

OIL ANALYSIS REPORT

Sample Rating Trend

Oct0022 Doct0222 Feb2023 Apr0023 Sep2023 Doct023 Mart024





CATERPILLAR 374 10552 (S/N TNX10027)

Component

Diesel Engine

DIESEL ENGINE OIL SAE 30 (--- GAL)

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil

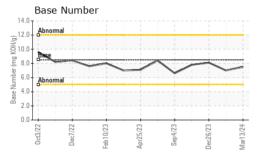
Fluid Condition

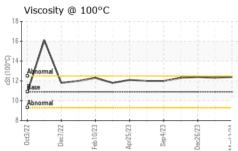
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date	AE 30 (GAL)		0ct2022	Dec2022 Feb2023	Apr2023 Sep2023 Dec2023	Mar2024	
Sample Date Client Info 33 Mar 2024 31 Jan 2024 26 Dec 2023 Machine Age hrs Client Info 671 624 548 54	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 8361 7690 7066 Oil Age hrs Client Info 671 624 548 548 Oil Okanged Client Info Changed Changed <t< th=""><th>Sample Number</th><th></th><th>Client Info</th><th></th><th>WC0887948</th><th>WC0888240</th><th>WC0879349</th></t<>	Sample Number		Client Info		WC0887948	WC0888240	WC0879349
Dil Age	Sample Date		Client Info		13 Mar 2024	31 Jan 2024	26 Dec 2023
Client Info Changed Changed Changed NORMAL NORMAL NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		8361	7690	7066
NORMAL NORMAL NORMAL NORMAL NORMAL	Oil Age	hrs	Client Info		671	624	548
Fuel	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method WC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 22 26 24 Chromium ppm ASTM D5185m >6 0 <1 0 Nickel ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >10 <1 3 1 Copper ppm ASTM D5185m >10 <1 3 1 Copper ppm ASTM D5185m >10 <1 3 1 Cadadium ppm ASTM D5185m >4 0 <1 0 Boron ppm ASTM D5185m 0 0 <1 0<	CONTAMINATIO	N	method	limit/base	current	history1	history2
MEG NEG NEG NEG NEG NEG	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 22 26 24 Chromium ppm ASTM D5185m >6 0 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Chromium	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	22	26	24
Titanium	Chromium	ppm	ASTM D5185m	>6	0	<1	0
Silver	Nickel	ppm	ASTM D5185m	>4	0	0	0
Aluminum	Titanium	ppm	ASTM D5185m	>2	0	0	0
Lead	Silver	ppm	ASTM D5185m	>2	0	0	
Copper ppm ASTM D5185m >150 2 2 2 2 Tin ppm ASTM D5185m >4 0 <1	Aluminum	ppm	ASTM D5185m	>30	<1	2	3
Tin	Lead	ppm					
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 1 0 8 Barium ppm ASTM D5185m 10 0 <1	Copper	ppm	ASTM D5185m	>150	2	2	2
ADDITIVES	Tin	ppm	ASTM D5185m	>4			
ADDITIVES	Vanadium	ppm	ASTM D5185m			0	
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium	ADDITIVES		method	limit/base	current	•	
Molybdenum ppm ASTM D5185m 100 55 61 59 Manganese ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m 450 956 950 1004 Calcium ppm ASTM D5185m 3000 1253 1164 1211 Phosphorus ppm ASTM D5185m 1150 1033 1080 1045 Zinc ppm ASTM D5185m 1350 1233 1290 1304 Sulfur ppm ASTM D5185m 4250 3436 2905 3171 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 5 3 4 Sodium ppm ASTM D5185m >20 5 3 4 Sodium ppm ASTM D5185m >20 0 1 4 INFRA-RED method limit/base current <td>Boron</td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td>	Boron						
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Sulfur ppm ASTM D5185m 4250 3436 2905 3171 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 5 3 4 Sodium ppm ASTM D5185m >75 <1 <1 2 Potassium ppm ASTM D5185m >20 0 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 9.0 9.3 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 20.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.7 15.1							
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 5 3 4 Sodium ppm ASTM D5185m >75 <1							
Silicon ppm ASTM D5185m >20 5 3 4 Sodium ppm ASTM D5185m >75 <1 <1 2 Potassium ppm ASTM D5185m >20 0 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 9.0 9.3 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 20.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.7 15.1					3436		
Sodium ppm ASTM D5185m >75 <1 <1 2 Potassium ppm ASTM D5185m >20 0 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 9.0 9.3 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 20.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.7 15.1		5				· ·	· ·
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INFRA-RED							
Soot % % *ASTM D7844 >3 0.5 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 9.0 9.3 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 20.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.7 15.1		ppm		>20	0	1	4
Nitration Abs/cm *ASTM D7624 >20 9.0 9.3 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 20.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.7 15.1				limit/base			· ·
Sulfation Abs/.1mm *ASTM D7415 >30 20.3 20.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.7 15.1	Soot %						
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.7 15.1	Nitration						
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.3	20.6	19.2
	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 8.5 7.5 7.0 8.1	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.3	16.7	15.1
	Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.5	7.0	8.1



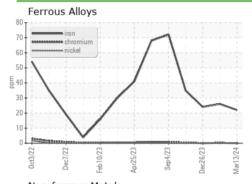
OIL ANALYSIS REPORT

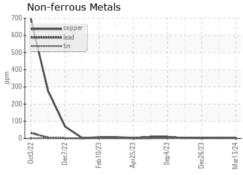


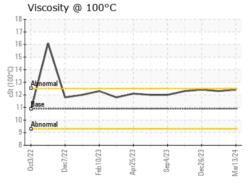


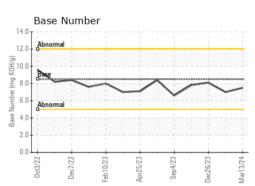
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

FLUID PROPERTIES		method				history2	
Visc @ 100°C	cSt	ASTM D445	10.9	12.4	12.3	12.4	













Laboratory Sample No.

Lab Number : 06122058

Unique Number: 10936209

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0887948 Received : 19 Mar 2024 **Tested**

: 19 Mar 2024 Diagnosed : 19 Mar 2024 - 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)



PO DRAWER 1578 NEW BERN, NC US 28563

Contact: MIKE WYATT

mwyatt@traderconstruction.com T: (252)633-1399

F: (252)638-4871

Contact/Location: MIKE WYATT - TRANEW