

OIL ANALYSIS REPORT

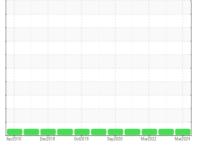
Sample Rating Trend

NORMAL

Thompson Falls **THF03 Generator Lube Oil**

Case Drain Lube System

CONOCO TURBINE OIL 68 (360 GAL)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

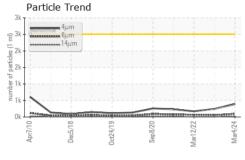
Fluid Condition

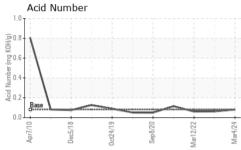
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

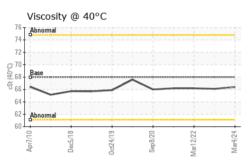
SAMPLE INFORMATION method limit/base current history1 history2							
Sample Date Client Info 16	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age yrs	Sample Number		Client Info		WC0757774	WCI2326261	WCI2326876
Oil Age Oil Changed Oil Changed Sample Status Vrs Client Info Not Changed N/A Not Changed N/A Not Changed NORMAL NoRMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NEG NEG Water WC Method Iimil/base current history2 history2 history2 Iron ppm ASTM D5185m >20 <1 0 0 Chromium ppm ASTM D5185m >20 <1 0 0 Nickel ppm ASTM D5185m >20 <1 0 0 Nickel ppm ASTM D5185m >20 <1 0 0 Silver ppm ASTM D5185m >20 2 0 0 Aluminum ppm ASTM D5185m >20 2 0 0 Lead ppm ASTM D5185m >20 1 <1 <1 Copper ppm ASTM D5185m >20 1 <1 <1 Cadaium ppm <t< th=""><th>Sample Date</th><th></th><th>Client Info</th><th></th><th>04 Mar 2024</th><th>24 Mar 2023</th><th>12 Mar 2022</th></t<>	Sample Date		Client Info		04 Mar 2024	24 Mar 2023	12 Mar 2022
Oil Changed Sample Status	Machine Age	yrs	Client Info		16	15	14
Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1	Oil Age	yrs	Client Info		16	15	14
Water WC Method So.0.5 NEG NEG NEG NEG	Oil Changed		Client Info		Not Changd	N/A	Not Changd
Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1 0 0 Chromium ppm ASTM D5185m >20 <1 0 0 Nickel ppm ASTM D5185m >20 <1 0 0 Silver ppm ASTM D5185m >20 2 0 0 Aluminum ppm ASTM D5185m >20 1 0 0 Lead ppm ASTM D5185m >20 1 0 0 Copper ppm ASTM D5185m >20 1 <1 <1 <1 Antimony ppm ASTM D5185m >20 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1 0 0 Chromium ppm ASTM D5185m 20 <1 0 0 Nickel ppm ASTM D5185m >20 <1 0 0 Silver ppm ASTM D5185m >20 2 0 0 Aluminum ppm ASTM D5185m >20 2 0 0 Lead ppm ASTM D5185m >20 1 0 0 Lead ppm ASTM D5185m >20 1 <1 <1 Antimony ppm ASTM D5185m >20 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	CONTAMINATION	1	method	limit/base	current	history1	history2
Iron	Water		WC Method	>0.05	NEG	NEG	NEG
Chromium ppm ASTM D5185m ≥20 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >20 <1	Iron	ppm	ASTM D5185m	>20	<1	0	0
Titanium ppm ASTM D5185m <1	Chromium	ppm	ASTM D5185m	>20	<1	0	0
Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m >20 2 0 0 Lead ppm ASTM D5185m >20 1 0 0 Copper ppm ASTM D5185m >20 -1 0 -1 Tin ppm ASTM D5185m >20 1 <1	Nickel	ppm	ASTM D5185m	>20	<1	0	0
Aluminum ppm ASTM D5185m >20 2 0 0 Lead ppm ASTM D5185m >20 1 0 0 Copper ppm ASTM D5185m >20 <1 0 <1 Tin ppm ASTM D5185m >20 1 <1 <1 Antimony ppm ASTM D5185m Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 1 0 0 Boron ppm ASTM D5185m <1 0 0 Barium ppm ASTM D5185m <1 0 0 Molybdenum ppm ASTM D5185m <1 0 0 Manganese ppm ASTM D5185m <1 <1 0 0 Magnesium ppm ASTM D5185m <1	Titanium	ppm	ASTM D5185m		<1	0	0
Lead ppm ASTM D5185m >20 1 0 0 Copper ppm ASTM D5185m >20 <1	Silver	ppm	ASTM D5185m		0	0	0
Copper ppm ASTM D5185m >20 <1	Aluminum	ppm		>20	_		
Tin	Lead	ppm					
Antimony ppm ASTM D5185m Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 <1 Barium ppm ASTM D5185m 1 0 0 Molybdenum ppm ASTM D5185m <1 0 0 Manganese ppm ASTM D5185m <1 <1 0 0 Magnesium ppm ASTM D5185m <1 <1 0 0 Calcium ppm ASTM D5185m 15 11 6 1 <1 6 Phosphorus ppm ASTM D5185m 7 3 0 0 0 0 Sulfur ppm ASTM D5185m 7 3 0 0 0		ppm				-	
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Cadmium ppm ASTM D5185m c1 0 0 0	•						
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 <1 Barium ppm ASTM D5185m 1 0 0 Molybdenum ppm ASTM D5185m <1 0 0 Manganese ppm ASTM D5185m <1 0 0 Magnesium ppm ASTM D5185m <1 <1 0 Calcium ppm ASTM D5185m 6 1 <1 0 Calcium ppm ASTM D5185m 15 11 6 Zinc ppm ASTM D5185m 7 3 0 Sulfur ppm ASTM D5185m >15 1 <1 1 Sulfour ppm ASTM D5185m >15 1 <1 1 Sodium ppm ASTM D5185m >20 <1 <1 <1 Sodium ppm ASTM D5185m		• •					
Boron ppm ASTM D5185m 0 0 <1	Cadmium	ppm	ASTM D5185m		<1	0	0
Barium ppm ASTM D5185m 1 0 0 Molybdenum ppm ASTM D5185m <1 0 0 Manganese ppm ASTM D5185m <1 0 0 Magnesium ppm ASTM D5185m <1 <1 0 Calcium ppm ASTM D5185m 6 1 <1 6 Phosphorus ppm ASTM D5185m 7 3 0 0 Sulfur ppm ASTM D5185m 203 247 239 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 1 <1 1 Sodium ppm ASTM D5185m >20 <1 <1 <1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 389 247 172 Particles >21μm AS	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		0	0	<1
Manganese ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		1	0	0
Magnesium ppm ASTM D5185m <1	Molybdenum	ppm	ASTM D5185m		<1	0	0
Calcium ppm ASTM D5185m 6 1 <1	Manganese	ppm	ASTM D5185m		<1	0	0
Phosphorus ppm ASTM D5185m 15 11 6 Zinc ppm ASTM D5185m 7 3 0 Sulfur ppm ASTM D5185m 203 247 239 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 1 <1 1 Sodium ppm ASTM D5185m >0 0 0 0 Potassium ppm ASTM D5185m >20 <1 <1 <1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 389 247 172 Particles >6μm ASTM D7647 >80 15 6 6 Particles >1μm ASTM D7647 >20 4 3 2 Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm <td< th=""><th>Magnesium</th><th>ppm</th><th>ASTM D5185m</th><th></th><th><1</th><th><1</th><th>0</th></td<>	Magnesium	ppm	ASTM D5185m		<1	<1	0
Zinc ppm ASTM D5185m 7 3 0 Sulfur ppm ASTM D5185m 203 247 239 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 1 <1 1 Sodium ppm ASTM D5185m 0 0 0 0 Potassium ppm ASTM D5185m >20 <1 <1 <1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 389 247 172 Particles >6μm ASTM D7647 >640 96 56 66 Particles >1μm ASTM D7647 >80 15 6 6 Particles >21μm ASTM D7647 >20 4 3 2 Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm	Calcium	ppm	ASTM D5185m		6	1	<1
Sulfur ppm ASTM D5185m 203 247 239 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 1 <1 1 Sodium ppm ASTM D5185m >0 0 0 0 Potassium ppm ASTM D5185m >20 <1 <1 <1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 389 247 172 Particles >6μm ASTM D7647 >640 96 56 66 Particles >14μm ASTM D7647 >80 15 6 6 Particles >21μm ASTM D7647 >20 4 3 2 Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0	Phosphorus	ppm	ASTM D5185m		15	11	6
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 1 <1 1 Sodium ppm ASTM D5185m 0 0 0 0 Potassium ppm ASTM D5185m >20 <1 <1 <1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 389 247 172 Particles >6μm ASTM D7647 >640 96 56 66 Particles >14μm ASTM D7647 >80 15 6 6 Particles >21μm ASTM D7647 >20 4 3 2 Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0	-	ppm	ASTM D5185m		7		
Silicon ppm ASTM D5185m >15 1 <1	Sulfur	ppm	ASTM D5185m		203	247	239
Sodium ppm ASTM D5185m 0 0 0 Potassium ppm ASTM D5185m >20 <1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1	Silicon	ppm	ASTM D5185m	>15	1	<1	1
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 389 247 172 Particles >6μm ASTM D7647 >640 96 56 66 Particles >14μm ASTM D7647 >80 15 6 6 Particles >21μm ASTM D7647 >20 4 3 2 Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0		ppm	ASTM D5185m		0		
Particles >4μm ASTM D7647 >2500 389 247 172 Particles >6μm ASTM D7647 >640 96 56 66 Particles >14μm ASTM D7647 >80 15 6 6 Particles >21μm ASTM D7647 >20 4 3 2 Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0	Potassium	ppm	ASTM D5185m	>20	<1	<1	<1
Particles >6μm ASTM D7647 >640 96 56 66 Particles >14μm ASTM D7647 >80 15 6 6 Particles >21μm ASTM D7647 >20 4 3 2 Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >14μm ASTM D7647 >80 15 6 6 Particles >21μm ASTM D7647 >20 4 3 2 Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0	Particles >4µm		ASTM D7647	>2500	389	247	172
Particles >21μm ASTM D7647 >20 4 3 2 Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0			ASTM D7647	>640	96	56	66
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$							
Particles >71 μ m ASTM D7647 >3 0 0							
Oil Cleanliness ISO 4406 (c) >18/16/13 16/14/11 15/13/10 15/13/10							
	Oil Cleanliness		ISO 4406 (c)	>18/16/13	16/14/11	15/13/10	15/13/10

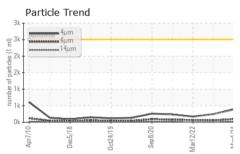


OIL ANALYSIS REPORT

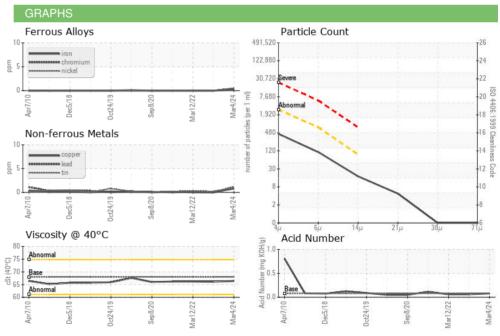








FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.08	0.08	0.061	0.06
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	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	>0.05	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	TES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	68	66.4	66.1	66.2
SAMPLE IMAGES	6	method	limit/base	current	history1	history2
Color						







Laboratory Sample No. Lab Number : 06153769

: WC0757774 Unique Number : 10989192 Test Package : IND 2

Bottom

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 18 Apr 2024

Tested : 19 Apr 2024 Diagnosed : 23 Apr 2024 - Angela Borella

Certificate 12367 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)

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