

OIL ANALYSIS REPORT

Area G.LOPES CONSTRUCTION INC./OFF-ROAD L-63

Component Diesel Engine Fluid 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

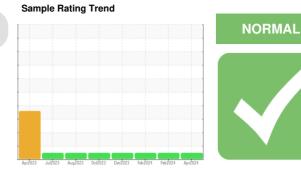
All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

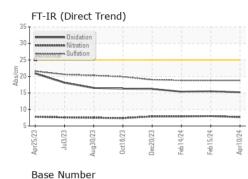
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

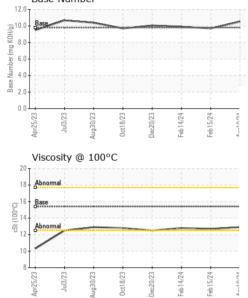


SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0109894	PCA0109854	PCA0098337
Sample Date		Client Info		10 Apr 2024	15 Feb 2024	14 Feb 2024
Machine Age	hrs	Client Info		2673	1924	1924
Oil Age	hrs	Client Info		2673	1924	1924
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<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	>100	12	12	16
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	2
Lead	ppm	ASTM D5185m	>40	2	<1	<1
Copper	ppm	ASTM D5185m	>330	3	5	6
Tin	ppm	ASTM D5185m	>15	1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base	current 2	history1 2	history2 3
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	2	2	3
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 0	2 10	3 10
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 60	2 10 59	3 10 75
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 60 <1	2 10 59 0	3 10 75 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 60 <1 1034	2 10 59 0 930	3 10 75 0 1196
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	2 0 60 <1 1034 1231	2 10 59 0 930 1057	3 10 75 0 1196 1318
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	2 0 60 <1 1034 1231 1182	2 10 59 0 930 1057 1072	3 10 75 0 1196 1318 1365
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	0 0 60 0 1010 1070 1150 1270	2 0 60 <1 1034 1231 1182 1413	2 10 59 0 930 1057 1072 1199	3 10 75 0 1196 1318 1365 1558
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	0 00 00 1010 1070 1150 1270 2060	2 0 60 <1 1034 1231 1182 1413 3969	2 10 59 0 930 1057 1072 1199 3429	3 10 75 0 1196 1318 1365 1558 4503
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 00 00 1010 1070 1150 1270 2060	2 0 60 <1 1034 1231 1182 1413 3969 current	2 10 59 0 930 1057 1072 1199 3429 history1	3 10 75 0 1196 1318 1365 1558 4503 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	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 kimit/base >25	2 0 60 <1 1034 1231 1182 1413 3969 current 5	2 10 59 0 930 1057 1072 1199 3429 history1 5	3 10 75 0 1196 1318 1365 1558 4503 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	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 kimit/base	2 0 60 <1 1034 1231 1182 1413 3969 current 5 <	2 10 59 0 930 1057 1072 1199 3429 history1 5 0	3 10 75 0 1196 1318 1365 1558 4503 history2 6 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	2 0 60 <1 1034 1231 1182 1413 3969 <u>current</u> 5 <1 3	2 10 59 0 930 1057 1072 1199 3429 history1 5 0 2	3 10 75 0 1196 1318 1365 1558 4503 history2 6 0 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25	2 0 60 <1 1034 1231 1182 1413 3969 current 5 <1 3 current	2 10 59 0 930 1057 1072 1199 3429 history1 5 0 2 history1	3 10 75 0 1196 1318 1365 1558 4503 history2 6 0 2 kistory2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	2 0 60 <1 1034 1231 1182 1413 3969 current 5 <1 3 current 0.3	2 10 59 0 930 1057 1072 1199 3429 history1 5 0 2 history1 0.3	3 10 75 0 1196 1318 1365 1558 4503 history2 6 0 2 <u>history2</u> 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	2 0 60 <1 1034 1231 1182 1413 3969 <i>current</i> 5 <1 3 <i>current</i> 0.3 7.7	2 10 59 0 930 1057 1072 1199 3429 history1 5 0 2 history1 0.3 8.0	3 10 75 0 1196 1318 1365 1558 4503 history2 6 0 2 history2 0.3 7.9
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 20 imit/base >3 >20	2 0 60 <1 1034 1231 1182 1413 3969 current 5 <1 3 current 0.3 7.7 18.8	2 10 59 0 930 1057 1072 1199 3429 history1 5 0 2 history1 0.3 8.0 18.8	3 10 75 0 1196 1318 1365 1558 4503 history2 6 0 2 history2 0.3 7.9 18.8
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 33 220 20 330 20 330	2 0 60 <1 1034 1231 1182 1413 3969 <i>current</i> 5 <1 3 <i>current</i> 0.3 7.7 18.8	2 10 59 0 930 1057 1072 1199 3429 history1 5 0 2 history1 0.3 8.0 18.8 history1	3 10 75 0 1196 1318 1365 1558 4503 history2 6 0 2 history2 0.3 7.9 18.8 history2



OIL ANALYSIS REPORT





	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	LIGHT	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
Skannet	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Apr10/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Apı	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	12.9	12.7	12.8
	GRAPHS						
	Iron (ppm)			100	Lead (ppm)		
10,01	200 - Severe			80	Severe		
	E 150 100 - Abnormal			60	·		
	and Abnormal			40	Abnormal		
	50-			20) -		
			4 4			21 E1	4 4
	Apr25/23 Jul3/23	0ct18/23 Dec20/23	Feb14/24 ·	Apr10/24 -	Apr25/23 Jul3/23 Aug30/23	Oct18/23 - Dec20/23 -	Feb14/24 Feb15/24
		0 0	ű ű	A	-		ű ű
	Aluminum (ppm)			50	Chromium (p	pm)	
	40 - Severe			40	Severe		
	E 30			= 30	• • • • • • • • • • • • • • • • • • • •		
	20 - Abnormal			E 20	Abnormal		
	10-			10) -		
			4 4	-+- (4 4
	Apr25/23 Jul3/23 Aug30/23	0ct18/23 Dec20/23	Feb14/24 Feb15/24	Apr10/24	Apr25/23 Jul3/23 Aug30/23	0ct18/23 Dec20/23	Feb14/24 Feb15/24
	ح ع Copper (ppm)	o ă	3 F	Ä	a dilicon (ppm)	o ă	r r
	800			100			
	600			80		1 1	
	E 400 - Styfigmal			⁶⁰ ط 40			
	200			20	Abnorma		
	Apr25/23 Jul3/23 Aug30/23	0ct18/23 Dec20/23	Feb14/24 Feb15/24	Apr10/24	Apr25/23 Jul3/23 Aug30/23	0ct18/23 Dec20/23	Feb 1 4/2 4 Feb 1 5/2 4
	ح Viscosity @ 100°0	_	r r	Ä	ase Number		ë ë
	20 18 Abnormal			12.0 デ10.0			
				9 8.0			
	G 16 Base 0014 3712 Abnormal)		
				(B) 10.0 HOX base base 6.0 Numps 4.0 Base 2.0	1		
	10			№ 2.0			
	Apr25/23	0ct18/23 - Dec20/23 -	Feb 14/24 - Feb 15/24 -	Apr10/24	Apr25/23	0ct18/23 - Dec20/23 -	Feb 14/24 - Feb 15/24 -
		E1	61	pr]	pr2 Jul	ct1	eb1



Unique Number : 10977641 Diagnosed : 15 Apr 2024 - Wes Davis 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)

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