

# **OIL ANALYSIS REPORT**

#### Sample Rating Trend

**Client Info** 

#### NORMAL



### KEMP QUARRIES / RIVER VALLEY OZARK WL112 Component

**Hydraulic System** 

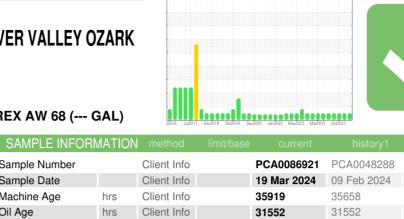
PETRO CANADA HYDREX AW 68 (--- GAL)

Sample Number

Sodium

Potassium

VISUAL



N/A

NORMAL

N/A

NORMAL



PCA0069681

09 Oct 2023

34927

31552

NORMAL

N/A

# DIAGNOSIS

Recommendation

| Resample at the next service interval to monitor.     | Sample Date   |     |  |  |
|---|---------------|-----|--|--|
| Wear  | Machine Age   | hrs |  |  |
| All component wear rates are normal.                  | Oil Age       | hrs |  |  |
| Contamination   | Oil Changed   |     |  |  |
| There is no indication of any contamination in the    | Sample Status |     |  |  |
| fluid.  | CONTAMINATION |     |  |  |
| Fluid Condition                                       |               |     |  |  |
| The condition of the fluid is acceptable for the time | Water         |     |  |  |
| in service.   | WEAR METAL    | S   |  |  |
|   | Iron          | ppm |  |  |
|   | Chromium      | ppm |  |  |
|   | Nickel        | ppm |  |  |
|   | Titanium      | ppm |  |  |
|   | Silver        | ppm |  |  |
|   | Aluminum      | ppm |  |  |
|   |               |     |  |  |

| CONTAMINA  |     | method      | limit/base | current | nistory i | nistory2 |
|------------|-----|-------------|------------|---------|-----------|----------|
| Water      |     | WC Method   | >0.1       | NEG     | NEG       | NEG      |
| WEAR META  | ALS | method      | limit/base | current | history1  | history2 |
| Iron       | ppm | ASTM D5185m | >20        | 8       | 8         | 7        |
| Chromium   | ppm | ASTM D5185m | >10        | 1       | <1        | <1       |
| Nickel     | ppm | ASTM D5185m | >10        | <1      | 0         | <1       |
| Titanium   | ppm | ASTM D5185m |            | 1       | <1        | <1       |
| Silver     | ppm | ASTM D5185m |            | 0       | 0         | 0        |
| Aluminum   | ppm | ASTM D5185m | >10        | 6       | 3         | <1       |
| Lead       | ppm | ASTM D5185m | >10        | 1       | 0         | <1       |
| Copper     | ppm | ASTM D5185m | >75        | 3       | 2         | 2        |
| Tin        | ppm | ASTM D5185m | >10        | 1       | 0         | <1       |
| Vanadium   | ppm | ASTM D5185m |            | <1      | 0         | 0        |
| Cadmium    | ppm | ASTM D5185m |            | <1      | 0         | 0        |
| ADDITIVES  |     | method      | limit/base | current | history1  | history2 |
| Boron      | ppm | ASTM D5185m | 0          | 3       | 6         | 4        |
| Barium     | ppm | ASTM D5185m | 0          | 1       | 0         | 2        |
| Molybdenum | ppm | ASTM D5185m | 0          | 6       | 5         | 7        |
| Manganese  | ppm | ASTM D5185m | 0          | <1      | 0         | <1       |
| Magnesium  | ppm | ASTM D5185m | 0          | 24      | 25        | 42       |
| Calcium    | ppm | ASTM D5185m | 50         | 281     | 210       | 235      |
| Phosphorus | ppm | ASTM D5185m | 330        | 400     | 435       | 400      |
| Zinc       | ppm | ASTM D5185m | 430        | 521     | 482       | 526      |
| Sulfur     | ppm | ASTM D5185m | 760        | 1166    | 1237      | 1328     |
| CONTAMINA  | NTS | method      | limit/base | current | history1  | history2 |
| Silicon    | ppm | ASTM D5185m | >20        | 13      | 11        | 12       |
|            |     |             |            |         |           |          |

0

3

0

2

| White Metal      | scalar | *Visual | NONE  | NONE  | 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 | >0.1  | NEG   | NEG   | NEG   |
| Free Water       | scalar | *Visual |       | NEG   | NEG   | NEG   |

ASTM D5185m

ASTM D5185m

>20

ppm

ppm

Report Id: KEMOZA [WUSCAR] 06128965 (Generated: 03/28/2024 14:33:09) Rev: 1

0

2



# **OIL ANALYSIS REPORT**



|   | FLUID PROPE                                | ERTIES                 | method                    | l limit/base                                   | current                        | history1                              | history2                                      |
|---|--|------------------------|---------------------------|--|--------------------------------|---------------------------------------|---|
|   | Visc @ 40°C                                | cSt                    | ASTM D44                  | 45 67.4  | 67.3                           | 64.3                                  | 64.7  |
| $\sim$  | SAMPLE IMAG                                | GES                    | method                    | l limit/base                                   | current                        | history1                              | history2                                      |
| 22-   | Color                                      |                        |                           |  | no image                       | no image                              | no image                                      |
| Jan 10/22<br>May9/22<br>Mar27/23<br>0ct9/23                             | Bottom                                     |                        |                           |  | no image                       | no image                              | no image                                      |
|   | GRAPHS                                     |                        |                           |  | •                              |                                       | -   |
|   | Iron (ppm)                                 |                        |                           |  | Lead (ppm)                     |                                       |   |
|   | 30 -                                       |                        |                           |  | 25 - Severe                    |                                       |   |
|   |  |                        |                           |  | 20 -                           |                                       |   |
|   |  | 14                     |                           | udd d  | 10 Abnormal                    |                                       |   |
|   |  | h                      | $\sim$                    | 2  | 5-                             |                                       |   |
|   | 0ct4/16<br>Jul6/17<br>Jul6/17<br>Dec12/18  | Dec8/20 -              | May9/22 +<br>Mar27/23 +   | 0ct9/23  | 0ct4/16<br>Jul6/17             | 0ct23/19<br>Dec8/20<br>Jan 10/22      | May9/22                                       |
|   | م م م م<br>Aluminum (ppm)                  | De<br>Jan              | Ma                        | ō  | ے م<br>Chromium (r             | -                                     | Mar<br>Nar                                    |
|   | <sup>30</sup>                              |                        |                           |  | <sup>30</sup> I                |                                       |   |
|   | 25   |                        |                           |  | 25 - Severe<br>20              |                                       |   |
|   | E 15 -                                     |                        |                           | udd  | 15                             |                                       |   |
|   | 10 - Abnormal                              | 2                      | ~~~                       | $\wedge$                                       | 10 Abnormal                    | · · · · · · · · · · · · · · · · · · · |   |
|   |  | 22                     | 22 1                      |  |                                | 20                                    | 23  |
|   | 0ct4/16<br>Jul6/17<br>Dec12/18<br>0ct23/19 | Dec8/20<br>Jan10/22    | May9/22<br>Mar27/23       | 0ct9/23  | 0ct4/16<br>Jul6/17<br>Dec12/18 | 0ct23/19<br>Dec8/20<br>Jan 10/22      | May9/22<br>Mar27/23<br>0ct9/23                |
|   | Copper (ppm)                               |                        |                           |  | Silicon (ppm)                  | 1                                     |   |
|   | 200 - Severe                               |                        |                           |  | 50 - Severe                    |                                       |   |
|   | 150-                                       |                        |                           | u d  | 40 -<br>30 -                   |                                       |   |
|   | Abnormal                                   |                        |                           |  | 20 - Abnormal                  | ~                                     | ~   |
|   | 50-  |                        |                           |  |                                |                                       | ~~~   |
|   | Oct4/16<br>Jul6/17<br>Dec12/18             | Dec8/20                | May9/22 -<br>Mar27/23 -   | 0ct9/23  | 0ct4/16<br>Jul6/17             | 0ct23/19 -<br>Dec8/20 -<br>Jan10/22 - | May9/22 -<br>Mar27/23 -<br>0ct9/23 -          |
|   | ් ි සි පි<br>Viscosity @ 40°C              |                        | Mar                       | 0  | Additives                      | Dr.<br>Jan                            | Ma<br>0                                       |
|   |  |                        |                           | 25   |                                |                                       |   |
|   | 90   | >                      |                           | 20   | JU - management phosphor       | us ma                                 |   |
|   | Go 80<br>Abnormal<br>5 70 - Base           | 5                      | ~                         | 15<br>10                                       | i contractor                   | V\                                    | 2   |
|   | 60 - Abnormal                              |                        |                           | 5  | Non- Constanting of the State  | construction of the                   | -   |
|   | 50 91 61 88 61                             | 20                     | 22                        | 53   |                                | 20 22                                 | 23  |
|   | 0ct4/16<br>Jul6/17<br>Dec12/18<br>0ct23/19 | Dec8/20<br>Jan10/22    | May9/22<br>Mar27/23       | 0ct9/23  | 0ct4/16<br>Jul6/17<br>Dec12/18 | 0ct23/19<br>Dec8/20<br>Jan10/22       | May9/22<br>Mar27/23<br>0ct9/23                |
| Laboratory<br>Sample No.<br>Lab Number<br>Unique Number<br>Test Package | : 10943116                                 | Rece<br>Teste<br>Diagi | ived :<br>ed :<br>nosed : | 25 Mar 2024<br>28 Mar 2024<br>28 Mar 2024 - Do | -                              | Quarries - Rive                       | 9446 N Hwy 30<br>Ozark, A<br>US 729<br>Contac |