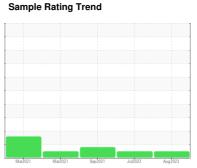


# **OIL ANALYSIS REPORT**

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NORMAL



# Machine Id **831003**

Component

**Natural Gas Engine** 

PETRO CANADA DURON HP 15W40 (--- LTR)

## DIAGNOSIS

## Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

## Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

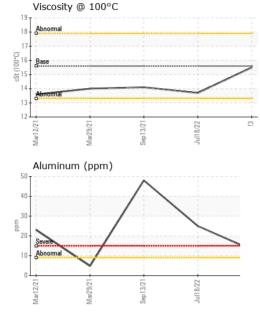
## **Fluid Condition**

The condition of the oil is acceptable for the time in service.

ΓR)		Mar2021	Mar2021	Sep2021 Jul2022	Aug2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0090602	GFL0053100	GFL0032547
Sample Date		Client Info		25 Aug 2023	18 Jul 2022	13 Sep 2021
Machine Age	hrs	Client Info		6420	4373	2328
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Glycol		WC Method				
WEAR METAL	.S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>50	31	20	31
Chromium	ppm	ASTM D5185(m)	>4	2	2	4
Nickel	ppm	ASTM D5185(m)	>2	1	<1	1
Titanium	ppm	ASTM D5185(m)		0	<1	0
Silver	ppm	ASTM D5185(m)	>3	0	0	<1
Aluminum	ppm	ASTM D5185(m)	>9	13	25	<b>48</b>
Lead	ppm	ASTM D5185(m)	>30	3	2	2
Copper	ppm	ASTM D5185(m)	>35	2	1	4
Tin	ppm	ASTM D5185(m)	>4	<1	<1	2
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	11	8	8
Barium	ppm	ASTM D5185(m)	0	0	0	<1
Molybdenum	ppm	ASTM D5185(m)	60	63	62	63
Manganese	ppm	ASTM D5185(m)	0	1	1	3
Magnesium	ppm	ASTM D5185(m)	1010	687	795	570
Calcium	ppm	ASTM D5185(m)	1070	1842	1695	1655
Phosphorus	ppm	ASTM D5185(m)	1150	930	946	822
Zinc	ppm	ASTM D5185(m)	1270	1072	1182	991
Sulfur	ppm	ASTM D5185(m)	2060	2140	2418	1974
Lithium	ppm	ASTM D5185(m)		<1	<1	<1
CONTAMINAN	ITS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>+100	5	5	8
Sodium	ppm	ASTM D5185(m)		10	8	10
Potassium	ppm	ASTM D5185(m)	>20	22	39	84
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		0	0	0
Nitration	Abs/cm	ASTM D7624*	>20	13.3	10.7	11.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	29.9	23.2	26.5
FLUID DEGRAI	NOITAC	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	24.2	20.1	21.9



## **OIL ANALYSIS REPORT**



VISUAL		method Visual*	limit/base >0.1		current		history1	history2	
Emulsified Water	scalar				NEG		NEG	NEG	NEG
Free Water	scalar	Visual*			NEG		NEG	NEG	
FLUID PROPEI	RTIES	method	limit/b	ase	current		history1	histo	ory2
Visc @ 100°C	cSt	ASTM D7279(m)	15.6		15.5		13.7	14.1	
GRAPHS									
Iron (ppm)					Lead (ppm	1)			
O Severe				60 <del>-</del> 50 -	Severe				
0 +				40 -					
O Abnormal	 	***************************************		튎30-	Abnormal				
			-	20-	Ī				
		<u></u>		10-					
				0			_		_
Mar12/21 Mar29/21	Sep13/21	Jul18/22	Aug25/23		Mar12/21	Mar29/21	Sep13/21	Jul18/22	Λα.2Ε./2.2
	ő	7	An					ī	<
Aluminum (ppm)				7	Chromium	(bbin	) 		
D				6 -	Severe				
				5-	Abnormal				
				шd 3.					
Severe				2.		/		<u> </u>	
Abnormal				1-		/			
12/2	3/21	/22 +	/23	0 -	-12/2	3/21+	3/21-	722 -	22
Mar12/21	Sep13/21	Jul18/22	Aug25/23		Mar12/21	Mar29/21	Sep13/21	Jul18/22	Λ2Ε/23
Copper (ppm)				200	Silicon (pp	m)			
Severe	1		-	200-	Severe				
D+				150-					
O Abnormal				툂 100 -	Abnormal				
Abnormal				₫					
				50-					
				0		_		-	
Mar12/21 Mar29/21	p13/21	Jul18/22	g25/23		Mar12/21	ar29/21	Sep13/21	Jul18/22	-95.79
∑ ∑ Viscosity @ 100°C	Sep	5	Aug		≊ Additives	Ma	ŏ	5	V
, I :				2000					
Abnormal			E-F-F-F	1800 -	calciu	phorus			-
Page				1600 - _ 1400 -	Zific				
Base				E 1200				and the Same	
Abnormal				1000 -	-		No. 2 of Congression and Conference of Congression		
and the second				800-	Anna and Proper Commence of the State of the	THE RESERVE THE PERSON	表表成就是可能完全 <del>对这种原则也就是是这</del> 就是不是		
2 1	+	Jul18/22	Aug25/23	600	Mar12/21—	Mar29/21-	Sep13/21-	Jul18/22 +	Α2Ε./22
Mar12/21	Sep13/21	SS	15		2	6	<u>m</u>	200	



**CALA** ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number Unique Number : 5633341 Test Package : MOB 1

: GFL0090602 : 02580281

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 554 - Edmonton SW Received Diagnosed

Diagnostician : Wes Davis

: 05 Sep 2023 8409 -15th Street NW : 05 Sep 2023 Edmonton, AB **CA T6P 0B8** Contact: Tim Greig tgreig@gflenv.com

To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

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