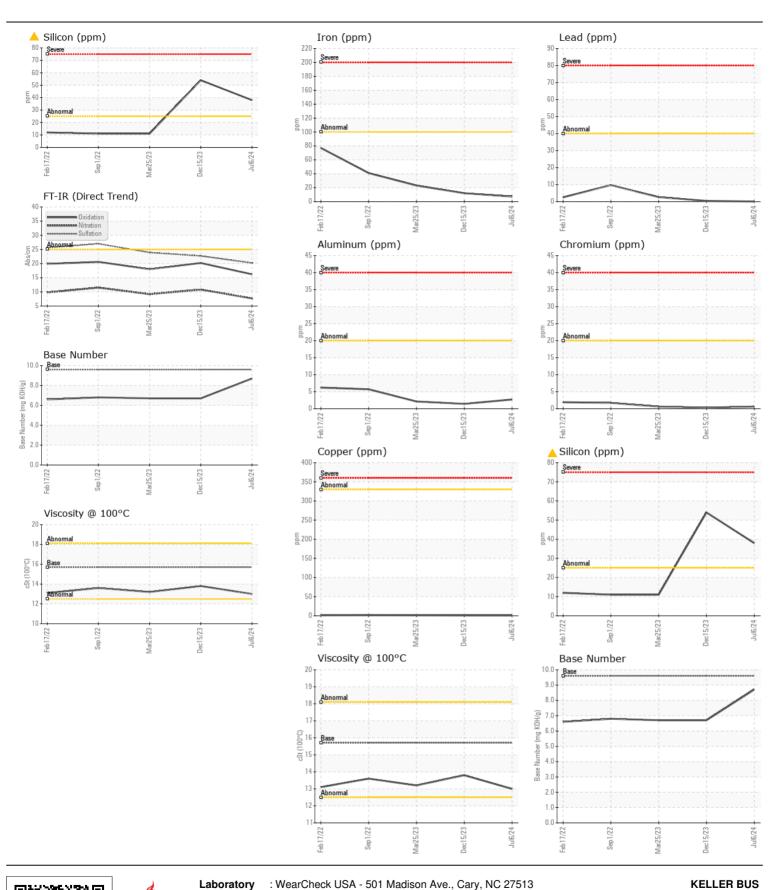
WEAR CONTAMINATION **FLUID CONDITION**

NORMAL ABNORMAL NORMAL

Machine Id

BUS 719
Component
Diesel Engine

RECOMMENDATION We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Sample Date Machine Age Mis Oil Changed Filter Changed Sample Status WEAR All component wear rates are normal. Iron ppm Chromium ppm Chromium ppm Itanium ppm Aluminum ppm Aluminum ppm Lead ppm Copper ppm Tin ppm Vanadium ppm White Metal scale Yellow Metal scale Itanium ppm Silver ppm Silver ppm Silver ppm White Metal Scale Yellow Metal Scale Sulfation Abs/c Sulfation Silt scale Debris scale Appearance	Client Info ASTM D5185m MASTM D5185m	>20 >4 >3 >20 >40 >330	DC0037506 06 Jul 2024 286343 0 0 Changed Changed ABNORMAL 7 <1 0 <1 0 3 0 <1 0 <1 0 <1	15 Dec 2023 269900 0 0 Changed Changed	History2 DC0025258 25 Mar 2023 254786 0 0 Changed Changed NORMAL 23 <1 0 0 2 3
areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Machine Age	Client Info ASTM D5185m	>20 >4 >3 >20 >40 >330 >15 NONE	286343 0 0 Changed Changed ABNORMAL 7 <1 0 <1 0 <1 0 <1	269900 0 0 Changed Changed ABNORMAL 12 <1 0 0 0	254786 0 0 Changed Changed NORMAL 23 <1 0 0
time of sampling has been noted. Resample at the next service interval to monitor. Oil Age mls Oil Changed Filter Changed Sample Status	Client Info ASTM D5185m MASTM D5185m	>20 >4 >3 >20 >40 >330 >15 NONE	0 0 Changed Changed ABNORMAL 7 <1 0 <1 0 <1 0 3 0 <1	0 0 Changed Changed ABNORMAL 12 <1 0 0 1	0 0 Changed Changed NORMAL 23 <1 0 0
to monitor. Oil Age mls Filter Age Oil Changed Filter Changed Sample Status WEAR All component wear rates are normal. Iron ppm Chromium ppm Nickel ppm Titanium ppm Silver ppm Aluminum ppm Aluminum ppm Lead ppm Copper ppm Tin Vanadium ppm White Metal scale Yellow Metal scale Yellow Metal scale Yellow Metal Scale Soot % % Nitration Abs/c Glycol Soot % % Nitration Abs/c Sulfation Abs/c Sulfatio	Client Info Client Info Client Info Client Info Client Info Client Info Market Info Marke	>20 >4 >3 >20 >40 >330 >15 NONE	0 Changed Changed ABNORMAL 7 <1 0 <1 0 3 0 <1	0 Changed Changed ABNORMAL 12 <1 0 0	O Changed Changed NORMAL 23 <1 0 0 2 22
Filter Age Oil Changed Filter Changed Sample Status WEAR All component wear rates are normal. Iron ppm Nickel ppm Titanium ppm Silver ppm Aluminum ppm Lead ppm Copper ppm Tin ppm Vanadium White Metal Yellow Metal scale Yellow Metal Scale Yellow Metal Scale Ootor Amination Elemental level of silicon (Si) above normal. Fuel Water Glycol Soot % Nitration Abs/in Silt scale Debris scale Sand/Dirt scale Appearance odor Scale Scale Debris scale Emulsified Water scale Scale Debris scale	Client Info Client Info Client Info Client Info M ASTM D5185m M ASTM D5	>20 >4 >3 >20 >40 >330 >15 NONE	Changed Changed ABNORMAL 7 <1 0 <1 0 3 0 <1 0	Changed Changed ABNORMAL 12 <1 0 0 1	Changed Changed NORMAL 23 <1 0 0 2
Filter Changed Sample Status WEAR All component wear rates are normal. Iron ppm Chromium ppm Nickel ppm Titanium ppm Aluminum ppm Lead ppm Tin ppm Vanadium Vanadium ppm Vanadium Vanadium ppm Vanadium Vana	Client Info M ASTM D5185m M A	>20 >4 >3 >20 >40 >330 >15 NONE	Changed ABNORMAL 7 <1 0 <1 0 3 0 <1 0 1	Changed ABNORMAL 12 <1 0 0 0 1	Changed NORMAL 23 <1 0 0 2
NEAR All component wear rates are normal. Iron ppm Chromium ppm Nickel ppm Titanium ppm Alumium ppm Lead ppm Copper ppm Tin ppm Vanadium ppm White Metal scala Yellow Metal scala Yellow Metal scala Yellow Motal scala Yellow Metal scala Yell	m ASTM D5185m	>20 >4 >3 >20 >40 >330 >15 NONE	7 <1 0 <1 0 3 0 <1 0	ABNORMAL 12 <1 0 0 0 1	23 <1 0 0 0 2
All component wear rates are normal. Iron ppm Chromium ppm Nickel ppm Titanium ppm Silver ppm Aluminum ppm Lead ppm Copper ppm Vanadium ppm White Metal scala Yellow Metal scala Yellow Metal scala Yellow Metal scala Yellow Metal scala Solicon ppm Potassium ppm Fuel Water Glycol Soot % Nitration Abs/tm Silt scala Debris scala Debris scala Appearance scala Appearance scala Appearance Odor scala Emulsified Water scala The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service. Iron ppm Chromium Ppm Silver ppm Vanadium ppm Nolum Nolum ppm Nolum Nolum Nolum ppm Nolum Nolum Nolum Nolum ppm Nolum	m ASTM D5185m m ASTM D5185m	>20 >4 >3 >20 >40 >330 >15 NONE	7 <1 0 <1 0 3 0 <1 0	12 <1 0 0 0 0	23 <1 0 0 0
All component wear rates are normal. Chromium ppm Nickel ppm Titanium ppm Aluminum ppm Lead ppm Copper ppm Tin ppm Vanadium ppm White Metal scale Yellow Metal Scale Soot % Mater Glycol Soot % % Nitration Abs/tr Silt scale Debris scale Sand/Dirt scale Sand/Dirt scale Appearance scale Odor scale Emulsified Water scale The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service. Chromium ppm Vanadium pp	m ASTM D5185m m ASTM D5185m	>20 >4 >3 >20 >40 >330 >15 NONE	<1 0 <1 0 3 0 <1	<1 0 0 0 0	<1 0 0 0 0
All component wear rates are normal. Chromium ppm Nickel ppm Titanium ppm Aluminum ppm Lead ppm Copper ppm Tin ppm Vanadium ppm White Metal scala Yellow Metal Scala Solicon ppm Potassium ppm Fuel Water Glycol Soot % % Nitration Abs/tr Silt scala Debris scala Sand/Dirt scala Appearance scala Appearance scala Odor scala Emulsified Water scala Solicon ppm Solicon ppm Fuel Water Glycol Soot % % Nitration Abs/tr Silt scala Debris scala Codor scala Emulsified Water scala Solicon ppm Boron ppm Boron ppm Boron ppm Molybdenum ppm Molybdenum ppm Molybdenum ppm	m ASTM D5185m m ASTM D5185m	>20 >4 >3 >20 >40 >330 >15 NONE	<1 0 <1 0 3 0 <1	<1 0 0 0 0	<1 0 0 0 0
All component wear rates are normal. Nickel ppm Titanium ppm Silver ppm Aluminum ppm Lead ppm Tin ppm Vanadium ppm White Metal scala Yellow Metal scala Yellow Metal scala Yellow for silicon (Si) above normal. Fuel Water Glycol Soot % Nitration Abs/s Sulfation Abs/s Silt scala Debris scala Sand/Dirt scala Appearance scala Appearance scala Cdor scala Emulsified Water scala Sodium ppm Boron ppm Molybdenum ppm Molybdenum ppm Molybdenum ppm	m ASTM D5185m	>4 >3 >20 >40 >330 >15 NONE	0 <1 0 3 0 <1	0 0 0 1	0 0 0 2
Titanium ppm Silver ppm Aluminum ppm Lead ppm Copper ppm Tin ppm White Metal scala Yellow Metal scala Silicon ppm Potassium ppm Fuel Water Glycol Soot % % Nitration Abs/c Sulfation Abs/c Sulf	m ASTM D5185m alar *Visual alar *Visual	>3 >20 >40 >330 >15	<1 0 3 0 <1	0 0 1	0 0 2
Silver ppm Aluminum ppm Lead ppm Copper ppm Tin ppm Vanadium ppm White Metal scala Yellow Metal scala Silicon ppm Potassium ppm Fuel Water Glycol Soot % Nitration Abs/cr Sulfation Abs/cr Silt scala Debris scala Sand/Dirt scala Appearance scala Odor scala Emulsified Water scala Odor scala Emulsified Water scala Sodium ppm Boron ppm Boron ppm Boron ppm Boron ppm Barium ppm Molybdenum ppm Molybdenum ppm	m ASTM D5185m m *Visual	>20 >40 >330 >15	0 3 0 <1 0	0 1	0 2
Aluminum ppm Lead ppm Copper ppm Tin ppm Vanadium ppm White Metal scala Yellow Metal scala Yellow Metal scala Yellow Isolate Yellow Metal scala Yellow Metal yellow Yellow Metal Yellow Yello	m ASTM D5185m m ASTM D5185m m ASTM D5185m m ASTM D5185m m ASTM D5185m m ASTM D5185m alar *Visual	>20 >40 >330 >15	3 0 <1 0	1	2
Lead ppm Copper ppm Tin ppm Vanadium ppm White Metal scala Yellow Metal scala Yellow Metal scala Yellow Getal scala Yellow Metal scala Water Glycol Soot % % Nitration Abs/c Sulfation Abs/c Sulfat	m ASTM D5185m alar *Visual alar *Visual	>40 >330 >15 NONE	0 <1 0	<1 1	
Copper ppm Tin ppm Vanadium ppm White Metal scala Yellow Metal scala Potassium ppm Fuel Water Glycol Soot % Nitration Abs/s Sulfation Abs/s Sulfation Abs/s Silt scala Debris scala Sand/Dirt scala Appearance odor scala Appearance Odor scala Emulsified Water scala Odor scala Emulsified Water scala Odor scala Emulsified Water scala Odor ppm Boron ppm Boron ppm Boron ppm Boron ppm Barium ppm Molybdenum ppm Molybdenum ppm	m ASTM D5185m m ASTM D5185m m ASTM D5185m alar *Visual alar *Visual	>330 >15 NONE	<1 0	1	
Tin ppm Vanadium ppm White Metal scala Yellow Metal scala Potassium ppm Fuel Water Glycol Soot % % Nitration Abs/dr Silt scala Debris scala Debris scala Sand/Dirt scala Appearance odor scala Appearance scala Odor scala Emulsified Water Sodium ppm Boron ppm Boron ppm Boron ppm Barium ppm Molybdenum ppm Molybdenum ppm	m ASTM D5185m m ASTM D5185m alar *Visual alar *Visual	>15 NONE	0		2
Vanadium ppm White Metal scala Yellow Metal scala Potassium ppm Fuel Water Glycol Soot % % Nitration Abs/c Sulfation Abs/c Sodium ppm Boron ppm Boron ppm Barium ppm Molybdenum ppm	m ASTM D5185m alar *Visual alar *Visual	NONE		0	0
White Metal scalar Yellow Metal Silicon ppm Fuel Water Glycol Soot % Nitration Abs/c Sulfation Abs/c Sulfation Abs/c Sulfation Abs/c Sulfation Abs/c Sulfation Abs/c Sulfation Abs/c Scalar Scand/Dirt scalar Scand/Dirt scalar Appearance Scalar Scand/Dirt Scalar Emulsified Water scalar Emulsified Water scalar Sc	alar *Visual alar *Visual			0	0
CONTAMINATION Elemental level of silicon (Si) above normal. Fuel Water Glycol Soot % Nitration Abs/.n Silt scala Debris scala Debris scala Sand/Dirt scala Appearance scala Codor scala Emulsified Water scala Fuel Water Glycol Soot % Soutfation Abs/.n Silt scala Debris scala Sand/Dirt scala Appearance scala Codor scala Emulsified Water scala FLUID CONDITION The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service. Sodium ppm Boron ppm Boron ppm Molybdenum ppm Molybdenum ppm	alar *Visual		NONE	NONE	NONE
Elemental level of silicon (Si) above normal. Potassium ppm Fuel Water Glycol Soot % % Nitration Abs/c Sulfation Abs/Im Silt scala Debris scala Sand/Dirt scala Appearance scala Odor scala Emulsified Water scala South Silt scala Debris scala Sand/Dirt scala Sand/Dirt scala Sand/Dirt scala Appearance scala Odor scala Emulsified Water scala Sodium ppm Boron ppm Boron ppm Barium ppm Molybdenum ppm Molybdenum ppm			NONE	NONE	NONE
Elemental level of silicon (Si) above normal. Potassium ppm Fuel Water Glycol Soot % % Nitration Abs/c Sulfation Abs/Im Silt scala Debris scala Sand/Dirt scala Appearance scala Odor scala Emulsified Water scala Sodium ppm Boron ppm Boron ppm Barium ppm Molybdenum ppm Molybdenum ppm					
Elemental level of silicon (Si) above normal. Fuel Water Glycol Soot % % Nitration Abs/.1m Silt scala Debris scala Sand/Dirt scala Appearance scala Odor scala Emulsified Water scala Sodium ppm Boron ppm Boron ppm Barium ppm Molybdenum ppm Molybdenum ppm			▲ 38	<u>^</u> 54	11
Water Glycol Soot % % Nitration Abs/.1m Silt scala Debris scala Sand/Dirt scala Sand/Dirt scala Appearance odor scala Emulsified Water Sodium ppm Boron ppm Barium ppm Molybdenum ppm Molybdenum ppm Molybdenum ppm			2	0	0
Glycol Soot % % Nitration Abs/c Sulfation Abs/.1m Silt scala Debris scala Sand/Dirt scala Appearance scala Odor scala Emulsified Water scala Sodium ppm Boron ppm Boron ppm Barium ppm Molybdenum ppm Molybdenum ppm		>5	<1.0	<1.0	<1.0
Soot % Nitration Abs/c Sulfation Abs/.1m Silt scala Debris scala Sand/Dirt scala Appearance scala Odor scala Emulsified Water scala Emulsified Water scala Sodium ppm Boron ppm Boron ppm Barium ppm Molybdenum ppm Molybdenum ppm	WC Method	>0.2	NEG	NEG	NEG
Nitration Abs/c Sulfation Abs/.1m Silt scala Debris scala Sand/Dirt scala Appearance scala Odor scala Emulsified Water scala Emulsified Water scala Sodium ppm Boron ppm Boron ppm Barium ppm Molybdenum ppm Molybdenum ppm	WC Method	0	NEG	NEG	NEG
Sulfation Abs/.fm Silt scala Debris scala Sand/Dirt scala Appearance scala Odor scala Emulsified Water scala FLUID CONDITION The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service. Sulfation Abs/.fm Silt scala Debris scala Sand/Dirt scala Appearance odder Scala Emulsified Water scala Boron ppm Boron ppm Barium ppm Molybdenum ppm	*ASTM D7844		0.2	0.5	0.6
Silt scalar Debris scalar Sand/Dirt scalar Sand/Dirt scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water sc		>20	7.7	10.8	9.2
Debris scalar Sand/Dirt scalar Appearance scalar Appearance odor scalar Emulsified Water scalar Emulsi			20.2	22.7	23.9
Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Emulsif		NONE	NONE	NONE NONE	NONE
Appearance scalar Codor scalar Emulsified Water scalar Emulsified Water scalar Emulsified Water scalar Emulsified Water scalar Scalar Emulsion Scalar Emul		NONE	NONE	-	NONE
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service. Odor scalar		NONE	NONE NORML	NONE NORML	NONE
FLUID CONDITION The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service. Emulsified Water scalar ppm Boron ppm Barium ppm Molybdenum ppm		NORML NORML	_	NORML	NORM
FLUID CONDITION The BN result indicates that there is suitable alkalinity remaining in the pil. The condition of the oil is acceptable for the time in service. Sodium ppm Boron ppm Barium ppm Molybdenum ppm		>0.2	NORML NEG	NEG	NEG
The BN result indicates that there is suitable alkalinity remaining in the bil. The condition of the oil is acceptable for the time in service. Boron Barium ppm Molybdenum ppm	alai Visuai		·····	INLO	INLO
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service. Barium ppm Molybdenum ppm	m ASTM D5185m		2	3	<1
oil. The condition of the oil is acceptable for the time in service. Molybdenum ppm	m ASTM D5185m		61	77	233
Molybdenum ppm	m ASTM D5185m		0	0	0
	m ASTM D5185m		58	58	93
Manganese ppm	m ASTM D5185m		0	0	<1
Magnesium ppm	m ASTM D5185m		699	683	439
Calcium ppm			1252	1230	1454
Phosphorus ppm	m ASTM D5185m	1200	775	644	927
Zinc ppm	m ASTM D5185m	1300	900	861	1225
Sulfur ppm	m ASTM D5185m m ASTM D5185m		2222	2195	3348
Oxidation Abs/.1m	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		16.2	20.2	18.0
Base Number (BN) mg KOH	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		8.7	6.7	6.7





Certificate L2367

Laboratory Sample No.

: DC0037506 Lab Number : 06234649

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

Received **Tested** Unique Number : 11123483

: 12 Jul 2024 : 15 Jul 2024 Diagnosed

: 15 Jul 2024 - Don Baldridge

WALDORF, MD

Contact: Paul Lking@kellerbus.com

4472 GALLANT GREEN RD

Test Package : MOB 1 (Additional Tests: 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)

T: (301)645-5734

US 20601

Or Larry