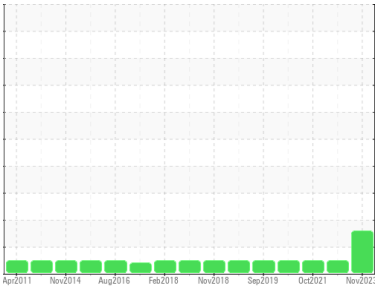
DIAMOND WTG ENGINEERING & SERVICES, INC.
a group company of MITSUBISHI HEAVY INDUSTRIES, LTD.

PROBLEM SUMMARY

Sample Rating Trend

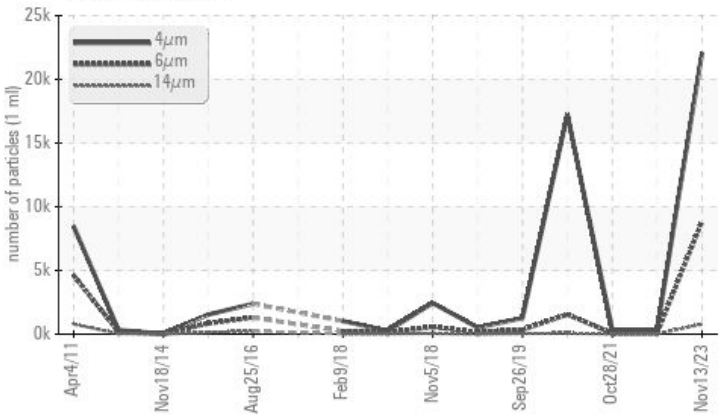


ISO

Machine Id
A103 (S/N 6409-11)
Component
Wind Turbine Gearbox
Fluid
MOBIL MOBILGEAR SHC XMP 320 (74 GAL)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

No corrective action is recommended at this time.
Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				ATTENTION	NORMAL	NORMAL
Particles >6µm		ASTM D7647	>5000	▲ **8830**	77	74
Particles >14µm		ASTM D7647	>640	▲ **778**	12	8
Particles >21µm		ASTM D7647	>160	▲ **199**	3	2
Oil Cleanliness		ISO 4406 (c)	>--/19/16	▲ **22/20/17**	16/13/11	16/13/10

Customer Id: DIADIL
Sample No.: MHI026276
Lab Number: 06015056
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldridge +1
don.b505@comcast.net

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

26 Oct 2022 Diag: Doug Bogart

NORMAL

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

view report

28 Oct 2021 Diag: Jonathan Hester

NORMAL

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

view report

23 Oct 2020 Diag: Don Baldridge

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 are acceptable. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

DIAMOND WTG ENGINEERING & SERVICES, INC.
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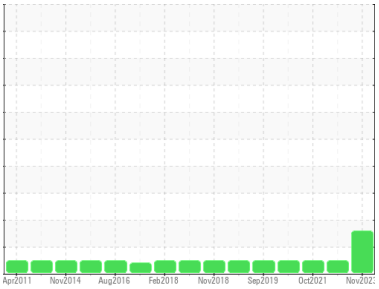
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
A103 (S/N 6409-11)
Component
Wind Turbine Gearbox
Fluid
MOBIL MOBILGEAR SHC XMP 320 (74 GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. 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		**MHI026276**	MHI025361	MHI018312
Sample Date		Client Info		**13 Nov 2023**	26 Oct 2022	28 Oct 2021
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**96661**	90190	84477
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ATTENTION**	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>200	**8**	10	17
Iron	ppm	ASTM D5185m	>200	**2**	3	3
Chromium	ppm	ASTM D5185m	>3	**<1**	0	0
Nickel	ppm	ASTM D5185m	>3	**<1**	1	0
Titanium	ppm	ASTM D5185m	>10	**<1**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>30	**2**	0	0
Lead	ppm	ASTM D5185m	>15	**0**	<1	0
Copper	ppm	ASTM D5185m	>75	**12**	5	9
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		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**0**	0	0
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m	0	**<1**	0	0
Manganese	ppm	ASTM D5185m		**0**	<1	<1
Magnesium	ppm	ASTM D5185m		**<1**	<1	0
Calcium	ppm	ASTM D5185m	0	**<1**	<1	0
Phosphorus	ppm	ASTM D5185m	485	**415**	386	398
Zinc	ppm	ASTM D5185m	0	**4**	10	10
Sulfur	ppm	ASTM D5185m		**4363**	4927	3402

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+30	**33**	<1	0
Sodium	ppm	ASTM D5185m	>15	**<1**	<1	0
Potassium	ppm	ASTM D5185m	>20	**<1**	2	0
Water	%	ASTM D6304	>0.1	**0.016**	0.008	0.011
ppm Water	ppm	ASTM D6304	>1000	**164**	87.3	110.9

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**22073**	327	354
Particles >6µm		ASTM D7647	>5000	▲ **8830**	77	74
Particles >14µm		ASTM D7647	>640	▲ **778**	12	8
Particles >21µm		ASTM D7647	>160	▲ **199**	3	2
Particles >38µm		ASTM D7647	>40	**11**	0	0
Particles >71µm		ASTM D7647	>10	**6**	0	0
Oil Cleanliness		ISO 4406 (c)	>--/19/16	▲ **22/20/17**	16/13/11	16/13/10

OIL ANALYSIS REPORT

DIAMOND WTG ENGINEERING & SERVICES, INC.
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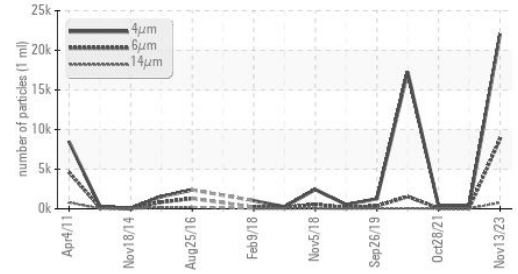
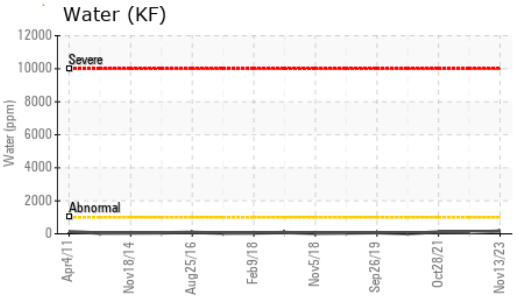
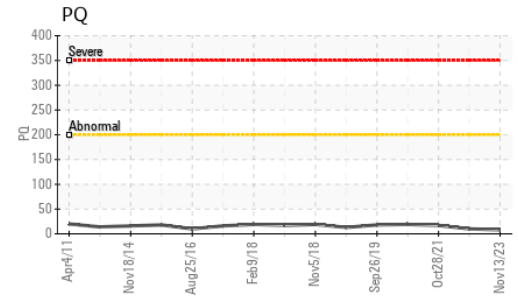
Particle Trend



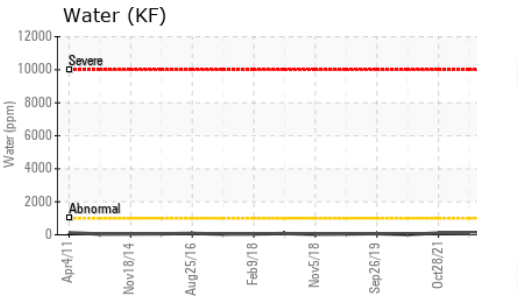
Water (KF)



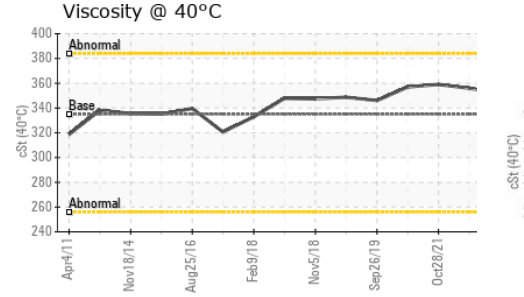
PQ



Water (KF)



Viscosity @ 40°C

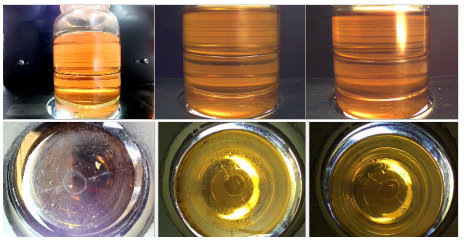


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.85	**1.10**	1.10	1.073

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	NONE
Debris	scalar	*Visual	NONE	**LIGHT**	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

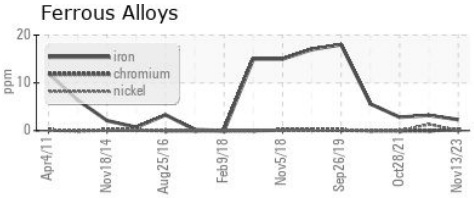
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	335	**352**	356	359

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

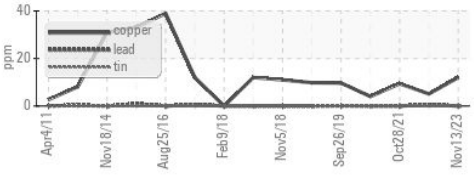


GRAPHS

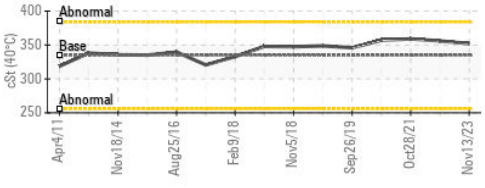
Ferrous Alloys



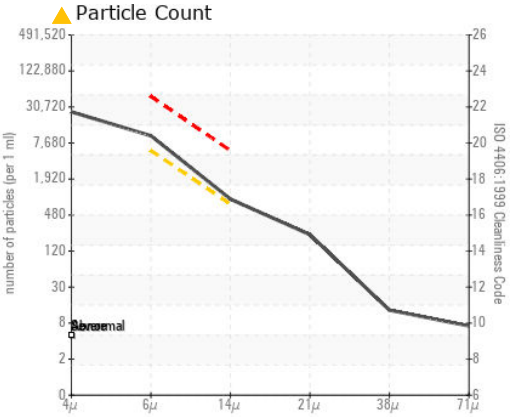
Non-ferrous Metals



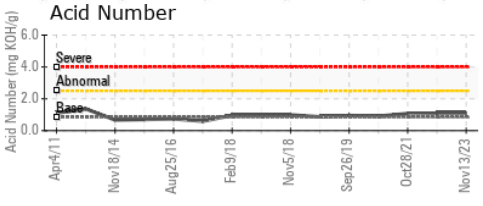
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MHI026276 **Received** : 22 Nov 2023
Lab Number : 06015056 **Diagnosed** : 26 Nov 2023
Unique Number : 10754200 **Diagnostician** : Don Baldridge
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)

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