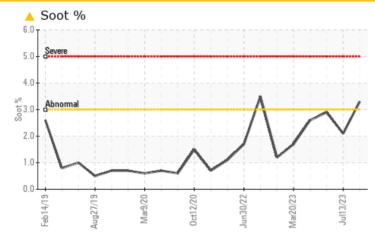


425061-402314

Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

The oil change at the time of sampling has been noted.

PROBLEMATIC TEST RESULTS								
Sample Status				ABNORMAL	NORMAL	NORMAL		
Soot %	%	*ASTM D7844	>3	A 3.3	2.1	2.9		

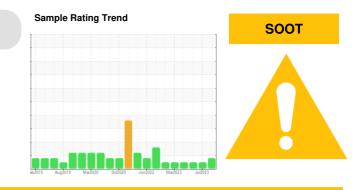
Customer Id: GFL836 Sample No.: GFL0087163 Lab Number: 05923131 Test Package: FLEET



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

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

13 Jul 2023 Diag: Wes Davis



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.

25 Apr 2023 Diag:



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.

17 Apr 2023 Diag: Wes Davis

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

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OIL ANALYSIS REPORT

Sample Rating Trend SOOT

history1

history2

Machine	ld		
195	061	Λ	6

425061-402314 Component

Diesel Engine

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

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted.

Wear

All component wear rates are normal.

Contamination

Light concentration of carbon/soot present in the oil.

Fluid Condition

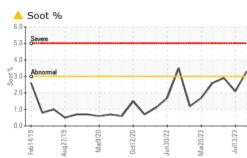
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

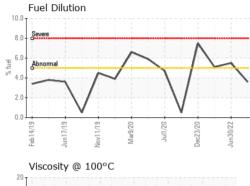
SAMPLE INFORM		method	limit/base	current	nistory i		
Sample Number		Client Info		GFL0087163	GFL0087171	GFL0070330	
Sample Date		Client Info		10 Aug 2023	13 Jul 2023	25 Apr 2023	
Machine Age	hrs	Client Info		24174	23960	23632	
Oil Age	hrs	Client Info		600	0	600	
Oil Changed		Client Info		Changed	Not Changd	Changed	
Sample Status				ABNORMAL	NORMAL	NORMAL	
		method	limit/bass	ourroat	biotomut	history 0	
			limit/base	current	history1	history2	
Glycol		WC Method		NEG	NEG	NEG	
WEAR METALS	S	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>100	56	38	58	
Chromium	ppm	ASTM D5185m	>20	2	2	2	
Nickel	ppm	ASTM D5185m	>4	<1	0	0	
Titanium	ppm	ASTM D5185m		0	0	0	
Silver	ppm	ASTM D5185m	>3	<1	0	0	
Aluminum	ppm	ASTM D5185m	>20	8	6	7	
Lead	ppm	ASTM D5185m	>40	<1	0	0	
Copper	ppm	ASTM D5185m	>330	1	<1	1	
Tin	ppm	ASTM D5185m	>15	0	0	0	
Vanadium	ppm	ASTM D5185m		0	0	0	
Cadmium	ppm	ASTM D5185m		0	0	0	
ADDITIVES		method	limit/base	current	history1	history2	
	ppm	method ASTM D5185m	limit/base	current 0	history1 <1	history2 1	
	ppm ppm		0				
Boron Barium		ASTM D5185m	0	0	<1	1	
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	0 0 60	0 2	<1 <1	1 0	
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 2 63	<1 <1 60	1 0 56	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 2 63 <1	<1 <1 60 <1	1 0 56 1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 2 63 <1 894	<1 <1 60 <1 975	1 0 56 1 910	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	0 2 63 <1 894 1109	<1 <1 60 <1 975 1092	1 0 56 1 910 1004	
Boron 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 0 60 0 1010 1070 1150	0 2 63 <1 894 1109 997	<1 <1 60 <1 975 1092 1058	1 0 56 1 910 1004 963	
Boron 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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270	0 2 63 <1 894 1109 997 1222	<1 <1 60 <1 975 1092 1058 1300	1 0 56 1 910 1004 963 1194	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 00 00 1010 1070 1150 1270 2060	0 2 63 <1 894 1109 997 1222 3144	<1 <1 60 <1 975 1092 1058 1300 3566	1 0 56 1 910 1004 963 1194 3203	
Boron 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 ASTM D5185m	0 00 00 1010 1070 1150 1270 2060	0 2 63 <1 894 1109 997 1222 3144 current	<1 <1 60 <1 975 1092 1058 1300 3566 history1	1 0 56 1 910 1004 963 1194 3203 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	0 2 63 <1 894 1109 997 1222 3144 current 7	<1 <1 60 <1 975 1092 1058 1300 3566 history1 5	1 0 56 1 910 1004 963 1194 3203 history2 6	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Iimit/base >25 	0 2 63 <1 894 1109 997 1222 3144 current 7 5	<1 <1 60 <1 975 1092 1058 1300 3566 history1 5 7	1 0 56 1 910 1004 963 1194 3203 history2 6 7	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Iimit/base >25 	0 2 63 <1 894 1109 997 1222 3144 <u>current</u> 7 5 2	<1 <1 60 <1 975 1092 1058 1300 3566 history1 5 7 <1	1 0 56 1 910 1004 963 1194 3203 history2 6 7 0	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25 >20 >5	0 2 63 <1 894 1109 997 1222 3144 current 7 5 2 2 <1.0	<1 <1 60 <1 975 1092 1058 1300 3566 history1 5 7 <1 .10	1 0 56 1 910 1004 963 1194 3203 history2 6 7 0 0 <1.0	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN' Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >5 limit/base >3	0 2 63 <1 894 1109 997 1222 3144 current 7 5 2 2 <1.0 current	<1 <1 60 <1 975 1092 1058 1300 3566 history1 5 7 <1 <1.0 history1	1 0 56 1 910 1004 963 1194 3203 history2 6 7 0 0 <1.0 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >5 limit/base >3	0 2 63 <1 894 1109 997 1222 3144 <i>current</i> 7 5 2 <1.0 <i>current</i>	<1 <1 60 <1 975 1092 1058 1300 3566 history1 5 7 <1 <1 <1.0 history1 2.1	1 0 56 1 910 1004 963 1194 3203 history2 6 7 0 <1.0 kistory2 2.9	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 >20 >5 1imit/base >3 >20	0 2 63 <1 894 1109 997 1222 3144 <i>current</i> 7 5 2 <1.0 <i>current</i> 3.3 15.9	<1 <1 60 <1 975 1092 1058 1300 3566 history1 5 7 <1 <1.0 history1 2.1 13.1	1 0 56 1 910 1004 963 1194 3203 history2 6 7 0 <1.0 history2 2.9 14.6	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Iimit/base >25 S Iimit/base >3 >20 >3 >30	0 2 63 <1 894 1109 997 1222 3144 <urrent 7 5 2 <1.0 <urrent ▲ 3.3 15.9 29.2</urrent </urrent 	<1 <1 60 <1 975 1092 1058 1300 3566 history1 5 7 <1 <1.0 history1 2.1 13.1 23.5	1 0 56 1 910 1004 963 1194 3203 history2 6 7 0 <1.0 kistory2 2.9 14.6 27.3	

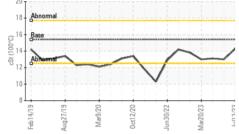
SAMPLE INFORMATION method limit/base current

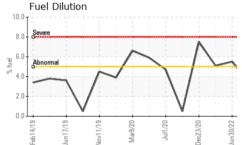


OIL ANALYSIS REPORT

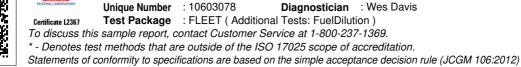








	VICLA		in all seal	line trans		la la travert	la la tarra O
	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
$1 \wedge 1$	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
V	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Mar20/23 Jul13/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
M L	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
Λ	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
12	Visc @ 100°C	cSt	ASTM D445	15.4	14.4	14.3	13.0
	GRAPHS						
J	Ferrous Alloys						
V	120 iron						
Dec23/20 Jun30/22	100 - chromium	٨					
Juni	80 -	Λ					
-		$ \rangle$					
	60-	11	AM	1			
	40	1 -	1//	V			
	20		V				
			3 53	200 million - 20			
	Feb14/19 Aug27/19 Mar9/20	0ct12/20	Jun30/22 Mar20/23	Jul13/23			
			Ju. Mi	<u>ت</u>			
23	Non-ferrous Meta	IS					
Mar20/23	copper	٨					
2	8 - tin	11					
	6	11					
	Ed.	11					
	4	11					
		IN					
$1 \sim$	2-	IN'S					
		1V	280V	- ALAN			
	Feb14/19 Aug27/19 Mar9/20	0ct12/20	Jun30/22 Mar20/23	Jul13/23			
V	Feb1 Augź Ma	Octl	Jun.	Jul			
Dec23/20 Jun30/22	Viscosity @ 100°C	2			Base Number		
Jun	19 18 Abnormal			12.0			
	18 - Abnormal	1		10.0	Base		
	10			(B/H	The second	\wedge	
Į.	Duau			9 8.0 P	0+	$ \rangle$	$/ \land \land$
005	2 15 14 3 13 Abronnal		N	Jan Bi	0-		$\langle \rangle \rangle$
ć		1	/	1.8 Mumber (mg KOH/g)			V
	12	\backslash					
	10	V		2.0	0-		
	9			0.0			
	Feb 14/19 Aug 27/19 Mar9/20	0ct12/20	Jun 30/22 Mar20/23	Jul13/23	Feb14/19 Aug27/19 M4.20	0ct12/20 0ct12/20	Mar20/23 Jul13/23
	Feb Aug.	Oct	Mari	Jul	Aug	Jun:	Mar
Laboratory	: WearCheck USA -	501 Madi	son Ave Ca	INC 2751	3 GEL Envi	ronmental - 836 - Ka	ansas City Hauling
Sample No.		Received		Aug 2023			t Truman Road
Lab Number		Diagnos	ed : 15 /	Aug 2023			ansas City, MO
Unique Number		Diagnos		s Davis			US 64126
Test Package	: FLEET (Additional	Tests: Fu	elDilution)				ct: Robert Hart
	contact Customer Serv			2		rbc	rt@aflenv.com



Contact/Location: See also GFL823, 834, 837, 840 - Robert Hart - GFL836

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rhart@gflenv.com

T: (580)461-1509