**WEAR** CONTAMINATION **FLUID CONDITION** 

**NORMAL NORMAL ATTENTION** 

## JCB 510-56 2912041

Component Diesel Engine

Test	JCB 5W40 (12 GAL)							
No corrective action is recommended at this time. Resample at the next service interval to monitor.	RECOMMENDATION	Test	UOM	Method	I imit/Abn	Current	History1	History2
No corrective action is recommended at this time. Resample at the next service interval to monitor.	TEODIMINERDATION				2.1111071011			
Machine Age	No corrective action is recommended at this time. Resample at the	•						
Oil Age   hrs   Cilent Info   O   O   Oil Not Changed   Cilent Info   Oil Changed	next service interval to monitor.		hrs					
Filter Age   Oil Changed   Cilent Info   Not Changed   Filter Changed   Cilent Info   Not Changed   Cilent Info   Cilent Info   Not Changed   Cilent Info   Cilent Info								
Oil Changed   Client Info   Not Changed   Not Changed   Sample Status   Not Changed   Not Changed								
Filter Changed Sample Status   Status		•						
Name				Client Info				
All component wear rates are normal. The wear metal levels do not reflect the reported failure.    Chromium   ppm   ASTIN DSISSm   > 4   0		_						
All component wear rates are normal. The wear metal levels do not reflect the reported failure.    Chromium   ppm   ASTM D5185m   >4   0	WEAD	Iron	nnm	ACTM DE10Em	. 105			
Nickel   ppm   ASTM DS185m   3   0	WEAR							
reflect the reported failure.    Trianium   ppm   ASTIN D5165m   3   0	All component wear rates are normal. The wear metal levels do not							
Silver   ppm   ASTM 05185m   25   2	•				>4			
Aluminum   ppm   ASTM D5185m   >25   <1					. 0			
Lead								
Copper   ppm   ASTM DS185m   >12.5   2         Tin   ppm   ASTM DS185m   >4   <1         Vanadium   ppm   ASTM DS185m   0         Vanadium   ppm   ASTM DS185m   0   0       Vallow Metal   scalar   Visual   NONE   NONE       Vallow Metal   Scalar   NONE   NONE   NONE   NEG       Vallow Metal   Scalar   NONE   NEG       Vallow Metal   Scalar   NONE   NEG       Vallow Metal   Scalar   NONE   NONE   NEG       Vallow Metal   Scalar   NONE								
Tin								
Vanadium   ppm   ASTM D5185m   NONE   NON								
White Metal   Scalar   Visual   NONE   NON					>4			
Yellow Metal   Scalar   Visual   NONE   NO					NONE			
Silicon   ppm   ASTM D5185m   >20   2								
Potassium   ppm   ASTM D5185m   20   2		Tellow Metal	Scalai	Visuai	INOINL	INONE		
Potassium   ppm   ASTM D5185m   20   2	CONTAMINATION	Silicon	ppm	ASTM D5185m	>50	33		
Water   WC Method   O.2   NEG     O.   O.5		Potassium	ppm	ASTM D5185m	>20	2		
Water   Witchest   W		Fuel	%	ASTM D3524	>5	0.6		
Soot %	the oil.	Water		WC Method	>0.2	NEG		
Nitration   Abs/cm		Glycol		WC Method		NEG		
Sulfation   Abs/.lmm   ASTM D7415   >30   15.4		Soot %	%	*ASTM D7844	>3	0		
Silt   Scalar *Visual   NONE   NONE   NONE   Sand/Dirt   Scalar *Visual   NONE   NONE   NONE   Sand/Dirt   Scalar *Visual   NONE   NONE   NONE   Sand/Dirt   Scalar *Visual   NORML   NORML   Scalar *Visual   NORML   NORML		Nitration	Abs/cm	*ASTM D7624	>20	5.2		
Debris   Scalar   *Visual   NONE   NONE   NONE   Appearance   Scalar   *Visual   NONE   NON		Sulfation	Abs/.1mm	*ASTM D7415	>30	15.4		
Sand/Dirt   Scalar   *Visual   NONE   NORML   NORML		Silt	scalar	*Visual	NONE	NONE		
Appearance   Scalar   *Visual   NORML   NORM		Debris	scalar	*Visual	NONE	NONE		
Odor Emulsified Water   Scalar   *Visual   NORML		Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Water   Scalar   *Visual   >0.2   NEG		Appearance	scalar	*Visual	NORML	NORML		
Sodium   ppm   ASTM D5185m   Calcium   ppm   ASTM D5185m   Sodium   ppm   ASTM D5185m   Calcium   ppm   ASTM D5185m   Calcium   ppm   ASTM D5185m   Calcium   ppm   ASTM D5185m   Calcium   ppm   ASTM D5185m   D5185m   Calcium   ppm   ASTM D5185m   D5185		Odor	scalar	*Visual	NORML	NORML		
Boron   ppm   ASTM D5185m   0         Barium   ppm   ASTM D5185m   0         Molybdenum   ppm   ASTM D5185m   2         Manganese   ppm   ASTM D5185m   2         Calcium   ppm   ASTM D5185m   2         Calcium   ppm   ASTM D5185m   2004         Phosphorus   ppm   ASTM D5185m   824         Zinc   ppm   ASTM D5185m   955         Sulfur   ppm   ASTM D5185m   3249         Oxidation   Abs/.1mm   *ASTM D7414   >25   9.4         Base Number (BN)   mg KOH/g   ASTM D2896   7.5         Visc @ 40°C   CSt   ASTM D445   & 82.0         Visc @ 100°C   CSt   ASTM D445   & 11.8		Emulsified Water	scalar	*Visual	>0.2	NEG		
Boron   ppm   ASTM D5185m   0         Barium   ppm   ASTM D5185m   0         Molybdenum   ppm   ASTM D5185m   2         Manganese   ppm   ASTM D5185m   2         Calcium   ppm   ASTM D5185m   2         Calcium   ppm   ASTM D5185m   2004         Phosphorus   ppm   ASTM D5185m   824         Zinc   ppm   ASTM D5185m   955         Sulfur   ppm   ASTM D5185m   3249         Oxidation   Abs/.1mm   *ASTM D7414   >25   9.4         Base Number (BN)   mg KOH/g   ASTM D2896   7.5         Visc @ 40°C   CSt   ASTM D445   & 82.0         Visc @ 100°C   CSt   ASTM D445   & 11.8	FLUID CONDITION	Sodium	ppm	ASTM D5185m		<1		
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   2         Molybdenum   ppm   ASTM D5185m   2         Manganese   ppm   ASTM D5185m   2         Magnesium   ppm   ASTM D5185m   2         Calcium   ppm   ASTM D5185m   2         Phosphorus   ppm   ASTM D5185m   2004         Phosphorus   ppm   ASTM D5185m   824         Zinc   ppm   ASTM D5185m   955         Sulfur   ppm   ASTM D5185m   3249         Oxidation   Abs/.1mm *ASTM D7414   >25   9.4         Base Number (BN)   mg KOH/g   ASTM D2896   7.5         Visc @ 40°C   CSt   ASTM D445   82.0         Visc @ 100°C   CSt   ASTM D445   11.8	I ESID CONDITION							
there is suitable alkalinity remaining in the oil. Confirm oil type.    Molybdenum   ppm   ASTM D5185m   2         Manganese   ppm   ASTM D5185m   2         Magnesium   ppm   ASTM D5185m   22         Calcium   ppm   ASTM D5185m   2004         Phosphorus   ppm   ASTM D5185m   824         Zinc   ppm   ASTM D5185m   955         Sulfur   ppm   ASTM D5185m   3249         Oxidation   Abs/.1mm *ASTM D7414   >25   9.4         Base Number (BN)   mg KOH/g   ASTM D2896   7.5         Visc @ 40°C   cSt   ASTM D445   82.0         Visc @ 100°C   cSt   ASTM D445   11.8								
Manganese       ppm       ASTM D5185m       2           Magnesium       ppm       ASTM D5185m       22           Calcium       ppm       ASTM D5185m       2004           Phosphorus       ppm       ASTM D5185m       824           Zinc       ppm       ASTM D5185m       955           Sulfur       ppm       ASTM D5185m       3249           Oxidation       Abs/.1mm       *ASTM D7414       >25       9.4           Base Number (BN)       mg KOH/g       ASTM D2896       7.5           Visc @ 40°C       cSt       ASTM D445       82.0           Visc @ 100°C       cSt       ASTM D445       11.8								
Magnesium         ppm         ASTM D5185m         22             Calcium         ppm         ASTM D5185m         2004             Phosphorus         ppm         ASTM D5185m         824             Zinc         ppm         ASTM D5185m         955             Sulfur         ppm         ASTM D5185m         3249             Oxidation         Abs/.1mm         *ASTM D7414         >25         9.4             Base Number (BN)         mg KOH/g         ASTM D2896         7.5             Visc @ 40°C         cSt         ASTM D445         82.0             Visc @ 100°C         cSt         ASTM D445         11.8		-						
Calcium       ppm       ASTM D5185m       2004           Phosphorus       ppm       ASTM D5185m       824           Zinc       ppm       ASTM D5185m       955           Sulfur       ppm       ASTM D5185m       3249           Oxidation       Abs/.1mm       *ASTM D7414       >25       9.4           Base Number (BN)       mg KOH/g       ASTM D2896       7.5           Visc @ 40°C       cSt       ASTM D445       82.0           Visc @ 100°C       cSt       ASTM D445       11.8		-						
Phosphorus         ppm         ASTM D5185m         824             Zinc         ppm         ASTM D5185m         955             Sulfur         ppm         ASTM D5185m         3249             Oxidation         Abs/.1mm         *ASTM D7414         >25         9.4             Base Number (BN)         mg KOH/g         ASTM D2896         7.5             Visc @ 40°C         cSt         ASTM D445         82.0             Visc @ 100°C         cSt         ASTM D445         11.8								
Zinc         ppm         ASTM D5185m         955             Sulfur         ppm         ASTM D5185m         3249             Oxidation         Abs/.1mm         *ASTM D7414         >25         9.4             Base Number (BN)         mg KOH/g         ASTM D2896         7.5             Visc @ 40°C         cSt         ASTM D445         82.0             Visc @ 100°C         cSt         ASTM D445         11.8								
Sulfur         ppm         ASTM D5185m         3249             Oxidation         Abs/.1mm         *ASTM D7414         >25         9.4             Base Number (BN)         mg KOH/g         ASTM D2896         7.5             Visc @ 40°C         cSt         ASTM D445         82.0             Visc @ 100°C         cSt         ASTM D445         11.8								
Oxidation       Abs/.1mm       *ASTM D7414       >25       9.4           Base Number (BN)       mg KOH/g       ASTM D2896       7.5           Visc @ 40°C       cSt       ASTM D445       82.0           Visc @ 100°C       cSt       ASTM D445       ▲ 11.8				ASTM D5185m				
Base Number (BN)       mg KOH/g       ASTM D2896       7.5           Visc @ 40°C       cSt       ASTM D445       82.0           Visc @ 100°C       cSt       ASTM D445       ▲ 11.8					>25			
Visc @ 40°C       cSt       ASTM D445       82.0           Visc @ 100°C       cSt       ASTM D445       ▲ 11.8								
Visc @ 100°C   cSt   ASTM D445   ▲ 11.8								
		Visc @ 100°C						
Viscosity Index (VI) Scale ASTM D2270 (136 )		Viscosity Index (VI)	Scale	ASTM D2270		136		





Laboratory Sample No.

: JCB004220 Lab Number : 06084670 Unique Number : 10872115

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

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Diagnosed

: 13 Feb 2024 : 13 Feb 2024 - Jonathan Hester Test Package : MOB 1 ( Additional Tests: FuelDilution, KV40, PercentFuel, TBN, VI )

: 09 Feb 2024

**HOOBER INC** 10450 SUCCESS ST ASHLAND, VA US 23005 Contact: ED COOPER

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. RECOOPER@HOOBER.COM T: (804)798-1500 F: (804)752-2164