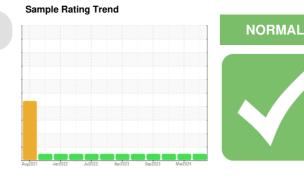


### **OIL ANALYSIS REPORT**

SAMPLE INFORMATION method



# VOLVO VNR 2126904 (S/N 4V4WC9EH5MN600465)

Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- 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.

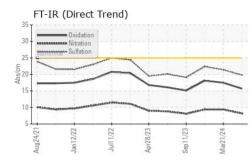
#### Fluid Condition

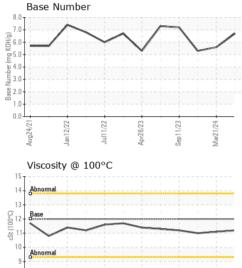
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		method				
Sample Number		Client Info		PCA0094603	PCA0094632	PCA0094597
Sample Date		Client Info		23 May 2024	21 Mar 2024	22 Dec 2023
Machine Age	mls	Client Info		391414	368142	332180
Oil Age	mls	Client Info		23272	36282	39232
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
			11 1.0			
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	22	27	26
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm		>2	0	1	2
Titanium	ppm	ASTM D5185m	~_	0	0	0
Silver		ASTM D5185m	>2		0	0
Aluminum	ppm	ASTM D5185m	>2	0	1	<1
	ppm		>25 >40	0	1	<1
Lead	ppm	ASTM D5185m		3	5	5
Copper	ppm	ASTM D5185m	>330	-		
Tin	ppm		>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method				history2
ABBIIII 20		method	iiiiii/base	current	history1	TIStoryz
Boron	ppm	ASTM D5185m	2	3	<1	1
	ppm ppm					
Boron		ASTM D5185m	2	3	<1	1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	3 0	<1 0	1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	3 0 61	<1 0 59	1 0 66
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	3 0 61 <1	<1 0 59 <1	1 0 66 <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	3 0 61 <1 956	<1 0 59 <1 970	1 0 66 <1 1009
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	3 0 61 <1 956 1076	<1 0 59 <1 970 1161	1 0 66 <1 1009 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	2 0 50 0 950 1050 995	3 0 61 <1 956 1076 1066	<1 0 59 <1 970 1161 861	1 0 66 <1 1009 1201 1013
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 50 950 1050 995 1180	3 0 61 <1 956 1076 1066 1256	<1 0 59 <1 970 1161 861 1275	1 0 66 <1 1009 1201 1013 1313
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	2 0 50 950 1050 995 1180 2600	3 0 61 <1 956 1076 1066 1256 3206 current	<1 0 59 <1 970 1161 861 1275 3090	1 0 66 <1 1009 1201 1013 1313 2752
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 <b>method</b>	2 0 50 950 1050 995 1180 2600	3 0 61 <1 956 1076 1066 1256 3206 <i>current</i> 3	<1 0 59 <1 970 1161 861 1275 3090 history1 4	1 0 66 <1 1009 1201 1013 1313 2752 history2 4
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600	3 0 61 <1 956 1076 1066 1256 3206 current	<1 0 59 <1 970 1161 861 1275 3090 history1	1 0 66 <1 1009 1201 1013 1313 2752 history2
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 <b>limit/base</b> >25 >20	3 0 61 <1 956 1076 1066 1256 3206 current 3 1 <1	<1 0 59 <1 970 1161 861 1275 3090 history1 4 < 2	1 0 66 <1 1009 1201 1013 1313 2752 history2 4 < 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >25 >20	3 0 61 <1 956 1076 1066 1256 3206 current 3 1 <1 <1	<1 0 59 <1 970 1161 861 1275 3090 history1 4 <1 2 history1	1 0 66 <1 1009 1201 1013 1313 2752 history2 4 <1 1 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 ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	3 0 61 <1 956 1076 1066 1256 3206 <i>current</i> 3 1 <1 <1 <i>current</i> 0.4	<1 0 59 <1 970 1161 861 1275 3090 history1 4 <1 2 history1 0.6	1 0 66 <1 1009 1201 1013 1313 2752 history2 4 <1 1 history2 0.6
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	3 0 61 <1 956 1076 1066 1256 3206 <i>current</i> 3 1 <1 <1 <i>current</i> 0.4 8.2	<1 0 59 <1 970 1161 861 1275 3090 history1 4 <1 2 history1 0.6 9.4	1 0 66 <1 1009 1201 1013 1313 2752 history2 4 <1 1 1 history2 0.6 9.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	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	3 0 61 <1 956 1076 1066 1256 3206 <i>current</i> 3 1 <1 <1 <i>current</i> 0.4	<1 0 59 <1 970 1161 861 1275 3090 history1 4 <1 2 history1 0.6	1 0 66 <1 1009 1201 1013 1313 2752 history2 4 <1 1 history2 0.6
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	3 0 61 <1 956 1076 1066 1256 3206 <i>current</i> 3 1 <1 <1 <i>current</i> 0.4 8.2	<1 0 59 <1 970 1161 861 1275 3090 history1 4 <1 2 history1 0.6 9.4	1 0 66 <1 1009 1201 1013 1313 2752 history2 4 <1 1 1 history2 0.6 9.4
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 0 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >3 >20	3 0 61 <1 956 1076 1066 1256 3206 <u>current</u> 3 1 <1 <1 0.4 8.2 19.8	<1 0 59 <1 970 1161 861 1275 3090 history1 4 <1 2 history1 0.6 9.4 21.4	1 0 66 <1 1009 1201 1013 1313 2752 history2 4 <1 1 1 <u>history2</u> 0.6 9.4 22.4
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	2 0 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 20 >20 >30 >30 <b>imit/base</b>	3 0 61 <1 956 1076 1066 1256 3206 <i>current</i> 3 1 <1 <1 <i>current</i> 0.4 8.2 19.8 <i>current</i>	<1 0 59 <1 970 1161 861 1275 3090 history1 4 <1 2 history1 0.6 9.4 21.4 history1	1 0 66 <1 1009 1201 1013 1313 2752 history2 4 <1 1 1 history2 0.6 9.4 22.4 history2



## **OIL ANALYSIS REPORT**





Jul11/22

Jan 12/22

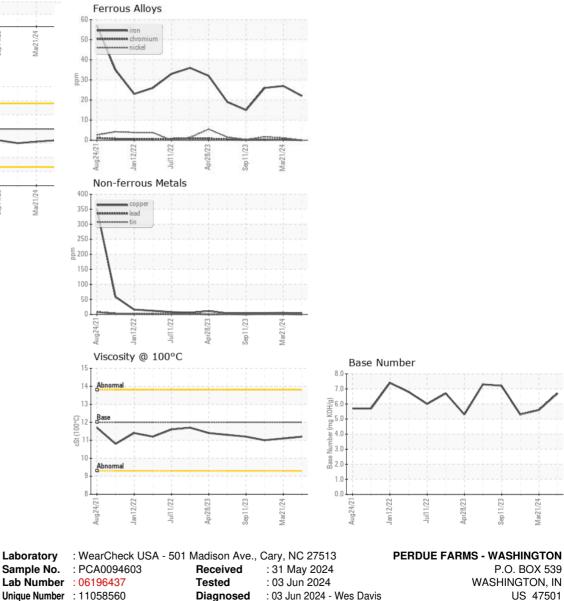
Apr28/23

Sep11/23

Mar21/24

Laboratory

VISUAL		method				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	11.2	11.1	11.0
GRAPHS						





8. Aug24/21-

> Unique Number : 11058560 Diagnosed : 03 Jun 2024 - Wes Davis Test Package : FLEET Contact: DEREK RYAN Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. derek.ryan@perdue.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (812)257-3023 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: PERWAS [WUSCAR] 06196437 (Generated: 06/03/2024 13:16:16) Rev: 1

Contact/Location: DEREK RYAN - PERWAS

F: