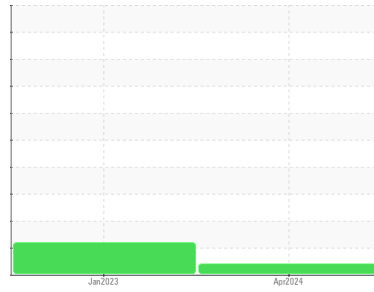




OIL ANALYSIS REPORT

Sample Rating Trend



VIS DEBRIS



Area
BLACKJACK CREEK [200007683]
 Machine Id
16WEA88418 - D-01 (S/N W-122452)
 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	NX015619	NX011563	---
Sample Date	Client Info	23 Apr 2024	31 Jan 2023	---
Machine Age	hrs	Client Info	0	2049
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	N/A	N/A	---
Sample Status		ABNORMAL	ABNORMAL	---

WEAR METALS

method	limit/base	current	history1	history2	
PQ	ASTM D8184	>40	18	19	
Iron	ppm	ASTM D5185m	>55	47	42
Chromium	ppm	ASTM D5185m	>2	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1
Titanium	ppm	ASTM D5185m	>10	<1	0
Silver	ppm	ASTM D5185m		0	0
Aluminum	ppm	ASTM D5185m	>15	2	0
Lead	ppm	ASTM D5185m	>3	1	<1
Copper	ppm	ASTM D5185m	>7	<1	<1
Tin	ppm	ASTM D5185m	>3	0	0
Vanadium	ppm	ASTM D5185m		0	0
Cadmium	ppm	ASTM D5185m		0	0

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		4	3
Barium	ppm	ASTM D5185m		<1	0
Molybdenum	ppm	ASTM D5185m		0	1
Manganese	ppm	ASTM D5185m		1	<1
Magnesium	ppm	ASTM D5185m		<1	1
Calcium	ppm	ASTM D5185m		14	27
Phosphorus	ppm	ASTM D5185m		205	200
Zinc	ppm	ASTM D5185m		13	0
Sulfur	ppm	ASTM D5185m		4400	5125

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>35	10	7
Sodium	ppm	ASTM D5185m		3	2
Potassium	ppm	ASTM D5185m	>20	2	0
Water	%	ASTM D6304	>0.02	0.001	0.010
ppm Water	ppm	ASTM D6304	>200	14	100.3

FLUID CLEANLINESS

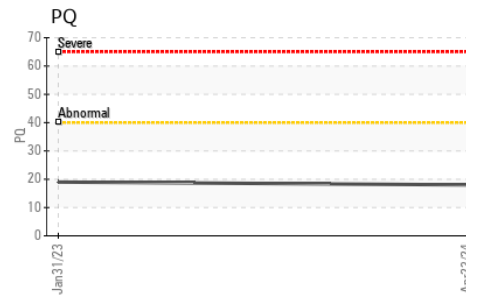
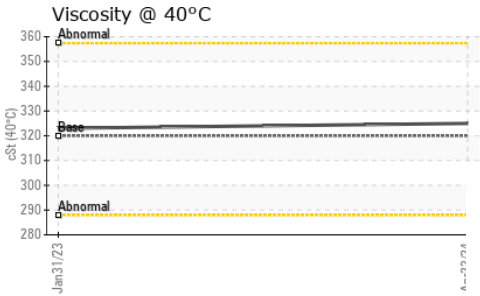
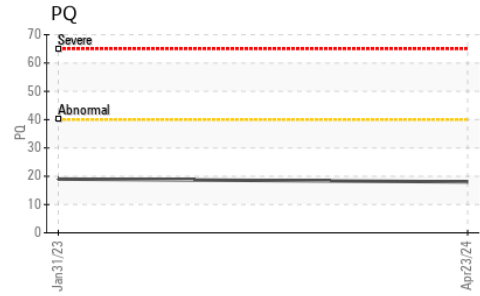
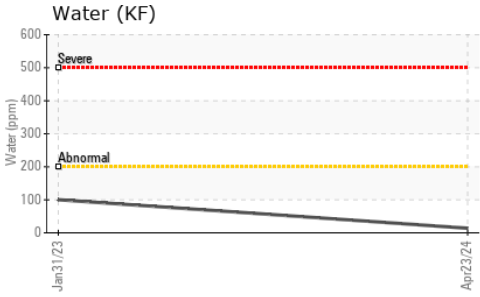
method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		---	159067
Particles >6µm	ASTM D7647	>320	---	▲ 88253
Particles >14µm	ASTM D7647	>40	---	▲ 470
Particles >21µm	ASTM D7647	>10	---	16
Particles >38µm	ASTM D7647	>3	---	1
Particles >71µm	ASTM D7647	>3	---	0
Oil Cleanliness	ISO 4406 (c)	>--/15/12	---	▲ 24/24/16

FLUID DEGRADATION

method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045	0.6	0.36	0.34



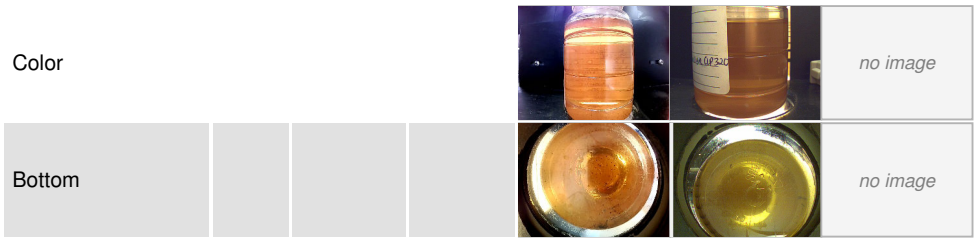
OIL ANALYSIS REPORT



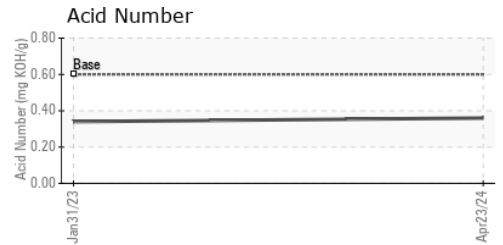
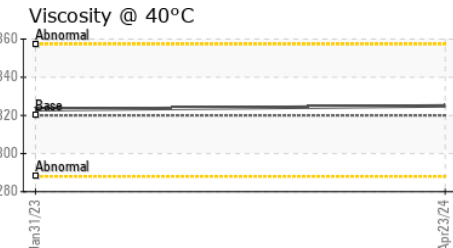
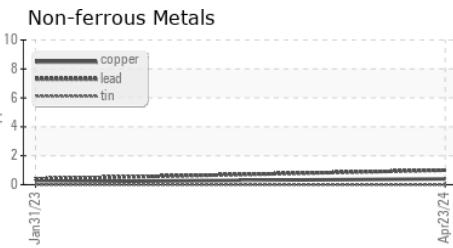
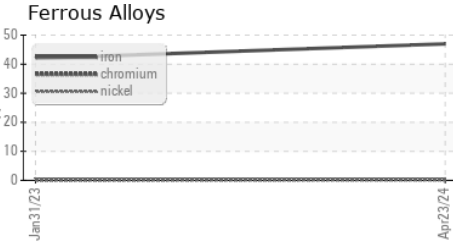
VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	LIGHT	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	▲ MODER	NONE	---
Sand/Dirt	scalar	*Visual	NONE	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	325	323	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX015619 **Received** : 14 Jun 2024
Lab Number : **06210770** **Tested** : 19 Jun 2024
Unique Number : 11083634 **Diagnosed** : 19 Jun 2024 - Angela Borella
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

NORDEX USA - Chicago
 300 SOUTH WACKER DRIVE, SUITE 1500
 CHICAGO, IL
 US 60606
 Contact: DEVIN LINEHAN
 DLinehan@nordex-online.com

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)