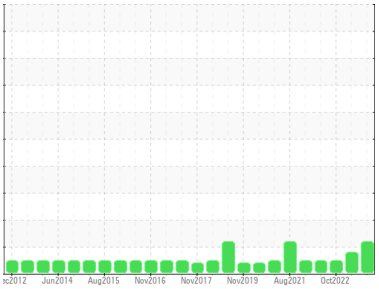
PROBLEM SUMMARY

Area
HIGHLAND [600380493]
Machine Id
15WEA80822
Component
Wind Turbine Gearbox
Fluid
MOBIL XMP 320 (--- LTR)

Sample Rating Trend



VISUAL METAL

COMPONENT CONDITION SUMMARY

No relevant graphs to display

RECOMMENDATION

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

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	NORMAL
White Metal	scalar	*Visual	NONE	▲ **MODER**	LIGHT	VLITE

Customer Id: NORHIG
Sample No.: NX05928207
Lab Number: 05928207
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldridge +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
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Change Filter	---	---	?	We recommend you service the filters on this component if applicable.
Alert	---	---	?	We were unable to perform a particle count due to metal particles present in this sample.

HISTORICAL DIAGNOSIS

21 Dec 2022 Diag: Doug Bogart

ISO

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

21 Oct 2022 Diag: Jonathan Hester

NORMAL

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

view report

09 May 2022 Diag: Don Baldridge

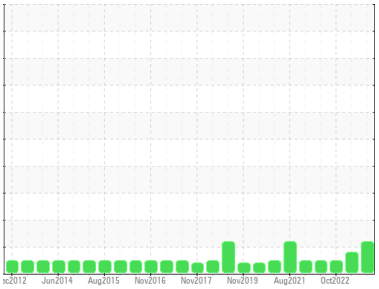
NORMAL

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



VISUAL METAL

Area
HIGHLAND [600380493]
Machine Id
15WEA80822
Component
Wind Turbine Gearbox
Fluid
MOBIL XMP 320 (--- LTR)

DIAGNOSIS

Recommendation

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

Wear

Moderate concentration of visible metal present. All component wear rates are normal.

Contamination

No other contaminants were detected 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		**NX05928207**	NX05766522	NX05700248
Sample Date		Client Info		**17 May 2023**	21 Dec 2022	21 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	**12**	15	4
Iron	ppm	ASTM D5185m	>150	**50**	84	81
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**	0	0
Lead	ppm	ASTM D5185m	>20	**0**	<1	0
Copper	ppm	ASTM D5185m	>50	**1**	1	2
Tin	ppm	ASTM D5185m	>10	**0**	<1	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

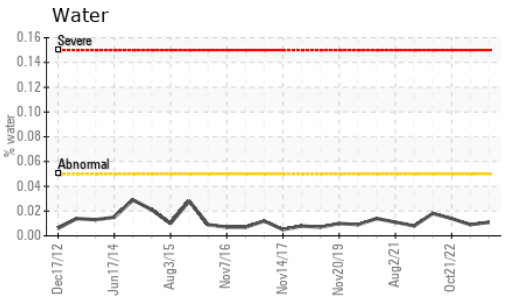
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	0
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**7**	<1	12
Manganese	ppm	ASTM D5185m		**<1**	1	1
Magnesium	ppm	ASTM D5185m		**0**	<1	0
Calcium	ppm	ASTM D5185m		**8**	<1	4
Phosphorus	ppm	ASTM D5185m	315	**394**	353	362
Zinc	ppm	ASTM D5185m		**30**	19	18
Sulfur	ppm	ASTM D5185m		**14295**	13141	14230

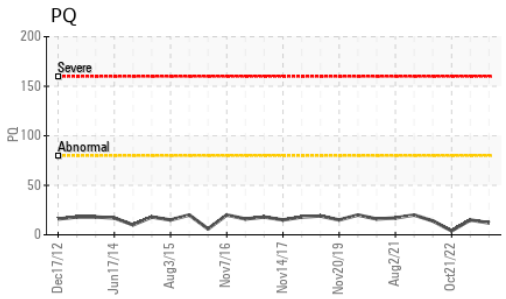
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**1**	<1	0
Sodium	ppm	ASTM D5185m	>20	**0**	<1	0
Potassium	ppm	ASTM D5185m	>20	**0**	1	0
Water	%	ASTM D6304	>0.05	**0.011**	0.009	0.014
ppm Water	ppm	ASTM D6304	>500	**111.5**	93.8	147.1

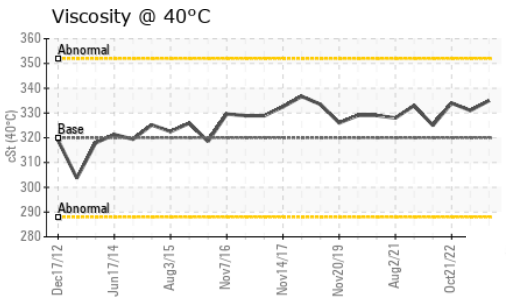
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**---**	67257	2098
Particles >6µm		ASTM D7647	>2500	**---**	▲ 8864	303
Particles >14µm		ASTM D7647	>320	**---**	51	18
Particles >21µm		ASTM D7647	>80	**---**	8	6
Particles >38µm		ASTM D7647	>20	**---**	0	0
Particles >71µm		ASTM D7647	>4	**---**	0	0
Oil Cleanliness		ISO 4406 (c)	>--/18/15	**---**	▲ 23/20/13	18/15/11

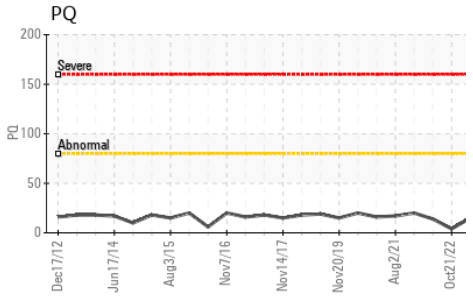
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.97**	1.25	1.22

OIL ANALYSIS REPORT



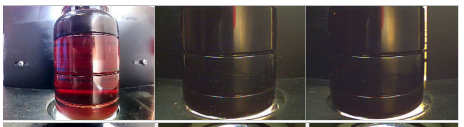
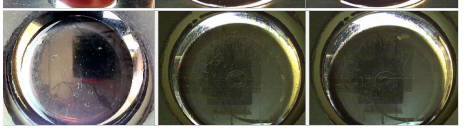




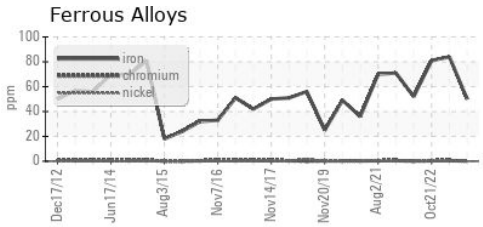


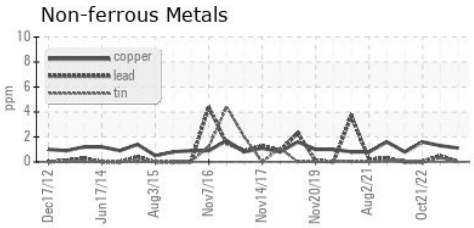
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	▲ **MODER**	LIGHT	VLITE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
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

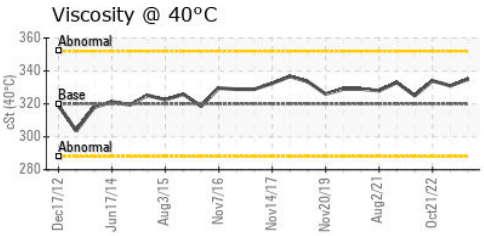
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	**335**	331	334

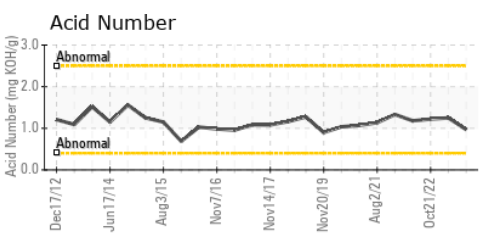
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS









Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX05928207 **Received** : 18 Aug 2023
Lab Number : 05928207 **Diagnosed** : 21 Aug 2023
Unique Number : 10608154 **Diagnostician** : Don Baldridge
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)

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