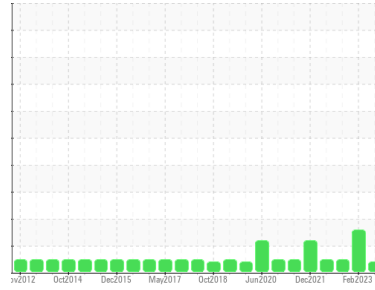




PROBLEM SUMMARY

Sample Rating Trend



VIS DEBRIS



Area
HIGHLAND [600380491]
 Machine Id
13WEA80820
 Component
Wind Turbine Gearbox
 Fluid
MOBIL XMP 320 (--- LTR)

COMPONENT CONDITION SUMMARY

No relevant graphs to display

RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	ABNORMAL	NORMAL
Debris	scalar	*Visual	NONE	▲ MODER	NONE	NONE

Customer Id: NORHIG
 Sample No.: NX05928189
 Lab Number: 05928189
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Don Baldrige +1
don.b505@comcast.net

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Alert	---	---	?	We were unable to perform a particle count due to a high concentration of particles present in this sample.

HISTORICAL DIAGNOSIS

06 Feb 2023 Diag: Doug Bogart

ISO



We recommend you service the filters on this component. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



24 Oct 2022 Diag: Angela Borella

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



17 Jun 2022 Diag: Don Baldrige

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



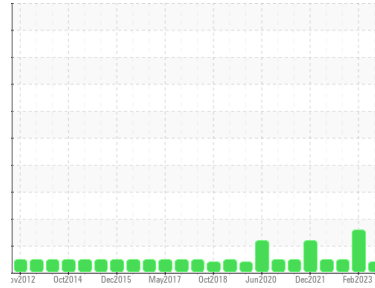


OIL ANALYSIS REPORT

Sample Rating Trend

VIS DEBRIS

Area
HIGHLAND [600380491]
 Machine Id
13WEA80820
 Component
Wind Turbine Gearbox
 Fluid
MOBIL XMP 320 (--- LTR)



DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Wear

All component wear rates are normal.

Contamination

Moderate concentration of visible dirt/debris 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		NX05928189	NX05766516	NX05700253
Sample Date	Client Info		10 Apr 2023	06 Feb 2023	24 Oct 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			ABNORMAL	ABNORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>80	17	35	11	
Iron	ppm	ASTM D5185m	>150	94	71	61
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>10	0	<1	0
Titanium	ppm	ASTM D5185m	>10	0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>10	0	<1	0
Lead	ppm	ASTM D5185m	>20	0	0	0
Copper	ppm	ASTM D5185m	>50	1	2	1
Tin	ppm	ASTM D5185m	>10	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	0	0
Manganese	ppm	ASTM D5185m		1	1	<1
Magnesium	ppm	ASTM D5185m		<1	<1	0
Calcium	ppm	ASTM D5185m		0	<1	<1
Phosphorus	ppm	ASTM D5185m	315	378	383	352
Zinc	ppm	ASTM D5185m		26	22	18
Sulfur	ppm	ASTM D5185m		14570	14469	13875

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>50	1	3	<1
Sodium	ppm	ASTM D5185m	>20	0	1	0
Potassium	ppm	ASTM D5185m	>20	0	1	0
Water	%	ASTM D6304	>0.05	0.015	0.010	0.013
ppm Water	ppm	ASTM D6304	>500	158.4	106.4	136.8

FLUID CLEANLINESS

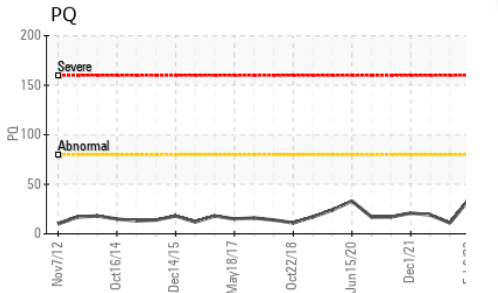
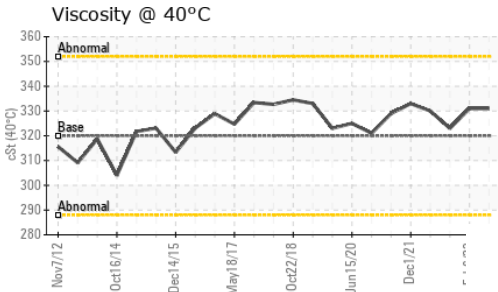
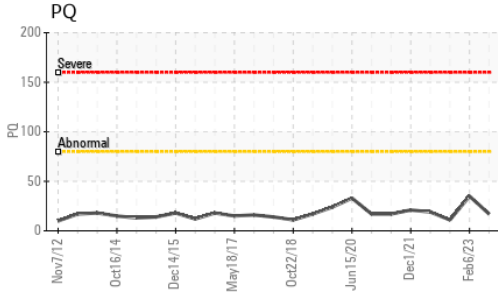
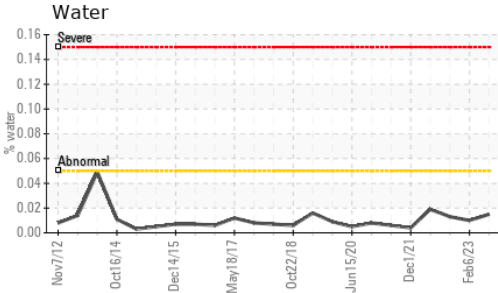
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		---	130180	2831
Particles >6µm	ASTM D7647	>2500	---	▲ 39825	390
Particles >14µm	ASTM D7647	>320	---	▲ 1062	18
Particles >21µm	ASTM D7647	>80	---	▲ 224	4
Particles >38µm	ASTM D7647	>20	---	20	0
Particles >71µm	ASTM D7647	>4	---	0	0
Oil Cleanliness	ISO 4406 (c)	>--/18/15	---	▲ 24/22/17	19/16/11

FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045		1.14	1.13	1.14



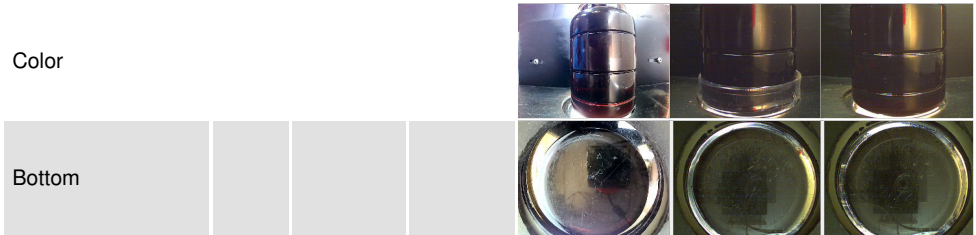
OIL ANALYSIS REPORT



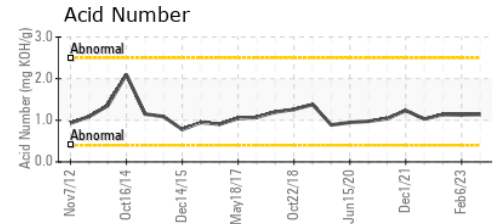
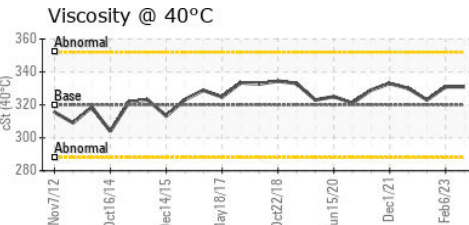
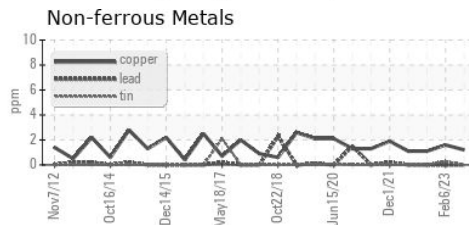
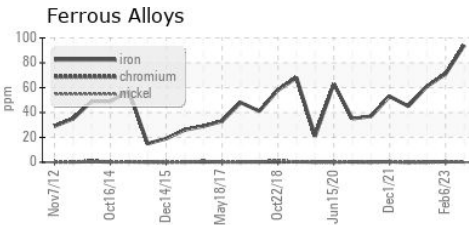
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	▲ MODER	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	331	323

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. : NX05928189 **Received** : 18 Aug 2023
Lab Number : 05928189 **Diagnosed** : 21 Aug 2023
Unique Number : 10608136 **Diagnostician** : Don Baldrige
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: