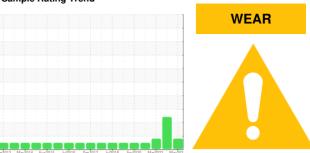


GREASE ANALYSIS

Sample Rating Trend



Machine Id

TURBINA 20 (S/N 101181)

Wind Turbine Gearbox

FUCHS RENOLIN UNISYN CLP 320 (320 LTR)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

The iron level is abnormal. All other component wear rates are normal.

Contamination

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

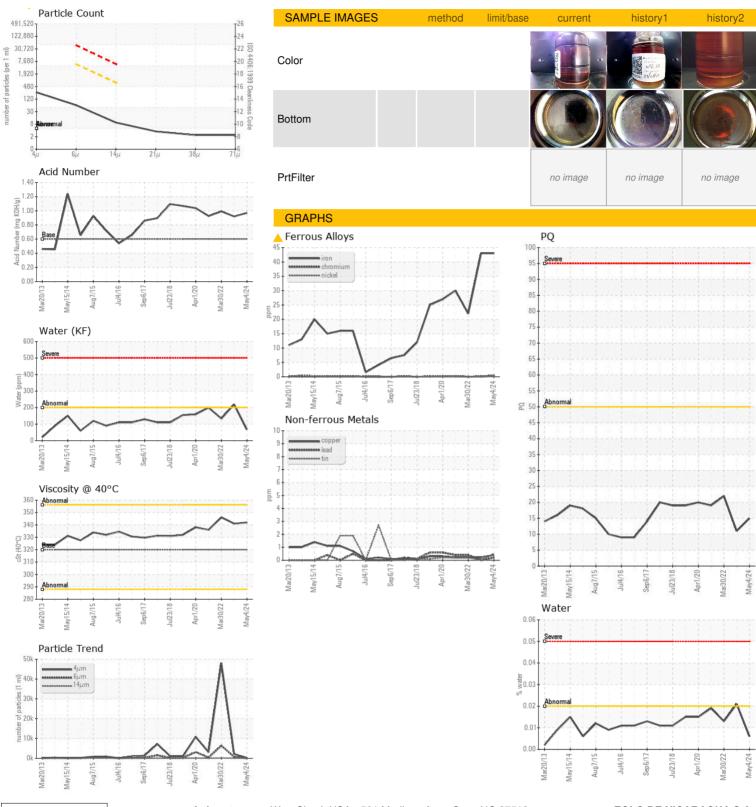
Fluid Condition

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

SAMPLE INFORMA	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0881140	WC0505299	WC05582420
Sample Date		Client Info		04 May 2024	23 Aug 2023	30 Mar 2022
Machine Age	yrs	Client Info		12	11	72
Oil Age	yrs	Client Info		9	7	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ATTENTION
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>50	15	11	22
Iron p	ppm	ASTM D5185m	>30	43	4 3	22
Chromium	ppm	ASTM D5185m	>3	<1	<1	0
Nickel	ppm	ASTM D5185m	>3	<1	0	0
Cadmium p	ppm	ASTM D5185m		<1	0	0
Titanium	ppm	ASTM D5185m	>10	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Lead r	ppm	ASTM D5185m	>15	<1	0	<1
Copper	ppm	ASTM D5185m	>10	<1	<1	<1
Tin r	ppm	ASTM D5185m	>10	<1	0	<1
Silver p	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
		motriod	IIIIII Dase	Current	HISTOLY	Thistory Z
Boron p	ppm	ASTM D5185m	IIIIII/Dase	0	0	0
'	ppm ppm		IIIIII Dase			,
Magnesium		ASTM D5185m	IIIIIVVase	0	0	0
Magnesium Kanganese Kanganese	ppm	ASTM D5185m ASTM D5185m	iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	0 <1	0 <1	0
Magnesium p Manganese p Molybdenum p	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	iii iii voase	0 <1 0	0 <1 0	0 0 0
Magnesium p Manganese p Molybdenum p Phosphorus p	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	iiiiii/base	0 <1 0 <1	0 <1 0	0 0 0 0
Magnesium pagnesium pagnese pa	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	iiiiii/base	0 <1 0 <1 174	0 <1 0 0 168	0 0 0 0 0
Magnesium pagnesium pagnese pa	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 <1 0 <1 174 85	0 <1 0 0 168 83	0 0 0 0 0 124 64
Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAP	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 <1 0 <1 174 85	0 <1 0 0 168 83	0 0 0 0 0 124 64
Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAP Aluminum	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 <1 0 <1 174 85 	0 <1 0 0 168 83 history1	0 0 0 0 124 64
Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAP Aluminum Barium	pppm pppm pppm pppm pppm pppm pppm	ASTM D5185m		0 <1 0 <1 174 85 current	0 <1 0 0 168 83 history1 0	0 0 0 0 124 64 history2
Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAP Aluminum Barium Calcium	pppm pppm pppm pppm pppm pppm pppm ppp	ASTM D5185m		0 <1 0 <1 174 85 current 1	0 <1 0 0 168 83 history1 0 2	0 0 0 0 124 64 history2 <1
Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAP Aluminum Barium Calcium Sodium	pppm pppm pppm pppm pppm pppm	ASTM D5185m		0 <1 0 <1 174 85 current 1 1 8	0 <1 0 0 168 83 history1 0 2 5	0 0 0 0 124 64 history2 <1 0
Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAP Aluminum Barium Calcium Sodium	pppm pppm pppm pppm pppm pppm pppm ppp	ASTM D5185m		0 <1 0 <1 174 85 current 1 1 8 3 3	0 <1 0 0 168 83 history1 0 2 5 0	0 0 0 0 124 64 history2 <1 0 4
Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAP Aluminum Barium Calcium Sodium Sulfur CONTAMINANTS	pppm pppm pppm pppm pppm pppm pppm ppp	ASTM D5185m	limit/base	0 <1 0 <1 174 85 current 1 1 8 3 4254	0 <1 0 0 168 83 history1 0 2 5 0 4655	0 0 0 0 124 64 history2 <1 0 4 1 3410
Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAP Aluminum Barium Calcium Sodium Sulfur CONTAMINANTS Silicon	pppm pppm pppm pppm pppm pppm pppm ppp	ASTM D5185m	limit/base	0 <1 0 <1 174 85 current 1 1 8 3 4254 current	0 <1 0 0 168 83 history1 0 2 5 0 4655 history1	0 0 0 0 124 64 history2 <1 0 4 1 3410 history2
Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAP Aluminum Barium Calcium Sodium Sulfur CONTAMINANTS Silicon Potassium	pppm pppm pppm pppm pppm pppm pppm ppp	ASTM D5185m	limit/base	0 <1 0 <1 174 85 current 1 1 8 3 4254 current 1	0 <1 0 0 168 83 history1 0 2 5 0 4655 history1 1	0 0 0 0 124 64 history2 <1 0 4 1 3410 history2
Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAP Aluminum Barium Calcium Sodium Sulfur CONTAMINANTS Silicon Potassium Water	pppm pppm pppm pppm pppm pppm pppm ppp	ASTM D5185m	limit/base limit/base >+15 >0.02	0 <1 0 <1 0 <1 174 85 current 1 1 8 3 4254 current 1 2	0 <1 0 0 168 83 history1 0 2 5 0 4655 history1 1 <1	0 0 0 0 124 64 history2 <1 0 4 1 3410 history2 <1 0



GREASE ANALYSIS







Certificate 12367

Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0881140 Lab Number : 06194671

Received : 29 May 2024 **Tested** : 31 May 2024

EOLO DE NICARAGUA S.A. DEL SEMAFORO DEL CLUB TERRAZA, 1 CUADRA AL SUR MANAGUA, ZZ

Unique Number : 11056794 Diagnosed : 31 May 2024 - Angela Borella Test Package : GRS 1 (Additional Tests: Consistency, FilterPatch, GreaseColor, ICP, KF, KV40, PQ, PrtCount, Confident Rafael Bermudez

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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