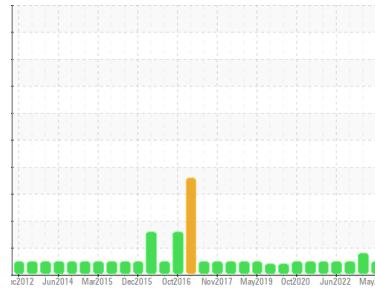




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
HIGHLAND [600380488]
 Machine Id
10WEA80817
 Component
Wind Turbine Gearbox
 Fluid
MOBIL XMP 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 | | NX05928197 | NX05766520 | NX05700251 |
| Sample Date | Client Info | | 01 May 2023 | 30 Jan 2023 | 12 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 | | | NORMAL | ATTENTION | NORMAL |

WEAR METALS

| | method | limit/base | current | history1 | history2 | |
|----------|------------|-------------|-----------|--------------|----------|----|
| PQ | ASTM D8184 | >80 | 17 | 9 | 7 | |
| Iron | ppm | ASTM D5185m | >150 | 104 | 75 | 70 |
| 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 | <1 | <1 | 0 |
| Lead | ppm | ASTM D5185m | >20 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >50 | 1 | 1 | 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 | | <1 | 7 | 0 |
| Manganese | ppm | ASTM D5185m | | 1 | 1 | 1 |
| Magnesium | ppm | ASTM D5185m | | <1 | 1 | 0 |
| Calcium | ppm | ASTM D5185m | | 0 | 4 | 0 |
| Phosphorus | ppm | ASTM D5185m | 315 | 364 | 331 | 350 |
| Zinc | ppm | ASTM D5185m | | 32 | 28 | 26 |
| Sulfur | ppm | ASTM D5185m | | 14240 | 12668 | 13875 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 | |
|-----------|--------|-------------|---------|--------------|----------|-------|
| Silicon | ppm | ASTM D5185m | >50 | <1 | <1 | <1 |
| Sodium | ppm | ASTM D5185m | >20 | 0 | <1 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 1 | 0 |
| Water | % | ASTM D6304 | >0.05 | 0.014 | 0.004 | 0.012 |
| ppm Water | ppm | ASTM D6304 | >500 | 147.6 | 47.6 | 125.2 |

FLUID CLEANLINESS

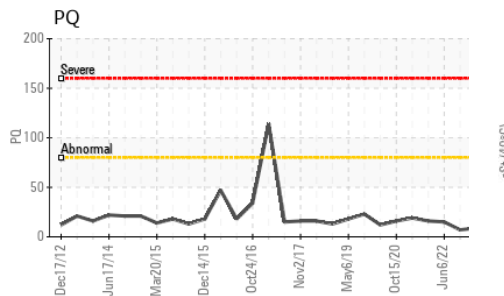
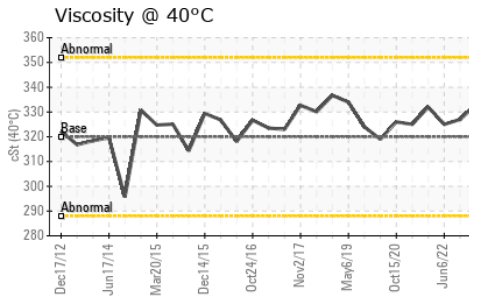
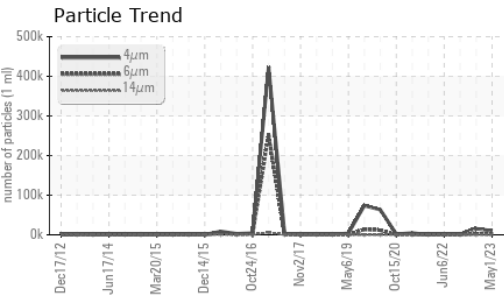
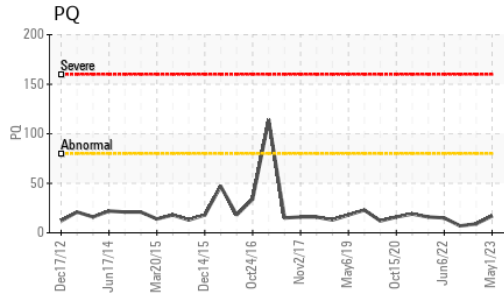
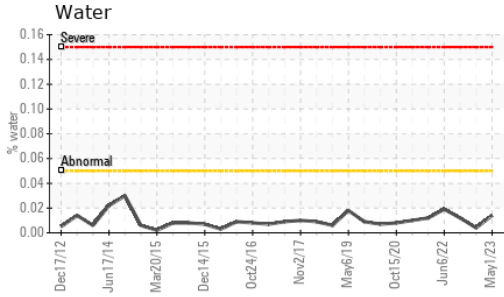
| | method | limit/base | current | history1 | history2 |
|-----------------|--------------|------------|-----------------|------------|----------|
| Particles >4µm | ASTM D7647 | | 10187 | 15489 | 1090 |
| Particles >6µm | ASTM D7647 | >2500 | 1988 | ▲ 2957 | 121 |
| Particles >14µm | ASTM D7647 | >320 | 91 | 114 | 10 |
| Particles >21µm | ASTM D7647 | >80 | 16 | 21 | 3 |
| Particles >38µm | ASTM D7647 | >20 | 2 | 1 | 0 |
| Particles >71µm | ASTM D7647 | >4 | 1 | 0 | 0 |
| Oil Cleanliness | ISO 4406 (c) | >--/18/15 | 21/18/14 | ▲ 21/19/14 | 17/14/10 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 | |
|------------------|----------|------------|---------|-------------|----------|------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 1.17 | 1.11 | 1.11 |



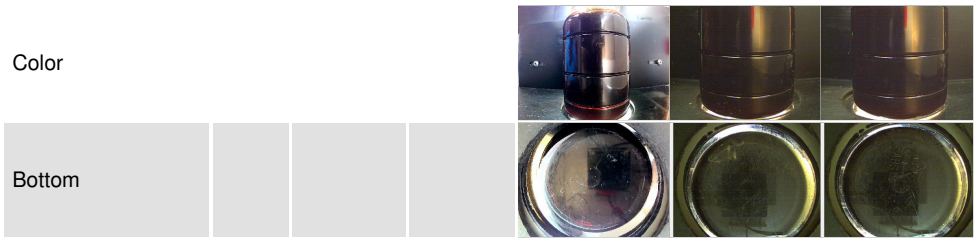
OIL ANALYSIS REPORT



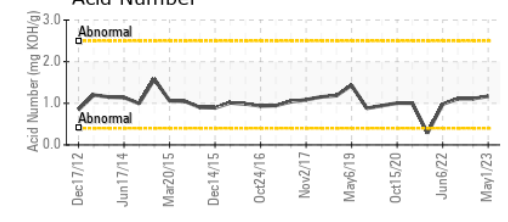
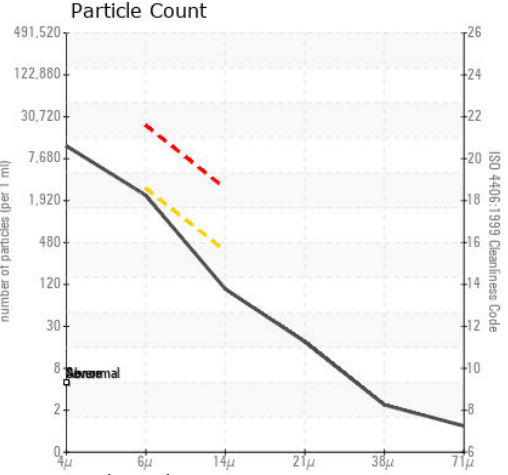
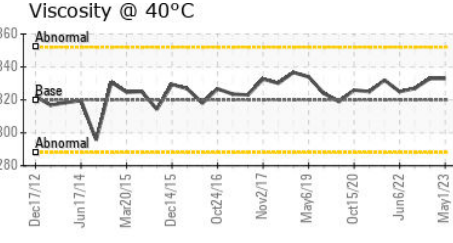
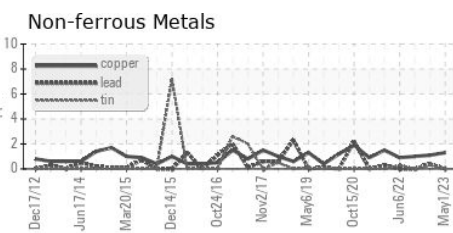
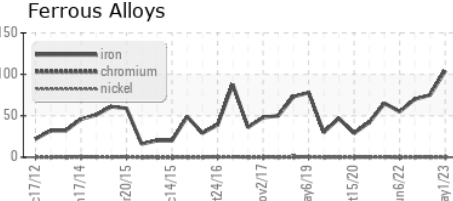
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|--------------|----------|
| White Metal | scalar | *Visual | NONE | LIGHT | LIGHT |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | 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 | 333 | 333 |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
|---------------|--------|------------|---------|----------|----------|



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX05928197
Lab Number : 05928197
Unique Number : 10608144
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: