

OIL ANALYSIS REPORT

Area KEMP QUARRIES / KEMP STONE - FAIRLAND [70959] **WP023**

Diesel Engine Fluic PETRO CANADA DURON HP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. (Customer Sample Comment: Changed fluid and filters)

Wear

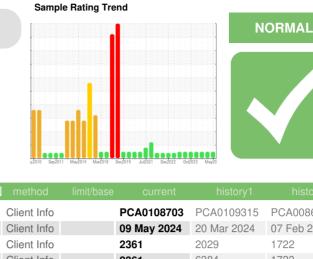
All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

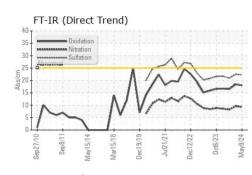
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

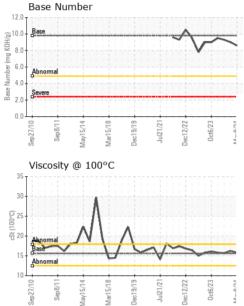


SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0108703	PCA0109315	PCA0086492
Sample Date		Client Info		09 May 2024	20 Mar 2024	07 Feb 2024
Machine Age	hrs	Client Info		2361	2029	1722
Oil Age	hrs	Client Info		2361	6384	1723
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>51	24	24	18
Chromium	ppm	ASTM D5185m	>11	1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>31	3	3	2
Lead	ppm	ASTM D5185m	>26	2	3	<1
Copper	ppm	ASTM D5185m	>26	2	2	0
Tin	ppm	ASTM D5185m	>4	1	1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		<1	<1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		1	0	3
Barium	ppm	ASTM D5185m		0	1	0
Molybdenum	ppm	ASTM D5185m		75	73	68
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		1150	1089	1108
Calcium	ppm	ASTM D5185m		1273	1298	1169
Phosphorus	ppm	ASTM D5185m		1160	1147	1176
Zinc	ppm	ASTM D5185m		1442	1422	1457
Sulfur	ppm	ASTM D5185m		3415	3468	3345
CONTAMINAN	TS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>22	5	4	3
Sodium	ppm	ASTM D5185m	>31	2	0	2
Potassium	ppm	ASTM D5185m	>20	2	2	<1
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	1.1	1.4	0.8
Nitration	Abs/cm	*ASTM D7624	>20	9.3	9.6	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.2	22.4	20.9
FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.0	18.4	16.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.6	9.0	9.3



OIL ANALYSIS REPORT





	VISUAL		method	limit/base	current	history1	history2		
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE		
~	Yellow Metal		*Visual	NONE	NONE	NONE	NONE		
1	Precipitate		*Visual	NONE	NONE	NONE	NONE		
\sim	Silt		*Visual	NONE	NONE	NONE	NONE		
	Debris		*Visual	NONE	NONE	NONE	NONE		
	Sand/Dirt		*Visual	NONE	NONE	NONE	NONE		
22 - 23 - 24 -			*Visual	NORML	NORML	NORML	NORML		
Dec12/22 0ct6/23 May9/24	Appearance			NORML	-	NORML	NORML		
	Ouoi		*Visual		NORML				
	Emulsified Water		*Visual	>0.21	NEG	NEG	NEG		
A	Free Water		*Visual	11	NEG	NEG	NEG		
\sim	FLUID PROPE Visc @ 100°C	cSt	method ASTM D445	limit/base	current	history1 16.2	history2 15.7		
	GRAPHS	COL	A31101 D443	15.0	15.0	10.2	13.7		
	Iron (ppm)				Lead (ppm)				
	200 Severe	1012010	1110110000	40					
Dec12/22 0ct6/23	150-			30	0				
Decl 0c	<u>۾</u> اور			Ę.20	0	Λ			
		Λ				Λ			
	50 - Controlling	1VV	\sim	10	0 - Severe Abnormal				
		6	22 -	4	0	19 21	22		
	Sep27/10 - Sep8/11 - May15/14 -	Dec19/19	Jul21/21 Dec12/22 Oct6/23	May9/24 -	Sep27/10 Sep8/11 May15/14	Mar15/18 Dec19/19 Jul21/21	Dec12/22 0ct6/23 May9/24		
		De		2		_	ă - 2		
	Aluminum (ppm)			2	Chromium (p	pm)			
	50 -			2	Severe				
	40-			debies .					
/23	abnormal			d.	Abnormal				
Dec12/22 Oct6/23 ^^^	20				5 - 1				
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		61/6	Jul21/21 - Jec12/22 - Oct6/23 -	May9/24	8/11 8/11	Mar15/18 Dec19/19 -	Dec12/22 - 0ct6/23 - May9/24 -		
	Sep27/10 Sep8/11 Mar15/18 Mar15/18	Dec19/19	Jul21/21 Dec12/22 0ct6/23	May	Sep27/10 Sep8/11 May15/14	Mar15/18 Dec19/19 Jul21/21	Dec12/22 0ct6/23 May9/24		
	Copper (ppm) Silicon (ppm)								
	150								
	Severe			3	0 - Severe				
	100			Ed 2	Abnormal				
	50								
	Abnormal	+++++	+++++++++++++++++++++++++++++++++++++++	1		$\sim \sim \sim$			
		-	3 12				4		
	Sep27/10 Sep8/11 May15/14 Mar15/18	Dec19/19	Jul21/21 Dec12/22 Oct6/23	May9/24	Sep27/10 Sep8/11 May15/14	Mar15/18 Dec19/19 Jul21/21	Dec12/22 0ct6/23 May9/24		
	~ 2 =		, ă	2			ă 2		
	Viscosity @ 100°C	•		12.	Base Number	-			
	30			(^B)H0.	Deve		~~~		
				(b/H0) Bay Participant Bay Par	0				
	0.025 දේ 25 දේ 20 Abnormal	٨		age 6.					
	10 Dase	15	1-	un 4. 92 2.	Severe				
	10 Abnormal			⁸⁰ 2.					
	Sep27/10 Sep8/11 May15/14 Mar15/18	Dec19/19	Jul21/21 Jec12/22 Oct6/23	May9/24		Mar15/18 Dec19/19 Jul21/21	Dec12/22 0ct6/23 May9/24		
	Sep27/10 Sep8/11 May15/18 Mar15/18	Decl	Jul21/2 Dec12/22 Oct6/23	Maj	Sep27/10 Sep8/11 May15/14	Marì Dec1 Jul2	Dec1 Oct May		
Laboratory	: WearCheck USA - 50	1 Madisc	n Ave., Car	y, NC 27513	Kemp (Quarries - Kemp	Stone - Fairland		
Sample No. : PCA0108703 Received : 23 May 2024							8350 S 590 Rd		
Lab Number		Teste		5 May 2024			Fairland, OK US 74343		
	que Number : 11046657 Diagnosed : 29 May 2024 - Sean Felton US st Package : MOB 1 (Additional Tests: TBN) Contact: FAIRLAND NOTIFIC/								
				a	Contac				
, , ,	contact Customer Serv					rairiand@l	empstone.com T·		

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: KEMFAI [WUSCAR] 06189905 (Generated: 05/29/2024 10:12:27) Rev: 1

Certificate L2367

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