



# OIL ANALYSIS REPORT

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

Machine Id  
**ALS UTH**  
 Component  
**New (Unused) Oil**  
 Fluid  
**{not provided} (--- LTR)**

## RECOMMENDATION

This is a baseline read-out on the submitted sample.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>DC0035585</b>   | DC0031274   | DC0031267   |
| Sample Date    |     | Client Info |           | <b>14 Mar 2024</b> | 01 Mar 2024 | 01 Mar 2024 |
| Machine Age    | mls | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Age        | mls | Client Info |           | <b>0</b>           | 0           | 0           |
| Filter Age     | mls | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Changed    |     | Client Info |           | <b>N/A</b>         | N/A         | N/A         |
| Filter Changed |     | Client Info |           | <b>N/A</b>         | N/A         | N/A         |
| Sample Status  |     |             |           | <b>NORMAL</b>      | ATTENTION   | ATTENTION   |

## WEAR

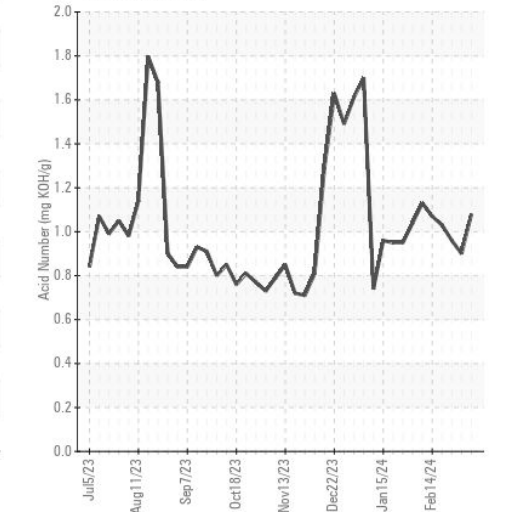
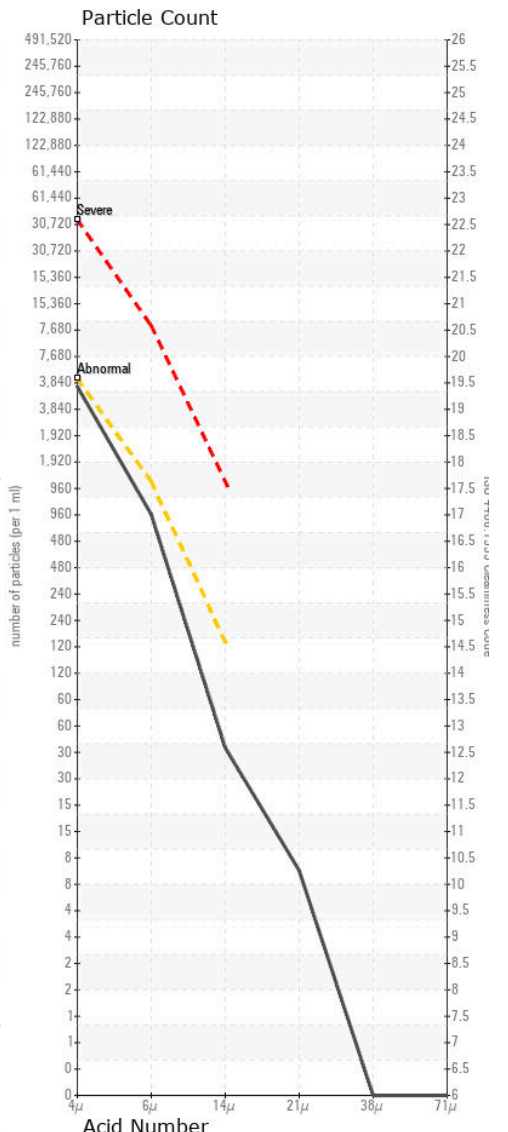
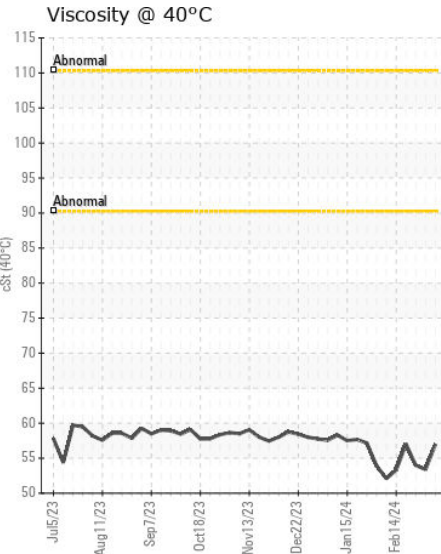
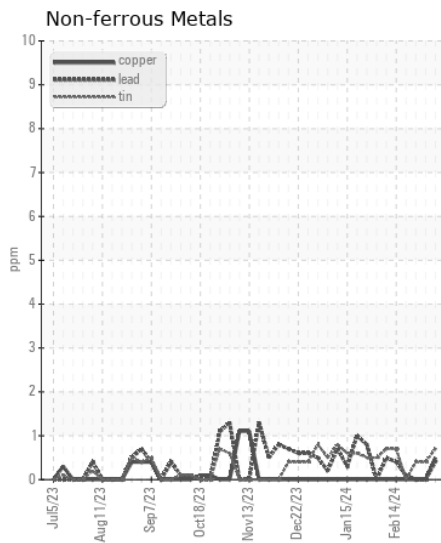
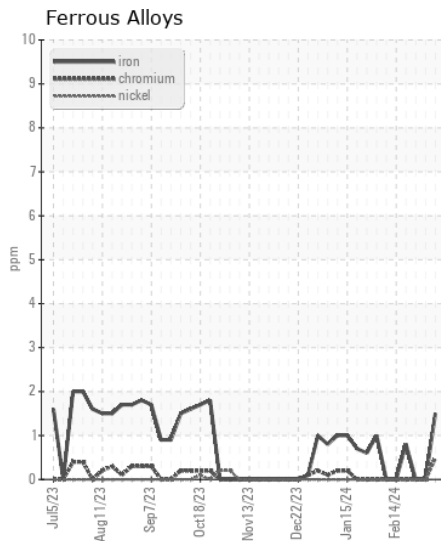
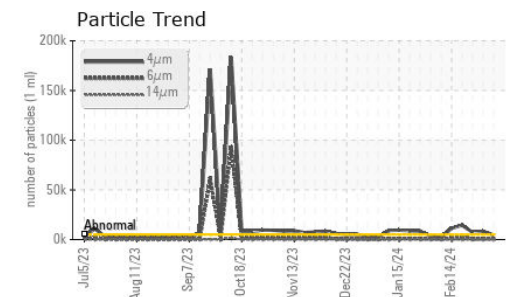
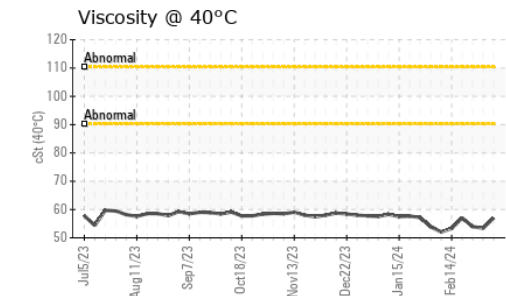
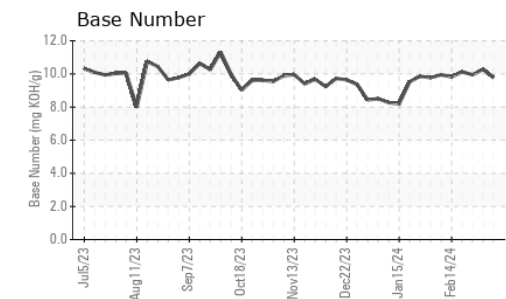
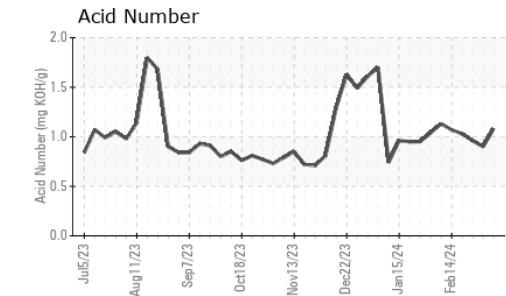
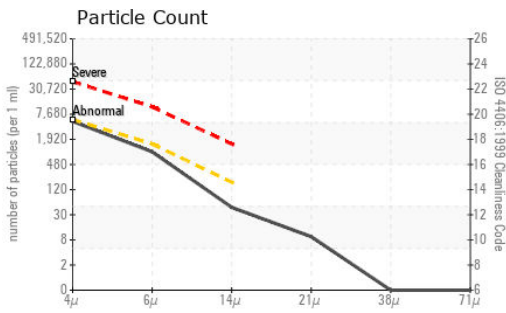
|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m |      | <b>2</b>     | 0    | 0    |
| Chromium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0  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

## CONTAMINATION

|                  |        |              |           |                 |          |          |
|------------------|--------|--------------|-----------|-----------------|----------|----------|
| Silicon          | ppm    | ASTM D5185m  |           | <b>10</b>       | 9        | 9        |
| Potassium        | ppm    | ASTM D5185m  | >20       | <b>1</b>        | 0        | 0        |
| Water            |        | WC Method    |           | <b>NEG</b>      | NEG      | NEG      |
| Particles >4µm   |        | ASTM D7647   | >5000     | <b>4508</b>     | 7119     | 8340     |
| Particles >6µm   |        | ASTM D7647   | >1300     | <b>846</b>      | 593      | 942      |
| Particles >14µm  |        | ASTM D7647   | >160      | <b>40</b>       | 21       | 28       |
| Particles >21µm  |        | ASTM D7647   | >40       | <b>8</b>        | 6        | 10       |
| Particles >38µm  |        | ASTM D7647   | >10       | <b>0</b>        | 0        | 1        |
| Particles >71µm  |        | ASTM D7647   | >3        | <b>0</b>        | 0        | 1        |
| Oil Cleanliness  |        | ISO 4406 (c) | >19/17/14 | <b>19/17/12</b> | 20/16/12 | 20/17/12 |
| Silt             | scalar | *Visual      | NONE      | <b>NONE</b>     | NONE     | NONE     |
| Debris           | scalar | *Visual      | NONE      | <b>NONE</b>     | NONE     | NONE     |
| Sand/Dirt        | scalar | *Visual      | NONE      | <b>NONE</b>     | NONE     | NONE     |
| Appearance       | scalar | *Visual      | NORML     | <b>NORML</b>    | NORML    | NORML    |
| Odor             | scalar | *Visual      | NORML     | <b>NORML</b>    | NORML    | NORML    |
| Emulsified Water | scalar | *Visual      |           | <b>NEG</b>      | NEG      | NEG      |

## FLUID CONDITION

|                      |          |             |  |              |       |       |
|----------------------|----------|-------------|--|--------------|-------|-------|
| Sodium               | ppm      | ASTM D5185m |  | <b>1</b>     | 0     | 0     |
| Boron                | ppm      | ASTM D5185m |  | <b>94</b>    | 99    | 98    |
| Barium               | ppm      | ASTM D5185m |  | <b>0</b>     | 0     | 0     |
| Molybdenum           | ppm      | ASTM D5185m |  | <b>1</b>     | 0     | <1    |
| Manganese            | ppm      | ASTM D5185m |  | <b>&lt;1</b> | 0     | 0     |
| Magnesium            | ppm      | ASTM D5185m |  | <b>32</b>    | 23    | 41    |
| Calcium              | ppm      | ASTM D5185m |  | <b>3249</b>  | 3170  | 3077  |
| Phosphorus           | ppm      | ASTM D5185m |  | <b>918</b>   | 1046  | 1029  |
| Zinc                 | ppm      | ASTM D5185m |  | <b>1345</b>  | 1371  | 1359  |
| Sulfur               | ppm      | ASTM D5185m |  | <b>3042</b>  | 3508  | 3519  |
| Acid Number (AN)     | mg KOH/g | ASTM D8045  |  | <b>1.08</b>  | 0.90  | 0.96  |
| Base Number (BN)     | mg KOH/g | ASTM D2896  |  | <b>9.77</b>  | 10.28 | 9.95  |
| Visc @ 40°C          | cSt      | ASTM D445   |  | <b>56.99</b> | 53.39 | 53.97 |
| Visc @ 100°C         | cSt      | ASTM D445   |  | <b>9.88</b>  | 9.48  | 9.57  |
| Viscosity Index (VI) | Scale    | ASTM D2270  |  | <b>160</b>   | 162   | 163   |



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : DC0035585  
**Lab Number** : 06124447  
**Unique Number** : 10938598  
**Test Package** : MOB 2 ( Additional Tests: FT-IR, ICP-NewOil, KV100, PrtCount, TBN, ~~Q~~

**THE UNITED OIL COMPANY - OPERATIONS**  
 4405 E. BALTIMORE ST  
 BALTIMORE, MD  
 US 21224  
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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)