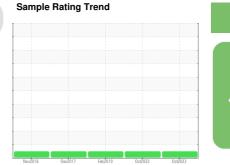


OIL ANALYSIS REPORT

G.LOPES CONSTRUCTION INC./On-Road





NORMAL

Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

SAMPLE INFORMATION method

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

WT11 Component

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

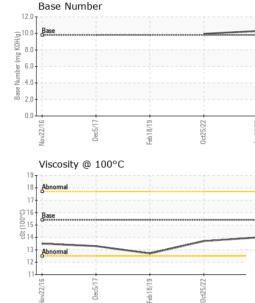
Fluid Condition

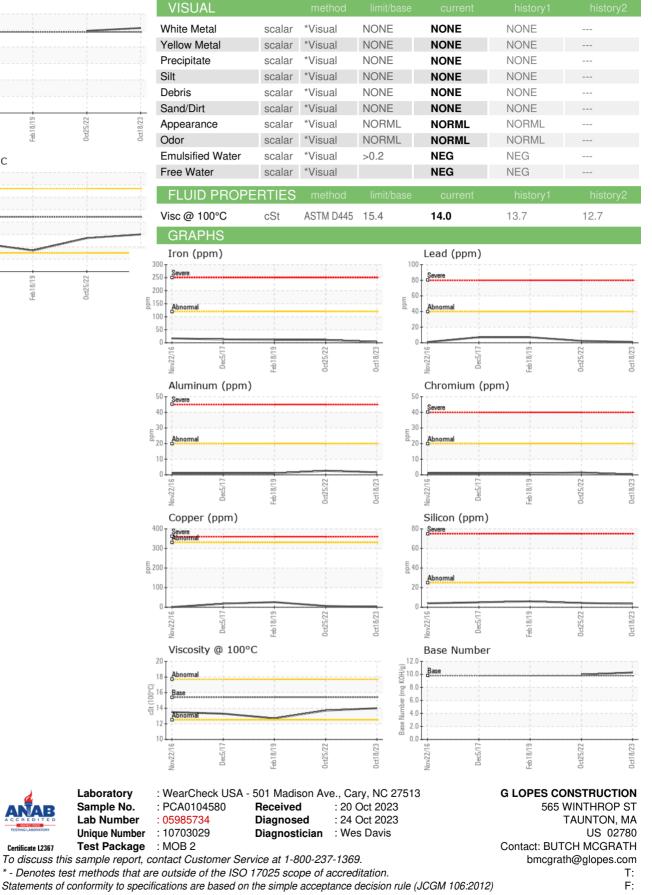
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info PCA0104580 PCA0178202 PCA63173041 Sample Date Client Info 18 Oct 2023 25 Oct 2022 18 Feb 2019 Machine Age mis Client Info 406000 406000 Oll Age mis Client Info 406000 406000 Oll Anged Client Info N/A N/A N/A N/A Sample Status Im Client Info N/A N/A N/A Glopol WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method >3.0 <1.0 <1.0 <1.0 Tron ppm ASTM 05185 >20 <1 0 Trainum ppm ASTM 05185 >20 <1 0 Trainum ppm ASTM 05185 >20 2 3 1 Coper ppm	SAMPLE INFOR	VIATION	methou	iiiiii/base	current	TIIStOLA	Thistory Z
Machine Age mils Client Info 406000 406000 406000 Oil Age mils Client Info N/A N/A N/A Oil Changed Client Info N/A N/A N/A N/A Sample Status Imit/base current History1 History2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method >3.0 <1.0 <1.0 <1.0 Mickel ppm ASTM D5185m >120 3 11 11 Chromium ppm ASTM D5185m >5 <1 0 0 Titanium ppm ASTM D5185m >20 <1 2 7 Copper ppm ASTM D5185m >20 <1 0 ADDITY ASTM D5185m >40 1 2 7 Copper ppm ASTM D5185m <1 <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>PCA0104580</th> <th>PCA0078202</th> <th>PCA63173041</th>	Sample Number		Client Info		PCA0104580	PCA0078202	PCA63173041
Oil Age mis Client Info 406000 406000 Oil Changed Client Info N/A N/A N/A N/A Sample Status Imit Description Imit/Description NoRMAL NORMAL NORMAL CONTAMINATION method Imit/Description Current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method >3.0 <1.1 11	Sample Date		Client Info		18 Oct 2023	25 Oct 2022	18 Feb 2019
Oil Age mis Client Info 406000 406000 Oil Changed Client Info N/A N/A N/A N/A Sample Status Imit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method >3.0 <1.1 11	Machine Age	mls	Client Info		406000	406000	406000
Oli Changed Client Info N/A N/A N/A N/A N/A Sample Status Image Status Image Status NormAL NormAL NormAL NormAL NormAL NormAL NormAL NormAL CONTAMINATION method Imit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method >3.0 <1.0 <1.0 <1.0 Chromium ppm ASTM D5185m >12.0 3 11 11 Chromium ppm ASTM D5185m >2.2 0 <1 0 Silver ppm ASTM D5185m >2.2 0 <1 0 Auminum ppm ASTM D5185m >2.0 <1 0 0 Auminum ppm ASTM D5185m >2.0 <1 0 0 0	0	mls	Client Info		406000	406000	
Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method NEG NEG 0.0 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1 2 1 Nickel ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >2 0 <1 0 Copper ppm ASTM D5185m >20 2 3 1 Lead ppm ASTM D5185m >20 2 6 26 Tin ppm ASTM D5185m >15 <1 <1 0 Copper ppm ASTM D5185m 0 0 <1 0 Roadmium	•					N/A	N/A
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Glycol WC Method NEG NEG 0.0 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1 2 1 Nickel ppm ASTM D5185m >20 <1 0 0 Silver ppm ASTM D5185m >2 0 <1 0 0 Silver ppm ASTM D5185m >20 2 3 1 1 2 7 Copper ppm ASTM D5185m >20 2 3 1 0 1 0 1 0 1 0 1 0 1 1 0 1 0 1 0 1 0 1 1 0 1 0 1 1	0				NORMAL		NORMAL
Fuel WC Method >3.0 <1.0	•						-
Glycol WC Method NEG NEG 0.0 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 3 11 11 Chromium ppm ASTM D5185m >20 <1 2 1 Nickel ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 2 3 1 Lead ppm ASTM D5185m >20 2 3 1 Lead ppm ASTM D5185m >40 1 2 7 Copper ppm ASTM D5185m 0 <<1 0 ADDITIVES method limit/base current history1 history2 Barium ppm ASTM D5185m 0 0 <1 Magnes	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 3 11 11 Othromium ppm ASTM D5185m >20 <1 2 1 Nickel ppm ASTM D5185m >2 0 <1 0 0 Titanium ppm ASTM D5185m >2 0 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 0 Lead ppm ASTM D5185m >20 2 3 1 1 Lead ppm ASTM D5185m >20 2 3 1 0 Copper ppm ASTM D5185m >20 2 3 1 0 Cadmium ppm ASTM D5185m >20 2 3 1 0 Cadmium ppm ASTM D5185m 15 <1 0 1	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Iron ppm ASTM D5185m >120 3 11 11 Chromium ppm ASTM D5185m >20 <1	Glycol		WC Method		NEG	NEG	0.0
Chromium ppm ASTM D5185m >20 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >5 <1	Iron	ppm	ASTM D5185m	>120	3	11	11
Titanium ppm ASTM D5185m >2 0 <1	Chromium	ppm	ASTM D5185m	>20	<1	2	1
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 2 3 1 Lead ppm ASTM D5185m >40 1 2 7 Copper ppm ASTM D5185m >330 2 6 26 Tin ppm ASTM D5185m >15 <1	Nickel	ppm	ASTM D5185m	>5	<1	0	0
Aluminum ppm ASTM D5185m >20 2 3 1 Lead ppm ASTM D5185m >40 1 2 7 Copper ppm ASTM D5185m >330 2 6 26 Tin ppm ASTM D5185m >15 <1 <1 0 Vanadium ppm ASTM D5185m <1 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 8 48 Barium ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 <11 Magnesium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1070 1063 1	Titanium	ppm	ASTM D5185m	>2	0	<1	0
Lead ppm ASTM D5185m >40 1 2 7 Copper ppm ASTM D5185m >330 2 6 26 Tin ppm ASTM D5185m >15 <1 <1 0 Vanadium ppm ASTM D5185m >15 <1 0 < ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 8 48 Barium ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1070 1063 1260 1758 Phosphorus ppm ASTM D5185m 2060 3860 <th>Silver</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>2</th> <th>0</th> <th>0</th> <th>0</th>	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 2 6 26 Tin ppm ASTM D5185m >15 <1 <1 0 Vanadium ppm ASTM D5185m >15 <1 0 < Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 8 48 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 <11 Magnesium ppm ASTM D5185m 0 0 <11 Magnesium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1070 1063 1260 1758 Phosphorus ppm ASTM D5185m 2060 <	Aluminum	ppm	ASTM D5185m	>20	2	3	1
Tin ppm ASTM D5185m >15 <1	Lead	ppm	ASTM D5185m	>40	1	2	7
Vanadium ppm ASTM D5185m 0 <1	Copper	ppm	ASTM D5185m	>330	2	6	26
Cadmium ppm ASTM D5185m <1	Tin	ppm	ASTM D5185m	>15	<1	<1	0
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 8 48 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 61 58 41 Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1070 1063 1260 1758 Phosphorus ppm ASTM D5185m 1270 1226 1355 910 Sulfur ppm ASTM D5185m 2060 3860 3663 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m <	Vanadium	ppm	ASTM D5185m		0	<1	0
Boron ppm ASTM D5185m 0 7 8 48 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 61 58 41 Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1070 1063 1260 1758 Phosphorus ppm ASTM D5185m 1270 1226 1355 910 Sulfur ppm ASTM D5185m 2060 3860 3663 Solicon ppm ASTM D5185m >255 4 4 6 Sodium ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base cur	Cadmium	ppm	ASTM D5185m		<1	0	
Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 61 58 41 Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1070 1063 1260 1758 Phosphorus ppm ASTM D5185m 1270 1226 1355 910 Sulfur ppm ASTM D5185m 2060 3860 3663 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 2 1 INFRA-RED method	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 61 58 41 Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1070 1063 1260 1758 Phosphorus ppm ASTM D5185m 1070 1023 1355 910 Zinc ppm ASTM D5185m 1270 1226 1355 910 Sulfur ppm ASTM D5185m 2060 3860 3663 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/b	Boron	ppm	ASTM D5185m	0	7	8	48
Manganese ppm ASTM D5185m 0 0 <1	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 928 997 507 Calcium ppm ASTM D5185m 1070 1063 1260 1758 Phosphorus ppm ASTM D5185m 1150 1074 1050 770 Zinc ppm ASTM D5185m 1270 1226 1355 910 Sulfur ppm ASTM D5185m 2060 3860 3663 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 6 Sodium ppm ASTM D5185m >20 2 1 4 Potassium ppm ASTM D5185m >20 2 1 4 Nitration Abs/cm *ASTM D7844 >4 0.2 0.6 0.84 Nitration Abs/.1mm *ASTM D7624 >20 5.3 7.5 Sulfation Abs/.1mm *	Molybdenum	ppm	ASTM D5185m	60	61	58	41
Calcium ppm ASTM D5185m 1070 1063 1260 1758 Phosphorus ppm ASTM D5185m 1150 1074 1050 770 Zinc ppm ASTM D5185m 1270 1226 1355 910 Sulfur ppm ASTM D5185m 2060 3860 3663 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 6 Sodium ppm ASTM D5185m >20 2 2 1 Potassium ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.6 0.84 Nitration Abs/cm *ASTM D7624 >20 5.3 7.5 Sulfation Abs/.1mm *ASTM D7415	Manganese	ppm	ASTM D5185m	0	0	<1	
Phosphorus ppm ASTM D5185m 1150 1074 1050 770 Zinc ppm ASTM D5185m 1270 1226 1355 910 Sulfur ppm ASTM D5185m 2060 3860 3663 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 6 Sodium ppm ASTM D5185m >25 4 4 6 Sodium ppm ASTM D5185m >20 2 2 1 Potassium ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.6 0.84 Nitration Abs/cm *ASTM D7624 >20 5.3 7.5 Sulfation Abs/.1mm *ASTM D7415	Magnesium	ppm	ASTM D5185m	1010	928	997	507
Zinc ppm ASTM D5185m 1270 1226 1355 910 Sulfur ppm ASTM D5185m 2060 3860 3663 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 6 Sodium ppm ASTM D5185m >20 2 1 4 Potassium ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.6 0.84 Nitration Abs/cm *ASTM D7624 >20 5.3 7.5 Sulfation Abs/.1mm *ASTM D7615 >30 17.5 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414	Calcium	ppm	ASTM D5185m	1070	1063	1260	1758
SulfurppmASTM D5185m2060386003663CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25446SodiumppmASTM D5185m>20214PotassiumppmASTM D5185m>20221INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.20.60.84NitrationAbs/cm*ASTM D7624>205.37.5SulfationAbs/1mm*ASTM D7615>3017.520.6FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2513.515.62	Phosphorus	ppm	ASTM D5185m	1150	1074	1050	770
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25446SodiumppmASTM D5185m>20221PotassiumppmASTM D5185m>20221INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.20.60.84NitrationAbs/cm*ASTM D7624>205.37.5SulfationAbs/.1mm*ASTM D7415>3017.520.6FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2513.515.62	Zinc	ppm	ASTM D5185m	1270	1226	1355	910
Silicon ppm ASTM D5185m >25 4 4 6 Sodium ppm ASTM D5185m <1	Sulfur	ppm	ASTM D5185m	2060	3860	3663	
Sodium ppm ASTM D5185m <1	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.6 0.84 Nitration Abs/cm *ASTM D7624 >20 5.3 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 17.5 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.6 2	Silicon	ppm	ASTM D5185m	>25	4	4	6
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.6 0.84 Nitration Abs/cm *ASTM D7624 >20 5.3 7.5 Sulfation Abs/.1mm *ASTM D7624 >30 17.5 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.6 2	Sodium	ppm	ASTM D5185m		<1	<1	4
Soot % % *ASTM D7844 >4 0.2 0.6 0.84 Nitration Abs/cm *ASTM D7624 >20 5.3 7.5 Sulfation Abs/.1mm *ASTM D7415 >30 17.5 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.6 2	Potassium	ppm	ASTM D5185m	>20	2	2	1
Nitration Abs/cm *ASTM D7624 >20 5.3 7.5 Sulfation Abs/.1mm *ASTM D7615 >30 17.5 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.6 2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.5 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.6 2	Soot %	%	*ASTM D7844	>4	0.2	0.6	0.84
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.6 2	Nitration	Abs/cm	*ASTM D7624	>20	5.3	7.5	
Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.6 2	i ili allori						
			*ASTM D7415	>30	17.5	20.6	
Base Number (BN) mg KOH/g ASTM D2896 9.8 10.29 9.95	Sulfation	Abs/.1mm					
	Sulfation FLUID DEGRAE	Abs/.1mm	method	limit/base	current	history1	history2



OIL ANALYSIS REPORT





Certificate L2367

Submitted By: MATT MANOLI

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