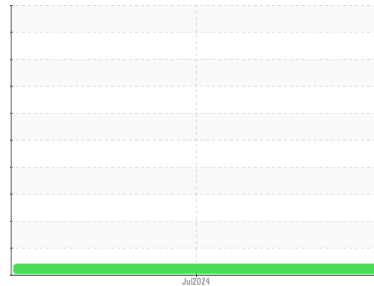




OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Area

Robinson

Machine Id

[Robinson] Oil- Port Reduction Gear

Component

Port Reduction Gear

Fluid

GEAR OIL SAE 85W140 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The oil viscosity is lower than normal. Confirm oil type. The AN level is acceptable for this fluid.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|----------|----------|
| Sample Number | Client Info | | WC0859943 | --- | --- |
| Sample Date | Client Info | | 01 Jul 2024 | --- | --- |
| Machine Age | hrs | Client Info | 29792 | --- | --- |
| Oil Age | hrs | Client Info | 606 | --- | --- |
| Oil Changed | Client Info | | N/A | --- | --- |
| Sample Status | | | ATTENTION | --- | --- |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >200 | 5 | --- | --- |
| Chromium | ppm | ASTM D5185m >10 | 0 | --- | --- |
| Nickel | ppm | ASTM D5185m >10 | 0 | --- | --- |
| Titanium | ppm | ASTM D5185m | <1 | --- | --- |
| Silver | ppm | ASTM D5185m | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m | 2 | --- | --- |
| Lead | ppm | ASTM D5185m | 0 | --- | --- |
| Copper | ppm | ASTM D5185m | 15 | --- | --- |
| Tin | ppm | ASTM D5185m | 0 | --- | --- |
| Vanadium | ppm | ASTM D5185m | 0 | --- | --- |
| Cadmium | ppm | ASTM D5185m | 0 | --- | --- |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|-------------------|-------------|----------|----------|
| Boron | ppm | ASTM D5185m 400 | 457 | --- | --- |
| Barium | ppm | ASTM D5185m 200 | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m 12 | 77 | --- | --- |
| Manganese | ppm | ASTM D5185m | 0 | --- | --- |
| Magnesium | ppm | ASTM D5185m 12 | 319 | --- | --- |
| Calcium | ppm | ASTM D5185m 150 | 2066 | --- | --- |
| Phosphorus | ppm | ASTM D5185m 1650 | 1063 | --- | --- |
| Zinc | ppm | ASTM D5185m 125 | 1177 | --- | --- |
| Sulfur | ppm | ASTM D5185m 22500 | 4226 | --- | --- |

CONTAMINANTS

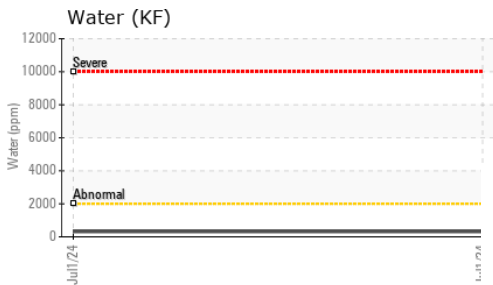
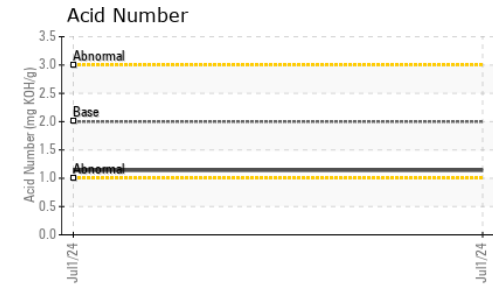
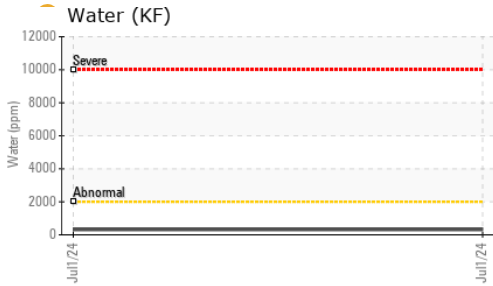
| | method | limit/base | current | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m | 4 | --- | --- |
| Sodium | ppm | ASTM D5185m | 3 | --- | --- |
| Potassium | ppm | ASTM D5185m >20 | 1 | --- | --- |
| Water | % | ASTM D6304 >0.2 | 0.032 | --- | --- |
| ppm Water | ppm | ASTM D6304 >2000 | 320 | --- | --- |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 2.00 | 1.14 | --- | --- |



OIL ANALYSIS REPORT



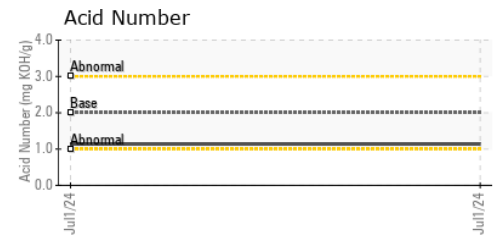
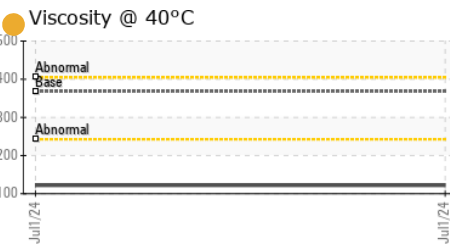
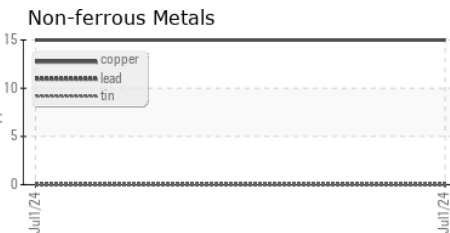
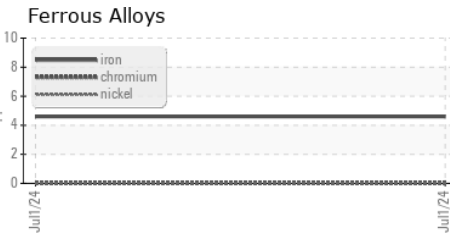
| VISUAL | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|--------------|----------|-----|
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Precipitate | scalar | *Visual | NONE | NONE | --- | --- |
| 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 | >0.2 | NEG | --- | --- |
| Free Water | scalar | *Visual | | NEG | --- | --- |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|------------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 368 ● 122 | --- | --- |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
|---------------|--------|------------|---------|----------|----------|

| | | | |
|--------|--|----------|----------|
| Color | | no image | no image |
| Bottom | | no image | no image |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0859943 **Received** : 15 Jul 2024
Lab Number : **06236079** **Tested** : 16 Jul 2024
Unique Number : 11124913 **Diagnosed** : 17 Jul 2024 - Don Baldrige
Test Package : IND 2 (Additional Tests: KF)

MARATHON PETROLEUM CO.
 101 12TH ST
 CATLETTSBURG, KY
 US 41169
 Contact: COREY GUMBERT
 cagumbert@marathonpetroleum.com

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)