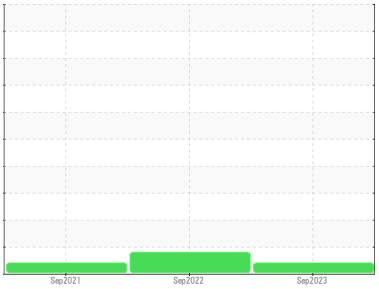
OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY

Area
[117475]
Machine Id
3005857109 - FRANKLIN CO 911
Component
Diesel Engine
Fluid
RED STAR 10W30 (--- 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.

Contamination
Moderate concentration of visible dirt/debris present in the oil.

Fluid Condition
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0812676**	WC0663237	WC0566970
Sample Date		Client Info		**26 Sep 2023**	19 Sep 2022	01 Sep 2021
Machine Age	hrs	Client Info		**92**	48	20
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	N/A
Sample Status				**ATTENTION**	ABNORMAL	ATTENTION

CONTAMINATION	method	limit/base	current	history1	history2
Glycol	WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**4**	7	7
Chromium	ppm	ASTM D5185m	>20	**0**	0	<1
Nickel	ppm	ASTM D5185m	>4	**0**	0	0
Titanium	ppm	ASTM D5185m		**<1**	0	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**9**	13	8
Lead	ppm	ASTM D5185m	>40	**0**	0	4
Copper	ppm	ASTM D5185m	>330	**3**	7	4
Tin	ppm	ASTM D5185m	>15	**<1**	<1	0
Antimony	ppm	ASTM D5185m		**---**	---	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**180**	170	172
Barium	ppm	ASTM D5185m		**2**	15	10
Molybdenum	ppm	ASTM D5185m		**69**	42	38
Manganese	ppm	ASTM D5185m		**<1**	1	<1
Magnesium	ppm	ASTM D5185m		**438**	384	376
Calcium	ppm	ASTM D5185m		**1136**	1444	1525
Phosphorus	ppm	ASTM D5185m		**682**	716	658
Zinc	ppm	ASTM D5185m		**818**	821	707
Sulfur	ppm	ASTM D5185m		**3369**	3930	3356

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**23**	39	30
Sodium	ppm	ASTM D5185m		**2**	3	5
Potassium	ppm	ASTM D5185m	>20	**1**	2	17
Fuel	%	ASTM D3524	>5	**<1.0**	<1.0	0.4

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**4.8**	5.5	4.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	**15.5**	18.4	17.4

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**10.4**	15.7	16
Base Number (BN)	mg KOH/g	ASTM D2896		**5.5**	5.5	---

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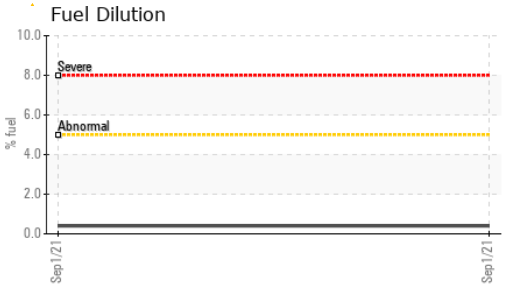
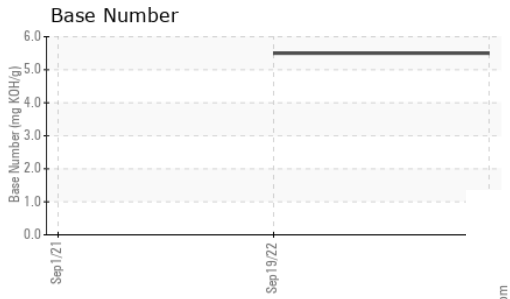
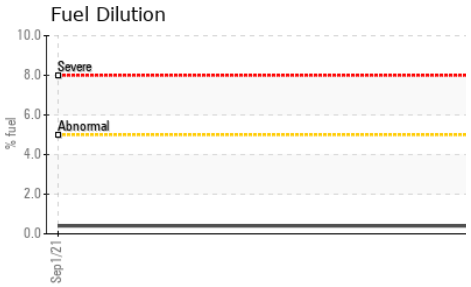


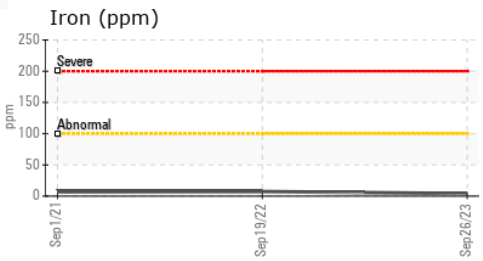


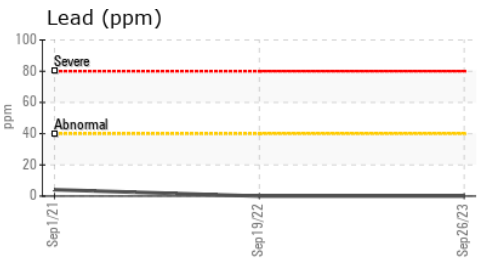


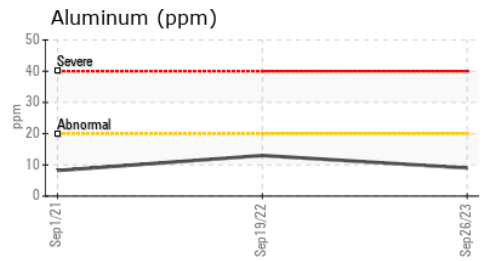
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**LIGHT**	▲ MODER	LIGHT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

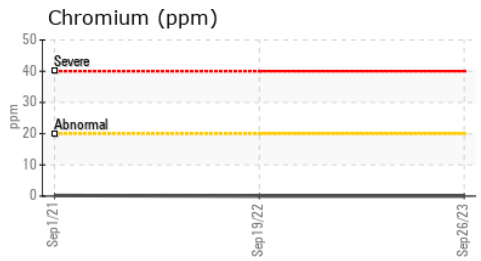
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		▲ **9.1**	▲ 8.4	▲ 8.69

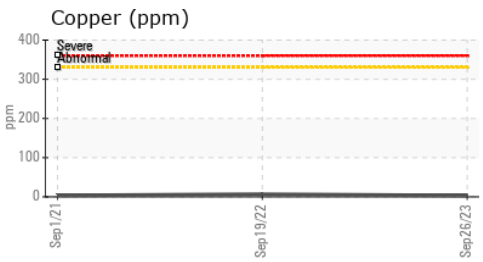
GRAPHS

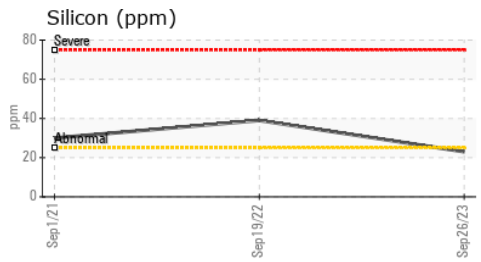


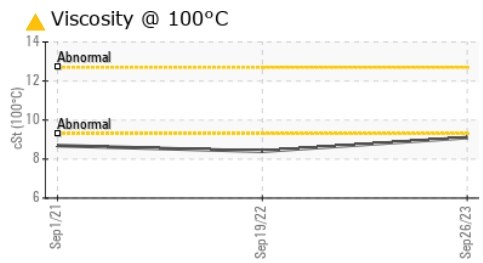


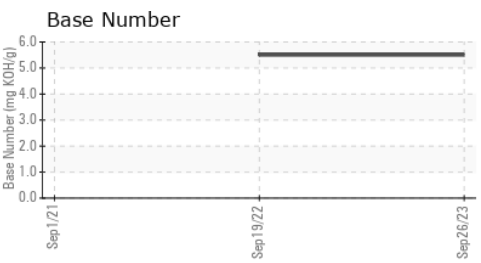












Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0812676 **Received** : 03 Oct 2023
Lab Number : 05967351 **Diagnosed** : 05 Oct 2023
Unique Number : 10673902 **Diagnostician** : Jonathan Hester
Test Package : MOB 1 (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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