

OIL ANALYSIS REPORT

Sample Rating Trend





Component

Natural Gas Engine

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

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.

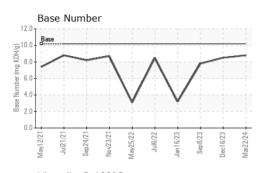
Fluid Condition

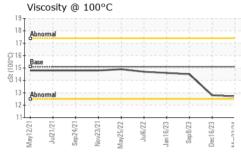
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

• Mmy2021 Ju/2021 Smy20221 Nov2022 Jun/2022 Jun/2023 Smy2023 Smy2023 Mm/2024								
SAMPLE INFORI	VIATION	method	limit/base	current	history1	history2		
Sample Number		Client Info		GFL0115504	GFL0089751	GFL0089708		
Sample Date		Client Info		22 Mar 2024	16 Dec 2023	08 Sep 2023		
Machine Age	hrs	Client Info		25079	24437	23775		
Oil Age	hrs	Client Info		642	662	1578		
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	20	16	4		
Chromium	ppm	ASTM D5185m	>4	0	<1	0		
Nickel	ppm	ASTM D5185m	>2	<1	<1	0		
Titanium	ppm	ASTM D5185m		0	<1	0		
Silver	ppm	ASTM D5185m	>3	0	0	0		
Aluminum	ppm	ASTM D5185m	>9	2	1	<1		
Lead	ppm	ASTM D5185m	>30	2	<1	0		
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		
Boron	ppm	ASTM D5185m	limit/base	current 4	history1 <1	nistory2 27		
	ppm ppm							
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	50	4	<1	27		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5	4 0	<1 0	27 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	4 0 58	<1 0 57	27 0 51		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	4 0 58 <1	<1 0 57 <1	27 0 51 <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	4 0 58 <1 882	<1 0 57 <1 863	27 0 51 <1 596		
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	4 0 58 <1 882 1048	<1 0 57 <1 863 1020	27 0 51 <1 596 1650		
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	4 0 58 <1 882 1048 1056	<1 0 57 <1 863 1020 1042	27 0 51 <1 596 1650 793		
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	4 0 58 <1 882 1048 1056 1234	<1 0 57 <1 863 1020 1042 1248	27 0 51 <1 596 1650 793 981		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	4 0 58 <1 882 1048 1056 1234 3426	<1 0 57 <1 863 1020 1042 1248 2984	27 0 51 <1 596 1650 793 981 2978		
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 50 50 560 1510 780 870 2040 >+100	4 0 58 <1 882 1048 1056 1234 3426 current	<1 0 57 <1 863 1020 1042 1248 2984 history1	27 0 51 <1 596 1650 793 981 2978 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 limit/base >+100	4 0 58 <1 882 1048 1056 1234 3426 current 3	<1 0 57 <1 863 1020 1042 1248 2984 history1 2	27 0 51 <1 596 1650 793 981 2978 history2 3		
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 method ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	4 0 58 <1 882 1048 1056 1234 3426 current 3 18 10	<1 0 57 <1 863 1020 1042 1248 2984 history1 2 13	27 0 51 <1 596 1650 793 981 2978 history2 3 5		
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 limit/base >+100	4 0 58 <1 882 1048 1056 1234 3426 current 3 18 10	<1 0 57 <1 863 1020 1042 1248 2984 history1 2 13 3	27 0 51 <1 596 1650 793 981 2978 history2 3 5 <1		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 2040 >+100 >20 20 20 20 20 20 20 20 20 20 20 20 20 2	4 0 58 <1 882 1048 1056 1234 3426 current 3 18 10 current	<1 0 57 <1 863 1020 1042 1248 2984 history1 2 13 3 history1	27 0 51 <1 596 1650 793 981 2978 history2 3 5 <1 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 2040 >+100 >20 20 20 20 20 20 20 20 20 20 20 20 20 2	4 0 58 <1 882 1048 1056 1234 3426 current 3 18 10 current 1.5	<1 0 57 <1 863 1020 1042 1248 2984 history1 2 13 3 history1 1.5	27 0 51 <1 596 1650 793 981 2978 history2 3 5 <1 history2 0.1		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc 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	4 0 58 <1 882 1048 1056 1234 3426 current 3 18 10 current 1.5 10.4	<1 0 57 <1 863 1020 1042 1248 2984 history1 2 13 3 history1 1.5 9.9	27 0 51 <1 596 1650 793 981 2978 history2 3 5 <1 5 <1 history2 0.1 8.3		
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 50 150 780 870 2040 imit/base >+100 220 imit/base >20	4 0 58 <1 882 1048 1056 1234 3426 <u>current</u> 3 18 10 <u>current</u> 1.5 10.4 20.6	<1 0 57 <1 863 1020 1042 1248 2984 history1 2 13 3 <u>history1</u> 1.5 9.9 20.7	27 0 51 <1 596 1650 793 981 2978 history2 3 5 <1 +istory2 0.1 8.3 17.9		
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 *ASTM D7415	50 50 560 1510 780 870 2040 >100 >+100 >20 100 20 20 20 20 20 20 20 20 20 20 20 20 2	4 0 58 <1 882 1048 1056 1234 3426 Current 3 18 10 Current 1.5 10.4 20.6 Current	<1 0 57 0 57 <1 863 1020 1042 1248 2984 history1 2 13 3 history1 1.5 9.9 20.7 history1	27 0 51 <1 596 1650 793 981 2978 history2 3 5 <1 history2 0.1 8.3 17.9 history2		

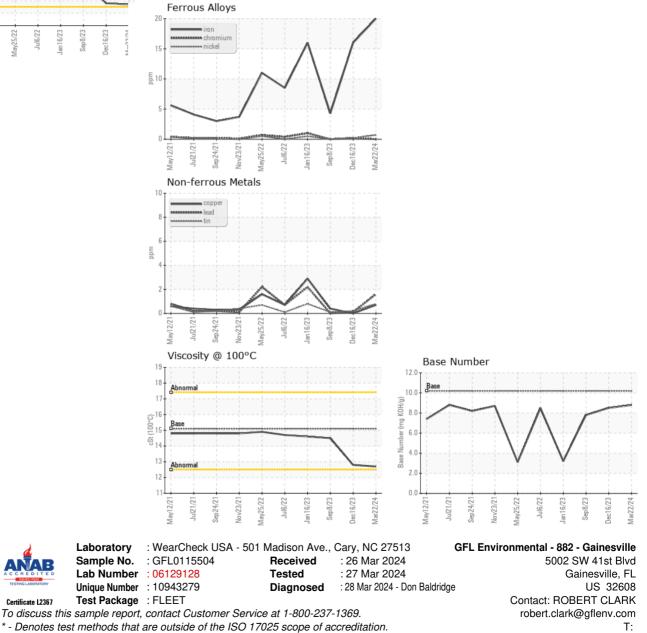


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	12.7	12.8	14.5
GRAPHS						



Certificate L2367

Submitted By: STEPHEN WEIL

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