

PROBLEM SUMMARY

Sample Rating Trend



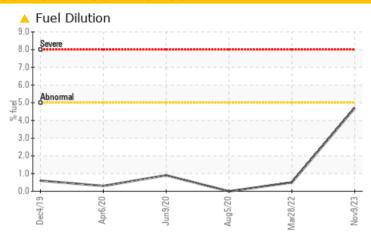
429059-402467

Component

Diesel Engine

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

COMPONENT CONDITION SUMMARY



RECOMMENDATION

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS							
Sample Status				MARGINAL	NORMAL	NORMAL	
Fuel	%	ASTM D3524	>5	4.7	<1.0	<1.0	

Customer Id: GFL846 Sample No.: GFL0101120 Lab Number: 06008031 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Angela Borella +1 800-237-1369 angela.borella@wearcheckusa.com

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

07 Sep 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.



04 Aug 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.



25 Jun 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.





OIL ANALYSIS REPORT

Sample Rating Trend



429059-402467

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- G

DIAGNOSIS

Recommendation

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring.

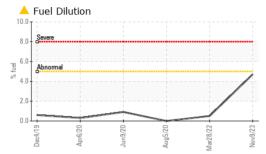
Fluid Condition

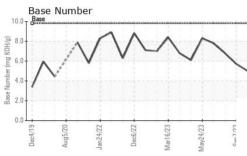
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

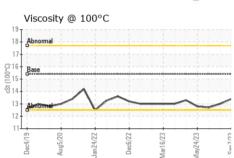
Sample Date Client Info 09 Nov 2023 Client Info 150 Client Info Oil Age hrs Client Info 600 Client Info Oil Changed Client Info Not Changd	Sep2023	
Sample Date Client Info 09 Nov 2023 Client Info Machine Age hrs Client Info 150 Cond Oil Age hrs Client Info 600 Cond Oil Changed Client Info Not Changd MARGINAL Not Changd Sample Status MARGINAL MARGINAL NEG WEAR METALS Immit Mase current Iron ppm ASTM D5185m >110 38 Chromium ppm ASTM D5185m >4 2 2 Nickel ppm ASTM D5185m >2 0 1 38 Chromium ppm ASTM D5185m >2 0 1 38 Chromium ppm ASTM D5185m >2 0 1 1 Silver ppm ASTM D5185m >2 1 1 4 1 2 1 1 4 1 4 1 4 1 2 1 3 3	history1	history2
Machine Age hrs Client Info 150 Colination Oil Age hrs Client Info 600 Colient Info Oil Changed Client Info Not Changd Marginat Sample Status Marginat Marginat Neg CONTAMINATION method limit/base current Government WEAR METALS method limit/base current WEAR METALS method Mimit/base current WEAR METALS method Mimit/base current MEChronium ppm ASTM D5185m >2 1 ASTM D5185m <t< td=""><td>GFL0087037</td><td>GFL0087048</td></t<>	GFL0087037	GFL0087048
Machine Age hrs Client Info 150 Control of the part of the	07 Sep 2023	04 Aug 2023
Dil Changed Client Info Not Changed MARGINAL	0	0
Colient Info	0	0
MARGINAL NEG	N/A	Not Changd
WEAR METALS method limit/base current Iron ppm ASTM D5185m >110 38 Chromium ppm ASTM D5185m >4 2 Nickel ppm ASTM D5185m >2 0 Titanium ppm ASTM D5185m >2 0 Silver ppm ASTM D5185m >2 <1	NORMAL	NORMAL
WEAR METALS method limit/base current Iron ppm ASTM D5185m >110 38 Chromium ppm ASTM D5185m >4 2 Nickel ppm ASTM D5185m >2 0 Titanium ppm ASTM D5185m >2 1 Silver ppm ASTM D5185m >2 1 Aluminum ppm ASTM D5185m >2 1 Aluminum ppm ASTM D5185m >25 8 Lead ppm ASTM D5185m >45 14 Copper ppm ASTM D5185m >4 1 Vanadium ppm ASTM D5185m >4 1 Vanadium ppm ASTM D5185m >4 1 Cadmium ppm ASTM D5185m >4 1 ADDITIVES method limit/base current Boron ppm ASTM D5185m 0 5 Barium ppm	history1	history2
ASTM D5185m >110 38	NEG	NEG
Description	history1	history2
Nickel	29	19
Pritanium	2	1
Silver	0	0
Aluminum	<1	0
December December	0	0
Copper	8	8
Sorting	13	7
Company Com	2	1
Vanadium ppm ASTM D5185m <1 Cadmium ppm ASTM D5185m <1 ADDITIVES method limit/base current Boron ppm ASTM D5185m 0 <1 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 <1 Manganese ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 1010 885 Calcium ppm ASTM D5185m 1070 1205 Phosphorus ppm ASTM D5185m 1270 1210 Sulfur ppm ASTM D5185m 2060 2695 CONTAMINANTS method limit/base current Solicon ppm ASTM D5185m >30 8 Sodium ppm ASTM D5185m >20 17 Fuel % ASTM D5185m >20 17 Fuel % ASTM D5185m	<1	<1
ADDITIVES method limit/base current Boron ppm ASTM D5185m 0 <1	<1	0
Boron ppm ASTM D5185m 0 0 0	0	0
Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 59 Manganese ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 1010 885 Calcium ppm ASTM D5185m 1070 1205 Phosphorus ppm ASTM D5185m 1150 987 Zinc ppm ASTM D5185m 1270 1210 Sulfur ppm ASTM D5185m 2060 2695 CONTAMINANTS method limit/base current Silicon ppm ASTM D5185m >30 8 Sodium ppm ASTM D5185m 3 20 Potassium ppm ASTM D5185m >20 17 Fuel % ASTM D3524 >5 ▲ 4.7 INFRA-RED method limit/base current Soot % % *ASTM D7624 >20 13.2 Sulfation	history1	history2
Molybdenum ppm ASTM D5185m 60 59 Manganese ppm ASTM D5185m 0 <1	1	3
Manganese ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 1010 885 Calcium ppm ASTM D5185m 1070 1205 Phosphorus ppm ASTM D5185m 1150 987 Zinc ppm ASTM D5185m 1270 1210 Sulfur ppm ASTM D5185m 2060 2695 CONTAMINANTS method limit/base current Silicon ppm ASTM D5185m >30 8 Sodium ppm ASTM D5185m 3 20 Potassium ppm ASTM D5185m >20 17 Fuel % ASTM D3524 >5 ▲ 4.7 INFRA-RED method limit/base current Soot % % *ASTM D7844 >3 0.7 Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5 <td>0</td> <td>0</td>	0	0
Magnesium ppm ASTM D5185m 1010 885 Calcium ppm ASTM D5185m 1070 1205 Phosphorus ppm ASTM D5185m 1150 987 Zinc ppm ASTM D5185m 1270 1210 Sulfur ppm ASTM D5185m 2060 2695 CONTAMINANTS method limit/base current Silicon ppm ASTM D5185m >30 8 Sodium ppm ASTM D5185m >30 8 Potassium ppm ASTM D5185m >20 17 Fuel % ASTM D3524 >5 ▲ 4.7 INFRA-RED method limit/base current Soot % % *ASTM D7844 >3 0.7 Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5	63	61
Calcium ppm ASTM D5185m 1070 1205 Phosphorus ppm ASTM D5185m 1150 987 Zinc ppm ASTM D5185m 1270 1210 Sulfur ppm ASTM D5185m 2060 2695 CONTAMINANTS method limit/base current Silicon ppm ASTM D5185m >30 8 Sodium ppm ASTM D5185m >30 8 Potassium ppm ASTM D5185m >20 17 Fuel % ASTM D3524 >5 ▲ 4.7 INFRA-RED method limit/base current Soot % % *ASTM D7844 >3 0.7 Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5	<1	<1
Phosphorus ppm ASTM D5185m 1150 987 Zinc ppm ASTM D5185m 1270 1210 Sulfur ppm ASTM D5185m 2060 2695 CONTAMINANTS method limit/base current Silicon ppm ASTM D5185m >30 8 Sodium ppm ASTM D5185m 3 9 Potassium ppm ASTM D5185m >20 17 Fuel % ASTM D3524 >5 ▲ 4.7 INFRA-RED method limit/base current Soot % % *ASTM D7844 >3 0.7 Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5	1064	982
Zinc ppm ASTM D5185m 1270 1210 Sulfur ppm ASTM D5185m 2060 2695 CONTAMINANTS method limit/base current Silicon ppm ASTM D5185m >30 8 Sodium ppm ASTM D5185m 3 Potassium ppm ASTM D5185m >20 17 Fuel % ASTM D3524 >5 ▲ 4.7 INFRA-RED method limit/base current Soot % % *ASTM D7844 >3 0.7 Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5	1459	1277
Sulfur ppm ASTM D5185m 2060 2695 CONTAMINANTS method limit/base current Silicon ppm ASTM D5185m >30 8 Sodium ppm ASTM D5185m 3 3 Potassium ppm ASTM D5185m >20 17 Fuel % ASTM D3524 >5 ▲ 4.7 INFRA-RED method limit/base current Soot % % *ASTM D7844 >3 0.7 Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5	1116	1091
CONTAMINANTS method limit/base current Silicon ppm ASTM D5185m >30 8 Sodium ppm ASTM D5185m 3 Potassium ppm ASTM D5185m >20 17 Fuel % ASTM D3524 >5 ▲ 4.7 INFRA-RED method limit/base current Soot % % *ASTM D7844 >3 0.7 Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5	1429	1374
Silicon ppm ASTM D5185m >30 8 Sodium ppm ASTM D5185m 3 Potassium ppm ASTM D5185m >20 17 Fuel % ASTM D3524 >5 ▲ 4.7 INFRA-RED method limit/base current Soot % % *ASTM D7844 >3 0.7 Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5	3593	3789
Sodium ppm ASTM D5185m 3 Potassium ppm ASTM D5185m >20 17 Fuel % ASTM D3524 >5 ▲ 4.7 INFRA-RED method limit/base current Soot % % *ASTM D7844 >3 0.7 Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5	history1	history2
Potassium ppm ASTM D5185m >20 17 Fuel % ASTM D3524 >5 ▲ 4.7 INFRA-RED method limit/base current Soot % % *ASTM D7844 >3 0.7 Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5	7	5
Fuel	8	6
INFRA-RED method limit/base current Soot % % *ASTM D7844 >3 0.7 Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5	16	11
Soot % % *ASTM D7844 >3 0.7 Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5	<1.0	<1.0
Nitration Abs/cm *ASTM D7624 >20 13.2 Sulfation Abs/.1mm *ASTM D7415 >30 26.5	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 26.5	0.6	0.5
Sulfation Abs/.1mm *ASTM D7415 >30 26.5	11.9	11.1
FLUID DEGRADATION method limit/base current	25.2	23.4
	history1	history2
Oxidation	22.5	20.2
Base Number (BN) mg KOH/g ASTM D2896 9.8 5.0	5.7	6.8



OIL ANALYSIS REPORT



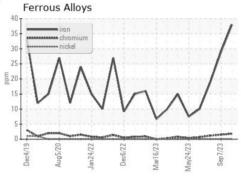


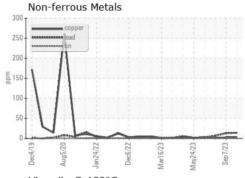


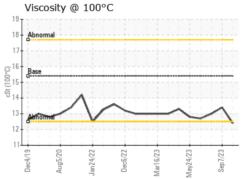
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

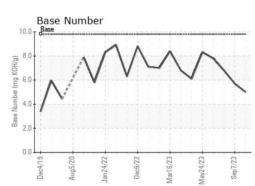
FLUID PROP	EHITES	method	iiiiii/base	current	riistory i	riistoryz
Visc @ 100°C	cSt	ASTM D445	15.4	12.4	13.4	13.0

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number**

: 10741793

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0101120 : 06008031

Received : 15 Nov 2023 Diagnosed : 16 Nov 2023

Diagnostician : Angela Borella **Test Package**: FLEET (Additional Tests: FuelDilution, PercentFuel)

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)

GFL Environmental - 846 - Mayfield Hauling

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Contact: Jack Lindsey jack.lindsey@gflenv.com T: (270)970-3690