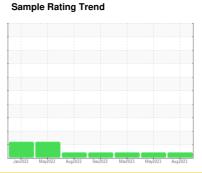


OIL ANALYSIS REPORT

G.LOPES CONSTRUCTION INC./ON-ROAD **PU298**

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.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

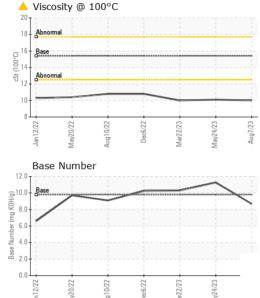
▲ Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		PCA0098579	PCA0083261	PCA0072077	
Sample Date		Client Info		07 Aug 2023	24 May 2023	22 Mar 2023	
Machine Age	hrs	Client Info		62600	57000	53000	
Oil Age	hrs	Client Info		62600	57000	53000	
Oil Changed		Client Info		N/A	N/A	N/A	
Sample Status				ATTENTION ATTEN		ATTENTION	
CONTAMINAT	MINATION method		limit/base current		history1	history2	
Fuel		WC Method	>5	<1.0	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>100	14	15	21	
Chromium	ppm	ASTM D5185m	>20	2	2	2	
Nickel	ppm	ASTM D5185m	>4	<1	0	0	
Titanium	ppm	ASTM D5185m		<1	0	0	
Silver	ppm	ASTM D5185m	>3	<1	<1	0	
Aluminum	ppm	ASTM D5185m	>20	3	3	4	
Lead	ppm	ASTM D5185m	>40	3	0	<1	
Copper	ppm	ASTM D5185m	>330	4	0	<1	
Tin	ppm	ASTM D5185m	>15	<1	<1	0	
Vanadium	ppm	ASTM D5185m		<1	0	0	
Cadmium	ppm	ASTM D5185m		0	0	0	
ADDITIVES		method	limit/base	current	history1	history2	
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 12	history1 36	history2 1	
	ppm ppm						
Boron		ASTM D5185m	0	12	36	1	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	12 0	36 0	1	
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	12 0 79	36 0 82	1 0 56	
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	12 0 79 2	36 0 82 <1	1 0 56 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	12 0 79 2 210 1736 910	36 0 82 <1 140	1 0 56 <1 871	
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	12 0 79 2 210 1736	36 0 82 <1 140 1981	1 0 56 <1 871 1054	
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	12 0 79 2 210 1736 910	36 0 82 <1 140 1981 984	1 0 56 <1 871 1054 963	
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	12 0 79 2 210 1736 910 1102	36 0 82 <1 140 1981 984 1192	1 0 56 <1 871 1054 963 1164	
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	0 0 60 0 1010 1070 1150 1270 2060	12 0 79 2 210 1736 910 1102 4025	36 0 82 <1 140 1981 984 1192 4198	1 0 56 <1 871 1054 963 1164 2856	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	0 0 60 0 1010 1070 1150 1270 2060	12 0 79 2 210 1736 910 1102 4025	36 0 82 <1 140 1981 984 1192 4198 history1	1 0 56 <1 871 1054 963 1164 2856	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	12 0 79 2 210 1736 910 1102 4025 current	36 0 82 <1 140 1981 984 1192 4198 history1	1 0 56 <1 871 1054 963 1164 2856 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	12 0 79 2 210 1736 910 1102 4025 current 7	36 0 82 <1 140 1981 984 1192 4198 history1 7	1 0 56 <1 871 1054 963 1164 2856 history2 6 0	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	12 0 79 2 210 1736 910 1102 4025 current 7 7 3	36 0 82 <1 140 1981 984 1192 4198 history1 7 2 2 history1 0.4	1 0 56 <1 871 1054 963 1164 2856 history2 6 0	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	12 0 79 2 210 1736 910 1102 4025 current 7 7 3 current 0.4 10.6	36 0 82 <1 140 1981 984 1192 4198 history1 7 2 2 history1 0.4 10.7	1 0 56 <1 871 1054 963 1164 2856 history2 6 0 1 history2 0.4 9.3	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	12 0 79 2 210 1736 910 1102 4025 current 7 7 3	36 0 82 <1 140 1981 984 1192 4198 history1 7 2 2 history1 0.4	1 0 56 <1 871 1054 963 1164 2856 history2 6 0 1 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m method *ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	12 0 79 2 210 1736 910 1102 4025 current 7 7 3 current 0.4 10.6	36 0 82 <1 140 1981 984 1192 4198 history1 7 2 2 history1 0.4 10.7	1 0 56 <1 871 1054 963 1164 2856 history2 6 0 1 history2 0.4 9.3	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m method *ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	12 0 79 2 210 1736 910 1102 4025 current 7 7 3 current 0.4 10.6 21.0	36 0 82 <1 140 1981 984 1192 4198 history1 7 2 2 history1 0.4 10.7 21.0	1 0 56 <1 871 1054 963 1164 2856 history2 6 0 1 history2 0.4 9.3 19.3	



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
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
ELLID DDODEDTIES		mothod	limit/baco	ourront	history1	history?

Visc @ 100°C	cSt	ASTM D445	15.4	△ 10.0	<u></u> 10.1	▲ 10.0
CBADHS						

								-			
	GRAPHS										
250	Iron (ppm)					Lead (ppm))				
200	Severe					Severe					
150 E 100						E 60 Abnormal					
100	Abnormal					Abnormal					
50						20					
U	Jan 12/22 - May20/22 - Aug 10/22 -	Dec6/22 -	Mar22/23 -	May24/23	Aug7/23	Jan12/22	Aug10/22 -	Dec6/22 -	Mar22/23 -	May24/23 -	Aug7/23
	_		Marý	May	Aug			Dea	Marý	May	Aug
50	Aluminum (ppm)					Chromium 50 T	(ppm)				
40	Severe					40 Severe		-			
B 30	Abnormal					Abnormal					
10	- donomica					10					
0			_	_	_	0		_		_	_
	Jan 12/22 May20/22 Aug 10/22	Dec6/22 -	Mar22/23	May24/23	Aug7/23 -	Jan 12/22 May20/22	Aug10/22	Dec6/22	Mar22/23	May24/23	Aug7/23
	~ ₹ ₹ Copper (ppm)		Σ	M	d	ా ≝ Silicon (ppn			Σ	M	⋖
400	Severe					80 Severe					
300	1					60					
를 200						Abnormal					
100						20					
0		22	- 52	- EZ	23	22 22	22	22	- EZ	- 52	13
	Jan 12/22 May20/22 Aug 10/22	Dec6/22	Mar22/23	May24/23	Aug7/23 -	Jan 12/22 May20/22	Aug10/22 -	Dec6/22	Mar22/23	May24/23	Aug7/23
	Viscosity @ 100°	С	_	~		Base Numb				~	
20 18	Abnormal					12.0 Base				_	
						0.8 B					
() 16 () 14 12 12	Abnormal					6.0					
10	-			_	_	Base Mumber (mg KOH KO) (mg KOH KOH KO) (mg KOH KOH KO) (mg KOH KOH KO) (mg KOH					
8	727	3/22	1/23	1/23	1/23	0.0	1/22	3/22	1/23	1/23	1/23
	Jan 12/22 May20/22	Dec6/22 -	Mar22/23	//ay24/23	Aug7/23	Jan 12/22 May20/22	4ug10/22	Dec6/22	Mar22/23	//ay24/23	Aug7/23





Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10592713

: PCA0098579 : 05920799 Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 10 Aug 2023 Diagnosed

: 11 Aug 2023 Diagnostician : Sean Felton

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)

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