

OIL ANALYSIS REPORT

(P656780) 3815C

Component **Natural Gas Engine**

PETRO CANADA DURON GEO LD 15W40 (8 GAL)

Sample Rating Trend



12018 Sen/2019 Apr/2020 Oct/2020 Mar/2021 Ju/2021 Nov/2021 Feb-2022 Mar/202 Mar/2020 Nov/2021 Feb-2022 Mar/2020 Nov/2021 Feb-2022 Mar/2020 Nov/2020 Feb-2022 Mar/2020 Nov/2020 Feb-2022 Nov/2020 Nov/2020 Feb-2022 Nov/2020 Nov/2020 Feb-2022 Nov/2020 Nov/2020 Nov/2020 Feb-2022 Nov/2020 Nov/2020 Feb-2022 Nov/2020 Nov/2020 Nov/2020 Feb-2022 Nov/2020 Nov/2020

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

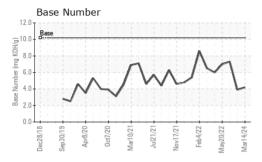
Fluid Condition

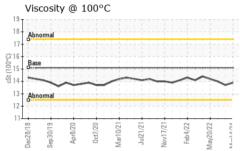
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0096968	GFL0096979	GFL0069706
Sample Date		Client Info		14 Mar 2024	15 Nov 2023	19 May 2023
Machine Age	hrs	Client Info		79427	78758	77799
Oil Age	hrs	Client Info		79427	77799	77799
Oil Changed		Client Info		Changed	Changed	Changed
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	5	7	3
Chromium	ppm	ASTM D5185m	>4	<1	1	0
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m		3	2	0
Lead	ppm	ASTM D5185m	>30	1	14	<1
Copper	ppm	ASTM D5185m	>35	5	2	<1
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES		memou	IIIIII/Dase	Current	riistory i	Thistoryz
Boron	ppm	ASTM D5185m	50	11	8	29
	ppm ppm					
Boron		ASTM D5185m	50	11	8	29
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5 50	11 <1	8 10	29
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	11 <1 62	8 10 61	29 0 53
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	11 <1 62 0	8 10 61 <1	29 0 53 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	11 <1 62 0 635	8 10 61 <1 648	29 0 53 <1 624
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510	11 <1 62 0 635 1484	8 10 61 <1 648 1530	29 0 53 <1 624 1568
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 ASTM D5185m	50 5 50 0 560 1510 780	11 <1 62 0 635 1484 820	8 10 61 <1 648 1530 841	29 0 53 <1 624 1568 794
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 ASTM D5185m	50 5 50 0 560 1510 780 870	11 <1 62 0 635 1484 820 1046	8 10 61 <1 648 1530 841 1048	29 0 53 <1 624 1568 794 1011
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 ASTM D5185m	50 5 50 0 560 1510 780 870 2040	11 <1 62 0 635 1484 820 1046 2626	8 10 61 <1 648 1530 841 1048 2758	29 0 53 <1 624 1568 794 1011 2834
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	11 <1 62 0 635 1484 820 1046 2626 current	8 10 61 <1 648 1530 841 1048 2758	29 0 53 <1 624 1568 794 1011 2834 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	11 <1 62 0 635 1484 820 1046 2626 current	8 10 61 <1 648 1530 841 1048 2758 history1	29 0 53 <1 624 1568 794 1011 2834 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	11 <1 62 0 635 1484 820 1046 2626 current 11 13	8 10 61 <1 648 1530 841 1048 2758 history1 38 6	29 0 53 <1 624 1568 794 1011 2834 history2 38 5
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	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20	11 <1 62 0 635 1484 820 1046 2626 current 11 13 5	8 10 61 <1 648 1530 841 1048 2758 history1 38 6	29 0 53 <1 624 1568 794 1011 2834 history2 38 5 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20	11 <1 62 0 635 1484 820 1046 2626 current 11 13 5 current	8 10 61 <1 648 1530 841 1048 2758 history1 38 6 3	29 0 53 <1 624 1568 794 1011 2834 history2 38 5 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	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	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	11 <1 62 0 635 1484 820 1046 2626 current 11 13 5 current 0	8 10 61 <1 648 1530 841 1048 2758 history1 38 6 3 history1 0.1	29 0 53 <1 624 1568 794 1011 2834 history2 38 5 2 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 Method ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D76145	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	11	8 10 61 <1 648 1530 841 1048 2758 history1 38 6 3 history1 0.1 11.5	29 0 53 <1 624 1568 794 1011 2834 history2 38 5 2 history2 0 8.0
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 Method ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D76145	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	11 <1 62 0 635 1484 820 1046 2626 current 11 13 5 current 0 10.4 21.8	8 10 61 <1 648 1530 841 1048 2758 history1 38 6 3 history1 0.1 11.5 26.3	29 0 53 <1 624 1568 794 1011 2834 history2 38 5 2 history2 0 8.0 19.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base >20 >30 limit/base >25	11	8 10 61 <1 648 1530 841 1048 2758 history1 38 6 3 history1 0.1 11.5 26.3 history1	29 0 53 <1 624 1568 794 1011 2834 history2 38 5 2 history2 0 8.0 19.2 history2



OIL ANALYSIS REPORT



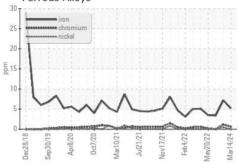


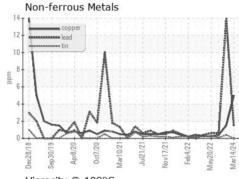
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

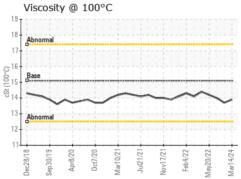
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.1	13.9	13.7	14.0

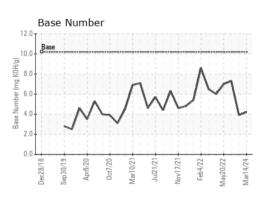
GRAPHS

Ferrous Alloys













Laboratory Sample No.

: GFL0096968 Lab Number : 06120569 Unique Number : 10929402

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 18 Mar 2024

Tested : 19 Mar 2024 Diagnosed : 19 Mar 2024 - Wes Davis

GFL Environmental - 031 - Greenville/Spartanburg

1635 Antioch Church Rd Piedmont, SC

US 29673 Contact: TECHNICIAN ACCOUNT

Test Package : FLEET Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

catherine.anastasio@wearcheck.com T:

* - 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)

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