OIL ANALYSIS REPORT

VOLVO PENTA 70112034648 - STARBOARD DIESEL ENGINE

Sample No: VPA051867

Oil Type: CHEVRON DELO 400 MULTIGRADE 15W40

SAMPLE INFORMATION VPA051867 Sample Number Sample Date 28 Aug 2023 Machine Hours 190 **Oil Hours** 190 Oil Changed Changed ABNORMAL Sample Status **OIL CONDITION** F: Visc @ 100°C **11.7** cSt Base Number (BN) mg KOH/g 9.3 Oxidation (PA) % 56 CONTAMINATION Soot % % 0.2 % Nitration (PA) 53 Sulfation (PA) % 52 % Glycol NEG Fuel % **5.2** Silicon ppm Sodium 1 ppm Potassium 2 ppm WEAR METALS Iron ppm 8 66 Copper ppm Lead ppm 1 🔲 Tin 1 ppm Aluminum ppm 1 Chromium 2 ppm Molybdenum ppm 66 Nickel ■ <1 ppm Titanium 0 🔲 ppm Silver **||** <1 ppm Manganese 1 ppm Vanadium 0 ppm **ADDITIVES** Calcium 1361 ppm Magnesium 815 ppm 1278 Zinc ppm Phosphorus ppm 1042 Barium ppm 0 Boron ppm 14

North Harbor Diesel Inc 720 30Th Street ANACORTES, WA US 98221 Contact: ROBBIN MURDOCK robbin@northharbordiesel.com T: (360)299-1904

Diagnosis

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.All component wear rates are normal. Elemental level of silicon (Si) above normal indicating ingress of seal material. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

 Depot:
 VP179089

 Unique No:
 10633947

 Signed:
 Don Baldridge

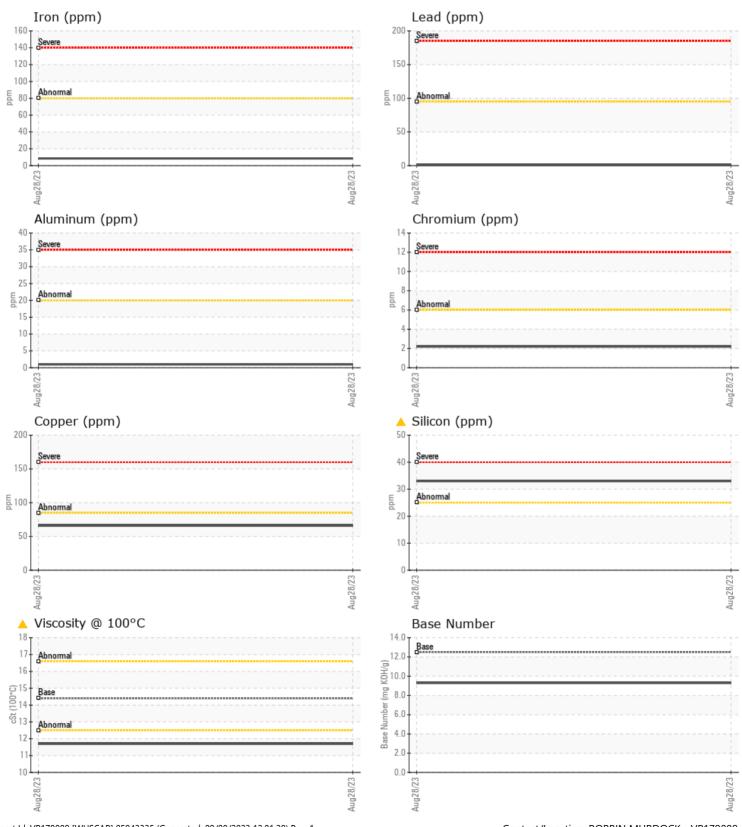
 Report Date:
 08 Sep 2023

Contact/Location: ROBBIN MURDOCK - VP179089

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GRAPHS



Report Id: VP179089 [WUSCAR] 05943335 (Generated: 09/08/2023 12:01:28) Rev: 1

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