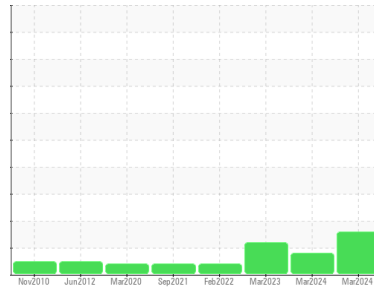


# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id  
**E-02**  
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.

### 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.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>MHI021590</b>	MHI021616	MHI021546
Sample Date	Client Info		<b>04 Mar 2024</b>	04 Mar 2024	17 Mar 2023
Machine Age	hrs	Client Info	<b>0</b>	0	0
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>200	<b>30</b>	18	17	
Iron	ppm	ASTM D5185m	>200	<b>23</b>	12	15
Chromium	ppm	ASTM D5185m	>3	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>30	<b>&lt;1</b>	0	0
Lead	ppm	ASTM D5185m	>15	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>75	<b>2</b>	11	5
Tin	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Antimony	ppm	ASTM D5185m	>5	<b>---</b>	---	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>0</b>	0
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	2
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1
Magnesium	ppm	ASTM D5185m	90	<b>14</b>	4
Calcium	ppm	ASTM D5185m		<b>&lt;1</b>	<1
Phosphorus	ppm	ASTM D5185m		<b>10</b>	162
Zinc	ppm	ASTM D5185m		<b>13</b>	21
Sulfur	ppm	ASTM D5185m		<b>21613</b>	11075

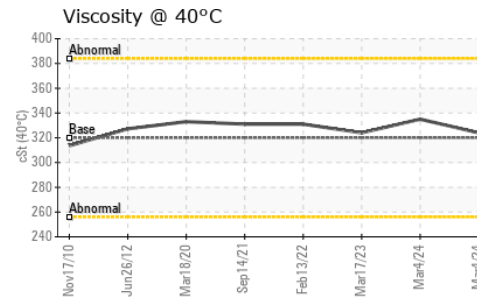
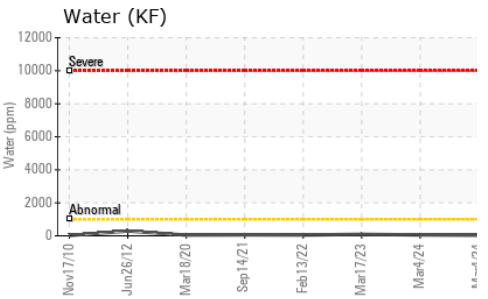
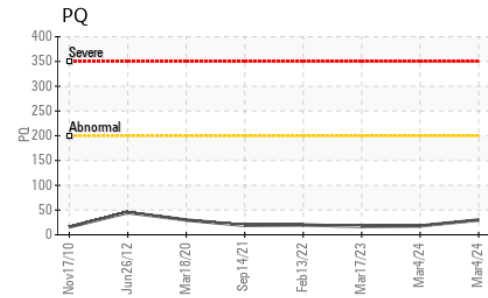
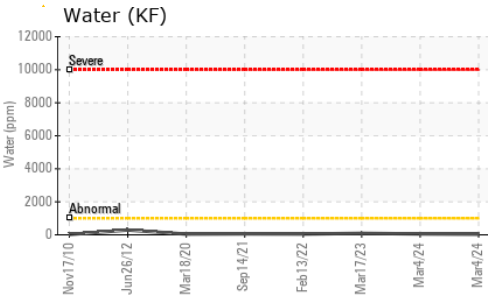
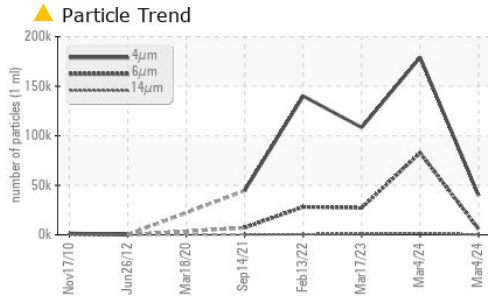
## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+30	<b>2</b>	<1
Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	0
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	<1
Water	%	ASTM D6304	>0.1	<b>0.003</b>	0.005
ppm Water	ppm	ASTM D6304	>1000	<b>30</b>	53

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>179094</b>	39743	108364
Particles >6µm	ASTM D7647	>5000	<b>82664</b>	5901	27013
Particles >14µm	ASTM D7647	>640	<b>1477</b>	254	797
Particles >21µm	ASTM D7647	>160	<b>233</b>	60	118
Particles >38µm	ASTM D7647	>40	<b>9</b>	1	1
Particles >71µm	ASTM D7647	>10	<b>2</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16	<b>25/24/18</b>	22/20/15	24/22/17

# OIL ANALYSIS REPORT

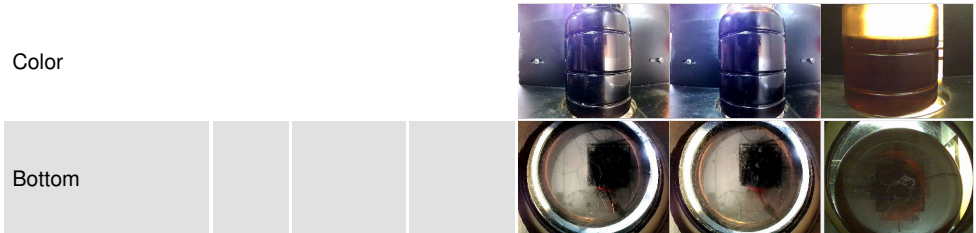


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.25	<b>0.39</b>	0.70	0.77

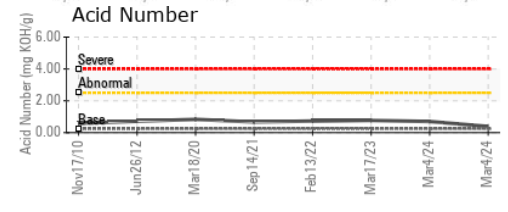
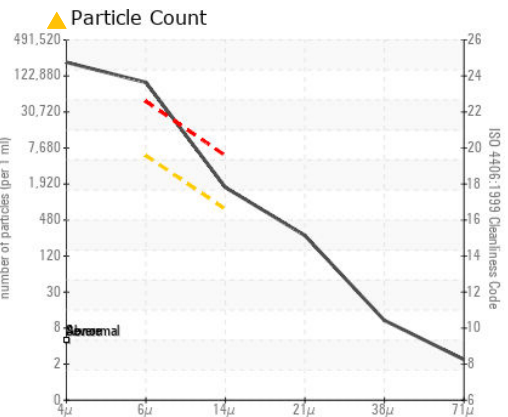
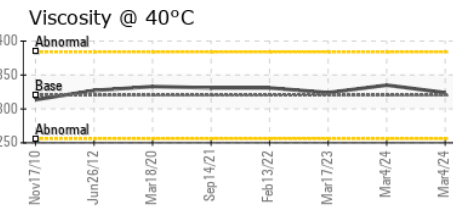
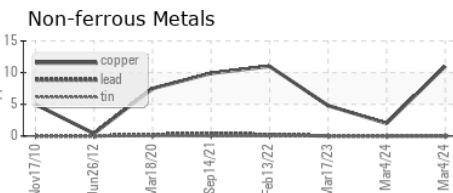
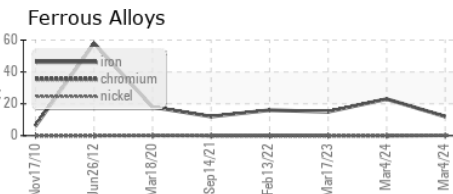
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	<b>324</b>	335	324

SAMPLE IMAGES		method	limit/base	current	history1	history2
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## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MHI021590 **Received** : 10 Jun 2024  
**Lab Number** : 06204596 **Tested** : 12 Jun 2024  
**Unique Number** : 11072057 **Diagnosed** : 12 Jun 2024 - Angela Borella  
**Test Package** : IND 2 ( Additional Tests: KF, PQ, PrtCont )

**DIAMOND WTG - WHITE DEER SITE - MPS WD**  
 PO BOX 872  
 WHITE DEER, TX  
 US 79097

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Contact: WESLEY CAMPBELL  
 wesley.campbell@diamonddwtg.com

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

T: (806)883-1051

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: (806)883-2004