

OIL ANALYSIS REPORT

ADT



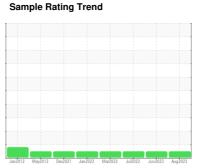


WMR-Pueblo Machine Id VOLVO EC460CL 110479

Component

Diesel Engine

PHILLIPS 66 15W40 (--- GAL)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Moor

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil

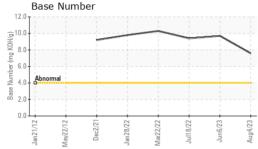
Fluid Condition

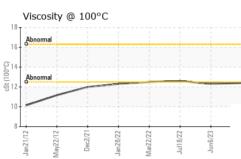
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info DJJ0015276 DJJ0017389 DJJ0009140 Sample Date Client Info O4 Aug 2023 06 Jun 2023 18 Jul 2022 Machine Age hrs Client Info 15550 15315 15050 Oil Age hrs Client Info 235 300 250 Oil Age hrs Client Info Changed NORMAL NORM	SAMPLE INFORM	IATI <u>ON</u>	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		DJJ0015276		DJJ0009140
Machine Age hrs Client Info 15550 15315 15050 Oil Age hrs Client Info 235 300 250 Oil Changed Changed Changed Changed Changed Sample Status NORMAL NORMAL NORMAL CONTAMINATION method Imitibase current history1 Fuel WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >10 <1 <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.	·						
Oil Age hrs Client Info 235 300 250 Oil Changed Sample Status Client Info Changed Changed NORMAL Changed NORMAL Changed NORMAL Changed Changed NORMAL Changed Changed NORMAL Changed Changed NORMAL Changed NORMAL Changed NORMAL NORMAL 1.0 1.0 1.0 1.0 1.0 <th>•</th> <th>hrs</th> <th></th> <th></th> <th>•</th> <th></th> <th></th>	•	hrs			•		
Contained Client Info Changed NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL			Client Info			300	
NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 history2 Fuel WC Method NEG	-						
Fuel	Sample Status					Ü	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 6 5 4 Chromium ppm ASTM D5185m >10 -1 <1 0 Nickel ppm ASTM D5185m >10 -1 <1 <1 Titanium ppm ASTM D5185m >20 0 0 -1 Silver ppm ASTM D5185m >20 0 0 -1 Aluminum ppm ASTM D5185m >20 -1 0 <1 Aluminum ppm ASTM D5185m >20 -1 0 <1 Copper ppm ASTM D5185m >10 -1 <1 <1 Tin ppm ASTM D5185m >10 <1 <1 <1 Vanadium ppm ASTM D5185m 0 <1 0 <0 Cadmium ppm ASTM D5185m 0 <0 <td< th=""><th>CONTAMINATION</th><th>1</th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></td<>	CONTAMINATION	1	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >10 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	6	5	4
Titanium ppm ASTM D5185m 0 0 <1 Silver ppm ASTM D5185m >2 0 0 1 Aluminum ppm ASTM D5185m >10 3 3 3 Lead ppm ASTM D5185m >20 <1	Chromium	ppm	ASTM D5185m	>10	<1	<1	0
Silver ppm ASTM D5185m >2 0 0 1 Aluminum ppm ASTM D5185m >10 3 3 3 Lead ppm ASTM D5185m >20 <1 0 <1 Copper ppm ASTM D5185m 15 <1 <1 <1 <1 Tin ppm ASTM D5185m 10 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <th>Nickel</th> <td>ppm</td> <td>ASTM D5185m</td> <td>>10</td> <th><1</th> <td><1</td> <td><1</td>	Nickel	ppm	ASTM D5185m	>10	<1	<1	<1
Aluminum ppm ASTM D5185m >10 3 3 3 Lead ppm ASTM D5185m >20 <1	Titanium	ppm	ASTM D5185m		0	0	<1
Lead ppm ASTM D5185m >20 <1 0 <1 Copper ppm ASTM D5185m >15 <1 <1 <1 Tin ppm ASTM D5185m >10 <1 <1 <1 Vanadium ppm ASTM D5185m 0 <1 <1 <1 Vanadium ppm ASTM D5185m 0 <1 <1 <0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 32 55 92 Manganese ppm ASTM D5185m 721 841 618 Calcium ppm ASTM D5185m 759 944 712 Zinc ppm ASTM D5185m 892 1185 864 Sulfur ppm ASTM D5185m	Silver	ppm	ASTM D5185m	>2	0	0	1
Copper ppm ASTM D5185m >15 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Aluminum	ppm	ASTM D5185m	>10	3	3	3
Tin ppm ASTM D5185m >10 <1 <1 <1 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 32 55 92 Manganese ppm ASTM D5185m 31 41 <1 <1 Magnesium ppm ASTM D5185m 721 841 618 Calcium ppm ASTM D5185m 759 944 712 <23 Zinc ppm ASTM D5185m 892 1185 864 Sulfur ppm ASTM D5185m 3632 3640 3083	Lead	ppm	ASTM D5185m	>20	<1	0	<1
Tin ppm ASTM D5185m >10 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <0 <1 0 <1 0 <1 0 <0 <0 0	Copper	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 117 33 336 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 32 55 92 Manganese ppm ASTM D5185m 21 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <th></th> <td></td> <td>ASTM D5185m</td> <td>>10</td> <th><1</th> <td><1</td> <td><1</td>			ASTM D5185m	>10	<1	<1	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 117 33 336 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 32 55 92 Manganese ppm ASTM D5185m -1 <1	Vanadium		ASTM D5185m		0		0
Boron	Cadmium		ASTM D5185m			0	0
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 32 55 92 Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 721 841 618 Calcium ppm ASTM D5185m 1387 1114 1523 Phosphorus ppm ASTM D5185m 759 944 712 Zinc ppm ASTM D5185m 3632 3640 3083 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 3 2 <1 Potassium ppm ASTM D5185m >20 3 2 <1 Potassium ppm ASTM D7844 >3 0.4 0.3 0.3 Nitration Abs/.1mm	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 32 55 92 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		117	33	336
Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 721 841 618 Calcium ppm ASTM D5185m 1387 1114 1523 Phosphorus ppm ASTM D5185m 759 944 712 Zinc ppm ASTM D5185m 892 1185 864 Sulfur ppm ASTM D5185m 3632 3640 3083 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 3 2 <1 Potassium ppm ASTM D5185m >20 3 2 <1 Soot % % *ASTM D7844 >3 0.4 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.0 7.3 6.5 Sulfation	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 721 841 618 Calcium ppm ASTM D5185m 1387 1114 1523 Phosphorus ppm ASTM D5185m 759 944 712 Zinc ppm ASTM D5185m 892 1185 864 Sulfur ppm ASTM D5185m 3632 3640 3083 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 3 2 <1 Potassium ppm ASTM D5185m >20 3 2 <1 Soot % % *ASTM D7844 >3 0.4 0.3 0.3 Soot % % *ASTM D7624 >20 7.0 7.3 6.5 Sulfation Abs/:nm *ASTM D7415 >30 18.1 19.5 23.2 <	Molybdenum	ppm	ASTM D5185m		32	55	92
Calcium ppm ASTM D5185m 1387 1114 1523 Phosphorus ppm ASTM D5185m 759 944 712 Zinc ppm ASTM D5185m 892 1185 864 Sulfur ppm ASTM D5185m 3632 3640 3083 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 3 2 <1	Manganese	ppm	ASTM D5185m		<1	<1	<1
Calcium ppm ASTM D5185m 1387 1114 1523 Phosphorus ppm ASTM D5185m 759 944 712 Zinc ppm ASTM D5185m 892 1185 864 Sulfur ppm ASTM D5185m 3632 3640 3083 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 3 2 <1	Magnesium	ppm	ASTM D5185m		721	841	618
Zinc ppm ASTM D5185m 892 1185 864 Sulfur ppm ASTM D5185m 3632 3640 3083 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m 3 2 <1	Calcium	ppm	ASTM D5185m		1387	1114	1523
Zinc ppm ASTM D5185m 892 1185 864 Sulfur ppm ASTM D5185m 3632 3640 3083 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m 3 2 <1 Potassium ppm ASTM D5185m >20 3 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.0 7.3 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 19.5 23.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.5 14.4 </th <th>Phosphorus</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>759</th> <th>944</th> <th>712</th>	Phosphorus	ppm	ASTM D5185m		759	944	712
Sulfur ppm ASTM D5185m 3632 3640 3083 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m 3 2 <1 Potassium ppm ASTM D5185m >20 3 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.0 7.3 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 19.5 23.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.5 14.4 16.0		ppm	ASTM D5185m		892	1185	864
Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m 3 2 <1 Potassium ppm ASTM D5185m >20 3 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.0 7.3 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 19.5 23.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.5 14.4 16.0	Sulfur		ASTM D5185m		3632	3640	3083
Sodium ppm ASTM D5185m 3 2 <1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.0 7.3 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 19.5 23.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.5 14.4 16.0	Silicon	ppm	ASTM D5185m	>20	4	3	4
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.0 7.3 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 19.5 23.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.5 14.4 16.0	Sodium	ppm	ASTM D5185m		3	2	<1
Soot % % *ASTM D7844 >3 0.4 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.0 7.3 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 19.5 23.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.5 14.4 16.0	Potassium	ppm	ASTM D5185m	>20	3	2	0
Nitration Abs/cm *ASTM D7624 >20 7.0 7.3 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 19.5 23.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.5 14.4 16.0	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.1 19.5 23.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.5 14.4 16.0	Soot %	%	*ASTM D7844	>3	0.4	0.3	0.3
Sulfation Abs/.1mm *ASTM D7415 >30 18.1 19.5 23.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.5 14.4 16.0	Nitration	Abs/cm	*ASTM D7624	>20	7.0	7.3	6.5
Oxidation Abs/.1mm *ASTM D7414 >25 12.5 14.4 16.0	Sulfation			>30	18.1		
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	12.5	14.4	16.0
			ASTM D2896				



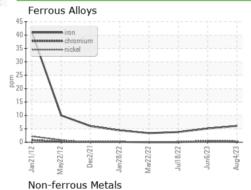
OIL ANALYSIS REPORT

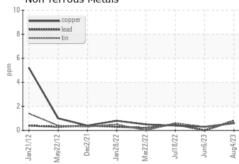


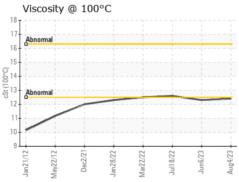


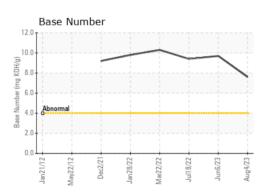
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

FLUID PROPER	HES	metnoa	ilmit/base	current	nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445		12.4	12.3	12.6













Laboratory Sample No. Lab Number

: DJJ0015276 : 05921965 Unique Number : 10601912

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 11 Aug 2023 Diagnosed : 11 Aug 2023

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. **WESTERN METALS RECYCLING - PLYMOUTH**

7400 WEST CEMETERY ROAD PLYMOUTH, UT

US 84330 Contact: JARDEE STEED

jardee.steed@wmrecycling.com

T: (435)458-3851 F: (435)458-3601

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Contact/Location: JARDEE STEED - WESPLY