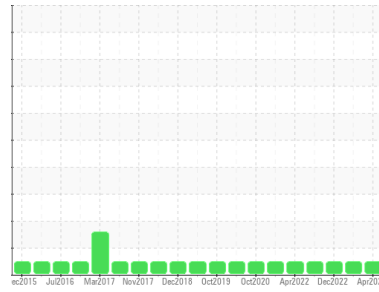




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
FAIRWIND [200009524]
 Machine Id
07WEA84131 (S/N 72802187757)
 Component
Wind Turbine Gearbox
 Fluid
CASTROL OPTIGEAR SYNTHETIC X 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		NX015241	NX004202	NX004928
Sample Date	Client Info		16 Apr 2024	28 Mar 2023	06 Dec 2022
Machine Age	hrs	Client Info	66724	57662	55245
Oil Age	hrs	Client Info	66724	57662	55245
Oil Changed	Client Info		Not Changed	Not Changd	Not Changed
Sample Status			NORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>80	14	17	13	
Iron	ppm	ASTM D5185m	>150	4	45	32
Chromium	ppm	ASTM D5185m	>5	<1	0	<1
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m	>10	<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>10	6	<1	0
Lead	ppm	ASTM D5185m	>20	<1	0	<1
Copper	ppm	ASTM D5185m	>50	8	7	<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	37
Barium	ppm	ASTM D5185m		0	0	2
Molybdenum	ppm	ASTM D5185m	1150	817	632	584
Manganese	ppm	ASTM D5185m		0	1	<1
Magnesium	ppm	ASTM D5185m		6	9	6
Calcium	ppm	ASTM D5185m	2000	1595	1239	1150
Phosphorus	ppm	ASTM D5185m	400	328	275	281
Zinc	ppm	ASTM D5185m	0	0	0	1
Sulfur	ppm	ASTM D5185m	1850	2022	1321	1698

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>50	11	9	8
Sodium	ppm	ASTM D5185m	>20	0	3	4
Potassium	ppm	ASTM D5185m	>20	1	0	<1
Water	%	ASTM D6304	>0.05	0.014	0.019	0.016
ppm Water	ppm	ASTM D6304	>500	149	196.1	166.0

FLUID CLEANLINESS

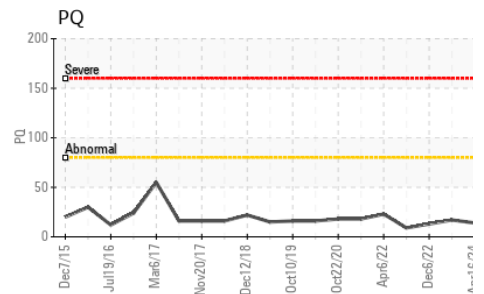
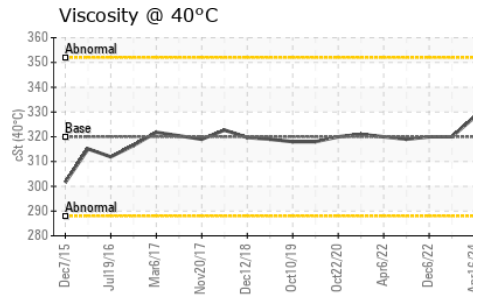
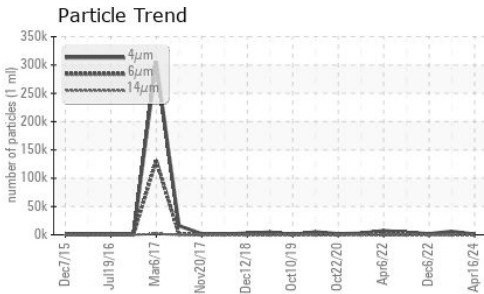
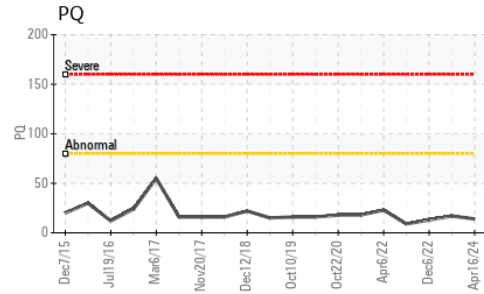
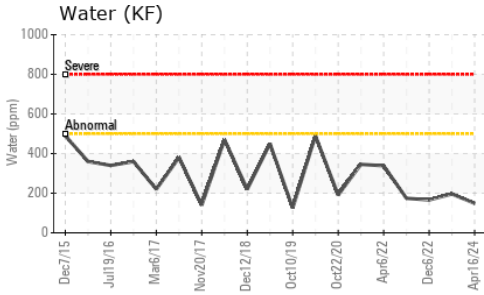
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		1119	6087	1873
Particles >6µm	ASTM D7647	>2500	302	514	158
Particles >14µm	ASTM D7647	>320	80	23	15
Particles >21µm	ASTM D7647	>80	35	6	4
Particles >38µm	ASTM D7647	>20	3	0	0
Particles >71µm	ASTM D7647	>4	0	0	0
Oil Cleanliness	ISO 4406 (c)	>--/18/15	17/15/13	20/16/12	18/14/11

FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045	1.6	0.92	0.36	0.26



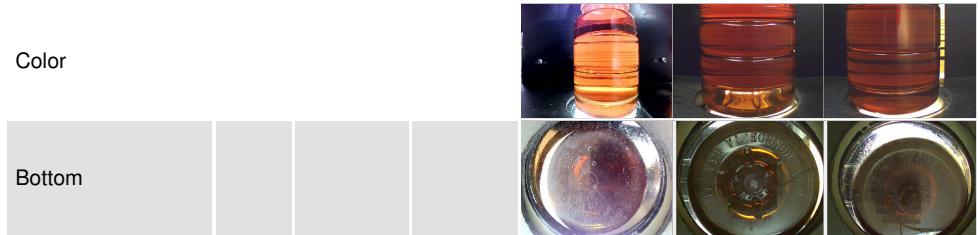
OIL ANALYSIS REPORT



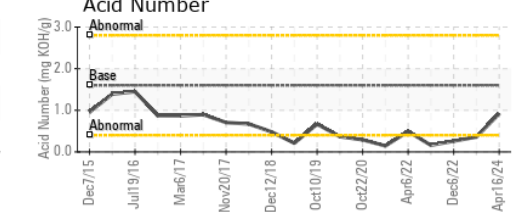
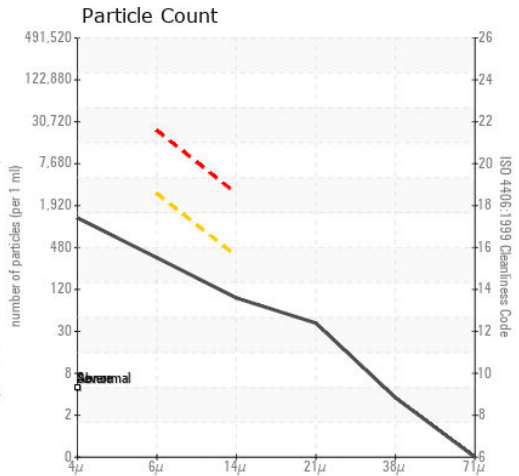
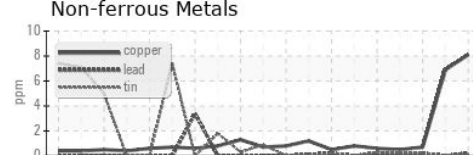
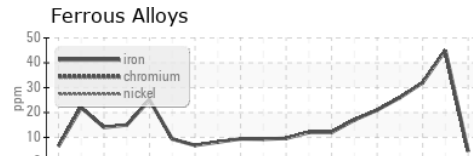
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	320	320

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : NX015241

Lab Number : 06209222

Unique Number : 11076683

Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

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)

Received : 13 Jun 2024

Tested : 16 Jun 2024

Diagnosed : 16 Jun 2024 - Doug Bogart

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US 60606

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