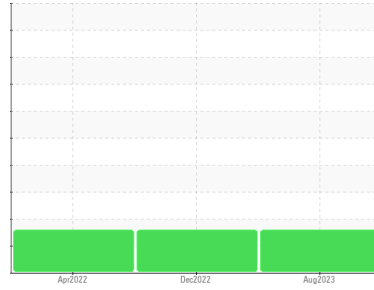




PROBLEM SUMMARY

Sample Rating Trend

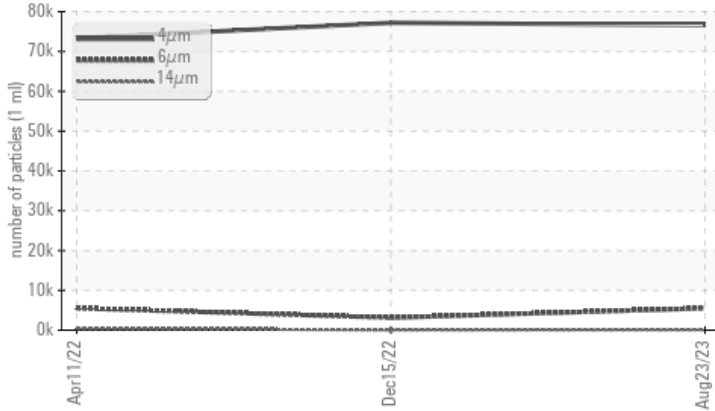
ISO



Area
IRON STAR [200006142]
 Machine Id
50WEA88310
 Component
Wind Turbine Gearbox
 Fluid
GEAR OIL (PAO) ISO 320 (--- LTR)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ABNORMAL	ABNORMAL
Particles >6µm	ASTM D7647	>320	▲ 5496	▲ 3130	▲ 5507
Particles >14µm	ASTM D7647	>40	▲ 85	▲ 60	▲ 426
Particles >21µm	ASTM D7647	>10	▲ 17	▲ 16	▲ 121
Oil Cleanliness	ISO 4406 (c)	>--/15/12	▲ 23/20/14	▲ 23/19/13	▲ 23/20/16

Customer Id: NORDEX
 Sample No.: NX05933538
 Lab Number: 05933538
 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 if applicable.

HISTORICAL DIAGNOSIS

15 Dec 2022 Diag: Jonathan Hester

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 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



11 Apr 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 particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

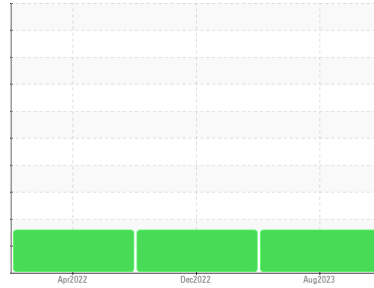
view report





OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area
IRON STAR [200006142]
 Machine Id
50WEA88310
 Component
Wind Turbine Gearbox
 Fluid
GEAR OIL (PAO) ISO 320 (--- LTR)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates 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		NX05933538	NX05739635	NX05555952
Sample Date	Client Info		23 Aug 2023	15 Dec 2022	11 Apr 2022
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	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	>50	15	7	21	
Iron	ppm	ASTM D5185m	>30	16	21	13
Chromium	ppm	ASTM D5185m	>3	0	0	0
Nickel	ppm	ASTM D5185m	>3	0	0	<1
Titanium	ppm	ASTM D5185m	>10	0	0	0
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>30	0	0	<1
Lead	ppm	ASTM D5185m	>15	<1	<1	<1
Copper	ppm	ASTM D5185m	>10	<1	0	<1
Tin	ppm	ASTM D5185m	>10	0	<1	<1
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	25	4	8	14
Barium	ppm	ASTM D5185m	12	2	0	0
Molybdenum	ppm	ASTM D5185m	5	0	0	0
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	25	<1	0	0
Calcium	ppm	ASTM D5185m	25	17	19	6
Phosphorus	ppm	ASTM D5185m	375	200	215	201
Zinc	ppm	ASTM D5185m	25	4	2	0
Sulfur	ppm	ASTM D5185m	4900	5463	5689	4492

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>+15	9	8	12
Sodium	ppm	ASTM D5185m		0	3	2
Potassium	ppm	ASTM D5185m	>20	1	0	0
Water	%	ASTM D6304	>0.02	0.003	0.004	0.004
ppm Water	ppm	ASTM D6304	>200	29.9	47.7	48.3

FLUID CLEANLINESS

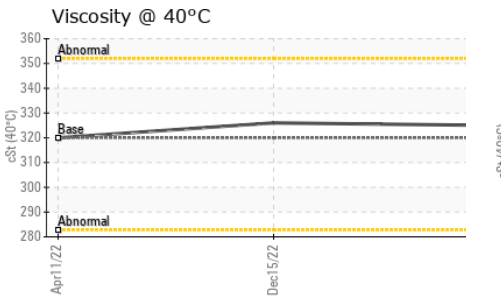
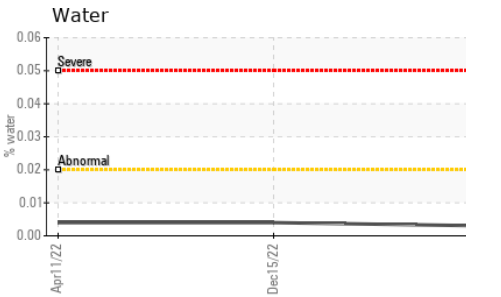
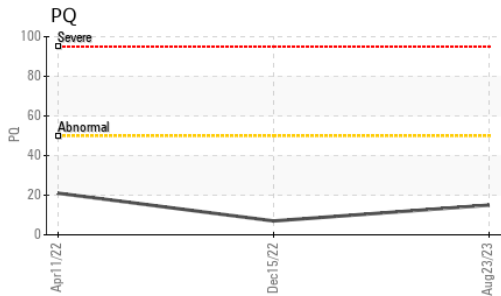
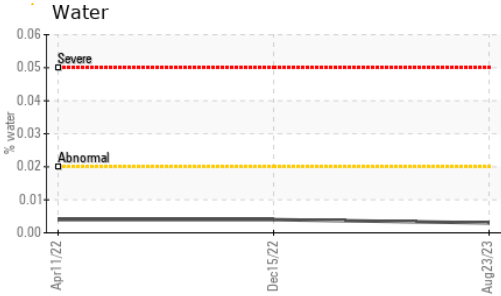
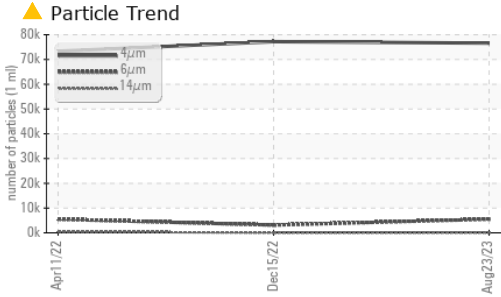
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		76602	77201	73334
Particles >6µm	ASTM D7647	>320	▲ 5496	▲ 3130	▲ 5507
Particles >14µm	ASTM D7647	>40	▲ 85	▲ 60	▲ 426
Particles >21µm	ASTM D7647	>10	▲ 17	▲ 16	▲ 121
Particles >38µm	ASTM D7647	>3	1	1	2
Particles >71µm	ASTM D7647	>3	1	0	0
Oil Cleanliness	ISO 4406 (c)	>--/15/12	▲ 23/20/14	▲ 23/19/13	▲ 23/20/16

FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045	1.10	0.34	0.32	0.39



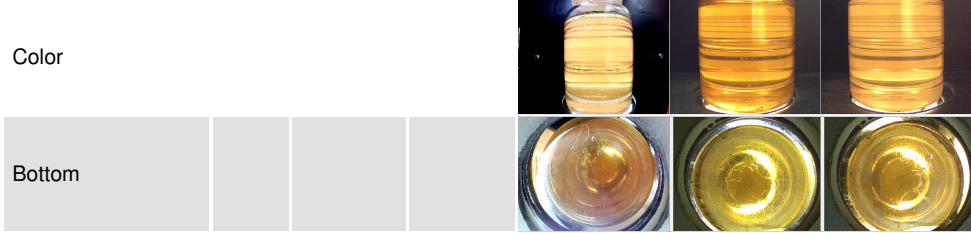
OIL ANALYSIS REPORT



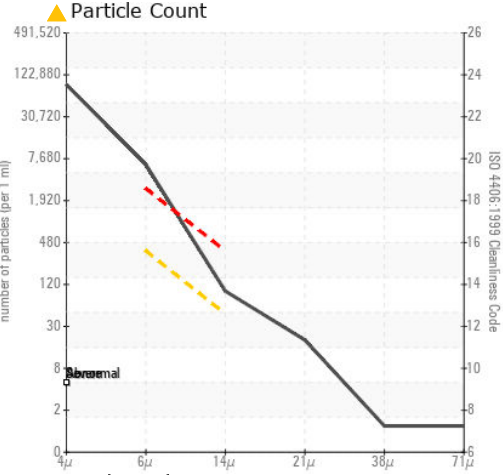
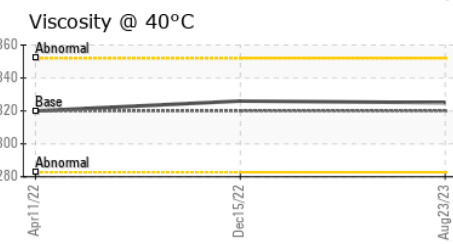
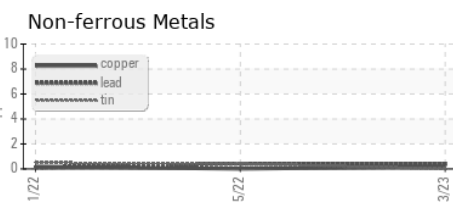
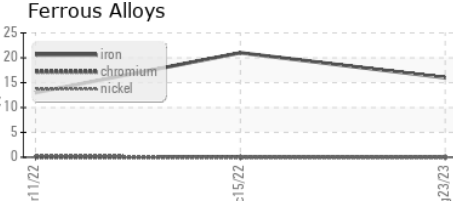
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	VLITE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.02	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 320	325	326	320

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX05933538 **Received** : 24 Aug 2023
Lab Number : 05933538 **Diagnosed** : 25 Aug 2023
Unique Number : 10618809 **Diagnostician** : Don Baldrige
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

NORDEX USA - Chicago
 300 SOUTH WACKER DRIVE, SUITE 1500
 CHICAGO, IL
 US 60606
 Contact: DEVIN LINEHAN
 DLinehan@nordex-online.com
 T: (312)386-4124
 F: (312)386-7102

Certificate L2367
 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)