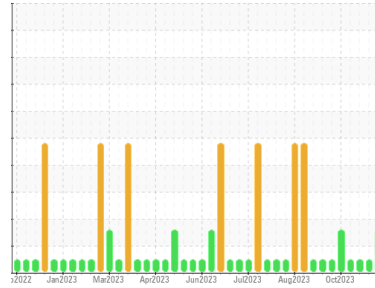




OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
HBKM01BE
 Component
Biogas Engine
 Fluid
SHELL MYSELLA S5 S (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: Top Up Amount: 30 GAL)

Wear

All component wear rates are normal.

Contamination

Elemental level of silicon (Si) above normal.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. 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 | | WC0775434 | WC0775428 | WC0775430 |
| Sample Date | Client Info | | 30 Oct 2023 | 23 Oct 2023 | 16 Oct 2023 |
| Machine Age | hrs | Client Info | 106230 | 106068 | 105936 |
| Oil Age | hrs | Client Info | 455 | 293 | 161 |
| Oil Changed | Client Info | | Oil Added | Not Changd | Oil Added |
| Sample Status | | | ABNORMAL | NORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel | WC Method | >4.0 | <1.0 | <1.0 | <1.0 |
| Glycol | WC Method | | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 | |
|----------|--------|-------------|---------|--------------|----------|---|
| Iron | ppm | ASTM D5185m | >15 | 6 | 6 | 0 |
| Chromium | ppm | ASTM D5185m | >4 | <1 | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Silver | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >6 | 5 | 3 | 2 |
| Lead | ppm | ASTM D5185m | >9 | <1 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >6 | 2 | 1 | 0 |
| Tin | ppm | ASTM D5185m | >4 | 5 | 3 | 1 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | <1 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 | |
|------------|--------|-------------|---------|--------------|----------|------|
| Boron | ppm | ASTM D5185m | | 4 | 6 | 4 |
| Barium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Molybdenum | ppm | ASTM D5185m | | 7 | 6 | 3 |
| Manganese | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | | 26 | 25 | 24 |
| Calcium | ppm | ASTM D5185m | | 1692 | 1439 | 1398 |
| Phosphorus | ppm | ASTM D5185m | 300 | 389 | 292 | 313 |
| Zinc | ppm | ASTM D5185m | | 489 | 376 | 383 |
| Sulfur | ppm | ASTM D5185m | | 4091 | 2711 | 2752 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 | |
|-----------|--------|-------------|---------|--------------|----------|----|
| Silicon | ppm | ASTM D5185m | >181 | ▲ 191 | 128 | 72 |
| Sodium | ppm | ASTM D5185m | | 3 | 2 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | <1 | 0 |

INFRA-RED

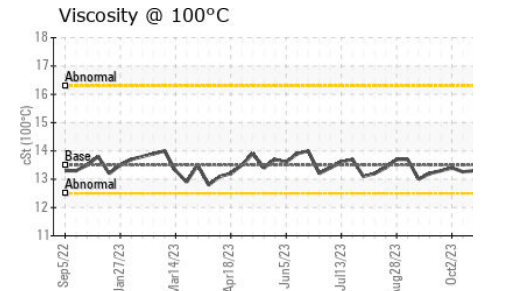
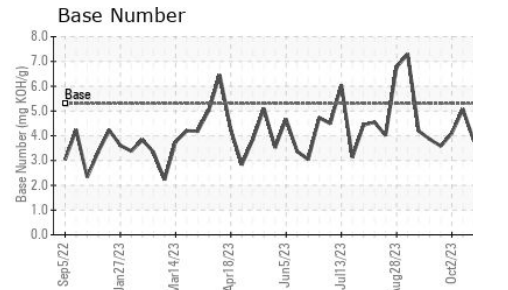
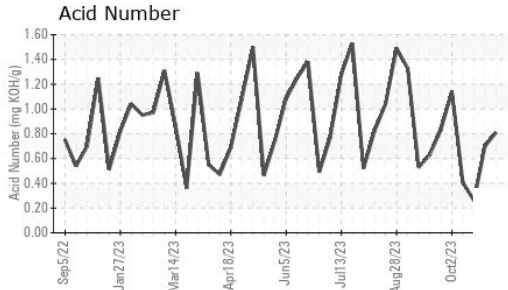
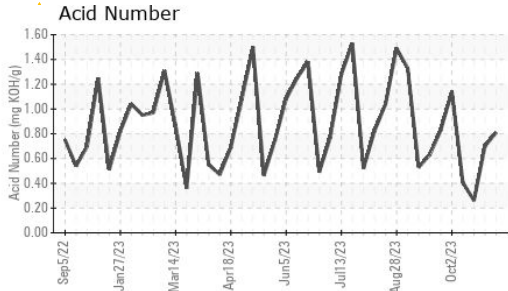
| | method | limit/base | current | history1 | history2 | |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot % | % | *ASTM D7844 | | 0 | 0 | 0 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 4.7 | 4.5 | 4.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 20.4 | 19.5 | 18.2 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 | |
|------------------|----------|-------------|---------|-------------|----------|------|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 13.4 | 12.6 | 11.7 |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 0.81 | 0.70 | 0.26 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 5.3 | 2.04 | 4.34 | 3.78 |



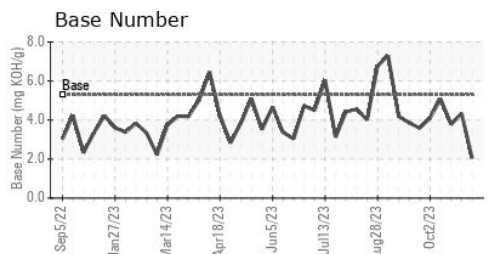
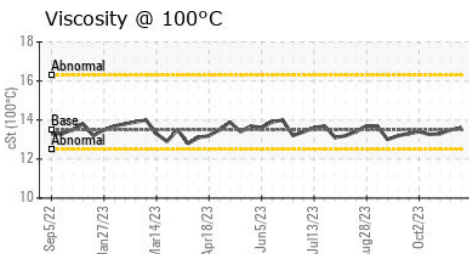
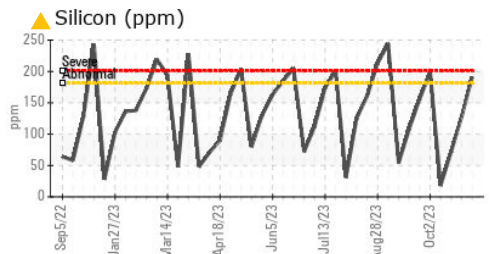
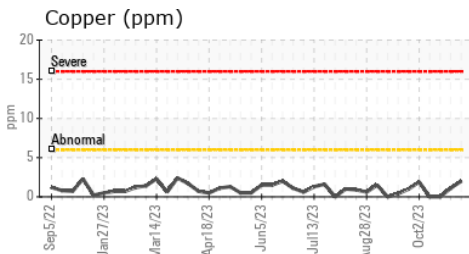
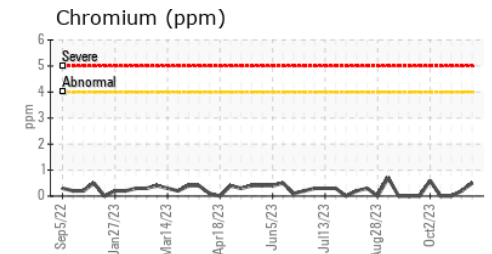
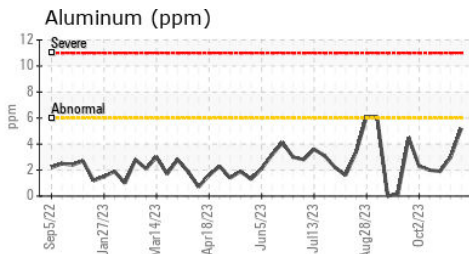
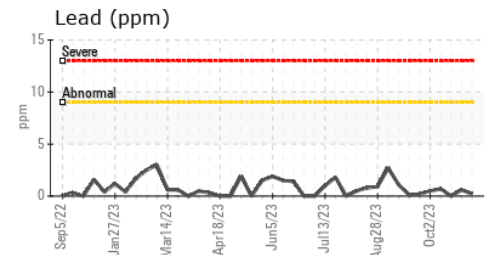
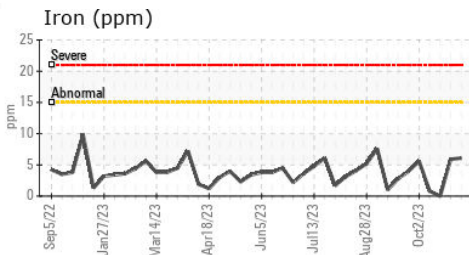
OIL ANALYSIS REPORT



| 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 @ 100°C | cSt | ASTM D445 | 13.5 | 13.6 | 13.5 |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0775434 **Received** : 01 Nov 2023
Lab Number : 05995860 **Diagnosed** : 03 Nov 2023
Unique Number : 10724220 **Diagnostician** : Don Baldrige
Test Package : MOB 2

EDL NA Recips-Honeybrook
 Honey Brook Powerstation, 481 S. Churchtown Road
 Narvon, PA
 US 17555-9574
 Contact: Christian Adames
 Christian.Adames@edlenergy.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)