

OIL ANALYSIS REPORT

Sample Rating Trend

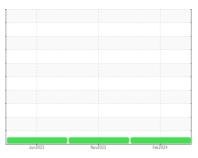
NORMAL

Supermarket - Tractor FREIGHTLINER 107A3684

Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 GAL)



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

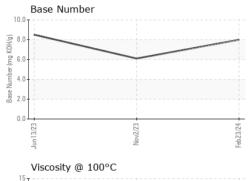
Fluid Condition

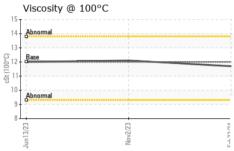
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date Client Info 23 Feb 2024 02 Nov 2023 13 Jun 2023 Machine Age mls Client Info 430885 413965 394714 Oil Age mls Client Info 16920 31667 12416 Oil Changed Client Info Changed Changed Not Changed Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0	•		Jur	2023	Nov2023 Feb20	24	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 430885 413965 394714 Oil Age mis Client Info 16920 31667 12416 Oil Changed Client Info Changed Changed Not Changed Sample Status NoRMAL NORMAL NORMAL CONTAMINATION method Imilitrose current history1 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >5 <1.0 <1.0 <1.0 Wear WC Method NEG NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM05185m >5 2 2 2 -1 Iron ppm ASTM05185m >2 -1 0 -1 Silver ppm ASTM05185m >30	Sample Number		Client Info		PCA0116959	PCA0104082	PCA0099857
Oil Age mls Client Info 16920 31667 12416 Oil Changed Sample Status Client Info Changed Changed NoRMAL N	Sample Date		Client Info		23 Feb 2024	02 Nov 2023	13 Jun 2023
Client Info Changed Changed NORMAL NORMAL NORMAL	Machine Age	mls	Client Info		430885	413965	394714
Client Info Changed Changed NORMAL NORMAL NORMAL	Oil Age	mls	Client Info		16920	31667	12416
Fuel	-		Client Info		Changed	Changed	Not Changd
Fuel WC Method S5 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 18 28 18 Chromium ppm ASTM D5185m >55 2 2 <1 Nickel ppm ASTM D5185m >2 <1 0 <1 Silver ppm ASTM D5185m >2 <1 0 <1 Silver ppm ASTM D5185m >30 0 0 <1 Silver ppm ASTM D5185m >30 0 0 <1 Copper ppm ASTM D5185m >30 0 0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	CONTAMINATI	ON	method	limit/base	current	history1	history2
WEAR METALS	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 >5 2 2 <1	WEAR METALS	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>80	18	28	18
Nickel	Chromium	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m	>5	2	2	<1
Titanium ppm ASTM D5185m 0 <1 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 10 12 5 Lead ppm ASTM D5185m >30 0 0 <1 Copper ppm ASTM D5185m >150 3 5 3 Tin ppm ASTM D5185m >5 <1 <1 <1 Vanadium ppm ASTM D5185m >5 <1 <1 <1 Vanadium ppm ASTM D5185m >0 <1 <1 <1 Vanadium ppm ASTM D5185m >5 <1 <1 <1 <1 Vanadium ppm ASTM D5185m >0 0 <1 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 Barium ppm ASTM D5185m 50	Nickel		ASTM D5185m	>2	<1	0	<1
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 10 12 5 Lead ppm ASTM D5185m >30 0 0 <1 Copper ppm ASTM D5185m >150 3 5 3 Tin ppm ASTM D5185m >5 <1 <1 <1 Vanadium ppm ASTM D5185m 0 <1 0 <1 0 Cadmium ppm ASTM D5185m 0 0 <1 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 0 Barium ppm ASTM D5185m 50 68 62 67 Mangnesium ppm	Titanium		ASTM D5185m		0	<1	0
Aluminum	Silver			>3	0		
Lead	Aluminum	• • • • • • • • • • • • • • • • • • • •		>30		12	5
Copper ppm ASTM D5185m >150 3 5 3 Tin ppm ASTM D5185m >5 <1							<1
Tin							
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 11 31 100 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 68 62 67 Manganese ppm ASTM D5185m 50 68 62 67 Manganesium ppm ASTM D5185m 950 920 733 725 Calcium ppm ASTM D5185m 950 920 733 725 Calcium ppm ASTM D5185m 995 1063 902 972 Zinc ppm ASTM D5185m 2600 3246 2453 2919 CONTAMINANTS method limit/base current history1 <th< td=""><td>• •</td><td></td><td></td><td></td><th>_</th><td></td><td></td></th<>	• •				_		
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 11 31 100 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 68 62 67 Manganese ppm ASTM D5185m 0 <1		• • • • • • • • • • • • • • • • • • • •					
Boron					-		
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 68 62 67 Manganese ppm ASTM D5185m 50 48 62 67 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 68 62 67 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 950 920 733 725 Calcium ppm ASTM D5185m 1050 1180 1145 1177 Phosphorus ppm ASTM D5185m 995 1063 902 972 Zinc ppm ASTM D5185m 995 1063 902 972 Zinc ppm ASTM D5185m 2600 3246 2453 2919 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 5 6 4 Sodium ppm ASTM D5185m 20 3 6 3 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3 0.6	Boron	ppm	ASTM D5185m	2	11	31	100
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 950 920 733 725 Calcium ppm ASTM D5185m 1050 1180 1145 1177 Phosphorus ppm ASTM D5185m 995 1063 902 972 Zinc ppm ASTM D5185m 1180 1261 1190 1141 Sulfur ppm ASTM D5185m 2600 3246 2453 2919 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 5 6 4 Sodium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.9 0.4 Nitration Abs/m *ASTM D7815	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 950 920 733 725 Calcium ppm ASTM D5185m 1050 1180 1145 1177 Phosphorus ppm ASTM D5185m 1063 902 972 Zinc ppm ASTM D5185m 1180 1261 1190 1141 Sulfur ppm ASTM D5185m 2600 3246 2453 2919 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 5 6 4 Sodium ppm ASTM D5185m 2 3 0 Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >3 0.6 0.9 0.4 Nitration Abs/cm "ASTM D7415 >30 19.4 2	Molybdenum	ppm	ASTM D5185m	50	68	62	67
Magnesium ppm ASTM D5185m 950 920 733 725 Calcium ppm ASTM D5185m 1050 1180 1145 1177 Phosphorus ppm ASTM D5185m 1063 902 972 Zinc ppm ASTM D5185m 1180 1261 1190 1141 Sulfur ppm ASTM D5185m 2600 3246 2453 2919 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 5 6 4 Sodium ppm ASTM D5185m 2 3 0 Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >3 0.6 0.9 0.4 Nitration Abs/cm "ASTM D7415 >30 19.4 2	•	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 995 1063 902 972 Zinc ppm ASTM D5185m 1180 1261 1190 1141 Sulfur ppm ASTM D5185m 2600 3246 2453 2919 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 5 6 4 Sodium ppm ASTM D5185m 2 3 0 Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.9 0.4 Nitration Abs/cm *ASTM D7624 >20 7.7 8.7 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.4 22.0 19.8 FLUID DEGRADATION *ASTM D7414 <td< td=""><td></td><td>ppm</td><td>ASTM D5185m</td><td>950</td><th>920</th><td>733</td><td>725</td></td<>		ppm	ASTM D5185m	950	920	733	725
Zinc ppm ASTM D5185m 1180 1261 1190 1141 Sulfur ppm ASTM D5185m 2600 3246 2453 2919 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 5 6 4 Sodium ppm ASTM D5185m 2 3 0 Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.9 0.4 Nitration Abs/cm *ASTM D7624 >20 7.7 8.7 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.4 22.0 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D74	Calcium		ASTM D5185m	1050	1180	1145	1177
Zinc ppm ASTM D5185m 1180 1261 1190 1141 Sulfur ppm ASTM D5185m 2600 3246 2453 2919 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 5 6 4 Sodium ppm ASTM D5185m 2 3 0 Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.9 0.4 Nitration Abs/cm *ASTM D7624 >20 7.7 8.7 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.4 22.0 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D74	Phosphorus	ppm	ASTM D5185m	995	1063	902	972
Sulfur ppm ASTM D5185m 2600 3246 2453 2919 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 5 6 4 Sodium ppm ASTM D5185m 2 3 0 Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.9 0.4 Nitration Abs/cm *ASTM D7624 >20 7.7 8.7 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.4 22.0 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 16.4 14.2			ASTM D5185m	1180	1261	1190	1141
Silicon ppm ASTM D5185m >20 5 6 4 Sodium ppm ASTM D5185m 2 3 0 Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.9 0.4 Nitration Abs/cm *ASTM D7624 >20 7.7 8.7 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.4 22.0 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 16.4 14.2	Sulfur		ASTM D5185m	2600	3246	2453	2919
Sodium ppm ASTM D5185m 2 3 0 Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.9 0.4 Nitration Abs/cm *ASTM D7624 >20 7.7 8.7 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.4 22.0 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 16.4 14.2	CONTAMINAN [*]	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 6 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.9 0.4 Nitration Abs/cm *ASTM D7624 >20 7.7 8.7 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.4 22.0 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 16.4 14.2	Silicon	ppm	ASTM D5185m	>20	5	6	4
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.9 0.4 Nitration Abs/cm *ASTM D7624 >20 7.7 8.7 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.4 22.0 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 16.4 14.2	Sodium	ppm	ASTM D5185m		2	3	0
Soot % % *ASTM D7844 >3 0.6 0.9 0.4 Nitration Abs/cm *ASTM D7624 >20 7.7 8.7 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.4 22.0 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 16.4 14.2	Potassium	ppm	ASTM D5185m	>20	3	6	3
Nitration Abs/cm *ASTM D7624 >20 7.7 8.7 7.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.4 22.0 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 16.4 14.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.4 22.0 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 16.4 14.2	Soot %	%	*ASTM D7844	>3	0.6	0.9	0.4
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 16.4 14.2	Nitration	Abs/cm	*ASTM D7624	>20	7.7	8.7	7.0
Oxidation Abs/.1mm *ASTM D7414 >25 14.7 16.4 14.2	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.4	22.0	19.8
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 8.0 6.1 8.5	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.7	16.4	14.2
	Base Number (BN)	mg KOH/g	ASTM D2896		8.0	6.1	8.5



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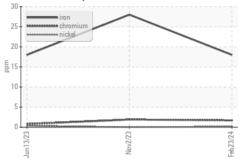


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

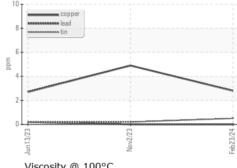
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.7	12.1	12.0

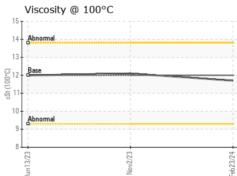
GRAPHS

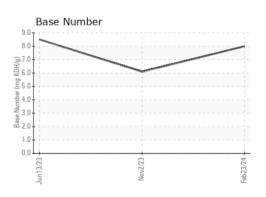
Ferrous Alloys















Certificate L2367

Laboratory Sample No. Lab Number : 06120719

Unique Number : 10929552

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0116959

Received : 18 Mar 2024 **Tested** : 19 Mar 2024 Diagnosed

: 19 Mar 2024 - Wes Davis

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)

T:

F: