

OIL ANALYSIS REPORT

Area (P9739A) {UNASSIGNED} 749011-362011

Component Natural Gas Engine Fluid

PETRO CANADA DURON GEO LD 15W40 (7 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

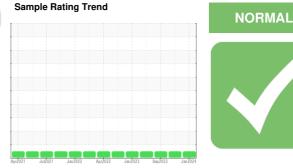
All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

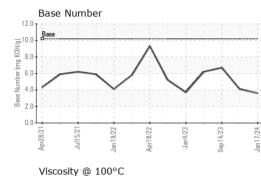
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

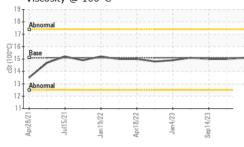


· ·		Apr2U21				
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0081081	GFL0081038	GFL0081122
Sample Date		Client Info		17 Jan 2024	08 Dec 2023	14 Sep 2023
Machine Age	hrs	Client Info		13892	27872	13067
Oil Age	hrs	Client Info		1133	700	308
Oil Changed		Client Info		Changed	Not Changd	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	9	7
Chromium	ppm	ASTM D5185m	>4	1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	2	2	1
Lead	ppm	ASTM D5185m	>30	<1	<1	<1
Copper	ppm	ASTM D5185m	>35	1	0	<1
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES		methoa	iiiiii/base	Current	mistory	motory
Boron	ppm	ASTM D5185m	50	2	8	14
	ppm ppm				· · · · · · · · · · · · · · · · · · ·	
Boron		ASTM D5185m	50	2	8	14
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5 50	2 0	8 0	14 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	2 0 54	8 0 52	14 0 48
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	2 0 54 1	8 0 52 <1	14 0 48 <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	2 0 54 1 544	8 0 52 <1 544	14 0 48 <1 547
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	2 0 54 1 544 1626	8 0 52 <1 544 1605	14 0 48 <1 547 1741
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	2 0 54 1 544 1626 759	8 0 52 <1 544 1605 708	14 0 48 <1 547 1741 777
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	2 0 54 1 544 1626 759 978	8 0 52 <1 544 1605 708 1008	14 0 48 <1 547 1741 777 990
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	2 0 54 1 544 1626 759 978 2370	8 0 52 <1 544 1605 708 1008 2499	14 0 48 <1 547 1741 777 990 3021
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 >+100	2 0 54 1 544 1626 759 978 2370 current	8 0 52 <1 544 1605 708 1008 2499 history1	14 0 48 <1 547 1741 777 990 3021 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm 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 limit/base >+100	2 0 54 1 544 1626 759 978 2370 current 3	8 0 52 <1 544 1605 708 1008 2499 history1 4	14 0 48 <1 547 1741 777 990 3021 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	2 0 54 1 544 1626 759 978 2370 current 3 6 0	8 0 52 <1 544 1605 708 1008 2499 history1 4 6	14 0 48 <1 547 1741 777 990 3021 history2 3 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	2 0 54 1 544 1626 759 978 2370 current 3 6 0	8 0 52 <1 544 1605 708 1008 2499 history1 4 6 <1	14 0 48 <1 547 1741 777 990 3021 history2 3 6 2
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	2 0 54 1 544 1626 759 978 2370 current 3 6 0 0	8 0 52 <1 544 1605 708 1008 2499 history1 4 6 <1 kistory1	14 0 48 <1 547 1741 777 990 3021 history2 3 6 2 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 ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >20 limit/base	2 0 54 1 544 1626 759 978 2370 <u>current</u> 3 6 0 <u>current</u> 0	8 0 52 <1 544 1605 708 1008 2499 history1 4 6 <1 4 6 <1 history1 0	14 0 48 <1 547 1741 777 990 3021 history2 3 6 2 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 5 50 0 560 1510 780 870 2040 2040 2040 >+100 >20 Limit/base	2 0 54 1 544 1626 759 978 2370 current 3 6 0 current 0 0 11.9 24.2	8 0 52 <1 544 1605 708 1008 2499 history1 4 6 <1 history1 0 11.3	14 0 48 <1 547 1741 777 990 3021 history2 3 6 2 history2 0.1 8.5
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 50 150 1510 780 870 2040 imit/base >+100 220 imit/base 220	2 0 54 1 544 1626 759 978 2370 current 3 6 0 current 0 0 11.9 24.2	8 0 52 <1 544 1605 708 1008 2499 history1 4 6 <1 4 6 <1 history1 0 11.3 22.8	14 0 48 <1 547 1741 777 990 3021 history2 3 6 2 history2 0.1 8.5 19.1
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 0 560 1510 780 870 2040 2040 2040 2040 2040 2040 20 20 20 20 20 20 20 20 20 20 20 20 20	2 0 54 1 544 1626 759 978 2370 current 3 6 0 current 0 11.9 24.2 current	8 0 52 <1 544 1605 708 1008 2499 history1 4 6 <1 history1 0 11.3 22.8 history1	14 0 48 <1 547 1741 777 990 3021 history2 3 6 2 history2 0.1 8.5 19.1 history2

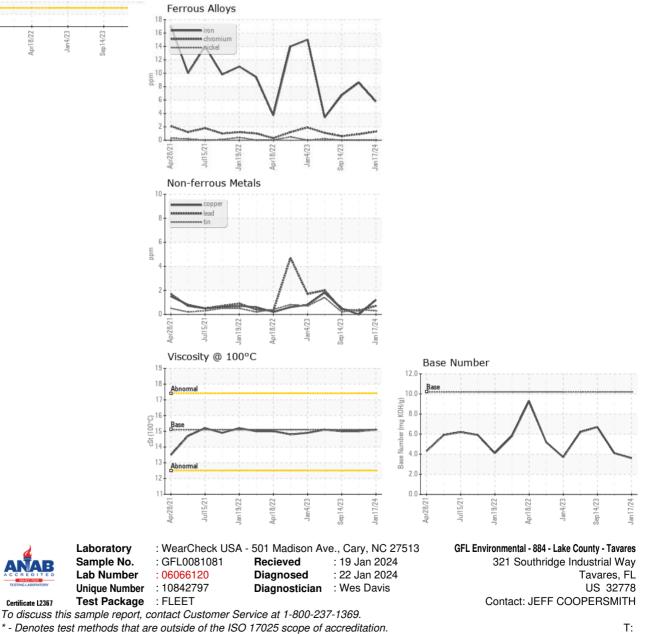


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	15.1	15.0	15.0
GRAPHS						





* - 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)

Certificate L2367

Submitted By: Daniel Wheeler Page 2 of 2

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