



# OIL ANALYSIS REPORT

|                 |                  |
|-----------------|------------------|
| WEAR            | <b>NORMAL</b>    |
| CONTAMINATION   | <b>NORMAL</b>    |
| FLUID CONDITION | <b>ATTENTION</b> |

Machine Id  
**LUMOS 8KW-5**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL ROTELLA T 15W40 (--- QTS)**

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|----------|----------|
| Sample Number  |     | Client Info |           | <b>WC0946744</b>   | ---      | ---      |
| Sample Date    |     | Client Info |           | <b>17 May 2024</b> | ---      | ---      |
| Machine Age    | hrs | Client Info |           | <b>2</b>           | ---      | ---      |
| Oil Age        | hrs | Client Info |           | <b>0</b>           | ---      | ---      |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | ---      | ---      |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | ---      | ---      |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | ---      | ---      |
| Sample Status  |     |             |           | <b>ATTENTION</b>   | ---      | ---      |

## WEAR

All component wear rates are normal.

|              |        |             |      |              |     |     |
|--------------|--------|-------------|------|--------------|-----|-----|
| Iron         | ppm    | ASTM D5185m | >100 | <b>5</b>     | --- | --- |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>0</b>     | --- | --- |
| Nickel       | ppm    | ASTM D5185m | >4   | <b>0</b>     | --- | --- |
| Titanium     | ppm    | ASTM D5185m |      | <b>0</b>     | --- | --- |
| Silver       | ppm    | ASTM D5185m | >3   | <b>&lt;1</b> | --- | --- |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>2</b>     | --- | --- |
| Lead         | ppm    | ASTM D5185m | >40  | <b>&lt;1</b> | --- | --- |
| Copper       | ppm    | ASTM D5185m | >330 | <b>5</b>     | --- | --- |
| Tin          | ppm    | ASTM D5185m | >15  | <b>&lt;1</b> | --- | --- |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | --- | --- |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | --- | --- |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | --- | --- |

## CONTAMINATION

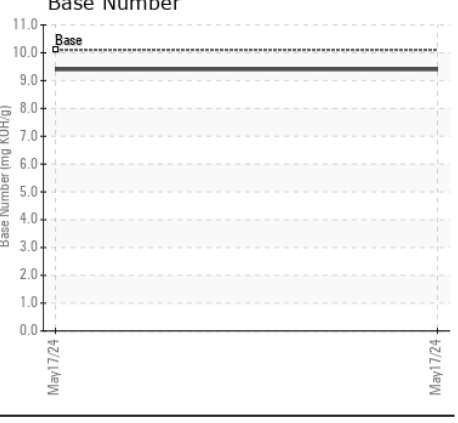
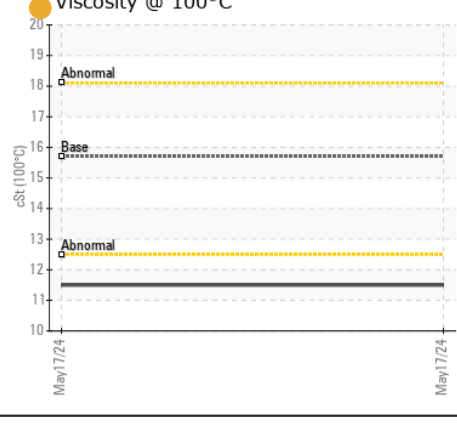
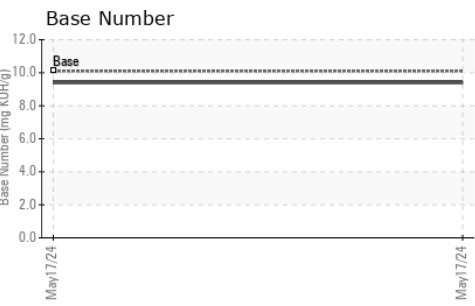
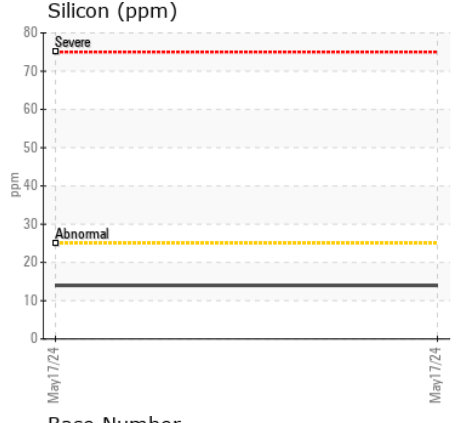
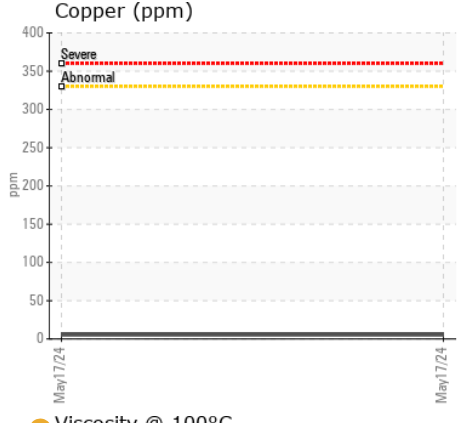
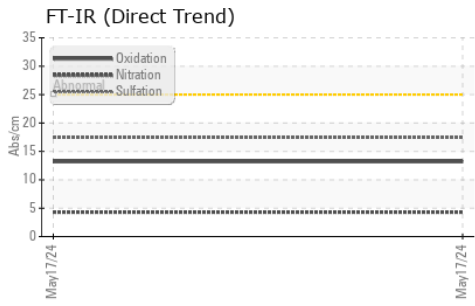
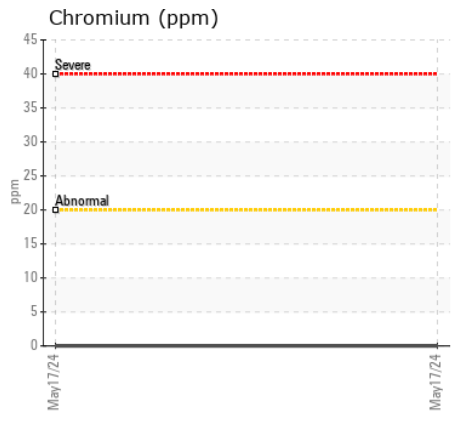
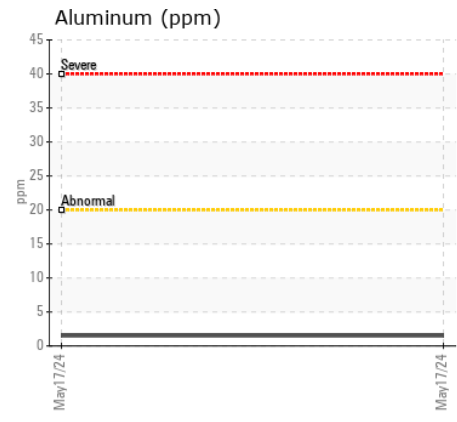
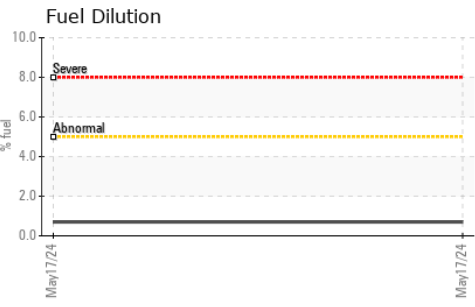
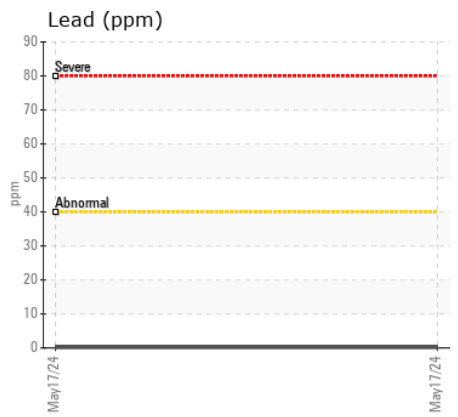
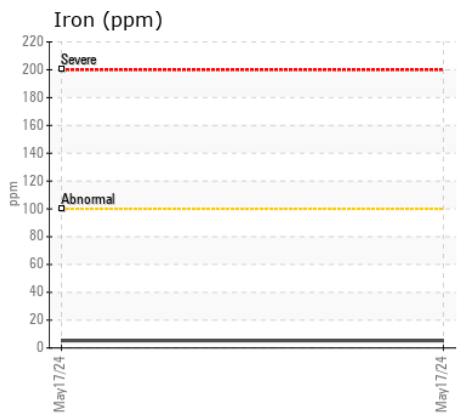
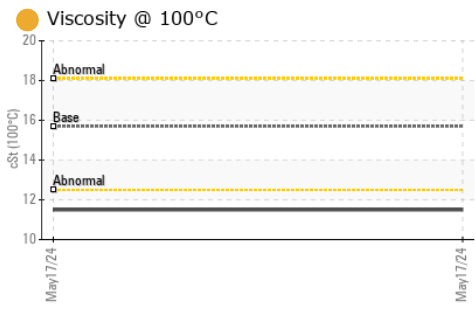
Fuel content negligible. There is no indication of any contamination in the oil.

|                  |          |             |       |              |     |     |
|------------------|----------|-------------|-------|--------------|-----|-----|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>14</b>    | --- | --- |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>0</b>     | --- | --- |
| Fuel             | %        | ASTM D3524  | >5    | <b>0.7</b>   | --- | --- |
| Water            |          | WC Method   | >0.2  | <b>NEG</b>   | --- | --- |
| Glycol           |          | WC Method   |       | <b>NEG</b>   | --- | --- |
| Soot %           | %        | *ASTM D7844 | >3    | <b>0</b>     | --- | --- |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>4.3</b>   | --- | --- |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>17.4</b>  | --- | --- |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>  | --- | --- |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>  | --- | --- |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>  | --- | --- |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b> | --- | --- |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b> | --- | --- |
| Emulsified Water | scalar   | *Visual     | >0.2  | <b>NEG</b>   | --- | --- |

## FLUID CONDITION

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

|                  |          |             |      |             |     |     |
|------------------|----------|-------------|------|-------------|-----|-----|
| Sodium           | ppm      | ASTM D5185m |      | <b>1</b>    | --- | --- |
| Boron            | ppm      | ASTM D5185m | 316  | <b>104</b>  | --- | --- |
| Barium           | ppm      | ASTM D5185m | 0.0  | <b>3</b>    | --- | --- |
| Molybdenum       | ppm      | ASTM D5185m | 1.2  | <b>66</b>   | --- | --- |
| Manganese        | ppm      | ASTM D5185m |      | <b>2</b>    | --- | --- |
| Magnesium        | ppm      | ASTM D5185m | 24   | <b>390</b>  | --- | --- |
| Calcium          | ppm      | ASTM D5185m | 2292 | <b>2154</b> | --- | --- |
| Phosphorus       | ppm      | ASTM D5185m | 1064 | <b>1083</b> | --- | --- |
| Zinc             | ppm      | ASTM D5185m | 1160 | <b>1281</b> | --- | --- |
| Sulfur           | ppm      | ASTM D5185m | 4996 | <b>4261</b> | --- | --- |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>13.2</b> | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 10.1 | <b>9.4</b>  | --- | --- |
| Visc @ 100°C     | cSt      | ASTM D445   | 15.7 | <b>11.5</b> | --- | --- |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0946744 **Received** : 23 May 2024  
**Lab Number** : 06188854 **Tested** : 28 May 2024  
**Unique Number** : 11045606 **Diagnosed** : 28 May 2024 - Don Baldrige  
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, PercentFuel, TBN )

**PIEDMONT GENERATOR**  
 7560 NC HWY 22 NORTH  
 CLIMAX, NC  
 US 27233

Contact: TERRY SHEPPARD  
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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)