

# **OIL ANALYSIS REPORT**

Sample Rating Trend



## Machine Id 733022

Component Natural Gas Engine

Fluid PETRO CANADA DURON GEO LD 15W40 (--- QTS)

### DIAGNOSIS

#### Recommendation

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.

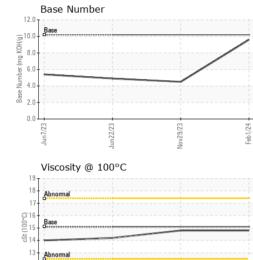
SAMPLE INFORI		method	limit/base	ourropt	bioton/1	history?
	MATION		iimii/base		history1	history2
Sample Number		Client Info		GFL0092166	GFL0092045	GFL0084595
Sample Date		Client Info		01 Feb 2024	29 Nov 2023	22 Jun 2023
Machine Age	hrs	Client Info		2469	1913	5621
Oil Age	hrs	Client Info		3708	600	0
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
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	6	6	36
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	1	<1	1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	3	3	8
Lead	ppm	ASTM D5185m	>30	1	<1	0
Copper	ppm	ASTM D5185m	>35	2	<1	18
Tin	ppm	ASTM D5185m	>4	<1	1	1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES						history2
ADDITIVES		method	IIIIII/Dase	current	history1	TIIStOLYZ
Boron	ppm	ASTM D5185m	50	6	7	12
Boron Barium	ppm ppm					
Boron		ASTM D5185m	50 5 50	6	7	12
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5	6 0	7 0	12 1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	6 0 52 1 531	7 0 51 <1 564	12 1 50 13 775
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510	6 0 52 1 531 1530	7 0 51 <1 564 1585	12 1 50 13 775 1186
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780	6 0 52 1 531 1530 666	7 0 51 <1 564 1585 729	12 1 50 13 775 1186 673
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	6 0 52 1 531 1530	7 0 51 <1 564 1585 729 1009	12 1 50 13 775 1186 673 936
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	6 0 52 1 531 1530 666	7 0 51 <1 564 1585 729	12 1 50 13 775 1186 673
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	6 0 52 1 531 1530 666 935	7 0 51 <1 564 1585 729 1009	12 1 50 13 775 1186 673 936
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 0 560 1510 780 870 2040 <b>limit/base</b>	6 0 52 1 531 1530 666 935 2355	7 0 51 <1 564 1585 729 1009 2571	12 1 50 13 775 1186 673 936 2815
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 0 560 1510 780 870 2040 <b>limit/base</b>	6 0 52 1 531 1530 666 935 2355 Current	7 0 51 <1 564 1585 729 1009 2571 history1	12 1 50 13 775 1186 673 936 2815 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 ASTM D5185m	50 5 50 0 560 1510 780 870 2040 <b>limit/base</b> >+100	6 0 52 1 531 1530 666 935 2355 2355 current 4	7 0 51 <1 564 1585 729 1009 2571 history1 4	12 1 50 13 775 1186 673 936 2815 kistory2 37
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 <b>limit/base</b> >+100	6 0 52 1 531 1530 666 935 2355 current 4 7 9	7 0 51 <1 564 1585 729 1009 2571 history1 4 5	12 1 50 13 775 1186 673 936 2815 <b>bistory2</b> 37 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 <b>limit/base</b> >+100	6 0 52 1 531 1530 666 935 2355 current 4 7 9	7 0 51 <1 564 1585 729 1009 2571 history1 4 5 8	12 1 50 13 775 1186 673 936 2815 <b>history2</b> 37 4 31
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 0 560 1510 780 870 2040 <b>Imit/base</b> >+100 >20 <b>Imit/base</b>	6 0 52 1 531 1530 666 935 2355 current 4 7 9 9	7 0 51 <1 564 1585 729 1009 2571 history1 4 5 8 8	12 1 50 13 775 1186 673 936 2815 history2 37 4 31 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	ASTM D5185m ASTM D5185m	50 50 0 560 1510 780 870 2040 <b>Imit/base</b> >+100 >20 <b>Imit/base</b>	6 0 52 1 531 1530 666 935 2355 <u>current</u> 4 7 9 <u>current</u> 0.9	7 0 51 <1 564 1585 729 1009 2571 history1 4 5 8 8 history1 0	12 1 50 13 775 1186 673 936 2815 history2 37 4 31 history2 0.1
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 50 00 560 1510 780 870 2040 imit/base >+100 20 imit/base	6 0 52 1 531 1530 666 935 2355 <u>current</u> 4 7 9 <u>current</u> 0.9 6.4	7 0 51 <1 564 1585 729 1009 2571 history1 4 5 8 history1 0 11.1	12 1 50 13 775 1186 673 936 2815 history2 37 4 31 history2 0.1 11.5
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 50 560 1510 780 870 2040 <b>Imit/base</b> >+100 	6 0 52 1 531 1530 666 935 2355 <u>current</u> 4 7 9 <u>current</u> 0.9 6.4 19.4	7 0 51 <1 564 1585 729 1009 2571 history1 4 5 8 <u>history1</u> 0 11.1 21.2	12 1 50 13 775 1186 673 936 2815 history2 37 4 31 history2 0.1 11.5 22.4
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 <b>Iimit/base</b> >+100 220 <b>Iimit/base</b> >20 30	6 0 52 1 531 1530 666 935 2355 Current 4 7 9 Current 0.9 6.4 19.4	7 0 51 <1 564 1585 729 1009 2571 history1 4 5 8 history1 0 11.1 21.2 history1	12 1 50 13 775 1186 673 936 2815 history2 37 4 31 history2 0.1 11.5 22.4 history2



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# **OIL ANALYSIS REPORT**



White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water Free Water Visc @ 100°C GRAPHS Ferrous Alloys	cSt	*Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual <b>method</b> ASTM D445		NONE NONE NONE NONE NORML NORML NEG NEG Current 14.8	NONE NONE NONE NONE NORML NORML NEG NEG history1 14.8	NONE NONE NONE NONE NORML NORML NEG NEG history2 14.2
Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual <b>method</b> ASTM D445	NONE NONE NONE NORE NORML >0.1 imit/base 15.1	NONE NONE NONE NONE NORML NORML NEG NEG	NONE NONE NONE NONE NORML NORML NEG NEG history1	NONE NONE NONE NONE NORML NORML NEG NEG history2
Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual Method ASTM D445	NONE NONE NONE NORML NORML >0.1 Imit/base 15.1	NONE NONE NONE NORML NORML NEG NEG	NONE NONE NONE NORML NORML NEG NEG history1	NONE NONE NORML NORML NEG NEG history2
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual Method ASTM D445	NONE NORML NORML >0.1 Imit/base 15.1	NONE NORML NORML NEG NEG Current	NONE NORML NORML NEG NEG history1	NONE NORML NORML NEG NEG history2
Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar cSt	*Visual *Visual *Visual *Visual *Visual Method ASTM D445	NONE NORML NORML >0.1 Imit/base 15.1	NONE NORML NORML NEG NEG Current	NONE NORML NORML NEG NEG history1	NONE NORML NORML NEG NEG history2
Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar ERTIES cSt	*Visual *Visual *Visual <b>Tethod</b> ASTM D445	NORML >0.1 limit/base 15.1	NORML NORML NEG NEG current	NORML NORML NEG NEG history1	NORML NORML NEG NEG history2
Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar ERTIES cSt	*Visual *Visual *Visual ASTM D445	NORML >0.1	NORML NEG NEG current	NORML NEG NEG history1	NORML NEG NEG history2
Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar ERTIES cSt	*Visual *Visual ASTM D445	>0.1 limit/base 15.1	NEG NEG current	NEG NEG history1	NEG NEG history2
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FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	cSt	method ASTM D445	15.1	current	history1	history2
Visc @ 100°C GRAPHS Ferrous Alloys	cSt	ASTM D445	15.1			
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	: WearCheck USA - 50 : GFL0092166	: WearCheck USA - 501 Madiso : GFL0092166 Recei	: WearCheck USA - 501 Madison Ave., Cary : GFL0092166 Received : 06 r : 06081890 Tested : 07	<pre>How Base </pre>	i WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Env i GFL0092166 r : 06081890 r : 10869335 Diagnosed : 07 Feb 2024 - Wes Davis	i WearCheck USA - 501 Madison Ave., Cary, NC 27513 i GFL0092166 r : 06081890 r : 10869335 Diagnosed : 07 Feb 2024 - Wes Davis