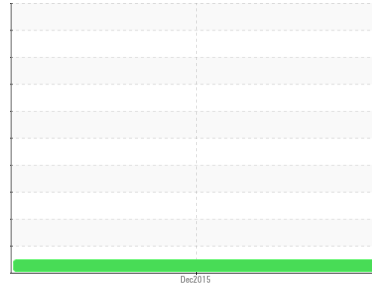


OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
NOT GIVEN MHI007425 (S/N UNKNOWN - NO INFO ON BOTTLE)

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 | | | MHI007425 | --- | --- |
| Sample Date | Client Info | | | 02 Dec 2015 | --- | --- |
| Machine Age | hrs | Client Info | | 45468 | --- | --- |
| Oil Age | hrs | Client Info | | 0 | --- | --- |
| Oil Changed | Client Info | | | N/A | --- | --- |
| Sample Status | | | | NORMAL | --- | --- |

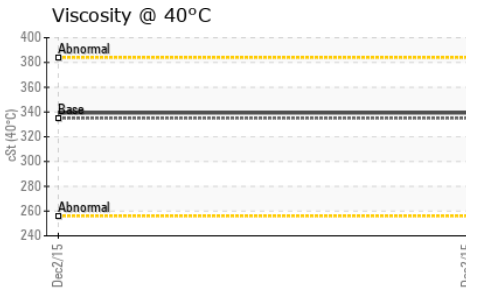
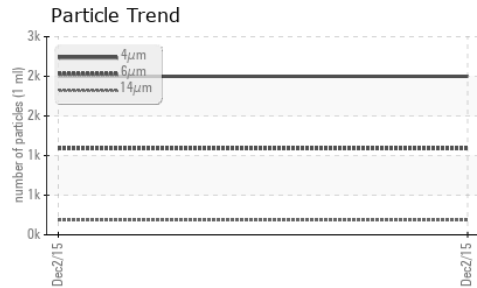
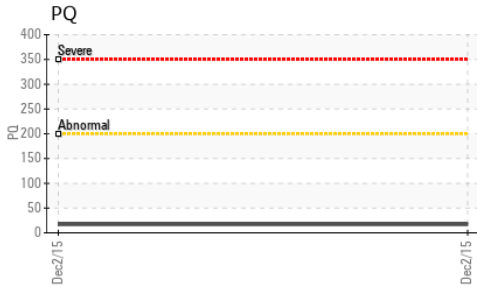
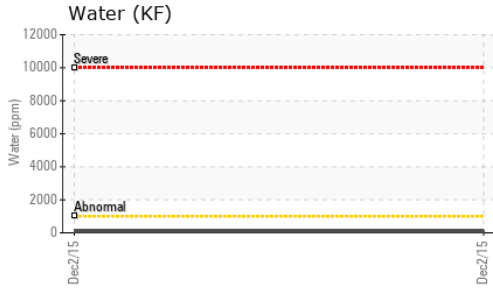
| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| PQ | | ASTM D8184 | >200 | 17.0 | --- | --- |
| Iron | ppm | ASTM D5185m | >200 | 7 | --- | --- |
| Chromium | ppm | ASTM D5185m | | <1 | --- | --- |
| Nickel | ppm | ASTM D5185m | | 0 | --- | --- |
| Titanium | ppm | ASTM D5185m | | 0 | --- | --- |
| Silver | ppm | ASTM D5185m | | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m | | <1 | --- | --- |
| Lead | ppm | ASTM D5185m | | 1 | --- | --- |
| Copper | ppm | ASTM D5185m | >75 | 6 | --- | --- |
| Tin | ppm | ASTM D5185m | | 0 | --- | --- |
| Antimony | ppm | ASTM D5185m | | 0 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | --- | --- |
| Cadmium | ppm | ASTM D5185m | | 0 | --- | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 0 | 0 | --- | --- |
| Barium | ppm | ASTM D5185m | | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | 0 | 0 | --- | --- |
| Manganese | ppm | ASTM D5185m | | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185m | | 0 | --- | --- |
| Calcium | ppm | ASTM D5185m | 0 | 0 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 485 | 322 | --- | --- |
| Zinc | ppm | ASTM D5185m | 0 | 12 | --- | --- |
| Sulfur | ppm | ASTM D5185m | | 3750 | --- | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m | >+30 | <1 | --- | --- |
| Sodium | ppm | ASTM D5185m | >15 | 0 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | 0 | --- | --- |
| Water | % | ASTM D6304 | >0.1 | 0.009 | --- | --- |
| ppm Water | ppm | ASTM D6304 | >1000 | 90 | --- | --- |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|-------------------|--|--------------|------------|-----------------|----------|----------|
| Particles >4µm | | ASTM D7647 | | 2000 | --- | --- |
| Particles >6µm | | ASTM D7647 | >5000 | 1089 | --- | --- |
| Particles >14µm | | ASTM D7647 | >640 | 185 | --- | --- |
| Particles >21µm | | ASTM D7647 | >160 | 62 | --- | --- |
| Particles >38µm | | ASTM D7647 | >40 | 9 | --- | --- |
| Particles >71µm | | ASTM D7647 | >10 | 0 | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >--/19/16 | 18/17/15 | --- | --- |

OIL ANALYSIS REPORT



| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.85 | 1.16 | --- | --- |

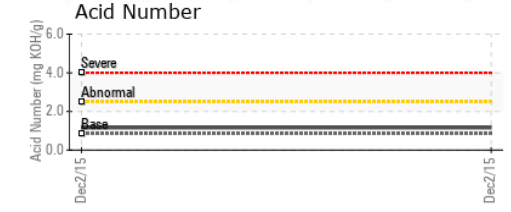
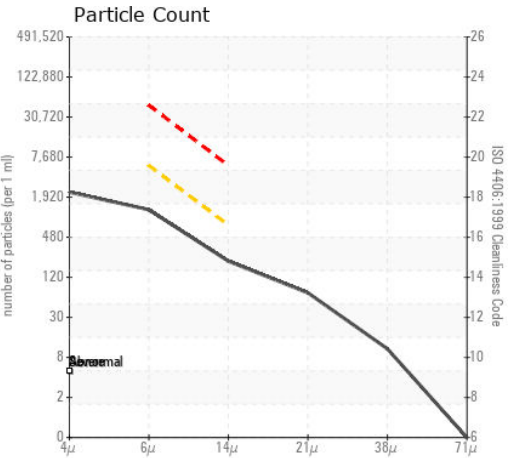
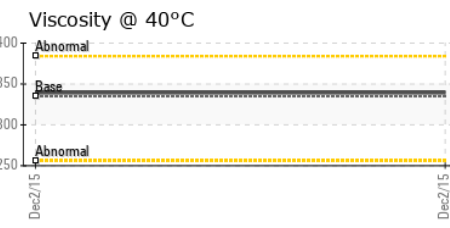
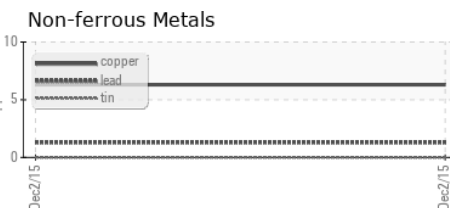
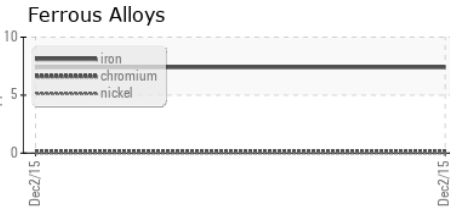
| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|---------|------------|--------------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Precipitate | scalar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

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|------------------|-----|-----------|------------|--------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 335 | 339.3 | --- | --- |

| SAMPLE IMAGES | | method | limit/base | current | history1 | history2 |
|---------------|--|--------|------------|---------|----------|----------|
|---------------|--|--------|------------|---------|----------|----------|

| | | | |
|--------|--|----------|----------|
| Color | | no image | no image |
| Bottom | | no image | no image |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : MH1007425 Received : 07 Jan 2016
 Lab Number : 03896679 Tested : 08 Jan 2016
 Unique Number : 7256970 Diagnosed : 08 Jan 2016 - Jonathan Hester
 Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

DIAMOND WTG - DILLON
 P.O. BOX 880
 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)