

OIL ANALYSIS REPORT

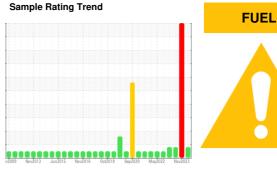
OIL ANAL 1313 REPORT

G.LOPES CONSTRUCTION INC./On-Road

122

Component **Diesel Engine**

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



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

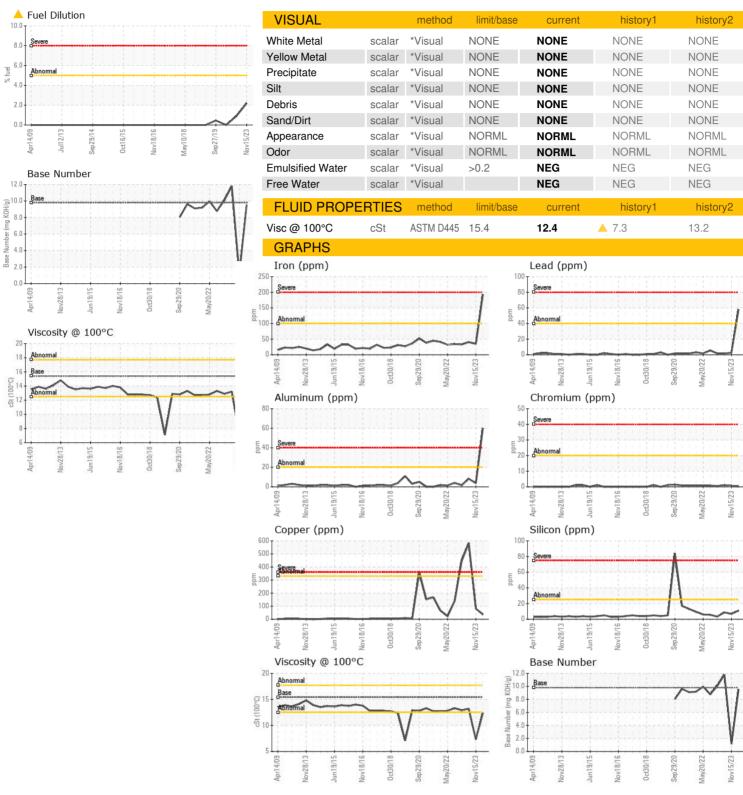
Fluid Condition

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

SAMPLE INFORMATION	iAL)		x2009 Nov2013 Jun2015 Nov2016 Oc2018 Smp2020 May2022 Nov2023					
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2	
Machine Age mls Client Info 535000 535000 535000 Oil Age mls Client Info 535000 535000 535000 Oil Changed Client Info N/A N/A N/A N/A Sample Status MARGINAL SEVERE ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG Glycol WC Method limit/base current history1 history2 Iron ppm ASTM D5185m >100 35 192 40 Chromium ppm ASTM D5185m >20 <1	Sample Number		Client Info		PCA0078197	PCA0078197	PCA0098320	
Oil Age	Sample Date		Client Info		15 Nov 2023	15 Nov 2023	12 Jul 2023	
Dil Changed Client Info	Machine Age	mls	Client Info		535000	535000	535000	
CONTAMINATION method limit/base current history1 history2	Oil Age	mls	Client Info		535000	535000	535000	
Magnesium ppm ASTM D5185m color color ppm ASTM D5185m color col	Oil Changed		Client Info		N/A	N/A	N/A	
Water WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 35 ▲ 192 40 Chromium ppm ASTM D5185m >20 <1	Sample Status				MARGINAL	SEVERE	ABNORMAL	
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 35 ▲ 192 40 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG	
Description	Glycol		WC Method		NEG	NEG	NEG	
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2	
Silver	ron	ppm	ASTM D5185m	>100	35	△ 192	40	
Silver	Chromium	ppm	ASTM D5185m	>20	<1	<1	1	
Salver	Nickel	ppm	ASTM D5185m	>4	0	<1	<1	
Aluminum ppm ASTM D5185m >20 4	Titanium	ppm	ASTM D5185m		<1	<1	<1	
Lead ppm ASTM D5185m >40 3 ▲ 58 2 Copper ppm ASTM D5185m >330 81 36 ▲ 584 Fin ppm ASTM D5185m >15 <1 ▲ 8 1 Vanadium ppm ASTM D5185m 0 0 0 <1 Cadmium ppm ASTM D5185m 0 13 ♣ 75 2 Boron ppm ASTM D5185m 0 <1 <1 2 Molybdenum ppm ASTM D5185m 0 0 2 <1 2 Magnesium ppm ASTM D5185m 1010 755 △2 917 Calcium ppm ASTM D5185m 1270 1153<	Silver	ppm	ASTM D5185m	>3	0	0	0	
Copper	Aluminum	ppm	ASTM D5185m	>20	4	• 60	8	
Fin	_ead	ppm	ASTM D5185m	>40	3	△ 58	2	
Asymptotic As	Copper	ppm	ASTM D5185m	>330	81	36	<u></u> 584	
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 13 ↑75 2 Barium ppm ASTM D5185m 0 <1		ppm	ASTM D5185m	>15	<1	<u>^</u> 8	1	
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 13 ↑ 75 2 Barium ppm ASTM D5185m 0 <1	/anadium	ppm	ASTM D5185m		0	0	<1	
Boron ppm ASTM D5185m 0 13	Cadmium	ppm	ASTM D5185m		<1	<1	0	
Sarium	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 60 50 ▲ 0 61 Manganese ppm ASTM D5185m 0 0 2 <1	Boron	ppm	ASTM D5185m	0	13	<u>^</u> 75	2	
Manganese ppm ASTM D5185m 0 0 2 <1 Magnesium ppm ASTM D5185m 1010 755 △ 2 917 Calcium ppm ASTM D5185m 1070 1246 △ 57 1124 Phosphorus ppm ASTM D5185m 1150 934 △ 245 984 Zinc ppm ASTM D5185m 1270 1153 △ 0 1258 Sulfur ppm ASTM D5185m 2060 2935 △ 950 3133 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 11 9 Goldium ppm ASTM D5185m >20 2 7 1 Fuel % ASTM D5185m >20 2 7 1 Fuel % ASTM D5185m >20 2 7 1 <th< td=""><td>Barium</td><td>ppm</td><td>ASTM D5185m</td><td>0</td><td><1</td><td><1</td><td>2</td></th<>	Barium	ppm	ASTM D5185m	0	<1	<1	2	
Magnesium ppm ASTM D5185m 1010 755 ▲ 2 917 Calcium ppm ASTM D5185m 1070 1246 ▲ 57 1124 Phosphorus ppm ASTM D5185m 1150 934 ▲ 245 984 Zinc ppm ASTM D5185m 1270 1153 ▲ 0 1258 Sulfur ppm ASTM D5185m 2060 2935 ▲ 950 3133 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 11 9 Sodium ppm ASTM D5185m >25 7 1 9 Potassium ppm ASTM D5185m >20 2 7 1 Fuel % ASTM D3524 >5 ▲ 2.2 0.9 <1.0	Molybdenum	ppm	ASTM D5185m	60	50	<u> </u>	61	
Calcium ppm ASTM D5185m 1070 1246 ▲ 57 1124 Phosphorus ppm ASTM D5185m 1150 934 ▲ 245 984 Zinc ppm ASTM D5185m 1270 1153 ▲ 0 1258 Sulfur ppm ASTM D5185m 2060 2935 ▲ 950 3133 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 11 9 Sodium ppm ASTM D5185m >20 2 7 1 Fuel % ASTM D5185m >20 2 7 1 Fuel % ASTM D3524 >5 ▲ 2.2 0.9 <1.0	Manganese	ppm	ASTM D5185m	0	0	2	<1	
Phosphorus ppm ASTM D5185m 1150 934 ▲ 245 984 Zinc ppm ASTM D5185m 1270 1153 ▲ 0 1258 Sulfur ppm ASTM D5185m 2060 2935 ▲ 950 3133 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 11 9 Sodium ppm ASTM D5185m >20 2 7 1 Fuel % ASTM D524 >5 A.2.2 0.9 <1.0	Magnesium	ppm	ASTM D5185m	1010	755	<u>^</u> 2	917	
Zinc ppm ASTM D5185m 1270 1153 ▲ 0 1258 Sulfur ppm ASTM D5185m 2060 2935 ▲ 950 3133 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 11 9 Sodium ppm ASTM D5185m >20 2 7 1 Foull % ASTM D5185m >20 2 7 1 Full % ASTM D5185m >20 2 7 1 Full % ASTM D5185m >20 2 2 7 1 Full % ASTM D7844 >3 0.7	Calcium	ppm	ASTM D5185m	1070	1246	△ 57	1124	
Sulfur ppm ASTM D5185m 2060 2935 ▲ 950 3133 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 11 9 Sodium ppm ASTM D5185m <1	Phosphorus	ppm	ASTM D5185m	1150	934	<u>^</u> 245	984	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 11 9 Sodium ppm ASTM D5185m <1	Zinc		ASTM D5185m	1270	1153	<u> </u>	1258	
Sollicon ppm ASTM D5185m >25 7 11 9 Sodium ppm ASTM D5185m <1 8 2 Potassium ppm ASTM D5185m >20 2 7 1 Fuel % ASTM D3524 >5 ▲ 2.2 0.9 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.1 0.7 Nitration Abs/cm *ASTM D7624 >20 6.6 5.6 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.1 52.7 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 69.5 16.5	Sulfur		ASTM D5185m	2060	2935	△ 950	3133	
Sodium	CONTAMINAN	ITS	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 2 7 1 Fuel % ASTM D3524 >5 ▲ 2.2 0.9 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.1 0.7 Nitration Abs/cm *ASTM D7624 >20 6.6 5.6 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.1 52.7 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 69.5 16.5	Silicon	ppm	ASTM D5185m	>25	7	11	9	
Fuel % ASTM D3524 >5	Sodium	ppm	ASTM D5185m		<1	8	2	
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.1 0.7 Nitration Abs/cm *ASTM D7624 >20 6.6 5.6 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.1 52.7 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 69.5 16.5	Potassium	ppm	ASTM D5185m	>20	2	7	1	
Soot % % *ASTM D7844 >3 0.7 0.1 0.7 Nitration Abs/cm *ASTM D7624 >20 6.6 5.6 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.1 52.7 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 69.5 16.5	Fuel	%	ASTM D3524	>5	△ 2.2	0.9	<1.0	
Nitration Abs/cm *ASTM D7624 >20 6.6 5.6 7.9 Sulfation Abs/.1mm *ASTM D7615 >30 20.1 ▲ 52.7 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 ● 69.5 16.5	INFRA-RED		method	limit/base	current	history1	history2	
Sulfation Abs/.1mm *ASTM D7415 >30 20.1 ▲ 52.7 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 ● 69.5 16.5	Soot %	%	*ASTM D7844	>3	0.7	0.1	0.7	
Sulfation Abs/.1mm *ASTM D7415 >30 20.1 ▲ 52.7 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 ● 69.5 16.5								
Oxidation								
·	FLUID DEGRAI	OATION	method	limit/base	current	history1	history2	
	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.1	69.5	16.5	
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	9.53	1.15	11.79	



OIL ANALYSIS REPORT







Certificate L2367

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

: 10750244

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0078197 : 06011100

Received Diagnosed

: 17 Nov 2023 : 21 Nov 2023 Diagnostician : Wes Davis

Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel) 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)

G LOPES CONSTRUCTION

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Report Id: GLOTAU [WUSCAR] 06011100 (Generated: 11/21/2023 09:11:48) Rev: 1

Submitted By: MATT MANOLI