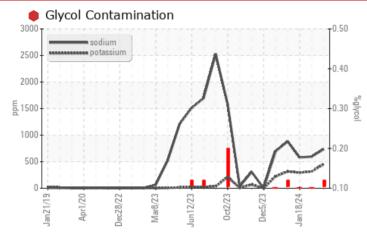


# Machine Id 726047-310048

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

# COMPONENT CONDITION SUMMARY



### RECOMMENDATION

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS								
Sample Status				SEVERE	SEVERE	SEVERE		
Potassium	ppm	ASTM D5185m	>20	<u> </u>	▲ 315	<b>A</b> 293		
Glycol	%	*ASTM D2982		0.12	0.10	0.10		

Sample Rating Trend

Customer Id: GFL821 Sample No.: GFL0105265 Lab Number: 06091459 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		
Change Fluid			?	We recommend that you drain the oil from the component if this has not already been done.		
Flush System			?	We advise that you flush the component thoroughly before re-filling with oil.		
Resample			?	We recommend an early resample to monitor this condition.		
Check Glycol Access			?	We advise that you check for the source of the coolant leak.		

# HISTORICAL DIAGNOSIS



## 02 Feb 2024 Diag: Sean Felton

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.All component wear rates are normal. Test for glycol is positive. There is a high concentration of glycol present 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.





#### 18 Jan 2024 Diag: Wes Davis

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.All component wear rates are normal. Test for glycol is positive. There is a high concentration of glycol present 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.

#### 09 Jan 2024 Diag: Wes Davis





We advise that you check for the source of the coolant leak. 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. Test for glycol is positive. There is a high concentration of glycol present 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





# **OIL ANALYSIS REPORT**

Sample Rating Trend

GLYCOL

# Machine Id 726047-310048

Component Diesel Engine Fluid

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

## DIAGNOSIS

#### Recommendation

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.

#### Wear

All component wear rates are normal.

#### Contamination

Test for glycol is positive. There is a high concentration of glycol present in the oil.

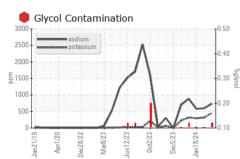
#### Fluid Condition

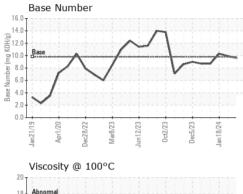
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

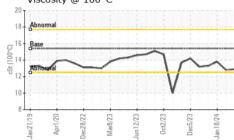
AL)						
SAMPLE INFOF	RMATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0105265	GFL0105221	GFL0105169
Sample Date		Client Info		14 Feb 2024	02 Feb 2024	18 Jan 2024
Machine Age	hrs	Client Info		20692	20569	20426
Oil Age	hrs	Client Info		300	150	150
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				SEVERE	SEVERE	SEVERE
CONTAMINAT	ΓΙΟΝ	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METAL	_S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	25	20	11
Chromium	ppm	ASTM D5185m	>4	2	1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	4	3	3
Lead	ppm	ASTM D5185m	>45	1	<1	<1
Copper	ppm	ASTM D5185m	>85	1	<1	<1
Tin	ppm	ASTM D5185m	>4	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
Vanadium Cadmium	ppm ppm	ASTM D5185m ASTM D5185m		<1 0	<1 0	0
			limit/base			0
Cadmium ADDITIVES		ASTM D5185m	limit/base 0	0	0 history1 0	0 history2 0
Cadmium ADDITIVES Boron	ppm	ASTM D5185m method ASTM D5185m		0 current	0 history1 0 0	0 history2 0 3
Cadmium ADDITIVES Boron Barium	ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 current 6 <1 154	0 history1 0 0 128	0 history2 0
Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	0 0 60	0 current 6 <1	0 history1 0 0 128 <1	0 history2 0 3 119 0
Cadmium ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 current 6 <1 154	0 history1 0 0 128	0 history2 0 3 119
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 current 6 <1 154 <1	0 history1 0 0 128 <1	0 history2 0 3 119 0
Cadmium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 current 6 <1 154 <1 855	0 history1 0 0 128 <1 902	0 history2 0 3 119 0 930
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	0 current 6 <1 154 <1 855 951	0 history1 0 0 128 <1 902 979	0 history2 0 3 119 0 930 1040
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	0 current 6 <1 154 <1 855 951 882	0 history1 0 0 128 <1 902 979 977	0 history2 0 3 119 0 930 1040 931
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	0 current 6 <1 154 <1 855 951 882 1166	0 history1 0 0 128 <1 902 979 977 1195	0 history2 0 3 119 0 930 1040 931 1217 3296
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 current 6 <1 154 <1 855 951 882 1166 2907	0 history1 0 0 128 <1 902 979 977 977 1195 2989	0 history2 0 3 119 0 930 1040 931 1217 3296
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 current 6 <1 154 <1 855 951 882 1166 2907 current	0 history1 0 128 <1 902 979 977 1195 2989 history1	0 history2 0 3 119 0 930 1040 931 1217 3296 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 current 6 <1 154 <1 855 951 882 1166 2907 current 5	0 history1 0 128 <1 902 979 977 1195 2989 history1 5	0 history2 0 3 119 0 930 930 1040 931 1217 3296 history2 3
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method 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 >30	0 current 6 <1 154 <1 855 951 882 1166 2907 current 5 √ 734	0 history1 0 0 128 <1 902 979 977 1195 2989 history1 5 5 597	0 history2 0 3 119 0 930 1040 931 1217 3296 history2 3 3 ▲ 579
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >30	0 current 6 <1 154 <1 855 951 882 1166 2907 current 5 √ 734 ▲ 454	0 history1 0 0 128 <1 902 979 977 1195 2989 history1 5 5 5 597 ▲ 597 ▲ 315	0 history2 0 3 119 0 930 930 1040 931 1217 3296 history2 3 ▲ 579 ▲ 293 ● 0.10
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAM Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >30 >20	0 current 6 <1 154 <1 855 951 882 1166 2907 current 5 √ 734 ↓ 454 ● 0.12	0 history1 0 128 <1 902 979 977 1195 2989 history1 5 5 5 5 5 5 5 15 0.10	0 history2 0 3 119 0 930 930 1040 931 1217 3296 history2 3 ▲ 579 ▲ 293 ● 0.10
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m XSTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >20 <b>limit/base</b>	0 current 6 <1 154 <1 855 951 882 1166 2907 current 5 ▲ 734 ▲ 454 ● 0.12 current	0 history1 0 128 <128 <128 902 979 977 1195 2989 history1 5 5 5 5 5 5 315 0.10 history1	0 history2 0 3 119 0 930 1040 931 1217 3296 history2 3 ▲ 579 ▲ 293 ● 0.10
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >20 imit/base >33	0 current 6 <1 154 <1 855 951 882 1166 2907 current 5 ▲ 734 ▲ 454 ● 0.12 current 0.6	0 history1 0 128 <128 <10 902 979 977 1195 2989 history1 5 ▲ 597 ▲ 315 ■ 0.10 history1 0.4	0 history2 0 3 119 0 930 1040 931 1217 3296 history2 3 ▲ 579 ▲ 293 ● 0.10 history2 0.3
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >30 <b>limit/base</b> >33	0 current 6 <1 154 <1 855 951 882 1166 2907 current 5 ▲ 734 ▲ 454 ● 0.12 current 0.6 12.1	0 history1 0 128 <1 902 979 977 1195 2989 history1 5 ≤ 5 5 5 0.10 history1 0.4 10.4	0 history2 0 3 119 0 930 1040 931 1217 3296 history2 3 ▲ 579 ▲ 293 ● 0.10 history2 0.3 8.5 19.1
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAM Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >30 >20 <b>limit/base</b> >3 >20	0 current 6 <1 154 <1 855 951 882 1166 2907 current 5 ▲ 734 ▲ 454 ● 0.12 current 0.6 12.1 21.2	0 history1 0 128 <128 <1 902 979 977 1195 2989 history1 5 ▲ 597 ▲ 315 ■ 0.10 history1 0.4 10.4 20.2	0 history2 0 3 119 0 930 1040 931 1217 3296 history2 3 ▲ 579 ▲ 293 ● 0.10 history2 0.3 8.5



# **OIL ANALYSIS REPORT**







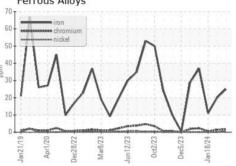
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.9	12.8	13.8
GRAPHS						

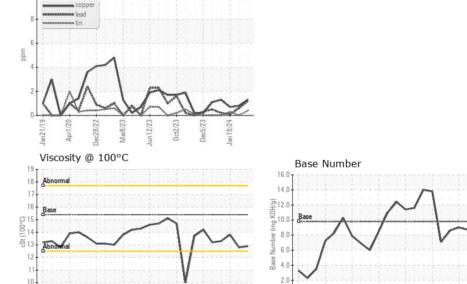
Ferrous Alloys

Non-ferrous Metals

10

9





0.0

Apr1/20 -Apr1/20 Mar8/23 0ct2/23 Mar8/23 Jun12/23 Jan21/19 Dec28/22 Jun12/23 Dec5/23 Jan 18/24 Jan21/19 Dec28/22 Dec5/23 an18/74 Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 821 - Ozarks Hauling Sample No. : GFL0105265 Received : 16 Feb 2024 33924 Olath Drive Lab Number : 06091459 Tested : 19 Feb 2024 Lebanon, MO Unique Number : 10884312 Diagnosed : 19 Feb 2024 - Wes Davis US 65536 Test Package : FLEET Contact: Landen Johnson Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. landen.johnson@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (417)664-0010 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: