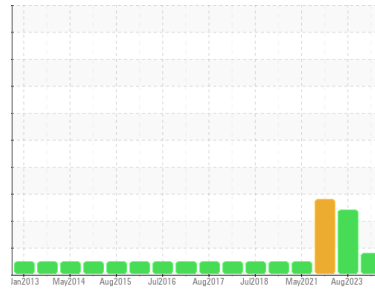




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
TURBINA 17 (S/N 101068)

Component
Wind Turbine Gearbox

Fluid
FUCHS RENOLIN UNISYN CLP 320 (340 LTR)

DIAGNOSIS

Recommendation

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

Wear

The iron level is abnormal.

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 INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0831497	WC0505304	WC05582418
Sample Date	Client Info		04 May 2024	22 Aug 2023	03 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	13	16
Iron	ppm	ASTM D5185m	>30	▲ 30	▲ 32
Chromium	ppm	ASTM D5185m	>3	<1	<1
Nickel	ppm	ASTM D5185m	>3	<1	0
Titanium	ppm	ASTM D5185m	>10	<1	0
Silver	ppm	ASTM D5185m		0	0
Aluminum	ppm	ASTM D5185m	>30	1	0
Lead	ppm	ASTM D5185m	>15	0	0
Copper	ppm	ASTM D5185m	>10	<1	<1
Tin	ppm	ASTM D5185m	>10	<1	0
Antimony	ppm	ASTM D5185m	>5	---	---
Vanadium	ppm	ASTM D5185m		0	0
Cadmium	ppm	ASTM D5185m		<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	0
Barium	ppm	ASTM D5185m		1	2
Molybdenum	ppm	ASTM D5185m		<1	0
Manganese	ppm	ASTM D5185m		0	0
Magnesium	ppm	ASTM D5185m		<1	<1
Calcium	ppm	ASTM D5185m		5	2
Phosphorus	ppm	ASTM D5185m		205	204
Zinc	ppm	ASTM D5185m		227	264
Sulfur	ppm	ASTM D5185m		3980	4326

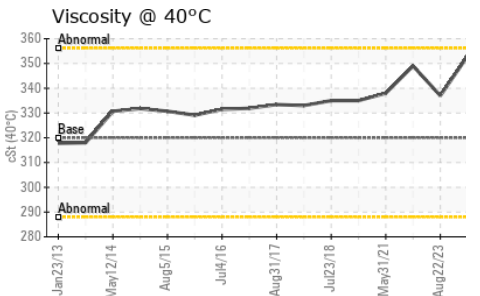
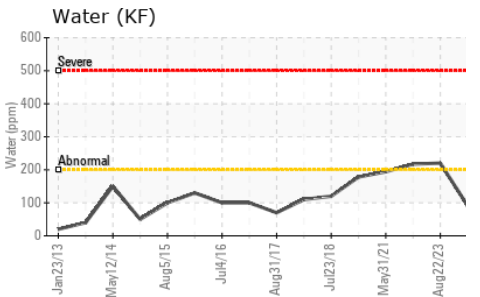
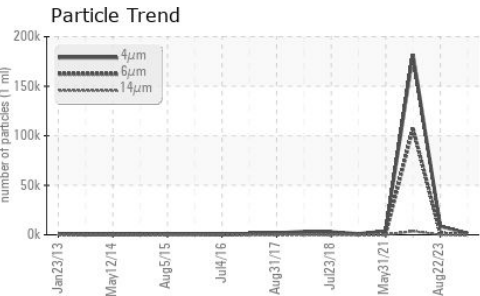
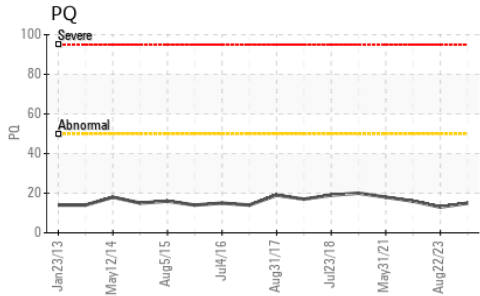
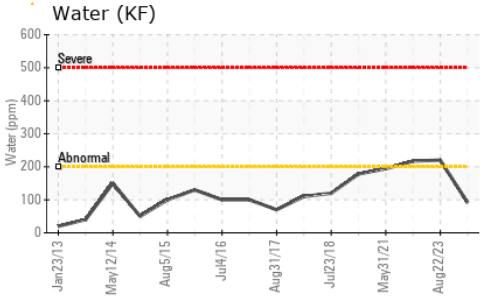
CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+15	<1	2
Sodium	ppm	ASTM D5185m		2	0
Potassium	ppm	ASTM D5185m	>20	1	<1
Water	%	ASTM D6304	>0.02	0.009	▲ 0.022
ppm Water	ppm	ASTM D6304	>200	91	▲ 220.2

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		1463	8572	182036
Particles >6µm	ASTM D7647	>5000	219	1485	▲ 107162
Particles >14µm	ASTM D7647	>640	10	46	▲ 3618
Particles >21µm	ASTM D7647	>160	4	11	147
Particles >38µm	ASTM D7647	>40	2	1	4
Particles >71µm	ASTM D7647	>10	2	0	1
Oil Cleanliness	ISO 4406 (c)	>--/19/16	18/15/10	20/18/13	▲ 25/24/19

OIL ANALYSIS REPORT

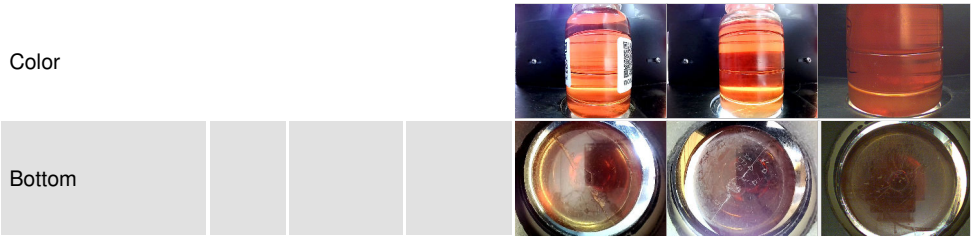


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.6	0.85	0.80	0.78

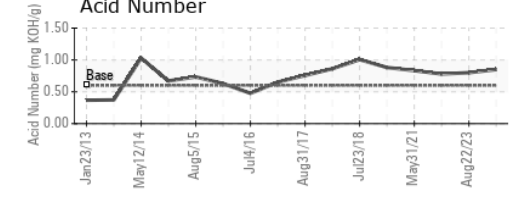
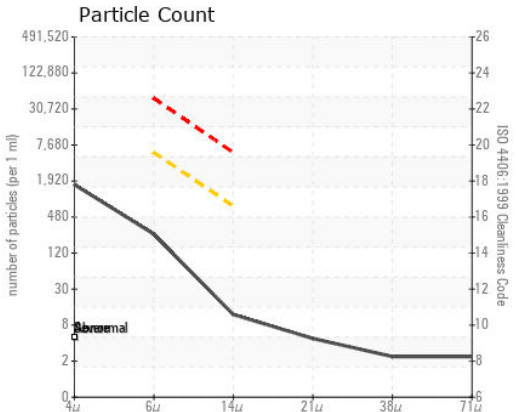
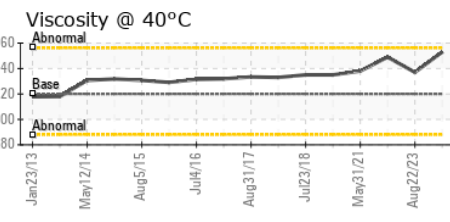
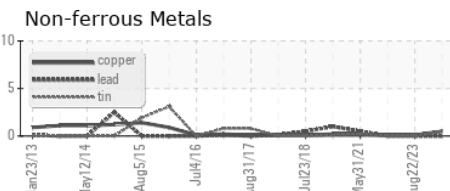
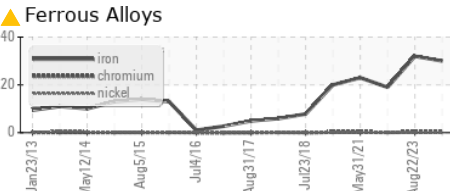
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.02	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	353	337	349

SAMPLE IMAGES		method	limit/base	current	history1	history2
---------------	--	--------	------------	---------	----------	----------



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0831497 **Received** : 29 May 2024
Lab Number : **06194659** **Tested** : 31 May 2024
Unique Number : 11056782 **Diagnosed** : 31 May 2024 - Angela Borella
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCont)

EOL DE NICARAGUA S.A.
 DEL SEMAFORO DEL CLUB TERRAZA, 1 CUADRA AL SUR
 MANAGUA, ZZ
 NI
 Contact: 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)