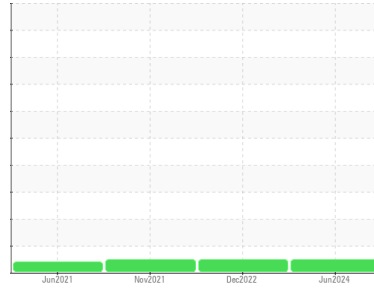




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

88-19

Machine Id

Manipulator PTI A-axis west (S/N SC006113)

Component

Planetary

Fluid

MOBIL MOBILGEAR 600 XP 220 (2 LTR)

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 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 | | WC0910121 | WC0701615 | WC0565772 |
| Sample Date | Client Info | | 14 Jun 2024 | 12 Dec 2022 | 01 Nov 2021 |
| Machine Age | hrs | Client Info | 0 | 0 | 0 |
| Oil Age | hrs | Client Info | 0 | 0 | 0 |
| Oil Changed | Client Info | | N/A | N/A | N/A |
| Sample Status | | | NORMAL | NORMAL | NORMAL |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|------------|------------------|--------------|----------|----------|
| PQ | ASTM D8184 | | 23 | 14 | --- |
| Iron | ppm | ASTM D5185m >150 | 5 | 8 | 5 |
| Chromium | ppm | ASTM D5185m >10 | 0 | 0 | <1 |
| Nickel | ppm | ASTM D5185m >10 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m >25 | <1 | 0 | 0 |
| Lead | ppm | ASTM D5185m >100 | 2 | 2 | 2 |
| Copper | ppm | ASTM D5185m >50 | 12 | 12 | 9 |
| Tin | ppm | ASTM D5185m >10 | <1 | <1 | <1 |
| Antimony | ppm | ASTM D5185m >5 | --- | --- | 0 |
| Vanadium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | 0 | 0 | <1 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|-------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 53 | 48 | 80 |
| Barium | ppm | ASTM D5185m | 1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | 1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | <1 | 0 | 0 |
| Calcium | ppm | ASTM D5185m | 1 | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | 471 | 431 | 421 |
| Zinc | ppm | ASTM D5185m | 13 | 0 | 0 |
| Sulfur | ppm | ASTM D5185m | 17787 | 16785 | 12591 |

CONTAMINANTS

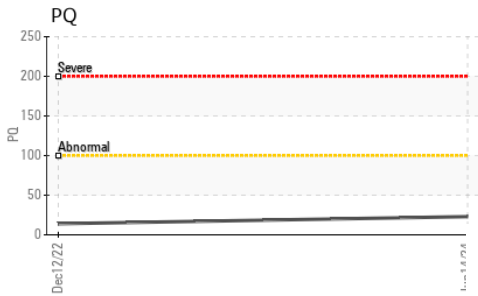
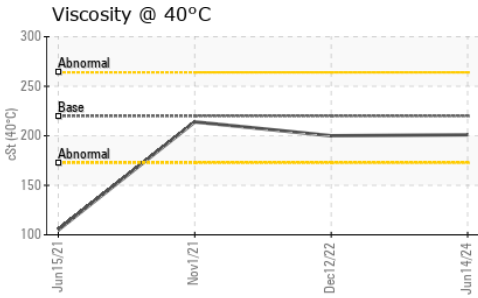
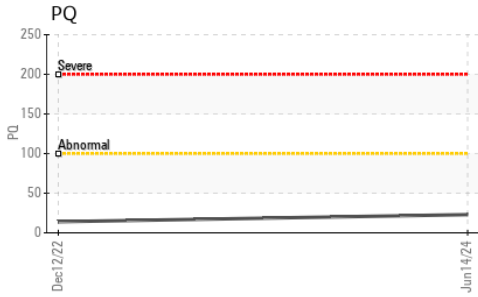
| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m >50 | <1 | <1 | 0 |
| Sodium | ppm | ASTM D5185m | 3 | 0 | <1 |
| Potassium | ppm | ASTM D5185m >20 | 4 | <1 | <1 |
| Water | % | ASTM D6304 >0.1 | NEG | NEG | NEG |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.93 | 0.91 | 0.966 |



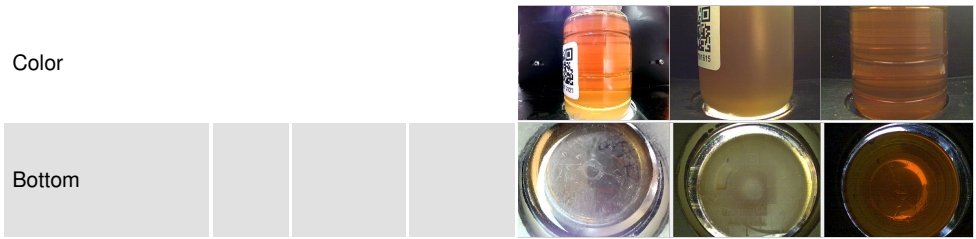
OIL ANALYSIS REPORT



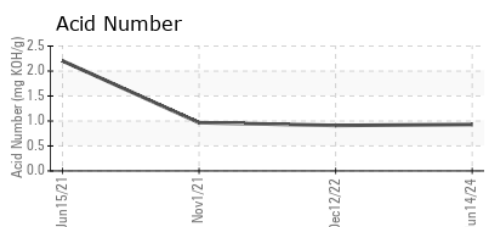
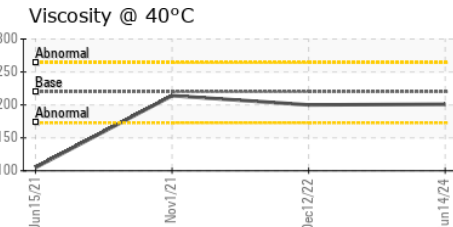
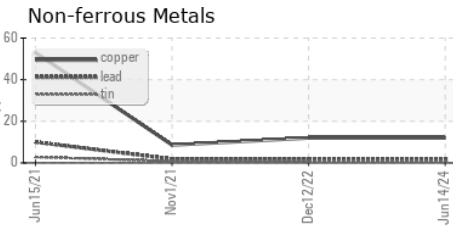
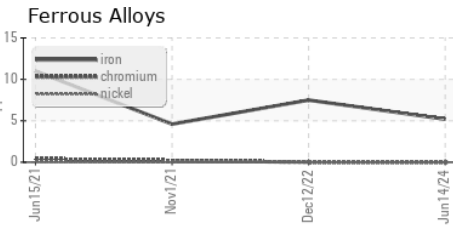
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE |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

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 220 | 201 | 214 |

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0910121 **Received** : 20 Jun 2024
Lab Number : 06215866 **Tested** : 24 Jun 2024
Unique Number : 11088730 **Diagnosed** : 24 Jun 2024 - Jonathan Hester
Test Package : PLANT

THE BOEING COMPANY
 5400 AIRFRAME DR
 NORTH CHARLESTON, SC
 US 29418
 Contact: DAN HARRIS
 DANIEL.R.HARRIS2@BOEING.COM

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)

T: (843)730-0805

F: