

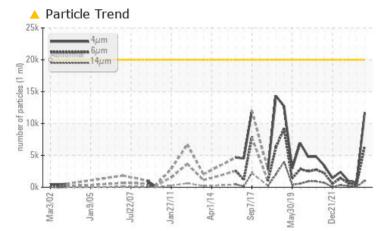
PROBLEM SUMMARY

Area FILMS DEPARTMENT SAMPLES Machine Id EGAN 2B (S/N 503243A)

Component Gearbox Fluid

TEXACO REGAL OIL R&O 220 (40 GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

| PROBLEMATIC TEST RESULTS | | | | | | | | |
|--------------------------|--------------|-----------|--------------|----------|----------|--|--|--|
| Sample Status | | | ATTENTION | NORMAL | NORMAL | | | |
| Particles >6µm | ASTM D7647 | >5000 | <u> </u> | 427 | 609 | | | |
| Particles >14µm | ASTM D7647 | >640 | 4 981 | 111 | 185 | | | |
| Oil Cleanliness | ISO 4406 (c) | >21/19/16 | <u> </u> | 17/16/14 | 17/16/15 | | | |

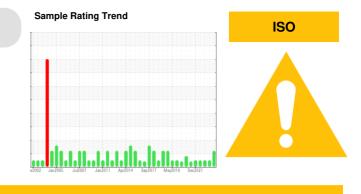
Customer Id: CRYIOW Sample No.: WC0869565 Lab Number: 06014004 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Jonathan Hester +1 919-379-4092 x4092 jhester@wearcheckusa.com

To change component or sample information: Customer Service +1 1-800-237-1369 <u>customerservice@wearcheck.com</u>



RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

04 Apr 2023 Diag: Don Baldridge



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



08 Feb 2023 Diag: Jonathan Hester

17 Apr 2022 Diag: Angela Borella



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

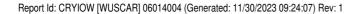


NORMAL



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. Confirm oil type. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.







OIL ANALYSIS REPORT

Area FILMS DEPARTMENT SAMPLES Machine Id EGAN 2B (S/N 503243A)

Component Gearbox

TEXACO REGAL OIL R&O 220 (40 GAL)

DIAGNOSIS

A Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of particulates present in the oil.

Fluid Condition

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

Sample Rating Trend

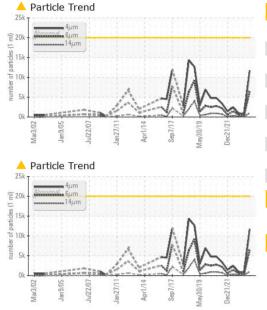
| | | ir2002 Jan201 | 05 Jul2007 Jan2011 | Apr2014 Sep2017 May2019 | Dec2021 | |
|--|---|---|---|--|--|--|
| SAMPLE INFORM | IATION | method | limit/base | current | history1 | history2 |
| Sample Number | | Client Info | | WC0869565 | WC0757267 | WC0757212 |
| Sample Date | | Client Info | | 20 Nov 2023 | 04 Apr 2023 | 08 Feb 2023 |
| Machine Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | ATTENTION | NORMAL | NORMAL |
| CONTAMINATIO | N | method | limit/base | current | history1 | history2 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| WEAR METALS | | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >200 | 18 | 16 | 16 |
| Chromium | ppm | ASTM D5185m | >15 | <1 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >15 | <1 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | 2 | 0 | <1 |
| Lead | ppm | ASTM D5185m | >100 | 1 | <1 | <1 |
| Copper | ppm | ASTM D5185m | >200 | 17 | 9 | 9 |
| Tin | ppm | ASTM D5185m | >25 | <1 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| | | | | | | |
| Boron | ppm | ASTM D5185m | 0 | 1 | <1 | 0 |
| Boron Barium | ppm ppm | | | 1 5 | <1 0 | 0 <1 |
| Barium | ppm | ASTM D5185m ASTM D5185m ASTM D5185m | | | | |
| Barium Molybdenum | ppm ppm | ASTM D5185m | 0 | 5 | 0 | <1 |
| Barium Molybdenum Manganese | ppm ppm ppm | ASTM D5185m ASTM D5185m | 0 | 5 <1 | 0 <1 | <1 1 |
| Barium Molybdenum | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 0 0 | 5 <1 <1 <1 | 0 <1 <1 | <1 1 <1 <1 |
| Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 0 0 | 5 <1 <1 <1 <1 3 | 0 <1 <1 0 | <1 1 <1 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 0 0 0 | 5 <1 <1 <1 3 173 | 0 <1 <1 0 2 178 | <1 1 <1 <1 5 168 |
| Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 0 0 0 | 5 <1 <1 <1 <1 3 | 0 <1 <1 0 2 | <1 1 <1 <1 5 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 0 0 0 0 | 5 <1 <1 <1 3 173 12 | 0 <1 <1 0 2 178 21 | <1 1 <1 <1 5 168 26 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 0 0 0 0 0 4046 limit/base | 5 <1 <1 <1 3 173 12 8043 current | 0 <1 <1 0 2 178 21 7520 history1 | <1 1 <1 <1 <1 <1 <1 5 168 26 7756 history2 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 0 0 0 0 0 4046 limit/base | 5 <1 <1 <1 3 173 12 8043 current 13 | 0 <1 <1 0 2 178 21 7520 history1 12 | <1 1 1 </1 </1 </1 </1 5 168 26 7756 history2 10</th |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m | 0 0 0 0 0 0 0 4046 limit/base | 5 <1 <1 <1 3 173 12 8043 current | 0 <1 <1 0 2 178 21 7520 history1 | <1 1 <1 <1 <1 <1 <1 5 168 26 7756 history2 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 0 0 0 4046 limit/base >50 >20 | 5 <1 <1 <1 3 173 12 8043 <u>current</u> 13 3 <1 | 0 <1 <1 0 2 178 21 7520 history1 12 2 1 | <1 1 1 </1 </1 </1 </1 </1 </1 </1 </1</th |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 0 0 0 0 0 0 4046 limit/base >50 | 5 <1 <1 <1 3 173 12 8043 current 13 3 <1 current | 0 <1 <1 0 2 178 21 7520 history1 12 2 1 history1 | <1 1 1 </1 </1 </1 </1 5 </168 </p 26 7756 history2 10 4 0 history2 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 0 0 0 0 0 0 4046 limit/base >50 limit/base >20 | 5 <1 <1 <1 3 173 12 8043 current 13 3 <1 current 11705 | 0 <1 <1 0 2 178 21 7520 history1 12 2 1 1 2 1 1 8 4 | <1 1 4 4 6 7756 6 10 10 4 0 6 6 6 6 6 775 6 6 6 775 6 6 775 6 775 6 775 6 775 6 775 6 775 775 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 0 0 0 4046 limit/base >50 limit/base >20 limit/base >20000 >5000 | 5 <1 <1 <1 3 173 12 8043 <u>current</u> 13 3 <1 <u>current</u> 11705 ▲ 6472 | 0 <1 <1 0 2 178 21 7520 history1 12 2 1 1 2 1 1 5 84 427 | <1 1 <1 <1 <1 <1 5 168 26 7756 history2 10 4 0 history2 965 609 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 | 0 0 0 0 0 4046 bimit/base >50 bimit/base >20 bimit/base >20000 >5000 >5000 >5000 | 5 <1 <1 <1 3 173 12 8043 <u>current</u> 13 3 <1 <u>current</u> 11705 ▲ 6472 ▲ 981 | 0 <1 <1 0 2 178 21 7520 history1 12 2 1 12 2 1 history1 784 427 111 | <1 1 4 4 6 7756 168 26 7756 10 10 4 0 10 4 0 10 14 0 10 14 0 10 14 0 10 15 10 16 16 16 16 16 16 16 16 16 16 16 16 16 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 | 0 0 0 0 0 4046 bimit/base >50 bimit/base >20 bimit/base >20000 >5000 >5000 >640 >160 | 5 <1 <1 <1 3 173 12 8043 <u>current</u> 13 3 <1 <u>current</u> 11705 ▲ 6472 ▲ 981 99 | 0 <1 <1 0 2 178 21 7520 history1 12 2 1 1 2 1 1 84 427 111 10 | <1 1 1 1 </1 </1 </1 5 168 26 7756 168 26 7756 10 4 0 4 0 10 4 0 10 4 0 10 14 0 10 14 0 10 14 14 10 14 14 15 14 14 15 14 18 14 14 14 14 14 14 14 14 14 14 14 14 14</th |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm Particles >21µm Particles >38µm | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 | 0 0 0 0 0 0 4046 bimit/base >50 bimit/base >20 bimit/base >20000 >5000 >640 >160 >40 | 5 <1 <1 <1 3 173 12 8043 Current 13 3 <1 Current 13 3 <1 6472 981 99 3 | 0 <1 <1 0 2 178 21 7520 history1 12 2 1 1 2 1 1 784 427 111 10 0 | <1 1 4 5 168 26 7756 history2 10 4 0 history2 965 609 185 28 1 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >21µm Particles >38µm Particles >71µm | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 | 0 0 0 0 0 0 4046 limit/base >50 limit/base >20 20000 >5000 >640 >160 >40 >10 | 5 <1 <1 <1 3 173 12 8043 Current 13 3 <1 Current 13 6472 981 99 3 0 | 0 <1 <1 0 2 178 21 7520 history1 12 2 1 1 784 427 111 10 0 0 | <1 1 1 1 </1 </1 5 168 26 7756 history2 10 4 0 history2 965 609 185 28 1 0 0</th |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >4µm Particles >4µm Particles >14µm Particles >38µm Particles >38µm Particles >71µm Oil Cleanliness | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D7647 ASTM D7647 | 0 0 0 0 0 4046 bimit/base >50 bimit/base >50 bimit/base >20000 >5000 >5000 >640 >160 >40 >10 >10 >10 | 5 <1 <1 <1 3 173 12 8043 Current 13 3 <1 Current 11705 ▲ 6472 ▲ 981 99 3 0 ▲ 21/20/17 | 0 <1 <1 0 2 178 21 7520 history1 12 2 1 1 84 427 111 10 0 0 0 17/16/14 | <1 1 1 1 </1 </1 </1 5 168 26 7756 </p history2 10 4 0 65 609 185 28 1 0 17/16/15 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >4µm Particles >21µm Particles >38µm Particles >71µm | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 | 0 0 0 0 0 0 4046 limit/base >50 limit/base >20 20000 >5000 >640 >160 >40 >10 | 5 <1 <1 <1 3 173 12 8043 Current 13 3 <1 Current 11705 ▲ 6472 ▲ 981 99 3 0 ▲ 21/20/17 | 0 <1 <1 0 2 178 21 7520 history1 12 2 1 1 784 427 111 10 0 0 | <1 1 4 6 609 185 28 1 0 0 |

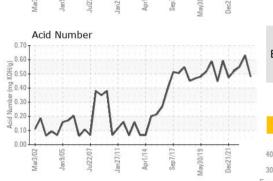
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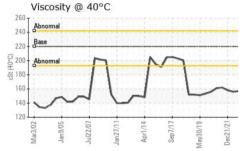
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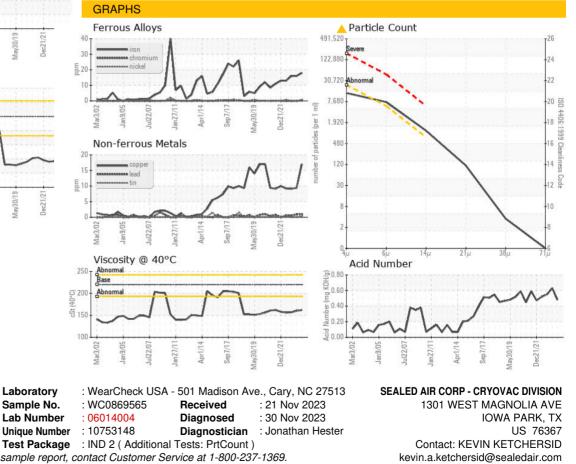
OIL ANALYSIS REPORT

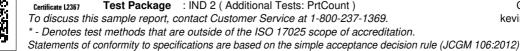






| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|-----------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | MODER | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | NONE |
| 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 |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |
| FLUID PROPER | TIES | method | limit/base | current | history1 | history2 |
| Visc @ 40°C | cSt | ASTM D445 | 220 | 162 | 160 | 157 |
| SAMPLE IMAGES | | method | limit/base | current | history1 | history2 |
| Color | | | | | | |
| Bottom | | | | | 6 | |





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