

OIL ANALYSIS REPORT

NORMAL

Machine Id **3662C** Component **Natural Gas Engine** Fluid **PETRO CANADA DURON GEO LD 15W40 (28 QTS)**

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

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.

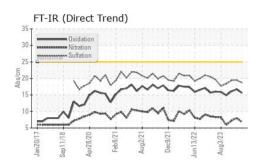
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0118398	GFL0112945	GFL0098128
Sample Date		Client Info		30 May 2024	13 Mar 2024	04 Dec 2023
Machine Age	hrs	Client Info		22937	22937	22937
Oil Age	hrs	Client Info		410	530	127
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	ABNORMAL
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	4	5	4
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>9	1	1	2
Lead	ppm	ASTM D5185m	>30	<1	<1	<1
Copper	ppm	ASTM D5185m	>35	<1	<1	A 31
Tin	ppm	ASTM D5185m	>4	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base			history2
ADDITIVES		method	IIIIII/Dase	current	history1	TIIStOLYZ
Boron	ppm	ASTM D5185m	50	32	28	30
	ppm ppm				· · · · · · · · · · · · · · · · · · ·	
Boron		ASTM D5185m	50	32	28	30
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5	32 0	28 0	30 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	32 0 49	28 0 48	30 0 52
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	32 0 49 <1	28 0 48 <1	30 0 52 <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	32 0 49 <1 587	28 0 48 <1 575	30 0 52 <1 625
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	32 0 49 <1 587 1662	28 0 48 <1 575 1508	30 0 52 <1 625 1564
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	32 0 49 <1 587 1662 881	28 0 48 <1 575 1508 799	30 0 52 <1 625 1564 874
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	32 0 49 <1 587 1662 881 1000	28 0 48 <1 575 1508 799 926	30 0 52 <1 625 1564 874 1027
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	32 0 49 <1 587 1662 881 1000 3069	28 0 48 <1 575 1508 799 926 2777	30 0 52 <1 625 1564 874 1027 2683
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	32 0 49 <1 587 1662 881 1000 3069 current	28 0 48 <1 575 1508 799 926 2777 history1	30 0 52 <1 625 1564 874 1027 2683 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 2040 2040 >+100	32 0 49 <1 587 1662 881 1000 3069 current 4	28 0 48 <1 575 1508 799 926 2777 history1 5	30 0 52 <1 625 1564 874 1027 2683 history2 6
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 2040 >+100	32 0 49 <1 587 1662 881 1000 3069 current 4 4	28 0 48 <1 575 1508 799 926 2777 history1 5 5	30 0 52 <1 625 1564 874 1027 2683 history2 6 17
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	32 0 49 <1 587 1662 881 1000 3069 current 4 4 26	28 0 48 <1 575 1508 799 926 2777 history1 5 5 5 29	30 0 52 <1 625 1564 874 1027 2683 history2 6 17 17 168
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	32 0 49 <1 587 1662 881 1000 3069 current 4 4 26 current	28 0 48 <1 575 1508 799 926 2777 history1 5 5 5 29 history1	30 0 52 <1 625 1564 874 1027 2683 history2 6 17 ▲ 168 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 Imit/base >+100 >20 Imit/base	32 0 49 <1 587 1662 881 1000 3069 <u>current</u> 4 4 26 <u>current</u> 0	28 0 48 <1 575 1508 799 926 2777 history1 5 5 5 29 history1 0	30 0 52 <1 625 1564 874 1027 2683 history2 6 17 6 17 168 168 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 Imit/base >+100 >20 Imit/base	32 0 49 <1 587 1662 881 1000 3069 <i>current</i> 4 4 26 <i>current</i> 0 6.8	28 0 48 <1 575 1508 799 926 2777 history1 5 5 5 29 history1 0 8.0	30 0 52 <1 625 1564 874 1027 2683 history2 6 17 6 17 168 history2 0 0 7.2
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 imit/base >+100 220 imit/base >20 >30	32 0 49 <1 587 1662 881 1000 3069 <u>current</u> 4 4 26 <u>current</u> 0 6.8 18.7	28 0 48 <1 575 1508 799 926 2777 history1 5 5 5 29 history1 0 8.0 19.5	30 0 52 <1 625 1564 874 1027 2683 history2 6 17 ▲ 168 history2 0 7.2 19.4
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 D7624	50 5 50 0 1510 780 870 2040 imit/base >20 imit/base >20 imit/base >20	32 0 49 <1 587 1662 881 1000 3069 current 4 4 26 current 0 6.8 18.7	28 0 48 <1 575 1508 799 926 2777 history1 5 5 29 history1 0 8.0 19.5 history1	30 0 52 <1 625 1564 874 1027 2683 history2 6 17 6 17 168 168 history2 0 7.2 19.4 history2

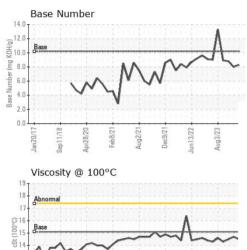


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OIL ANALYSIS REPORT





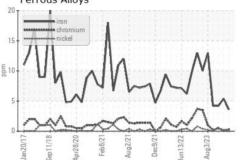
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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.5	14.7	14.5
GRAPHS						

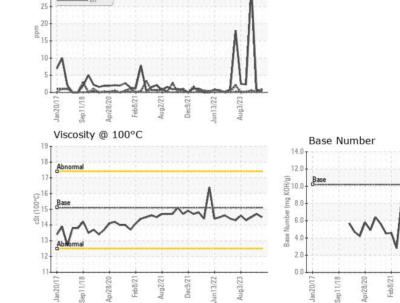
Ferrous Alloys

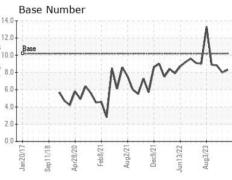




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Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 017 - Durham Sample No. : GFL0118398 Received : 30 May 2024 148 Stone Park Court Lab Number : 06195103 Tested : 31 May 2024 Durham, NC Unique Number : 11057226 Diagnosed : 31 May 2024 - Wes Davis US 27703 Test Package : FLEET Contact: Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. bill.waring@wearcheck.com T: (919)596-1363 * - 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) F: (919)598-1852

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Submitted By: Ren - William Russel