

PROBLEM SUMMARY

Sample Rating Trend

FREIGHTLINER 96

Diesel Engine

PETRO CANADA DURON SHP 15W40 (13 LTR)

COMPONENT CONDITION SUMMARY



▲ Viscosity @ 100°C



RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS								
Sample Status				ABNORMAL				
Fuel	%	ASTM D3524	>5	6.3				
Visc @ 100°C	cSt	ASTM D445	15.4	11.8				

Customer Id: ATRPIN Sample No.: PCA0100619 Lab Number: 05897866 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED ACTIONS						
Action	Status	Date	Done By	Description		
Resample			?	We recommend an early resample to monitor this condition.		

HISTORICAL DIAGNOSIS



OIL ANALYSIS REPORT

Sample Rating Trend



FREIGHTLINER 96

Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (13 LTR)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

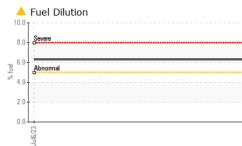
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

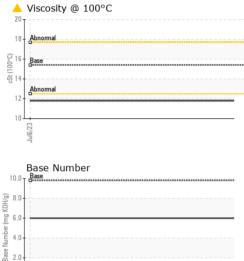
Sample NumberClient InfoPCA0100619····Sample DateClient Info06 Jul 2020······Machine AgemisClient Info209200······Oil AgemisClient Info27565········Sample StatusClient InfoChanged··········Sample Statuswith MethodImitbasecurrenthistory!history!·GlycolWC MethodImitbasecurrenthistory!history!·ChromiumppmASTM 051856>8024·····ChromiumppmASTM 051856>20········NickelppmASTM 051856>300········SilverppmASTM 051856>300··········AduminumppmASTM 051856>307··········NaddiumppmASTM 051856>300·· <th>SAMPLE INFORM</th> <th>IATION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age mis Client Info 309200 Oil Aga mis Client Info 27565 Sample Status Client Info Changed Sample Status method Imit/base current history1 history2 Glycol WC Method Imit/base current history1 history2 Glycol wC Method Imit/base current history1 MEG Mistory1 ppm ASTM D5185m >50 <1	Sample Number		Client Info		PCA0100619		
Oil Age mis Client Info 27565 Oil Changed Client Info ABNORMAL Sample Status Image Client Info ABNORMAL CONTAMINATION method limit/base current history1 history2 Glycol WC Method Imit/base current history1 history2 Contramino ppm ASTM 05185m >50 <1	Sample Date		Client Info		06 Jul 2023		
Oli Changed Client Info Changed Sample Status Imathod Imit/base current history1 history2 Glycol WC Method Imit/base current history1 history2 Glycol WC Method Imit/base current history1 history2 WEAR METAL> method Imit/base current history1 history2 Iron ppm ASTM D5185m >2 0 Nickel ppm ASTM D5185m >2 0 Nickel ppm ASTM D5185m >30 2 Nickel ppm ASTM D5185m >30 7 Silver ppm ASTM D5185m >30 7 Cadmium ppm ASTM D5185m >30 7 Cadmium ppm ASTM D5185m >50 <1	Machine Age	mls	Client Info		309200		
Sample Status method limit/base current history1 history2 Glycol WC Method NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5165m >80 24 Nickel ppm ASTM D5165m >20 Nickel ppm ASTM D5185m >2 0 Silver ppm ASTM D5185m >30 2 Lead ppm ASTM D5185m >30 2 Copper ppm ASTM D5185m >30 2 Cadmium ppm ASTM D5185m >30 2 Cadmium ppm ASTM D5185m >150 2 Cadmium ppm ASTM D5185m 1010 </td <td>Oil Age</td> <td>mls</td> <td>Client Info</td> <td></td> <td>27565</td> <td></td> <td></td>	Oil Age	mls	Client Info		27565		
CONTAMINATION method limit/base current history1 history2 Glycol WC Method NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 24 Ohromium ppm ASTM D5185m >2 0 Nickel ppm ASTM D5185m >2 0 Sliver ppm ASTM D5185m >30 2 Lead ppm ASTM D5185m >30 7 Copper ppm ASTM D5185m >150 2 Cadmium ppm ASTM D5185m >50 <1	Oil Changed		Client Info		Changed		
Glycol WC Method NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 24 Chromium ppm ASTM D5185m >2 0 Nickel ppm ASTM D5185m >2 0 Silver ppm ASTM D5185m >3 0 Aluminum ppm ASTM D5185m >30 7 Lead ppm ASTM D5185m >5 <1	Sample Status				ABNORMAL		
WEAR METALS method imit/base current history1 history2 Iron ppm ASTM D5185m >80 24 Chromium ppm ASTM D5185m >2 0 Nickel ppm ASTM D5185m >2 0 Silver ppm ASTM D5185m >3 0 Aluminum ppm ASTM D5185m >3 0 Lead ppm ASTM D5185m >3 7 Copper ppm ASTM D5185m >5 <1 Vanadium ppm ASTM D5185m 0 ADDITIVES method Imit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Magnese ppm ASTM D5185m 100 1061<	CONTAMINATIO	ON	method	limit/base	current	history1	history2
Iron ppm ASTM D5185m >80 24 Chromium ppm ASTM D5185m >5 <1	Glycol		WC Method		NEG		
Chromium ppm ASTM D5185m >5 <1	WEAR METALS	3	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185n >2 0 Titanium ppm ASTM D5185n >3 0 Silver ppm ASTM D5185n >30 2 Aluminum ppm ASTM D5185n >30 7 Lead ppm ASTM D5185n >150 2 Copper ppm ASTM D5185n >50 <1	Iron	ppm	ASTM D5185m	>80	24		
Titanium ppm ASTM D5185m >3 0 Silver ppm ASTM D5185m >30 2 Aluminum ppm ASTM D5185m >30 2 Lead ppm ASTM D5185m >150 2 Copper ppm ASTM D5185m >5 <1	Chromium	ppm	ASTM D5185m	>5	<1		
Silver ppm ASTM D5185m >30 2 Aluminum ppm ASTM D5185m >30 7 Lead ppm ASTM D5185m >30 7 Copper ppm ASTM D5185m >5 <1	Nickel	ppm	ASTM D5185m	>2	0		
Aluminum ppm ASTM D5185m >30 2 Lead ppm ASTM D5185m >30 7 Copper ppm ASTM D5185m >150 2 Tin ppm ASTM D5185m >5 <1	Titanium	ppm	ASTM D5185m		0		
Lead ppm ASTM D5185m >30 7 Copper ppm ASTM D5185m >150 2 Tin ppm ASTM D5185m >5 <1	Silver	ppm	ASTM D5185m	>3	0		
Copper ppm ASTM D5185m >150 2 Tin ppm ASTM D5185m >5 <1	Aluminum	ppm	ASTM D5185m	>30	2		
Tin ppm ASTM D5185m >5 <1 Vanadium ppm ASTM D5185m >5 <1	Lead	ppm	ASTM D5185m	>30	7		
Vanadium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 Barium ppm ASTM D5185m 0 2 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 0 Maganese ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 1010 787 Magnesium ppm ASTM D5185m 1070 1081 Solicium ppm ASTM D5185m 1070 1081 Sulfur ppm ASTM D5185m 1070 1081 Solifur ppm ASTM D5185m 2060 3	Copper	ppm	ASTM D5185m	>150	2		
Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 0 <11 Magnesium ppm ASTM D5185m 1010 787 Magnesium ppm ASTM D5185m 1070 1081 Calcium ppm ASTM D5185m 1270 1095 Sulfur ppm ASTM D5185m 2060 3069 Sulfur ppm ASTM D5185m 200 3 Sulfur ppm ASTM D5185m >20 3	Tin	ppm	ASTM D5185m	>5	<1		
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 56 Manganese ppm ASTM D5185m 0 <1	Vanadium	ppm	ASTM D5185m		0		
Boron ppm ASTM D5185m 0 2 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 60 56 Manganese ppm ASTM D5185m 0 <1	Cadmium	ppm	ASTM D5185m		0		
Barium ppm ASTM D5185n 0 0 Molybdenum ppm ASTM D5185n 60 56 Manganese ppm ASTM D5185n 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 56 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m	0	2		
Manganese ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 1010 787 Calcium ppm ASTM D5185m 1070 1081 Phosphorus ppm ASTM D5185m 1150 939 Zinc ppm ASTM D5185m 1270 1095 Sulfur ppm ASTM D5185m 1270 1095 Sulfur ppm ASTM D5185m 2060 3069 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 3 Sodium ppm ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 Soot % % *ASTM D7844	Barium	ppm	ASTM D5185m	0	0		
Magnesium ppm ASTM D5185m 1010 787 Calcium ppm ASTM D5185m 1070 1081 Phosphorus ppm ASTM D5185m 1150 939 Zinc ppm ASTM D5185m 1270 1095 Sulfur ppm ASTM D5185m 2060 3069 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 3 Sodium ppm ASTM D5185m >20 3 Sodium ppm ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 Fuel % ASTM D5185m	Molybdenum	ppm	ASTM D5185m		56		
Calcium ppm ASTM D5185m 1070 1081 Phosphorus ppm ASTM D5185m 1150 939 Zinc ppm ASTM D5185m 1270 1095 Sulfur ppm ASTM D5185m 2060 3069 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 3 Sodium ppm ASTM D5185m >20 3 Sodium ppm ASTM D5185m >20 3 Sodium ppm ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 Fuel % ASTM D584	Manganese	ppm	ASTM D5185m	0	<1		
Phosphorus ppm ASTM D5185m 1150 939 Zinc ppm ASTM D5185m 1270 1095 Sulfur ppm ASTM D5185m 2060 3069 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 3 Sodium ppm ASTM D5185m >20 3 Sodium ppm ASTM D5185m >20 3 Potassium ppm ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 Soot % % ASTM D5185m >20 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20	Magnesium	ppm		1010	-		
ZincppmASTM D5185m12701095SulfurppmASTM D5185m20603069CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>203SodiumppmASTM D5185m>203PotassiumppmASTM D5185m>203Fuel%ASTM D5185m>203INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>32.3NitrationAbs/cm*ASTM D7624>209.2SulfationAbs/lmm*ASTM D7415>3025.8CxidationAbs./1mm*ASTM D7414>2521.3		ppm	ASTM D5185m	1070			
SulfurppmASTM D5185m20603069CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>203SodiumppmASTM D5185m203PotassiumppmASTM D5185m>203Fuel%ASTM D5185m>203INFRA-RED%ASTM D5185m>203NitrationAbs/cm*ASTM D7624>32.3NitrationAbs/cm*ASTM D7624>209.2SulfationAbs/lmm*ASTM D7624>209.2CUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/lmm*ASTM D7614>2521.3		ppm					
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>203SodiumppmASTM D5185m>203PotassiumppmASTM D5185m>203Fuel%ASTM D3524>5▲ 6.3INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>32.3NitrationAbs/cm*ASTM D7624>209.2SulfationAbs/lmm*ASTM D7415>3025.8OxidationAbs/lmm*ASTM D7414>2521.3		ppm					
Silicon ppm ASTM D5185m >20 3 Sodium ppm ASTM D5185m 0 Potassium ppm ASTM D5185m >20 3 Potassium ppm ASTM D5185m >20 3 Fuel % ASTM D5185m >20 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.2 Sulfation Abs/.1mm *ASTM D7415 >30 25.8 Oxidation Abs/.1mm *ASTM D7414 >25 21.3			ASTM D5185m	2060	3069		
Sodium ppm ASTM D5185m 0 Potassium ppm ASTM D5185m >20 3 Fuel % ASTM D3524 >5 ▲ 6.3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.2 Sulfation Abs/.1mm *ASTM D7115 >30 25.8 history1 history2 Current history1 ×astry D7414 >25 21.3		S			current	history1	history2
Potassium ppm ASTM D5185m >20 3 Fuel % ASTM D3524 >5 ▲ 6.3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.2 Sulfation Abs/.1mm *ASTM D7615 >30 25.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7614 >25 21.3	Silicon	ppm	ASTM D5185m	>20	3		
Fuel % ASTM D3524 >5 ▲ 6.3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.2 Sulfation Abs/.1mm *ASTM D7415 >30 25.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.3	Sodium	ppm	ASTM D5185m		0		
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.2 Sulfation Abs/.1mm *ASTM D7615 >30 25.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.3				>20			
Soot % % *ASTM D7844 >3 2.3 Nitration Abs/cm *ASTM D7624 >20 9.2 Sulfation Abs/.1mm *ASTM D7415 >30 25.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.3	Fuel	%	ASTM D3524	>5	6.3		
Nitration Abs/cm *ASTM D7624 >20 9.2 Sulfation Abs/.1mm *ASTM D7415 >30 25.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.3	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 25.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.3	Soot %	%	*ASTM D7844	>3	2.3		
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.3	Nitration	Abs/cm	*ASTM D7624	>20	9.2		
Oxidation Abs/.1mm *ASTM D7414 >25 21.3	Sulfation	Abs/.1mm	*ASTM D7415	>30	25.8		
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 6.0	Oxidation	Abs/.1mm	*ASTM D7414	>25	21.3		
			ASTM D2896	9.8	6.0		

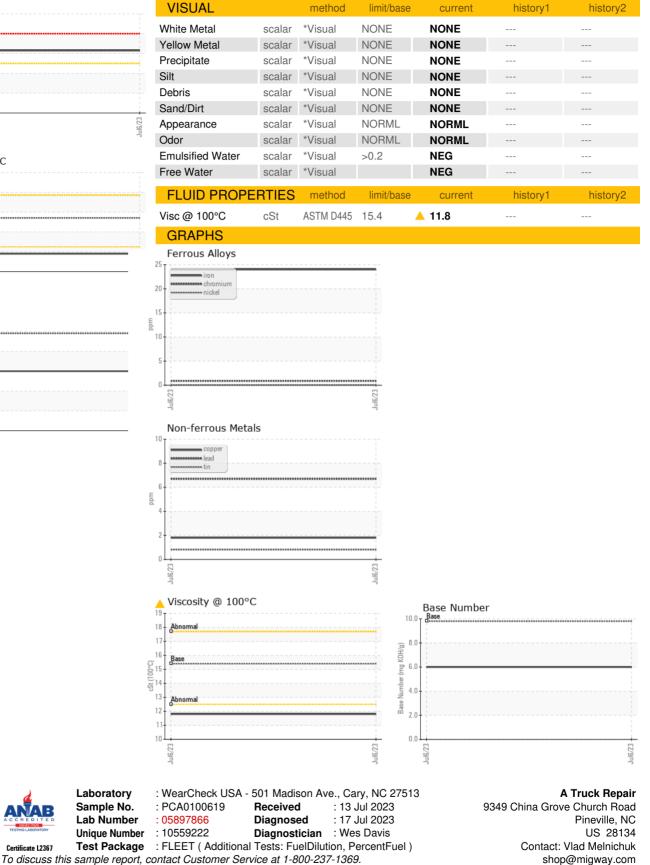


0.0 ul6/23

OIL ANALYSIS REPORT







* - 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)

Certificate L2367

F:

T: (980)255-3200