

## **OIL ANALYSIS REPORT**

Sample Rating Trend



## Machine Id

847000 Component Natural Gas Engine Fluid

### PETRO CANADA DURON GEO LD 15W40 (--- GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

Metal levels are typical for a components first oil change.

#### Contamination

There is no indication of any contamination in the oil.

#### Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0113996		
Sample Date		Client Info		13 Jun 2024		
Machine Age	hrs	Client Info		5000		
Oil Age	hrs	Client Info		5000		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG		
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	9		
Chromium	ppm	ASTM D5185m	>4	<1		
Nickel	ppm	ASTM D5185m	>2	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>9	1		
Lead	ppm	ASTM D5185m	>30	0		
Copper	ppm	ASTM D5185m	>35	0		
Tin	ppm	ASTM D5185m	>4	0		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
		mothod	innitibadoo	ourronn	motory	
Boron	ppm	ASTM D5185m	50	13		
	ppm ppm					
Boron		ASTM D5185m	50	13		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5	13 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	13 0 55		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	13 0 55 <1		 
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	13 0 55 <1 608		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510	13 0 55 <1 608 1721	  	
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	50 5 50 0 560 1510 780	13 0 55 <1 608 1721 738	  	
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	50 5 50 0 560 1510 780 870	13 0 55 <1 608 1721 738 953		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 50 00 560 1510 780 870 2040	13 0 55 <1 608 1721 738 953 2809		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 50 50 560 1510 780 870 2040 >+100	13 0 55 <1 608 1721 738 953 2809 current		
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 ASTM D5185m	50 5 50 0 560 1510 780 870 2040 2040 >+100	13 0 55 <1 608 1721 738 953 2809 current 4		
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	50 5 50 0 560 1510 780 870 2040 2040 >+100	13 0 55 <1 608 1721 738 953 2809 current 4 7		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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	50 50 00 560 1510 780 870 2040 <b>limit/base</b> >+100	13 0 55 <1 608 1721 738 953 2809 current 4 7 <1	     history1  	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >20 limit/base	13 0 55 <1 608 1721 738 953 2809 current 4 7 <1 current	     history1  	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >20 limit/base	13 0 55 <1 608 1721 738 953 2809 current 4 7 <1 <1 current 0	     history1  	    history2  history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 2040 >+100 >+100 >20 imit/base	13 0 55 <1 608 1721 738 953 2809 current 4 7 <1 current 0 10.3	     history1  	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 50 50 150 1510 780 870 2040 <b>imit/base</b> >20 <b>imit/base</b> >20 30	13 0 55 <1 608 1721 738 953 2809 current 4 7 <1 <1 current 0 10.3 19.5	      history1  history1	     history2  history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844	50 50 560 1510 780 870 2040 bimit/base >+100 220 iimit/base >20 30 iimit/base	13 0 55 <1 608 1721 738 953 2809 current 4 7 <1 current 0 10.3 19.5 current	      history1  history1	     history2  history2  history2  history2



# **OIL ANALYSIS REPORT**

Mileite Matel		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
Precipitate	scalar	*Visual	NONE	NONE		
Silt	scalar	*Visual	NONE	NONE		
Debris	scalar	*Visual	NONE	NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE		
	scalar	*Visual	NORML	NORML		
Odor						
			limit/base		biotoryd	biotory
						history
	cSt	ASTM D445	15.1	14.7		
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18 - Abnormal			10.0	Base		
17						
000115 83 14			9.8.0 E	1		
			<u>ل</u> ے ای 6.0			
to 19			4.0			
2013 314 13 Abnormal			Base			
12			2.0			
13 Abnormal			4.0 8 8 9 0.0 4 0.0			
	Silt Debris Sand/Dirt Appearance Odor Emulsified Wate Free Water FLUID PRO Visc @ 100°C GRAPHS Ferrous Alloy <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup>	Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar Free Water scalar Fluid PROPERTIES Visc @ 100°C cSt GRAPHS Ferrous Alloys	Silt scalar *Visual Debris scalar *Visual Appearance scalar *Visual Odor scalar *Visual Emulsified Water scalar *Visual Free Water scalar *Visual Non-ferrous Alloys Non-ferrous Metals	Silt scalar "Visual NONE Debris scalar "Visual NONE Sand/Dirt scalar "Visual NONE Appearance scalar "Visual NORML Odor scalar "Visual NORML Emulsified Water scalar "Visual >0.1 Free Water scalar "Visual ~ For Out of the State of the St	Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.1 NEG Free Water scalar *Visual NORML NEG Free Water scalar *Visual NORML NORML Visc @ 100°C cSt ASTM D445 15.1 14.7 GRAPHS Ferrous Alloys	Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NORML NORML Appearance scalar *Visual NORML NORML Emulsified Water scalar *Visual NORML NORML NORM Free Water scalar *Visual NORML NEG Free Water scalar *Visual NEG FLUID PROPERTIES method imit/base current history1 Visc @ 100°C cSt ASTM D445 15.1 14.7 GRAPHS Ferrous Alloys

Submitted By: GFL932, GFL414 - BECKY FLETCHER