

OIL ANALYSIS REPORT

Sample Rating Trend

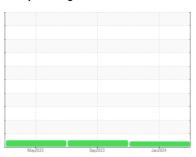
VISCOSITY



(AT652T) Supermarket - Tractor Machine Id MACK 107A1856

Component
Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 GAL)





DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

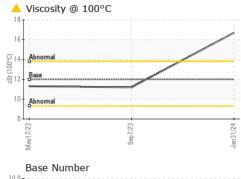
▲ Fluid Condition

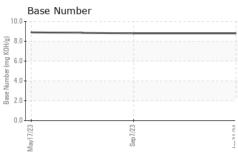
The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

Sample Date Client Info 31 Jan 2024 07 Sep 2023 17 May 2023 Machine Age mls Client Info 279445 276068 272579			1910	y2023	Sep2023 Jan203			
Sample Date	SAMPLE INFO	RMATION	method	limit/base	current	history1	history2	
Machine Age mis Client Info 279445 276068 272579	Sample Number		Client Info		PCA0116970	PCA0104084	PCA0097065	
Oil Age	Sample Date		Client Info		31 Jan 2024	07 Sep 2023	17 May 2023	
Client Info Changed Changed Not Changed Normal Normal	Machine Age	mls	Client Info		279445	276068	272579	
ATTENTION NORMAL NORMAL	Oil Age	mls	Client Info		3377	3489	2634	
ATTENTION NORMAL NORMAL	Oil Changed		Client Info		Changed	Changed	Not Changd	
Fuel	Sample Status				ATTENTION	NORMAL	NORMAL	
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imitibase current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 15 26 15 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >5 <1 2 <1 Silver ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >20 1 4 3 Lead ppm ASTM D5185m >40 0 <1 <1 <1 Copper ppm ASTM D5185m >30 3 6 3 3 Tin ppm ASTM D5185m >10 0 0 0 Cadmium ppm ASTM D5185m 0 0	CONTAMINA	NOITA	method	limit/base	current	history1	history2	
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 15 26 15 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG	
Iron	Glycol		WC Method		NEG	NEG	NEG	
Chromium ppm ASTM D5185m >20 <1	WEAR META	ALS	method	limit/base	current	history1	history2	
Nickel	Iron	ppm	ASTM D5185m	>120	15	26	15	
Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 1 4 3 Lead ppm ASTM D5185m >40 0 <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1	
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 1 4 3 Lead ppm ASTM D5185m >40 0 <1 <1 Copper ppm ASTM D5185m >330 3 6 3 Tin ppm ASTM D5185m 0 <1 1 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 9 0 0 0 Barium ppm ASTM D5185m 0 9 0 0 0 0 Molybdenum ppm ASTM D5185m 50 67 67 64 4 Mangaesium ppm ASTM D5185m 950 839	Nickel	ppm	ASTM D5185m	>5	<1	2	<1	
Aluminum ppm ASTM D5185m >20 1 4 3 Lead ppm ASTM D5185m >40 0 <1	Titanium	ppm	ASTM D5185m	>2	0	0	0	
Lead ppm ASTM D5185m >40 0 <1 <1 Copper ppm ASTM D5185m >330 3 6 3 Tin ppm ASTM D5185m >15 0 <1 1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 9 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 9 0 0 ADDITIVES method limit/base current history1	Silver		ASTM D5185m	>2	0	0	0	
Lead ppm ASTM D5185m >40 0 <1 <1 Copper ppm ASTM D5185m >330 3 6 3 Tin ppm ASTM D5185m >15 0 <1 1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 9 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 9 0 0 ADDITIVES method 0 0 1 1	Aluminum	ppm	ASTM D5185m	>20	1	4	3	
Copper ppm ASTM D5185m >330 3 6 3 Tin ppm ASTM D5185m >15 0 <1	Lead		ASTM D5185m	>40	0	<1	<1	
Tin	Copper		ASTM D5185m	>330	3		3	
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 31 23 28 Barium ppm ASTM D5185m 0 9 0 0 Molybdenum ppm ASTM D5185m 50 67 67 64 Manganese ppm ASTM D5185m 50 67 67 64 Magnesium ppm ASTM D5185m 950 839 963 941 Calcium ppm ASTM D5185m 1050 998 1208 1162 Phosphorus ppm ASTM D5185m 995 841 1100 1082 Zinc ppm ASTM D5185m 2600 2654 3968 4001 CONTAMINANTS method limit/base current history1								
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 31 23 28 Barium ppm ASTM D5185m 0 9 0 0 Molybdenum ppm ASTM D5185m 50 67 67 64 Manganese ppm ASTM D5185m 50 67 67 64 Manganesium ppm ASTM D5185m 950 839 963 941 Calcium ppm ASTM D5185m 950 839 963 941 Calcium ppm ASTM D5185m 1050 998 1208 1162 Phosphorus ppm ASTM D5185m 995 841 1100 1082 Zinc ppm ASTM D5185m 2600 2654 3968 4001 CONTAMINANTS method limit/base current	Vanadium		ASTM D5185m				0	
Boron	Cadmium							
Barium ppm ASTM D5185m 0 9 0 0 Molybdenum ppm ASTM D5185m 50 67 67 64 Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 950 839 963 941 Calcium ppm ASTM D5185m 1050 998 1208 1162 Phosphorus ppm ASTM D5185m 995 841 1100 1082 Zinc ppm ASTM D5185m 995 841 1100 1082 Zinc ppm ASTM D5185m 2600 2654 3968 4001 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 2 1 2 INFRA-RED method limit/base	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 50 67 67 64 Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 950 839 963 941 Calcium ppm ASTM D5185m 1050 998 1208 1162 Phosphorus ppm ASTM D5185m 995 841 1100 1082 Zinc ppm ASTM D5185m 995 841 1100 1082 Zinc ppm ASTM D5185m 2600 2654 3968 4001 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 2 1 2 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4 0.1<	Boron	ppm	ASTM D5185m	2	31	23	28	
Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 950 839 963 941 Calcium ppm ASTM D5185m 1050 998 1208 1162 Phosphorus ppm ASTM D5185m 995 841 1100 1082 Zinc ppm ASTM D5185m 1180 1162 1325 1323 Sulfur ppm ASTM D5185m 2600 2654 3968 4001 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 2 1 2 Potassium ppm ASTM D5185m >20 2 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844	Barium	ppm	ASTM D5185m	0	9	0	0	
Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 950 839 963 941 Calcium ppm ASTM D5185m 1050 998 1208 1162 Phosphorus ppm ASTM D5185m 995 841 1100 1082 Zinc ppm ASTM D5185m 1180 1162 1325 1323 Sulfur ppm ASTM D5185m 2600 2654 3968 4001 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 2 1 2 Potassium ppm ASTM D5185m >20 2 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844	Molybdenum	ppm	ASTM D5185m	50	67	67	64	
Calcium ppm ASTM D5185m 1050 998 1208 1162 Phosphorus ppm ASTM D5185m 995 841 1100 1082 Zinc ppm ASTM D5185m 1180 1162 1325 1323 Sulfur ppm ASTM D5185m 2600 2654 3968 4001 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 2 <1		ppm	ASTM D5185m	0	0	1	<1	
Calcium ppm ASTM D5185m 1050 998 1208 1162 Phosphorus ppm ASTM D5185m 995 841 1100 1082 Zinc ppm ASTM D5185m 1180 1162 1325 1323 Sulfur ppm ASTM D5185m 2600 2654 3968 4001 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 2 1 2 Potassium ppm ASTM D5185m >20 2 1 2 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >4 0.1 0.2 0.1 Nitration Abs/cm "ASTM D7415 >30 17.5 17.8 17.8 FLUID DEGRADATION method limit	Magnesium	ppm	ASTM D5185m	950	839	963	941	
Phosphorus ppm ASTM D5185m 995 841 1100 1082 Zinc ppm ASTM D5185m 1180 1162 1325 1323 Sulfur ppm ASTM D5185m 2600 2654 3968 4001 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m >20 2 1 2 Potassium ppm ASTM D5185m >20 2 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.1 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 5.6 7.9 6.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.5 17.8 17.8 FLUID DEGRADATION *ASTM	Calcium	ppm	ASTM D5185m	1050	998	1208	1162	
Zinc ppm ASTM D5185m 1180 1162 1325 1323 Sulfur ppm ASTM D5185m 2600 2654 3968 4001 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m 0 2 <1	Phosphorus		ASTM D5185m	995	841	1100	1082	
Sulfur ppm ASTM D5185m 2600 2654 3968 4001 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m 0 2 <1	Zinc		ASTM D5185m	1180	1162	1325	1323	
Silicon ppm ASTM D5185m >25 3 4 4 Sodium ppm ASTM D5185m 0 2 <1 Potassium ppm ASTM D5185m >20 2 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.1 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 5.6 7.9 6.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.5 17.8 17.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.1 13.7 13.1	Sulfur	ppm	ASTM D5185m	2600	2654	3968	4001	
Sodium ppm ASTM D5185m 0 2 <1	CONTAMINA	ANTS	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 2 1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.1 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 5.6 7.9 6.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.5 17.8 17.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.1 13.7 13.1	Silicon	ppm	ASTM D5185m	>25	3	4	4	
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.1 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 5.6 7.9 6.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.5 17.8 17.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.1 13.7 13.1	Sodium	ppm	ASTM D5185m		0	2	<1	
Soot % % *ASTM D7844 >4 0.1 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 5.6 7.9 6.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.5 17.8 17.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.1 13.7 13.1	Potassium	ppm	ASTM D5185m	>20	2	1	2	
Nitration Abs/cm *ASTM D7624 > 20 5.6 7.9 6.2 Sulfation Abs/.1mm *ASTM D7415 > 30 17.5 17.8 17.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 > 25 13.1 13.7 13.1	INFRA-RED		method	limit/base	current	history1	history2	
Sulfation Abs/.1mm *ASTM D7415 >30 17.5 17.8 17.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.1 13.7 13.1	Soot %	%	*ASTM D7844	>4	0.1	0.2	0.1	
Sulfation Abs/.1mm *ASTM D7415 >30 17.5 17.8 17.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.1 13.7 13.1	Nitration	Abs/cm	*ASTM D7624	>20				
Oxidation Abs/.1mm *ASTM D7414 >25 13.1 13.7 13.1								
	FLUID DEGRADATION method limit/base current history1 history2							
	Oxidation	Abs/.1mm	*ASTM D7414	>25	13.1	13.7	13.1	
					8.8			



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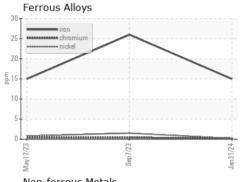


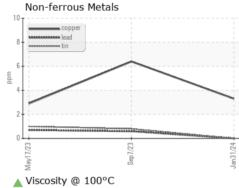


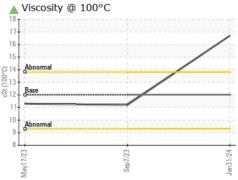
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

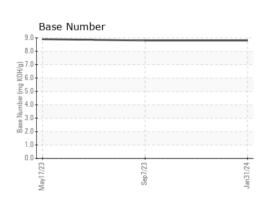
FLUID PROPI	ERITES	method			riistory i	nistory∠
Visc @ 100°C	cSt	ASTM D445	12.00	16.7	11.2	11.3

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number : 06088476

: PCA0116970

Unique Number : 10875921 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 14 Feb 2024 **Tested**

: 15 Feb 2024 Diagnosed : 15 Feb 2024 - Don Baldridge

Transervice - Shop 1071 - Supermarket-Dayton

60 A Tower Road Dayton, NJ US 08810

Contact: Brian Quinn bquinn@transervice.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.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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F: