

WEAR CONTAMINATION FLUID CONDITION

NORMAL NORMAL



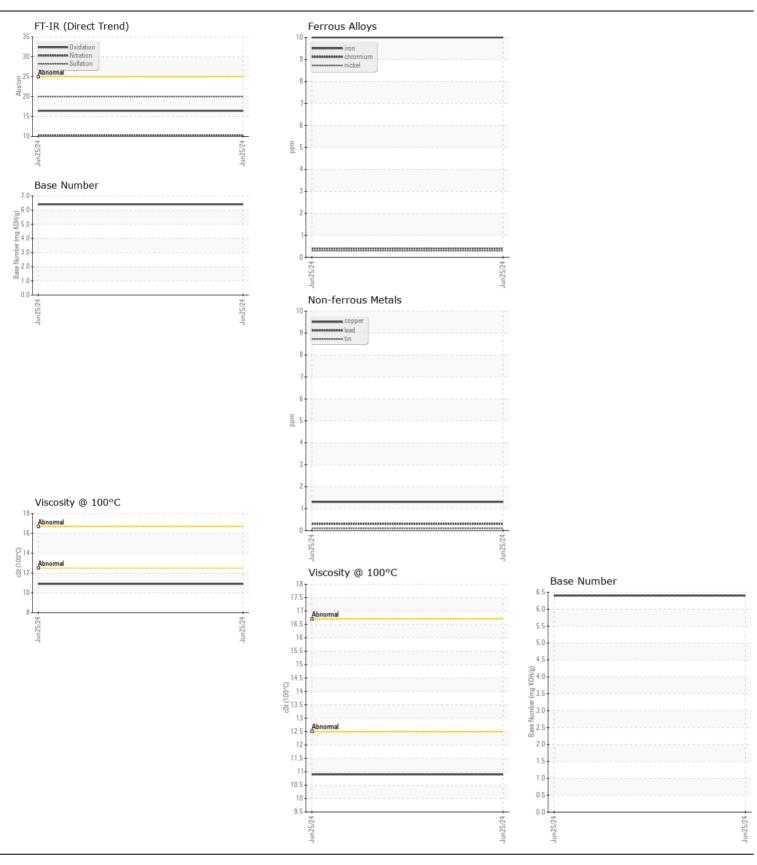
[28] Machine Id

FREIGHTLINER Trash truck (S/N 1FVHCYCY2GHHE4532)

Primary Diesel Engine

Starfire 10w30 HDEO CK-4/SN (21 QTS)

Test UOM Method Unifold Un	Startire 10w30 HDEO CK-4/SN	(21 Q1S)						
Resample at the next service interval to monitor. (Customer Sample Comment: Oil used was Starfire 10w30 HDEO CK-4/SN) Sample Deb	·	Test	HOM	Method	Limit/Ahn	Current	History1	History2
Resample at the next service interval to monitor. (Customer Sample Comment. Oil used was Starfire 10x30 HDEO CK-4/SN)			OOW		LITTIO / COTT			
Machine Age Install Instal								
Oil Age his Client Info 287			hrs					
Filter Age Nrs Client Info Changed Client Info Changed Client Info Changed Changed Client Info Changed Client Info Changed Changed Client Info Changed Changed Changed Client Info Changed Changed Changed Client Info Client Info Client Info Changed Client Info Client In		J						
Oil Changed Cilent Info Changed Change								
Filter Changed Clent Info Changed Clent Info Changed C			1110					
No		_						
VEAR		_		Olletti IIIIO		_		
All component wear rates are normal. Chromium ppm ASTM D586m >2 <1 Titanium ppm ASTM D586m >2 <1 Titanium ppm ASTM D586m >2 <1 Titanium ppm ASTM D586m >2 <1 All uninum ppm ASTM D586m >2 <1 All uninum ppm ASTM D586m >2 <1 All uninum ppm ASTM D586m >15 6 All uninum ppm ASTM D586m >15 6 All uninum ppm ASTM D586m >15 6 All uninum ppm ASTM D586m >10 1 ASTM D586m >4 <1 All uninum ppm		Sample Status				NONWAL		
All component wear rates are normal. Chromium Spm ASTM D816km 54 1 Titanium ppm ASTM D816km 54 Silver ppm ASTM D816km 52 All uniform ppm ASTM D816km 55 ASTM D816km 52 ASTM D816km 54 ASTM D816km 54 -	WEAR	Iron	ppm	ASTM D5185m	>75	10		
Nickel		Chromium		ASTM D5185m	>5			
Titanium ppm ASTM D5185m >2 <1		Nickel						
Silver ppm ASTM D5185n >2 0		Titanium		ASTM D5185m	>2	<1		
Aluminum ppm ASTM DS185m >15 6								
Lead								
Copper								
Tin								
Vanadium ppm ASTM D5185m <1								
White Metal Scalar *Visual NONE NO								
Vellow Metal Scalar Visual NONE NONE NONE					NONE			
Silicon ppm ASTM D5185m >2.5 5								
Potassium ppm ASTM 05185m 2-0 4								
Potassium ppm ASTM 05185m 2-0 4	CONTAMINATION	Silicon	ppm	ASTM D5185m	>25	5		
Value		Potassium	ppm	ASTM D5185m	>20	4		
Glycol	There is no indication of any contamination in the oil.	Fuel	%	ASTM D3524	>3.0	<1.0		
Soot %		Water		WC Method	>0.2	NEG		
Nitration		Glycol		WC Method		NEG		
Sulfation Abs/.tmm *ASTM D7415 >30 20.0 Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML		Soot %	%	*ASTM D7844	>6	0.3		
Silt scalar *Visual NONE NONE		Nitration	Abs/cm	*ASTM D7624	>20	10.2		
Debris Scalar *Visual NONE NONE Sand/Dirt Scalar *Visual NONE NONE Sand/Dirt Scalar *Visual NONE NONE Sand/Dirt Scalar *Visual NONE NORML Scalar *Visual NORML NORML Scalar *Visual NORML *Visual *Visual *Visual NORML *Visual		Sulfation	Abs/.1mm	*ASTM D7415	>30	20.0		
Sand/Dirt Scalar *Visual NONE NORML NORML		Silt	scalar	*Visual	NONE	NONE		
Appearance		Debris	scalar	*Visual	NONE	NONE		
Codor Scalar Visual NORML NORML NORML Full		Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Water scalar *Visual >0.2 NEG		Appearance	scalar	*Visual	NORML	NORML		
Sodium ppm ASTM D5185m 7		Odor	scalar	*Visual	NORML	NORML		
Boron ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 92 Magnesium ppm ASTM D5185m 92 Magnesium ppm ASTM D5185m 92 Magnesium ppm ASTM D5185m 62 Calcium ppm ASTM D5185m 2257 Phosphorus ppm ASTM D5185m 1105 Zinc ppm ASTM D5185m 1300 Sulfur ppm ASTM D5185m 4248 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 Base Number (BN) mg KOH/g ASTM D2896 6.4		Emulsified Water	scalar	*Visual	>0.2	NEG		
Boron ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 92 Magnesium ppm ASTM D5185m 92 Magnesium ppm ASTM D5185m 92 Magnesium ppm ASTM D5185m 62 Calcium ppm ASTM D5185m 2257 Phosphorus ppm ASTM D5185m 1105 Zinc ppm ASTM D5185m 1300 Sulfur ppm ASTM D5185m 4248 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 Base Number (BN) mg KOH/g ASTM D2896 6.4								
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service. Barium ppm ASTM D5185m 92 Manganese ppm ASTM D5185m 92 Magnesium ppm ASTM D5185m 62 Calcium ppm ASTM D5185m 2257 Phosphorus ppm ASTM D5185m 1105 Zinc ppm ASTM D5185m 1300 Sulfur ppm ASTM D5185m 4248 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 Base Number (BN) mg KOH/g ASTM D2896 6.4	FLUID CONDITION							
oil. The condition of the oil is suitable for further service. Molybdenum ppm ASTM D5185m 92 Magnesium ppm ASTM D5185m 62 Calcium ppm ASTM D5185m 2257 Phosphorus ppm ASTM D5185m 1105 Zinc ppm ASTM D5185m 1300 Sulfur ppm ASTM D5185m 4248 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 Base Number (BN) mg KOH/g ASTM D2896 6.4	The BN result indicates that there is suitable alkalinity remaining in the							
Manganese ppm ASTM D5185m <1								
Magnesium ppm ASTM D5185m 62 Calcium ppm ASTM D5185m 2257 Phosphorus ppm ASTM D5185m 1105 Zinc ppm ASTM D5185m 1300 Sulfur ppm ASTM D5185m 4248 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 Base Number (BN) mg KOH/g ASTM D2896 6.4		•	ppm					
Calcium ppm ASTM D5185m 2257 Phosphorus ppm ASTM D5185m 1105 Zinc ppm ASTM D5185m 1300 Sulfur ppm ASTM D5185m 4248 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 Base Number (BN) mg KOH/g ASTM D2896 6.4								
Phosphorus ppm ASTM D5185m 1105 Zinc ppm ASTM D5185m 1300 Sulfur ppm ASTM D5185m 4248 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 Base Number (BN) mg KOH/g ASTM D2896 6.4		_						
Zinc ppm ASTM D5185m 1300 Sulfur ppm ASTM D5185m 4248 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 Base Number (BN) mg KOH/g ASTM D2896 6.4								
Sulfur ppm ASTM D5185m 4248 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 Base Number (BN) mg KOH/g ASTM D2896 6.4		•						
Oxidation Abs/.1mm *ASTM D7414 >25 16.4 Base Number (BN) mg KOH/g ASTM D2896 6.4								
Base Number (BN) mg KOH/g ASTM D2896 6.4								
					>25			
Visc @ 100°C cSt ASTM D445		, ,						
		Visc @ 100°C	cSt	ASTM D445		10.9		





Certificate L2367

Laboratory Sample No.

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

Lab Number : 06222162

: ML0000592

Unique Number : 11100359

Received **Tested** Diagnosed

Test Package : CONST (Additional Tests: FuelDilution, TBN) To discuss this sample report, contact Customer Service at 1-800-237-1369.

: 29 Jun 2024 - Don Baldridge

: 27 Jun 2024

: 28 Jun 2024

Contact: MATT GOFORTH m.goforth@townoforangeva.gov

T: (540)859-3428

TOWN OF ORANGE

235 WARREN ST

ORANGE, VA

US 22960

* - 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)