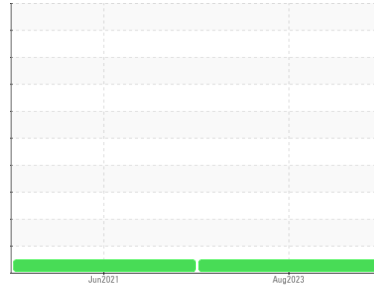




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**DAKOTA RANGE III [200006428]**  
 Machine Id  
**23WEA87753 - E-01**  
 Component  
**Wind Turbine Gearbox**  
 Fluid  
**FUCHS RENOLIN CLP ISO 320 (--- LTR)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

### 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		<b>NX05981212</b>	NX05437524	---
Sample Date	Client Info		<b>24 Aug 2023</b>	18 Jun 2021	---
Machine Age	hrs	Client Info	<b>15720</b>	0	---
Oil Age	hrs	Client Info	<b>15720</b>	0	---
Oil Changed	Client Info		<b>Not Changed</b>	Not Changed	---
Sample Status			<b>NORMAL</b>	NORMAL	---

## WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184	>80	<b>20</b>	22	---
Iron	ppm	ASTM D5185m	>150	<b>15</b>	4
Chromium	ppm	ASTM D5185m	>5	<b>0</b>	0
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	0
Titanium	ppm	ASTM D5185m	>10	<b>0</b>	0
Silver	ppm	ASTM D5185m		<b>0</b>	<1
Aluminum	ppm	ASTM D5185m	>10	<b>0</b>	0
Lead	ppm	ASTM D5185m	>20	<b>2</b>	<1
Copper	ppm	ASTM D5185m	>50	<b>&lt;1</b>	<1
Tin	ppm	ASTM D5185m	>10	<b>0</b>	<1
Antimony	ppm	ASTM D5185m	>5	<b>---</b>	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>8</b>	10
Barium	ppm	ASTM D5185m		<b>0</b>	0
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	<1
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1
Magnesium	ppm	ASTM D5185m		<b>0</b>	0
Calcium	ppm	ASTM D5185m		<b>12</b>	23
Phosphorus	ppm	ASTM D5185m		<b>184</b>	226
Zinc	ppm	ASTM D5185m		<b>0</b>	0
Sulfur	ppm	ASTM D5185m		<b>4764</b>	4903

## CONTAMINANTS

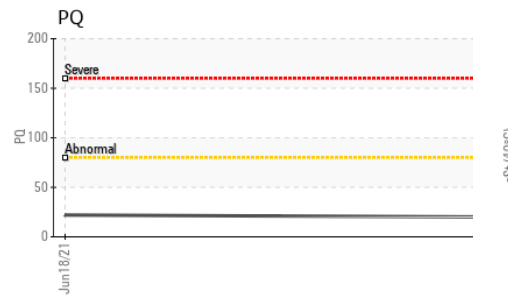
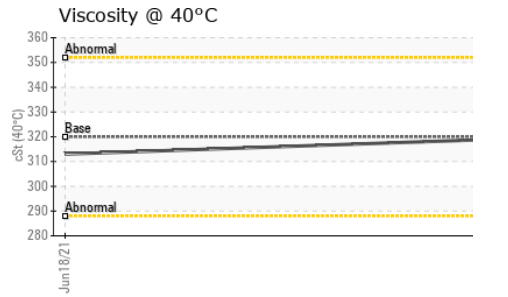
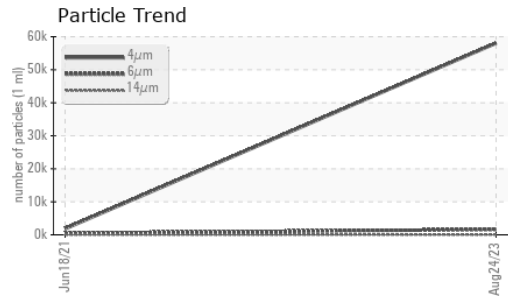
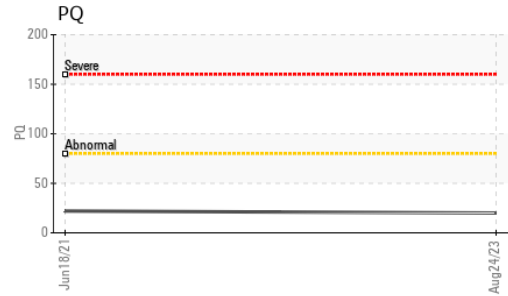
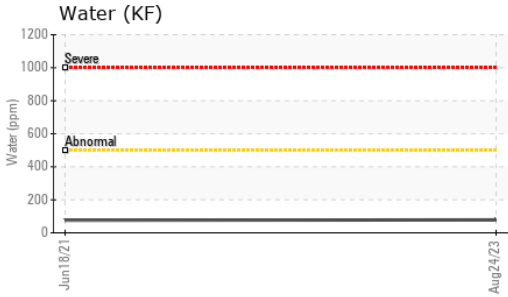
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	<b>2</b>	5
Sodium	ppm	ASTM D5185m	>20	<b>2</b>	<1
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0
Water	%	ASTM D6304	>0.05	<b>0.007</b>	0.007
ppm Water	ppm	ASTM D6304	>500	<b>78.3</b>	76.1

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>58056</b>	1820	---
Particles >6µm	ASTM D7647	>2500	<b>1604</b>	487	---
Particles >14µm	ASTM D7647	>320	<b>40</b>	41	---
Particles >21µm	ASTM D7647	>80	<b>15</b>	11	---
Particles >38µm	ASTM D7647	>20	<b>2</b>	0	---
Particles >71µm	ASTM D7647	>4	<b>1</b>	0	---
Oil Cleanliness	ISO 4406 (c)	>--/18/15	<b>23/18/12</b>	18/16/13	---



# OIL ANALYSIS REPORT



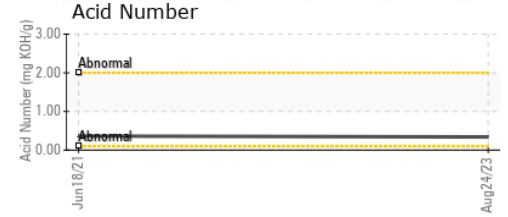
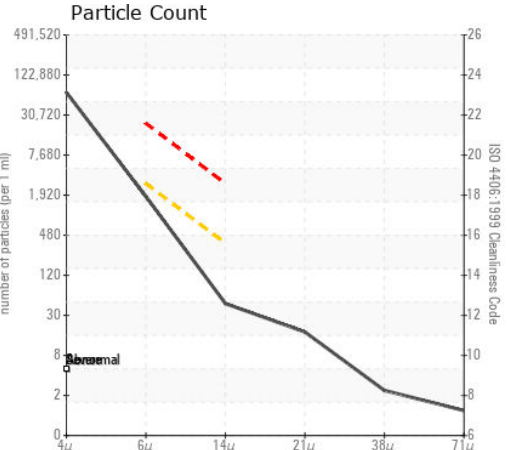
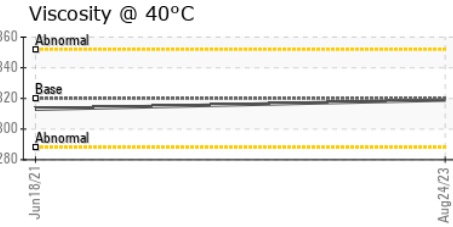
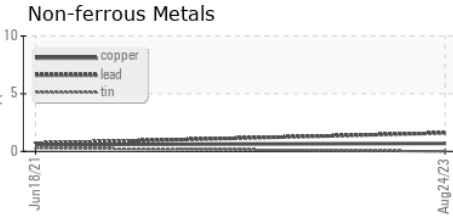
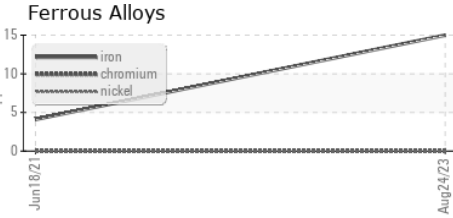
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.34</b>	0.365	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.05	<b>NEG</b>	NEG	---
Free Water	scalar	*Visual		<b>NEG</b>	NEG	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	<b>319</b>	313	---

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						no image
Bottom						no image

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : NX05981212 **Received** : 17 Oct 2023  
**Lab Number** : **05981212** **Diagnosed** : 21 Oct 2023  
**Unique Number** : 10698507 **Diagnostician** : Don Baldrige  
**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  
 T: (312)386-4124  
 F: (312)386-7102

Certificate L2367  
 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)