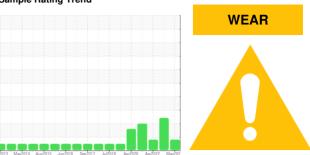


# **GREASE ANALYSIS**

Sample Rating Trend



Machine Id

# TURBINA 09 (S/N 101311)

Wind Turbine Gearbox

**FUCHS RENOLIN UNISYN CLP 320 (320 LTR)** 

### **DIAGNOSIS**

### Recommendation

Resample at the next service interval to monitor.

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

### Contamination

The amount and size of particulates present in the system are acceptable.

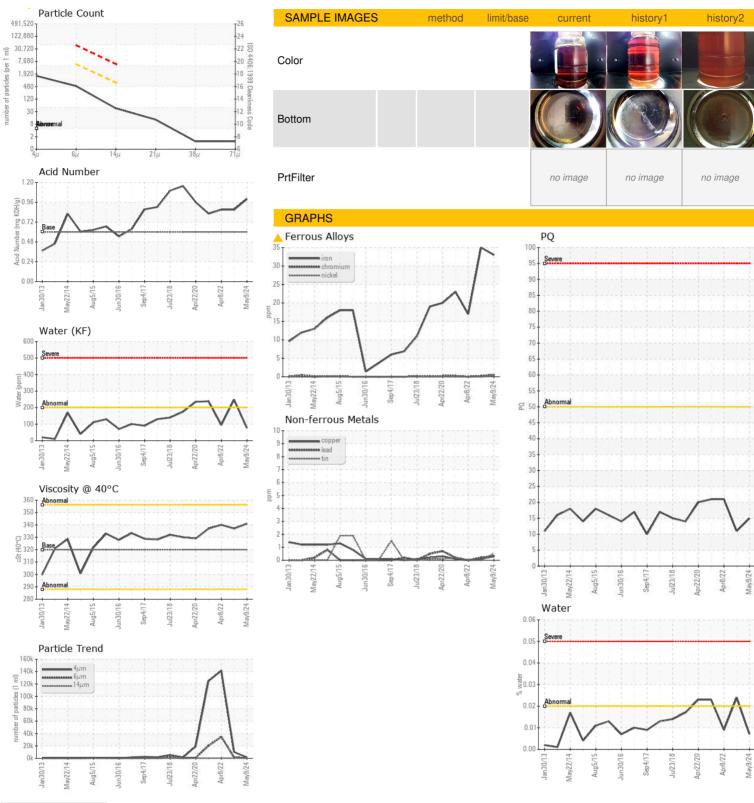
### **Fluid Condition**

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in

,						
SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0881128	WC0831517	WC05582421
Sample Date		Client Info		09 May 2024	14 Aug 2023	08 Apr 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	ABNORMAL
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>50	15	11	21
Iron	ppm	ASTM D5185m	>30	<b>4</b> 33	<b>△</b> 35	17
Chromium	ppm	ASTM D5185m	>3	<1	<1	0
Nickel	ppm	ASTM D5185m	>3	<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
Titanium	ppm	ASTM D5185m	>10	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Lead	ppm	ASTM D5185m	>15	<1	<1	0
Copper	ppm	ASTM D5185m	>10	<1	<1	0
Tin	ppm	ASTM D5185m	>10	<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 0	history2 0
	ppm ppm		limit/base		,	
Boron		ASTM D5185m	limit/base	0	0	0
Boron Magnesium	ppm	ASTM D5185m ASTM D5185m	limit/base	0 <1	0	0
Boron Magnesium Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 <1 0	0 0 0	0 0 0
Boron Magnesium Manganese Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 <1 0 <1	0 0 0 0	0 0 0 0
Boron Magnesium Manganese Molybdenum Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 <1 0 <1 163	0 0 0 0 0 174	0 0 0 0 0
Boron Magnesium Manganese Molybdenum Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 <1 0 <1 163 79	0 0 0 0 0 174 106	0 0 0 0 0 112 86
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 <1 0 <1 163 79	0 0 0 0 174 106	0 0 0 0 112 86
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAI	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 <1 163 79 	0 0 0 0 174 106 	0 0 0 0 112 86 
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAI	ppm ppm ppm ppm ppm ppm	ASTM D5185m		0 <1 0 <1 163 79 current	0 0 0 0 174 106  history1	0 0 0 0 112 86  history2
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAI Aluminum Barium	ppm	ASTM D5185m		0 <1 0 <1 163 79 current 1 1	0 0 0 0 174 106  history1 0	0 0 0 0 112 86  history2 <1
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAI Aluminum Barium Calcium	ppm	ASTM D5185m		0 <1 0 <1 163 79 current 1 1 8	0 0 0 0 174 106  history1 0 2	0 0 0 0 112 86  history2 <1 0 <1
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAI Aluminum Barium Calcium Sodium	ppm	ASTM D5185m		0 <1 0 <1 163 79 current 1 1 8 2 2	0 0 0 0 174 106  history1 0 2 4	0 0 0 0 112 86  history2 <1 0 <1
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAI Aluminum Barium Calcium Sodium Sulfur	ppm	ASTM D5185m	limit/base	0 <1 0 <1 163 79 current 1 1 8 2 4845	0 0 0 0 174 106  history1 0 2 4 0 5871	0 0 0 0 112 86  history2 <1 0 <1 <1 3818
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAI Aluminum Barium Calcium Sodium Sulfur CONTAMINANTS	ppm	ASTM D5185m	limit/base	0 <1 0 <1 0 <1 163 79 current 1 1 8 2 4845 current	0 0 0 0 174 106  history1 0 2 4 0 5871 history1	0 0 0 0 112 86  history2 <1 0 <1 <1 3818
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAI Aluminum Barium Calcium Sodium Sulfur CONTAMINANTS Silicon	ppm	ASTM D5185m	limit/base	0 <1 0 <1 163 79 current 1 1 8 2 4845 current 2	0 0 0 0 174 106  history1 0 2 4 0 5871 history1	0 0 0 0 112 86  history2 <1 0 <1 <1 3818 history2
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOAI Aluminum Barium Calcium Sodium Sulfur CONTAMINANTS Silicon Potassium	ppm	ASTM D5185m	limit/base limit/base >+15 >0.02	0 <1 0 <1 163 79 current 1 1 8 2 4845 current 2 <1	0 0 0 0 174 106  history1 0 2 4 0 5871 history1	0 0 0 0 112 86  history2 <1 0 <1 <1 3818 history2 <1 0



## **GREASE ANALYSIS**







Certificate 12367

Report Id: EOLOMAN [WUSCAR] 06194666 (Generated: 05/31/2024 20:10:19) Rev: 1

Laboratory Sample No.

: WC0881128 Lab Number : 06194666

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

: 29 May 2024 **Tested** : 31 May 2024 Diagnosed

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

Unique Number : 11056789 : 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)

Contact/Location: Rafael Bermudez - EOLOMAN

NI

T:

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