

LIEBHERR

CONSTRUCTION EQUIPMENT



[(339786)] LIEBHERR R920 047100-1705 - Diesel Engine

Sample No: LH0242087

Oil Type: PETRO CANADA 10W40



SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-------------|-------------|-------------|
| Sample Number | LH0242087 | LH0260637 | LH0240689 | LH0221949 |
| Sample Date | 07 Nov 2023 | 28 Apr 2023 | 04 Oct 2022 | 21 Jan 2022 |
| Machine Hours | 3040 | 2450 | 1988 | 1006 |
| Oil Hours | 0 | 0 | 0 | 0 |
| Oil Changed | Changed | Changed | Changed | Changed |
| Sample Status | NORMAL | NORMAL | NORMAL | NORMAL |

ECOWASTE INDUSTRIES LTD.
 15111 WILLIAMS ROAD
 RICHMOND, BC
 CA V6W 1G9
 Contact: Service Manager



OIL CONDITION

| | | | | | |
|----------------|-----|------|------|------|------|
| Visc @ 100°C | cSt | 14.0 | 14.1 | 15.1 | 13.7 |
| Oxidation (PA) | % | 66 | 76 | 101 | 26 |

T: (604)277-1410
 F:



CONTAMINATION

| | | | | | |
|----------------|-----|------|------|------|------|
| Soot % | % | 0 | 0 | 0 | 0 |
| Nitration (PA) | % | 70 | 80 | 90 | 30 |
| Sulfation (PA) | % | 56 | 61 | 72 | 39 |
| Glycol | % | NEG | NEG | NEG | NEG |
| Fuel | % | <1.0 | <1.0 | <1.0 | <1.0 |
| Silicon | ppm | 10 | 22 | 17 | 8 |
| Sodium | ppm | 3 | 3 | 4 | 2 |
| Potassium | ppm | 0 | 1 | <1 | <1 |

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.



WEAR METALS

| | | | | | |
|------------|-----|----|----|----|----|
| Iron | ppm | 12 | 10 | 16 | 13 |
| Copper | ppm | 3 | 6 | 19 | 3 |
| Lead | ppm | <1 | <1 | 3 | <1 |
| Tin | ppm | 0 | <1 | <1 | <1 |
| Aluminum | ppm | 2 | 2 | 2 | 1 |
| Chromium | ppm | <1 | <1 | <1 | <1 |
| Molybdenum | ppm | 55 | 52 | 62 | 51 |
| Nickel | ppm | 0 | <1 | 0 | <1 |
| Titanium | ppm | 0 | <1 | <1 | 0 |
| Silver | ppm | <1 | 0 | <1 | 0 |
| Manganese | ppm | 0 | <1 | <1 | <1 |
| Vanadium | ppm | 0 | 0 | 0 | 0 |



ADDITIVES

| | | | | | |
|------------|-----|------|------|------|------|
| Calcium | ppm | 1167 | 1364 | 1151 | 1175 |
| Magnesium | ppm | 1008 | 943 | 1054 | 995 |
| Zinc | ppm | 1240 | 1253 | 1300 | 1196 |
| Phosphorus | ppm | 998 | 1117 | 1164 | 1017 |
| Barium | ppm | 0 | 0 | 0 | <1 |
| Boron | ppm | 11 | 26 | 8 | 20 |

Depot: ECORIC
Unique No: 5672785
Signed: Kevin Marson
Report Date: 14 Nov 2023



GRAPHS

