

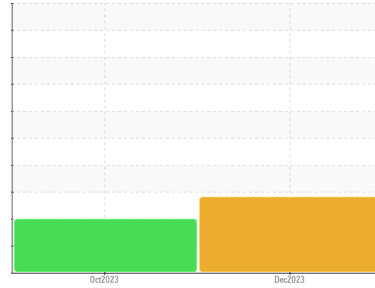


OIL ANALYSIS REPORT

Sample Rating Trend

WEAR

Area
BLACKJACK CREEK [700007683]
 Machine Id
10WEA88406 - B-04 (S/N 11542390)
 Component
Wind Turbine Gearbox
 Fluid
FUCHS RENOLIN UNISYN CLP 320 (--- LTR)



DIAGNOSIS

Recommendation

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

Wear

An increase in the iron level is noted.

Contamination

There is a high amount of particulates 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	NX015709	NX011527	---
Sample Date	Client Info	27 Dec 2023	23 Oct 2023	---
Machine Age	hrs	Client Info	0	15687
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	13	11	
Iron	ppm	ASTM D5185m	>55	▲ 28	1
Chromium	ppm	ASTM D5185m	>2	0	<1
Nickel	ppm	ASTM D5185m	>2	0	<1
Titanium	ppm	ASTM D5185m	>10	0	0
Silver	ppm	ASTM D5185m		0	0
Aluminum	ppm	ASTM D5185m	>15	0	<1
Lead	ppm	ASTM D5185m	>3	1	<1
Copper	ppm	ASTM D5185m	>7	<1	2
Tin	ppm	ASTM D5185m	>3	0	<1
Vanadium	ppm	ASTM D5185m		0	0
Cadmium	ppm	ASTM D5185m		0	<1

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		2	0
Barium	ppm	ASTM D5185m		0	<1
Molybdenum	ppm	ASTM D5185m		0	<1
Manganese	ppm	ASTM D5185m		<1	<1
Magnesium	ppm	ASTM D5185m		0	<1
Calcium	ppm	ASTM D5185m		6	28
Phosphorus	ppm	ASTM D5185m		176	336
Zinc	ppm	ASTM D5185m		1	▲ 182
Sulfur	ppm	ASTM D5185m		4870	▲ 778

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>35	8	<1
Sodium	ppm	ASTM D5185m		2	0
Potassium	ppm	ASTM D5185m	>20	0	<1
Water	%	ASTM D6304	>0.02	0.004	0.005
ppm Water	ppm	ASTM D6304	>200	48	51

FLUID CLEANLINESS

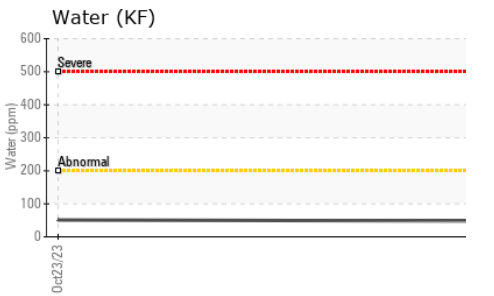
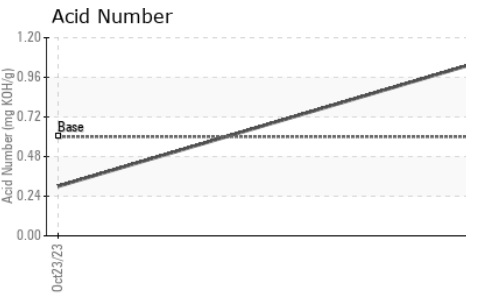
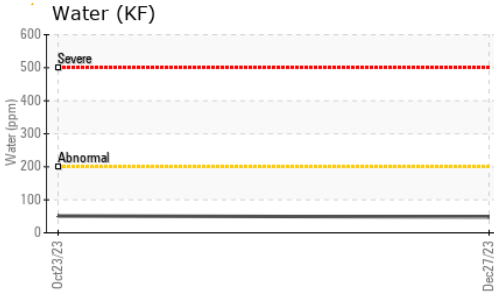
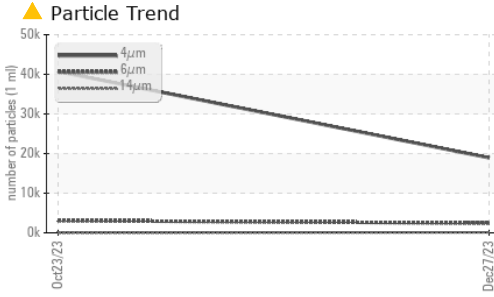
method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		18934	40722
Particles >6µm	ASTM D7647	>320	▲ 2459	▲ 3078
Particles >14µm	ASTM D7647	>40	▲ 116	11
Particles >21µm	ASTM D7647	>10	▲ 41	3
Particles >38µm	ASTM D7647	>3	▲ 4	1
Particles >71µm	ASTM D7647	>3	1	0
Oil Cleanliness	ISO 4406 (c)	>--/15/12	▲ 21/18/14	▲ 23/19/11

FLUID DEGRADATION

method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045	0.6	1.07	0.30



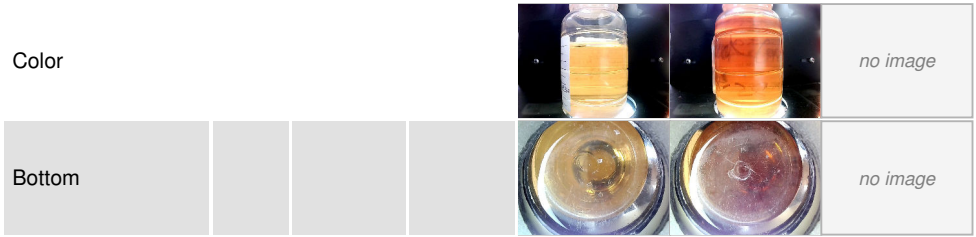
OIL ANALYSIS REPORT



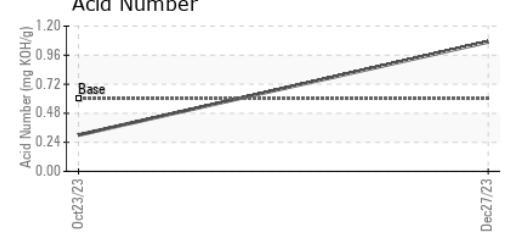
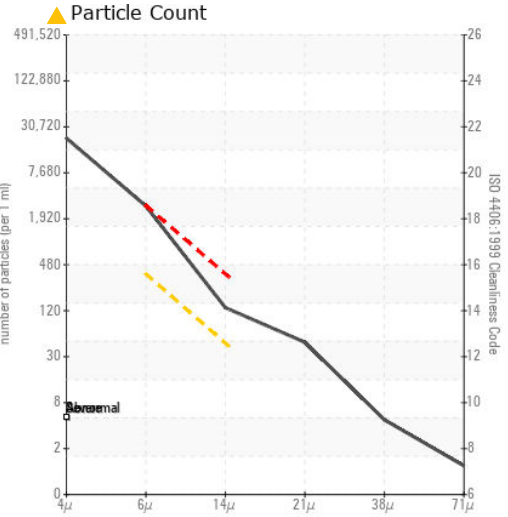
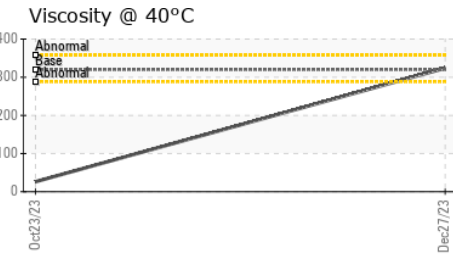
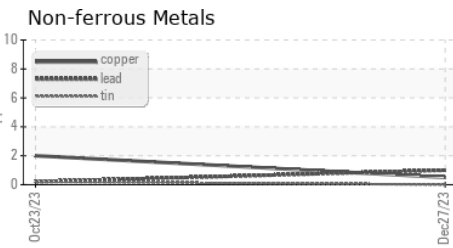
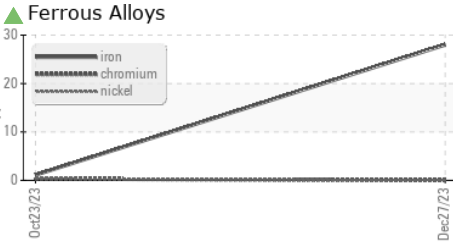
PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	324	▲ 26.2

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : NX015709 Recieved : 30 Jan 2024
 Lab Number : 06073853 Diagnosed : 31 Jan 2024
 Unique Number : 10855944 Diagnostician : Don Baldrige

NORDEX USA - Chicago
 300 SOUTH WACKER DRIVE, SUITE 1500
 CHICAGO, IL
 US 60606
 Contact: DEVIN LINEHAN
 DLinehan@nordex-online.com
 T: (312)386-4124
 F: (312)386-7102

Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)
 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)