



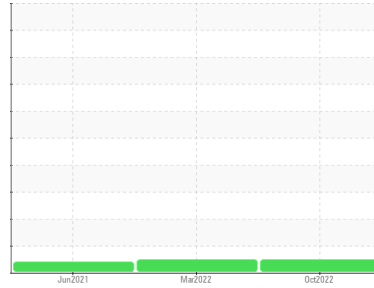
OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
FRONTIER II [200006776]
 Machine Id
51WEA86898
 Component
Wind Turbine Gearbox
 Fluid
FUCHS RENOLIN CLP ISO 320 (--- LTR)



DIAGNOSIS

Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition

The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		NX05687124	NX05486632	NX008433
Sample Date	Client Info		24 Oct 2022	07 Mar 2022	24 Jun 2021
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			NORMAL	NORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184	>80	11	22	23
Iron	ppm	ASTM D5185m	>150	12	11
Chromium	ppm	ASTM D5185m	>5	0	0
Nickel	ppm	ASTM D5185m	>10	0	0
Titanium	ppm	ASTM D5185m		0	0
Silver	ppm	ASTM D5185m		0	<1
Aluminum	ppm	ASTM D5185m	>10	0	0
Lead	ppm	ASTM D5185m	>20	0	0
Copper	ppm	ASTM D5185m	>50	<1	<1
Tin	ppm	ASTM D5185m		0	0
Antimony	ppm	ASTM D5185m	---	0	0
Vanadium	ppm	ASTM D5185m		0	0
Cadmium	ppm	ASTM D5185m		0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		4	4
Barium	ppm	ASTM D5185m		0	0
Molybdenum	ppm	ASTM D5185m		0	0
Manganese	ppm	ASTM D5185m		<1	<1
Magnesium	ppm	ASTM D5185m		2	0
Calcium	ppm	ASTM D5185m		21	11
Phosphorus	ppm	ASTM D5185m		192	225
Zinc	ppm	ASTM D5185m		3	0
Sulfur	ppm	ASTM D5185m		6246	4563

CONTAMINANTS

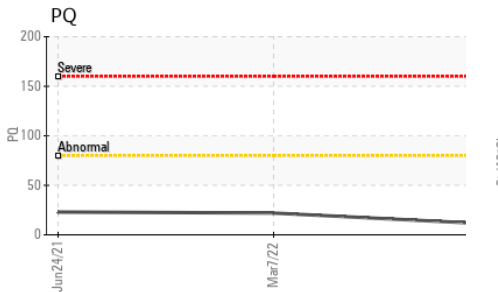
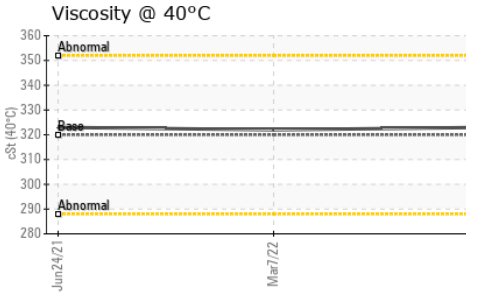
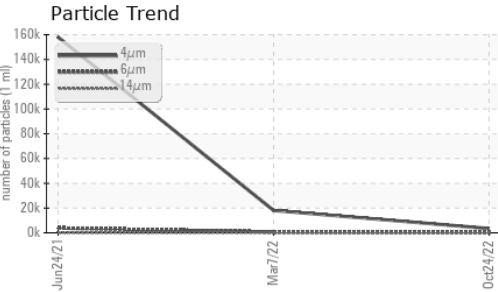
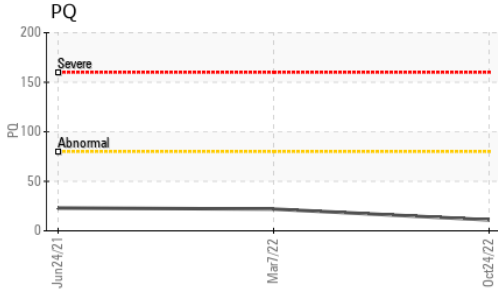
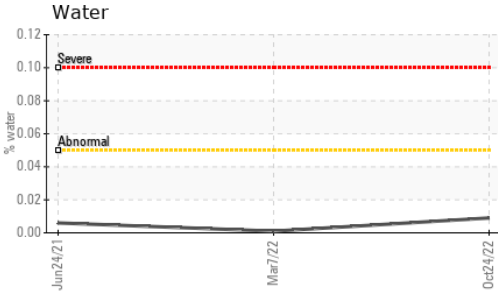
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	5	4
Sodium	ppm	ASTM D5185m	>20	2	<1
Potassium	ppm	ASTM D5185m	>20	<1	0
Water	%	ASTM D6304	>0.05	0.009	0.001
ppm Water	ppm	ASTM D6304	>500	97.5	2.0

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		3458	18080	158022
Particles >6µm	ASTM D7647	>2500	252	609	▲ 3874
Particles >14µm	ASTM D7647	>320	15	40	18
Particles >21µm	ASTM D7647	>80	5	11	3
Particles >38µm	ASTM D7647	>20	0	0	0
Particles >71µm	ASTM D7647	>4	0	0	0
Oil Cleanliness	ISO 4406 (c)	>--/18/15	19/15/11	21/16/12	▲ 24/19/11



OIL ANALYSIS REPORT



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.55	0.46	0.493

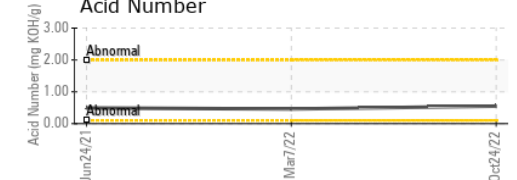
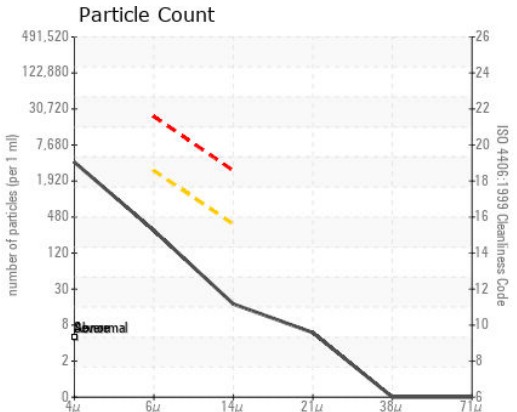
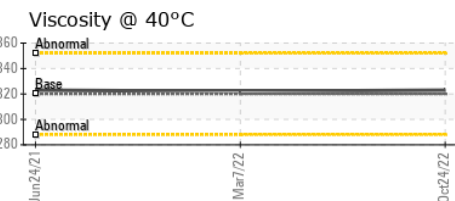
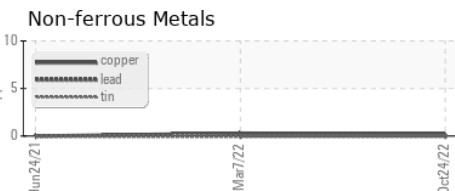
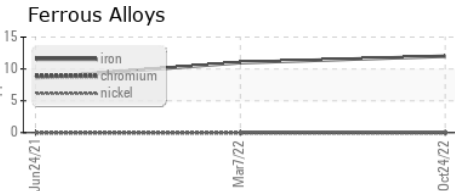
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	320	323	322	323

SAMPLE IMAGES		method	limit/base	current	history1	history2
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GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : NX05687124 Received : 07 Nov 2022
 Lab Number : 05687124 Diagnosed : 09 Nov 2022
 Unique Number : 10206696 Diagnostician : Angela Borella
 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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