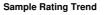


OIL ANALYSIS REPORT





Machine Id ISUZU 160657 Component

Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (12 QTS)

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.

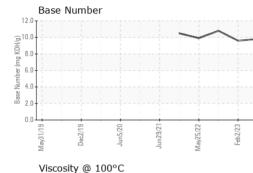
Fluid Condition

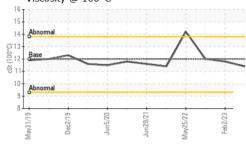
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORI | MATION | method | limit/base | current | history 1 | history 2 |
|---|--|---|---|---|---|--|
| Sample Number | | Client Info | | PCA0083838 | PCA0071730 | PCA0071716 |
| Sample Date | | Client Info | | 15 May 2023 | 02 Feb 2023 | 07 Sep 2022 |
| Machine Age | mls | Client Info | | 84390 | 84144 | 78008 |
| Oil Age | mls | Client Info | | 246 | 6136 | 4046 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| CONTAMINAT | ION | method | limit/base | current | history 1 | history 2 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Glycol | | WC Method | | NEG | NEG | NEG |
| WEAR METAL | S | method | limit/base | current | history 1 | history 2 |
| Iron | ppm | ASTM D5185m | >100 | 9 | 33 | 18 |
| Chromium | ppm | | >20 | 2 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | 1 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | 2.1 | 22 | 74 | 64 |
| Silver | ppm | ASTM D5185m | >3 | 2 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | 4 | <1 | 1 |
| Lead | ppm | ASTM D5185m | | 4 | <1 | 0 |
| Copper | ppm | ASTM D5185m | | 2 | 2 | 2 |
| Tin | ppm | ASTM D5185m | | 2 | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | >15 | 1 | <1 | <1 |
| Cadmium | ppm | ASTM D5185m | | 2 | 0 | 0 |
| | ррпі | AOTIN DOTOSIII | | - | 0 | |
| | | | | | | |
| ADDITIVES | | method | limit/base | current | history 1 | history 2 |
| Boron | ppm | ASTM D5185m | 2 | 37 | 93 | 77 |
| Boron Barium | ppm ppm | ASTM D5185m ASTM D5185m | 2 0 | 37 18 | 93 0 | 77 0 |
| Boron Barium Molybdenum | ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 | 37 18 33 | 93 0 17 | 77 0 21 |
| Boron Barium Molybdenum Manganese | ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 | 37 18 33 2 | 93 0 17 <1 | 77 0 21 <1 |
| Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 | 37 18 33 2 583 | 93 0 17 <1 510 | 77 0 21 <1 554 |
| Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 | 37 18 33 2 583 945 | 93 0 17 <1 510 1652 | 77 0 21 <1 554 1591 |
| 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 | 2 0 50 0 950 1050 995 | 37 18 33 2 583 945 752 | 93 0 17 <1 510 1652 1040 | 77 0 21 <1 554 1591 980 |
| 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 | 2 0 50 950 1050 995 1180 | 37 18 33 2 583 945 752 907 | 93 0 17 <1 510 1652 1040 1222 | 77 0 21 <1 554 1591 980 1143 |
| 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 | 2 0 50 0 950 1050 995 | 37 18 33 2 583 945 752 | 93 0 17 <1 510 1652 1040 | 77 0 21 <1 554 1591 980 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN | 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 | 2 0 50 950 1050 995 1180 2600 | 37 18 33 2 583 945 752 907 | 93 0 17 <1 510 1652 1040 1222 | 77 0 21 <1 554 1591 980 1143 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 950 1050 995 1180 2600 | 37 18 33 2 583 945 752 907 2962 | 93 0 17 <1 510 1652 1040 1222 3805 | 77 0 21 <1 554 1591 980 1143 4128 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN | 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 | 2 0 50 950 1050 995 1180 2600 limit/base >25 | 37 18 33 2 583 945 752 907 2962 current | 93 0 17 <1 510 1652 1040 1222 3805 history 1 | 77 0 21 <1 554 1591 980 1143 4128 history 2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method | 2 0 50 950 1050 995 1180 2600 limit/base >25 | 37 18 33 2 583 945 752 907 2962 current 5 | 93 0 17 <1 510 1652 1040 1222 3805 history 1 5 | 77 0 21 <1 554 1591 980 1143 4128 history 2 3 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m | 2 0 50 950 1050 995 1180 2600 limit/base >25 | 37 18 33 2 583 945 752 907 2962 current 5 3 | 93 0 17 <1 510 1652 1040 1222 3805 history 1 5 3 | 77 0 21 <1 554 1591 980 1143 4128 history 2 3 <1 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m | 2 0 50 950 1050 995 1180 2600 limit/base >25 >20 | 37 18 33 2 583 945 752 907 2962 current 5 3 7 | 93 0 17 <1 510 1652 1040 1222 3805 history 1 5 3 3 3 | 77 0 21 <1 554 1591 980 1143 4128 history 2 3 <1 0 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base | 37 18 33 2 583 945 752 907 2962 current 5 3 7 2 current | 93 0 17 <1 510 1652 1040 1222 3805 history 1 5 3 3 3 history 1 | 77 0 21 <1 554 1591 980 1143 4128 history 2 3 <1 0 history 2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm | ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 995 1180 2600 Imit/base >25 >20 Imit/base >3 | 37 18 33 2 583 945 752 907 2962 <u>current</u> 5 3 7 2 5 3 7 <i>current</i> 0.3 | 93 0 17 <1 510 1652 1040 1222 3805 history 1 5 3 3 3 history 1 0.8 | 77 0 21 <1 554 1591 980 1143 4128 history 2 3 <1 0 history 2 0.8 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 | 37 18 33 2 583 945 752 907 2962 current 5 3 7 current 0.3 6.1 | 93 0 17 <1 510 1652 1040 1222 3805 history 1 5 3 3 3 history 1 0.8 9.7 | 77 0 21 <1 554 1591 980 1143 4128 history 2 3 <1 0 history 2 0.8 9.1 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD | ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 2 0 0 50 0 950 1050 995 1180 2600 2600 25 20 220 20 20 20 20 20 20 30 20 20 20 | 37 18 33 2 583 945 752 907 2962 current 5 3 7 current 0.3 6.1 18.3 current | 93 0 17 <1 510 1652 1040 1222 3805 history 1 5 3 3 3 history 1 0.8 9.7 20.4 history 1 | 77 0 21 <1 554 1591 980 1143 4128 history 2 3 <1 0 history 2 0.8 9.1 21.7 history 2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D7844 *ASTM D7624 | 2 0 50 0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20 | 37 18 33 2 583 945 752 907 2962 <u>current</u> 5 3 7 <u>current</u> 0.3 6.1 18.3 | 93 0 17 <1 510 1652 1040 1222 3805 history 1 5 3 3 history 1 0.8 9.7 20.4 | 77 0 21 <1 554 1591 980 1143 4128 history 2 3 <1 0 history 2 0.8 9.1 21.7 |



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Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

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