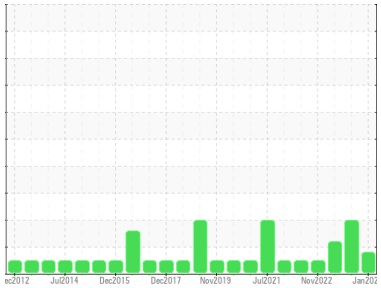
OIL ANALYSIS REPORT

Sample Rating Trend



ADDITIVES

Area
HINO [200005320]
Machine Id
34WEA81871
Component
Wind Turbine Gearbox
Fluid
CASTROL OPTIGEAR SYNTHETIC X 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 a high concentration of particles present in this sample.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of visible silt present in the sample.

Fluid Condition
Zinc level above recommendations. The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**NX06062677**	NX06023716	NX05928238
Sample Date		Client Info		**12 Jan 2024**	08 Nov 2023	23 Jun 2023
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	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>80	**13**	11	13
Iron	ppm	ASTM D5185m	>150	**8**	5	5
Chromium	ppm	ASTM D5185m	>5	**0**	0	0
Nickel	ppm	ASTM D5185m	>10	**0**	0	0
Titanium	ppm	ASTM D5185m	>10	**0**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>10	**5**	▲ 9	<1
Lead	ppm	ASTM D5185m	>20	**0**	0	0
Copper	ppm	ASTM D5185m	>50	**2**	<1	1
Tin	ppm	ASTM D5185m	>10	**0**	0	0
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	12	0
Barium	ppm	ASTM D5185m		**0**	<1	0
Molybdenum	ppm	ASTM D5185m	1150	**662**	706	508
Manganese	ppm	ASTM D5185m		**0**	<1	0
Magnesium	ppm	ASTM D5185m		**75**	87	92
Calcium	ppm	ASTM D5185m	2000	**1371**	1348	1231
Phosphorus	ppm	ASTM D5185m	400	**466**	452	439
Zinc	ppm	ASTM D5185m	0	▲ **164**	▲ 192	▲ 226
Sulfur	ppm	ASTM D5185m	1850	**2267**	2241	2535

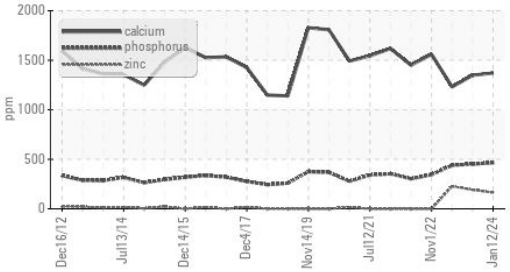
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**11**	9	7
Sodium	ppm	ASTM D5185m	>20	**4**	<1	2
Potassium	ppm	ASTM D5185m	>20	**1**	0	<1
Water	%	ASTM D6304	>0.05	**0.008**	0.013	0.023
ppm Water	ppm	ASTM D6304	>500	**87**	132	233.5

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**---**	39239	---
Particles >6µm		ASTM D7647	>2500	**---**	▲ 6437	---
Particles >14µm		ASTM D7647	>320	**---**	295	---
Particles >21µm		ASTM D7647	>80	**---**	57	---
Particles >38µm		ASTM D7647	>20	**---**	1	---
Particles >71µm		ASTM D7647	>4	**---**	0	---
Oil Cleanliness		ISO 4406 (c)	>--/18/15	**---**	▲ 22/20/15	---

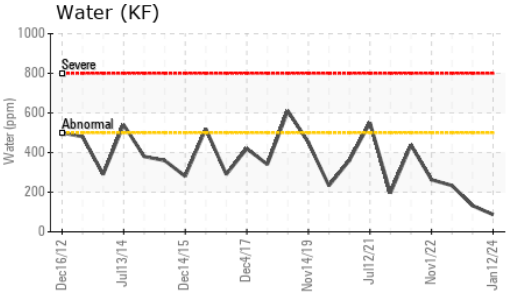
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.6	**0.58**	0.73	0.58

OIL ANALYSIS REPORT

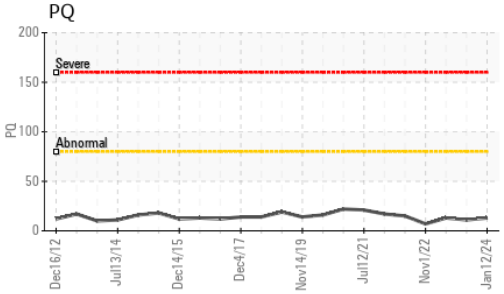
Additives



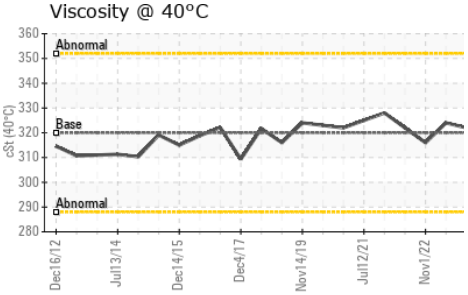
Water (KF)



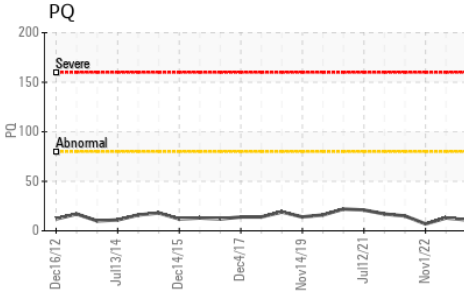
PQ



Viscosity @ 40°C

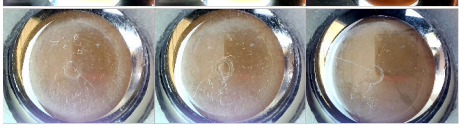


PQ



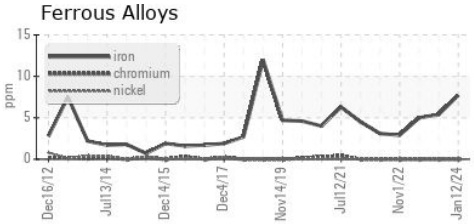
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	▲ MODER
Debris	scalar	*Visual	NONE	▲ **MODER**	NONE	NONE
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	**316**	322	324

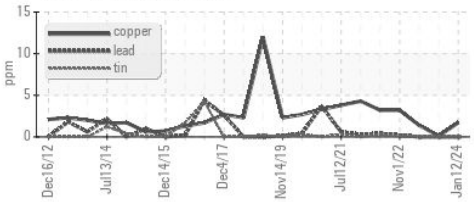
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

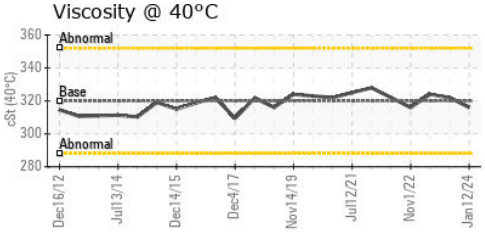
Ferrous Alloys



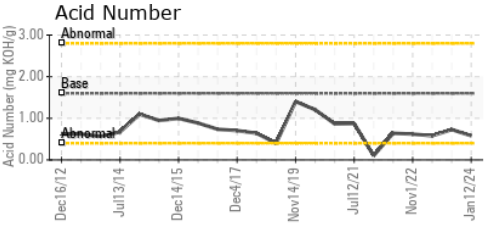
Non-ferrous Metals



Viscosity @ 40°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX06062677 **Recieved** : 17 Jan 2024
Lab Number : 06062677 **Diagnosed** : 19 Jan 2024
Unique Number : 10834059 **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)

NORDEX USA - HIGHLAND & HIGHLAND NORTH
300 SOUTH WACKER DRIVE, SUITE 1500
CHICAGO, IL
US 60606
Contact: Robert Warner
rwarner@everpower.com
T: x:
F: x: