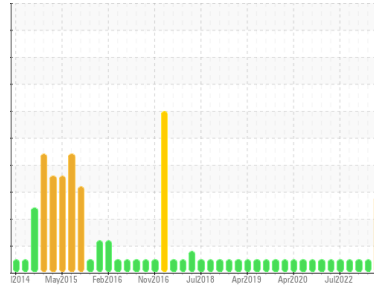




PROBLEM SUMMARY

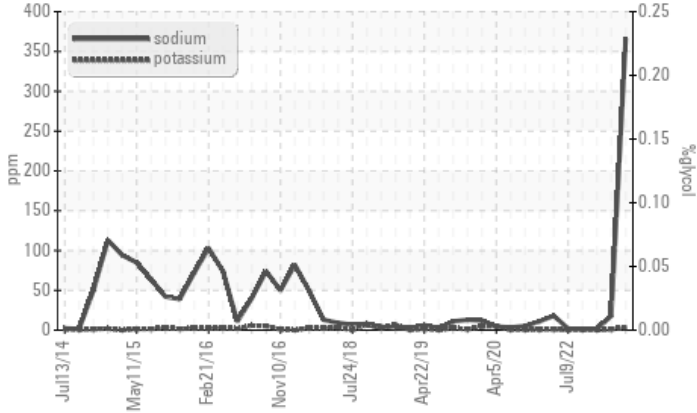
Sample Rating Trend



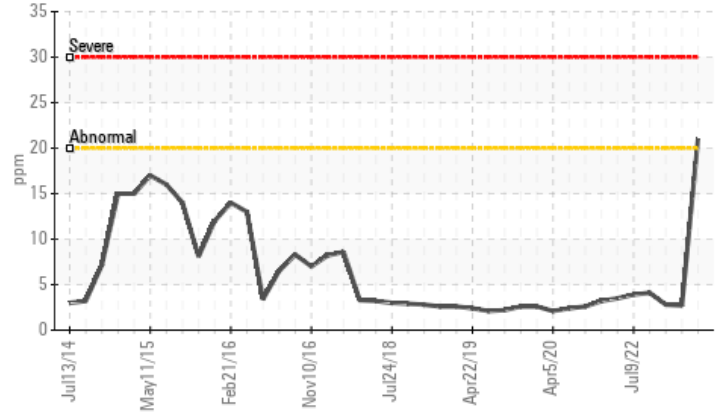
Area
API
 Machine Id
API
 Component
Center Main Engine
 Fluid
CHEVRON DELO 710 LS (450 GAL)

COMPONENT CONDITION SUMMARY

▲ Glycol Contamination



▲ Silicon (ppm)



RECOMMENDATION

We advise that you check for possible coolant leak. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

| Sample Status | | | | ABNORMAL | NORMAL | NORMAL |
|---------------|-----|-------------|-----|-----------------|--------|--------|
| Silicon | ppm | ASTM D5185m | >20 | ▲ 21 | 3 | 3 |
| Sodium | ppm | ASTM D5185m | >75 | ▲ 366 | 18 | 1 |

Customer Id: AMESAI
 Sample No.: MW0055079
 Lab Number: 05966941
 Test Package: MAR 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
customerservice@wearcheck.com

RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---------------------|--------|------|---------|--|
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |
| Check Glycol Access | --- | --- | ? | We advise that you check for the source of the coolant leak. |

HISTORICAL DIAGNOSIS

29 Jul 2023 Diag: Wes Davis

NORMAL



No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. Fuel content negligible. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

[view report](#)



13 May 2023 Diag: Wes Davis

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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

[view report](#)



18 Mar 2023 Diag: Don Baldrige

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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

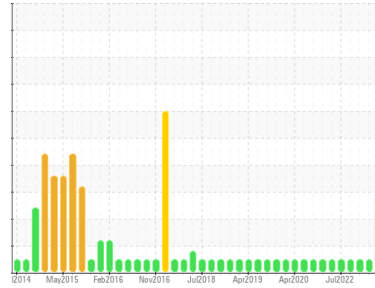
[view report](#)





OIL ANALYSIS REPORT

Sample Rating Trend



Area
API
 Machine Id
API
 Component
Center Main Engine
 Fluid
CHEVRON DELO 710 LS (450 GAL)

DIAGNOSIS

Recommendation
 We advise that you check for possible coolant leak. We recommend an early resample to monitor this condition.

Wear
 All component wear rates are normal.

Contamination
 Sodium and/or potassium levels are high. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Fluid Condition
 The BN result indicates that there is suitable alkalinity remaining in the oil.

| SAMPLE INFORMATION | method | limit/base | current | history1 | history2 |
|--------------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | MW0055079 | MW0040100 | MW0040077 |
| Sample Date | Client Info | | 23 Sep 2023 | 29 Jul 2023 | 13 May 2023 |
| Machine Age | hrs | Client Info | 10927 | 9927 | 8480 |
| Oil Age | hrs | Client Info | 10927 | 9927 | 8480 |
| Oil Changed | Client Info | | Not Chngd | Changed | Not Chngd |
| Sample Status | | | ABNORMAL | NORMAL | NORMAL |

| CONTAMINATION | method | limit/base | current | history1 | history2 |
|---------------|-----------|------------|----------------|----------|----------|
| Fuel | WC Method | >4.0 | <1.0 | 0.9 | <1.0 |

| WEAR METALS | method | limit/base | current | history1 | history2 | |
|-------------|--------|-------------|---------|--------------|----------|----|
| Iron | ppm | ASTM D5185m | >75 | 36 | 18 | 25 |
| Chromium | ppm | ASTM D5185m | >8 | 2 | 1 | 2 |
| Nickel | ppm | ASTM D5185m | >2 | <1 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | >3 | 0 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >15 | 0 | <1 | <1 |
| Lead | ppm | ASTM D5185m | >18 | 15 | 7 | 9 |
| Copper | ppm | ASTM D5185m | >80 | 34 | 10 | 14 |
| Tin | ppm | ASTM D5185m | >14 | 7 | 5 | 7 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |

| ADDITIVES | method | limit/base | current | history1 | history2 | |
|------------|--------|-------------|---------|-------------|----------|------|
| Boron | ppm | ASTM D5185m | | 116 | 39 | 43 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 48 | 38 | 47 |
| Manganese | ppm | ASTM D5185m | | 1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 15 | 5 | 17 |
| Calcium | ppm | ASTM D5185m | | 3223 | 3045 | 3613 |
| Phosphorus | ppm | ASTM D5185m | | 6 | 5 | 0 |
| Zinc | ppm | ASTM D5185m | | 5 | 0 | 0 |
| Sulfur | ppm | ASTM D5185m | | 2219 | 2225 | 2599 |

| CONTAMINANTS | method | limit/base | current | history1 | history2 | |
|--------------|--------|-------------|---------|--------------|----------|-----|
| Silicon | ppm | ASTM D5185m | >20 | ▲ 21 | 3 | 3 |
| Sodium | ppm | ASTM D5185m | >75 | ▲ 366 | 18 | 1 |
| Potassium | ppm | ASTM D5185m | >20 | 3 | 1 | 0 |
| Glycol | % | *ASTM D2982 | | NEG | NEG | NEG |

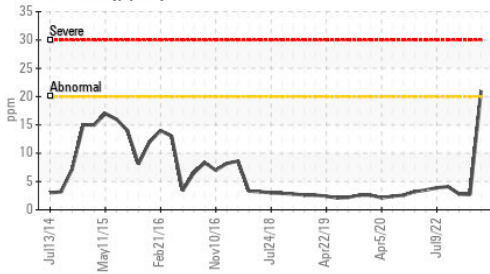
| INFRA-RED | method | limit/base | current | history1 | history2 | |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot % | % | *ASTM D7844 | >3 | 1.2 | 1 | 0.7 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 11.9 | 13.7 | 10.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 19.1 | 14.5 | 19.0 |

| FLUID DEGRADATION | method | limit/base | current | history1 | history2 | |
|-------------------|----------|-------------|---------|-------------|----------|------|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 11.1 | 12.6 | 12.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.5 | 8.9 | 13.3 | 7.1 |

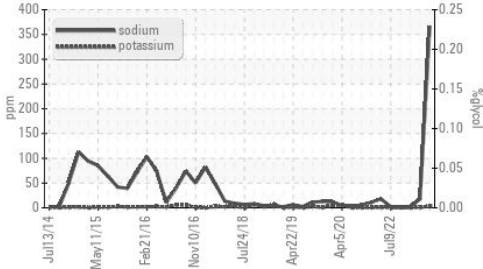


OIL ANALYSIS REPORT

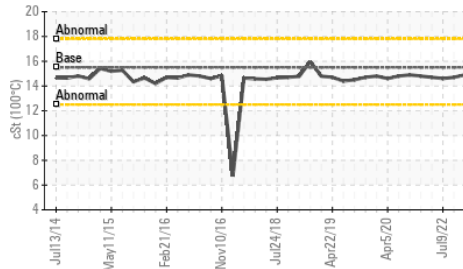
▲ Silicon (ppm)



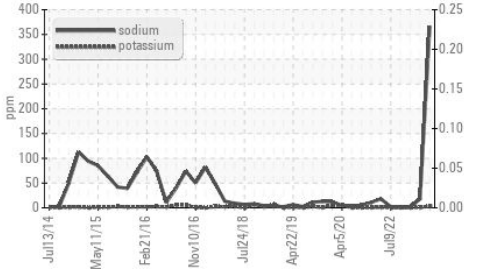
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

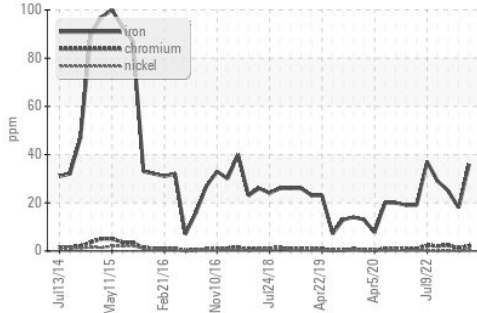


| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

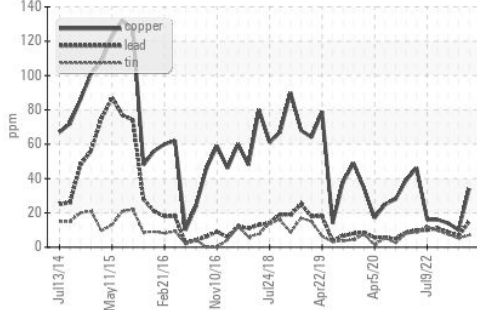
| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 15.5 | 13.9 | 15.09 |

GRAPHS

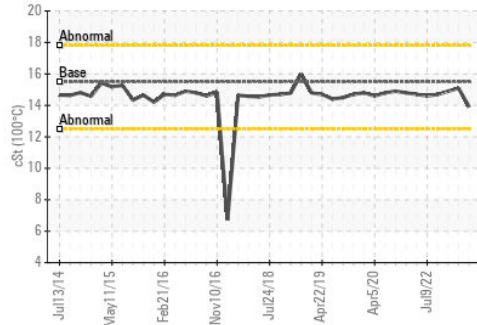
Ferrous Alloys



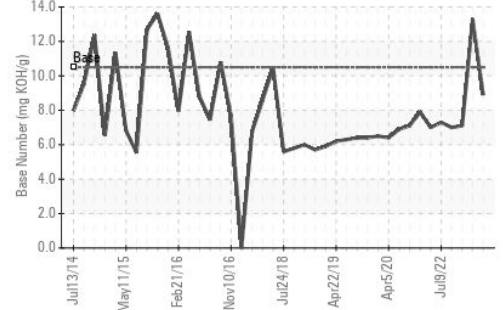
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0055079 **Received** : 02 Oct 2023
Lab Number : 05966941 **Diagnosed** : 04 Oct 2023
Unique Number : 10673492 **Diagnostician** : Jonathan Hester
Test Package : MAR 2 (Additional Tests: Glycol)

AMERICAN RIVER TRANSPORTATION CO.
 P.O. BOX 2889
 ST. LOUIS, MO
 US 63111
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 brian.griewing@adm.com
 T:
 F: (314)481-5278

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)