

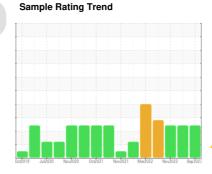
PROBLEM SUMMARY

IBACO [CONHER] BM JLV II

Component

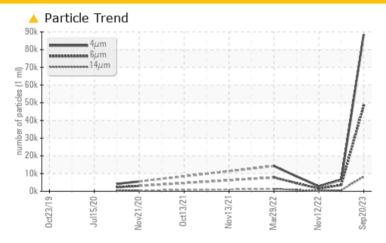
Bottom Diesel Engine

XTRA REV 15W40 (160 LTR)





COMPONENT CONDITION SUMMARY



RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor. (Customer Sample Comment: Please Add particule count)

PROBLEMATIC TEST RESULTS								
Sample Status			ABNORMAL	SEVERE	SEVERE			
Particles >6µm	ASTM D7647	>5000	48283	3531	1525			
Particles >14µm	ASTM D7647	>640	8217	601	260			
Particles >21µm	ASTM D7647	>160	2768	202	87			
Particles >38µm	ASTM D7647	>40	427	31	13			
Particles >71µm	ASTM D7647	>10	44	3	1			
Oil Cleanliness	ISO 4406 (c)	>19/16	23/20	19/16	18/15			

Customer Id: CONHERKL Sample No.: KL0012271 Lab Number: 05964776 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Angela Borella +1 800-237-1369 angela.borella@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 Filter			?	We recommend you service the filters on this component.

HISTORICAL DIAGNOSIS

22 Feb 2023 Diag: Doug Bogart

FUEL



We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a high amount of fuel present in the oil. The amount and size of particulates present in the system are acceptable. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.



12 Nov 2022 Diag: Jonathan Hester

FUEL



We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a high amount of fuel present in the oil. The amount and size of particulates present in the system are acceptable. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.



06 Oct 2022 Diag: Doug Bogart

FUEL



We advise that you check the fuel injection system. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of particulates present in the oil. There is a moderate amount of fuel present 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.





OIL ANALYSIS REPORT

IBACO [CONHER] **BM JLV II**

Bottom Diesel Engine

XTRA REV 15W40 (160 LTR)

Sample Rating Trend



DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor. (Customer Sample Comment: Please Add particule count)

Wear

All component wear rates are normal.

Contamination

Fuel content negligible. There is a high amount of particulates present in the oil.

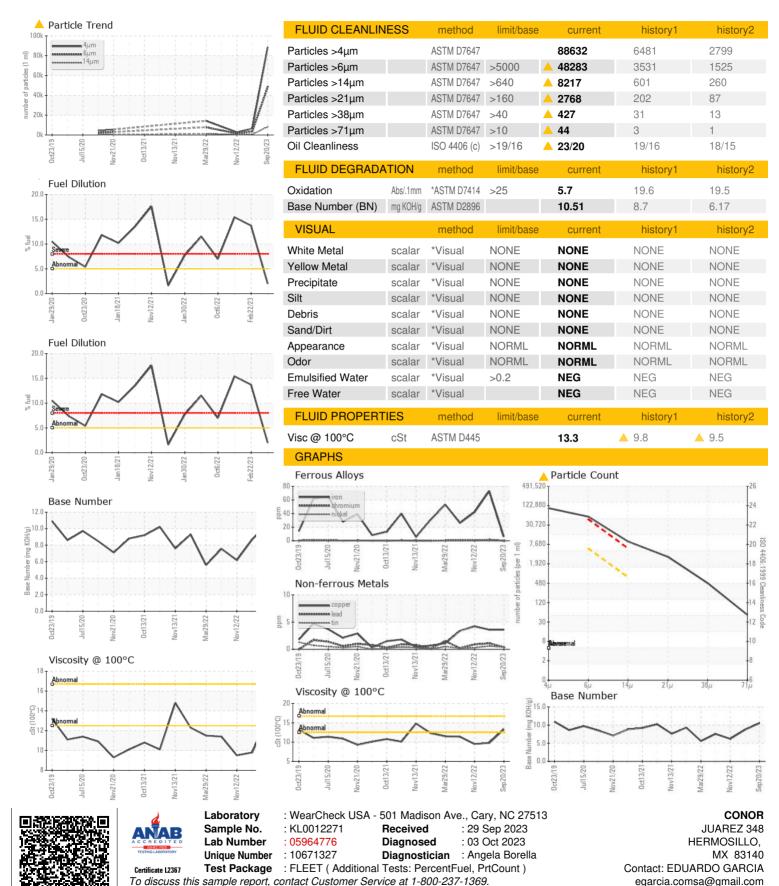
Fluid Condition

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

SAMPLE INFORMATION method limit/base current history2 KL0010234 KL0011214 KL0011214			Dct2019 Ju	2020 NOV2020 OCIZOZ	:1 Nov2021 Mar2022 Nov20	2Z Sep2023	
Sample Date Client Info 20 Sep 2023 22 Feb 2023 12 Nov 2022 Machine Age hrs Client Info 11428 11418 10348 Oil Age hrs Client Info 10 1818 748 Oil Changed Client Info Not Changd Not Changd Not Changd Not Changd Sample Status 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 6 73 42 Chromium ppm ASTM D5185m >20 0 1 -1 Nickel ppm ASTM D5185m >20 0 1 -1 Silver ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >25 3 2 2 <	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 11428 11418 10348 Oil Age hrs Client Info 10 1818 748 Oil Changed Client Info Not Changd Not Changd Not Changd Sample Status Brown ABNORMAL SEVERE SEVERE CONTAMINATION method limit/base current history1 history2 Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 1 <1 Iron ppm ASTM D5185m >20 0 1 <1 Nickel ppm ASTM D5185m >2 0 1 <1 Silver ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >25 3 2 2 Copper ppm <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>KL0012271</th> <th>KL0010234</th> <th>KL0011214</th>	Sample Number		Client Info		KL0012271	KL0010234	KL0011214
Oil Age hrs Client Info 10 1818 748 Oil Changed Sample Status Client Info Not Changd ABNORMAL Not Changd SEVERE Not Changd SEVERE 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 6 73 42 Chromium ppm ASTM D5185m >20 0 1 <1 Nickel ppm ASTM D5185m >20 0 1 <1 Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >330 4 4	Sample Date		Client Info		20 Sep 2023	22 Feb 2023	12 Nov 2022
Oil Changed Sample Status Client Info Not Changd ABNORMAL Not Changd SEVERE	Machine Age	hrs	Client Info		11428	11418	10348
Sample Status method limit/base current history1 history2 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 6 73 42 Chromium ppm ASTM D5185m >20 0 1 <1	Oil Age	hrs	Client Info		10	1818	748
CONTAMINATION method limit/base current history1 history2	Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 6 73 42 Chromium ppm ASTM D5185m >20 0 1 <1	Sample Status				ABNORMAL	SEVERE	SEVERE
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 6 73 42 Chromium ppm ASTM D5185m >20 0 1 <1 Nickel ppm ASTM D5185m >2 0 1 1 Titanium ppm ASTM D5185m >2 <1 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >330 4 4 4 Copper ppm ASTM D5185m >15 <1 <1 <1 <1 Vanadium ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m <1 6	CONTAMINATION	J	method	limit/base	current	history1	history2
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 0 1 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >2 0 1 1 Titanium ppm ASTM D5185m >2 <1 0 0 Silver ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >25 3 2 2 Lead ppm ASTM D5185m >40 <1 1 <1 Copper ppm ASTM D5185m >330 4 4 4 Tin ppm ASTM D5185m >15 <1 <1 <1 Vanadium ppm ASTM D5185m >15 <1 <1 <1 Vanadium ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m <1 <1 <1 <1 Vanadium ppm ASTM D5185m <1 6 55 81 Vanadium ppm ASTM D5185m <1 <1 0	Iron	ppm	ASTM D5185m	>100	6	73	42
Titanium ppm ASTM D5185m >2 <1	Chromium	ppm	ASTM D5185m	>20	0	1	<1
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >25 3 2 2 Lead ppm ASTM D5185m >25 3 2 2 Copper ppm ASTM D5185m >40 <1	Nickel	ppm	ASTM D5185m	>2	0	1	1
Aluminum ppm ASTM D5185m >25 3 2 2 Lead ppm ASTM D5185m >40 <1 1 <1 Copper ppm ASTM D5185m >330 4 4 4 Tin ppm ASTM D5185m >15 <1 <1 <1 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1 60 150 Barium ppm ASTM D5185m 0 <1 0 Molybdenum ppm ASTM D5185m 6 55 81 Manganese ppm ASTM D5185m <1 <1 <1 <1 Magnesium ppm ASTM D5185m 2509 2108 1597 Phosphorus ppm ASTM D518	Titanium	ppm	ASTM D5185m	>2	<1	0	0
Lead ppm ASTM D5185m >40 <1	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 4 4 4 4 Tin ppm ASTM D5185m >15 <1 <1 <1 <1 Vanadium ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1 60 150 Barium ppm ASTM D5185m 0 <1 0 Molybdenum ppm ASTM D5185m 6 55 81 Manganese ppm ASTM D5185m 2509 2108 1597 Phosphorus ppm ASTM D5185m 2509 2108 1597 Phosphorus ppm ASTM D5185m 1336 1015 867 Sulfur ppm ASTM D5185m 3745 4003 3420 CONTAMINANTS	Aluminum	ppm	ASTM D5185m	>25	3	2	2
Tin ppm ASTM D5185m >15 <1	Lead	ppm	ASTM D5185m	>40	<1	1	<1
Vanadium ppm ASTM D5185m <1	Copper	ppm	ASTM D5185m	>330	4	4	4
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1 60 150 Barium ppm ASTM D5185m 0 <1 0 Molybdenum ppm ASTM D5185m 6 55 81 Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 2509 2108 1597 Phosphorus ppm ASTM D5185m 1098 830 748 Zinc ppm ASTM D5185m 1336 1015 867 Sulfur ppm ASTM D5185m 3745 4003 3420 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 10 10 Sodium ppm ASTM D5185m >20	Tin	ppm	ASTM D5185m	>15	<1	<1	<1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m <1 60 150 Barium ppm ASTM D5185m 0 <1 0 Molybdenum ppm ASTM D5185m 6 55 81 Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 8 189 317 Calcium ppm ASTM D5185m 2509 2108 1597 Phosphorus ppm ASTM D5185m 1098 830 748 Zinc ppm ASTM D5185m 1336 1015 867 Sulfur ppm ASTM D5185m 3745 4003 3420 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 10 10 Sodium ppm ASTM D5185m <td< th=""><th>Vanadium</th><th>ppm</th><th>ASTM D5185m</th><th></th><th><1</th><th>0</th><th>0</th></td<>	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron ppm ASTM D5185m <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 6 55 81 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		<1	60	150
Manganese ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		0	<1	0
Magnesium ppm ASTM D5185m 8 189 317 Calcium ppm ASTM D5185m 2509 2108 1597 Phosphorus ppm ASTM D5185m 1098 830 748 Zinc ppm ASTM D5185m 1336 1015 867 Sulfur ppm ASTM D5185m 3745 4003 3420 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 10 10 Sodium ppm ASTM D5185m >20 30 6 3 Fuel % ASTM D5185m >20 30 6 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 1.4 1 Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1	Molybdenum	ppm	ASTM D5185m		6	55	81
Calcium ppm ASTM D5185m 2509 2108 1597 Phosphorus ppm ASTM D5185m 1098 830 748 Zinc ppm ASTM D5185m 1336 1015 867 Sulfur ppm ASTM D5185m 3745 4003 3420 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 10 10 Sodium ppm ASTM D5185m >20 30 6 3 Fuel % ASTM D5185m >20 30 6 3 Fuel % ASTM D3524 >5 2.0 13.7 15.4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 1.4 1 Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1 <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 1098 830 748 Zinc ppm ASTM D5185m 1336 1015 867 Sulfur ppm ASTM D5185m 3745 4003 3420 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 10 10 Sodium ppm ASTM D5185m >20 30 6 3 Fuel % ASTM D5185m >20 30 6 3 Fuel % ASTM D3524 >5 2.0 13.7 15.4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 1.4 1 Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1	Magnesium	ppm	ASTM D5185m		8	189	317
Zinc ppm ASTM D5185m 1336 1015 867 Sulfur ppm ASTM D5185m 3745 4003 3420 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 10 10 Sodium ppm ASTM D5185m >20 30 6 3 Potassium ppm ASTM D5185m >20 30 6 3 Fuel % ASTM D3524 >5 2.0 13.7 15.4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 1.4 1 Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1	Calcium	ppm	ASTM D5185m		2509	2108	1597
Sulfur ppm ASTM D5185m 3745 4003 3420 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 10 10 Sodium ppm ASTM D5185m >20 30 6 3 Potassium ppm ASTM D5185m >20 30 6 3 Fuel % ASTM D3524 >5 2.0 13.7 15.4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 1.4 1 Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1	Phosphorus	ppm	ASTM D5185m		1098	830	748
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 10 10 Sodium ppm ASTM D5185m 10 9 11 Potassium ppm ASTM D5185m >20 30 6 3 Fuel % ASTM D3524 >5 2.0 13.7 15.4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 1.4 1 Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1	Zinc	ppm	ASTM D5185m		1336	1015	867
Silicon ppm ASTM D5185m >25 15 10 10 Sodium ppm ASTM D5185m 10 9 11 Potassium ppm ASTM D5185m >20 30 6 3 Fuel % ASTM D3524 >5 2.0 13.7 15.4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 1.4 1 Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1	Sulfur	ppm	ASTM D5185m		3745	4003	3420
Sodium ppm ASTM D5185m 10 9 11 Potassium ppm ASTM D5185m >20 30 6 3 Fuel % ASTM D3524 >5 2.0 13.7 15.4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 1.4 1 Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1	CONTAMINANTS		method	limit/base	current	history1	history2
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Fuel % ASTM D3524 >5 2.0 ■ 13.7 ■ 15.4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 1.4 1 Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1	Sodium	ppm	ASTM D5185m		10	9	11
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 1.4 1 Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1	Potassium	ppm	ASTM D5185m	>20	30	6	3
Soot % % *ASTM D7844 >3 0.1 1.4 1 Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1	Fuel	%	ASTM D3524	>5	2.0	13.7	15.4
Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 4.5 12.8 11.1	Soot %	%	*ASTM D7844	>3	0.1	1.4	1
		Abs/cm		>20	4.5	12.8	11.1
	Sulfation	Abs/.1mm			12.3		



OIL ANALYSIS REPORT



* - 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)

T: (526)622-1581 x:81

F: x: