

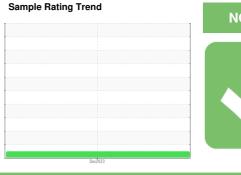
OIL ANALYSIS REPORT

{UNASSIGNED} 7983

Component

Natural Gas Engine

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





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Metal levels are typical for a components first oil change.

Contamination

There is no indication of any contamination in the

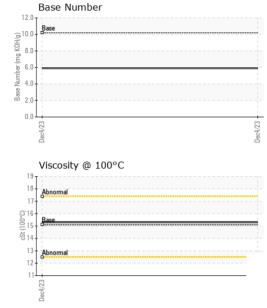
Fluid Condition

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

Oil Changed	GAL)				Dec2023		
Client Info	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date Client Info 1742	Sample Number		Client Info		GFL0098429		
Machine Age hrs Client Info 1742			Client Info		04 Dec 2023		
Contamped Client Info Changed Changed Contample Status Con	Machine Age	hrs	Client Info		1742		
CONTAMINATION	Oil Age	hrs	Client Info		1742		
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.1 NEG	Oil Changed		Client Info		Changed		
Water WC Method >0.1 NEG WEAR METALS method limit/base current history1 history2 Iron PM ASTM D5185m >50 18 Chromium ppm ASTM D5185m >4 1 Nickel ppm ASTM D5185m >2 <1 Silver ppm ASTM D5185m >3 0 Aluminum ppm ASTM D5185m >9 2 Aluminum ppm ASTM D5185m >9 2 Lead ppm ASTM D5185m >9 2 Copper ppm ASTM D5185m >30 <1 Capper ppm ASTM D5185m 0 0 Capper ppm ASTM D5185m 50 12 <td>Sample Status</td> <td></td> <td></td> <td></td> <td>NORMAL</td> <td></td> <td></td>	Sample Status				NORMAL		
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
Tron	Water		WC Method	>0.1	NEG		
Chromium	WEAR METAL	.S	method	limit/base	current	history1	history2
Chromium	Iron	ppm	ASTM D5185m	>50	18		
Titanium	Chromium	ppm	ASTM D5185m	>4	1		
Silver	Nickel	ppm	ASTM D5185m	>2	<1		
Silver	Titanium		ASTM D5185m		<1		
Lead	Silver	ppm	ASTM D5185m	>3	0		
Copper	Aluminum	ppm	ASTM D5185m	>9	2		
Tin	Lead	ppm	ASTM D5185m	>30	<1		
Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 50 12 Barium ppm ASTM D5185m 50 60 Molybdenum ppm ASTM D5185m 50 60 Manganese ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 560 588 Calcium ppm ASTM D5185m 780 753 Phosphorus ppm ASTM D5185m 870 1032 Sulfur ppm ASTM D5185m 2040 2644 CONTAMINANTS method limit/base current histo	Copper	ppm	ASTM D5185m	>35	1		
ADDITIVES	Tin	ppm	ASTM D5185m	>4	<1		
ADDITIVES	Vanadium	ppm	ASTM D5185m		0		
Boron ppm ASTM D5185m 50 12	Cadmium	ppm	ASTM D5185m		<1		
Barium ppm ASTM D5185m 5 12 Molybdenum ppm ASTM D5185m 50 60 Manganese ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 560 588 Calcium ppm ASTM D5185m 1510 1708 Phosphorus ppm ASTM D5185m 780 753 Zinc ppm ASTM D5185m 870 1032 Sulfur ppm ASTM D5185m 2040 2644 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 4 Sodium ppm ASTM D5185m 5 Potassium ppm	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 60 Manganese ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 560 588 Calcium ppm ASTM D5185m 1510 1708 Phosphorus ppm ASTM D5185m 780 753 Zinc ppm ASTM D5185m 870 1032 Sulfur ppm ASTM D5185m 2040 2644 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 4 Sodium ppm ASTM D5185m >20 2 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base<	Boron	ppm	ASTM D5185m	50	12		
Manganese ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 560 588 Calcium ppm ASTM D5185m 1510 1708 Phosphorus ppm ASTM D5185m 780 753 Zinc ppm ASTM D5185m 870 1032 Sulfur ppm ASTM D5185m 2040 2644 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 4 Sodium ppm ASTM D5185m 5 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20	Barium	ppm	ASTM D5185m	5	12		
Magnesium ppm ASTM D5185m 560 588 Calcium ppm ASTM D5185m 1510 1708 Phosphorus ppm ASTM D5185m 780 753 Zinc ppm ASTM D5185m 870 1032 Sulfur ppm ASTM D5185m 2040 2644 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 4 Sodium ppm ASTM D5185m 5 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 <td>Molybdenum</td> <td>ppm</td> <td>ASTM D5185m</td> <td>50</td> <td>60</td> <td></td> <td></td>	Molybdenum	ppm	ASTM D5185m	50	60		
Calcium ppm ASTM D5185m 1510 1708 Phosphorus ppm ASTM D5185m 780 753 Zinc ppm ASTM D5185m 870 1032 Sulfur ppm ASTM D5185m 2040 2644 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 4 Sodium ppm ASTM D5185m 5 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 Nitration Abs/cm *ASTM D7624 >20 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.8	Manganese	ppm	ASTM D5185m	0	<1		
Phosphorus	Magnesium	ppm	ASTM D5185m	560	588		
Zinc ppm ASTM D5185m 870 1032 Sulfur ppm ASTM D5185m 2040 2644 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 4 Sodium ppm ASTM D5185m 5 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 Nitration Abs/cm *ASTM D7624 >20 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2	Calcium	ppm	ASTM D5185m	1510	1708		
Sulfur ppm ASTM D5185m 2040 2644 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 4 Sodium ppm ASTM D5185m 5 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 Nitration Abs/cm *ASTM D7624 >20 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2	Phosphorus	ppm	ASTM D5185m	780	753		
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 4 Sodium ppm ASTM D5185m 5 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 Nitration Abs/cm *ASTM D7624 >20 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2	Zinc	ppm	ASTM D5185m	870	1032		
Silicon ppm ASTM D5185m >+100 4 Sodium ppm ASTM D5185m 5 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 Nitration Abs/cm *ASTM D7624 >20 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2	Sulfur	ppm	ASTM D5185m	2040	2644		
Sodium ppm ASTM D5185m 5 Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 Nitration Abs/cm *ASTM D7624 >20 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 Nitration Abs/cm *ASTM D7624 >20 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2	Silicon	ppm	ASTM D5185m	>+100	4		
INFRA-RED	Sodium	ppm	ASTM D5185m		5		
Soot % % *ASTM D7844 0.1 Nitration Abs/cm *ASTM D7624 >20 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2	Potassium	ppm	ASTM D5185m	>20	2		
Nitration Abs/cm *ASTM D7624 >20 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2	Soot %	%	*ASTM D7844		0.1		
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2	Nitration	Abs/cm	*ASTM D7624	>20	11.3		
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.8		
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.2		
	Base Number (BN)	mg KOH/g	ASTM D2896		5.9		



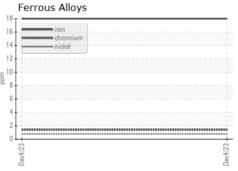
OIL ANALYSIS REPORT

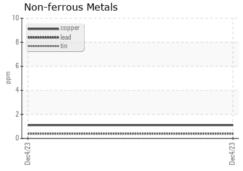


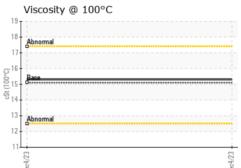
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
Precipitate	scalar	*Visual	NONE	NONE		
Silt	scalar	*Visual	NONE	NONE		
Debris	scalar	*Visual	NONE	NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE		
Appearance	scalar	*Visual	NORML	NORML		
Odor	scalar	*Visual	NORML	NORML		
Emulsified Water	scalar	*Visual	>0.1	NEG		
Free Water	scalar	*Visual		NEG		
	DTIEO	ام مالم می	limait/la a a a		المراجعة والمراجعة	history O

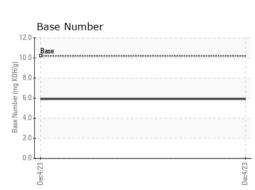
FLUID PROPE	ERITES	method	limit/base		history1	nistory2
Visc @ 100°C	cSt	ASTM D445	15.1	15.3		

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number

Unique Number : 10790984 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0098429 : 06035755

Recieved Diagnosed

: 15 Dec 2023 : 16 Dec 2023 Diagnostician : Wes Davis

GFL Environmental - 918 - Hartland HC

630 E Industrial Drive Hartland, WI US 53029

Contact: David McCall david.mccall@gflenv.com T: (262)369-3069

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)