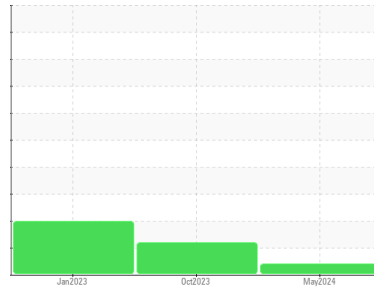




OIL ANALYSIS REPORT

Sample Rating Trend



VIS DEBRIS



Area

[200007683]

Machine Id

23WEA88443 - E-03 (S/N W-122462)

Component

Wind Turbine Gearbox

Fluid

FUCHS RENOLIN UNISYN CLP 320 (--- LTR)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Wear

All component wear rates are normal.

Contamination

Moderate concentration of visible dirt/debris present in the oil.

Fluid Condition

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

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	NX015761	NX011555	NX011588
Sample Date	Client Info	06 May 2024	24 Oct 2023	25 Jan 2023
Machine Age	hrs	Client Info	7412	2256
Oil Age	hrs	Client Info	0	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	>40	18	16	17	
Iron	ppm	ASTM D5185m	>55	35	34	21
Chromium	ppm	ASTM D5185m	>2	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Titanium	ppm	ASTM D5185m	>10	<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	<1	0
Lead	ppm	ASTM D5185m	>3	2	1	0
Copper	ppm	ASTM D5185m	>7	1	<1	<1
Tin	ppm	ASTM D5185m	>3	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	<1	0

ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m		4	5	3
Barium	ppm	ASTM D5185m		<1	<1	0
Molybdenum	ppm	ASTM D5185m		0	<1	0
Manganese	ppm	ASTM D5185m		1	1	<1
Magnesium	ppm	ASTM D5185m		<1	<1	0
Calcium	ppm	ASTM D5185m		13	19	18
Phosphorus	ppm	ASTM D5185m		194	214	197
Zinc	ppm	ASTM D5185m		13	<1	0
Sulfur	ppm	ASTM D5185m		4323	5313	5195

CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>35	13	9	7
Sodium	ppm	ASTM D5185m		3	2	2
Potassium	ppm	ASTM D5185m	>20	2	2	0
Water	%	ASTM D6304	>0.02	0.006	0.003	0.005
ppm Water	ppm	ASTM D6304	>200	70	35	59.0

FLUID CLEANLINESS

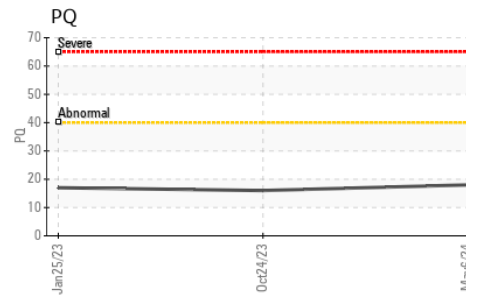
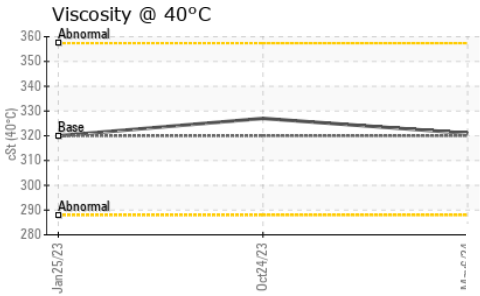
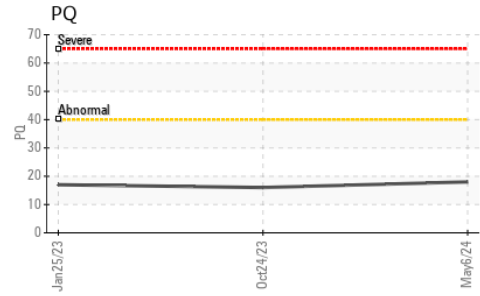
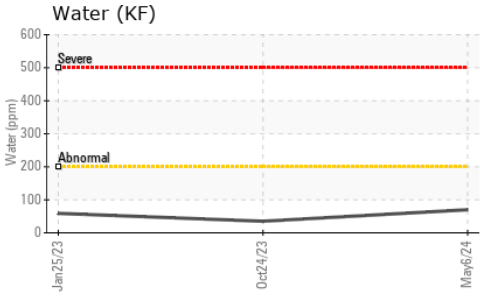
method	limit/base	current	history1	history2	
Particles >4µm	ASTM D7647		---	101912	103525
Particles >6µm	ASTM D7647	>320	---	▲ 19714	▲ 15273
Particles >14µm	ASTM D7647	>40	---	● 71	▲ 408
Particles >21µm	ASTM D7647	>10	---	12	▲ 84
Particles >38µm	ASTM D7647	>3	---	1	▲ 5
Particles >71µm	ASTM D7647	>3	---	0	0
Oil Cleanliness	ISO 4406 (c)	>--/15/12	---	▲ 24/21/13	▲ 24/21/16

FLUID DEGRADATION

method	limit/base	current	history1	history2		
Acid Number (AN)	mg KOH/g	ASTM D8045	0.6	0.37	0.33	0.32



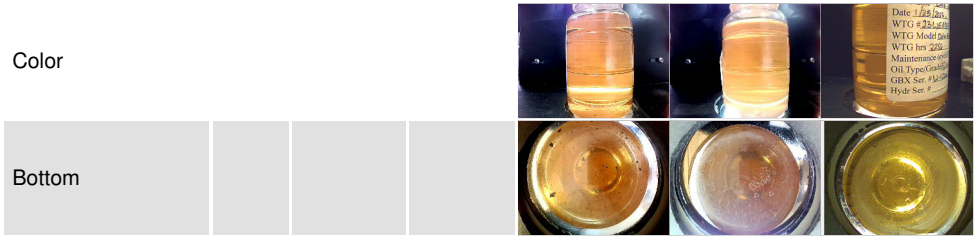
OIL ANALYSIS REPORT



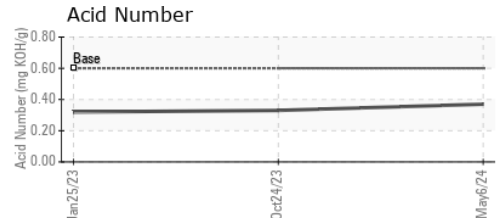
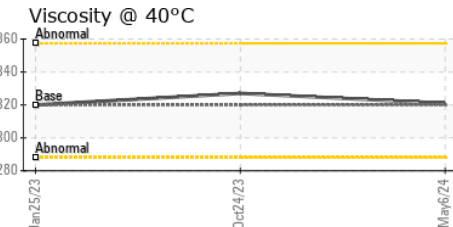
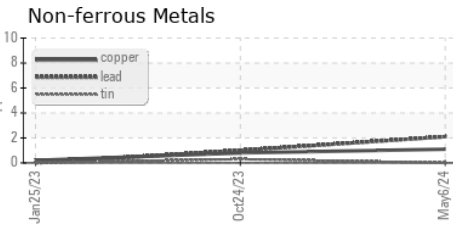
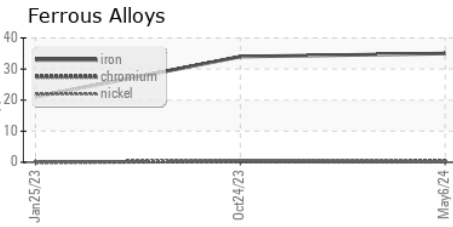
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	LIGHT	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	▲ MODER	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	321	327

SAMPLE IMAGES



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX015761
Lab Number : **06210764**
Unique Number : 11083628
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)
Received : 14 Jun 2024
Tested : 19 Jun 2024
Diagnosed : 19 Jun 2024 - Angela Borella

NORDEX USA - Chicago
 300 SOUTH WACKER DRIVE, SUITE 1500
 CHICAGO, IL
 US 60606

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: DEVIN LINEHAN
 DLinehan@nordex-online.com
 T: (312)386-4124
 F: (312)386-7102