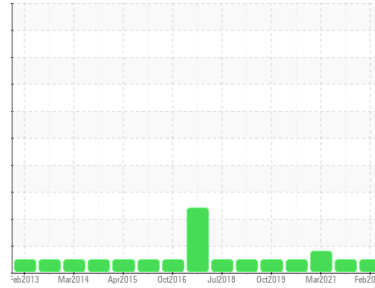




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

4

Machine Id

WINERGY GEARBOX WTG-401 (S/N 4836488-0020-3)

Component

Wind Turbine Gearbox

Fluid

FUCHS RENOLIN UNISYN CKC ISO 320 (340 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

The amount and size of particulates present in the system are acceptable. There is no indication of any contamination 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		WC0804481	WC05504535	WC0547151
Sample Date	Client Info		28 Feb 2023	26 Jan 2022	02 Mar 2021
Machine Age	yrs	Client Info	92	77	120
Oil Age	yrs	Client Info	92	0	75
Oil Changed	Client Info		Not Chngd	N/A	Not Chngd
Sample Status			NORMAL	NORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>50	13	15	14	
Iron	ppm	ASTM D5185m	>65	17	21	18
Chromium	ppm	ASTM D5185m	>3	<1	<1	<1
Nickel	ppm	ASTM D5185m	>3	0	0	<1
Titanium	ppm	ASTM D5185m	>10	0	0	0
Silver	ppm	ASTM D5185m		0	<1	0
Aluminum	ppm	ASTM D5185m	>10	<1	0	0
Lead	ppm	ASTM D5185m	>5	0	0	<1
Copper	ppm	ASTM D5185m	>10	0	0	0
Tin	ppm	ASTM D5185m	>10	0	0	0
Antimony	ppm	ASTM D5185m	>5	---	---	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	25	0	0	2
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	0	0
Manganese	ppm	ASTM D5185m		<1	0	0
Magnesium	ppm	ASTM D5185m		0	0	0
Calcium	ppm	ASTM D5185m	17	0	<1	0
Phosphorus	ppm	ASTM D5185m	200	80	102	74
Zinc	ppm	ASTM D5185m		0	8	7
Sulfur	ppm	ASTM D5185m	5000	5143	4020	3069

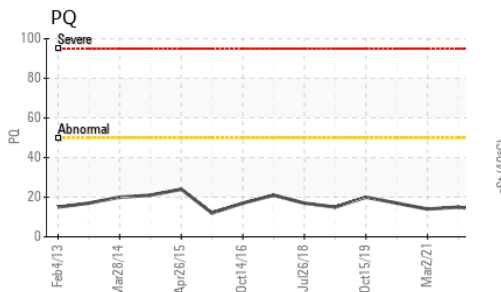
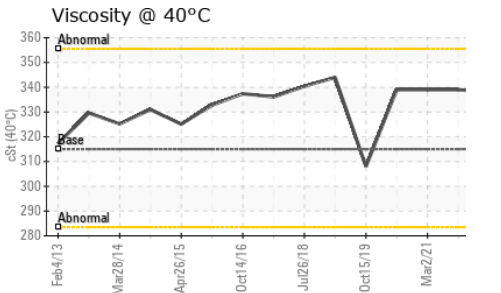
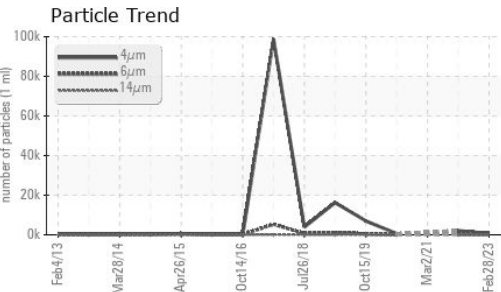
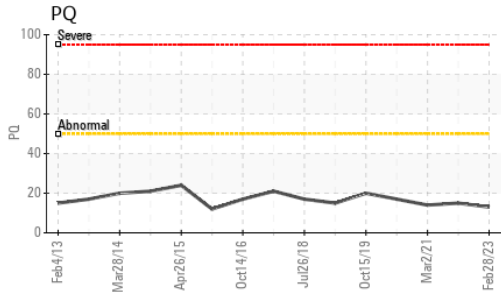
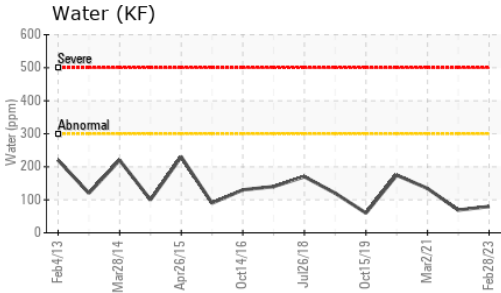
CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>15	0	0	0
Sodium	ppm	ASTM D5185m		<1	0	<1
Potassium	ppm	ASTM D5185m	>20	<1	0	9
Water	%	ASTM D6304	>0.03	0.007	0.006	0.013
ppm Water	ppm	ASTM D6304	>300	79.7	68.9	134.4

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		627	2093	---
Particles >6µm	ASTM D7647	>5000	118	244	---
Particles >14µm	ASTM D7647	>640	10	17	---
Particles >21µm	ASTM D7647	>160	2	4	---
Particles >38µm	ASTM D7647	>40	0	0	---
Particles >71µm	ASTM D7647	>10	0	0	---
Oil Cleanliness	ISO 4406 (c)	>--/19/16	16/14/10	18/15/11	---

OIL ANALYSIS REPORT



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.9	0.67	0.77	0.850

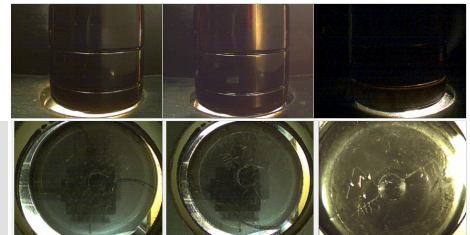
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	▲ MODER
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.03	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	315	338	339	339

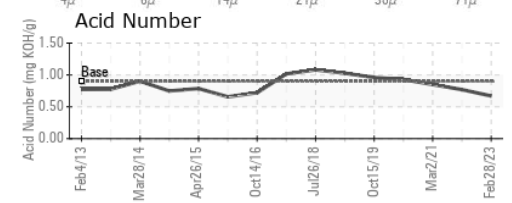
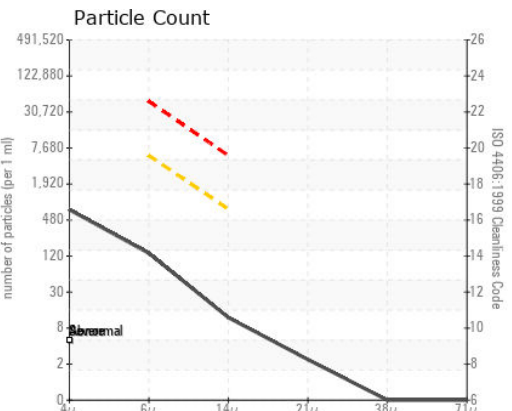
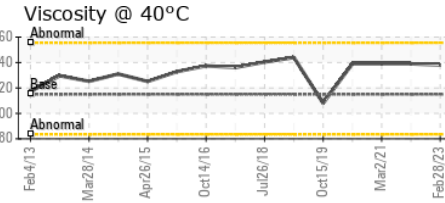
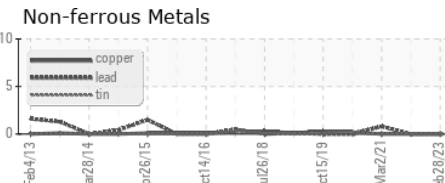
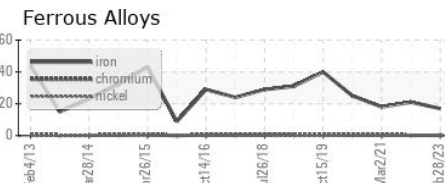
SAMPLE IMAGES		method	limit/base	current	history1	history2
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Color

Bottom



GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0804481 **Received** : 26 May 2023
Lab Number : 05857944 **Diagnosed** : 30 May 2023
Unique Number : 10492409 **Diagnostician** : Don Baldrige
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)

ENERGIA EOLICA
 STA ANA KM25 CARRETERA AL SUR, A 1KM DEL CRUCE
 FRANCISCO MORAZAN, ZZ
 HN
 Contact: SANTOS DEL CID
 sdelcid@dennci.com

T: x:
 F: x: