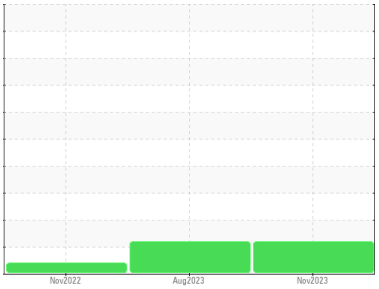
PROBLEM SUMMARY

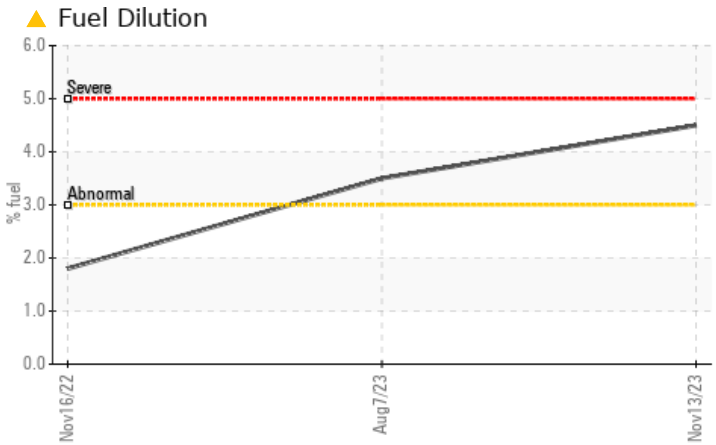
Machine Id
1464
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

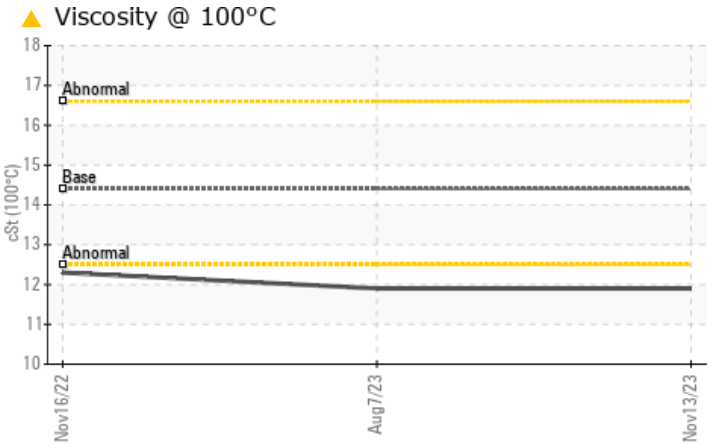
Sample Rating Trend



FUEL

COMPONENT CONDITION SUMMARY





RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	ATTENTION
Fuel	%	ASTM D3524	>3.0	▲ **4.5**	▲ 3.5	1.8
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **11.9**	▲ 11.9	▲ 12.3

Customer Id: AVWHOM
Sample No.: WC0858170
Lab Number: 06013140
Test Package: CONST

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS

07 Aug 2023 Diag: Wes Davis

FUEL

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

view report

16 Nov 2022 Diag: Jonathan Hester

VISCOSITY

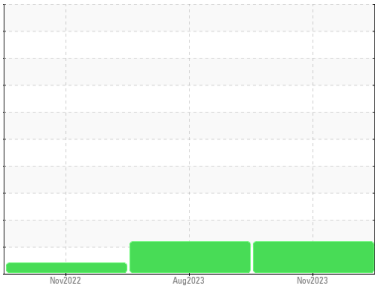
No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. Fuel content negligible. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

view report

OIL ANALYSIS REPORT

Machine Id
1464
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

Sample Rating Trend



FUEL

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. 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
There is a moderate amount of fuel present in the oil.

Fluid Condition
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0858170**	WC0760067	WC0758529
Sample Date		Client Info		**13 Nov 2023**	07 Aug 2023	16 Nov 2022
Machine Age	hrs	Client Info		**20287**	19783	2499
Oil Age	hrs	Client Info		**520**	520	2499
Oil Changed		Client Info		**Changed**	Changed	Not Changd
Sample Status				**ABNORMAL**	ABNORMAL	ATTENTION

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	**6**	18	4
Chromium	ppm	ASTM D5185m	>20	**<1**	0	<1
Nickel	ppm	ASTM D5185m	>5	**<1**	<1	<1
Titanium	ppm	ASTM D5185m	>2	**<1**	<1	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**3**	3	2
Lead	ppm	ASTM D5185m	>40	**<1**	<1	<1
Copper	ppm	ASTM D5185m	>330	**1**	1	<1
Tin	ppm	ASTM D5185m	>15	**<1**	<1	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**<1**	3	14
Barium	ppm	ASTM D5185m	10	**9**	0	0
Molybdenum	ppm	ASTM D5185m	100	**61**	64	67
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	450	**852**	969	789
Calcium	ppm	ASTM D5185m	3000	**1034**	1164	1166
Phosphorus	ppm	ASTM D5185m	1150	**1003**	1025	899
Zinc	ppm	ASTM D5185m	1350	**1141**	1274	1171
Sulfur	ppm	ASTM D5185m	4250	**3432**	3911	3389

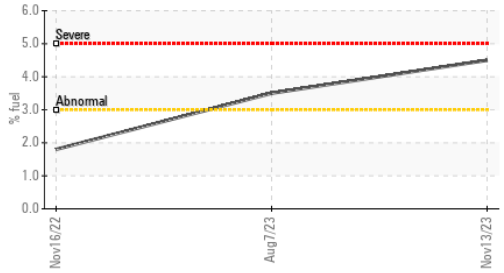
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**5**	12	3
Sodium	ppm	ASTM D5185m	>158	**<1**	2	1
Potassium	ppm	ASTM D5185m	>20	**2**	2	0
Fuel	%	ASTM D3524	>3.0	▲ **4.5**	▲ 3.5	1.8

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**8.6**	7.2	6.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.5**	17.9	19.3

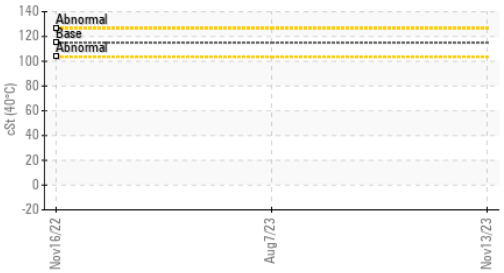
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.9**	14.7	14.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**7.3**	8.1	9.6

OIL ANALYSIS REPORT

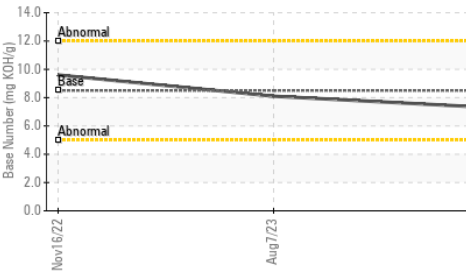
Fuel Dilution



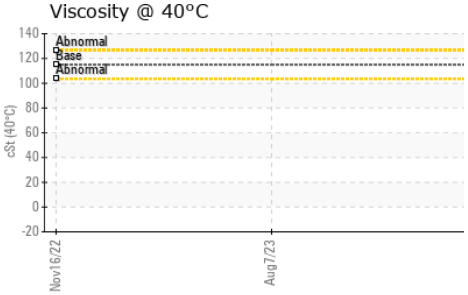
Viscosity @ 40°C



Base Number



Viscosity @ 40°C

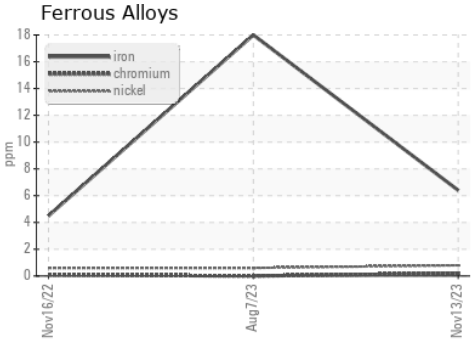


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

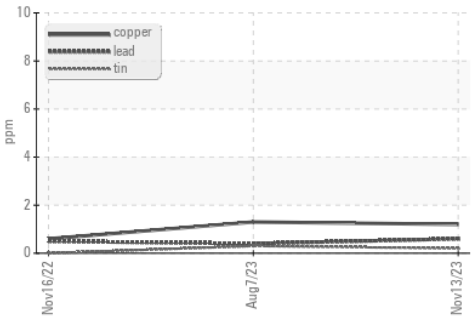
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **11.9**	▲ 11.9	▲ 12.3

GRAPHS

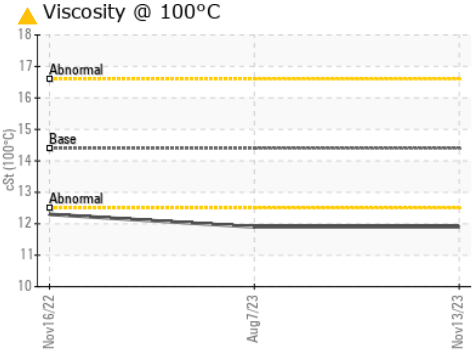
Ferrous Alloys



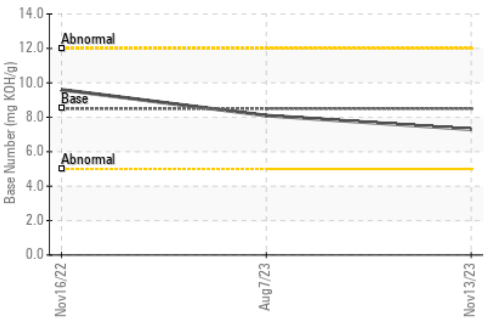
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0858170 **Received** : 20 Nov 2023
Lab Number : 06013140 **Diagnosed** : 24 Nov 2023
Unique Number : 10752284 **Diagnostician** : Jonathan Hester
Test Package : CONST (Additional Tests: KV40, PercentFuel, TBN)

Apple Valley Waste - Hometown Location
155 Airport Road
Selinsgrove, PA
US 17870
Contact: Service Manager

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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