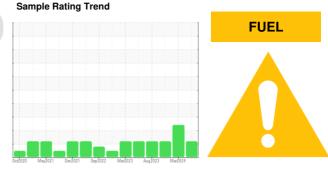


OIL ANALYSIS REPORT



history2

history2

history2

history2

history2

history2

history2

KEMP QUARRIES / PRYOR STONE [70706] **OHT110 Diesel Engine**

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

SAMPLE INFORMATION method limit/base current history1 PCA0086621 PCA0086249 PCA0108868 Sample Number **Client Info** 19 Jun 2024 29 Mar 2024 Sample Date Client Info 26 Oct 2023 29710 Machine Age hrs Client Info 29240 28435 Oil Age hrs Client Info 470 805 352 Oil Changed Client Info Changed Changed Changed ABNORMAL Sample Status SEVERE ABNORMAL CONTAMINATION method limit/base current history1 Water >0.2 NEG NEG WC Method NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current historv1 Iron ASTM D5185m >100 14 32 20 ppm ASTM D5185m >20 Chromium ppm <1 <1 <1 Nickel ASTM D5185m >2 <1 <1 0 ppm ASTM D5185m >2 Titanium ppm 1 <1 <1 Silver ppm ASTM D5185m >2 <1 0 0 Aluminum ASTM D5185m >25 2 2 2 ppm ASTM D5185m >40 1 Lead ppm <1 <1 1 ASTM D5185m 3 Copper >330 2 ppm Tin ppm ASTM D5185m >15 <1 1 <1 0 Vanadium ASTM D5185m 0 ppm <1 Cadmium ppm ASTM D5185m <1 <1 0 **ADDITIVES** method limit/base current history1 0 0 Boron ppm ASTM D5185m 3 <1 Barium ppm ASTM D5185m O 0 0 0 ASTM D5185m 60 58 60 55 Molybdenum ppm Manganese ASTM D5185m 0 <1 <1 <1 ppm 1010 902 Magnesium ppm ASTM D5185m 971 871 Calcium ASTM D5185m 1070 1087 1064 966 ppm Phosphorus ppm ASTM D5185m 1150 1037 1024 974 Zinc ASTM D5185m 1270 1278 1156 1195 ppm Sulfur 2060 3010 2884 ppm ASTM D5185m 3104 **CONTAMINANTS** method limit/base current history1 Silicon ASTM D5185m >25 4 5 8 ppm 2 Sodium ASTM D5185m 0 ppm 1 Potassium ASTM D5185m >20 2 2 2 ppm 10.3 8.5 Fuel % ASTM D3524 >5 6.8 **INFRA-RED** method limit/base current history1 % 0.5 0.9 0.6 Soot % *ASTM D7844 >3 Nitration Abs/cm *ASTM D7624 >20 7.4 10.3 8.4 20.0 Sulfation *ASTM D7415 >30 18.7 19.2 Abs/.1mm **FLUID DEGRADATION** method limit/base current history1 *ASTM D7414 >25 14.5 18.4 15.8 Oxidation Abs/.1mm

Base Number (BN) mg KOH/g ASTM D2896 9.8

8.8

7.8

DIAGNOSIS Recommendation

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. (Customer Sample Comment: Pm1 performed. All oil samples taken. Engine oil, engine oil filters, fuel filters, and air filters replaced.)

Ares

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil.

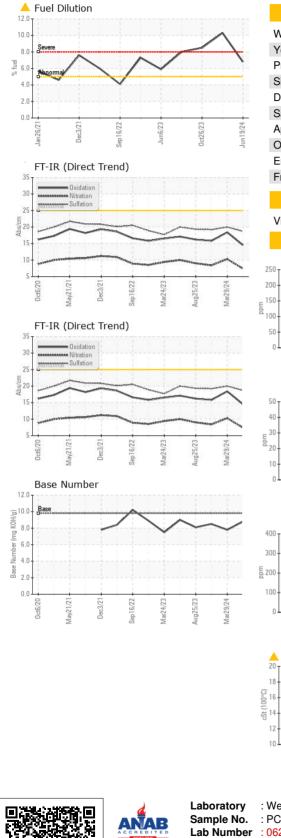
Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

8.5



OIL ANALYSIS REPORT



			100	JAL				method	limit/ba	se	С	urrent		histo	ryı	nı	story2
		w	hite I	Metal		scala	ar *	Visual	NONE		NO	NE		NONE		NO	NE
_		Ye	ellow	Metal		scala	ar *	Visual	NONE		NO	NE		NONE		NO	NE
		Pr	ecipi	tate		scala		Visual	NONE		NO	NE		NONE		NO	NE
		Si	lt			scala	ar *	Visual	NONE		NO	NE		NONE		NO	NE
		De	ebris			scala	ar *	Visual	NONE		NO	NE		NONE		NO	NE
		Sa	and/E	Dirt		scala	ar *	Visual	NONE		NO	NE		NONE		NO	NE
6/23 -	9/24	Ap	opea	rance		scala	ar *	Visual	NORML		NO	RML		NORM	1L	NO	RML
0ct2	Jun1					scala	ar *	Visual	NORML					NORM	1L	NO	RML
		Er	nulsi	fied W	/ater	scala	ar *	Visual	>0.2		NE	G		NEG		NE	G
		Fr	ee W	/ater		scala					NE	G		NEG		NE	G
			FLU	ID PI	ROPE	RTIE	S	method	limit/ba	se	С	urrent		histo	ry1	hi	story2
	-	Vi	sc @) 100°	С	cSt	A	STM D445	15.4	-	12.	3		11.2		1 2.0)
		(GR/	APHS	5												
and the local division of the	~		[ron	(ppm))						Leac	l (ppm	ı)				
53	64		Severe				1				Severe						
1g25/2	ar29/2									0.0							
Au	N	E 100	Abnorm	nal						ud.	Abnor	nal	1				
											Ţ						
		0 0	-				-		\sim	0							
			t6/20	21/21.	c3/21.	6/22 -	4/23	5/23	29/24		t6/20	21/21.	c3/21.	6/22 .	4/23	5/23	9/24
		0	0	Mayi	Det	Sep1	Mar2	Aug2	Mar2		00	Mayé	Dec	Sep1	Mar2	Aug2	Mar29/24
	~		Alum	inum	(ppm)						Chro	mium	(ppn	ר)			
-		⁵⁰	Saure							50	Same						
WW IN ADDRESS TO BE ADDRESS OF	~		Gevele					1		40-	Gevere						
33	- + + -	ي ³⁰	Abnorm	nal						E 30	Abro	nal					
1g25/2	ar29/2										Aunon	IIdi					
Au	W	10-						\sim		10-							
		0 L	107/	121	1/21	122	/23	/23	/24	0	/20	/21	1/21	/22	23	/23	24
		0	Uctb	May21	Dec3	Sep 16,	Mar24,	Aug25,	Mar29		0ct6	May21	Dec3	Sep 16,	Mar24,	Aug25/	Mar29/24
~	\checkmark		Сорр	er (pp	om)							on (pp	m)				
			Asvere	ıal							Severe	1	1	1			
		_								문 ⁴⁰	Abnon	nal					
23 -	24	100-								20-							
Aug25//	Mar29/	οL	- Inz	21-	/21-	22	23	23	24	0	20	21-	21	22	23-	Z3-	24+
-		ġ	Uctb	May21	Dec3	Sep 16/	Mar24/	Aug25/	Mar29,		0ct6/	May21.	Dec3,	Sep 16/	Mar24/	Aug25/	Mar29/24
			Visco		0 100°	2					Base		ber			-	
		20	AL-				1		3	12.0 10.0	Base						
				ıdi							0					~	
		001	Base							u 0.0					-		
			Abnorm	nal		~		to to to	- And	4.0 -							
		12	~	-	~		~			2.0-							
		10	+ 07/	121-	3/21+	/22 -	/23 -	/23	/24	0.0	/20	1/21-	1/21	/22	/23 -	/23 -	/24-
		0	Uct6/20	May21/2	Dec3/21	Sep 16/22	Mar24/23	Aug25/23	Mar29/24		0ct6/20	May21/21	Dec3/21	Sep16/22	Mar24/23	Aug25/23	Mar29/24
	Aug25/23 - Aug25/23 - Oct26/23 -	Aug25/23 + + + + + + + + + + + + + + + + + + +	CZ052DnV CZ052DNV CZ052D	EUG2DD EUG2DD	Debris Sand/Dirt Appearance Odor Emulsified W Free Water FLUID P Visc @ 100° GRAPHS Iron (ppm) 400 - 02900 Aluminum 50 - 02900 Aluminum 50 - 02900 Copper (pp 400 - 02900 Copper (pp	Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Iron (ppm) 4000 1000 1000 1000 1000 1000 1000 100	Debris scala Sand/Dirt scala Appearance scala Odor scala Emulsified Water scala Free Water scala Free Water scala Free Water scala Free Water scala Free Water scala Fluid PROPERTIE Visc @ 100°C cSt GRAPHS Iron (ppm) 400 400 400 400 400 400 400 400 400 40	Debris scalar * Sand/Dirt scalar * Appearance scalar * Odor scalar * Odor scalar * Odor scalar * Free Water scalar * Otor (c)	Debris scalar *Visual Sand/Dirt scalar *Visual Appearance scalar *Visual Odor scalar *Visual Emulsified Water scalar *Visual Free Water Scalar *Visual Aluminum (ppm) Aluminum (ppm) Aluminum (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm)	Debris scalar *Visual NONE Sand/Dirt scalar *Visual NONE Appearance scalar *Visual NORML Odor scalar *Visual NORML Emulsified Water scalar *Visual >0.2 Free Water scalar *Visual	Debris scalar *Visual NONE Sand/Dirt scalar *Visual NONE Appearance scalar *Visual NORML Odor scalar *Visual NORML Codor scalar *Visual NORML Emulsified Water scalar *Visual >0.2 Free Water scalar *Visual *0 Fuel Water scalar *0 Fuel Wate	Debris scalar *Visual NONE NO Sand/Dirt scalar *Visual NONE NO Appearance scalar *Visual NORML NO Codor scalar *Visual NORML NO Emulsified Water scalar *Visual NORML NO Visc @ 100°C cSt ASTM D445 15.4 12. GRAPHS Iron (ppm)	Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML N	Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NORML Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Odor scalar *Visual NORML NORM	Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NORML NORML NORM Appearance scalar *Visual NORML NORML NORM Dodor scalar *Visual NORML NORM NORM Emulsified Water scalar *Visual NORM NORM NE Free Water scalar *Visual NORM NE Visc @ 100°C cst ASTM D445 15.4 12.3 11.2 GRAPHS Tron (ppm) Aluminum (ppm) Aluminum (ppm) Aluminum (ppm) Copper	Debris scalar Visual NONE NONE NONE NONE Sand/Dirt scalar Visual NORML NORML NORML NORML Appearance scalar Visual NORML NORML NORML NORML Emulsified Water scalar Visual NORML NORML NORML Free Water scalar Visual NORML NORML NORML Visual NORML	Debris scalar 'Visual NONE NONE NONE NONE NONE NONE NONE NON

* - Denotes test methods that are of Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

回路

F: