



# OIL ANALYSIS REPORT

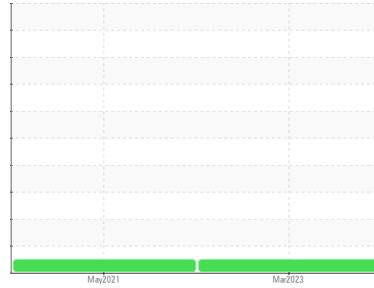
Sample Rating Trend

**NORMAL**



Area  
**DAKOTA RANGE III [200006928]**  
Machine Id  
**16WEA87748 - C-05**

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 oil. The amount and size of particulates present in the system are 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>NX05852430</b>	NX05437539	---
Sample Date	Client Info		<b>28 Mar 2023</b>	26 May 2021	---
Machine Age	hrs	Client Info	<b>1196</b>	0	---
Oil Age	hrs	Client Info	<b>0</b>	0	---
Oil Changed	Client Info		<b>N/A</b>	Not Chngd	---
Sample Status			<b>NORMAL</b>	NORMAL	---

## WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184	>80	<b>12</b>	18	---
Iron	ppm	ASTM D5185m	>150	<b>6</b>	5
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>&lt;1</b>	0
Lead	ppm	ASTM D5185m	>20	<b>0</b>	<1
Copper	ppm	ASTM D5185m	>50	<b>0</b>	<1
Tin	ppm	ASTM D5185m	>10	<b>0</b>	0
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>11</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>8</b>	23
Phosphorus	ppm	ASTM D5185m		<b>245</b>	223
Zinc	ppm	ASTM D5185m		<b>4</b>	0
Sulfur	ppm	ASTM D5185m		<b>6204</b>	4772

## CONTAMINANTS

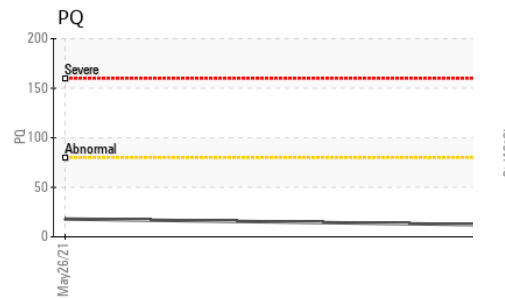
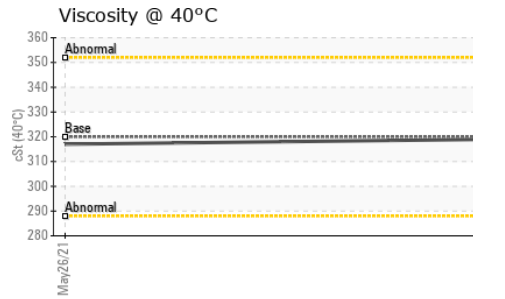
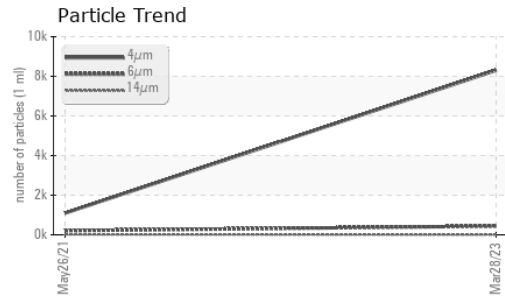
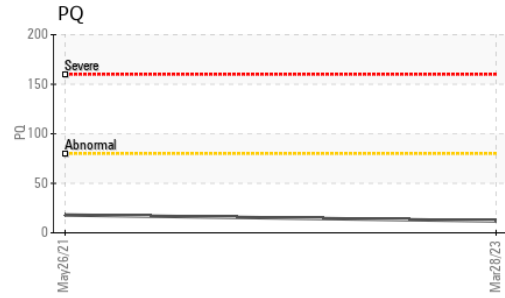
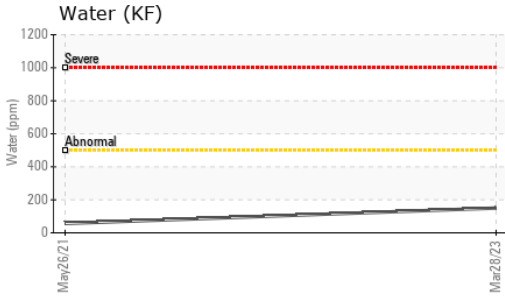
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	<b>&lt;1</b>	4
Sodium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0
Water	%	ASTM D6304	>0.05	<b>0.015</b>	0.005
ppm Water	ppm	ASTM D6304	>500	<b>150.0</b>	56.6

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>8302</b>	1095	---
Particles >6µm	ASTM D7647	>2500	<b>439</b>	208	---
Particles >14µm	ASTM D7647	>320	<b>14</b>	22	---
Particles >21µm	ASTM D7647	>80	<b>3</b>	6	---
Particles >38µm	ASTM D7647	>20	<b>0</b>	0	---
Particles >71µm	ASTM D7647	>4	<b>0</b>	0	---
Oil Cleanliness	ISO 4406 (c)	>--/18/15	<b>20/16/11</b>	17/15/12	---



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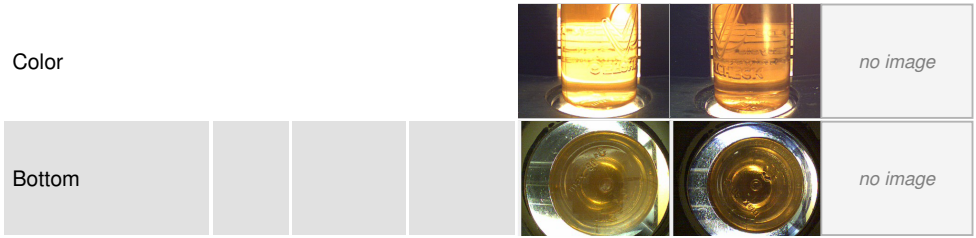


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.27</b>	0.370	---

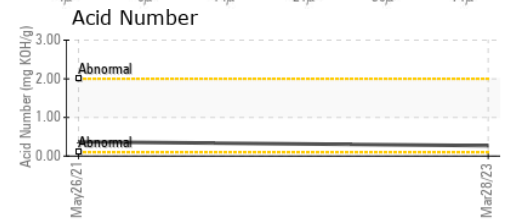
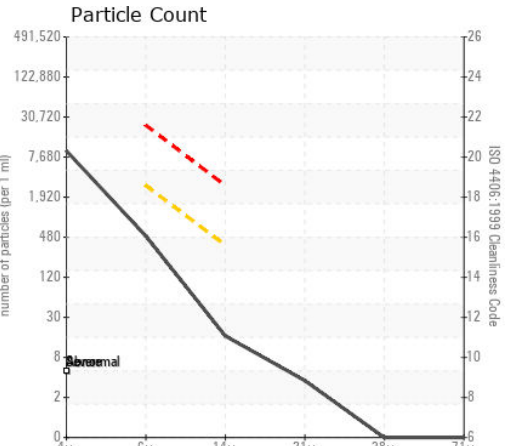
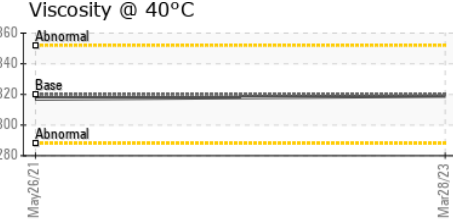
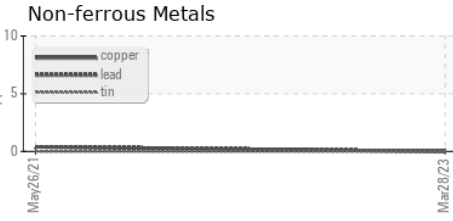
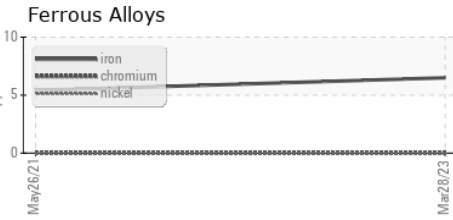
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
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>	317	---

## SAMPLE IMAGES



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : NX05852430 **Received** : 19 May 2023  
**Lab Number** : 05852430 **Diagnosed** : 25 May 2023  
**Unique Number** : 10481785 **Diagnostician** : Jonathan Hester  
**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

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)