



| | |
|-----------------|-----------------|
| WEAR | NORMAL |
| CONTAMINATION | ABNORMAL |
| FLUID CONDITION | NORMAL |

Machine Id
HYUNDAI Hhkhml03ed0000692

Component
Hydraulic System
Fluid
{not provided} (26 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|----------|----------|
| Sample Number | | Client Info | | JR0214183 | --- | --- |
| Sample Date | | Client Info | | 21 May 2024 | --- | --- |
| Machine Age | hrs | Client Info | | 5244 | --- | --- |
| Oil Age | hrs | Client Info | | 0 | --- | --- |
| Filter Age | hrs | Client Info | | 0 | --- | --- |
| Oil Changed | | Client Info | | Changed | --- | --- |
| Filter Changed | | Client Info | | Changed | --- | --- |
| Sample Status | | | | ABNORMAL | --- | --- |

WEAR

All component wear rates are normal.

| PQ | UOM | Method | Limit/Abn | Current | History1 | History2 |
|--------------|--------|-------------|-----------|--------------|----------|----------|
| PQ | | ASTM D8184 | | 17 | --- | --- |
| Iron | ppm | ASTM D5185m | >20 | 6 | --- | --- |
| Chromium | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Nickel | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Titanium | ppm | ASTM D5185m | | 0 | --- | --- |
| Silver | ppm | ASTM D5185m | | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Lead | ppm | ASTM D5185m | >10 | <1 | --- | --- |
| Copper | ppm | ASTM D5185m | >75 | 8 | --- | --- |
| Tin | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | <1 | --- | --- |
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |

CONTAMINATION

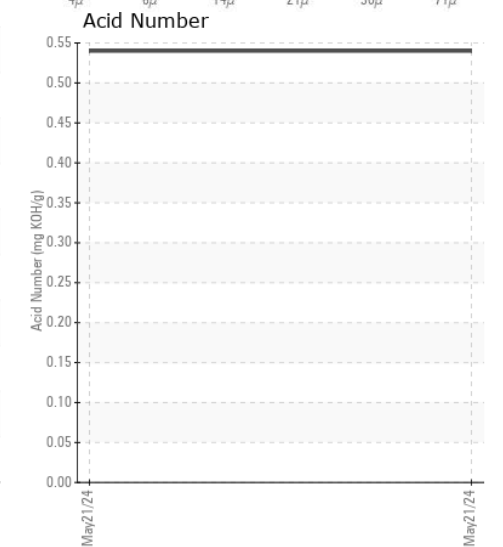
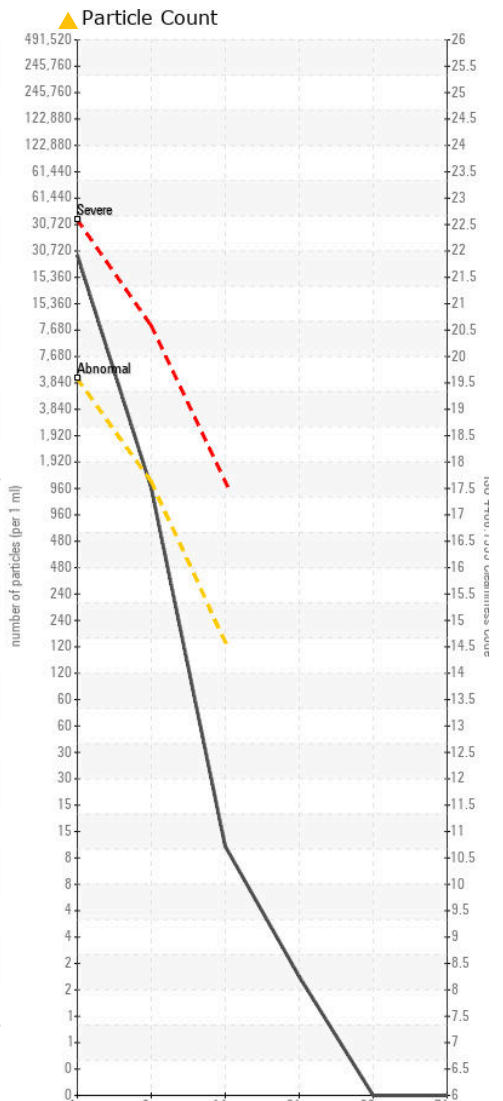
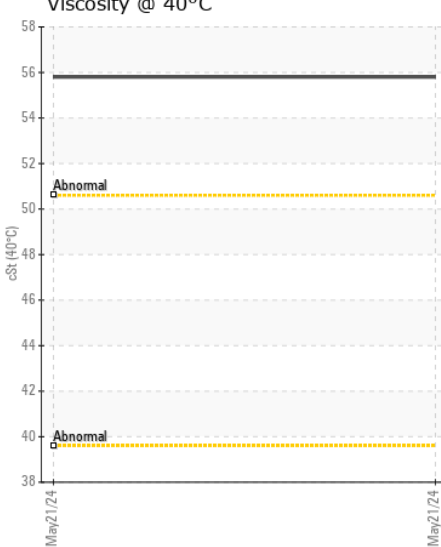
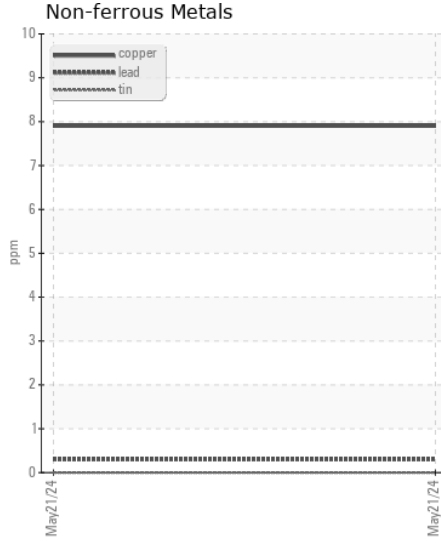
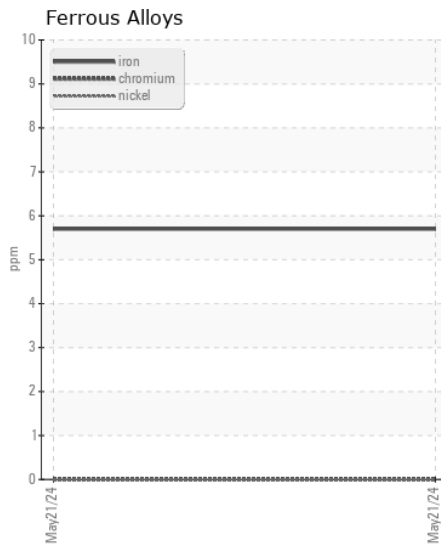
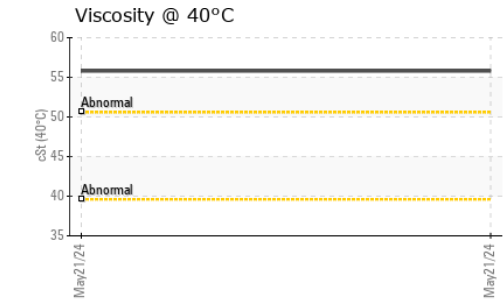
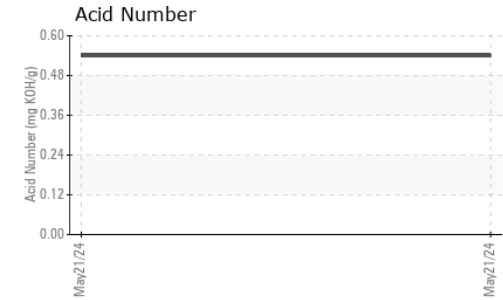
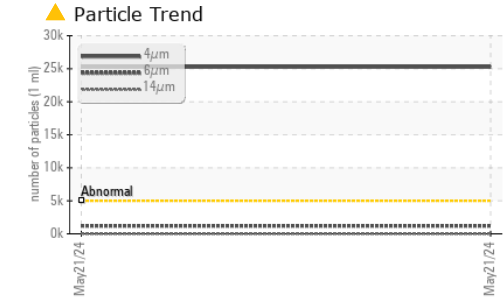
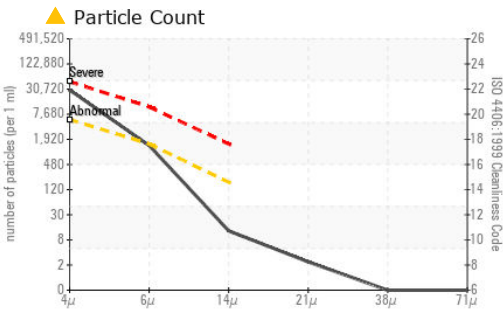
There is a high amount of silt (particulates < 14 microns in size) present in the oil.

| | | | | | | |
|------------------|--------|--------------|-----------|-------------------|-----|-----|
| Silicon | ppm | ASTM D5185m | >20 | <1 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | 0 | --- | --- |
| Water | | WC Method | >0.1 | NEG | --- | --- |
| Particles >4µm | | ASTM D7647 | >5000 | ▲ 25257 | --- | --- |
| Particles >6µm | | ASTM D7647 | >1300 | 1198 | --- | --- |
| Particles >14µm | | ASTM D7647 | >160 | 11 | --- | --- |
| Particles >21µm | | ASTM D7647 | >40 | 2 | --- | --- |
| Particles >38µm | | ASTM D7647 | >10 | 0 | --- | --- |
| Particles >71µm | | ASTM D7647 | >3 | 0 | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ 22/17/11 | --- | --- |
| Silt | scalar | *Visual | NONE | NONE | --- | --- |
| Debris | scalar | *Visual | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | --- | --- |
| Appearance | scalar | *Visual | NORML | NORML | --- | --- |
| Odor | scalar | *Visual | NORML | NORML | --- | --- |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | --- | --- |

FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

| | | | | | | |
|------------------|----------|-------------|--|--------------|-----|-----|
| Sodium | ppm | ASTM D5185m | | <1 | --- | --- |
| Boron | ppm | ASTM D5185m | | 0 | --- | --- |
| Barium | ppm | ASTM D5185m | | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | <1 | --- | --- |
| Manganese | ppm | ASTM D5185m | | 0 | --- | --- |
| Magnesium | ppm | ASTM D5185m | | 7 | --- | --- |
| Calcium | ppm | ASTM D5185m | | 572 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | | 442 | --- | --- |
| Zinc | ppm | ASTM D5185m | | 504 | --- | --- |
| Sulfur | ppm | ASTM D5185m | | 1552 | --- | --- |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 0.54 | --- | --- |
| Visc @ 40°C | cSt | ASTM D445 | | 55.8 | --- | --- |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0214183 **Received** : 29 May 2024
Lab Number : 06193863 **Tested** : 30 May 2024
Unique Number : 11055986 **Diagnosed** : 31 May 2024 - Angela Borella
Test Package : CONST (Additional Tests: PQ)

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)

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