



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Area  
**FOUR MILE RIDGE [200005315]**

Machine Id  
**83306 SITE 7**

Component  
**Wind Turbine Gearbox**

Fluid  
**CASTROL OPTIGEAR SYNTHETIC X 320 (--- LTR)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>NX012350</b>	NX010438	NX05620728
Sample Date		Client Info		<b>08 Mar 2023</b>	04 Nov 2022	30 Mar 2022
Machine Age	hrs	Client Info		<b>65116</b>	62508	0
Oil Age	hrs	Client Info		<b>65116</b>	62508	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changed</b>	Not Changed	N/A
Filter Changed		Client Info		<b>Changed</b>	Changed	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

PQ		ASTM D8184	>80	<b>6</b>	3	9
Iron	ppm	ASTM D5185m	>150	<b>2</b>	3	2
Chromium	ppm	ASTM D5185m	>5	<b>0</b>	<1	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	1
Lead	ppm	ASTM D5185m	>20	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>50	<b>&lt;1</b>	<1	<1
Tin	ppm	ASTM D5185m	>10	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

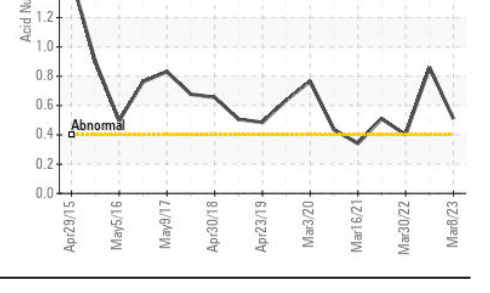
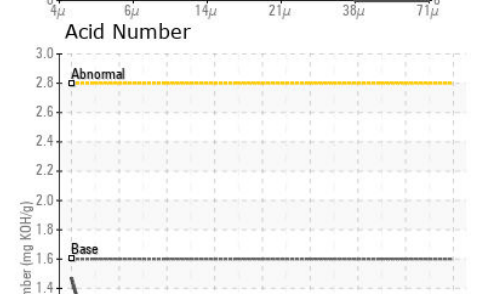
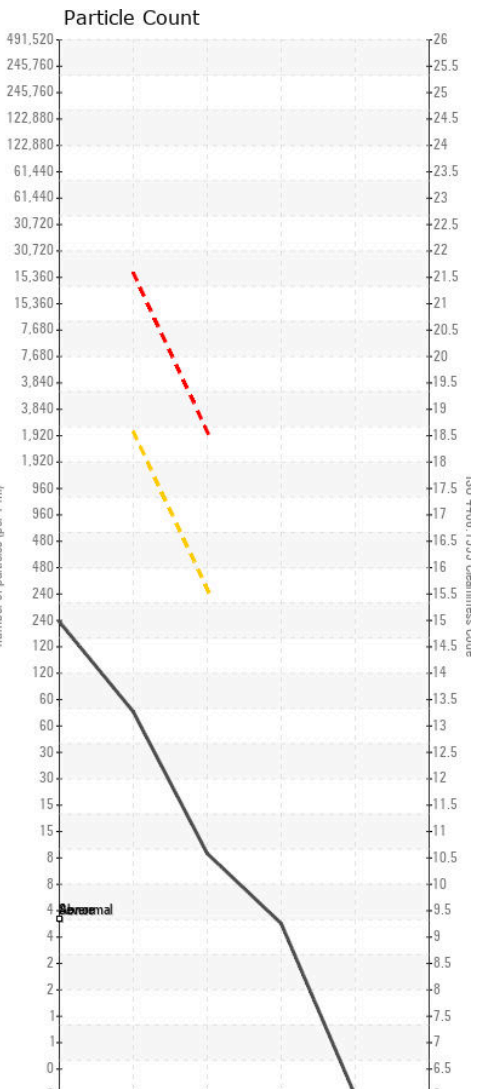
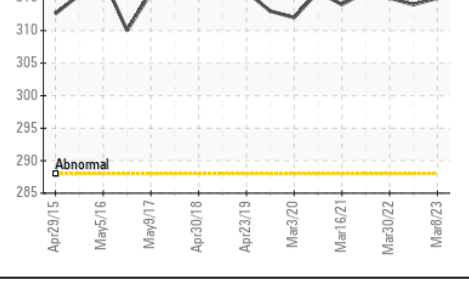
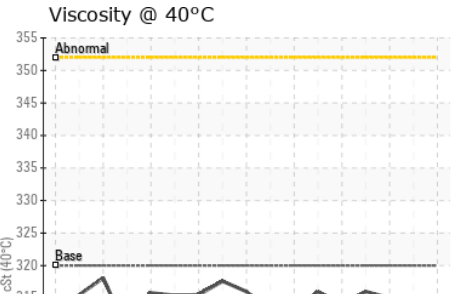
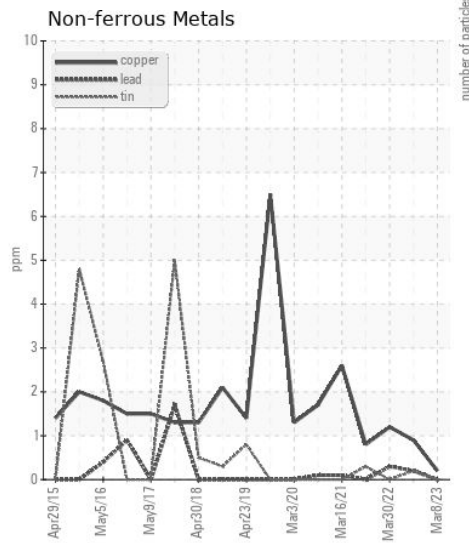
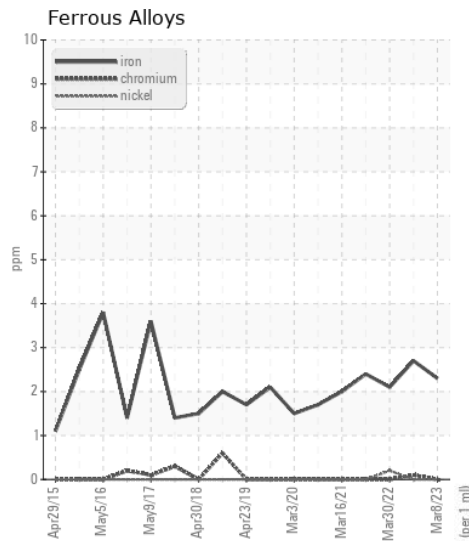
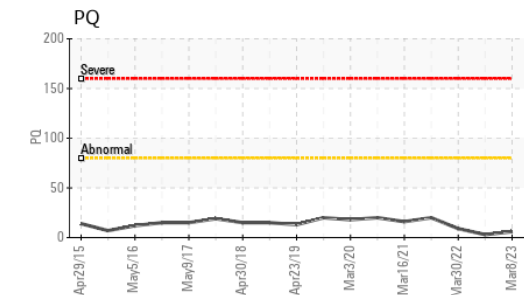
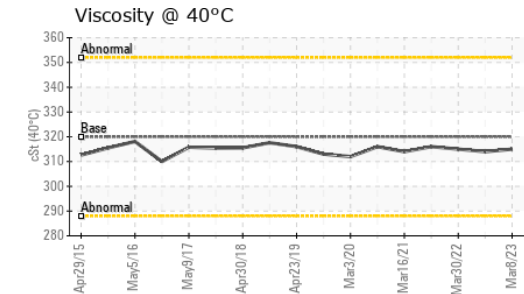
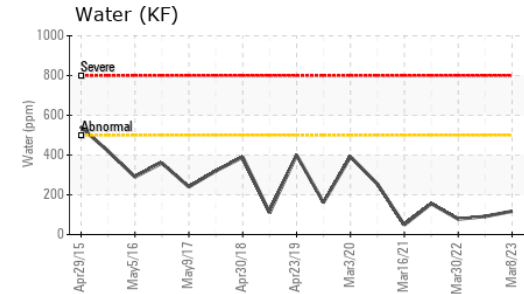
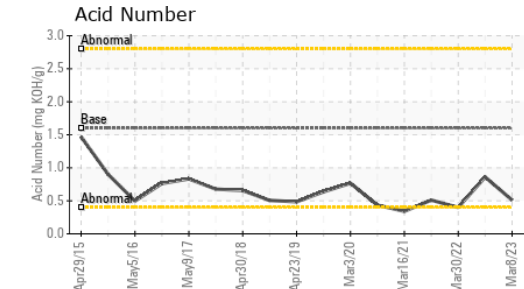
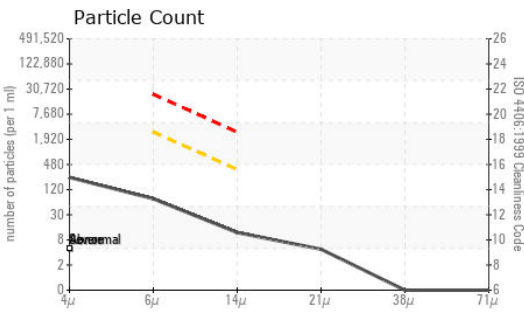
There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

Silicon	ppm	ASTM D5185m	>50	<b>8</b>	7	8
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	<1	0
Water	%	ASTM D6304	>0.05	<b>0.011</b>	0.009	0.007
ppm Water	ppm	ASTM D6304	>500	<b>117.3</b>	91.3	77.9
Particles >4µm		ASTM D7647		<b>208</b>	236	975
Particles >6µm		ASTM D7647	>2500	<b>64</b>	61	261
Particles >14µm		ASTM D7647	>320	<b>10</b>	7	21
Particles >21µm		ASTM D7647	>80	<b>4</b>	1	6
Particles >38µm		ASTM D7647	>20	<b>0</b>	0	0
Particles >71µm		ASTM D7647	>4	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	--/18/15	<b>15/13/10</b>	15/13/10	17/15/12
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>20	<b>6</b>	7	5
Boron	ppm	ASTM D5185m		<b>0</b>	32	0
Barium	ppm	ASTM D5185m		<b>0</b>	2	1
Molybdenum	ppm	ASTM D5185m	1150	<b>551</b>	516	581
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>8</b>	6	5
Calcium	ppm	ASTM D5185m	2000	<b>1129</b>	1034	1117
Phosphorus	ppm	ASTM D5185m	400	<b>295</b>	264	284
Zinc	ppm	ASTM D5185m	0	<b>0</b>	1	0
Sulfur	ppm	ASTM D5185m	1850	<b>1417</b>	1591	1454
Acid Number (AN)	mg KOH/g	ASTM D8045	1.6	<b>0.51</b>	0.86	0.40
Visc @ 40°C	cSt	ASTM D445	320	<b>315</b>	314	315



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : NX012350 **Received** : 07 Apr 2023  
**Lab Number** : 05814545 **Diagnosed** : 12 Apr 2023  
**Unique Number** : 10417337 **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)