WEAR CONTAMINATION FLUID CONDITION

NORMAL NORMAL NORMAL

Machine Id

Component
Diesel Engine

DIESEL ENGINE OIL SAE 15W40 (--- QTS)

Sample Date Sample Sample Sample Sample Sample Date Sample Date Sample Status Sample Status	DIESEL ENGINE OIL SAE 13W40 (Q13)							
Sample Number Client Into W00932884 Sample Number Client Into Sample Date Client Into Client Into	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Date Client Info	Resample at the next service interval to monitor. Please specify the component make and model with your next sample.	Sample Number		Client Info		WC0932894		
Machine Age mis Cilent Info 0		Sample Date		Client Info		19 Apr 2024		
Filter Age		Machine Age	mls	Client Info		244188		
Oil Changed Filter Changed Sample Status Not Changed Not Changed Not Changed Sample Status Not Changed Not Cha		Oil Age	mls	Client Info		0		
Filter Changed Sample Status Sample Stat		Filter Age	mls	Client Info		0		
NORMAL		Oil Changed		Client Info		Not Changd		
Iron		Filter Changed		Client Info		Not Changd		
Chromium ppm ASTM DS165m >20 <1 Titanium ppm ASTM DS165m >20 <1 Titanium ppm ASTM DS165m >20 <1 Titanium ppm ASTM DS165m >20 <1 ASTM DS165m >30 <1 ASTM DS165m >30 <1 ASTM DS165m >15 <1 ASTM DS165m >25 4 ASTM DS165m >20 4 ASTM DS165m >20 4 ASTM DS165m >20 AST		Sample Status				NORMAL		
Chromium ppm ASTM DS165m >20 <1 Titanium ppm ASTM DS165m >20 <1 Titanium ppm ASTM DS165m >20 <1 Titanium ppm ASTM DS165m >20 <1 ASTM DS165m >30 <1 ASTM DS165m >30 <1 ASTM DS165m >15 <1 ASTM DS165m >25 4 ASTM DS165m >20 4 ASTM DS165m >20 4 ASTM DS165m >20 AST	WEAR							
Nickel ppm ASTM D6185m >4 0	WEAR							
Nicket ppm ASTM D6165m -1	All component wear rates are normal.							
Silver ppm ASTM D5185m >20 4			• •		>4			
Aluminum ppm ASTM D5185m >20 4			ppm					
Lead			• •					
Copper								
Tin								
Vanadium ppm ASTM D5185m volume volume			ppm					
White Metal Scalar Visual NONE NON					>15			
Yellow Metal Scalar *Visual NONE NONE								
Silicon ppm ASTM D5185m >25 4								
Potassium ppm ASTM D5185m 20 4		Yellow Metal	scalar	*Visual	NONE	NONE		
Potassium ppm ASTM D5185m 20 4	CONTAMINATION	Silicon	nnm	ΔSTM D5185m	>25	4		
Fuel WC Method >5 <1.0	CONTAIVINATION							
Water WC Method >0.2 NEG	There is no indication of any contamination in the oil.		ррпп					
Glycol WC Method NEG Soot % % *ASTM D7844 >3 0.5 Soot % *ASTM D7844 >3 0.5 Soot % *ASTM D7844 >3 0.5 Soot % *ASTM D7845 >30 Soot % Soot & *ASTM D7845 >30 Soot & *ASTM D7846 >30 Soot								
Soot %					70.L			
Nitration		•	%		>3			
Sulfation Abs/.1mm *ASTM D7415 >30 18.9 Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML								
Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NORML								
Debris Scalar *Visual NONE NONE Sand/Dirt Scalar *Visual NONE NONE Sand/Dirt Scalar *Visual NONE NONE Sand/Dirt Scalar *Visual NORML NORML N								
Sand/Dirt Scalar *Visual NONE NONE Appearance Scalar *Visual NORML								
Appearance Scalar *Visual NORML NORM		Sand/Dirt						
Codor Scalar *Visual NORML N		Appearance	scalar	*Visual	NORML	NORML		
Sodium ppm ASTM D5185m >158 2		• •	scalar	*Visual		NORML		
Boron ppm ASTM D5185m 250 38 Magnesium ppm ASTM D5185m 100 <1 Magnesium ppm ASTM D5185m 100 88 Magnesium ppm ASTM D5185m 100 88 Magnesium ppm ASTM D5185m 450 239 Calcium ppm ASTM D5185m 1150 1222 Phosphorus ppm ASTM D5185m 1350 1427 Sulfur ppm ASTM D5185m 4250 4765 Oxidation Abs/.1mm *ASTM D7144 >25 14.5 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.9		Emulsified Water	scalar	*Visual	>0.2	NEG		
Boron ppm ASTM D5185m 250 38 Magnesium ppm ASTM D5185m 100 <1 Magnesium ppm ASTM D5185m 100 88 Magnesium ppm ASTM D5185m 100 88 Magnesium ppm ASTM D5185m 450 239 Calcium ppm ASTM D5185m 1150 1222 Phosphorus ppm ASTM D5185m 1350 1427 Sulfur ppm ASTM D5185m 4250 4765 Oxidation Abs/.1mm *ASTM D7144 >25 14.5 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.9								
The BN result indicates that there is suitable alkalinity remaining in the bil. The condition of the oil is suitable for further service. Barium ppm ASTM D5185m 10 38 38 38 38 38 38 38 3	FLUID CONDITION							
Molybdenum ppm ASTM D5185m 100 88	The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.							
Molybdenum ppm ASTM D5185m 100 88 Manganese ppm ASTM D5185m <1 Magnesium ppm ASTM D5185m 450 239 Calcium ppm ASTM D5185m 3000 2275 Phosphorus ppm ASTM D5185m 1150 1222 Zinc ppm ASTM D5185m 1350 1427 Sulfur ppm ASTM D5185m 4250 4765 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.9								
Magnesium ppm ASTM D5185m 450 239 Calcium ppm ASTM D5185m 3000 2275 Phosphorus ppm ASTM D5185m 1150 1222 Zinc ppm ASTM D5185m 1350 1427 Sulfur ppm ASTM D5185m 4250 4765 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.9		•			100			
Calcium ppm ASTM D5185m 3000 2275 Phosphorus ppm ASTM D5185m 1150 1222 Zinc ppm ASTM D5185m 1350 1427 Sulfur ppm ASTM D5185m 4250 4765 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.9					450			
Phosphorus ppm ASTM D5185m 1150 1222 Zinc ppm ASTM D5185m 1350 1427 Sulfur ppm ASTM D5185m 4250 4765 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.9		•						
Zinc ppm ASTM D5185m 1350 1427 Sulfur ppm ASTM D5185m 4250 4765 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.9								
Sulfur ppm ASTM D5185m 4250 4765 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.9		·						
Oxidation Abs/.1mm *ASTM D7414 >25 14.5 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.9								
Base Number (BN) mg KOH/g ASTM D2896 8.5 6.9								
VISC @ 100°C CST ASIM D445 14.4 \ 13.8 /		,	0 0					
		visc @ 100°C	051	ASTIVI D445	14.4	13.8		





Certificate L2367

Report Id: WCPRAL [WUSCAR] 06195110 (Generated: 05/31/2024 11:41:02) Rev: 1

Laboratory Sample No.

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

: WC0932894 Lab Number : 06195110 Unique Number : 11057233

Received **Tested** Diagnosed

: 31 May 2024 : 31 May 2024 - Wes Davis Test Package : MOB 1 (Additional Tests: TBN)

: 30 May 2024

1551 ROCK QUARRY ROAD RALEIGH, NC US 27610

WAKE COUNTY PUBLIC SCHOOL SYSTEM

Contact: DEVIN WEBER dweber@wcpss.net T: (919)856-8076

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)

F: x: