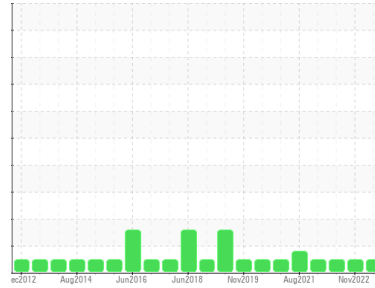




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
HINO [600380361]

Machine Id
28WEA81869

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 component. The amount and size of particulates present in the system is 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		NX05928243	NX05700274	NX05602757
Sample Date	Client Info		13 Jul 2023	17 Nov 2022	24 Jun 2022
Machine Age	mths	Client Info	0	0	0
Oil Age	mths	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184	>80	13	10	16
Iron	ppm	ASTM D5185m	>150	3	4
Chromium	ppm	ASTM D5185m	>5	0	0
Nickel	ppm	ASTM D5185m	>10	<1	0
Titanium	ppm	ASTM D5185m	>10	0	0
Silver	ppm	ASTM D5185m		0	0
Aluminum	ppm	ASTM D5185m	>10	<1	0
Lead	ppm	ASTM D5185m	>20	0	<1
Copper	ppm	ASTM D5185m	>50	1	<1
Tin	ppm	ASTM D5185m	>10	0	<1
Antimony	ppm	ASTM D5185m	>5	---	---
Vanadium	ppm	ASTM D5185m		0	0
Cadmium	ppm	ASTM D5185m		0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	34
Barium	ppm	ASTM D5185m		0	0
Molybdenum	ppm	ASTM D5185m	1150	741	627
Manganese	ppm	ASTM D5185m		0	0
Magnesium	ppm	ASTM D5185m		6	8
Calcium	ppm	ASTM D5185m	2000	1493	1407
Phosphorus	ppm	ASTM D5185m	400	330	325
Zinc	ppm	ASTM D5185m	0	0	0
Sulfur	ppm	ASTM D5185m	1850	1976	1994

CONTAMINANTS

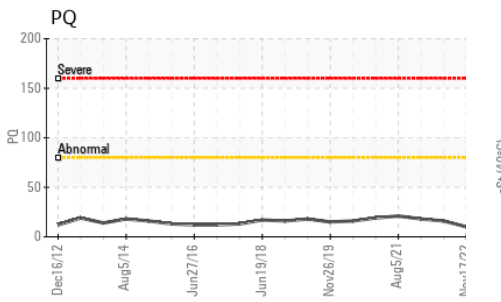
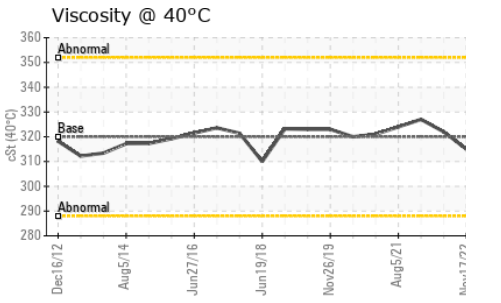
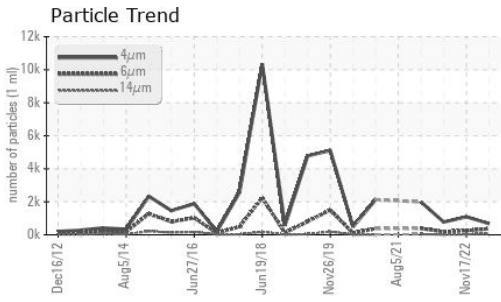
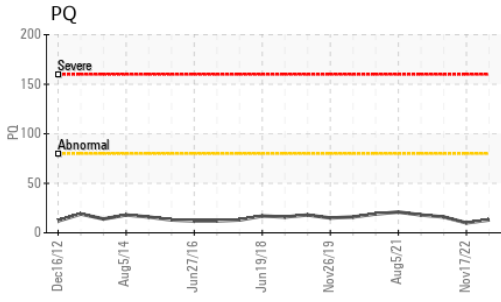
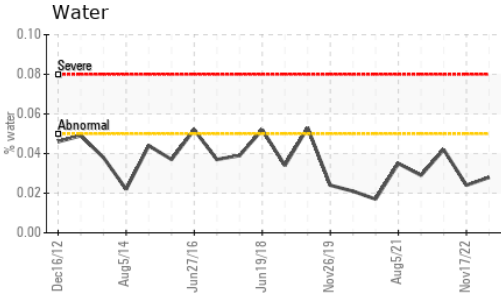
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	8	8
Sodium	ppm	ASTM D5185m	>20	4	5
Potassium	ppm	ASTM D5185m	>20	1	0
Water	%	ASTM D6304	>0.05	0.028	0.024
ppm Water	ppm	ASTM D6304	>500	282.0	241.1

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		678	1092	773
Particles >6µm	ASTM D7647	>2500	370	251	186
Particles >14µm	ASTM D7647	>320	63	28	15
Particles >21µm	ASTM D7647	>80	21	9	3
Particles >38µm	ASTM D7647	>20	3	1	1
Particles >71µm	ASTM D7647	>4	0	0	1
Oil Cleanliness	ISO 4406 (c)	>--/18/15	17/16/13	17/15/12	17/15/11



OIL ANALYSIS REPORT



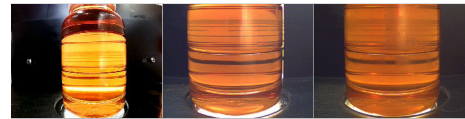
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.6	0.71	0.54	0.65

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	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	323	315	322

SAMPLE IMAGES		method	limit/base	current	history1	history2
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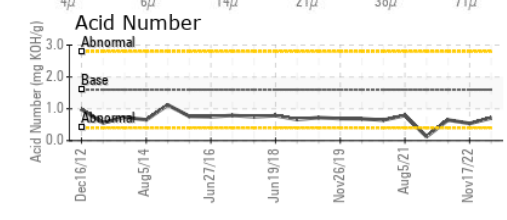
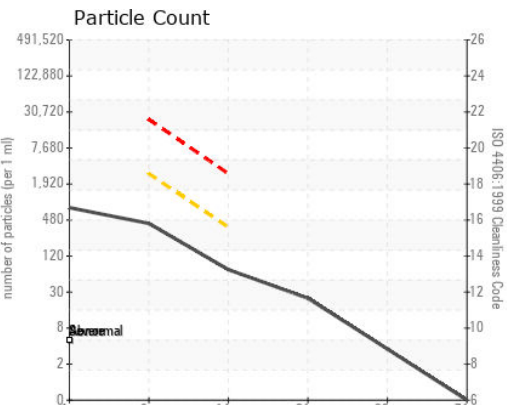
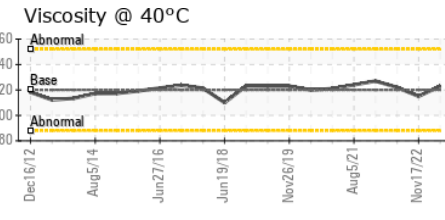
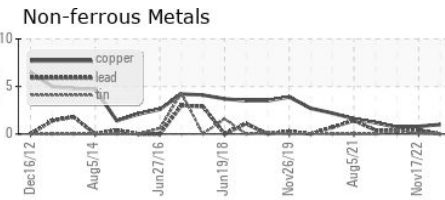
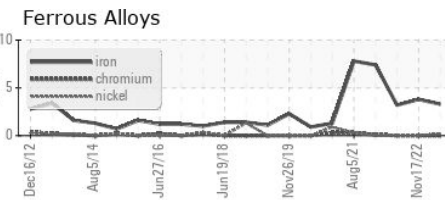
Color



Bottom



GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX05928243 **Received** : 18 Aug 2023
Lab Number : **05928243** **Diagnosed** : 21 Aug 2023
Unique Number : 10608190 **Diagnostician** : Doug Bogart
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

NORDEX USA - HIGHLAND & HIGHLAND NORTH
 300 SOUTH WACKER DRIVE, SUITE 1500
 CHICAGO, IL
 US 60606

Contact: Robert Warner
 rwarner@everpower.com

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)

T: x:
 F: x: