

# **OIL ANALYSIS REPORT**

# G.LOPES CONSTRUCTION INC./On-Road

Sample Rating Trend



## DIAGNOSIS

Component Diesel Engine

### Recommendation

Resample at the next service interval to monitor.

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

### Wear

311

Fluic

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

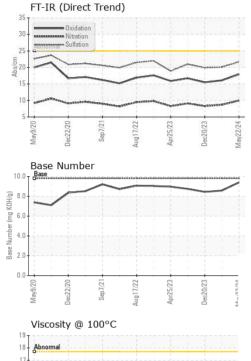
### Fluid Condition

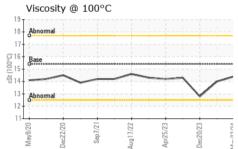
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0110070	PCA0122610	PCA0110110
Sample Date		Client Info		22 May 2024	23 Apr 2024	20 Dec 2023
Machine Age	mls	Client Info		386000	386000	386000
Oil Age	mls	Client Info		232000	232000	310000
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>65	18	25	24
Chromium	ppm	ASTM D5185m	>5	1	3	2
Nickel	ppm	ASTM D5185m	>3	<1	0	<1
Titanium	ppm	ASTM D5185m	>5	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>35	8	12	11
Lead	ppm	ASTM D5185m	>10	<1	0	0
Copper	ppm	ASTM D5185m	>180	4	10	11
Tin	ppm	ASTM D5185m	>8	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
0 1 1						
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	0 history2
	ppm ppm		limit/base 0		-	-
ADDITIVES		method	0	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 1	history1 0	history2 11
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60	current 1 <1	history1 0 0	history2 11 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 1 <1 59	history1 0 0 60	history2 11 0 62
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 1 <1 59 <1	history1 0 0 60 <1	history2 11 0 62 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 1 <1 59 <1 928	history1 0 0 60 <1 974	history2 11 0 62 <1 873
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current           1           <1           59           <1           928           1125	history1 0 0 60 <1 974 1157	history2 11 0 62 <1 873 1059
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	current           1           <1           59           <1           928           1125           1134	history1 0 0 60 <1 974 1157 1026	history2 11 0 62 <1 873 1059 985
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current           1           <1           59           <1           928           1125           1134           1292	history1 0 0 60 <1 974 1157 1026 1243	history2 11 0 62 <1 873 1059 985 1205
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current           1           <1           59           <1           928           1125           1134           1292           3285	history1 0 0 60 <1 974 1157 1026 1243 3190	history2 11 0 62 <11 873 1059 985 1205 2603
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current         1         <1         59         <1         928         1125         1134         1292         3285         current	history1 0 0 60 <1 974 1157 1026 1243 3190 history1	history2         11         0         62         <1         873         1059         985         1205         2603         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	0 0 60 1010 1070 1150 1270 2060 kimit/base >15	current           1           <1           59           <1           928           1125           1134           1292           3285           current           5	history1           0           0           60           <1           974           1157           1026           1243           3190           history1           4	history2           11           0           62           <1           873           1059           985           1205           2603           history2           4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >15	current         1         <1         59         <1         928         1125         1134         1292         3285         current         5         <1	history1           0           0           60           <1           974           1157           1026           1243           3190           history1           4           3	history2         11         0         62         <1         873         1059         985         1205         2603         history2         4         <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sidium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >15 >20	current         1         <1         59         <1         928         1125         1134         1292         3285         current         5         <1         4	history1           0           0           60           <1           974           1157           1026           1243           3190           history1           4           3           1	history2         11         0         62         <1         873         1059         985         1205         2603         history2         4         <1         1
ADDITIVES 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	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 >15 >20 20 imit/base >20	current         1         <1         59         <1         928         1125         1134         1292         3285         current         5         <1         4         current	history1         0         0         60         <1         974         1157         1026         1243         3190         history1         4         3         1         wistory1	history2         11         0         62         <1         873         1059         985         1205         2603         history2         4         <1         1         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 >15 >20 20 imit/base >20	current         1         <1         59         <1         928         1125         1134         1292         3285         current         5         <1         4         current         0.7	history1           0           0           60           <1           974           1157           1026           1243           3190           history1           4           3           1	history2         11         0         62         <1         873         1059         985         1205         2603         history2         4         <1         1         history2         0         0.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sidium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D7844           *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >15 >20 <i>limit/base</i> >3 >20	current         1         <1         59         <1         928         1125         1134         1292         3285         current         5         <1         4         current         0.7         10.0	history1           0           0           60           <1           974           1157           1026           1243           3190           history1           4           3           1	history2         11         0         62         <1         873         1059         985         1205         2603         history2         4         <1         1         history2         0.7         8.3
ADDITIVES 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	method           ASTM D5185m           ASTM D7844           *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >20 <b>imit/base</b> >3 >20 >30	current         1         <1         59         <1         928         1125         1134         1292         3285         current         5         <1         4         current         0.7         10.0         21.7	history1         0         0         60         <1         974         1157         1026         1243         3190         history1         4         3         1         history1         0.7         8.7         20.1	history2         11         0         62         <1         873         1059         985         1205         2603         history2         4         <1         1         history2         0.7         8.3         19.9



# **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			
$\sim$	Silt	scalar	*Visual	NONE	NONE	NONE	NONE			
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE			
A DESCRIPTION OF THE OWNER	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE			
0/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML			
Dec20/23 May22/24	Odor	scalar	*Visual	NORML	NORML	NORML	NORML			
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG			
	Free Water	scalar	*Visual		NEG	NEG	NEG			
	FLUID PROPER	RTIES	method	limit/base	current	history1	history2			
	Visc @ 100°C	cSt	ASTM D445	15.4	14.4	14.0	12.8			
	GRAPHS									
	Iron (ppm)			30	Sama					
Dec20/23	150 - Severe			25	, <b>1</b>			-		
Dec	E 100 - Abnormal			<u>ة</u> 19	Abnormal					
	50									
	20	22	23			21	23	24		
	May9/20 Dec22/20 Sep7/21	Aug17/22	Apr25/23 Dec20/23	May22/24	May9/20 Dec22/20	Sep7/21 Aug17/22	Apr25/23 Dec20/23	May22/24		
	– – – Aluminum (ppm)	A	4 O	Z	Chromium (		A D	M		
	<sup>80</sup> T			12	2 T 3	ррпту				
V	60 - Severe			10	Severe			-		
				Ε,						
Dec20/23 мс.л.	E 40 - Abnormal			ud d	G					
Dec	20	-			2		$\sim$			
		12				21+		++		
	May9/20 Dec22/20 Sep7/21	Aug17/22	Apr25/23 Dec20/23	May22/24	May9/20 Dec22/20	Sep7/21 Aug17/22	Apr25/23 Dec20/23	May22/24		
	Copper (ppm)	A	A D	W	Silicon (ppm)	A	A D	M		
	400 -			40		,				
	Severe			30						
	-			틆 20						
								-		
	100 -			10						
	20-00-00-00-00-00-00-00-00-00-00-00-00-0		23			22	23	- <del> </del> + -		
	May9/20 Dec22/20 Sep7/21	Aug17/22 -	Apr25/23	May22/24	May9/20 Dec22/20	Sep7/21. Aug17/22.	Apr25/23 Dec20/23	May22/24		
	Viscosity @ 100°C	4	~ U	≝						
	20			10.0 S	Base	$\sim$		-		
	18- Abnormal			(B)HOX Bull Bull Bull Bull Bull Bull Bull Bull						
	30 16 - Base		****	Ĕ 6.0						
	Abhormai			quint 4.0						
	12			82.0 80				T		
		1/22	5/23 +	0.0		Sep7/21+	5/23 -	2/24		
	May9/20 Dec22/20 Sep7/21	Aug17/22 -	Apr25/23 - Dec20/23 -	May22/24	May9/20 Dec22/20	Sep 7/21 Aug 17/22	Apr25/23 Dec20/23	May22/24		
	: WearCheck USA - 501 : PCA0110070 : 06191241 : 11047993 : MOB 2	n Ave., Cary, NC 27513 ved : 24 May 2024 d : 31 May 2024 osed : 31 May 2024 - Wes Davis			G LOPES CONSTRUCTION 565 WINTHROP ST TAUNTON, MA US 02780 Contact: BUTCH MCGRATH					



Test Package : MOB 2 Certificate 12367 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)

Report Id: GLOTAU [WUSCAR] 06191241 (Generated: 05/31/2024 18:18:42) Rev: 1

Submitted By: MATT MANOLI

bmcgrath@glopes.com

Page 2 of 2

T:

F: