

OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **328288**

Component **Diesel Engine**

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the

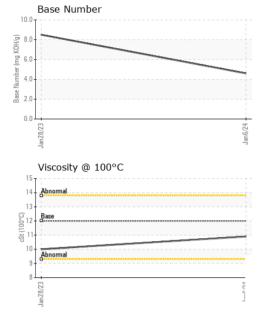
Fluid Condition

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

	iAL)			Jan2023	Jan 2024		
Client Info	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 34807 13027	Sample Number		Client Info		PCA0097309	PCA0071733	
Oil Age mls Client Info 21780 13027	Sample Date		Client Info		06 Jan 2024	28 Jan 2023	
Contained Client Info Changed Changed	Machine Age	mls	Client Info		34807	13027	
CONTAMINATION method limit/base current history1 history2	Oil Age	mls	Client Info		21780	13027	
CONTAMINATION	Oil Changed		Client Info		Changed	Changed	
Fuel	Sample Status				NORMAL	NORMAL	
Water Glycol WC Method WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 38 68 Chromium ppm ASTM D5185m >20 1 2 Nickel ppm ASTM D5185m >4 <1 <1 Silver ppm ASTM D5185m >4 <1 <1 Silver ppm ASTM D5185m >40 0 -1 Aluminum ppm ASTM D5185m >20 12 11 Lead ppm ASTM D5185m >40 0 <1 Copper ppm ASTM D5185m >15 2 3 Vanadium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current h	CONTAMINATION	NC	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 38 68 Chromium ppm ASTM D5185m 20 1 2 Nickel ppm ASTM D5185m 20 1 2 Titanium ppm ASTM D5185m 3 0 0 Aluminum ppm ASTM D5185m >20 12 11 Lead ppm ASTM D5185m >20 12 11 Copper ppm ASTM D5185m >15 2 3 Vanadium ppm ASTM D5185m 0 0	Water		WC Method	>0.2	NEG	NEG	
Chromium	Glycol		WC Method		NEG	NEG	
Chromium ppm ASTM D5185m >20	WEAR METALS	;	method	limit/base	current	history1	history2
Strickel	ron	ppm	ASTM D5185m	>100	38		
Titanium	Chromium	ppm	ASTM D5185m	>20	1	2	
Silver	Nickel	ppm	ASTM D5185m	>4	<1	<1	
Aluminum	Titanium	ppm	ASTM D5185m		15	5	
Lead	Silver	ppm					
Copper	Aluminum	ppm	ASTM D5185m	>20	12	11	
Tin	Lead	ppm					
Vanadium ppm ASTM D5185m <1 0 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 9 44 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 50 54 40 Manganese ppm ASTM D5185m 0 2 8 Magnesium ppm ASTM D5185m 950 837 521 Calcium ppm ASTM D5185m 950 837 728 Phosphorus ppm ASTM D5185m 995 937 728 Zinc ppm ASTM D5185m 2600 3030 2575 CONTAMINANTS method limit/base current history1	Copper	ppm		>330	9	30	
ADDITIVES		ppm		>15			
ADDITIVES	Vanadium	ppm	ASTM D5185m				
Soron ppm ASTM D5185m 2 9 44		ppm	ASTM D5185m		0	0	
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 54 40 Manganese ppm ASTM D5185m 0 2 8 Magnesium ppm ASTM D5185m 950 837 521 Calcium ppm ASTM D5185m 1050 1294 1747 Phosphorus ppm ASTM D5185m 995 937 728 Zinc ppm ASTM D5185m 1180 1176 922 Sulfur ppm ASTM D5185m 2600 3030 2575 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 13 Sodium ppm ASTM D5185m >25 8 Potassium ppm ASTM D5185m >20 13 17 INFRA-RED method limit/base current<	Boron	ppm				44	
Manganese ppm ASTM D5185m 0 2 8 Magnesium ppm ASTM D5185m 950 837 521 Calcium ppm ASTM D5185m 1050 1294 1747 Phosphorus ppm ASTM D5185m 995 937 728 Zinc ppm ASTM D5185m 1180 1176 922 Sulfur ppm ASTM D5185m 2600 3030 2575 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >25 6 13 Solicon ppm ASTM D5185m >25 8 Potassium ppm ASTM D5185m >20 13 17 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20	Barium	ppm	ASTM D5185m	0	0	0	
Magnesium ppm ASTM D5185m 950 837 521 Calcium ppm ASTM D5185m 1050 1294 1747 Phosphorus ppm ASTM D5185m 995 937 728 Zinc ppm ASTM D5185m 1180 1176 922 Sulfur ppm ASTM D5185m 2600 3030 2575 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 13 Sodium ppm ASTM D5185m >20 13 17 Potassium ppm ASTM D5185m >20 13 17 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 10.5 10.6 Sulfation Abs/.1mm *ASTM D7414 </td <td>Molybdenum</td> <td>ppm</td> <td></td> <td></td> <td>54</td> <td></td> <td></td>	Molybdenum	ppm			54		
Calcium ppm ASTM D5185m 1050 1294 1747 Phosphorus ppm ASTM D5185m 995 937 728 Zinc ppm ASTM D5185m 1180 1176 922 Sulfur ppm ASTM D5185m 2600 3030 2575 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >25 6 13 Solium ppm ASTM D5185m 5 8 Potassium ppm ASTM D5185m >20 13 17 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 10.5 10.6 Sulfation Abs/.1mm *ASTM D741	-	ppm	ASTM D5185m	0	2	8	
Phosphorus ppm ASTM D5185m 995 937 728 Zinc ppm ASTM D5185m 1180 1176 922 Sulfur ppm ASTM D5185m 2600 3030 2575 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 13 Sodium ppm ASTM D5185m 5 8 Potassium ppm ASTM D5185m >20 13 17 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 10.5 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.1 23.4 FLUID DEGRADATION method limit/base	Magnesium	ppm	ASTM D5185m		837	521	
Zinc ppm ASTM D5185m 1180 1176 922 Sulfur ppm ASTM D5185m 2600 3030 2575 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 13 Sodium ppm ASTM D5185m 5 8 Potassium ppm ASTM D5185m >20 13 17 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 10.5 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.1 23.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.3 23.3		ppm	ASTM D5185m		-	1747	
Sulfur ppm ASTM D5185m 2600 3030 2575 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 13 Sodium ppm ASTM D5185m 5 8 Potassium ppm ASTM D5185m >20 13 17 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 10.5 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.1 23.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.3 23.3		ppm					
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 13 Sodium ppm ASTM D5185m 5 8 Potassium ppm ASTM D5185m >20 13 17 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 10.5 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.1 23.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.3 23.3	-	ppm					
Silicon ppm ASTM D5185m >25 6 13 Sodium ppm ASTM D5185m 5 8 Potassium ppm ASTM D5185m >20 13 17 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 10.5 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.1 23.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.3 23.3			ASTM D5185m		3030	2575	
Sodium ppm ASTM D5185m 5 8 Potassium ppm ASTM D5185m >20 13 17 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 10.5 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.1 23.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.3 23.3		S		limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 13 17 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.5 Nitration Abs/cm *ASTM D7624 >20 10.5 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.1 23.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.3 23.3		ppm		>25			
INFRA-RED		ppm					
Soot % % *ASTM D7844 >3 0.6 0.5 Nitration Abs/cm		ppm	ASTM D5185m	>20	13	17	
Nitration Abs/cm *ASTM D7624 >20 10.5 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 21.1 23.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.3 23.3	INFRA-RED			limit/base			history2
Sulfation Abs/.1mm *ASTM D7415 >30 21.1 23.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.3 23.3	Soot %	%		>3		0.5	
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm 'ASTM D7414 >25 18.3 23.3	Nitration	Abs/cm	*ASTM D7624	>20			
Oxidation				>30	21.1	23.4	
	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 4.6 8.5	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.3	23.3	
	Base Number (BN)	mg KOH/g	ASTM D2896		4.6	8.5	



OIL ANALYSIS REPORT



VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	10.9	10.0	

Visc @ 100°C	cSt	ASTM D445	12.00	10.9	10.0	
GRAPHS						
Iron (ppm)				Lead (ppm))	
Severe				Severe Severe		
				E 60		
Abnormal		***************************************		Abnormal	***************************************	
				20		
9/23+			Jan6/24 +	0 123		
Jan 28/23			Jan	Jan28/23		
Aluminum (ppm)				Chromium	(ppm)	
Severe				Severe		
Abnormal						
Abnormal		***************************************		Abnormal	***************************************	
-				10		
+ 1/23			1/24	0 1/23		
Jan 28/23			Jan 6/24	Jan 28/23		
Copper (ppm)				Silicon (ppn	n)	
Severe Abmonnal				80 - Severe		
				60		
1				Abnormal		
				20		
723			724	0 1 23 ± 0		
Jan28/23			Jan6/24 -	Jan 28/23		
Viscosity @ 100°	С			Base Numb	er	
Abnormal				0H/g) 8.0		
Abnormal			0000	B 6.0		
				4.0		
Base				8.0 8.0 6.0 4.0 2.0 4.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2		
Jan 28/23 +			Jan 6/24	0.0 O.0		
28			9	60		





Laboratory Sample No.

Lab Number : 06084521 Unique Number : 10871966

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0097309 Received **Tested**

Diagnosed

: 09 Feb 2024 : 09 Feb 2024 : 09 Feb 2024 - Wes Davis 66 KELLER AVENUE LANCASTER, PA

Contact: RON ROBERTS rroberts@millertransgroup.com T: (717)945-6205

MILLER TRUCK LEASING #123

Test Package: MOB 1 (Additional Tests: TBN) 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)

F: (717)945-5818

US 17601