

## **OIL ANALYSIS REPORT**

Sample Rating Trend

WATER

### Area SMART OIL 6000 [32050R] HERTZ VD004311 - MRS-CMC

Component Compressor

### DIAGNOSIS

#### Recommendation

We advise that you follow the water drain-off procedure for this component. The filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

#### Wear

All component wear rates are normal.

#### Contamination

Free water present. Moderate concentration of visible dirt/debris present in the oil.

#### Fluid Condition

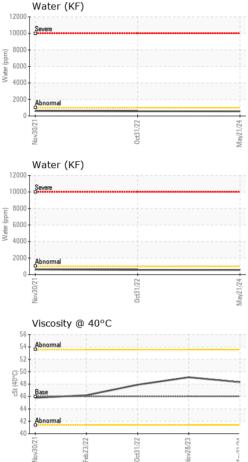
The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

| SAMPLE INFORM                                                                                                                                                                | IATION                                                             | method                                                                                                                                                                                                                                                                                                                                                                                                                                          | limit/base                                    | current                                                                                                                                                                                                                                                                                                                                                                                                                                                        | history1                                                                                                                                                                            | history2                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Sample Number                                                                                                                                                                |                                                                    | Client Info                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | UHK06205599                                                                                                                                                                                                                                                                                                                                                                                                                                                    | UHK06023849                                                                                                                                                                         | UHK0569344                                                                                                                                       |
| Sample Date                                                                                                                                                                  |                                                                    | Client Info                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | 21 May 2024                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 28 Nov 2023                                                                                                                                                                         | 31 Oct 2022                                                                                                                                      |
| Machine Age                                                                                                                                                                  | hrs                                                                | Client Info                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | 3405                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3373                                                                                                                                                                                | 2329                                                                                                                                             |
| Oil Age                                                                                                                                                                      | hrs                                                                | Client Info                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | 33                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1347                                                                                                                                                                                | 614                                                                                                                                              |
| Oil Changed                                                                                                                                                                  |                                                                    | Client Info                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | Not Changd                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Changed                                                                                                                                                                             | Not Changd                                                                                                                                       |
| Sample Status                                                                                                                                                                |                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                               | ABNORMAL                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NORMAL                                                                                                                                                                              | ATTENTION                                                                                                                                        |
| WEAR METALS                                                                                                                                                                  |                                                                    | method                                                                                                                                                                                                                                                                                                                                                                                                                                          | limit/base                                    | current                                                                                                                                                                                                                                                                                                                                                                                                                                                        | history1                                                                                                                                                                            | history2                                                                                                                                         |
| Iron                                                                                                                                                                         | ppm                                                                | ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                                     | >50                                           | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                                                                                                                                                                   | 2                                                                                                                                                |
| Chromium                                                                                                                                                                     | ppm                                                                | ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                                     | >10                                           | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                                                                                                                                                                   | 0                                                                                                                                                |
| Nickel                                                                                                                                                                       | ppm                                                                | ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                                                                                                                                                                   | <1                                                                                                                                               |
| Titanium                                                                                                                                                                     | ppm                                                                | ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                                                                                                                                                                   | 0                                                                                                                                                |
| Silver                                                                                                                                                                       | ppm                                                                | ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                                                                                                                                                                   | <1                                                                                                                                               |
| Aluminum                                                                                                                                                                     | ppm                                                                | ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                                     | >25                                           | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                                                                                                                                                                   | 0                                                                                                                                                |
| Lead                                                                                                                                                                         | ppm                                                                | ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                                     | >25                                           | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                                                                                                                                                                   | 0                                                                                                                                                |
| Copper                                                                                                                                                                       | ppm                                                                | ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                                     | >50                                           | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <1                                                                                                                                                                                  | 1                                                                                                                                                |
| Tin                                                                                                                                                                          | ppm                                                                | ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                                     | >15                                           | <1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1                                                                                                                                                                                   | 3                                                                                                                                                |
| Antimony                                                                                                                                                                     | ppm                                                                | ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                     |                                                                                                                                                  |
| Vanadium                                                                                                                                                                     | ppm                                                                | ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                                                                                                                                                                   | 0                                                                                                                                                |
| Cadmium                                                                                                                                                                      | ppm                                                                | ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                                                                                                                                                                   | 0                                                                                                                                                |
|                                                                                                                                                                              | le le                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                               | •                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Ŭ                                                                                                                                                                                   | •                                                                                                                                                |
| ADDITIVES                                                                                                                                                                    | <b>h</b> h                                                         | method                                                                                                                                                                                                                                                                                                                                                                                                                                          | limit/base                                    | current                                                                                                                                                                                                                                                                                                                                                                                                                                                        | history1                                                                                                                                                                            | history2                                                                                                                                         |
|                                                                                                                                                                              | ppm                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                 | limit/base                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                     | -                                                                                                                                                |
| ADDITIVES                                                                                                                                                                    |                                                                    | method                                                                                                                                                                                                                                                                                                                                                                                                                                          | limit/base                                    | current                                                                                                                                                                                                                                                                                                                                                                                                                                                        | history1                                                                                                                                                                            | history2                                                                                                                                         |
| ADDITIVES<br>Boron                                                                                                                                                           | ppm                                                                | method<br>ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                                           | limit/base                                    | current<br>0                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <mark>history1</mark><br>0                                                                                                                                                          | history2<br>0                                                                                                                                    |
| ADDITIVES<br>Boron<br>Barium                                                                                                                                                 | ppm<br>ppm                                                         | method<br>ASTM D5185m<br>ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                                            | limit/base                                    | current<br>0<br><1                                                                                                                                                                                                                                                                                                                                                                                                                                             | history1<br>0<br>0                                                                                                                                                                  | history2<br>0<br>0                                                                                                                               |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum                                                                                                                                   | ppm<br>ppm<br>ppm                                                  | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                                             | limit/base                                    | current<br>0<br><1<br>0                                                                                                                                                                                                                                                                                                                                                                                                                                        | history1<br>0<br>0<br>0                                                                                                                                                             | history2<br>0<br>0<br>0                                                                                                                          |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese                                                                                                                      | ppm<br>ppm<br>ppm<br>ppm                                           | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m                                                                                                                                                                                                                                                                                                                                                                              |                                               | current<br>0<br><1<br>0<br><1                                                                                                                                                                                                                                                                                                                                                                                                                                  | history1<br>0<br>0<br>0<br>0<br>0                                                                                                                                                   | history2<br>0<br>0<br>0<br>0<br>0                                                                                                                |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium                                                                                                         | ppm<br>ppm<br>ppm<br>ppm<br>ppm                                    | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m                                                                                                                                                                                                                                                                                                                                                               |                                               | current      0      <1      0      <1      0      <1      0                                                                                                                                                                                                                                                                                                                                                                                                    | history1<br>0<br>0<br>0<br>0<br>0<br>0                                                                                                                                              | history2<br>0<br>0<br>0<br>0<br>0<br>0                                                                                                           |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium                                                                                              | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                             | Method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m                                                                                                                                                                                                                                                                                                                                                |                                               | Current<br>0<br><1<br>0<br><1<br>0<br><1<br>0<br>1                                                                                                                                                                                                                                                                                                                                                                                                             | history1<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0                                                                                                                                    | history2<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0                                                                                                 |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus                                                                                | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | Method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m                                                                                                                                                                                                                                                                                                                                                |                                               | current      0      <1      0      <1      0      <1      560                                                                                                                                                                                                                                                                                                                                                                                                  | history1<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>399                                                                                                                                  | history2<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>524                                                                                               |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc                                                                        | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | Method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m                                                                                                                                                                                                                                                                                                                                 |                                               | Current<br>0<br><1<br>0<br><1<br>0<br><1<br>0<br>1<br>560<br>6                                                                                                                                                                                                                                                                                                                                                                                                 | history1<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>399<br>0                                                                                                                        | history2<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>524<br>0                                                                                     |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur                                                              | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | Method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m                                                                                                                                                                                                                                                                                                                  | 20                                            | current      0      <1      0      <1      0      <1      0      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10      <10 | history1      0      0      0      0      0      0      0      0      0      0      0      0      0      399      0      718      history1      <1                                  | history2    0    0    0    0    0    0    0    0    0    1289    history2    2                                                                   |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS                                              | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m                                                                                                                                                                                                                                                                                                   | 20<br>limit/base                              | current    0    <1    0    <1    0    <1    0    1    560    6    1564    current    1    <1                                                                                                                                                                                                                                                                                                                                                                   | history1      0      0      0      0      0      0      0      0      0      0      0      0      0      0      0      0      399      0      718      history1      <1             | history2      0      0      0      0      0      0      0      0      0      0      0      0      1289      history2      2      0               |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Chosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon                                   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm        | Method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>Method<br>ASTM D5185m                                                                                                                                                                                                                                                                          | 20<br>limit/base                              | current      0      <1      0      <1      0      <1      0      <1      0      1      560      6      1564      current      1                                                                                                                                                                                                                                                                                                                                | history1      0      0      0      0      0      0      0      0      0      0      0      0      0      399      0      718      history1      <1                                  | history2    0    0    0    0    0    0    0    0    0    1289    history2    2                                                                   |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium                         | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm        | Method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br><b>method</b><br>ASTM D5185m<br>ASTM D5185m                                                                                                                                                                                                                                                                   | 20<br>limit/base<br>>25                       | current    0    <1    0    <1    0    <1    0    1    560    6    1564    current    1    <1                                                                                                                                                                                                                                                                                                                                                                   | history1      0      0      0      0      0      0      0      0      0      0      0      0      0      0      0      0      399      0      718      history1      <1      0      | history2      0      0      0      0      0      0      0      0      0      0      0      0      1289      history2      2      0               |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm        | methodASTM D5185mASTM D5185m                                                                                                                                                                             | 20<br>limit/base<br>>25<br>>20                | current    0    <1    0    <1    0    <1    0    1    560    6    1564    current    1    <1    2                                                                                                                                                                                                                                                                                                                                                              | history1      0      0      0      0      0      0      0      0      0      0      0      0      0      0      0      718      history1      <1      0      0      0      0      0 | history2      0      0      0      0      0      0      0      0      0      0      0      0      0      1289      history2      2      0      0 |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>Water   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | method      ASTM D5185m      ASTM D5185m | 20<br>limit/base<br>>25<br>>20<br>>20<br>>0.1 | current    0    <1    0    <1    0    <1    0    1    560    6    1564    current    1    <1    2    0.056                                                                                                                                                                                                                                                                                                                                                     | history1    0    0    0    0    0    0    0    0    0    0    0    0    0    0    718    history1    <1                                                                             | history2      0      0      0      0      0      0      0      0      0      0      0      0      1289      history2      2      0      0      0 |





# **OIL ANALYSIS REPORT**

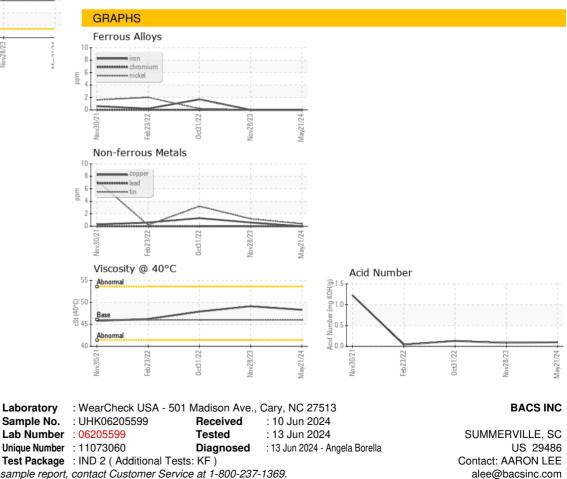


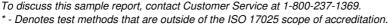
| VISUAL           |             | method    | limit/base | current  | history1 | history2 |
|------------------|-------------|-----------|------------|----------|----------|----------|
| White Metal      | scalar      | *Visual   | NONE       | NONE     | NONE     | NONE     |
| Yellow Metal     | scalar      | *Visual   | NONE       | NONE     | NONE     | NONE     |
| Precipitate      | scalar      | *Visual   | NONE       | NONE     | NONE     | NONE     |
| Silt             | scalar      | *Visual   | NONE       | NONE     | NONE     | NONE     |
| Debris           | scalar      | *Visual   | NONE       | A MODER  | HEAVY    | LIGHT    |
| 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       | 0.2%     | NEG      | 0.2%     |
| Free Water       | scalar      | *Visual   |            | <u> </u> | NEG      | 5.0      |
| FLUID PROPERT    | <b>FIES</b> | method    | limit/base | current  | history1 | history2 |
| Visc @ 40°C      | cSt         | ASTM D445 | 46         | 48.3     | 49.1     | 47.9     |
| SAMPLE IMAGE     | S           | method    | limit/base | current  | history1 | history2 |
| Color            |             |           |            |          |          |          |

Color



Bottom





Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate 12367

Contact/Location: AARON LEE - UCBACSUM

T: (843)821-3487

F: (843)821-3392