

PROBLEM SUMMARY

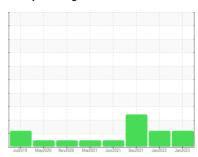
Sample Rating Trend

GLYCOL

Machine Id KENWORTH T880 T-858 (S/N 1XKZD40X5KJ371026)

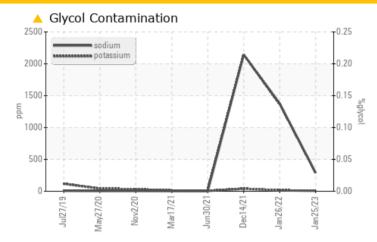
Diesel Engine

DURALENE Dura-Max 15W40 (44 QTS)





COMPONENT CONDITION SUMMARY



RECOMMENDATION

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				ATTENTION	ABNORMAL	ABNORMAL	
Sodium	ppm	ASTM D5185m		A 289	<u>▲</u> 1376	<u>^</u> 2143	

Customer Id: EAICLA **Sample No.:** WC0693416 **Lab Number:** 05758785 Test Package: CONST



To manage this report scan the QR code

To discuss the diagnosis or test data: Doug Bogart +1 (800)237-1369 x4016 dougb@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.

HISTORICAL DIAGNOSIS

26 Jan 2022 Diag: Jonathan Hester

GLYCOL



We advise that you check for possible coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition. All component wear rates are normal. Sodium and/or potassium levels remain high. The BN result indicates that there is suitable alkalinity remaining in the oil.



14 Dec 2021 Diag: Jonathan Hester

GLYCOL



We advise that you check for possible coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. The BN result indicates that there is suitable alkalinity remaining in the oil.



30 Jun 2021 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.





OIL ANALYSIS REPORT

SAMPLE INFORMATION method

limit/base

GLYCOL

history1

KENWORTH T880 T-858 (S/N 1XKZD40X5KJ371026)

Diesel Engine

DURALENE Dura-Max 15W40 (44 QTS)

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

Sodium and/or potassium levels are high. Test for glycol is negative.

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.

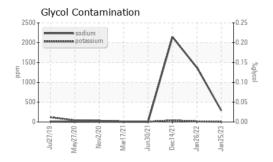
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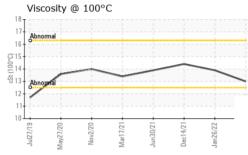
current

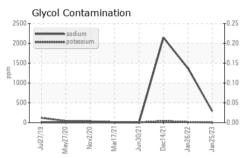
Vanadium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1	SAMI LE IN OTT	VI/ (1101V	method	IIIIII/Dase	Current	Thistory	HISTOTYZ
Machine Age mls Client Info 308361 226131 218040 Oil Age mls Client Info 0 0 0 0 Oil Changed Client Info Changed Not Changed Changed Sample Status Limit Changed ABNORMAL ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Sample Number		Client Info		WC0693416	WC0546600	WC0546574
Oil Age mls Client Info Changed ATTENTION Not Changed ABNORMAL	Sample Date		Client Info		25 Jan 2023	26 Jan 2022	14 Dec 2021
Oil Changed Sample Status Client Info Changed ATTENTION Not Changed ABNORMAL Changed ABNORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 42 17 65 Chromium ppm ASTM D5185m >20 1 <1 2 Nickel ppm ASTM D5185m >22 0 <1 <1 0 Niker ppm ASTM D5185m >22 0 <1 <1 0 Niker ppm ASTM D5185m >20 8 4 14 4 4 14 4 4 14 4 2 2 1 1 1 1 1 1 1 2 2 1 1 1 <t< th=""><th>Machine Age</th><th>mls</th><th>Client Info</th><th></th><th>308361</th><th>226131</th><th>218040</th></t<>	Machine Age	mls	Client Info		308361	226131	218040
ATTENTION	Oil Age	mls	Client Info		0	0	0
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	Oil Changed		Client Info			Not Changd	Changed
WEAR METALS	Sample Status				ATTENTION	ABNORMAL	ABNORMAL
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 42 17 65 Chromium ppm ASTM D5185m >20 1 <1 2 Nickel ppm ASTM D5185m >2 <1 <1 0 Titanium ppm ASTM D5185m >2 0 <1 0 Alluminum ppm ASTM D5185m >2 0 <1 0 Alluminum ppm ASTM D5185m >2 0 <1 0 Alluminum ppm ASTM D5185m >20 8 4 14 Lead ppm ASTM D5185m >40 14 3 8 Copper ppm ASTM D5185m >15 2 <1 2 Tin ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0	CONTAMINATION	N	method	limit/base	current	history1	history2
Iron	Fuel		WC Method	>5	<1.0	<1.0	<1.0
Chromium ppm ASTM D5185m >20 1 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>90	42	17	65
Titanium	Chromium	ppm	ASTM D5185m	>20	1	<1	2
Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >20 8 4 14 Lead ppm ASTM D5185m >40 14 3 8 Copper ppm ASTM D5185m >330 8 2 2 Tin ppm ASTM D5185m 0 0 0 0 Antimony ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 41 130 29 Barium ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 17 138 300 Magnesium ppm ASTM D5185m 54 48 48 Calcuium ppm	Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Aluminum ppm ASTM D5185m >20 8 4 14 Lead ppm ASTM D5185m >40 14 3 8 Copper ppm ASTM D5185m >330 8 2 2 Tin ppm ASTM D5185m >15 2 <1 2 Antimony ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m c1 130 29 Boron ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 17 138 300 Manganese ppm ASTM D5185m 11 <1 1 Magnesium ppm ASTM D5185m 2479 2426 2424 Phosphorus ppm ASTM D5185m<	Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Lead ppm ASTM D5185m >40 14 3 8 Copper ppm ASTM D5185m >330 8 2 2 Tin ppm ASTM D5185m >15 2 <1 2 Antimony ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m <1 130 29 Boron ppm ASTM D5185m <1 130 29 Barium ppm ASTM D5185m <1 130 29 Barium ppm ASTM D5185m <1 138 300 Malphaesium ppm ASTM D5185m <1 <1 1 1 Magnesium ppm ASTM D5185m <44 48 48 48 Calcium ppm ASTM D5185m <2479 2426 2424 Phosphorus ppm	Silver	ppm	ASTM D5185m	>2	0	<1	0
Copper ppm ASTM D5185m >330 8 2 2 Tin ppm ASTM D5185m >15 2 <1	Aluminum	ppm	ASTM D5185m	>20	8	4	14
Tin ppm ASTM D5185m > 15 2 < 1 2 Antimony ppm ASTM D5185m	Lead	ppm	ASTM D5185m	>40	14	3	8
Antimony ppm ASTM D5185m <1	Copper	ppm	ASTM D5185m	>330	8	2	2
Vanadium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1	Tin	ppm	ASTM D5185m	>15	2	<1	2
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1	Antimony	ppm	ASTM D5185m			<1	<1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1	Vanadium	ppm	ASTM D5185m		0	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 17 138 300 Manganese ppm ASTM D5185m <1 <1 1 Magnesium ppm ASTM D5185m 54 48 48 Calcium ppm ASTM D5185m 2479 2426 2424 Phosphorus ppm ASTM D5185m 860 1001 899 Zinc ppm ASTM D5185m 1129 1126 1092 Sulfur ppm ASTM D5185m 4138 3525 3619 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 24 Sodium ppm ASTM D5185m >26 8 14 40 Glycol % *ASTM D5185m >20 8 14 40 Regressium ppm ASTM D5	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 17 138 300 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		<1	130	29
Manganese ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 54 48 48 Calcium ppm ASTM D5185m 2479 2426 2424 Phosphorus ppm ASTM D5185m 860 1001 899 Zinc ppm ASTM D5185m 1129 1126 1092 Sulfur ppm ASTM D5185m 4138 3525 3619 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 24 Sodium ppm ASTM D5185m >25 8 16 24 Sodium ppm ASTM D5185m >20 8 14 40 Glycol % *ASTM D5185m >20 8 14 40 Glycol % *ASTM D5185m >20 8 14 40 Reg NEG NEG NEG NEG INFRA-RED method	Molybdenum	ppm	ASTM D5185m		17	138	300
Calcium ppm ASTM D5185m 2479 2426 2424 Phosphorus ppm ASTM D5185m 860 1001 899 Zinc ppm ASTM D5185m 1129 1126 1092 Sulfur ppm ASTM D5185m 4138 3525 3619 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 24 Sodium ppm ASTM D5185m >20 8 14 △ 40 Glycol % *ASTM D5185m >20 8 14 △ 40 Glycol % *ASTM D5185m >20 8 14 △ 40 Glycol % *ASTM D5185m >20 8 14 △ 40 Reg NEG NEG NEG NEG NEG NEG INFRA-RED method limit/base current <th>Manganese</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th><1</th> <th><1</th> <th>1</th>	Manganese	ppm	ASTM D5185m		<1	<1	1
Phosphorus ppm ASTM D5185m 860 1001 899 Zinc ppm ASTM D5185m 1129 1126 1092 Sulfur ppm ASTM D5185m 4138 3525 3619 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 24 Sodium ppm ASTM D5185m >20 8 14 △ 40 Glycol % *ASTM D5185m >20 8 14 △ 40 Glycol % *ASTM D5185m >20 8 14 △ 40 Glycol % *ASTM D5185m >20 8 14 △ 40 Regular NEG NEG NEG NEG NEG INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 <td< th=""><th>Magnesium</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>54</th><th>48</th><th>48</th></td<>	Magnesium	ppm	ASTM D5185m		54	48	48
Zinc ppm ASTM D5185m 1129 1126 1092 Sulfur ppm ASTM D5185m 4138 3525 3619 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 24 Sodium ppm ASTM D5185m >20 8 14 △ 40 Glycol % *ASTM D5185m >20 8 14 △ 40 Glycol % *ASTM D5185m >20 8 14 △ 40 Glycol % *ASTM D5185m >20 8 14 △ 40 Reg NEG NEG NEG NEG NEG NEG INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.6 0.2 0.7 Nitration Abs/cm *ASTM D7415	Calcium	ppm	ASTM D5185m		2479	2426	2424
Sulfur ppm ASTM D5185m 4138 3525 3619 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 24 Sodium ppm ASTM D5185m >20 8 1376 2143 Potassium ppm ASTM D5185m >20 8 14 40 Glycol % *ASTM D2982 NEG NEG NEG INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.6 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 12.2 12.0 16.8 Sulfation Abs/.1mm *ASTM D7415 >30 30.7 22.7 31.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25<	Phosphorus	ppm	ASTM D5185m		860	1001	899
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 24 Sodium ppm ASTM D5185m ▲ 289 ▲ 1376 ▲ 2143 Potassium ppm ASTM D5185m >20 8 14 ▲ 40 Glycol % *ASTM D2982 NEG NEG NEG INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.6 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 12.2 12.0 16.8 Sulfation Abs/.1mm *ASTM D7415 >30 30.7 22.7 31.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.1 11.6 18.7	Zinc	ppm	ASTM D5185m		1129	1126	1092
Silicon ppm ASTM D5185m >25 8 16 24 Sodium ppm ASTM D5185m ▲ 289 ▲ 1376 ▲ 2143 Potassium ppm ASTM D5185m >20 8 14 ▲ 40 Glycol % *ASTM D2982 NEG NEG NEG INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.6 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 12.2 12.0 16.8 Sulfation Abs/.1mm *ASTM D7415 >30 30.7 22.7 31.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.1 11.6 18.7	Sulfur	ppm	ASTM D5185m		4138	3525	3619
Sodium ppm ASTM D5185m ▲ 289 ▲ 1376 ▲ 2143 Potassium ppm ASTM D5185m >20 8 14 ▲ 40 Glycol % *ASTM D2982 NEG NEG NEG INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.6 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 12.2 12.0 16.8 Sulfation Abs/.1mm *ASTM D7415 >30 30.7 22.7 31.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.1 11.6 18.7	CONTAMINANTS	3	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 8 14 ▲ 40 Glycol % *ASTM D2982 NEG NEG NEG INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.6 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 12.2 12.0 16.8 Sulfation Abs/.1mm *ASTM D7415 >30 30.7 22.7 31.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.1 11.6 18.7	Silicon	ppm		>25	8	16	24
NEG NEG	Sodium	ppm			A 289		<u>^</u> 2143
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.6 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 12.2 12.0 16.8 Sulfation Abs/.1mm *ASTM D7415 >30 30.7 22.7 31.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.1 11.6 18.7				>20			
Soot % % *ASTM D7844 > 6 0.6 0.2 0.7 Nitration Abs/cm *ASTM D7624 > 20 12.2 12.0 16.8 Sulfation Abs/.1mm *ASTM D7415 > 30 30.7 22.7 31.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 > 25 22.1 11.6 18.7	Glycol	%	*ASTM D2982		NEG	NEG	NEG
Nitration Abs/cm *ASTM D7624 >20 12.2 12.0 16.8 Sulfation Abs/.1mm *ASTM D7415 >30 30.7 22.7 31.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.1 11.6 18.7	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 30.7 22.7 31.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.1 11.6 18.7	Soot %	%	*ASTM D7844	>6	0.6	0.2	0.7
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.1 11.6 18.7	Nitration	Abs/cm	*ASTM D7624	>20	12.2	12.0	16.8
Oxidation Abs/.1mm *ASTM D7414 >25 22.1 11.6 18.7	Sulfation	Abs/.1mm	*ASTM D7415	>30	30.7	22.7	31.2
	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 4.6 10.0 10.5	Oxidation	Abs/.1mm	*ASTM D7414	>25	22.1	11.6	18.7
	Base Number (BN)	mg KOH/g	ASTM D2896		4.6	10.0	10.5

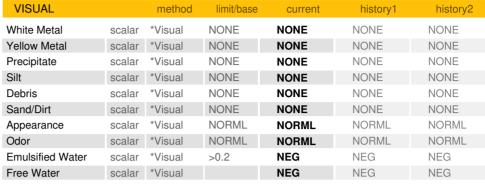


OIL ANALYSIS REPORT



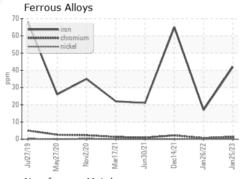


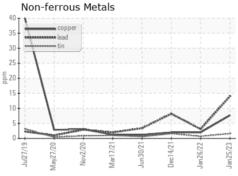


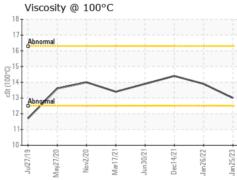


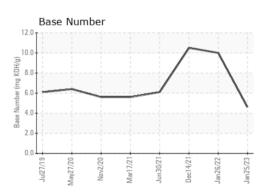
FLUID PROPE	RIIES	metnoa	ilmit/base	current	nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445		13.0	13.9	14.4

GRAPHS













Certificate L2367

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

: WC0693416 : 05758785 : 10323392

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received

: 03 Feb 2023 Diagnosed : 06 Feb 2023 Diagnostician : Doug Bogart

Test Package : CONST (Additional Tests: Glycol, 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)

EAI EQUIPMENT A DIIV OF PLEASANT CONSTRUCTION INC

24024 FREDERICK ROAD CLARKSBURG, MD US 20871

Contact: Service Manager

T: F: