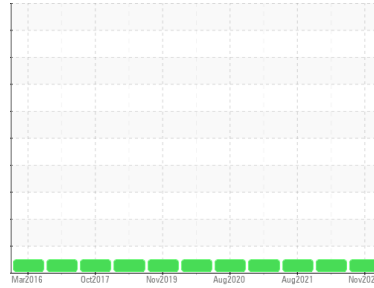




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
THUNDER SPIRIT [200005313]
 Machine Id
10WEA84014 (S/N 51373)
 Component
Hydraulic System
 Fluid
SHELL TELLUS S4 VX 32 (--- QTS)

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		NX014740	NX011642	NX004460
Sample Date	Client Info		22 Nov 2023	02 Nov 2022	10 Aug 2021
Machine Age	hrs	Client Info	0	51471	42105
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184		16	14	21
Iron	ppm	ASTM D5185m >20	7	6	5
Chromium	ppm	ASTM D5185m >20	<1	<1	<1
Nickel	ppm	ASTM D5185m >20	0	0	0
Titanium	ppm	ASTM D5185m	<1	0	0
Silver	ppm	ASTM D5185m	0	0	<1
Aluminum	ppm	ASTM D5185m >20	2	<1	<1
Lead	ppm	ASTM D5185m >20	4	5	4
Copper	ppm	ASTM D5185m >20	<1	<1	<1
Tin	ppm	ASTM D5185m >20	2	2	2
Antimony	ppm	ASTM D5185m	---	---	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	1
Barium	ppm	ASTM D5185m	5	<1	0
Molybdenum	ppm	ASTM D5185m	0	<1	0
Manganese	ppm	ASTM D5185m	0	<1	<1
Magnesium	ppm	ASTM D5185m	<1	3	0
Calcium	ppm	ASTM D5185m	<1	4	<1
Phosphorus	ppm	ASTM D5185m	581	574	535
Zinc	ppm	ASTM D5185m	80	107	84
Sulfur	ppm	ASTM D5185m	994	1107	1003

CONTAMINANTS

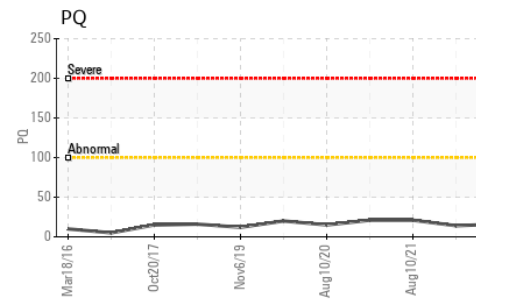
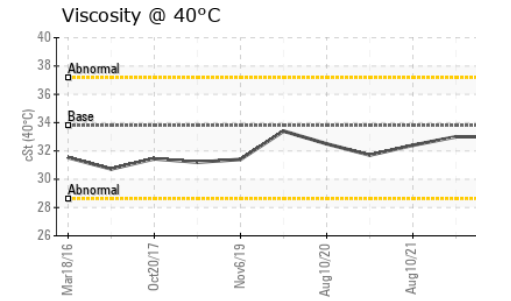
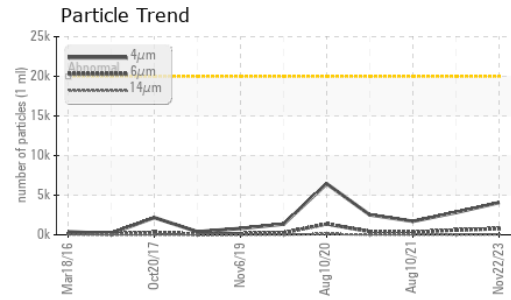
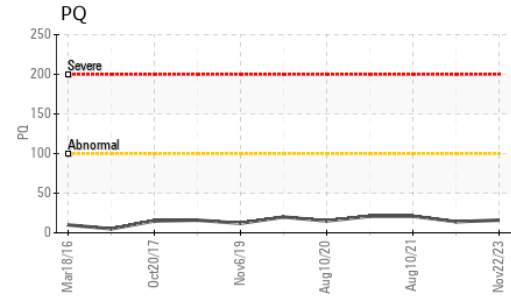
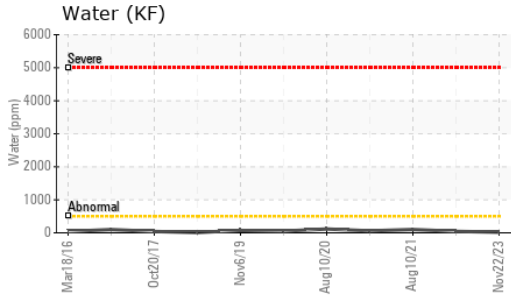
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	3	4	3
Sodium	ppm	ASTM D5185m	0	1	<1
Potassium	ppm	ASTM D5185m >20	2	0	0
Water	%	ASTM D6304 >0.05	0.002	0.004	0.010
ppm Water	ppm	ASTM D6304 >500	19	43.4	101.2

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	4068	2814	1706
Particles >6µm	ASTM D7647	>2500	782	602	327
Particles >14µm	ASTM D7647	>320	50	34	27
Particles >21µm	ASTM D7647	>80	12	6	8
Particles >38µm	ASTM D7647	>20	0	0	0
Particles >71µm	ASTM D7647	>4	0	0	0
Oil Cleanliness	ISO 4406 (c)	>21/18/15	19/17/13	19/16/12	18/16/12



OIL ANALYSIS REPORT

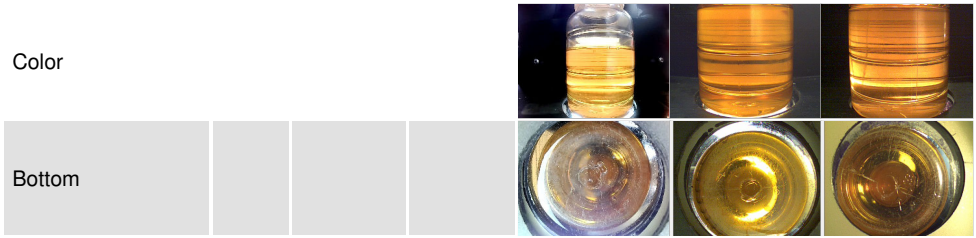


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.14	0.16	0.149

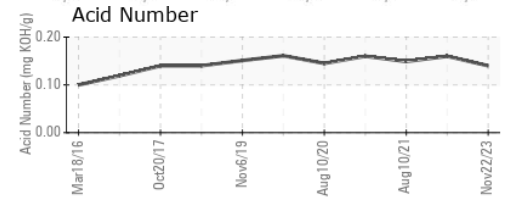
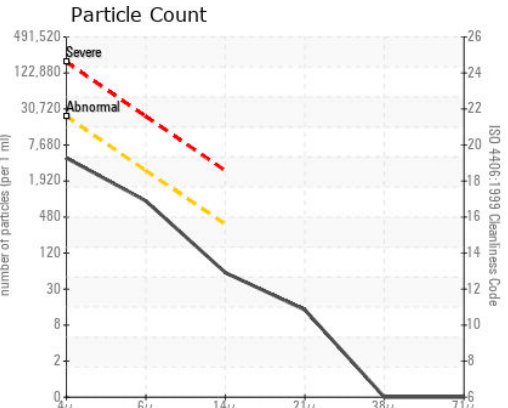
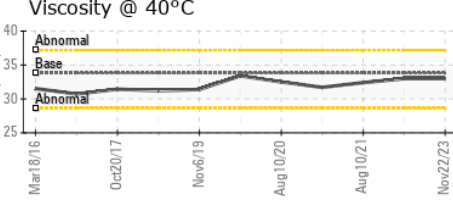
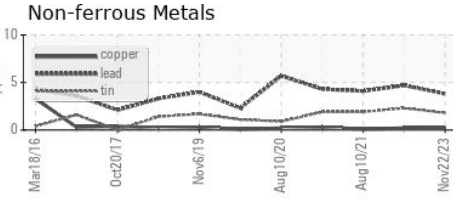
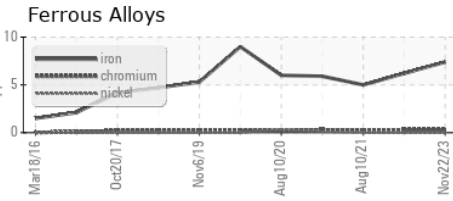
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	33.8	33.0	33.0	32.4

SAMPLE IMAGES		method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX014740 **Received** : 07 Dec 2023
Lab Number : 06027714 **Diagnosed** : 08 Dec 2023
Unique Number : 10777505 **Diagnostician** : Doug Bogart
Test Package : IND 2 (Additional Tests: KF, PQ)

NORDEX USA - Chicago
 300 SOUTH WACKER DRIVE, SUITE 1500
 CHICAGO, IL
 US 60606
 Contact: BRIAN DOBBINS
 bdobbins@nordex-online.com
 T: (312)386-4100
 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)