

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR A934C 064064-1007 - Swing Drive

Sample No: LH0272771

Oil Type: CHEVRON DELO GEAR ESI OIL 80W90



**AMERICAN STATE EQUIPMENT CO.**  
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#### SAMPLE INFORMATION

|               |             |             |             |             |
|---------------|-------------|-------------|-------------|-------------|
| Sample Number | LH0272771   | LH0254762   | LH0243218   | LH0217641   |
| Sample Date   | 21 Dec 2023 | 23 Jun 2023 | 10 Jan 2023 | 05 Jul 2022 |
| Machine Hours | 25949       | 24973       | 24002       | 23011       |
| Oil Hours     | 0           | 0           | 0           | 0           |
| Oil Changed   | Changed     | Changed     | Changed     | Changed     |
| Sample Status | ABNORMAL    | NORMAL      | ABNORMAL    | NORMAL      |



#### OIL CONDITION

|             |     |     |     |     |     |
|-------------|-----|-----|-----|-----|-----|
| Visc @ 40°C | cSt | 121 | 130 | 141 | 131 |
|-------------|-----|-----|-----|-----|-----|



#### CONTAMINATION

|           |     |     |     |       |     |
|-----------|-----|-----|-----|-------|-----|
| Water     | %   | NEG | NEG | 0.304 | NEG |
| Silicon   | ppm | 3   | 3   | 4     | 1   |
| Sodium    | ppm | 0   | 0   | 2     | <1  |
| Potassium | ppm | 1   | 2   | 3     | 1   |



#### WEAR METALS

|            |     |     |     |      |     |
|------------|-----|-----|-----|------|-----|
| Iron       | ppm | 669 | 570 | 1020 | 112 |
| Copper     | ppm | 186 | 111 | 152  | 69  |
| Lead       | ppm | <1  | <1  | 1    | 0   |
| Tin        | ppm | 14  | 8   | 12   | 5   |
| Aluminum   | ppm | 1   | <1  | 1    | <1  |
| Chromium   | ppm | 5   | 4   | 7    | <1  |
| Molybdenum | ppm | 1   | <1  | 1    | 2   |
| Nickel     | ppm | 2   | 1   | 1    | <1  |
| Titanium   | ppm | 1   | <1  | 0    | 0   |
| Silver     | ppm | 0   | 0   | 0    | 0   |
| Manganese  | ppm | 6   | 5   | 8    | <1  |
| Vanadium   | ppm | 0   | 0   | 0    | 0   |



#### ADDITIVES

|            |     |     |     |     |     |
|------------|-----|-----|-----|-----|-----|
| Calcium    | ppm | 87  | 40  | 68  | 136 |
| Magnesium  | ppm | 11  | 8   | 8   | 14  |
| Zinc       | ppm | 83  | 49  | 27  | 67  |
| Phosphorus | ppm | 761 | 816 | 654 | 741 |
| Barium     | ppm | 1   | 1   | 0   | 0   |
| Boron      | ppm | 6   | 7   | 21  | 29  |

#### Diagnosis

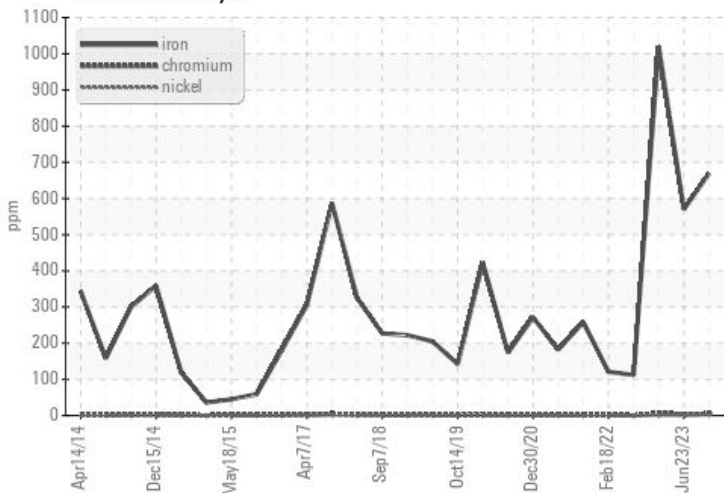
The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. Moderate concentration of visible metal present. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

Depot: LEC0008  
 Unique No: 10817555  
 Signed: Jonathan Hester  
 Report Date: 08 Jan 2024

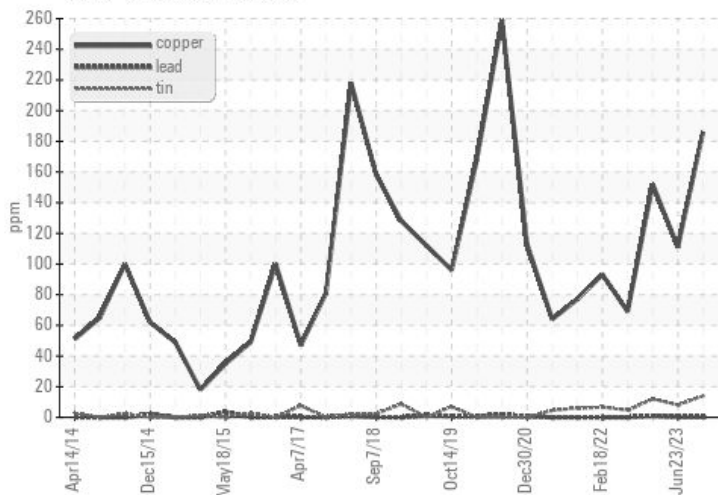


### GRAPHS

#### Ferrous Alloys



#### Non-ferrous Metals



#### Viscosity @ 40°C

