

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **3471** Component **Diesel Engine** Fluid **DPLX 21C 15W40 (--- GAL)**

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

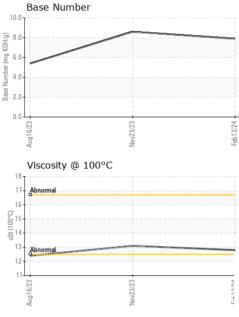
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORM | 1ATION | method | limit/base | current | history1 | history2 |
|---|--|--|---|---|---|---|
| Sample Number | | Client Info | | WC0885704 | WC0759015 | WC0758973 |
| Sample Date | | Client Info | | 13 Feb 2024 | 23 Nov 2023 | 16 Aug 2023 |
| Machine Age | hrs | Client Info | | 14288 | 13751 | 13072 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| CONTAMINATION | N. | method | limit/base | current | history1 | history2 |
| Fuel | N | WC Method | >5 | <1.0 | <1.0 | 0.7 |
| Water | | WC Method | | <1.0 NEG | NEG | NEG |
| Glycol | | WC Method | >0.2 | NEG | NEG | NEG |
| - | | | | - | | |
| WEAR METALS | | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >100 | 7 | 6 | 39 |
| Chromium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | | <1 | <1 | 2 |
| Lead | ppm | ASTM D5185m | >40 | <1 | 0 | 5 |
| Copper | ppm | ASTM D5185m | | 1 | 1 | 4 |
| Tin | ppm | ASTM D5185m | >15 | 1 | 0 | 1 |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| | | | | | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| ADDITIVES Boron | ppm | method ASTM D5185m | limit/base | current 7 | history1 6 | history2 3 |
| | ppm ppm | | limit/base | | | |
| Boron | | ASTM D5185m | limit/base | 7 | 6 | 3 |
| Boron Barium | ppm | ASTM D5185m ASTM D5185m | limit/base | 7 0 | 6 0 | 3 0 |
| Boron Barium Molybdenum | ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | 7 0 65 | 6 0 61 | 3 0 84 |
| Boron Barium Molybdenum Manganese | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | 7 0 65 <1 888 1088 | 6 0 61 0 | 3 0 84 <1 871 1178 |
| Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | 7 0 65 <1 888 | 6 0 61 0 917 | 3 0 84 <1 871 1178 961 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | 7 0 65 <1 888 1088 | 6 0 61 0 917 1138 1001 1213 | 3 0 84 <1 871 1178 961 1201 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | 7 0 65 <1 888 1088 928 | 6 0 61 0 917 1138 1001 | 3 0 84 <1 871 1178 961 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | 7 0 65 <1 888 1088 928 1162 | 6 0 61 0 917 1138 1001 1213 | 3 0 84 <1 871 1178 961 1201 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | 7 0 65 <1 888 1088 928 1162 2825 | 6 0 61 0 917 1138 1001 1213 2761 | 3 0 84 <1 871 1178 961 1201 2638 |
| Boron 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 ASTM D5185m | limit/base | 7 0 65 <1 888 1088 928 1162 2825 current | 6 0 61 0 917 1138 1001 1213 2761 history1 | 3 0 84 <1 871 1178 961 1201 2638 history2 |
| Boron 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 method ASTM D5185m | limit/base >25 | 7 0 65 <1 888 1088 928 1162 2825 2825 current 3 | 6 0 61 0 917 1138 1001 1213 2761 history1 4 | 3 0 84 <1 871 1178 961 1201 2638 history2 3 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m | limit/base >25 | 7 0 65 <1 888 1088 928 1162 2825 Current 3 2 | 6 0 61 0 917 1138 1001 1213 2761 history1 4 2 | 3 0 84 <1 871 1178 961 1201 2638 history2 3 4 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | limit/base >25 >20 | 7 0 65 <1 888 1088 928 1162 2825 Current 3 2 0 | 6 0 61 0 917 1138 1001 1213 2761 history1 4 2 0 | 3 0 84 <1 871 1178 961 1201 2638 history2 3 4 2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | limit/base >25 >20 limit/base | 7 0 65 <1 888 1088 928 1162 2825 current 3 2 0 0 | 6 0 61 0 917 1138 1001 1213 2761 history1 4 2 0 0 history1 | 3 0 84 <1 871 1178 961 1201 2638 history2 3 4 2 2 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | limit/base >25 >20 limit/base >3 | 7 0 65 <1 888 1088 928 1162 2825 <u>current</u> 3 2 0 <u>current</u> 0.3 | 6 0 61 0 917 1138 1001 1213 2761 history1 4 2 0 history1 0.3 | 3 0 84 <1 871 1178 961 1201 2638 history2 3 4 2 2 history2 0.8 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | limit/base >25 >20 limit/base >3 >20 | 7 0 65 <1 888 1088 928 1162 2825 current 3 2 2 0 current 0.3 7.4 | 6 0 61 0 917 1138 1001 1213 2761 history1 4 2 0 history1 0.3 7.5 | 3 0 84 <1 871 1178 961 1201 2638 history2 3 4 2 3 4 2 history2 0.8 10.5 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7615 | limit/base >25 >20 limit/base >3 >20 >30 >30 | 7 0 65 <1 888 1088 928 1162 2825 Current 3 2 0 Current 0.3 7.4 18.7 | 6 0 61 0 917 1138 1001 1213 2761 history1 4 2 0 history1 0.3 7.5 19.2 history1 | 3 0 84 <1 871 1178 961 1201 2638 history2 3 4 2 3 4 2 0.8 10.5 23.7 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | limit/base >25 >20 limit/base >3 >20 >30 | 7 0 65 <1 888 1088 928 1162 2825 <u>current</u> 3 2 0 <u>current</u> 0.3 7.4 18.7 | 6 0 61 0 917 1138 1001 1213 2761 history1 4 2 0 history1 0.3 7.5 19.2 | 3 0 84 <1 871 1178 961 1201 2638 history2 3 4 2 2 history2 0.8 10.5 23.7 |



OIL ANALYSIS REPORT

VISUAL



| | | 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 |
| Nov23/23 | Feb13/24 | Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Nová | Feb1 | Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| °C | | Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |
| | | Free Water | scalar | *Visual | | NEG | NEG | NEG |
| | | FLUID PROPE | RTIES | method | limit/base | current | history1 | history2 |
| | | Visc @ 100°C | cSt | ASTM D445 | | 12.8 | 13.1 | 12.4 |
| | | GRAPHS | | | | | | |
| | | Ferrous Alloys | | | | | | |
| 3/23 - | Y C C | 35 - iron | | | | | | |
| Nov23/23 | C.4.13.19 | 30 - nickel | | | | | | |
| | | 25 | | | | | | |
| | | 툡20 | | | | | | |
| | | 15 | | | | | | |
| | | 10 | | | | | | |
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| | | Aug16/23 | Vav23/23 | | Feb13/24 | | | |
| | | ∝ Non-ferrous Me | - | | LL. | | | |
| | | ¹⁰ T | | | | | | |
| | | copper | | | | | | |
| | | 8 - tin | | | | | | |
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| | Viscosity @ 100 | | | ц <u>г</u> | | | | |
| | ¹⁸ T | | | | Base Number | | | |
| | 17- Abnormal | | | 9.0 | 1 | | | |
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| | | | | | HO 6.0 | | | |
| | | (2) 15 00 [] tg 14 | 1 | | Ĕ 5.0 |] | | |
| | | 령 ¹⁴ | | | (07.0 HOX but 5.0 dun 4.0 WW 3.0 But 5.0 dun 4.0 8 8 8 2.0 | 0- | | |
| | | 13 Abnormal | | | | J | | |
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| | | 9 | 200 | | Feb 1 | Aug | Novź | Eah 1 |
| | | Aug16/23 | N | | | | | |
| | Laboratory | | | | NC 27512 | Annia | allov Wasta - Pr | |
| | Laboratory Sample No. | : WearCheck USA - | 501 Madisor | | | Apple V | /alley Waste - Ba 240 S | Itimore Distric |
| ANAB | Laboratory Sample No. Lab Number | : WearCheck USA - : WC0885704 | | ved : 22 | , NC 27513 Feb 2024 Feb 2024 | Apple V | 240 S | I ltimore Distric KRESSON S |
| | Sample No. Lab Number Unique Number | : WearCheck USA - : WC0885704 : 06097490 : 10890343 | 501 Madisor Receiv Testeo Diagn | ved : 22 d : 23 osed : 23 | Feb 2024 | | 240 S BA | I ltimore Distric KRESSON S ⁻ LTIMORE, ME US 21224 |
| Certificate L2367 | Sample No. Lab Number Unique Number Test Package | : WearCheck USA - : WC0885704 : 06097490 : 10890343 : CONST (Additiona | 501 Madison Receiv Tester Diagn I Tests: TBN | ved : 22 d : 23 osed : 23 \) | Feb 2024 Feb 2024 Feb 2024 - W | | 240 S BA Contact: k | I timore Distric Kresson S ⁻ ILTIMORE, ME US 21224 EVIN HINSON |
| To discuss this | Sample No. Lab Number Unique Number Test Package s sample report | : WearCheck USA - : WC0885704 : 06097490 : 10890343 | 501 Madison Receiv Tester Diagn I Tests: TBN ervice at 1-80 | ved : 22 d : 23 osed : 23 N) 00-237-1369 | Feb 2024 Feb 2024 Feb 2024 - W | | 240 S BA Contact: k | I ltimore Distric KRESSON S ⁻ LTIMORE, MI US 21224 |

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