

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id 307 Component **Diesel Engine**

DIESEL ENGINE OIL SAE 15W40 (



Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

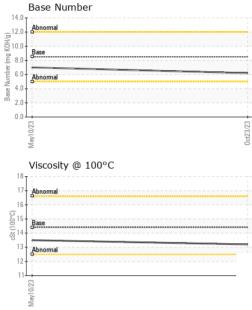
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info WC0847974 WC0759986 WC0759986 WC0847974 WC0847974	AE 15W40 (G	AL)		May2023	0ct2023		
Sample Date Client Info 23 Oct 2023 10 May 2023	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age	Sample Number		Client Info		WC0847974	WC0759986	
Oil Age	Sample Date		Client Info		23 Oct 2023	10 May 2023	
Contained Client Info Changed Changed Changed Changed Changed NORMAL NORMAL Contained NORMAL NORMAL Contained NORMAL Contained NORMAL Contained NORMAL Contained Changed NORMAL Contained NORMAL Contained Contained NORMAL Contained Changed Changed Changed Contained Changed Changed	Machine Age	hrs	Client Info		6479	5737	
NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 history2 water WC Method >3.0 <1.0 <1.0 <	Oil Age	hrs	Client Info		742	5737	
Fuel	Oil Changed		Client Info		Changed	Changed	
Fuel	Sample Status				NORMAL	NORMAL	
Water WC Method >0.2 NEG NEG	CONTAMINATION	I	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 13 40 Chromium ppm ASTM D5185m >20 -1 1 Nickel ppm ASTM D5185m >22 2 0 Titanium ppm ASTM D5185m >2 2 1 0 Silver ppm ASTM D5185m >2 -1 0 Aluminum ppm ASTM D5185m >2 -1 0 Lead ppm ASTM D5185m >20 3 5 Lead ppm ASTM D5185m >20 3 5 Lead ppm ASTM D5185m >15 2 -1 Copper ppm ASTM D5185m >15 2 -1 Codadium ppm ASTM D5185m 250 <	Water		WC Method	>0.2	NEG	NEG	
Description	Glycol		WC Method		NEG	NEG	
Chromium	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	13	40	
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	1	
Silver	Nickel	ppm	ASTM D5185m	>5	4	5	
Aluminum	Titanium	ppm	ASTM D5185m	>2	2	0	
Copper	Silver	ppm	ASTM D5185m	>2	<1	0	
Copper ppm ASTM D5185m >330 5 23 Tin ppm ASTM D5185m >15 2 <1	Aluminum	ppm	ASTM D5185m	>20	3	5	
Tin	Lead	ppm	ASTM D5185m	>40	<1	<1	
Vanadium ppm ASTM D5185m <1 0	Copper	ppm	ASTM D5185m	>330	5	23	
Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 8 2 Barium ppm ASTM D5185m 10 0 0 Molybdenum ppm ASTM D5185m 100 63 67 Manganese ppm ASTM D5185m 100 63 67 Magnesium ppm ASTM D5185m 450 887 903 Calcium ppm ASTM D5185m 3000 1104 1146 Phosphorus ppm ASTM D5185m 1350 1180 1191 Zinc ppm ASTM D5185m 4250 2501 2989 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >158	Tin	ppm	ASTM D5185m	>15	2	<1	
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	
Boron ppm ASTM D5185m 250 8 2	Cadmium	ppm	ASTM D5185m		0	0	
Barium ppm ASTM D5185m 10 0 0 Molybdenum ppm ASTM D5185m 100 63 67 Manganese ppm ASTM D5185m 100 63 67 Manganese ppm ASTM D5185m 11 1 Manganesium ppm ASTM D5185m 3000 1104 1146 Calcium ppm ASTM D5185m 3000 1104 1146 Phosphorus ppm ASTM D5185m 1350 1180 1191 Zinc ppm ASTM D5185m 4250 2501 2989 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 Sodium ppm ASTM D5185m >158 8 4 Potassium ppm ASTM D5185m 20	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 100 63 67 Manganese ppm ASTM D5185m 450 887 903 Calcium ppm ASTM D5185m 3000 1104 1146 Phosphorus ppm ASTM D5185m 3000 1104 1146 Phosphorus ppm ASTM D5185m 1150 870 944 Zinc ppm ASTM D5185m 1350 1180 1191 Sulfur ppm ASTM D5185m 4250 2501 2989 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 Sodium ppm ASTM D5185m >25 4 6 Potassium ppm ASTM D5185m >20 0 2 INFRA-RED method limit/b	Boron	ppm	ASTM D5185m	250	8	2	
Manganese ppm ASTM D5185m <1 1 Magnesium ppm ASTM D5185m 450 887 903 Calcium ppm ASTM D5185m 3000 1104 1146 Phosphorus ppm ASTM D5185m 1150 870 944 Zinc ppm ASTM D5185m 1350 1180 1191 Sulfur ppm ASTM D5185m 4250 2501 2989 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 Sodium ppm ASTM D5185m >158 8 4 Potassium ppm ASTM D5185m >20 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 <	Barium	ppm	ASTM D5185m	10	0	0	
Magnesium ppm ASTM D5185m 450 887 903 Calcium ppm ASTM D5185m 3000 1104 1146 Phosphorus ppm ASTM D5185m 1150 870 944 Zinc ppm ASTM D5185m 1350 1180 1191 Sulfur ppm ASTM D5185m 4250 2501 2989 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 Sodium ppm ASTM D5185m >158 8 4 Potassium ppm ASTM D5185m >20 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.5 0.9 Sulfation Abs/.1mm *ASTM D7415	Molybdenum	ppm	ASTM D5185m	100	63	67	
Calcium ppm ASTM D5185m 3000 1104 1146 Phosphorus ppm ASTM D5185m 1150 870 944 Zinc ppm ASTM D5185m 1350 1180 1191 Sulfur ppm ASTM D5185m 4250 2501 2989 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 Sodium ppm ASTM D5185m >158 8 4 Potassium ppm ASTM D5185m >20 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.5 0.9 Nitration Abs/cm *ASTM D7415 >30 20.5 21.6 FLUID DEGRADATION method limit/b	Manganese	ppm	ASTM D5185m		<1	1	
Phosphorus ppm ASTM D5185m 1150 870 944 Zinc ppm ASTM D5185m 1350 1180 1191 Sulfur ppm ASTM D5185m 4250 2501 2989 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 Sodium ppm ASTM D5185m >158 8 4 Potassium ppm ASTM D5185m >20 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.5 0.9 Nitration Abs/cm *ASTM D7624 >20 9.0 9.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 21.6 FLUID DEGRADATION method	Magnesium	ppm	ASTM D5185m	450	887	903	
Zinc	Calcium	ppm	ASTM D5185m	3000	1104	1146	
Sulfur ppm ASTM D5185m 4250 2501 2989 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 Sodium ppm ASTM D5185m >158 8 4 Potassium ppm ASTM D5185m >20 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.5 0.9 Nitration Abs/cm *ASTM D7624 >20 9.0 9.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 21.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9	Phosphorus	ppm	ASTM D5185m	1150	870	944	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 6 Sodium ppm ASTM D5185m >158 8 4 Potassium ppm ASTM D5185m >20 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.5 0.9 Nitration Abs/cm *ASTM D7624 >20 9.0 9.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 21.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9	Zinc	ppm	ASTM D5185m	1350	1180	1191	
Silicon ppm ASTM D5185m >25 4 6 Sodium ppm ASTM D5185m >158 8 4 Potassium ppm ASTM D5185m >20 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.5 0.9 Nitration Abs/cm *ASTM D7624 >20 9.0 9.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 21.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9	Sulfur	ppm	ASTM D5185m	4250	2501	2989	
Sodium ppm ASTM D5185m >158 8 4 Potassium ppm ASTM D5185m >20 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.5 0.9 Nitration Abs/cm *ASTM D7624 >20 9.0 9.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 21.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.5 0.9 Nitration Abs/cm *ASTM D7624 >20 9.0 9.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 21.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9	Silicon	ppm	ASTM D5185m	>25	4	6	
INFRA-RED	Sodium	ppm	ASTM D5185m	>158	8	4	
Soot % *ASTM D7844 >4 0.5 0.9 Nitration Abs/cm *ASTM D7624 >20 9.0 9.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 21.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9	Potassium	ppm	ASTM D5185m	>20	0	2	
Nitration Abs/cm *ASTM D7624 > 20 9.0 9.5 Sulfation Abs/.1mm *ASTM D7415 > 30 20.5 21.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 > 25 16.8 15.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 20.5 21.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9	Soot %	%	*ASTM D7844	>4	0.5	0.9	
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9	Nitration	Abs/cm	*ASTM D7624	>20	9.0	9.5	
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.5	21.6	
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 8.5 6.2 7.0	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.8	15.9	
	Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.2	7.0	



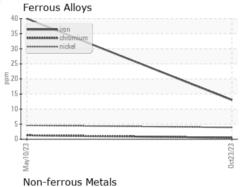
OIL ANALYSIS REPORT



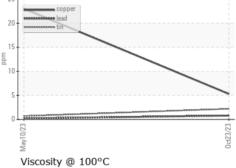
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID DDODEDT					111	1

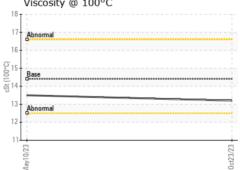
1 LOID I HOI LIN	0					
Visc @ 100°C	cSt	ASTM D445	14.4	13.2	13.5	

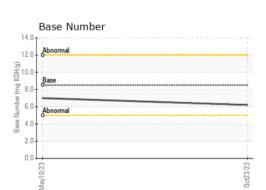
GRAPHS



25 T	
20-	copper











Laboratory Sample No. Lab Number **Unique Number**

: WC0847974 : 06061847 : 10833229

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 16 Jan 2024 Diagnosed

: 17 Jan 2024 Diagnostician : Wes Davis

Test Package : CONST (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)

Contact: Service Manager

Apple Valley Waste - Chambersburg Location

T: F:

US 17202

5436 Sunset Pike

Chambersburg, PA