869 967 973 1176 2856 history2 3 2 2 5 5 € 8.7
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m ASTM D5185m	0 60 0 1010 1150 1270 2060 limit/base >25 >20 >5	0 53 <1 748 908 823 1000 2403 <i>current</i> 2 2 2 1 1 10.7	0 56 0 798 909 904 1076 2687 history1 2 3 6 6 10.1 history1	0 57 <1 869 967 973 1176 2856 history2 3 2 5 5 € 8.7 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 60 0 1010 1150 1270 2060 <i>limit/base</i> >25 >20 >5 <i>limit/base</i> >3	0 53 <1 748 908 823 1000 2403 current 2 2 2 1 1 10.7 current 1.1	0 56 0 798 909 904 1076 2687 history1 2 3 6 10.1 history1 1.1	0 57 <1 869 967 973 1176 2856 history2 3 2 5 5 8.7 history2 1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5824 ASTM D3524	0 60 1010 1070 1150 1270 2060 imit/base >25 >20 >5 imit/base >3 >20	0 53 <1 748 908 823 1000 2403 current 2 2 2 1 1 1 0 10.7 current 1.1 9.8	0 56 0 798 909 904 1076 2687 history1 2 3 6 10.1 1.1 1.1 8.9	0 57 <1 869 967 973 1176 2856 history2 3 2 5 5 8.7 history2 1 8.3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 60 1010 1070 1150 1270 2060 imit/base >25 >20 >5 imit/base >3 >20	0 53 <1 748 908 823 1000 2403 current 2 2 2 1 1 10.7 current 1.1	0 56 0 798 909 904 1076 2687 history1 2 3 6 10.1 history1 1.1	0 57 <1 869 967 973 1176 2856 history2 3 2 5 5 8.7 history2 1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 60 1010 1070 1150 1270 2060 imit/base >25 >20 >5 imit/base >3 >20	0 53 <1 748 908 823 1000 2403 current 2 2 2 1 1 1 0 10.7 current 1.1 9.8	0 56 0 798 909 904 1076 2687 history1 2 3 6 10.1 1.1 1.1 8.9	0 57 <1 869 967 973 1176 2856 history2 3 2 5 5 8.7 history2 1 8.3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 60 1010 1070 1150 1270 2060 Imit/base >20 >20 >3 >20 >30 Simit/base	0 53 <1 748 908 823 1000 2403 current 2 2 2 1 10.7 current 1.1 9.8 21.8	0 56 0 798 909 904 1076 2687 history1 2 3 6 10.1 history1 1.1 8.9 19.8	0 57 <1 869 967 973 1176 2856 history2 3 2 5 8.7 history2 1 8.3 19.5



OIL ANALYSIS REPORT



VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
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
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	11.2	1 1.5	▲ 11.7
GRAPHS						
Ferrous Alloys						
iron 1						
chromium	Λ					
0 - mickel	1					
5	11					
	1-1-1					
5-	VL	~				
0			/			
5-		\sim				
	Contain Contraint					
	ui12/22 - Feb2/23 -	/23 -	9/24 -			
Apr8/21 Sep3/21 Feb15/22	Jul12/22 Feb2/23	Jul11/23 Nov27/23	Feb19/24			
Non-ferrous Meta	als	-				
copper						
management lead						
tin						
· · · · · · · · · · · · · · · · · · ·						
2						
	\sim					
			- Charles			
Apr8/21 Sep3/21 Feb15/22	Jul12/22 Feb2/23	Juli 1/23	Feb19/24			
Viscosity @ 100°	~	~ 2	LC.	De ce Ni l		
Tanana (1.2)			10	Base Numbe	er	
Abnormal				-		

8. (mg KOH/g)

6 (Number (4 (Base

0.0

Apr8/21

Sep3/21.

Feb 15/22

Jul12/22

Feb2/23

GFL Environmental - 622 - Traverse City Hauling

Jul11/23

Feb19/24.

: 22 Feb 2024

: 25 Feb 2024

Vov27/23



Unique Number : 10890333 Diagnosed : 25 Feb 2024 - Wes Davis Test Package : FLEET (Additional Tests: PercentFuel) Contact: GARY BREWER 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)

Jul12/22

Feb 15/22

Feb2/23

Received

Tested

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Jul11/23

17

16 cSt (100°C)

12

10

Lab Number : 06097480

Laboratory Sample No. Anr8/71

: GFL0110276

Sep3/21

Submitted By: TECHNICIAN ACCOUNT

Feb 19/24

T:

F:

Vov27/23

160 Hughes Dr

US 49686

Traverse City, MI