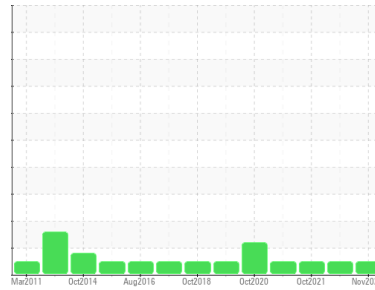


# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**A503 (S/N 6410-05)**

Component  
**Wind Turbine Gearbox**

Fluid  
**MOBIL MOBILGEAR SHC XMP 320 (74 GAL)**

## 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		<b>MHI026270</b>	MHI017497	MHI017699
Sample Date	Client Info		<b>03 Nov 2023</b>	05 Oct 2022	15 Oct 2021
Machine Age	hrs	Client Info	<b>0</b>	0	0
Oil Age	hrs	Client Info	<b>92860</b>	86310	80457
Oil Changed	Client Info		<b>Not Changed</b>	Not Changed	Not Changed
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>200	<b>11</b>	8	23	
Iron	ppm	ASTM D5185m	>200	<b>23</b>	25	20
Chromium	ppm	ASTM D5185m	>3	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>3	<b>0</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>	<1	<1
Lead	ppm	ASTM D5185m	>15	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>75	<b>4</b>	1	1
Tin	ppm	ASTM D5185m	>10	<b>0</b>	<1	<1
Antimony	ppm	ASTM D5185m	>5	<b>---</b>	---	0
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	0	<b>0</b>	1	4
Barium	ppm	ASTM D5185m		<b>7</b>	0	0
Molybdenum	ppm	ASTM D5185m	0	<b>0</b>	0	0
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>0</b>	0	0
Calcium	ppm	ASTM D5185m	0	<b>&lt;1</b>	0	0
Phosphorus	ppm	ASTM D5185m	485	<b>337</b>	410	372
Zinc	ppm	ASTM D5185m	0	<b>2</b>	0	<1
Sulfur	ppm	ASTM D5185m		<b>3534</b>	4590	3395

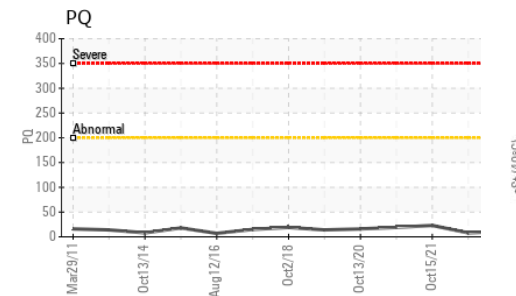
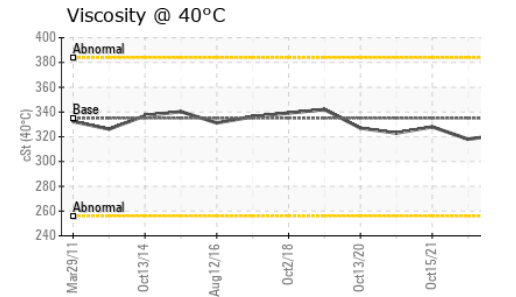
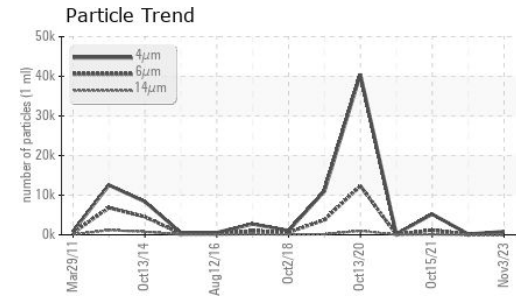
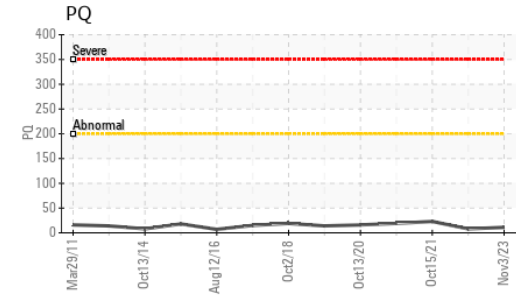
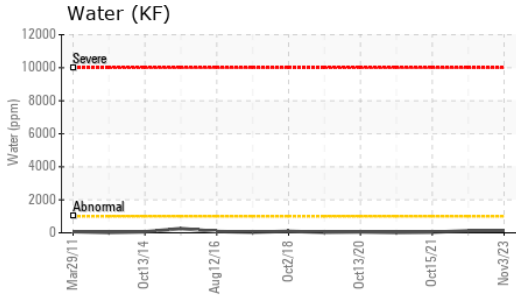
## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>+30	<b>&lt;1</b>	2	2
Sodium	ppm	ASTM D5185m	>15	<b>0</b>	<1	0
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Water	%	ASTM D6304	>0.1	<b>0.013</b>	0.012	0.003
ppm Water	ppm	ASTM D6304	>1000	<b>139.7</b>	121.9	38.7

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>806</b>	186	5212
Particles >6µm	ASTM D7647	>5000	<b>91</b>	46	1186
Particles >14µm	ASTM D7647	>640	<b>15</b>	11	114
Particles >21µm	ASTM D7647	>160	<b>6</b>	5	36
Particles >38µm	ASTM D7647	>40	<b>0</b>	0	0
Particles >71µm	ASTM D7647	>10	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16	<b>17/14/11</b>	15/13/11	20/17/14

# OIL ANALYSIS REPORT

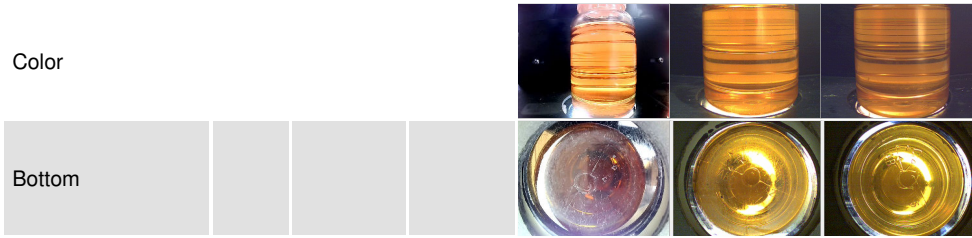


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.85	<b>0.75</b>	0.82	0.741

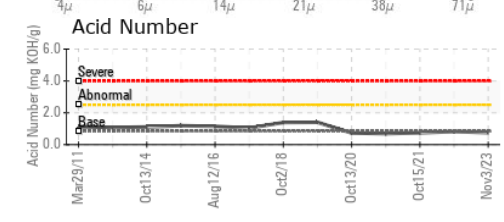
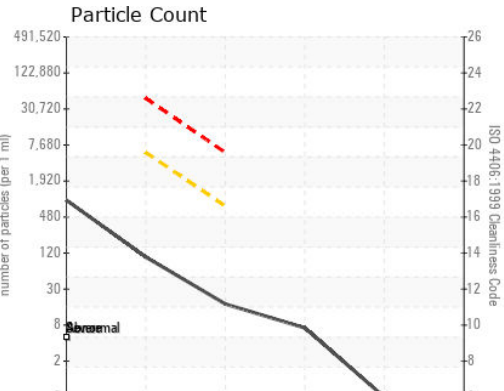
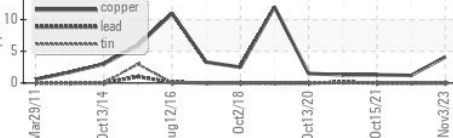
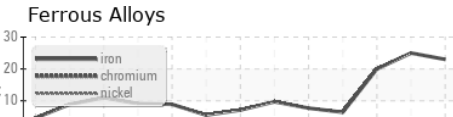
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
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	335	<b>322</b>	318	328

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



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MH1026270 **Received** : 16 Nov 2023  
**Lab Number** : **06009627** **Diagnosed** : 19 Nov 2023  
**Unique Number** : 10743389 **Diagnostician** : Don Baldrige  
**Test Package** : IND 2 ( Additional Tests: KF, PQ, PrtCount )

**DIAMOND WTG - DILLON**  
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DESERT HOT SPRINGS, CA  
US 92240  
Contact: DANIEL BOYD  
daniel.boyd@diamondwtg.com  
T: (760)329-7171  
F: (760)329-7122

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)