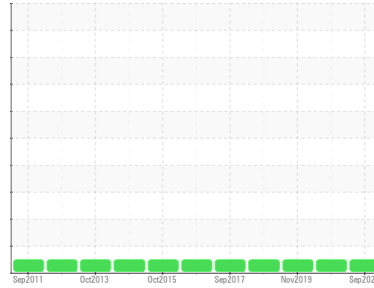


# OIL ANALYSIS REPORT

## Sample Rating Trend



**NORMAL**



Machine Id  
**D-29 (S/N 7403-07)**

Component  
**Wind Turbine Gearbox**

Fluid  
**MOBIL MOBILGEAR SHC XMP 320 (--- 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>MHI025352</b>	MHI025944	MHI019592
Sample Date	Client Info			<b>13 Sep 2021</b>	21 Sep 2020	07 Nov 2019
Machine Age	hrs	Client Info		<b>0</b>	0	0
Oil Age	hrs	Client Info		<b>89606</b>	83342	62365
Oil Changed	Client Info			<b>Not Changed</b>	Not Changed	Not Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

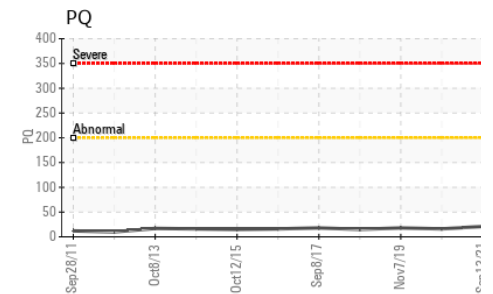
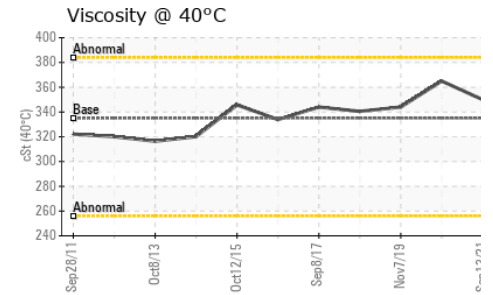
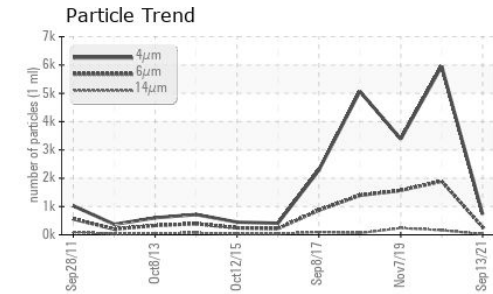
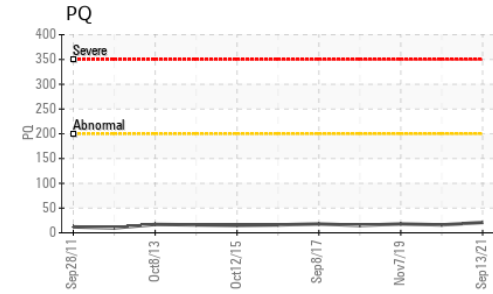
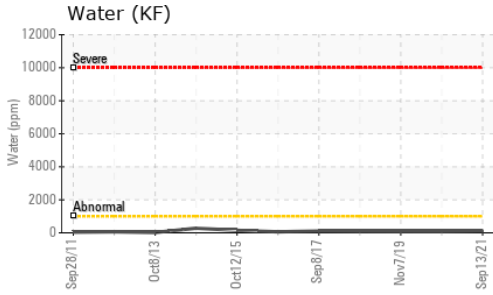
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>200	<b>21</b>	16	18
Iron	ppm	ASTM D5185m	>200	<b>4</b>	3	3
Chromium	ppm	ASTM D5185m		<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m		<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Lead	ppm	ASTM D5185m		<b>0</b>	0	<1
Copper	ppm	ASTM D5185m	>75	<b>1</b>	<1	1
Tin	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Antimony	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	<b>4</b>	4	<1
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	0	<b>&lt;1</b>	<1	0
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Calcium	ppm	ASTM D5185m	0	<b>0</b>	<1	<1
Phosphorus	ppm	ASTM D5185m	485	<b>439</b>	416	355
Zinc	ppm	ASTM D5185m	0	<b>15</b>	10	5
Sulfur	ppm	ASTM D5185m		<b>3898</b>	3756	1257

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+30	<b>&lt;1</b>	3	2
Sodium	ppm	ASTM D5185m	>15	<b>0</b>	0	<1
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0	<1
Water	%	ASTM D6304	>0.1	<b>0.011</b>	0.007	0.007
ppm Water	ppm	ASTM D6304	>1000	<b>114.2</b>	72.2	78.6

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		<b>726</b>	5958	3387
Particles >6µm		ASTM D7647	>5000	<b>275</b>	1891	1567
Particles >14µm		ASTM D7647	>640	<b>26</b>	161	239
Particles >21µm		ASTM D7647	>160	<b>6</b>	36	67
Particles >38µm		ASTM D7647	>40	<b>0</b>	2	1
Particles >71µm		ASTM D7647	>10	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>--/19/16	<b>17/15/12</b>	20/18/15	19/18/15

# OIL ANALYSIS REPORT

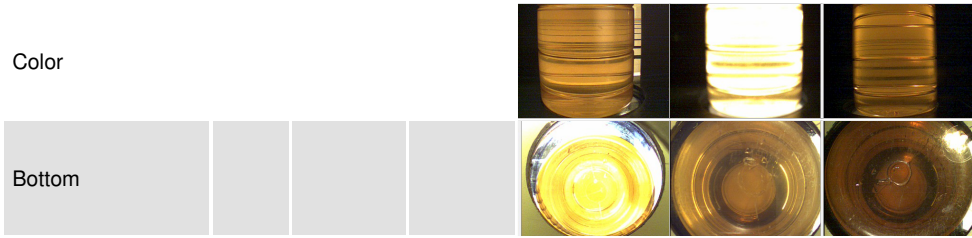


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.85	<b>1.268</b>	1.199	1.227

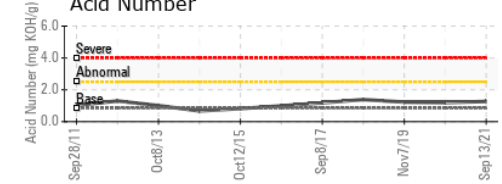
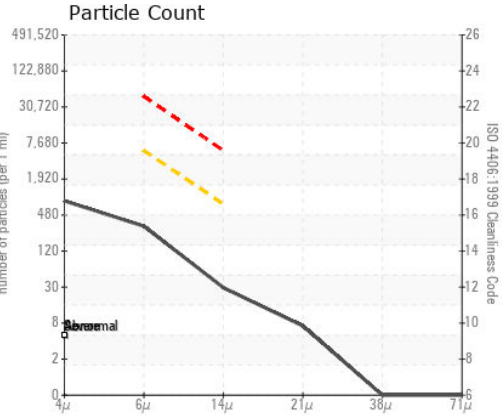
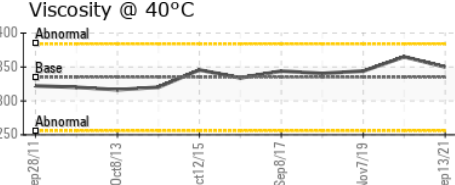
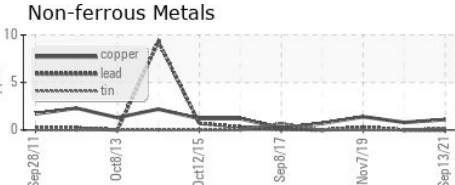
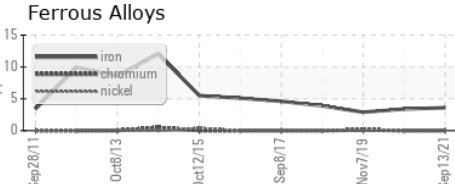
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	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>350</b>	365	344

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



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : MH1025352 Received : 11 Oct 2021  
 Lab Number : 05370369 Tested : 12 Oct 2021  
 Unique Number : 9694480 Diagnosed : 12 Oct 2021 - Jonathan Hester  
 Test Package : IND 2 ( Additional Tests: KF, PQ, PrtCount )

DIAMOND WTG - BULL CREEK - MPS BC  
 PO BOX 545  
 O'DONNELL, TX  
 US 79351  
 Contact: GARY GRANT  
 gary.grant@diamondwtg.com  
 T: (806)439-6660  
 F: (806)439-6659

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)