



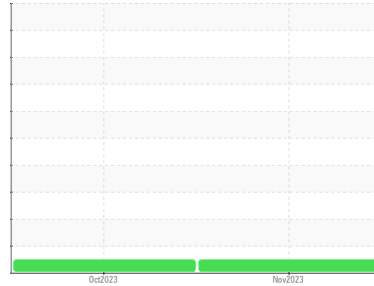
OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
BELL B45E B93A645EC03308114
 Component
Diesel Engine
 Fluid
SYNERGY 15W40 (--- GAL)



DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal. The wear metal levels do not reflect the reported failure.

Contamination

There is no indication of any contamination in the oil.

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.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		BE0016951	BE0016912	---
Sample Date	Client Info		08 Nov 2023	19 Oct 2023	---
Machine Age	hrs	Client Info	634	497	---
Oil Age	hrs	Client Info	0	0	---
Oil Changed	Client Info		Not Chngd	Changed	---
Sample Status			NORMAL	NORMAL	---

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	---
Water	WC Method	>0.2	NEG	NEG	---
Glycol	WC Method		NEG	NEG	---

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184	>79	20.	19	---
Iron	ppm	ASTM D5185m	>100	74	72
Chromium	ppm	ASTM D5185m	>20	2	4
Nickel	ppm	ASTM D5185m	>4	0	1
Titanium	ppm	ASTM D5185m		0	<1
Silver	ppm	ASTM D5185m	>3	1	0
Aluminum	ppm	ASTM D5185m	>20	16	22
Lead	ppm	ASTM D5185m	>40	0	<1
Copper	ppm	ASTM D5185m	>330	126	288
Tin	ppm	ASTM D5185m	>15	4	2
Vanadium	ppm	ASTM D5185m		0	0
Cadmium	ppm	ASTM D5185m		0	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		392	15
Barium	ppm	ASTM D5185m		0	6
Molybdenum	ppm	ASTM D5185m		73	2
Manganese	ppm	ASTM D5185m		2	6
Magnesium	ppm	ASTM D5185m		366	76
Calcium	ppm	ASTM D5185m		1571	2306
Phosphorus	ppm	ASTM D5185m		1007	697
Zinc	ppm	ASTM D5185m		1201	756
Sulfur	ppm	ASTM D5185m		2894	2051

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	5	7
Sodium	ppm	ASTM D5185m		0	0
Potassium	ppm	ASTM D5185m	>20	1	9

INFRA-RED

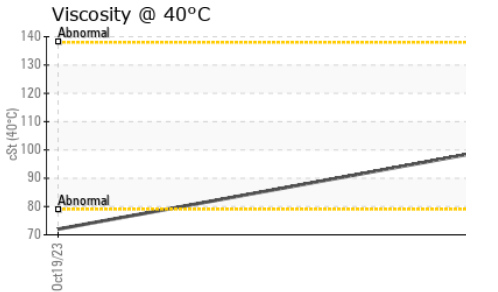
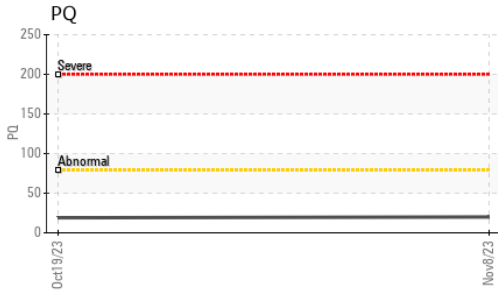
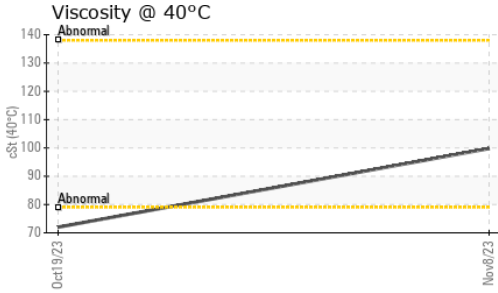
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.2	0.4
Nitration	Abs/cm	*ASTM D7624	>20	7.1	10.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.6	22.8

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.6	20.0
Base Number (BN)	mg KOH/g	ASTM D2896		7.7	9.3



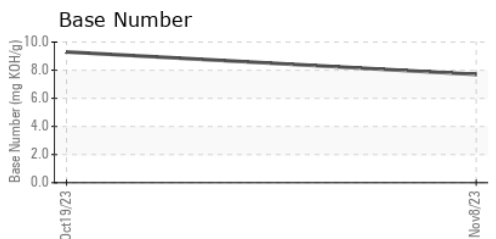
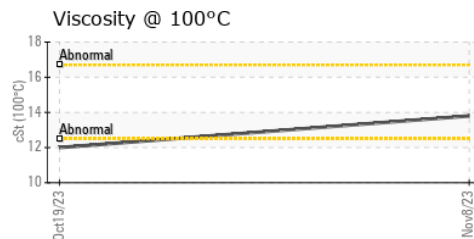
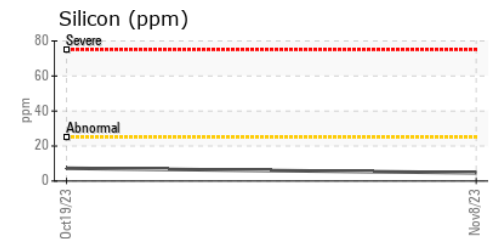
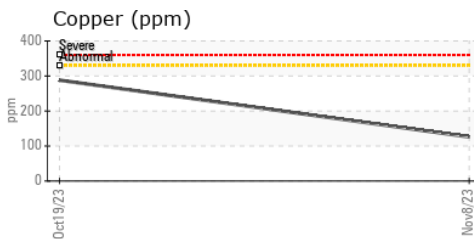
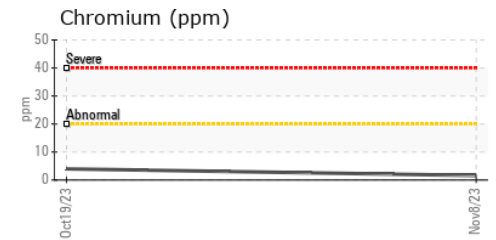
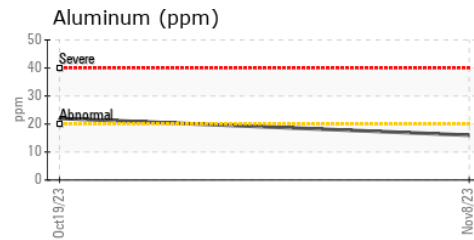
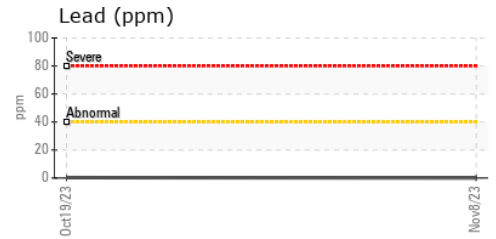
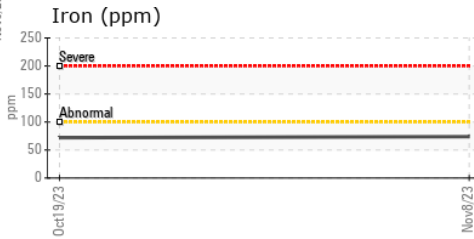
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	99.8	72.0	---
Visc @ 100°C	cSt	ASTM D445	13.8	12.0	---
Viscosity Index (VI)	Scale	ASTM D2270	139	163	---

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : BE0016951 **Recieved** : 16 Nov 2023
Lab Number : 06010131 **Diagnosed** : 10 Dec 2023
Unique Number : 10749275 **Diagnostician** : Doug Bogart
Test Package : MOBCE

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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