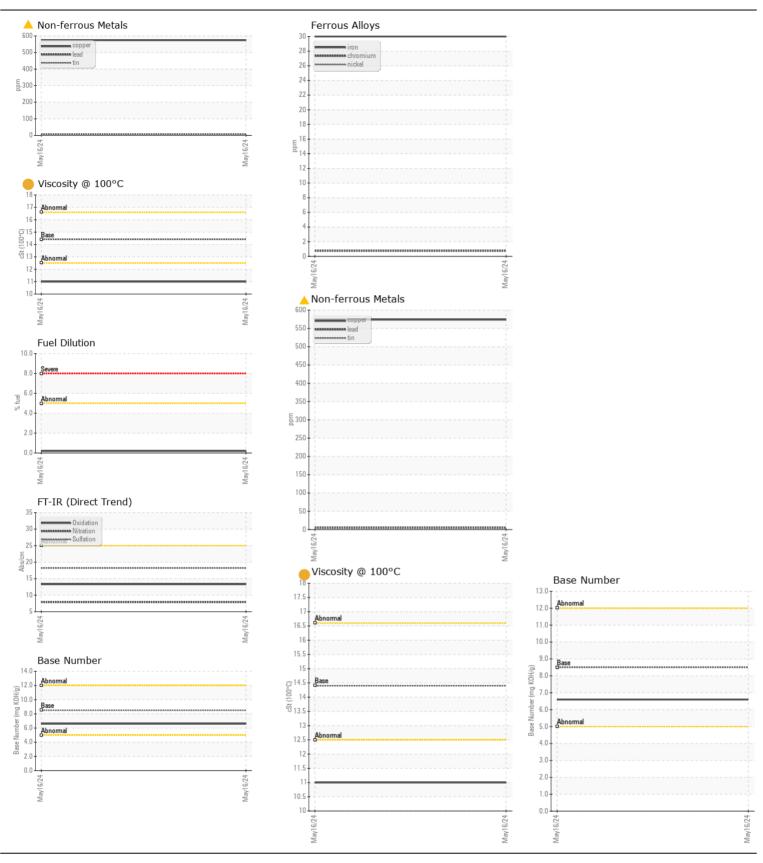
WEAR CONTAMINATION **FLUID CONDITION** **ABNORMAL** NORMAL **ATTENTION**

Machine Id

266/E-2

Part	Diesel Engine							
Test	Fluid							
Name	DIESEL ENGINE OIL SAL 13W40 (Q13)							
Sample Date Client Info 16 May 2024 Client Info O Competence action is recommended at this time. Resample at the next service interval to monitor. Sample Date Client Info O Competence action is recommended at this time. Resample at the next service interval to monitor. Client Info O Competence Client Info O Competence Client Info O Competence Client Info Changed Changed Changed Changed Changed Changed Changed Changed Changed	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Contractive action is recommended at this time. Resample at the next service interval to monitor. Color in the color i	corrective action is recommended at this time. Resample at the next	Sample Number		Client Info		WC0868240		
Service interval to monitor.		Sample Date		Client Info		16 May 2024		
Oil Age hrs Client Info O		Machine Age	hrs	Client Info		0		
Oil Changed Client Info		Oil Age	hrs			0		
Filter Changed Sample Status		•	hrs			-		
Name						_		
Iron		•		Client Info		•		
Chromium ppm ASTM D518sm 20 41		Sample Status				ABNORMAL		
Chromium ppm ASTIN D5185m >20	WFAR	Iron	mag	ASTM D5185m	>100	30		
Nickel	The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling							
metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal. Titanium ppm ASTM 05185m 20 5 All minium ppm ASTM 05185m 20 5 All minium ppm ASTM 05185m 20 5 ASTM 05185m 330 △ 574 Titanium ppm ASTM 05185m 340 5 Copper ppm ASTM 05185m 340 5 Titanium ppm ASTM 05185m 340 3 Titanium ppm ASTM 05185								
Silver ppm ASTM DSISSD >2								
Aluminum ppm ASTM 051855 >20 5		Silver			>3	2		
Lead ppm ASTM D6185m >40 5		Aluminum						
Copper		Lead		ASTM D5185m	>40	5		
Vanadium ppm ASTM D5185m NONE NONE NONE Valued Scalar Visual NONE NONE		Copper	ppm	ASTM D5185m	>330	<u> </u>		
White Metal Yellow Metal Scalar Visual NONE NONE NONE NONE NONE VISUAL NONE NONE NONE NONE NONE NONE NONE NON		Tin	ppm	ASTM D5185m	>15	4		
Vellow Metal Scalar Visual NONE NO		Vanadium	ppm	ASTM D5185m		<1		
Silicon ppm ASTM D5185m >25 8		White Metal	scalar	*Visual	NONE	NONE		
Potassium		Yellow Metal	scalar	*Visual	NONE	NONE		
Potassium	CONTAMINATION	Ciliana		ACTM DE10E	05			
Fuel content negligible. There is no indication of any contamination in the oil. Fuel % ASTM D3524 >5 0.2	Fuel content negligible. There is no indication of any contamination in							
Water WC Method Soc NEG Soc WC Method Soc NEG Soc Soc WC Method NEG Soc WC								
Glycol WC Method NEG			/0					
Soot %					<i>></i> 0.2			
Nitration		-	%		>3			
Sulfation Abs/.tmm *ASTM D7415 >30 18.2								
Silt scalar *Visual NONE NONE NONE Sand/Dit Scalar *Visual NONE NONE NONE Sand/Dit Scalar *Visual NONE NONE Sand/Dit Scalar *Visual NONE NONE Scalar *Visual NONE NONE Scalar *Visual NONE NONE Scalar *Visual NORML *Visual NORML *Visual NORML *Visual NORML *Visual								
Sand/Dirt scalar *Visual NONE NONE NORML N								
Appearance		Debris	scalar	*Visual	NONE	NONE		
Codor Scalar *Visual NORML NORML Fmulsified Water Scalar *Visual Scalar *Visual *Visual *Scalar *Scalar *Visual *Scalar *Scalar *Visual *Scalar *Scala		Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Water scalar *Visual >0.2 NEG		Appearance	scalar	*Visual	NORML	NORML		
Sodium ppm ASTM D5185m >158 4		Odor	scalar	*Visual	NORML	NORML		
Boron ppm ASTM D5185m 250 16		Emulsified Water	scalar	*Visual	>0.2	NEG		
Boron ppm ASTM D5185m 250 16	ELUID CONDITION	Cadium		ACTM DE10Em	. 150	4		
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type. Barium ppm ASTM D5185m 100 19 Molybdenum ppm ASTM D5185m 100 19 Manganese ppm ASTM D5185m 4 Magnesium ppm ASTM D5185m 450 177 Calcium ppm ASTM D5185m 3000 2334 Phosphorus ppm ASTM D5185m 1150 898 Zinc ppm ASTM D5185m 1350 1048 Sulfur ppm ASTM D5185m 4250 3614 Oxidation Abs/.1mm *ASTM D5185m 4250 3614 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.6	FLUID CONDITION							
there is suitable alkalinity remaining in the oil. Confirm oil type. Molybdenum ppm ASTM D5185m 100 19 Manganese ppm ASTM D5185m 450 177 Calcium ppm ASTM D5185m 3000 2334 Phosphorus ppm ASTM D5185m 1150 898 Zinc ppm ASTM D5185m 1350 1048 Sulfur ppm ASTM D5185m 4250 3614 Oxidation Abs/.1mm *ASTM D7414 >25 13.3 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.6	·							
Manganese ppm ASTM D5185m 4 Magnesium ppm ASTM D5185m 450 177 Calcium ppm ASTM D5185m 3000 2334 Phosphorus ppm ASTM D5185m 1150 898 Zinc ppm ASTM D5185m 1350 1048 Sulfur ppm ASTM D5185m 4250 3614 Oxidation Abs/.1mm *ASTM D7414 >25 13.3 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.6					-			
Magnesium ppm ASTM D5185m 450 177 Calcium ppm ASTM D5185m 3000 2334 Phosphorus ppm ASTM D5185m 1150 898 Zinc ppm ASTM D5185m 1350 1048 Sulfur ppm ASTM D5185m 4250 3614 Oxidation Abs/.1mm *ASTM D7414 >25 13.3 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.6		•			100			
Calcium ppm ASTM D5185m 3000 2334 Phosphorus ppm ASTM D5185m 1150 898 Zinc ppm ASTM D5185m 1350 1048 Sulfur ppm ASTM D5185m 4250 3614 Oxidation Abs/.1mm *ASTM D7414 >25 13.3 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.6		-			450			
Phosphorus ppm ASTM D5185m 1150 898 Zinc ppm ASTM D5185m 1350 1048 Sulfur ppm ASTM D5185m 4250 3614 Oxidation Abs/.1mm *ASTM D7414 >25 13.3 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.6		•						
Zinc ppm ASTM D5185m 1350 1048 Sulfur ppm ASTM D5185m 4250 3614 Oxidation Abs/.1mm *ASTM D7414 >25 13.3 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.6								
Sulfur ppm ASTM D5185m 4250 3614 Oxidation Abs/.1mm *ASTM D7414 >25 13.3 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.6		•						
Oxidation Abs/.1mm *ASTM D7414 >25 13.3 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.6								
Base Number (BN) mg KOH/g ASTM D2896 8.5 6.6		Oxidation						
Visc @ 100°C cSt ASTM D445 14.4 (11.0)		Base Number (BN)	mg KOH/g			6.6		
		Visc @ 100°C	cSt	ASTM D445	14.4	11.0		







Certificate L2367

Laboratory Sample No.

: WC0868240 Lab Number : 06188825

Unique Number : 11045577

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 23 May 2024 **Tested** : 28 May 2024

Diagnosed

: 28 May 2024 - Don Baldridge Test Package: CONST (Additional Tests: FuelDilution, PercentFuel, TBN) 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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