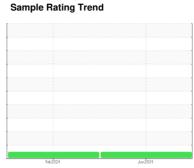


OIL ANALYSIS REPORT







PR7650
Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

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.

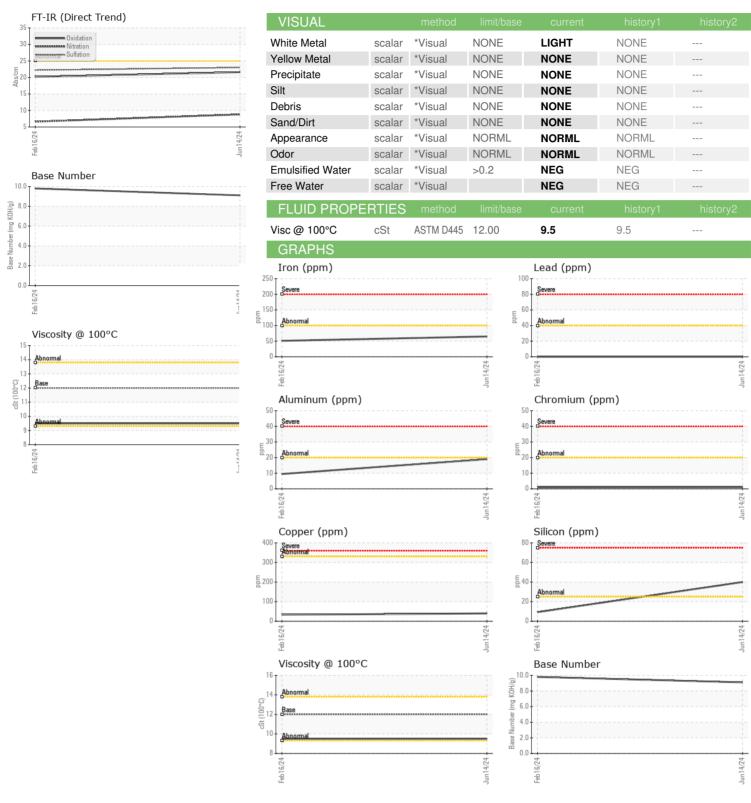
Fluid Condition

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

Client Info PCA0128926 PCA0118913	iAL)			Feb 2024	Jun2024		
Client Info	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 10407 6140 Clil Age mls Client Info 0 0 0 Clil Age mls Client Info 0 0 0 Clil Age mls Client Info N/A Not Changed NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL	Sample Number		Client Info		PCA0128926	PCA0118913	
Oil Age mls Client Info N/A Not Changed	Sample Date		Client Info		14 Jun 2024	16 Feb 2024	
Oil Changed Client Info N/A Not Changed NORMAL NORMAL	•	mls	Client Info		10407	6140	
NORMAL NORMAL CONTAMINATION method imit/base current history1 history2	-	mls	Client Info		0	0	
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	-		Client Info				
Fuel					NORMAL	NORMAL	
Water WC Method >0.2 NEG NEG Glycol WC Method Imit/base current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 65 51 Chromium ppm ASTM D5185m >20 1 1 Nickel ppm ASTM D5185m >4 -1 -1 Silver ppm ASTM D5185m >3 0 0 Silver ppm ASTM D5185m >20 19 10 Silver ppm ASTM D5185m >40 0 0 Silver ppm ASTM D5185m >40 0 0 Copper ppm ASTM D5185m >10 0 0 Tin ppm ASTM D5185m >10 0 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	
Chromium	Glycol		WC Method		NEG	NEG	
Chromium	WEAR METAL	_S	method	limit/base	current	history1	history2
Nickel	ron	ppm	ASTM D5185m	>100	65	51	
Description		ppm	ASTM D5185m			1	
Silver	Nickel	ppm	ASTM D5185m	>4	<1	<1	
Aluminum		ppm	ASTM D5185m		0	<1	
Lead	Silver	ppm	ASTM D5185m	>3	0	0	
Copper	Aluminum	ppm	ASTM D5185m	>20	19	10	
Proceedings Proceedings Processes	_ead	ppm	ASTM D5185m	>40	0	0	
Vanadium ppm ASTM D5185m 0 <1 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 48 61 Barium ppm ASTM D5185m 0 0 <1 Wolybdenum ppm ASTM D5185m 0 41 39 Wanganese ppm ASTM D5185m 0 12 10 Magnesium ppm ASTM D5185m 950 541 472 Calcium ppm ASTM D5185m 950 541 472 Phosphorus ppm ASTM D5185m 995 843 727 Zinc ppm ASTM D5185m 2600 2838 2242 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>330	40	33	
ADDITIVES	Tin	ppm	ASTM D5185m	>15	4	3	
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	<1	
Boron ppm ASTM D5185m 2 48 61	Cadmium	ppm	ASTM D5185m		0	0	
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 41 39 Manganese ppm ASTM D5185m 0 12 10 Magnesium ppm ASTM D5185m 950 541 472 Calcium ppm ASTM D5185m 1050 1743 1591 Phosphorus ppm ASTM D5185m 995 843 727 Zinc ppm ASTM D5185m 995 843 840 Sulfur ppm ASTM D5185m 2600 2838 2242 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 40 9 Sodium ppm ASTM D5185m >20 42 22 Potassium ppm ASTM D5185m >20 42 22 INFRA-RED method limit/base	Boron	ppm	ASTM D5185m	2	48	61	
Manganese ppm ASTM D5185m 0 12 10 Magnesium ppm ASTM D5185m 950 541 472 Calcium ppm ASTM D5185m 1050 1743 1591 Phosphorus ppm ASTM D5185m 995 843 727 Zinc ppm ASTM D5185m 1180 983 840 Sulfur ppm ASTM D5185m 2600 2838 2242 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 40 9 Sodium ppm ASTM D5185m >20 42 22 Potassium ppm ASTM D5185m >20 42 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624	Barium	ppm	ASTM D5185m	0	0	<1	
Magnesium ppm ASTM D5185m 950 541 472 Calcium ppm ASTM D5185m 1050 1743 1591 Phosphorus ppm ASTM D5185m 995 843 727 Zinc ppm ASTM D5185m 1180 983 840 Sulfur ppm ASTM D5185m 2600 2838 2242 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 40 9 Sodium ppm ASTM D5185m >20 42 22 Potassium ppm ASTM D5185m >20 42 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.2 Sulfation Abs/cm *ASTM D7624	Molybdenum	ppm	ASTM D5185m	50	41	39	
Calcium ppm ASTM D5185m 1050 1743 1591 Phosphorus ppm ASTM D5185m 995 843 727 Zinc ppm ASTM D5185m 1180 983 840 Sulfur ppm ASTM D5185m 2600 2838 2242 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 40 9 Sodium ppm ASTM D5185m 8 6 Potassium ppm ASTM D5185m >20 42 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.2 Nitration Abs/cm *ASTM D7415 >30 23.0 22.2 FLUID DEGRADATION method limit	Manganese	ppm	ASTM D5185m	0	12	10	
Phosphorus ppm ASTM D5185m 995 843 727 Zinc ppm ASTM D5185m 1180 983 840 Sulfur ppm ASTM D5185m 2600 2838 2242 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 40 9 Sodium ppm ASTM D5185m 8 6 Potassium ppm ASTM D5185m >20 42 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 8.8 6.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 22.2 FLUID DEGRADATION method limit/base <td>Magnesium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>950</td> <td>541</td> <td>472</td> <td></td>	Magnesium	ppm	ASTM D5185m	950	541	472	
Zinc ppm ASTM D5185m 1180 983 840 Sulfur ppm ASTM D5185m 2600 2838 2242 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 40 9 Sodium ppm ASTM D5185m 8 6 Potassium ppm ASTM D5185m >20 42 22 INFRA-RED method limit/base current history1 history2 Soot % 'ASTM D7844 >3 0.4 0.2 Nitration Abs/cm 'ASTM D7624 >20 8.8 6.6 Sulfation Abs/.1mm 'ASTM D7415 >30 23.0 22.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm 'ASTM D7414 >25 21.6 20.2	Calcium	ppm	ASTM D5185m	1050	1743	1591	
Sulfur ppm ASTM D5185m 2600 2838 2242 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 40 9 Sodium ppm ASTM D5185m 8 6 Potassium ppm ASTM D5185m >20 42 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 8.8 6.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 22.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.6 20.2	Phosphorus	ppm	ASTM D5185m	995	843	727	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 40 9 Sodium ppm ASTM D5185m 8 6 Potassium ppm ASTM D5185m >20 42 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 8.8 6.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 22.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.6 20.2	Zinc	ppm	ASTM D5185m	1180	983	840	
Solition ppm ASTM D5185m >25 40 9	Sulfur	ppm	ASTM D5185m	2600	2838	2242	
Sodium ppm ASTM D5185m 8 6 Potassium ppm ASTM D5185m >20 42 22 INFRA-RED method limit/base current history1 history2 Soot %	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 42 22 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 8.8 6.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 22.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.6 20.2	Silicon	ppm	ASTM D5185m	>25	40	9	
INFRA-RED	Sodium	ppm	ASTM D5185m		8	6	
Soot % *ASTM D7844 >3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 8.8 6.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 22.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.6 20.2	Potassium	ppm	ASTM D5185m	>20	42	22	
Nitration Abs/cm *ASTM D7624 >20 8.8 6.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.0 22.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.6 20.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 23.0 22.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.6 20.2	Soot %	%	*ASTM D7844	>3	0.4	0.2	
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.6 20.2	Nitration	Abs/cm	*ASTM D7624	>20	8.8	6.6	
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	23.0	22.2	
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.1 9.8	Oxidation	Abs/.1mm	*ASTM D7414	>25	21.6	20.2	
	Base Number (BN)	mg KOH/g	ASTM D2896		9.1	9.8	



OIL ANALYSIS REPORT







Certificate 12367

Laboratory Sample No.

Lab Number : 06216633

: PCA0128926

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received **Tested** Unique Number : 11089497

: 24 Jun 2024 Diagnosed : 24 Jun 2024 - Sean Felton

: 21 Jun 2024

Test Package : MOB 1 (Additional Tests: TBN) To discuss this sample report, contact Customer Service at 1-800-237-1369.

 st - 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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