



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

Area
BRIAN RAFFERTY
Machine Id
[BRIAN RAFFERTY] 010 566616-10
Component
Steering
Fluid
CHEVRON RANDO HDZ 68 (175 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | MW0062801 | MW0055646 | MW0055661 |
| Sample Date | | Client Info | | 18 Apr 2024 | 01 Apr 2024 | 01 Oct 2023 |
| Machine Age | hrs | Client Info | | 0 | 0 | 18000 |
| Oil Age | hrs | Client Info | | 0 | 0 | 18000 |
| Filter Age | hrs | Client Info | | 0 | 0 | 18000 |
| Oil Changed | | Client Info | | Not Changd | N/A | N/A |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | NORMAL | ABNORMAL | ABNORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >50 | 0 | 2 | <1 |
| Chromium | ppm | ASTM D5185m | >15 | 0 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Silver | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >5 | 0 | 2 | 0 |
| Lead | ppm | ASTM D5185m | >10 | <1 | <1 | <1 |
| Copper | ppm | ASTM D5185m | >50 | 7 | 9 | 9 |
| Tin | ppm | ASTM D5185m | >5 | 0 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

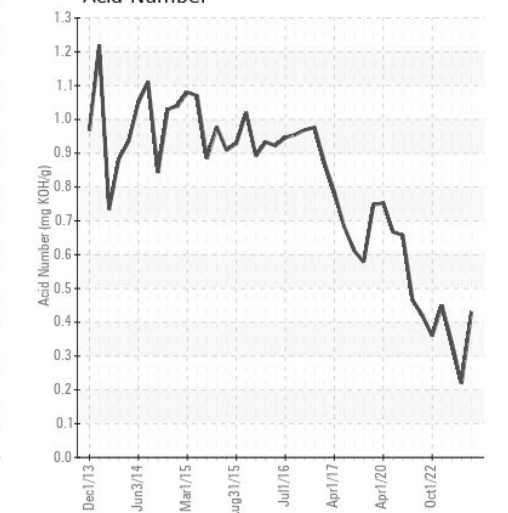
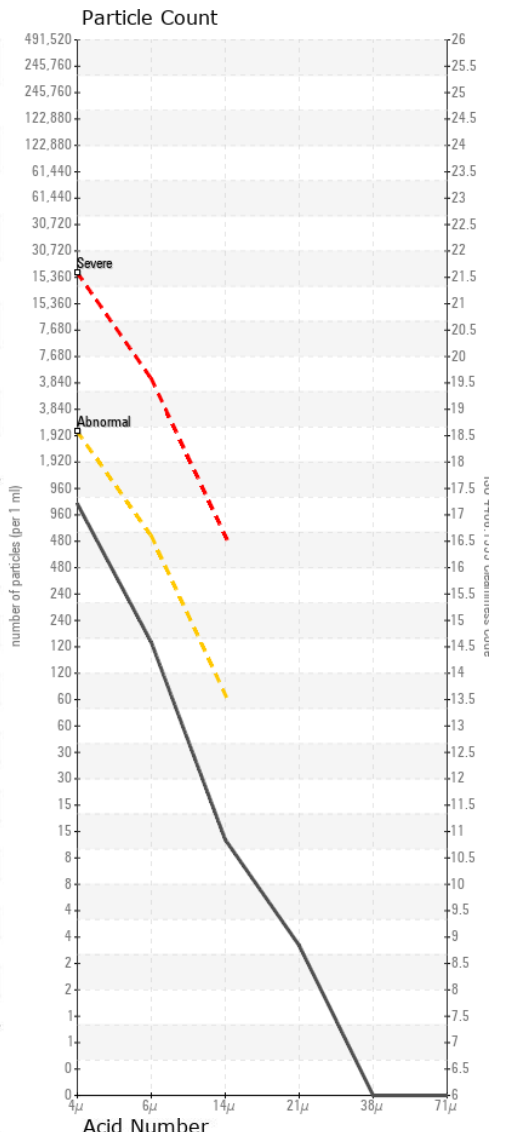
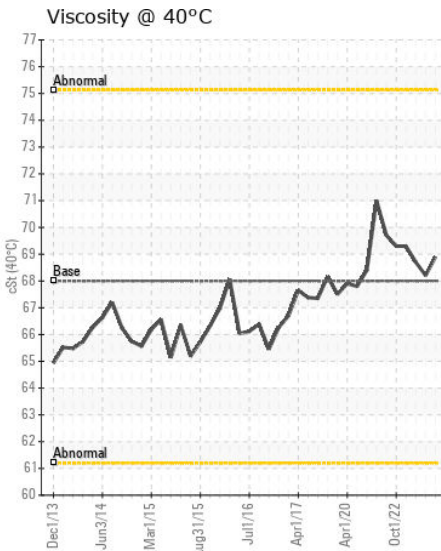
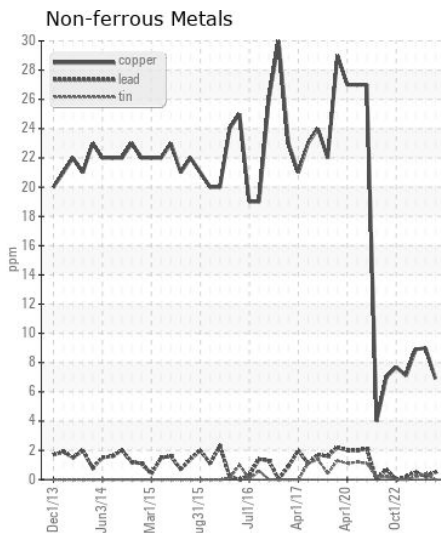
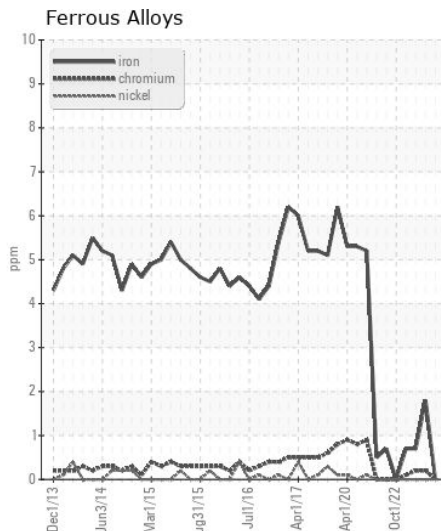
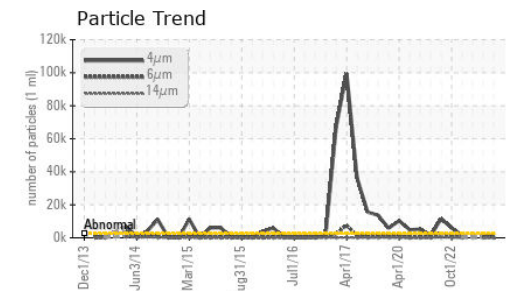
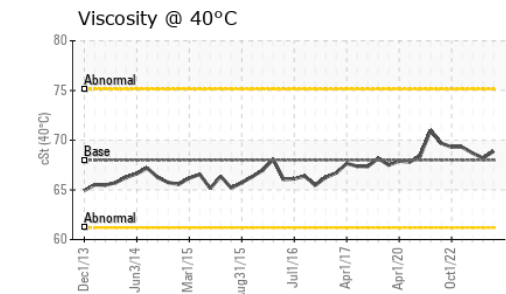
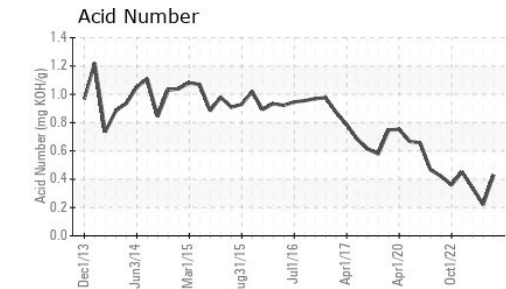
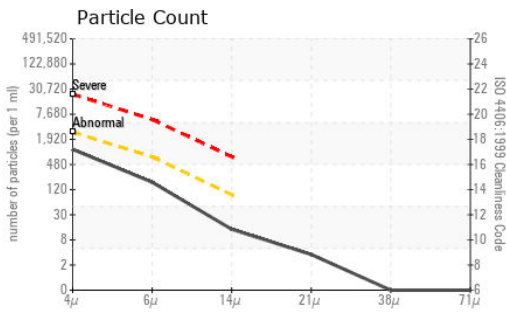
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

| | | | | | | |
|------------------|--------|--------------|-----------|-----------------|----------|-------|
| Silicon | ppm | ASTM D5185m | >15 | <1 | 26 | 1 |
| Potassium | ppm | ASTM D5185m | >20 | <1 | 2 | 0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Particles >4µm | | ASTM D7647 | >2500 | 973 | 899 | --- |
| Particles >6µm | | ASTM D7647 | >640 | 159 | 298 | --- |
| Particles >14µm | | ASTM D7647 | >80 | 12 | 32 | --- |
| Particles >21µm | | ASTM D7647 | >20 | 3 | 7 | --- |
| Particles >38µm | | ASTM D7647 | >4 | 0 | 1 | --- |
| Particles >71µm | | ASTM D7647 | >3 | 0 | 0 | --- |
| Oil Cleanliness | | ISO 4406 (c) | >18/16/13 | 17/14/11 | 17/15/12 | --- |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | MODER |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |

FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Boron | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 1 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | 0 | <1 | <1 |
| Manganese | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | 0 | 0 | 1 | <1 |
| Calcium | ppm | ASTM D5185m | 75 | 73 | 78 | 74 |
| Phosphorus | ppm | ASTM D5185m | 275 | 391 | 397 | 378 |
| Zinc | ppm | ASTM D5185m | 350 | 468 | 455 | 500 |
| Sulfur | ppm | ASTM D5185m | 550 | 1697 | 1585 | 1704 |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 0.43 | 0.22 | 0.34 |
| Visc @ 40°C | cSt | ASTM D445 | 68.0 | 68.9 | 68.2 | 68.7 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0062801 **Received** : 10 May 2024
Lab Number : 06176068 **Tested** : 14 May 2024
Unique Number : 11022121 **Diagnosed** : 14 May 2024 - Don Baldrige
Test Package : MAR 2 (Additional Tests: PrtCount)

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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