

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id

AUTOCAR 933047

Component Natural Gas Engine

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

DIAGNOSIS

Recommendation

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

Wear

Metal levels are typical for a new component breaking in.

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 INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0109618	GFL0109613	GFL0109648
Sample Date		Client Info		17 Jul 2024	12 Jul 2024	17 May 2024
Machine Age	hrs	Client Info		1225	1175	780
Oil Age	hrs	Client Info		1225	1175	780
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	ATTENTION
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	44	47	38
Chromium	ppm	ASTM D5185m	>4	1	1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	<1	0
Aluminum	ppm	ASTM D5185m	>9	4	4	2
Lead	ppm	ASTM D5185m	>30	7	7	2
Copper	ppm	ASTM D5185m	>35	14	15	10
Tin	ppm	ASTM D5185m	>4	2	2	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		<1	<1	0
ADDITIVES		method	limit/base	current	history1	history2
		mounou	initia baoo	ounon	Thotory	
Boron	ppm	ASTM D5185m	50	10	7	14
	ppm ppm					
Boron		ASTM D5185m	50	10	7	14
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5 50	10 5	7 5	14 5
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	10 5 57	7 5 58	14 5 52
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	10 5 57 4	7 5 58 4	14 5 52 3
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	10 5 57 4 748	7 5 58 4 763	14 5 52 3 722
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	10 5 57 4 748 1385	7 5 58 4 763 1367	14 5 52 3 722 1267
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	10 5 57 4 748 1385 769	7 5 58 4 763 1367 780	14 5 52 3 722 1267 666
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	10 5 57 4 748 1385 769 969	7 5 58 4 763 1367 780 966	14 5 52 3 722 1267 666 881
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 5 50 0 560 1510 780 870 2040	10 5 57 4 748 1385 769 969 2445	7 5 58 4 763 1367 780 966 2428	14 5 52 3 722 1267 666 881 2643
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 ASTM D5185m	50 5 50 0 560 1510 780 870 2040	10 5 57 4 748 1385 769 969 2445 current	7 5 58 4 763 1367 780 966 2428 history1	14 5 52 3 722 1267 666 881 2643 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	50 5 50 0 560 1510 780 870 2040	10 5 57 4 748 1385 769 969 2445 2445 current	7 5 58 4 763 1367 780 966 2428 history1 73	14 5 52 3 722 1267 666 881 2643 history2 75
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 method ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	10 5 57 4 748 1385 769 969 2445 <u>current</u> 67 2	7 5 58 4 763 1367 780 966 2428 history1 73 2	14 5 52 3 722 1267 666 881 2643 history2 75 4
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	50 50 00 560 1510 780 870 2040 limit/base >+100	10 5 57 4 748 1385 769 969 2445 <u>current</u> 67 2 6	7 5 58 4 763 1367 780 966 2428 history1 73 2 6	14 5 52 3 722 1267 666 881 2643 history2 75 4 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >20 limit/base	10 5 57 4 748 1385 769 969 2445 current 67 2 6 6	7 5 58 4 763 1367 780 966 2428 history1 73 2 6 history1	14 5 52 3 722 1267 666 881 2643 history2 75 4 3 3
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	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 2040 >+100 >+100 >20 imit/base	10 5 57 4 748 1385 769 969 2445 current 67 2 6 6 current 0	7 5 58 4 763 1367 780 966 2428 history1 73 2 6 history1 0	14 5 52 3 722 1267 666 881 2643 history2 75 4 3 3 history2 0
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	10 5 57 4 748 1385 769 969 2445 <i>current</i> 67 2 6 6 <i>current</i> 0 12.3	7 5 58 4 763 1367 780 966 2428 history1 73 2 6 history1 0 12.7	14 5 52 3 722 1267 666 881 2643 history2 75 4 3 history2 0 11.0
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 imit/base >20 imit/base >20 imit/base	10 5 57 4 748 1385 769 969 2445 current 67 2 6 current 0 12.3 25.5	7 5 58 4 763 1367 780 966 2428 history1 73 2 6 history1 0 12.7 26.0	14 5 52 3 722 1267 666 881 2643 history2 75 4 3 <u>history2</u> 0 11.0 22.0
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 D7844 *ASTM D7844	50 50 560 1510 780 870 2040 >+100 >+100 >20 imit/base >20 >20 >30	10 5 57 4 748 1385 769 969 2445 <i>current</i> 67 2 4 67 2 6 <i>current</i> 0 12.3 25.5 <i>current</i>	7 5 58 4 763 1367 780 966 2428 history1 73 2 6 history1 0 12.7 26.0 history1	14 5 52 3 722 1267 666 881 2643 history2 75 4 3 history2 0 11.0 22.0 history2



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VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
						NONE
						NONE
						NONE
						NORML
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			limit/base			history2
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May17/24	Jul12/24		Jult	May17/24	Jult	
	Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys Ferrous Alloys Non-ferrous Meta 100 100 100 100 100 100 100 100 100 10	Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar Free Water scalar Free Water scalar Free Water scalar Free Water scalar Ferrous Alloys Ferrous Alloys Mon-ferrous Metals	Silt scalar *Visual Debris scalar *Visual Appearance scalar *Visual Odor scalar *Visual Emulsified Water scalar *Visual Free Water scalar *Visual Free Water scalar *Visual Freuder scalar *Visual Free Water scalar *Visual Fullid PROPERTIES method Visc @ 100°C cSt ASTM D445 GRAPHS Ferrous Alloys Vor dominant Non-ferrous Metals Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C	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 *Visual *0.1 Free Water scalar *Visual *Visual *0.1 Free Water scalar *0.1 Free	Silt scalar "Visual NONE NONE Debris scalar "Visual NONE NONE Appearance scalar "Visual NORML NORML Odor scalar "Visual NORML NORML Emulsified Water scalar "Visual NORML NORML Emulsified Water scalar "Visual NORML NORML Visce @ 100°C cSt ASTM D445 15.1 12.3 GRAPHS Ferrous Alloys Uscosity @ 100°C Uscosity @ 100°C	Silt scalar Visual NONE NONE NONE NONE Debris scalar Visual NONE NONE NONE Appearance scalar Visual NORML NORML NORML NORML Odor scalar Visual NORML NORML NORML NORML Emulsified Water scalar Visual >0.1 NEG NEG Free Water scalar Visual >0.1 NEG NEG Free Water scalar Visual >0.1 NEG NEG Free Water scalar Visual >0.1 NEG NEG NEG NEG Free Water scalar Visual >0.1 NEG NEG NEG NEG NEG NEG Visc @ 100°C cst ASTM D445 15.1 12.3 12.2 GRAPHS Ferrous Alloys Visc @ 100°C more that the scalar of the

Submitted By: Matt Segars