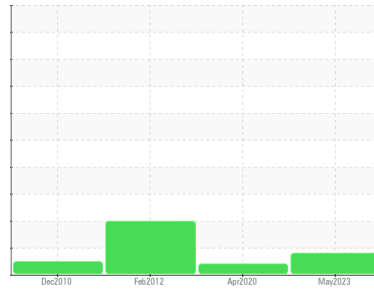


PROBLEM SUMMARY

Sample Rating Trend



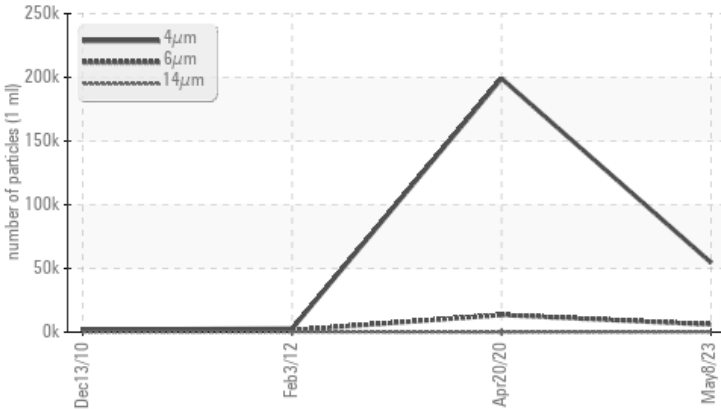
ISO



Machine Id
F-09
Component
Wind Turbine Gearbox
Fluid
ROYAL PURPLE SYNFILM GT 320 (65 GAL)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

Replace filter element and resample at later date. In case already attempted and cleanliness was not improved then proceed to replace oil. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status			MARGINAL	ABNORMAL	ABNORMAL
Particles >6µm	ASTM D7647	>5000	▲ 5939	▲ 13484	▲ 1487
Oil Cleanliness	ISO 4406 (c)	>--/19/16	▲ 23/20/14	▲ 25/21/13	▲ 19/18/15

Customer Id: MITWHI
Sample No.: MHI021611
Lab Number: 06016365
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

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	---	---	?	Replace filter element and resample at later date. In case already attempted and cleanliness was not improved then proceed to replace oil.
Resample	---	---	?	Replace filter element and resample at later date. In case already attempted and cleanliness was not improved then proceed to replace oil.

HISTORICAL DIAGNOSIS

20 Apr 2020 Diag: Doug Bogart

ISO



Replace filter element and resample at later date. In case already attempted and cleanliness was not improved then proceed to replace oil. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



03 Feb 2012 Diag: Jonathan Hester

ISO



We recommend you service the filters on this component. 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 condition of oil is suitable for further service.

view report



13 Dec 2010 Diag: Don Baldrige

NORMAL



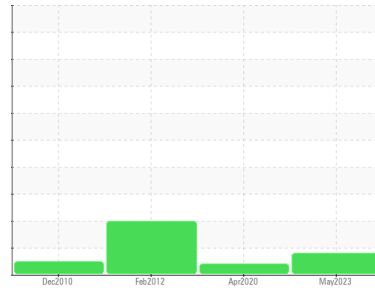
Resample at the next service interval to monitor. All component wear rates are normal. The amount and size of particulates present in the system is acceptable. There is no indication of any contamination in the component. The condition of oil is suitable for further service.

view report



OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id

F-09

Component

Wind Turbine Gearbox

Fluid

ROYAL PURPLE SYNFILM GT 320 (65 GAL)

DIAGNOSIS

▲ Recommendation

Replace filter element and resample at later date. In case already attempted and cleanliness was not improved then proceed to replace oil. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

▲ Contamination

There is a moderate amount of silt (particulates < 14 microns in size) 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		MHI021611	MHI023648	RP107430
Sample Date	Client Info		08 May 2023	20 Apr 2020	03 Feb 2012
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	0	98294	0
Oil Changed	Client Info		Not Changed	Not Changd	Not Changed
Sample Status			MARGINAL	ABNORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184	>200	13	17	19.0
Iron	ppm	ASTM D5185m	>200	19	23
Chromium	ppm	ASTM D5185m	>3	<1	<1
Nickel	ppm	ASTM D5185m	>3	0	<1
Titanium	ppm	ASTM D5185m	>10	<1	0
Silver	ppm	ASTM D5185m		0	0
Aluminum	ppm	ASTM D5185m	>30	2	<1
Lead	ppm	ASTM D5185m	>15	0	<1
Copper	ppm	ASTM D5185m	>75	6	5
Tin	ppm	ASTM D5185m	>10	0	0
Antimony	ppm	ASTM D5185m	>5	---	0
Vanadium	ppm	ASTM D5185m		0	0
Cadmium	ppm	ASTM D5185m		0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	<1
Barium	ppm	ASTM D5185m		0	<1
Molybdenum	ppm	ASTM D5185m		5	6
Manganese	ppm	ASTM D5185m		0	<1
Magnesium	ppm	ASTM D5185m	90	10	1
Calcium	ppm	ASTM D5185m		0	<1
Phosphorus	ppm	ASTM D5185m		0	26
Zinc	ppm	ASTM D5185m		0	0
Sulfur	ppm	ASTM D5185m		19744	12448

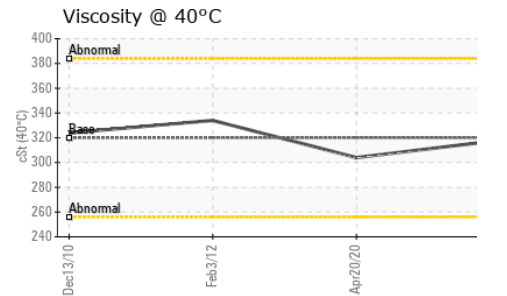
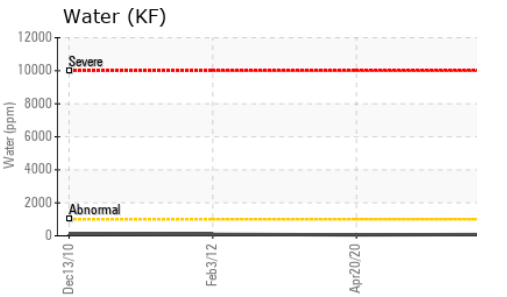
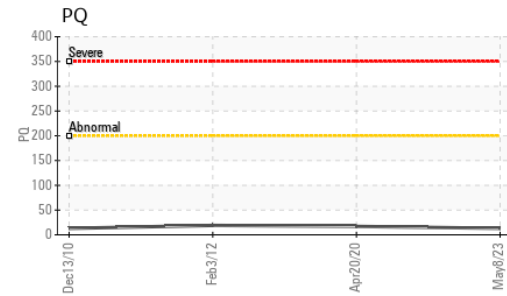
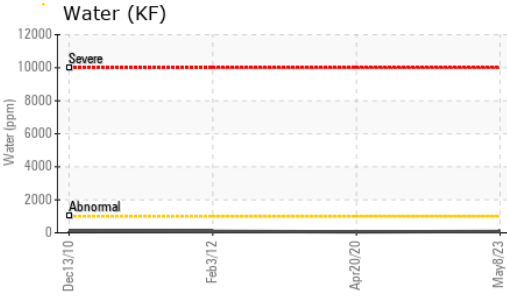
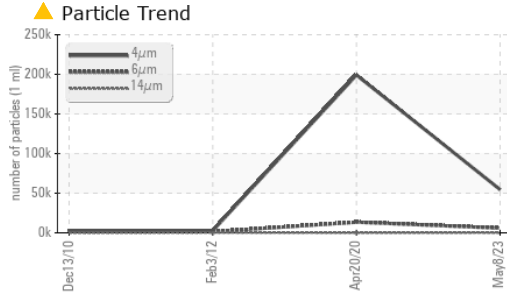
CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+30	4	4
Sodium	ppm	ASTM D5185m		0	<1
Potassium	ppm	ASTM D5185m	>20	1	0
Water	%	ASTM D6304	>0.1	0.008	0.005
ppm Water	ppm	ASTM D6304	>1000	81	58.6

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		54564	199074	2730
Particles >6µm	ASTM D7647	>5000	▲ 5939	▲ 13484	▲ 1487
Particles >14µm	ASTM D7647	>640	137	45	▲ 253
Particles >21µm	ASTM D7647	>160	21	6	▲ 85
Particles >38µm	ASTM D7647	>40	0	0	▲ 13
Particles >71µm	ASTM D7647	>10	0	0	▲ 1
Oil Cleanliness	ISO 4406 (c)	>--/19/16	▲ 23/20/14	▲ 25/21/13	▲ 19/18/15

OIL ANALYSIS REPORT

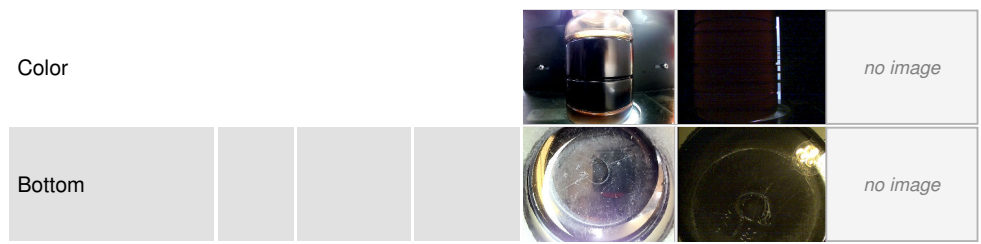


FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 0.25	0.39	0.416	0.497

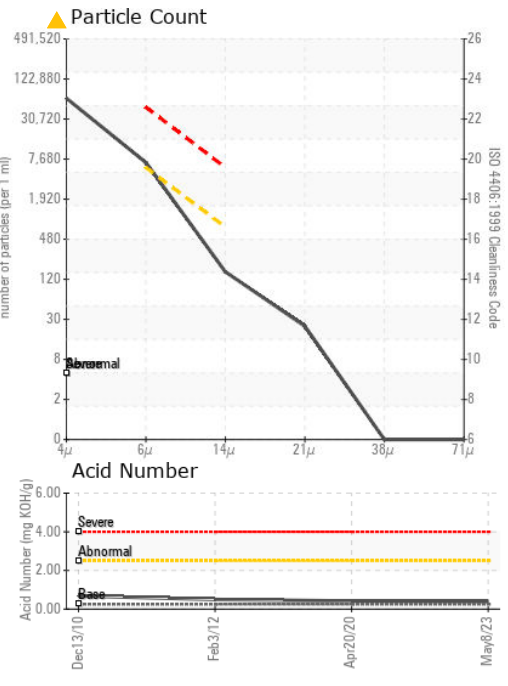
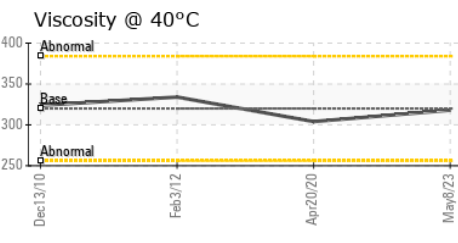
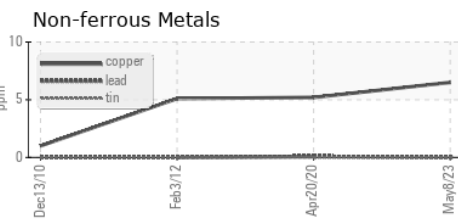
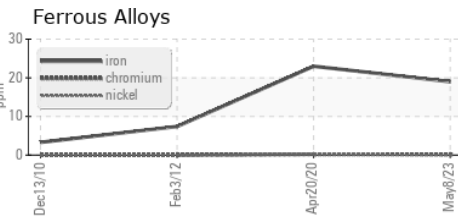
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual NONE	LIGHT	LIGHT	NONE
Yellow Metal	scalar	*Visual NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual NONE	NONE	NONE	NONE
Silt	scalar	*Visual NONE	LIGHT	NONE	NONE
Debris	scalar	*Visual NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual NONE	NONE	NONE	NONE
Appearance	scalar	*Visual NORML	NORML	NORML	NORML
Odor	scalar	*Visual NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual >0.1	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	318	304	334.0

SAMPLE IMAGES



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MHI021611 **Received** : 24 Nov 2023
Lab Number : 06016365 **Diagnosed** : 28 Nov 2023
Unique Number : 10755509 **Diagnostician** : Jonathan Hester
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

DIAMOND WTG - WHITE DEER SITE - MPS WD
 PO BOX 872
 WHITE DEER, TX
 US 79097
 Contact: WESLEY CAMPBELL
 wesley.campbell@diamondwtg.com
 T: (806)883-1051
 F: (806)883-2004

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)