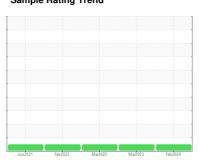


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 302620 Component

Diesel Engine

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

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

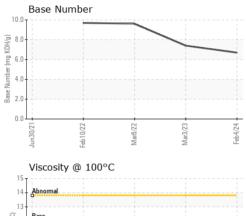
Fluid Condition

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

Sample Number Client Info PCA0110658 PCA0083879 PCA00610 Sample Date Client Info O4 Feb 2024 03 Mar 2023 08	QTS)		Jun 2021	Feb2022	Mar2022 Mar2023	Feb2024	
Sample Date	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		PCA0110658	PCA0083879	PCA0061039
Machine Age mls Client Info 79478 51592 34046 Oil Age mls Client Info 27886 17546 8288 Oil Changed Client Info Changed Changed Changed Sample Status NORMAL NORMAL NORMAL VORMED NORMAL NORMAL NORMAL Word WC Method >5 <1.0 <1.0 Vater WC Method >0.2 NEG NEG NEG Hron Dpm ASTM D5185m >10.0 41 49 34 WEAR METALS method limit/bass current history history Iron ppm ASTM D5185m >10.0 41 49 34 WEAR METALS method limit/bass current history history Iron ppm ASTM D5185m >20 <1 2 1 Nickel ppm ASTM D5185m >20 <1 0 0			Client Info		04 Feb 2024	03 Mar 2023	08 Mar 2022
Oil Age mls Client Info 27886 17546 8268 Oil Changed Client Info Changed NEG	•	mls					
Oil Changed Sample Status Client Info Changed NORMAL NEG NEG </th <th></th> <th></th> <th>Client Info</th> <th></th> <th>27886</th> <th>17546</th> <th></th>			Client Info		27886	17546	
Sample Status	-		Client Info		Changed	Changed	Changed
Fuel					_		Ü
Water WC Method >0.2 NEG Listory Neg Listory Neg Listory Neg Act Neg Neg <th>CONTAMINAT</th> <th>ION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINAT	ION	method	limit/base	current	history1	history2
Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >100 41 49 34 Chromium ppm ASTM D5185m >20 <1 2 1 Nickel ppm ASTM D5185m >4 0 <1 0 Silver ppm ASTM D5185m >4 0 <1 <1 Silver ppm ASTM D5185m >20 13 14 10 Aluminum ppm ASTM D5185m >20 13 14 10 Lead ppm ASTM D5185m >20 13 14 10 Copper ppm ASTM D5185m >20 13 14 10 Copper ppm ASTM D5185m >330 4 4 8 Tin ppm ASTM D5185m 15 1 2 2	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Chromium ppm ASTM D5185m >20 <1 2 1 Nickel ppm ASTM D5185m >4 0 <1	Iron	ppm	ASTM D5185m	>100	41	49	34
Nickel	Chromium		ASTM D5185m	>20	<1	2	1
Titanium	Nickel	ppm	ASTM D5185m	>4	0	<1	0
Silver ppm ASTM D5185m >3 <1 0 0 Aluminum ppm ASTM D5185m >20 13 14 10 Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >330 4 4 8 Tin ppm ASTM D5185m >15 1 2 2 2 Antimony ppm ASTM D5185m 0 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 ADDITIVES method limit/base current history1 history1 history1 ADDITIVES method limit/base current history1 history1 ADDITIVES method limit/base current history1 history3 Boron ppm ASTM D5185m 0 25 0 0 0 Boron ppm <td>Titanium</td> <td></td> <td>ASTM D5185m</td> <td></td> <th></th> <td><1</td> <td><1</td>	Titanium		ASTM D5185m			<1	<1
Aluminum	Silver			>3	<1	0	0
Lead	Aluminum		ASTM D5185m	>20	13	14	10
Copper ppm ASTM D5185m >330 4 4 8 Tin ppm ASTM D5185m >15 1 2 2 Antimony ppm ASTM D5185m Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 25 0 0 Barium ppm ASTM D5185m 0 25 0 0 Molybdenum ppm ASTM D5185m 0 <1	Lead		ASTM D5185m	>40	0	0	<1
Tin ppm ASTM D5185m >15 1 2 2 Antimony ppm ASTM D5185m Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 Boron ppm ASTM D5185m 2 3 7 30 Barium ppm ASTM D5185m 0 25 0 0 Molybdenum ppm ASTM D5185m 0 64 60 48 Manganese ppm ASTM D5185m 0 <1 <1 1 Magnesium ppm ASTM D5185m 950 889 984 887 Calcium ppm ASTM D5185m 995 1001 1052 926 Zinc ppm ASTM D5185m 995 1001 1052 926 Zinc ppm ASTM D5185m 2600 3200 3561 2510	Copper		ASTM D5185m	>330	4	4	8
Antimony ppm ASTM D5185m			ASTM D5185m	>15	1	2	
Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 2 3 7 30 Barium ppm ASTM D5185m 0 25 0 0 Molybdenum ppm ASTM D5185m 50 64 60 48 Manganese ppm ASTM D5185m 50 64 60 48 Manganesium ppm ASTM D5185m 950 889 984 887 Calcium ppm ASTM D5185m 950 1001 1052 1181 1147 Phosphorus ppm ASTM D5185m 995 1001 1052 926 Zinc ppm ASTM D5185m 2600 3200 3561 2510 CONTAMINANTS method limit/base <th>Antimony</th> <th></th> <th>ASTM D5185m</th> <th></th> <th></th> <th></th> <th></th>	Antimony		ASTM D5185m				
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 3 7 30 Barium ppm ASTM D5185m 0 25 0 0 Molybdenum ppm ASTM D5185m 50 64 60 48 Manganese ppm ASTM D5185m 50 64 60 48 Manganesium ppm ASTM D5185m 950 889 984 887 Calcium ppm ASTM D5185m 950 1102 1181 1147 Phosphorus ppm ASTM D5185m 995 1001 1052 926 Zinc ppm ASTM D5185m 2600 3200 3561 2510 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20	Vanadium		ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 2 3 7 30 Barium ppm ASTM D5185m 0 25 0 0 Molybdenum ppm ASTM D5185m 50 64 60 48 Manganese ppm ASTM D5185m 0 <1	Cadmium		ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 25 0 0 Molybdenum ppm ASTM D5185m 50 64 60 48 Manganese ppm ASTM D5185m 0 <1 <1 1 Magnesium ppm ASTM D5185m 950 889 984 887 Calcium ppm ASTM D5185m 1050 1102 1181 1147 Phosphorus ppm ASTM D5185m 1050 1102 1181 1147 Phosphorus ppm ASTM D5185m 995 1001 1052 926 Zinc ppm ASTM D5185m 2600 3200 3561 2510 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 4 5 5 Sodium ppm ASTM D5185m >20 12 12 11 INFRA-RED method limit/b	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 64 60 48 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m	2	3	7	30
Manganese ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m	0	25	0	0
Magnesium ppm ASTM D5185m 950 889 984 887 Calcium ppm ASTM D5185m 1050 1102 1181 1147 Phosphorus ppm ASTM D5185m 995 1001 1052 926 Zinc ppm ASTM D5185m 1180 1162 1220 1051 Sulfur ppm ASTM D5185m 2600 3200 3561 2510 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 4 5 5 Sodium ppm ASTM D5185m >20 12 12 11 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7624 >20 11.5 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 17.4 19.5 FLUID DEGRADATION *ASTM D74	Molybdenum	ppm	ASTM D5185m	50	64	60	48
Calcium ppm ASTM D5185m 1050 1102 1181 1147 Phosphorus ppm ASTM D5185m 995 1001 1052 926 Zinc ppm ASTM D5185m 1180 1162 1220 1051 Sulfur ppm ASTM D5185m 2600 3200 3561 2510 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 4 5 5 Sodium ppm ASTM D5185m >20 12 12 11 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7624 >20 11.5 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 17.4 19.5 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Ab	Manganese	ppm	ASTM D5185m	0	<1	<1	1
Phosphorus ppm ASTM D5185m 995 1001 1052 926 Zinc ppm ASTM D5185m 1180 1162 1220 1051 Sulfur ppm ASTM D5185m 2600 3200 3561 2510 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 4 5 5 Sodium ppm ASTM D5185m >20 12 12 11 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7624 >20 11.5 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 17.4 19.5 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 20.1 15.0 14.4	Magnesium	ppm	ASTM D5185m	950	889	984	887
Zinc ppm ASTM D5185m 1180 1162 1220 1051 Sulfur ppm ASTM D5185m 2600 3200 3561 2510 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 4 5 5 Sodium ppm ASTM D5185m 0 2 2 2 Potassium ppm ASTM D5185m >20 12 12 11 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7624 >20 11.5 9.0 8.1 Nitration Abs/.mm *ASTM D7624 >20 11.5 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 17.4 19.5 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm <th>Calcium</th> <th>ppm</th> <th>ASTM D5185m</th> <th>1050</th> <th>1102</th> <th>1181</th> <th>1147</th>	Calcium	ppm	ASTM D5185m	1050	1102	1181	1147
Sulfur ppm ASTM D5185m 2600 3200 3561 2510 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 5 Sodium ppm ASTM D5185m >20 12 12 11 Potassium ppm ASTM D5185m >20 12 12 11 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7624 >3 0.9 0.5 0.3 Nitration Abs/.mm *ASTM D7624 >20 11.5 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 17.4 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.1 15.0 14.4	Phosphorus	ppm	ASTM D5185m	995	1001	1052	926
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 5 Sodium ppm ASTM D5185m 0 2 2 2 Potassium ppm ASTM D5185m >20 12 12 11 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >3 0.9 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 11.5 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 17.4 19.5 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 20.1 15.0 14.4	Zinc	ppm	ASTM D5185m	1180	1162	1220	1051
Silicon ppm ASTM D5185m >25 4 5 5 Sodium ppm ASTM D5185m 0 2 2 2 Potassium ppm ASTM D5185m >20 12 12 11 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >3 0.9 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 11.5 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 17.4 19.5 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 20.1 15.0 14.4	Sulfur	ppm	ASTM D5185m	2600	3200	3561	2510
Sodium ppm ASTM D5185m 0 2 2 Potassium ppm ASTM D5185m >20 12 12 11 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >3 0.9 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 11.5 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 17.4 19.5 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 20.1 15.0 14.4	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 12 12 11 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 11.5 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 17.4 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.1 15.0 14.4	Silicon	ppm	ASTM D5185m	>25	4	5	5
INFRA-RED	Sodium	ppm	ASTM D5185m		0	2	2
Soot % % *ASTM D7844 >3 0.9 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 11.5 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 17.4 19.5 FLUID DEGRADATION method limit/base current history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 20.1 15.0 14.4	Potassium	ppm	ASTM D5185m	>20	12	12	11
Nitration Abs/cm *ASTM D7624 >20 11.5 9.0 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.8 17.4 19.5 FLUID DEGRADATION method limit/base current history1 history1 history Oxidation Abs/.1mm *ASTM D7414 >25 20.1 15.0 14.4	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 22.8 17.4 19.5 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 20.1 15.0 14.4	Soot %	%	*ASTM D7844	>3	0.9	0.5	0.3
FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 20.1 15.0 14.4	Nitration	Abs/cm	*ASTM D7624	>20		9.0	8.1
Oxidation	Sulfation	Abs/.1mm		>30			
	FLUID DEGRA	OATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	20.1	15.0	14.4
	Base Number (BN)	mg KOH/g	ASTM D2896			7.4	9.6

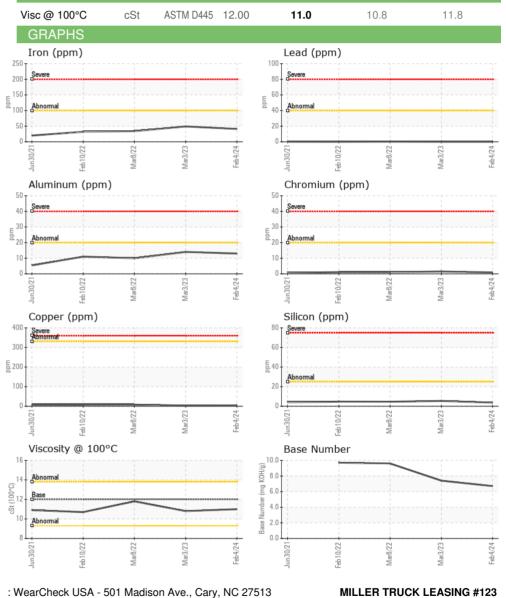


OIL ANALYSIS REPORT



VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2

15 T :				
14 Abnormal				
13				
Base				
(2012 Base 11 Base				
4.0				
Abnormal		***************************************		
9 +				
8 4	2 -	2 -	2	5
Jun30/21	Feb 10/2	Mar8/22	Mar3/23	1.4.79
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Laboratory Sample No. Unique Number : 10871991

: PCA0110658 Lab Number : 06084546

Received

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

: 09 Feb 2024 : 12 Feb 2024

: 12 Feb 2024 - Wes Davis

MILLER TRUCK LEASING #123 66 KELLER AVENUE LANCASTER, PA US 17601

Contact: RON ROBERTS rroberts@millertransgroup.com

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. T: (717)945-6205 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (717)945-5818