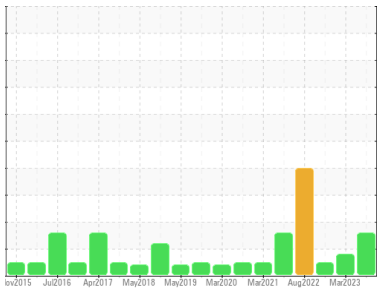
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
FAIRWIND [200009524]
Machine Id
05WEA84128 (S/N 72802187833)
Component
Wind Turbine Gearbox
Fluid
CASTROL OPTIGEAR SYNTHETIC X 320 (--- LTR)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a high amount of particulates present 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		**NX015239**	NX004200	NX011127
Sample Date		Client Info		**27 Mar 2024**	01 Mar 2023	18 Oct 2022
Machine Age	hrs	Client Info		**63375**	57012	53119
Oil Age	hrs	Client Info		**63375**	57012	53119
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	ABNORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>80	**28**	15	9
Iron	ppm	ASTM D5185m	>150	**36**	24	22
Chromium	ppm	ASTM D5185m	>5	**<1**	0	<1
Nickel	ppm	ASTM D5185m	>10	**<1**	0	<1
Titanium	ppm	ASTM D5185m	>10	**<1**	0	0
Silver	ppm	ASTM D5185m		**0**	0	<1
Aluminum	ppm	ASTM D5185m	>10	**5**	<1	<1
Lead	ppm	ASTM D5185m	>20	**0**	0	<1
Copper	ppm	ASTM D5185m	>50	**2**	<1	<1
Tin	ppm	ASTM D5185m	>10	**0**	0	<1
Vanadium	ppm	ASTM D5185m		**0**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	45
Barium	ppm	ASTM D5185m		**0**	0	2
Molybdenum	ppm	ASTM D5185m	1150	**674**	661	712
Manganese	ppm	ASTM D5185m		**<1**	1	<1
Magnesium	ppm	ASTM D5185m		**4**	9	8
Calcium	ppm	ASTM D5185m	2000	**1287**	1265	1369
Phosphorus	ppm	ASTM D5185m	400	**305**	275	320
Zinc	ppm	ASTM D5185m	0	**0**	0	1
Sulfur	ppm	ASTM D5185m	1850	**1732**	1285	1937

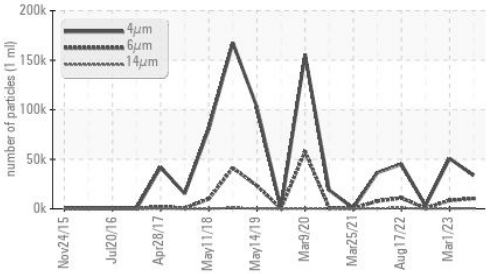
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**9**	9	9
Sodium	ppm	ASTM D5185m	>20	**3**	3	5
Potassium	ppm	ASTM D5185m	>20	**2**	0	<1
Water	%	ASTM D6304	>0.05	**0.020**	0.013	0.016
ppm Water	ppm	ASTM D6304	>500	**204**	131.0	163.9

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**33745**	50730	3251
Particles >6µm		ASTM D7647	>2500	▲ **10314**	▲ 8355	438
Particles >14µm		ASTM D7647	>320	▲ **541**	232	13
Particles >21µm		ASTM D7647	>80	▲ **89**	51	2
Particles >38µm		ASTM D7647	>20	**2**	1	0
Particles >71µm		ASTM D7647	>4	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>--/18/15	▲ **22/21/16**	▲ 23/20/15	19/16/11

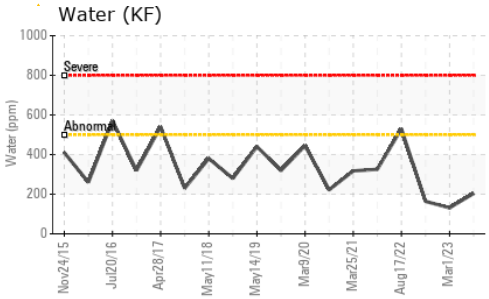
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.6	**0.28**	0.53	0.35

OIL ANALYSIS REPORT

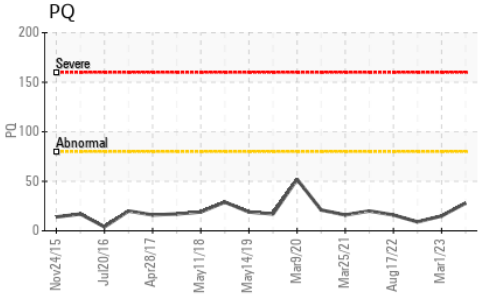
Particle Trend



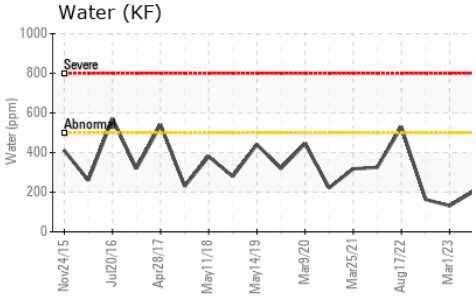
Water (KF)



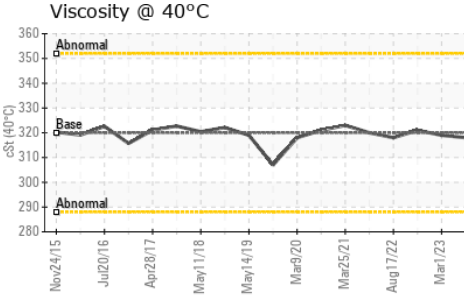
PQ



Water (KF)

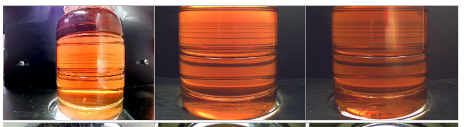


Viscosity @ 40°C



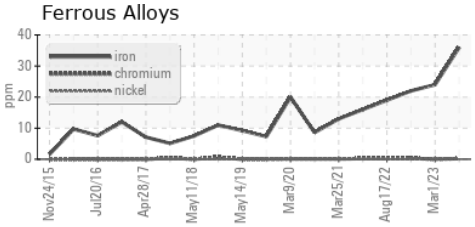
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**LIGHT**	LIGHT	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	**318**	319	321

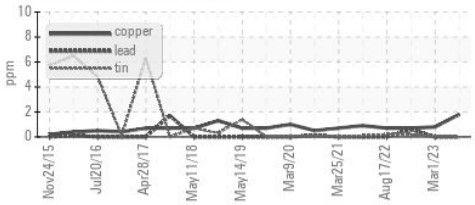
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

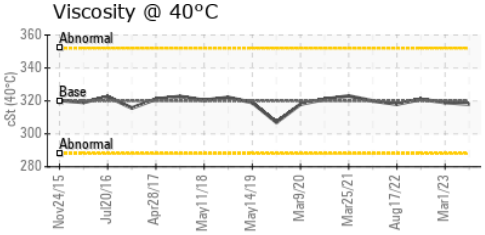
Ferrous Alloys



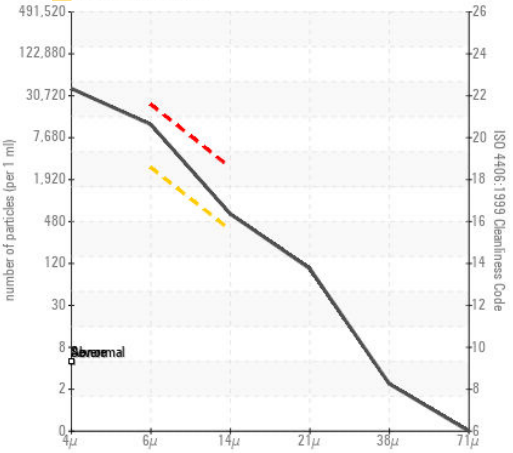
Non-ferrous Metals



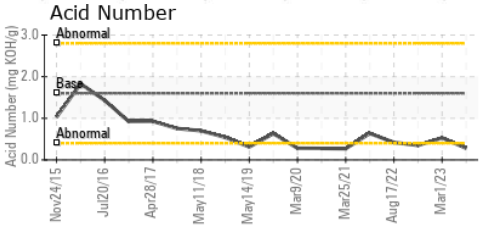
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX015239
Lab Number : 06209227
Unique Number : 11076688
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

Received : 13 Jun 2024
Tested : 16 Jun 2024
Diagnosed : 16 Jun 2024 - Doug Bogart

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)

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