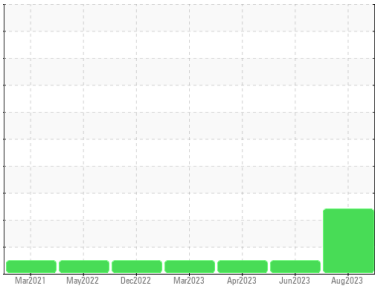
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
4078
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is a high amount of fuel present in the oil.

Fluid Condition
Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**LF0001225**	LF0001228	LF0001227
Sample Date		Client Info		**25 Aug 2023**	23 Jun 2023	06 Apr 2023
Machine Age	mls	Client Info		**879019**	0	837490
Oil Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	N/A
Sample Status				**SEVERE**	NORMAL	NORMAL

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	**14**	16	11
Chromium	ppm	ASTM D5185m	>20	**<1**	1	<1
Nickel	ppm	ASTM D5185m	>4	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	1	0
Lead	ppm	ASTM D5185m	>40	**8**	22	8
Copper	ppm	ASTM D5185m	>330	**<1**	<1	<1
Tin	ppm	ASTM D5185m	>15	**<1**	<1	<1
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	316	**56**	65	97
Barium	ppm	ASTM D5185m	0.0	**0**	0	2
Molybdenum	ppm	ASTM D5185m	1.2	**21**	17	12
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	24	**152**	182	115
Calcium	ppm	ASTM D5185m	2292	**1761**	1983	2004
Phosphorus	ppm	ASTM D5185m	1064	**821**	934	909
Zinc	ppm	ASTM D5185m	1160	**1078**	1229	1110
Sulfur	ppm	ASTM D5185m	4996	**3237**	3641	3246

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**5**	6	7
Sodium	ppm	ASTM D5185m		**2**	3	0
Potassium	ppm	ASTM D5185m	>20	**5**	4	6
Fuel	%	ASTM D3524	>5	**20.1**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.5**	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	**10.1**	12.2	10.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**26.4**	30.6	26.8

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**27.6**	32.8	30.2
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	**4.2**	4.6	3.9

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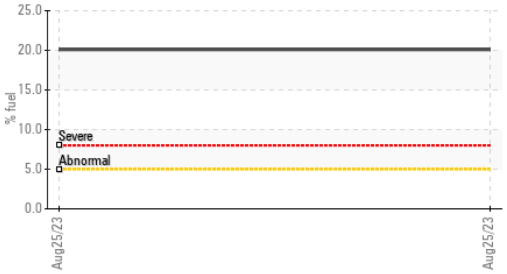
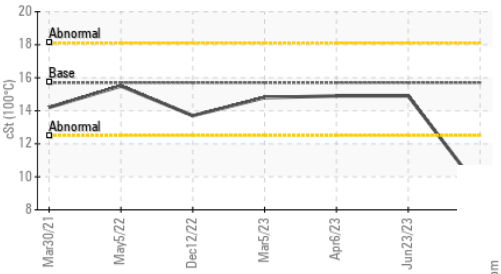
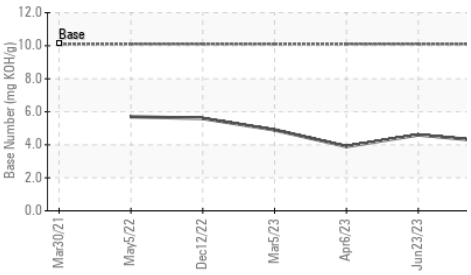
Fuel Dilution



Viscosity @ 100°C



Base Number

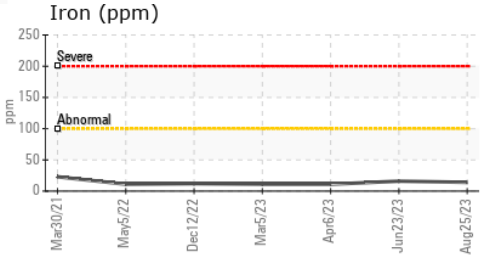


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

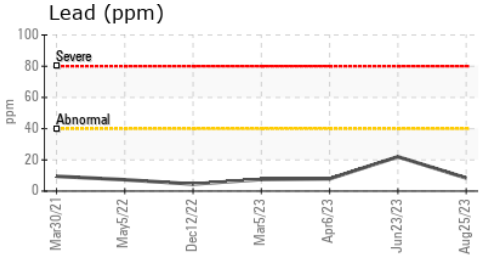
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.7	▲ **9.2**	14.9	14.9

GRAPHS

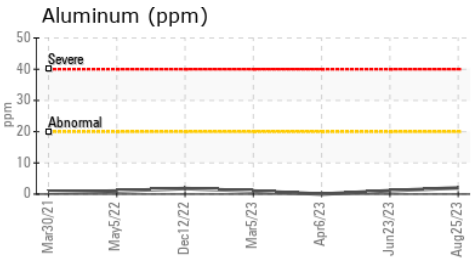
Iron (ppm)



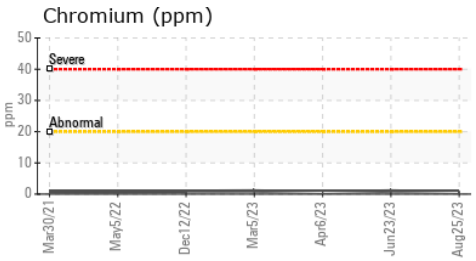
Lead (ppm)



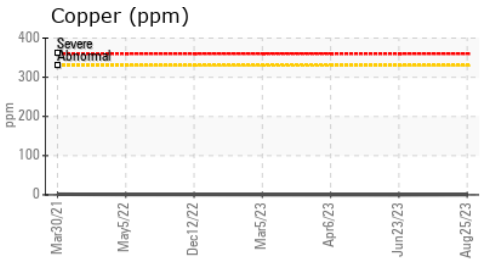
Aluminum (ppm)



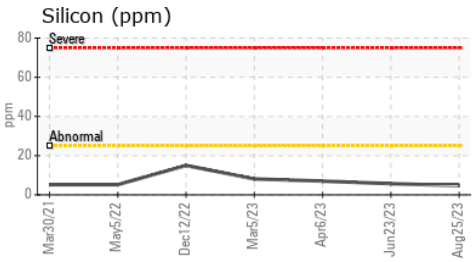
Chromium (ppm)



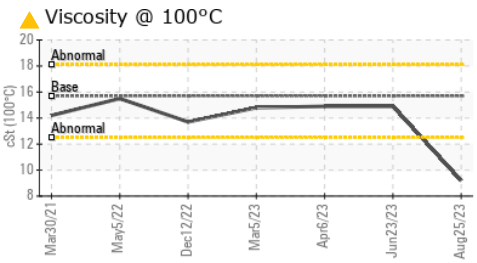
Copper (ppm)



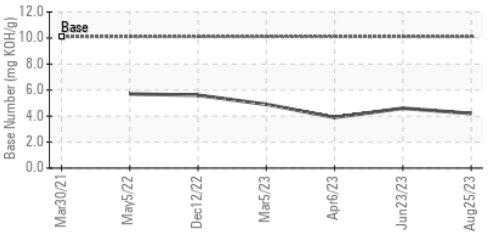
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LF0001225 **Received** : 30 Aug 2023
Lab Number : 05938689 **Diagnosed** : 01 Sep 2023
Unique Number : 10629301 **Diagnostician** : Don Baldridge
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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