

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id **3511C AUTOCAR** Component Natural Gas Engine

PETRO CANADA DURON GEO LD 15W40 (48 QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

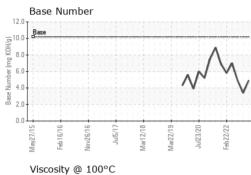
Fluid Condition

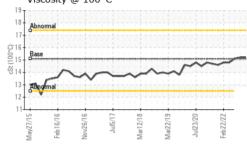
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample NumberClient InfoGFL0094727GFL0089293GFL00524Sample DateClient Info17 Nov 202312 Sep 202324 May 202Machine AgehrsClient Info484842621422Oil AgehrsClient Info00541Oil ChangedClient InfoChangedChangedChangedSample StatusImit InfoChangedChangedChangedCONTAMINATIONmethodlimit/basecurrenthistory1WaterWC Method >0.1NEGNEGNEGWEAR METALSmethodlimit/basecurrenthistory1	22
Machine Age hrs Client Info 4848 4262 1422 Oil Age hrs Client Info 0 0 541 Oil Changed Client Info Changed Changed Changed Changed Sample Status Imathematication NORMAL ABNORMAL NORMAL CONTAMINATION method limit/base current history1 history1 Water WC Method >0.1 NEG NEG NEG	
Machine Age hrs Client Info 4848 4262 1422 Oil Age hrs Client Info 0 0 541 Oil Changed Client Info Changed Changed Changed Changed Changed Sample Status Image Image Image NORMAL ABNORMAL NORMAL CONTAMINATION method limit/base current history1 history1 Water WC Method >0.1 NEG NEG NEG	12
Oil Changed Client Info Changed Changed Changed Changed Sample Status NORMAL NORMAL ABNORMAL NORMAL CONTAMINATION method limit/base current history1 history Water WC Method >0.1 NEG NEG NEG	12
Sample Status NORMAL ABNORMAL NORMAL CONTAMINATION method limit/base current history1 history Water WC Method >0.1 NEG NEG NEG	12
CONTAMINATION method limit/base current history1 history Water WC Method >0.1 NEG NEG NEG	12
Water WC Method >0.1 NEG NEG NEG	12
	2
WEAD METALS method limit/base ourrent history/1 history	
WEAR METALS method limit/base current history1 history	/2
Iron ppm ASTM D5185m >50 39 ▲ 54 16	
Chromium ppm ASTM D5185m >4 4 4 1	
Nickel ppm ASTM D5185m >2 <1	
Titanium ppm ASTM D5185m <1	
Silver ppm ASTM D5185m >3 0 0 0	
Aluminum ppm ASTM D5185m >9 8 9 4	
Lead ppm ASTM D5185m >30 15 21 <1	
Copper ppm ASTM D5185m >35 2 1	
Tin ppm ASTM D5185m >4 2 <1	
Vanadium ppm ASTM D5185m <1	
Cadmium ppm ASTM D5185m 0 0 0	
ADDITIVES method limit/base current history1 history	/2
Boron ppm ASTM D5185m 50 12 5 10	
Barium ppm ASTM D5185m 5 0 0 0	
Molybdenum ppm ASTM D5185m 50 61 69 54	
Manganese ppm ASTM D5185m 0 1 2 <1	
Magnesium ppm ASTM D5185m 560 721 756 567	
,	
Magnesium ppm ASTM D5185m 560 721 756 567	
Magnesium ppm ASTM D5185m 560 721 756 567 Calcium ppm ASTM D5185m 1510 1937 2148 1659 Phosphorus ppm ASTM D5185m 780 968 945 715 Zinc ppm ASTM D5185m 870 1206 1218 1047	
Magnesium ppm ASTM D5185m 560 721 756 567 Calcium ppm ASTM D5185m 1510 1937 2148 1659 Phosphorus ppm ASTM D5185m 780 968 945 715	
Magnesium ppm ASTM D5185m 560 721 756 567 Calcium ppm ASTM D5185m 1510 1937 2148 1659 Phosphorus ppm ASTM D5185m 780 968 945 715 Zinc ppm ASTM D5185m 870 1206 1218 1047 Sulfur ppm ASTM D5185m 2040 2754 3330 2205 CONTAMINANTS method limit/base current history1 history	/2
Magnesium ppm ASTM D5185m 560 721 756 567 Calcium ppm ASTM D5185m 1510 1937 2148 1659 Phosphorus ppm ASTM D5185m 780 968 945 715 Zinc ppm ASTM D5185m 870 1206 1218 1047 Sulfur ppm ASTM D5185m 2040 2754 3330 2205	v2
Magnesium ppm ASTM D5185m 560 721 756 567 Calcium ppm ASTM D5185m 1510 1937 2148 1659 Phosphorus ppm ASTM D5185m 780 968 945 715 Zinc ppm ASTM D5185m 870 1206 1218 1047 Sulfur ppm ASTM D5185m 2040 2754 3330 2205 CONTAMINANTS method limit/base current history1 history1	/2
Magnesium ppm ASTM D5185m 560 721 756 567 Calcium ppm ASTM D5185m 1510 1937 2148 1659 Phosphorus ppm ASTM D5185m 780 968 945 715 Zinc ppm ASTM D5185m 870 1206 1218 1047 Sulfur ppm ASTM D5185m 2040 2754 3330 2205 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >+100 7 16 10	/2
Magnesium ppm ASTM D5185m 560 721 756 567 Calcium ppm ASTM D5185m 1510 1937 2148 1659 Phosphorus ppm ASTM D5185m 780 968 945 715 Zinc ppm ASTM D5185m 870 1206 1218 1047 Sulfur ppm ASTM D5185m 2040 2754 3330 2205 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >+100 7 16 10 Sodium ppm ASTM D5185m 210 7 16 11	
Magnesium ppm ASTM D5185m 560 721 756 567 Calcium ppm ASTM D5185m 1510 1937 2148 1659 Phosphorus ppm ASTM D5185m 780 968 945 715 Zinc ppm ASTM D5185m 870 1206 1218 1047 Sulfur ppm ASTM D5185m 2040 2754 3330 2205 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >+100 7 16 10 Sodium ppm ASTM D5185m >20 5 8 4	
Magnesium ppm ASTM D5185m 560 721 756 567 Calcium ppm ASTM D5185m 1510 1937 2148 1659 Phosphorus ppm ASTM D5185m 780 968 945 715 Zinc ppm ASTM D5185m 870 1206 1218 1047 Sulfur ppm ASTM D5185m 2040 2754 3330 2205 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >+100 7 16 10 Sodium ppm ASTM D5185m >20 5 8 4 INFRA-RED method limit/base current history1 history1	
Magnesium ppm ASTM D5185m 560 721 756 567 Calcium ppm ASTM D5185m 1510 1937 2148 1659 Phosphorus ppm ASTM D5185m 780 968 945 715 Zinc ppm ASTM D5185m 870 1206 1218 1047 Sulfur ppm ASTM D5185m 2040 2754 3330 2205 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >+100 7 16 10 Sodium ppm ASTM D5185m >20 5 8 4 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 0.1 0.1 0	
Magnesium ppm ASTM D5185m 560 721 756 567 Calcium ppm ASTM D5185m 1510 1937 2148 1659 Phosphorus ppm ASTM D5185m 780 968 945 715 Zinc ppm ASTM D5185m 780 968 945 715 Zinc ppm ASTM D5185m 870 1206 1218 1047 Sulfur ppm ASTM D5185m 2040 2754 3330 2205 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >+100 7 16 10 Sodium ppm ASTM D5185m >20 5 8 4 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 0.1 0.1 0 1.4	/2
Magnesium ppm ASTM D5185m 560 721 756 567 Calcium ppm ASTM D5185m 1510 1937 2148 1659 Phosphorus ppm ASTM D5185m 780 968 945 715 Zinc ppm ASTM D5185m 870 1206 1218 1047 Sulfur ppm ASTM D5185m 2040 2754 3330 2205 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >+100 7 16 10 Sodium ppm ASTM D5185m >+100 7 16 10 Sodium ppm ASTM D5185m >20 5 8 4 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 0.1 0.1 0 Nitration Abs/cm<*ASTM D7415 >30 27.2	/2



OIL ANALYSIS REPORT





		VISUAL		method	limit/base	current	history1	history2
		White Metal	scalar	*Visual	NONE	NONE	LIGHT	NONE
	٨	Yellow Metal		*Visual	NONE	NONE	NONE	NONE
		Precipitate	scalar scalar	*Visual	NONE	NONE	NONE	NONE
	AN V	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	· · · · · · · · · · · · · · · · · · ·	Debris	scalar	*Visual	NONE	NONE	LIGHT	NONE
		_ Sand/Dirt		*Visual	NONE	NONE	NONE	NONE
118	20-	Appearance	scalar scalar	*Visual	NORML	NORML	NORML	NORML
Jul5/17 Mar12/18 Mar22/19	Jul23/20 Feb22/22	Odor		*Visual	NORML		NORML	NORML
2 2		Emulsified Water	scalar	*Visual	>0.1	NORML NEG	NEG	NEG
С		Free Water	scalar scalar	*Visual	>0.1	NEG	NEG	NEG
		FLUID PROPE		method	limit/base	current	history1	history2
	~~~~	Visc @ 100°C	cSt	ASTM D445	15.1	15.2	15.2	15.1
$\sim$	~	GRAPHS						
		Ferrous Alloys						
Jul5/17 Mar12/18 Mar22/19	Jul23/20 Feb22/22	40 udd 20 10 10 10 10 10 10 10 10 10 1	S Mari 2/18	Mar22/19 / Mar22/10 / Mar22/10 / Mar22/19 / Mar22/19 / Mar22/19 / Mar22/10 / Mar22/10 / Mar22/10 / Mar22/19 / Mar22/10 /		Base Number		
		Abnormal				Base		
					B/HOX 8.0			Λ
		6000 15 83 14			0.0 KOH/d) Base Number (mg KOH/d)			./\/
		14 Ann	~~	~~~	dumpe			$N^{\prime}$
		13 Abrormal			Z 4.0			V
		12-			2.0	• • • • • • • • • • • • • • • • • •		
			00	6 0 0	0.0	4	6	7 10
		May27/15 Feb16/16 Nov26/16	Mar12/18	Mar22/19 Jul23/20 Feh22/22		May27/15 Feb16/16 Nov26/16	Jul5/17 Mar12/18 Mar22/19	Jul23/20 Feb22/22
	Laboratory Sample No. Lab Number		01 Madis Received Diagnose	<b>d</b> : 20	ry, NC 27513 Nov 2023 Nov 2023	3 GFL Env		<b>1 - Raleigh(CNG)</b> Conquest Drive Garner, NC

Page 2 of 2