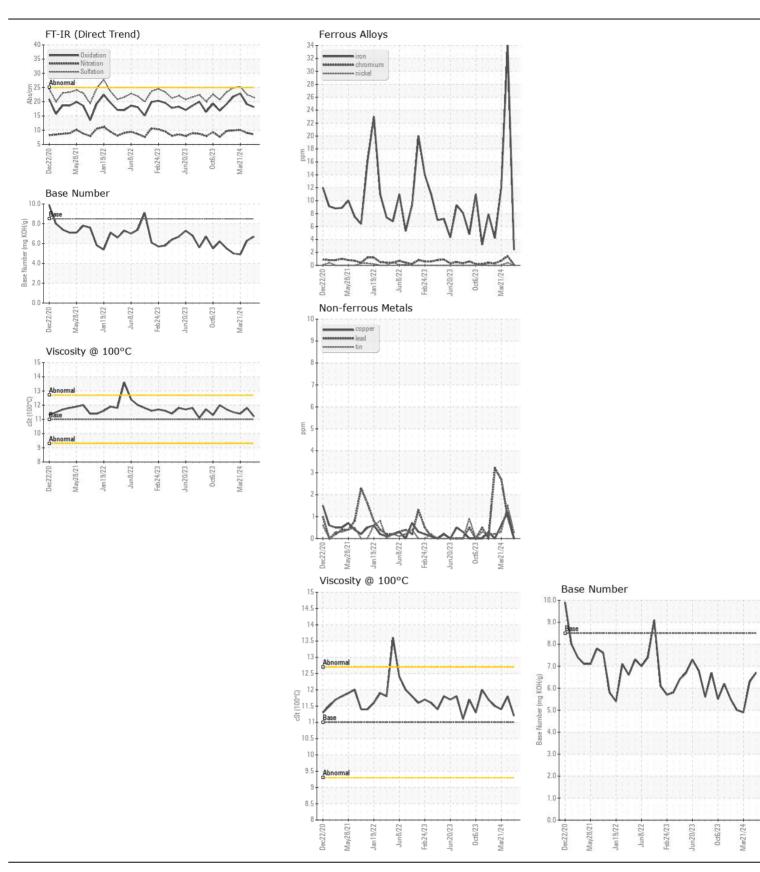
WEAR CONTAMINATION **FLUID CONDITION**

NORMAL NORMAL NORMAL

Machine Id

22150 Component Diesel Engine

Test Sample Number Sample Date Machine Age Oil Age Filter Age Oil Changed Filter Changed Sample Status Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal Yellow Metal	hrs hrs hrs ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	Method Client Info ASTM D5185m *Visual	>20 >4 >3 >20 >40 >330	Current WC0909738 09 May 2024 13561 314 314 Changed Changed NORMAL 2 <1 0 0 <1 0 <1 0 <1 0 0 <1 0	History1 WC0909713 03 Apr 2024 13248 326 0 Changed Changed NORMAL 34 1 <1 <1 0 9 1 1 2	History2 WC0909776 21 Mar 2024 178327 5723 5723 Changed Changed NORMAL 12 <1 0 <1 0 2 3 <1 <1
Sample Date Machine Age Oil Age Filter Age Oil Changed Filter Changed Sample Status Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	Client Info ASTM D5185m *Visual	>20 >4 >3 >20 >40 >330 >15	09 May 2024 13561 314 314 Changed Changed NORMAL 2 <1 0 0 <1 0 <1 0 <1	03 Apr 2024 13248 326 0 Changed Changed NORMAL 34 1 <1 <1 0 9 1	21 Mar 2024 178327 5723 5723 Changed Changed NORMAL 12 <1 0 <1 0 2 3
Machine Age Oil Age Filter Age Oil Changed Filter Changed Sample Status Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	Client Info ASTM D5185m *Visual	>20 >4 >3 >20 >40 >330 >15	13561 314 314 Changed Changed NORMAL 2 <1 0 0 0 <1 0	13248 326 0 Changed Changed NORMAL 34 1 <1 <1 0 9	178327 5723 5723 Changed Changed NORMAL 12 <1 0 <1 0 2 3 <1
Oil Age Filter Age Oil Changed Filter Changed Sample Status Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	Client Info Client Info Client Info Client Info Client Info ASTM D5185m *Visual	>20 >4 >3 >20 >40 >330 >15	314 314 Changed Changed NORMAL 2 <1 0 0 0 <1 0	326 0 Changed Changed NORMAL 34 1 <1 <1 0 9 1	5723 5723 Changed Changed NORMAL 12 <1 0 <1 0 2 3 <1
Filter Age Oil Changed Filter Changed Sample Status Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	Client Info Client Info Client Info Client Info ASTM D5185m *Visual	>20 >4 >3 >20 >40 >330 >15	314 Changed Changed NORMAL 2 <1 0 0 0 <1 0	O Changed Changed NORMAL 34 1 <1 <1 0 9 1 1	5723 Changed Changed NORMAL 12 <1 0 <1 0 2 3 <1
Oil Changed Filter Changed Sample Status Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	Client Info Client Info Client Info ASTM D5185m *Visual	>20 >4 >3 >20 >40 >330 >15	Changed Changed NORMAL 2 <1 0 0 <1 0 <1 0 <1	Changed Changed NORMAL 34 1 <1 <1 0 9 1	Changed Changed NORMAL 12 <1 0 <1 0 2 3 <1
Filter Changed Sample Status Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *Visual	>20 >4 >3 >20 >40 >330 >15	Changed NORMAL 2 <1 0 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 <	Changed NORMAL 34 1 <1 <1 <0 9 1 1 1	Changed NORMAL 12 <1 0 <1 0 <2 3 <11
Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual	>20 >4 >3 >20 >40 >330 >15	2 <1 0 0 0 <1 0 0 <1 0 0 <1	34 1 <1 <1 0 9 1	12 <1 0 <1 0 2 3 <1
Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual	>20 >4 >3 >20 >40 >330 >15	<1 0 0 0 0 <1 0 0 <1	1 <1 <1 0 9 1	<1 0 <1 0 2 3 <1
Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual	>20 >4 >3 >20 >40 >330 >15	<1 0 0 0 0 <1 0 0 <1	1 <1 <1 0 9 1	<1 0 <1 0 2 3 <1
Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual	>4 >3 >20 >40 >330 >15	0 0 0 <1 0 0	<1 0 9 1	0 <1 0 2 3 <1
Silver Aluminum Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm ppm ppm ppm scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual	>20 >40 >330 >15	0 <1 0 0 <1	0 9 1 1	0 2 3 <1
Aluminum Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm ppm scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual	>20 >40 >330 >15	0 <1 0 0 <1	9 1 1	2 3 <1
Lead Copper Tin Vanadium White Metal	ppm ppm ppm ppm ppm scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual	>40 >330 >15	0 0 <1	1	3 <1
Copper Tin Vanadium White Metal	ppm ppm ppm ppm scalar	ASTM D5185m ASTM D5185m ASTM D5185m *Visual	>330 >15	0 <1	1	<1
Tin Vanadium White Metal	ppm ppm ppm scalar	ASTM D5185m ASTM D5185m *Visual	>15	<1	1 2	
Vanadium White Metal	ppm scalar	ASTM D5185m *Visual			2	_1
White Metal	scalar	*Visual	NONE	0		< I
			NONE		<1	<1
Yellow Metal	scalar	*\/icual		NONE	NONE	NONE
		Visuai	NONE	NONE	NONE	NONE
Silicon	maa	ASTM D5185m	>25	3	5	4
Potassium	• • • • • • • • • • • • • • • • • • • •			6	5	6
Fuel	le le · · ·					<1.0
Water				NEG		NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.5	0.5
Nitration	Abs/cm	*ASTM D7624	>20	8.5	9.0	10.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.5	22.5	25.3
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORM
Odor	scalar	*Visual	NORML	NORML	NORML	NORM
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m		6	2	1
Boron	ppm	ASTM D5185m	269	54	58	97
Barium	ppm	ASTM D5185m		<1	0	0
Molybdenum	ppm	ASTM D5185m	0	22	27	4
Manganese	ppm	ASTM D5185m		<1	<1	0
Magnesium	ppm	ASTM D5185m	20	333	384	24
Calcium	ppm			1764	1834	2117
Phosphorus	ppm			1017	1094	1010
Zinc	ppm		893	1172	1253	1205
Sulfur	ppm	ASTM D5185m		3650	3492	3414
Oxidation	Abs/.1mm			18.1	19.1	22.9
				6.7	6.3	4.9
	Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Oxidation	Silicon ppm Potassium ppm Fuel Water Glycol Soot % % Nitration Abs/cm Sulfation Abs/.1mm Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Sodium ppm Boron ppm Barium ppm Molybdenum ppm Manganese ppm Magnesium ppm Calcium ppm Calcium ppm Phosphorus ppm Sulfur ppm Sulfur ppm Sulfur ppm Sulfur ppm Oxidation Abs/.1mm Base Number (BN) mg KOH/g	Silicon ppm ASTM D5185m Potassium ppm ASTM D5185m Fuel WC Method Water WC Method Glycol WC Method Soot % % *ASTM D7844 Nitration Abs/cm *ASTM D7845 Sulfation Abs/.1mm *ASTM D7815 Silt scalar *Visual Debris scalar *Visual Sand/Dirt scalar *Visual Appearance scalar *Visual Emulsified Water scalar *Visual Sodium ppm ASTM D5185m Boron ppm ASTM D5185m Barium ppm ASTM D5185m Manganese ppm ASTM D5185m Manganese ppm ASTM D5185m Magnesium ppm ASTM D5185m Calcium ppm ASTM D5185m Calcium ppm ASTM D5185m Phosphorus ppm ASTM D5185m Phosphorus ppm ASTM D5185m Sulfur ppm ASTM D5185m Sulfur ppm ASTM D5185m Oxidation Abs/.1mm *ASTM D71414 Base Number (BN) mg KOH/g ASTM D2896	Silicon ppm ASTM D5185m >25 Potassium ppm ASTM D5185m >20 Fuel WC Method >5 Water WC Method >0.2 Glycol WC Method >0.2 Soot % % *ASTM D7844 >3 Nitration Abs/cm *ASTM D7624 >20 Sulfation Abs/.1mm *ASTM D7415 >30 Silt scalar *Visual NONE Debris scalar *Visual NONE Sand/Dirt scalar *Visual NORML Appearance scalar *Visual NORML Appearance scalar *Visual NORML Codor scalar *Visual >0.2 Sodium ppm ASTM D5185m ASTM D5185m Boron ppm ASTM D5185m 269 Barium ppm ASTM D5185m 0 Manganese ppm ASTM D5185m 0 Magnesium<	Silicon ppm ASTM D5185m >25 3 Potassium ppm ASTM D5185m >20 6 Fuel WC Method >5 <1.0	Silicon ppm ASTM D5185m >25 3 5 Potassium ppm ASTM D5185m >20 6 5 Fuel WC Method >5 <1.0







Certificate L2367

Laboratory Sample No.

: WC0909738 Lab Number : 06178459 Unique Number : 11029785 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 14 May 2024

Tested : 15 May 2024 Diagnosed : 15 May 2024 - Wes Davis

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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)