

OIL ANALYSIS REPORT

FLEET **VOLVO VNR 26597** Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (38 QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

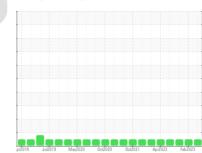
All component wear rates are normal.

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 Rating Trend

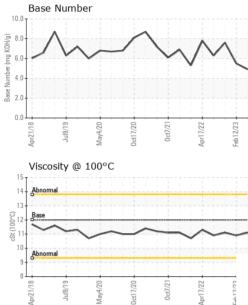


NORMAL

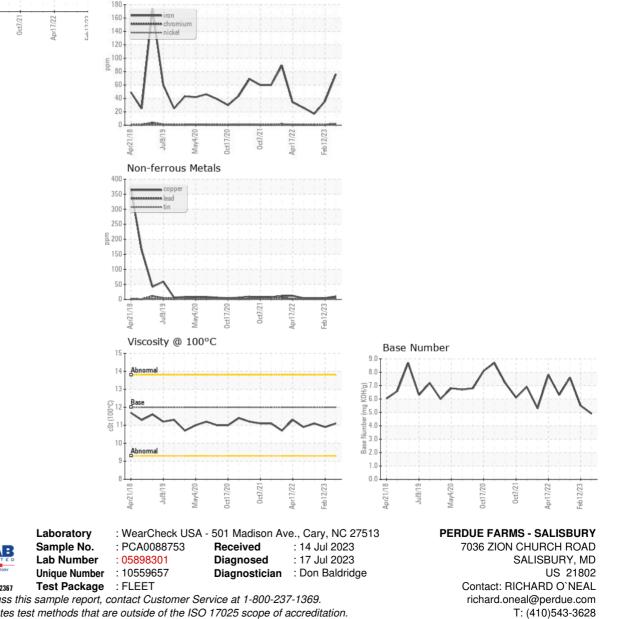
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0088753	PCA0087237	PCA0076944
Sample Date		Client Info		25 Jun 2023	12 Feb 2023	27 Oct 2022
Machine Age	mls	Client Info		0	569374	538394
Oil Age	mls	Client Info		30000	20000	30000
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Glycol		WC Method	20.0	NEG	NEG	NEG
-						
WEAR METAL		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	76	36	17
Chromium	ppm	ASTM D5185m	>20	2	<1	<1
Nickel	ppm	ASTM D5185m	>2	2	1	<1
Titanium	ppm	ASTM D5185m		6	5	6
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	7	4	<1
Lead	ppm	ASTM D5185m	>40	4	2	<1
Copper	ppm	ASTM D5185m	>330	10	4	4
Tin	ppm	ASTM D5185m	>15	2	<1	<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	history1 2	history2 5
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	2	<1	2	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0	<1 2	2 2	5 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	<1 2 72	2 2 53	5 0 53
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	<1 2 72 1	2 2 53 <1	5 0 53 <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	<1 2 72 1 1057	2 2 53 <1 828	5 0 53 <1 818
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	<1 2 72 1 1057 1434	2 2 53 <1 828 1145	5 0 53 <1 818 1176
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	<1 2 72 1 1057 1434 1200	2 2 53 <1 828 1145 933	5 0 53 <1 818 1176 900
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	<1 2 72 1 1057 1434 1200 1522	2 2 53 <1 828 1145 933 1164	5 0 53 <1 818 1176 900 1176
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 limit/base	<1 2 72 1 1057 1434 1200 1522 3488	2 2 53 <1 828 1145 933 1164 2669	5 0 53 <1 818 1176 900 1176 2997
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base	<1 2 72 1 1057 1434 1200 1522 3488 current	2 2 53 <1 828 1145 933 1164 2669 history1	5 0 53 <1 818 1176 900 1176 2997 history2
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	<1 2 72 1 1 1057 1434 1200 1522 3488 current 9	2 2 53 <1 828 1145 933 1164 2669 history1 6	5 0 53 <1 818 1176 900 1176 2997 history2 4
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 ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	<1 2 72 1 1 1057 1434 1200 1522 3488 current 9 37	2 2 53 <1 828 1145 933 1164 2669 history1 6 13	5 0 53 <1 818 1176 900 1176 2997 history2 4 13
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	<1 2 72 1 1057 1434 1200 1522 3488 current 9 37 4	2 2 53 <1 828 1145 933 1164 2669 history1 6 13 2	5 0 53 <1 818 1176 900 1176 2997 history2 4 13 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	<1 2 72 1 1 1057 1434 1200 1522 3488 current 9 37 4 current	2 2 53 <1 828 1145 933 1164 2669 history1 6 13 2 history1	5 0 53 <1 818 1176 900 1176 2997 history2 4 13 0 history2
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	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	<1 2 72 1 1 1057 1434 1200 1522 3488 current 9 37 4 current 0.8	2 2 53 <1 828 1145 933 1164 2669 history1 6 13 2 history1 0.6	5 0 53 <1 818 1176 900 1176 2997 history2 4 13 0 history2 0.4
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 0 950 1050 995 1180 2600 limit/base >25 .20 limit/base >3 >20	<1 2 72 1 1 1057 1434 1200 1522 3488 current 9 37 4 current 0.8 12.3	2 2 53 <1 828 1145 933 1164 2669 history1 6 13 2 history1 0.6 10.1	5 0 53 <1 818 1176 900 1176 2997 history2 4 13 0 history2 0.4 10
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 D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 imit/base >20 imit/base >3 >20	<1 2 72 1 1 1057 1434 1200 1522 3488 current 9 37 4 current 0.8 12.3 25.7	2 2 53 <1 828 1145 933 1164 2669 history1 6 13 2 history1 0.6 10.1 22.8	5 0 53 <1 818 1176 900 1176 2997 history2 4 13 0 history2 0.4 10 22.2
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 D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 imit/base >25 	<1 2 72 1 1 1057 1434 1200 1522 3488 Current 9 37 4 Current 0.8 12.3 25.7	2 2 53 <1 828 1145 933 1164 2669 history1 6 13 2 history1 0.6 10.1 22.8 history1	5 0 53 <1 818 1176 900 1176 2997 history2 4 13 0 history2 0.4 10 22.2 history2



OIL ANALYSIS REPORT



VISUAL		method	limit/base	current	history1	history2
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	>0.2	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	12.00	11.1	10.9	11.1
GRAPHS						
Ferrous Alloys						





Certificate L2367 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)

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