

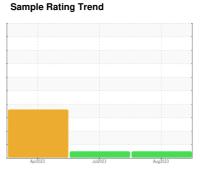
## **OIL ANALYSIS REPORT**

# G.LOPES CONSTRUCTION INC./OFF-ROAD

L-63

Component **Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (--- GAL)





## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

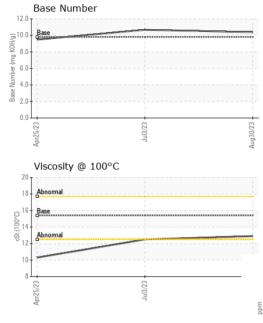
### **Fluid Condition**

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

		Α.	2023	Jul2023 Aug20.		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0104695	PCA0090751	PCA0083227
Sample Date		Client Info		30 Aug 2023	03 Jul 2023	25 Apr 2023
Machine Age	hrs	Client Info		1145	343	343
Oil Age	hrs	Client Info		1145	343	343
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<b>▲</b> 3.8
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	13	15	27
Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		<1	1	0
Silver	ppm	ASTM D5185m	>3	2	1	0
Aluminum	ppm	ASTM D5185m	>20	<1	<1	1
Lead	ppm	ASTM D5185m	>40	1	3	5
Copper	ppm	ASTM D5185m	>330	137	547	<b>△</b> 619
Tin	ppm	ASTM D5185m	>15	2	4	7
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base	current 2	history1	history2 47
	ppm	ASTM D5185m				
Boron	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m	0	2	4	47
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	2 0	4 2	47 0
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 59	4 2 58	47 0 40
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 59 <1	4 2 58 <1	47 0 40 4
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 59 <1 966	4 2 58 <1 845	47 0 40 4 451
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	2 0 59 <1 966 1107	4 2 58 <1 845 1124	47 0 40 4 451 1600
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	0 0 60 0 1010 1070 1150	2 0 59 <1 966 1107 1023	4 2 58 <1 845 1124 985	47 0 40 4 451 1600 883
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	0 0 60 0 1010 1070 1150 1270	2 0 59 <1 966 1107 1023 1279	4 2 58 <1 845 1124 985 1151	47 0 40 4 451 1600 883 1074
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	2 0 59 <1 966 1107 1023 1279 3356	4 2 58 <1 845 1124 985 1151 2814	47 0 40 4 451 1600 883 1074 3105
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	2 0 59 <1 966 1107 1023 1279 3356	4 2 58 <1 845 1124 985 1151 2814 history1	47 0 40 4 451 1600 883 1074 3105 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	2 0 59 <1 966 1107 1023 1279 3356 current	4 2 58 <1 845 1124 985 1151 2814 history1	47 0 40 4 451 1600 883 1074 3105 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	2 0 59 <1 966 1107 1023 1279 3356 current 9	4 2 58 <1 845 1124 985 1151 2814 history1 21	47 0 40 4 451 1600 883 1074 3105 history2   89 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	2 0 59 <1 966 1107 1023 1279 3356 current 9 2 <1	4 2 58 <1 845 1124 985 1151 2814 history1 21 0 2	47 0 40 4 451 1600 883 1074 3105 history2   89 2 2
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	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	2 0 59 <1 966 1107 1023 1279 3356 current 9 2 <1	4 2 58 <1 845 1124 985 1151 2814 history1 21 0 2	47 0 40 4 451 1600 883 1074 3105 history2 ▲ 89 2 2
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	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 0 59 <1 966 1107 1023 1279 3356 current 9 2 <1	4 2 58 <1 845 1124 985 1151 2814 history1 21 0 2 history1 0.3	47 0 40 4 451 1600 883 1074 3105 history2  A 89 2 2 history2 0.3
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  Method ASTM D5185m  Method *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	2 0 59 <1 966 1107 1023 1279 3356 current 9 2 <1 current 0.4 7.5	4 2 58 <1 845 1124 985 1151 2814 history1 21 0 2 history1 0.3 7.6	47 0 40 4 451 1600 883 1074 3105 history2  A 89 2 2 history2 0.3 7.8
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  Method ASTM D5185m  Method *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	2 0 59 <1 966 1107 1023 1279 3356 current 9 2 <1 current 0.4 7.5 20.3	4 2 58 <1 845 1124 985 1151 2814 history1 21 0 2 history1 0.3 7.6 20.6	47 0 40 4 451 1600 883 1074 3105 history2  ▲ 89 2 2 history2 0.3 7.8 21.6



# **OIL ANALYSIS REPORT**



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
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2

Base Number

(mg KOH/g) 6.0 Base Number ( 0.0 4.0 2.0 0.0

Visc @ 100°C	cSt	ASTM D445 15.4	12.9	12.5	<b>▲</b> 10.3
GRAPHS					
Iron (ppm)			Lead (ppm)	)	
250 Severe			100 Severe		
E 150			E 60		
Abnormal		-	Abnormal		
50			20		
Apr25/23	Jul3/23	Aug30/23 -	Apr25/23	Jul3/23	Aug30/23 -
		Aug			Aug
Aluminum (ppm	) 		Chromium 50 T 7	(ppm)	
40 Severe			40 Severe		
Abnormal			Abnormal		
10			10+1		
0	-		0	-	
Apr25/23	Jul3/23	Aug30/23	Apr25/23	Jul3/23	Aug30/23
Copper (ppm)		Au	⊲ Silicon (ppr		Au
800			100	···,	
600			80 - Severe		
E 400 - ASYROmal			E 60 40		
200			Abnormal 20		
0			0		





Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10633025

Test Package : MOB 2

: 05942413

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0104695

Viscosity @ 100°C

Received Diagnosed Diagnostician : Wes Davis

: 05 Sep 2023 : 06 Sep 2023

**G LOPES CONSTRUCTION** 565 WINTHROP ST TAUNTON, MA

Contact: BUTCH MCGRATH bmcgrath@glopes.com

T:

US 02780

F:

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)