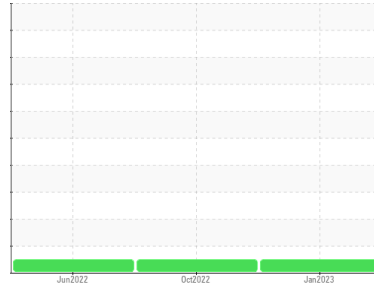




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**EOLUS SAFE HARBOUR PORT [46004111]**

Machine Id  
**11425272**

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

There is no indication of any contamination in the component. The amount and size of particulates present in the system is 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			<b>NX012559</b>	NX012576	NX011459
Sample Date	Client Info			<b>25 Jan 2023</b>	19 Oct 2022	25 Jun 2022
Machine Age	hrs	Client Info		<b>0</b>	0	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed	Client Info			<b>Not Changed</b>	N/A	Not Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>80	<b>10</b>	12	20
Iron	ppm	ASTM D5185m	>150	<b>2</b>	1	1
Chromium	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Lead	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Copper	ppm	ASTM D5185m	>50	<b>0</b>	0	0
Tin	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>3</b>	0	4
Barium	ppm	ASTM D5185m		<b>0</b>	0	2
Molybdenum	ppm	ASTM D5185m		<b>0</b>	0	0
Manganese	ppm	ASTM D5185m		<b>0</b>	0	0
Magnesium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Calcium	ppm	ASTM D5185m		<b>21</b>	20	17
Phosphorus	ppm	ASTM D5185m		<b>224</b>	218	192
Zinc	ppm	ASTM D5185m		<b>0</b>	0	3
Sulfur	ppm	ASTM D5185m		<b>5723</b>	5831	4586

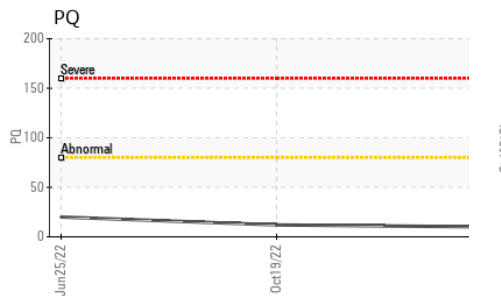
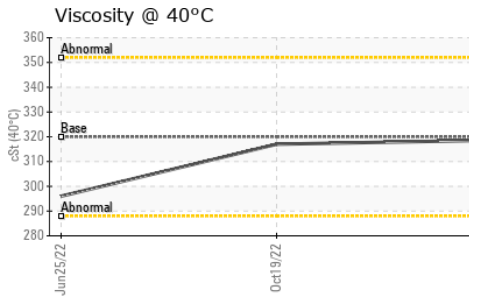
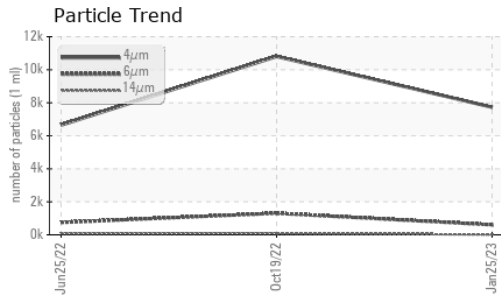
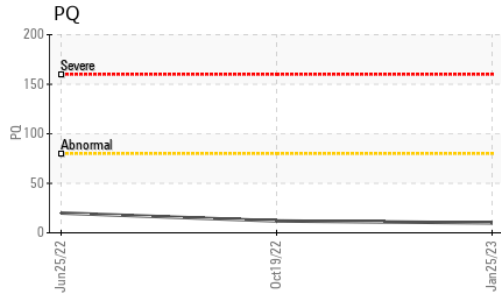
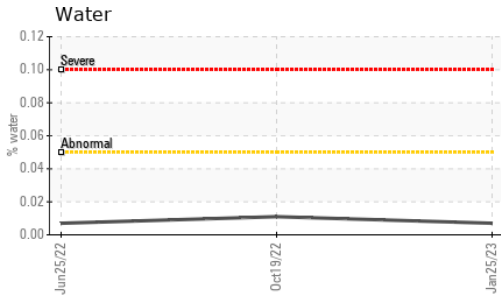
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	<b>5</b>	4	7
Sodium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	0
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	<1
Water	%	ASTM D6304	>0.05	<b>0.007</b>	0.011	0.007
ppm Water	ppm	ASTM D6304	>500	<b>77.4</b>	111.6	73.9

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		<b>7728</b>	10804	6643
Particles >6µm		ASTM D7647	>2500	<b>606</b>	1306	747
Particles >14µm		ASTM D7647	>320	<b>17</b>	86	74
Particles >21µm		ASTM D7647	>80	<b>6</b>	22	19
Particles >38µm		ASTM D7647	>20	<b>1</b>	1	7
Particles >71µm		ASTM D7647	>4	<b>0</b>	1	4
Oil Cleanliness		ISO 4406 (c)	>--/18/15	<b>20/16/11</b>	21/18/14	20/17/13

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.42</b>	0.47	0.44



# OIL ANALYSIS REPORT



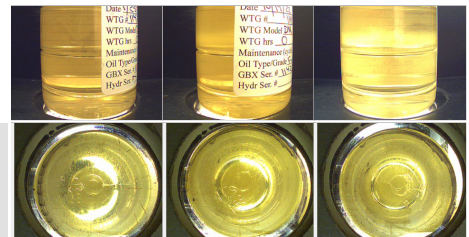
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 320	<b>318.6</b>	317	296

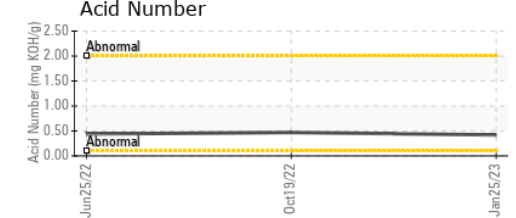
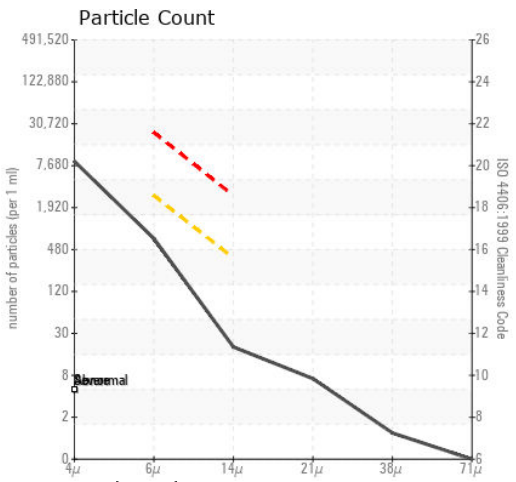
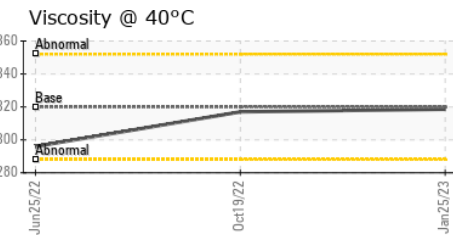
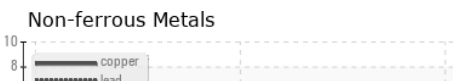
SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color

Bottom



## GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : NX012559 Received : 03 Feb 2023  
 Lab Number : 05758515 Diagnosed : 06 Feb 2023  
 Unique Number : 10323122 Diagnostician : Don Baldrige  
 Test Package : IND 2 ( Additional Tests: KF, PQ, PrtCount )

**NORDEX USA - Chicago**  
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 CHICAGO, IL  
 US 60606  
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 DLinehan@nordex-online.com  
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 F: (312)386-7102

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)