

OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 933023 Component

Natural Gas Engine

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

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

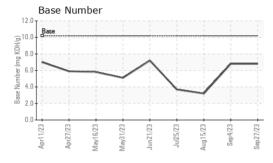
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

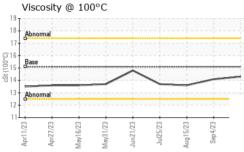
(GAL)		Apr2023 Ap	2023 May2023 May2023	Jun2023 Jul2023 Aug2023 Sep20	23 Sep2023	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0090721	GFL0090647	GFL0087202
Sample Date		Client Info		27 Sep 2023	04 Sep 2023	15 Aug 2023
Machine Age	hrs	Client Info		1527	1336	1201
Oil Age	hrs	Client Info		0	0	1201
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	12	22	△ 54
Chromium	ppm	ASTM D5185m	>4	<1	<1	1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	<1	4	8
Lead	ppm	ASTM D5185m	>30	2	<1	12
Copper	ppm	ASTM D5185m	>35	4	4	14
Tin	ppm	ASTM D5185m	>4	<1	<1	2
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
4.5.5.150.75.0						
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	method ASTM D5185m	limit/base	current 39	history1 42	history2 8
	ppm ppm					· · · · · ·
Boron		ASTM D5185m	50	39	42 3 53	8
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5	39 0	42	8
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	39 0 53	42 3 53	8 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	39 0 53 <1	42 3 53 2	8 0 60 4
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	39 0 53 <1 640	42 3 53 2 699	8 0 60 4 870
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	39 0 53 <1 640 1556	42 3 53 2 699 1411	8 0 60 4 870 1347
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	39 0 53 <1 640 1556 769	42 3 53 2 699 1411 753	8 0 60 4 870 1347 753
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	39 0 53 <1 640 1556 769 994	42 3 53 2 699 1411 753 953	8 0 60 4 870 1347 753 949
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	39 0 53 <1 640 1556 769 994 2597	42 3 53 2 699 1411 753 953 2848	8 0 60 4 870 1347 753 949 2777
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	39 0 53 <1 640 1556 769 994 2597	42 3 53 2 699 1411 753 953 2848 history1	8 0 60 4 870 1347 753 949 2777 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040	39 0 53 <1 640 1556 769 994 2597 current	42 3 53 2 699 1411 753 953 2848 history1	8 0 60 4 870 1347 753 949 2777 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	39 0 53 <1 640 1556 769 994 2597 current	42 3 53 2 699 1411 753 953 2848 history1 45	8 0 60 4 870 1347 753 949 2777 history2 92 8
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	39 0 53 <1 640 1556 769 994 2597 current 19 3	42 3 53 2 699 1411 753 953 2848 history1 45 4	8 0 60 4 870 1347 753 949 2777 history2 92 8 7
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	39 0 53 <1 640 1556 769 994 2597 current 19 3 2	42 3 53 2 699 1411 753 953 2848 history1 45 4	8 0 60 4 870 1347 753 949 2777 history2 92 8 7
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 ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20	39 0 53 <1 640 1556 769 994 2597 current 19 3 2 current	42 3 53 2 699 1411 753 953 2848 history1 45 4 4	8 0 60 4 870 1347 753 949 2777 history2 92 8 7 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 D7844 *ASTM D7624 *ASTM D76145	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	39 0 53 <1 640 1556 769 994 2597 current 19 3 2 current 0 9.2	42 3 53 2 699 1411 753 953 2848 history1 45 4 4 history1 0 8.7	8 0 60 4 870 1347 753 949 2777 history2 92 8 7 history2 0 12.7

Base Number (BN) mg KOH/g ASTM D2896 10.2



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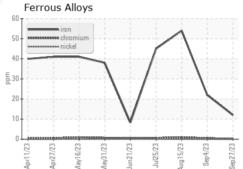


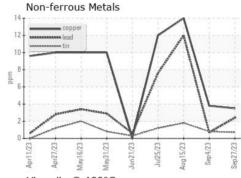


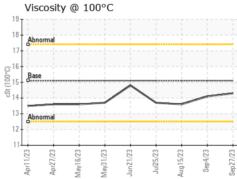
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

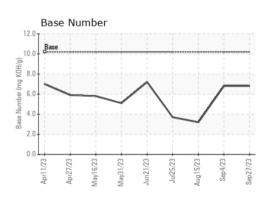
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.3	14.1	13.6

GRAPHS













Laboratory Sample No. Lab Number Test Package : FLEET

: GFL0090721 : 05965970 Unique Number : 10672521

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 02 Oct 2023 Diagnosed : 02 Oct 2023

Diagnostician : Wes Davis

GFL Environmental - 836 - Kansas City Hauling

7801 East Truman Road Kansas City, MO US 64126

Contact: Robert Hart rhart@gflenv.com T: (580)461-1509

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)