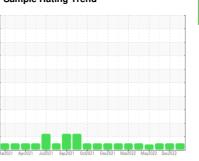


# **OIL ANALYSIS REPORT**

## Sample Rating Trend



NORMAL



# Machine Id **810023**

Component

**Natural Gas Engine** 

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**

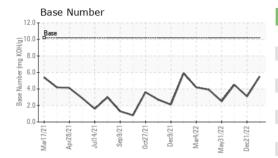
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

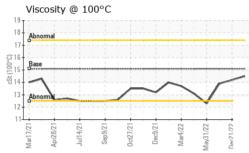
(7 GAL)		Mar2021 Apr20	21 Jul2021 Sep2021 04	t2021 Dec2021 Mar2022 May2022	Dec2022	
SAMPLE INFORM	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		PCA0095839	PCA0077314	PCA0077261
Sample Date		Client Info		27 Jun 2023	21 Dec 2022	16 Aug 2022
Machine Age	hrs	Client Info		5933	4844	3838
Oil Age	hrs	Client Info		1089	1006	442
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
WEAR METAL	S	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>50	44	17	9
Chromium	ppm	ASTM D5185m	>4	2	<1	<1
Nickel	ppm	ASTM D5185m	>2	2	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	7	2	2
Lead	ppm	ASTM D5185m	>30	<1	6	1
Copper	ppm	ASTM D5185m	>35	1	2	4
Tin	ppm	ASTM D5185m	>4	<1	1	1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
A B B I T I I I I I						
ADDITIVES		method	limit/base	current	history 1	history 2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 12	history 1	history 2 12
	ppm					
Boron		ASTM D5185m	50	12	5	12
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5	12 0	5	12
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	12 0 57	5 0 52	12 0 45
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	12 0 57 2	5 0 52 <1	12 0 45 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	12 0 57 2 568 1702 760	5 0 52 <1 502	12 0 45 <1 466
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	12 0 57 2 568 1702	5 0 52 <1 502 1618	12 0 45 <1 466 1348 611 828
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	12 0 57 2 568 1702 760	5 0 52 <1 502 1618 702	12 0 45 <1 466 1348 611
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	12 0 57 2 568 1702 760 992	5 0 52 <1 502 1618 702 924	12 0 45 <1 466 1348 611 828
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	12 0 57 2 568 1702 760 992 3028	5 0 52 <1 502 1618 702 924 3639	12 0 45 <1 466 1348 611 828 3245
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	12 0 57 2 568 1702 760 992 3028	5 0 52 <1 502 1618 702 924 3639 history 1	12 0 45 <1 466 1348 611 828 3245 history 2
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	12 0 57 2 568 1702 760 992 3028 current	5 0 52 <1 502 1618 702 924 3639 history 1	12 0 45 <1 466 1348 611 828 3245 history 2
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	12 0 57 2 568 1702 760 992 3028 current 22 6	5 0 52 <1 502 1618 702 924 3639 history 1 8 7	12 0 45 <1 466 1348 611 828 3245 history 2 6 7
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	12 0 57 2 568 1702 760 992 3028 current 22 6 3	5 0 52 <1 502 1618 702 924 3639 history 1 8 7	12 0 45 <1 466 1348 611 828 3245 history 2 6 7 <1
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	12 0 57 2 568 1702 760 992 3028 current 22 6 3	5 0 52 <1 502 1618 702 924 3639 history 1 8 7 2	12 0 45 <1 466 1348 611 828 3245 history 2 6 7 <1
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 limit/base	12 0 57 2 568 1702 760 992 3028 current 22 6 3 current 0.1	5 0 52 <1 502 1618 702 924 3639 history 1 8 7 2	12 0 45 <1 466 1348 611 828 3245 history 2 6 7 <1 history 2
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	12 0 57 2 568 1702 760 992 3028 current 22 6 3 current 0.1 10.2	5 0 52 <1 502 1618 702 924 3639 history 1 8 7 2 history 1 0.1 12.3	12 0 45 <1 466 1348 611 828 3245 history 2 6 7 <1 history 2 0 10.4

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



## **OIL ANALYSIS REPORT**

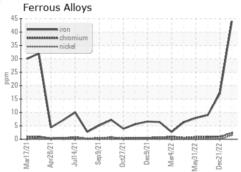


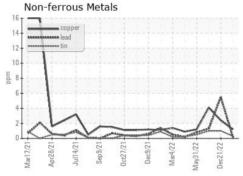


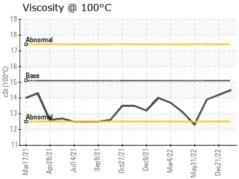
VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

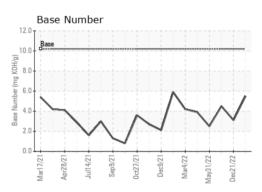
FLUID PROPERTIES		method			history 1	history 2
Visc @ 100°C	cSt	ASTM D445	15.1	14.5	14.2	13.9

## **GRAPHS**













Laboratory Sample No. Lab Number **Unique Number** 

: PCA0095839 : 05886472 : 10536955

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 29 Jun 2023 Diagnosed : 03 Jul 2023 Diagnostician : Don Baldridge

GFL Environmental - 002 - Vance-Granville

241 Vanco Mill Rd Henderson, NC US 27537

Contact: Cameron King cameron.king@gflenv.com T: (252)438-5333

Test Package : FLEET Certificate L2367 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)

F: (252)431-1635