

OIL ANALYSIS REPORT

G.LOPES CONSTRUCTION INC./ON-ROAD

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.

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.

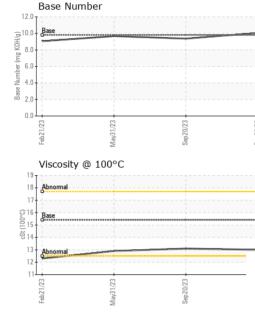
AL) Sample Number Client Info PCA0109754 PCA0104690 PCA0033120 Sample Number Client Info 26 Dec 2023 20 Sop 2023 31 May 2023 Machine Age hrs Client Info 92000 52000 52000 Oil Age hrs Client Info 92000 52000 52000 Oil Age hrs Client Info N/A N/A N/A CONTAMINATION method imit/base current history1 history2 Fuel WC Method >.0.2 NEG NEG NEG Onto ppm ASTM 051856 >.20 1.0 -1.0 -1.0 Kokel ppm ASTM 051856 >.20 2 3 2 Nickel Nickel ppm ASTM 051856 >.20 10 17 8 Lead ppm ASTM 051856 >.20 10 17 8 Lead ppm ASTM 051856 >.33 0 0 0 </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>								
stand taxis taxis taxis taxis SAMPLE INFORMATION method imilibaso current history1 history2 Sample Number Client Info 26 Dec 2023 20 Sep 2023 31 May 2023 Machine Age hrs Client Info 92000 52000 52000 Oil Age hrs Client Info 92000 52000 52000 Oil Changed Client Info 92000 52000 52000 Oil Changed Client Info 92000 52000 52000 Oil Changed Client Info NVA N/A N/A Sample Status method imil/base current history1 history2 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >100 12 14 11 Chromium ppm ASTM 05185 >20 2 3 2 Itanium ppm ASTM 05185 >30 0 0	AL)							
Sample Number Client Info PCA0109754 PCA0104690 PCA0083120 Sample Date Client Info 26 Dec 2023 20 Sep 2023 31 May 2023 Machine Age hrs Client Info 92000 52000 52000 Oil Age hrs Client Info 92000 52000 52000 Oil Changed Client Info 92000 52000 52000 Oil Changed Client Info 92000 52000 52000 Oll Age Client Info 92000 52000 52000 Sample Status Imathod Imit/base current history1 history2 Water WC Method >5.2 <1.0 <1.0 <1.0 NCG Water ppm ASTM D5185n >100 12 14 11 Chromum ppm ASTM D5185n >40 0 0 0 Nickel ppm ASTM D5185n >33 0 0 0 Sikver ppm ASTM D5185n<	,	ΜΑΤΙΟΝ					history2	
Sample Date Client Info 26 Dec 2023 20 Sep 2023 31 May 2023 Machine Age hrs Client Info 92000 52000 52000 Oil Age hrs Client Info 92000 52000 52000 Oil Changed Client Info 92000 52000 52000 Sample Status Imit base current history1 history2 Fuel WC Method >5 +1.0 <1.0				in the babb				
Machine Age hrs Client Info 92000 52000 52000 52000 Dil Age hrs Client Info 92000 52000 52000 Sample Status Client Info N/A N/A N/A Sample Status Client Info N/A NORMAL NORMAL NORMAL CONTAMINATION method 55 <1.0								
Dil Age hrs Client Info 92000 52000 52000 Dil Changed Client Info N/A N/A N/A Sample Status Imit/bass current history1 history2 Fuel WC Method >5 <1.0		bro						
Dil Changed Client Info N/A N/A N/A N/A Sample Status method limit/base current history1 history2 Fuel WC Method >5 +1.0 <1.0	0							
Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	-	1115						
Fuel WC Method >5 <1.0 <1.0 <1.0 Mater WC Method >0.2 NEG NEG NEG Silycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5165m >20 2 3 2 Vickel ppm ASTM D5165m >20 2 3 2 Nickel ppm ASTM D5165m >20 10 17 8 Lead ppm ASTM D5165m >20 10 0 0 Copper ppm ASTM D5165m >20 10 0 0 Copper ppm ASTM D5165m >30 33 39 51 Tin ppm ASTM D5165m 0 0 0 0 Copper ppm ASTM D5165m 0 2 0 1 Manadium	-							
Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method Imit/base current history1 history2 Iron ppm ASTM D5185m >100 12 14 11 Chromium ppm ASTM D5185m >20 2 3 2 Nickel ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >20 10 17 8 Lead ppm ASTM D5185m >20 10 0 0 Copper ppm ASTM D5185m >40 0 0 0 Cadmium ppm ASTM D5185m >15< <td><1</td> 1 2 Vanadium ppm ASTM D5185m 0 0 0 0 Addenium ppm ASTM D5185m 0 0 0 1	<1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Silycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >100 12 14 11 Chromium ppm ASTM D5185m >20 2 3 2 Nickel ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >20 10 17 8 Lead ppm ASTM D5185m >20 10 17 8 Lead ppm ASTM D5185m >20 10 0 0 Cadmium ppm ASTM D5185m >15 <1	Fuel		WC Method	>5	<1.0	<1.0	<1.0	
Blycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >100 12 14 11 Chromium ppm ASTM D5185m >20 2 3 2 Nickel ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Barimum ppm ASTM D5185m >20 10 17 8 Lead ppm ASTM D5185m >30 33 39 51 Tin ppm ASTM D5185m >15 <1	Water		WC Method	>0.2	NEG	NEG	NEG	
ron ppm ASTM D5185m >100 12 14 11 Chromium ppm ASTM D5185m >20 2 3 2 Nickel ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Auminum ppm ASTM D5185m >3 0 0 0 Auminum ppm ASTM D5185m >3 0 0 0 Aumanum ppm ASTM D5185m >40 0 0 0 0 Copper ppm ASTM D5185m >15 <1	Glycol		WC Method		NEG	NEG	NEG	
Ppm ASTM D5185m >20 2 3 2 Nickel ppm ASTM D5185m >4 0 0 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 10 17 8 ead ppm ASTM D5185m >20 10 0 0 Copper ppm ASTM D5185m >30 33 39 51 Tin ppm ASTM D5185m >15 <1	WEAR METAL	S	method	limit/base	current	history1	history2	
Nickel ppm ASTM D5185m >4 0 0 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 10 17 8 Lead ppm ASTM D5185m >330 33 39 51 Tin ppm ASTM D5185m >330 33 39 51 Tin ppm ASTM D5185m >15 <1	ron	ppm	ASTM D5185m	>100	12	14	11	
Titanium ppm ASTM D5185m 0 0 <1 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 10 177 8 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 33 39 51 Tin ppm ASTM D5185m >15 <1	Chromium	ppm	ASTM D5185m	>20	2	3	2	
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 10 17 8 Lead ppm ASTM D5185m >20 10 17 8 Lead ppm ASTM D5185m >330 33 39 51 Copper ppm ASTM D5185m >15 <1 1 2 Vanadium ppm ASTM D5185m >15 <1 1 2 Vanadium ppm ASTM D5185m 0 0 0 0 0 Cadmium ppm ASTM D5185m 0 2 0 1 Barium ppm ASTM D5185m 0 0 0 0 1 Barium ppm ASTM D5185m 0 0 0 <1 <1 Barium ppm ASTM D5185m 1010 907 1004 909 Calcium ppm ASTM D5185m	Nickel	ppm	ASTM D5185m	>4	0	0	0	
Aluminum ppm ASTM D5185m >20 10 17 8 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 33 39 51 Tin ppm ASTM D5185m >15 <1	Titanium	ppm	ASTM D5185m		0	0	<1	
Numinum ppm ASTM D5185m >20 10 17 8 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 33 39 51 Cin ppm ASTM D5185m >15 <1	Silver		ASTM D5185m	>3	0	0	0	
Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 33 39 51 Fin ppm ASTM D5185m >15 <1	Aluminum		ASTM D5185m	>20	10	17	8	
Dopper ppm ASTM D5185m >330 33 39 51 Fin ppm ASTM D5185m >15 <1	_ead		ASTM D5185m	>40	0	0	0	
Tin ppm ASTM D5185m >15 <1 1 2 /anadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 0 1 Barium ppm ASTM D5185m 0 0 0 0 Magnese ppm ASTM D5185m 0 0 <1	Copper		ASTM D5185m	>330	33	39		
Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 0 1 Barium ppm ASTM D5185m 0 0 0 0 Magnese ppm ASTM D5185m 0 0 <1	••		ASTM D5185m	>15	<1	1	2	
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 0 1 Barium ppm ASTM D5185m 0 0 0 0 0 Maganese ppm ASTM D5185m 0 0 0 <1 <1 Magnesium ppm ASTM D5185m 0 0 <1 <1 <1 Phosphorus ppm ASTM D5185m 1010 907 1004 909 Calcium ppm ASTM D5185m 1070 1138 1177 1180 Phosphorus ppm ASTM D5185m 1270 1127 1277 1152 Sulfur ppm ASTM D5185m 2060 2214 2702 2415 CONTAMINANTS method imit/base current history1 history2 Soliton ppm A	/anadium					0	0	
Boron ppm ASTM D5185m 0 2 0 1 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 61 59 57 Manganese ppm ASTM D5185m 0 0 <1	Cadmium							
Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 61 59 57 Manganese ppm ASTM D5185m 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 60 61 59 57 Manganese ppm ASTM D5185m 0 0 <1	Boron	ppm	ASTM D5185m	0	2	0	1	
Molybdenum ppm ASTM D5185m 60 61 59 57 Manganese ppm ASTM D5185m 0 0 <1	Barium		ASTM D5185m	0	0	0	0	
Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 907 1004 909 Calcium ppm ASTM D5185m 1070 1138 1177 1180 Phosphorus ppm ASTM D5185m 1070 1138 1177 1180 Phosphorus ppm ASTM D5185m 1150 813 930 854 Zinc ppm ASTM D5185m 1270 1127 1277 1152 Sulfur ppm ASTM D5185m 2060 2214 2702 2415 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 9 Sodium ppm ASTM D5185m >20 29 50 25 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844	Volybdenum		ASTM D5185m	60	61	59	57	
Magnesium ppm ASTM D5185m 1010 907 1004 909 Calcium ppm ASTM D5185m 1070 1138 1177 1180 Phosphorus ppm ASTM D5185m 1150 813 930 854 Zinc ppm ASTM D5185m 1270 1127 1277 1152 Sulfur ppm ASTM D5185m 2060 2214 2702 2415 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 9 Sodium ppm ASTM D5185m >25 4 4 9 Sodium ppm ASTM D5185m >20 29 50 25 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Soot % % *ASTM D7624 2	Manganese	ppm	ASTM D5185m	0	0	<1	<1	
Phosphorus ppm ASTM D5185m 1150 813 930 854 Zinc ppm ASTM D5185m 1270 1127 1277 1152 Sulfur ppm ASTM D5185m 2060 2214 2702 2415 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >25 4 4 9 Solicon ppm ASTM D5185m >25 4 4 9 Solicon ppm ASTM D5185m >20 29 50 25 Otassium ppm ASTM D5185m >20 29 50 25 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Sout % % *ASTM D7624 >20 8.4 8.2 8.1 Sout % %s/1mm *ASTM D7624 >30 <td>-</td> <td>ppm</td> <td>ASTM D5185m</td> <td>1010</td> <th>907</th> <td>1004</td> <td>909</td>	-	ppm	ASTM D5185m	1010	907	1004	909	
Phosphorus ppm ASTM D5185m 1150 813 930 854 Zinc ppm ASTM D5185m 1270 1127 1277 1152 Sulfur ppm ASTM D5185m 2060 2214 2702 2415 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >25 4 4 9 Solicon ppm ASTM D5185m >25 4 4 9 Solicon ppm ASTM D5185m >20 29 50 25 Otassium ppm ASTM D5185m >20 29 50 25 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Sout % % *ASTM D7624 >20 8.4 8.2 8.1 Sout % %s/1mm *ASTM D7624 >30 <td>Calcium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>1070</td> <th>1138</th> <td>1177</td> <td>1180</td>	Calcium	ppm	ASTM D5185m	1070	1138	1177	1180	
Zinc ppm ASTM D5185m 1270 1127 1277 1152 Sulfur ppm ASTM D5185m 2060 2214 2702 2415 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 9 Sodium ppm ASTM D5185m >20 29 50 25 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D5185m >20 29 50 25 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 8.4 8.2 8.1 Sulfation Abs/cm *ASTM D7624 >20 8.4 8.2 8.1 Sulfation Abs/.1mm *ASTM D7624 >30 19.6 19.9 20.2 Dxidation Abs/.1mm *ASTM D7414	Phosphorus		ASTM D5185m	1150	813	930	854	
SulfurppmASTM D5185m2060221427022415CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25449SodiumppmASTM D5185m>20295025PotassiumppmASTM D5185m>20295025INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.30.30.2NitrationAbs/cm*ASTM D7624>208.48.28.1SulfationAbs/cm*ASTM D7624>3019.619.920.2FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/Imm*ASTM D7414>2516.617.117.2			ASTM D5185m	1270	1127	1277	1152	
Silicon ppm ASTM D5185m >25 4 4 9 Sodium ppm ASTM D5185m <21 3 2 Potassium ppm ASTM D5185m >20 29 50 25 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Soot % % *ASTM D7624 >20 8.4 8.2 8.1 Soulfation Abs/cm *ASTM D7624 >30 19.6 19.9 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 17.1 17.2	Sulfur		ASTM D5185m	2060		2702	2415	
Sodium ppm ASTM D5185m <1 3 2 Potassium ppm ASTM D5185m >20 29 50 25 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.4 8.2 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 19.9 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 17.1 17.2	CONTAMINAN	ITS	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 29 50 25 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.4 8.2 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 19.9 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 17.1 17.2	Silicon	ppm	ASTM D5185m	>25	4	4	9	
INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.30.30.2NitrationAbs/cm*ASTM D7624>208.48.28.1SulfationAbs/.1mm*ASTM D7415>3019.619.920.2FLUID DEGRADATION methodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2516.617.117.2	Sodium	ppm	ASTM D5185m		<1	3	2	
Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.4 8.2 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 19.9 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 17.1 17.2	Potassium	ppm	ASTM D5185m	>20	29	50	25	
Nitration Abs/cm *ASTM D7624 >20 8.4 8.2 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 19.9 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 17.1 17.2	INFRA-RED		method	limit/base	current	history1	history2	
Nitration Abs/cm *ASTM D7624 >20 8.4 8.2 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 19.9 20.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 17.1 17.2	Soot %	%	*ASTM D7844	>3	0.3	0.3	0.2	
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 17.1 17.2		Abs/cm	*ASTM D7624	>20	8.4	8.2	8.1	
Oxidation Abs/.1mm *ASTM D7414 >25 16.6 17.1 17.2	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.6	19.9	20.2	
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2	
Base Number (BN) mg KOH/g ASTM D2896 9.8 10.04 9.37 9.67	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.6	17.1	17.2	
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	10.04	9.37	9.67	

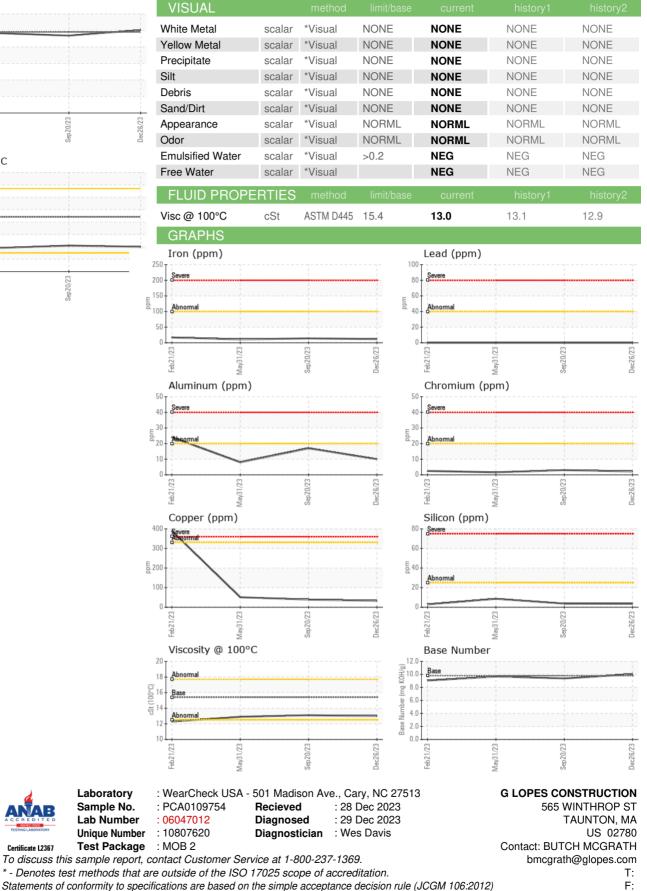
Sample Rating Trend

NORMAL



OIL ANALYSIS REPORT





Certificate L2367

Page 2 of 2