



# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**FRONTIER II [200006776]**  
 Machine Id  
**46WEA86889**  
 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>NX008498</b>	---	---
Sample Date	Client Info	<b>10 Oct 2021</b>	---	---
Machine Age	hrs Client Info	<b>0</b>	---	---
Oil Age	hrs Client Info	<b>0</b>	---	---
Oil Changed	Client Info	<b>N/A</b>	---	---
Sample Status		<b>NORMAL</b>	---	---

## WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184 >80	<b>16</b>	---	---
Iron	ppm ASTM D5185m >150	<b>7</b>	---	---
Chromium	ppm ASTM D5185m >5	<b>0</b>	---	---
Nickel	ppm ASTM D5185m >10	<b>&lt;1</b>	---	---
Titanium	ppm ASTM D5185m	<b>0</b>	---	---
Silver	ppm ASTM D5185m	<b>&lt;1</b>	---	---
Aluminum	ppm ASTM D5185m >10	<b>&lt;1</b>	---	---
Lead	ppm ASTM D5185m >20	<b>0</b>	---	---
Copper	ppm ASTM D5185m >50	<b>&lt;1</b>	---	---
Tin	ppm ASTM D5185m	<b>&lt;1</b>	---	---
Antimony	ppm ASTM D5185m	<b>0</b>	---	---
Vanadium	ppm ASTM D5185m	<b>0</b>	---	---
Cadmium	ppm ASTM D5185m	<b>0</b>	---	---

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	<b>11</b>	---	---
Barium	ppm ASTM D5185m	<b>0</b>	---	---
Molybdenum	ppm ASTM D5185m	<b>0</b>	---	---
Manganese	ppm ASTM D5185m	<b>&lt;1</b>	---	---
Magnesium	ppm ASTM D5185m	<b>0</b>	---	---
Calcium	ppm ASTM D5185m	<b>8</b>	---	---
Phosphorus	ppm ASTM D5185m	<b>81</b>	---	---
Zinc	ppm ASTM D5185m	<b>0</b>	---	---
Sulfur	ppm ASTM D5185m	<b>4446</b>	---	---

## CONTAMINANTS

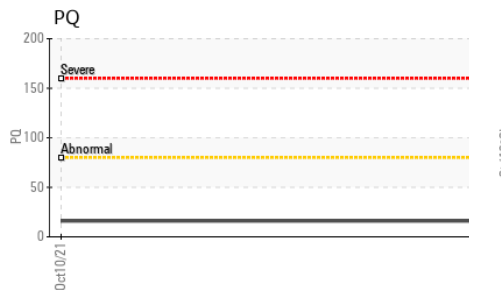
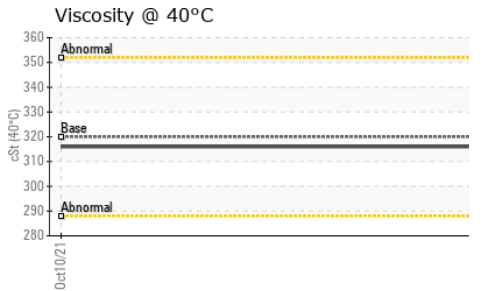
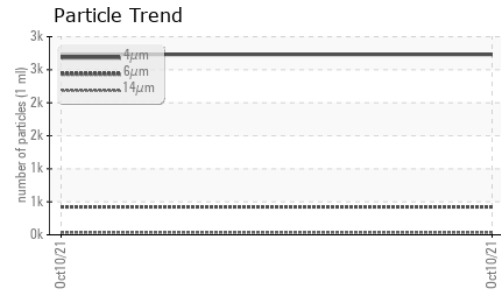
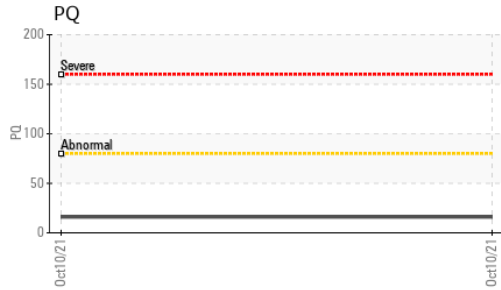
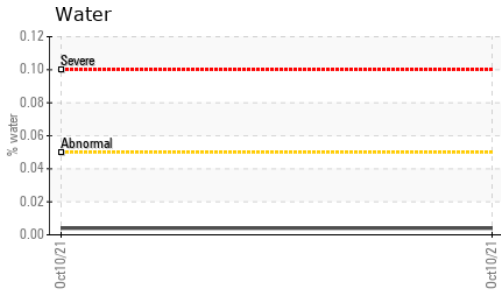
method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >50	<b>4</b>	---	---
Sodium	ppm ASTM D5185m >20	<b>&lt;1</b>	---	---
Potassium	ppm ASTM D5185m >20	<b>&lt;1</b>	---	---
Water	% ASTM D6304 >0.05	<b>0.004</b>	---	---
ppm Water	ppm ASTM D6304 >500	<b>48.0</b>	---	---

## FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	<b>2731</b>	---	---
Particles >6µm	ASTM D7647 >2500	<b>423</b>	---	---
Particles >14µm	ASTM D7647 >320	<b>35</b>	---	---
Particles >21µm	ASTM D7647 >80	<b>6</b>	---	---
Particles >38µm	ASTM D7647 >20	<b>0</b>	---	---
Particles >71µm	ASTM D7647 >4	<b>0</b>	---	---
Oil Cleanliness	ISO 4406 (c) >--/18/15	<b>19/16/12</b>	---	---



# OIL ANALYSIS REPORT



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.527</b>	---	---

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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	<b>316</b>	---	---

## SAMPLE IMAGES

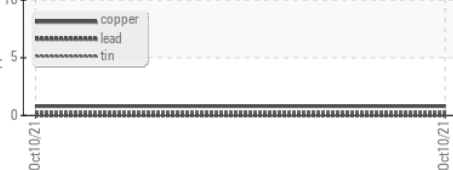
method	limit/base	current	history1	history2
Color			no image	no image
Bottom			no image	no image

## GRAPHS

### Ferrous Alloys



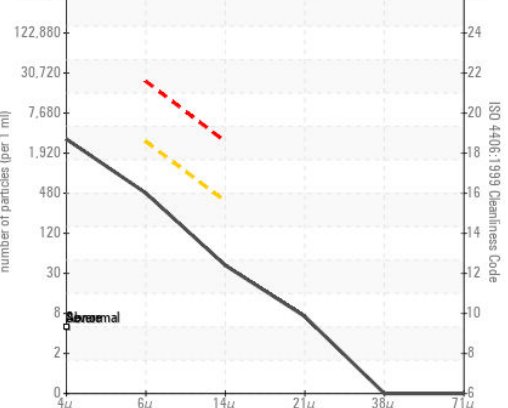
### Non-ferrous Metals



### Viscosity @ 40°C



### Particle Count



### Acid Number



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : NX008498 **Received** : 04 Nov 2021  
**Lab Number** : **05391906** **Diagnosed** : 08 Nov 2021  
**Unique Number** : 9726039 **Diagnostician** : Angela Borella  
**Test Package** : IND 2 ( Additional Tests: KF, PQ, PrtCount )

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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)