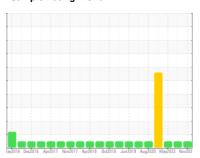


# **OIL ANALYSIS REPORT**

## Sample Rating Trend



NORMAL



# VOLVO 26410

Component

**Diesel Engine** 

PETRO CANADA DURON SHP 10W30 (33 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

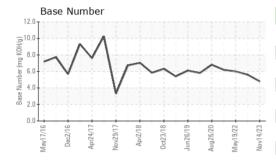
## **Fluid Condition**

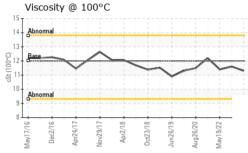
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Contamber   Client Info   PCA0094588   PCA0052368   PCA	TS) ************************************						
Client Info	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age   mls   Client Info   24590   368099   354774	Sample Number		Client Info		PCA0094588	PCA0052368	PCA005238
Dil Age	Sample Date		Client Info		14 Nov 2023	26 Jan 2023	19 May 2022
Changed   Changed   Changed   Changed   NORMAL   NORMAL	Machine Age	mls	Client Info		610669	586079	554774
NORMAL   NORMAL   NORMAL   NORMAL   CONTAMINATION   method   limit/base   current   history1   history1   history2   history3   history4   history5   hi	Oil Age	mls	Client Info		24590	36309	28043
CONTAMINATION         method         limit/base         current         history1         history1           Fuel         WC Method         >6.0         <1.0	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history1           fron         ppm         ASTM D5185m         >100         35         38         28           Chromium         ppm         ASTM D5185m         >20         <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Chromium	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2
Solicidar   Spm   ASTM D5185m   >2   0   <1   <1   <1   <1   <1   <1   <1	ron	ppm	ASTM D5185m	>100	35	38	28
Description	Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Silver	Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	Titanium	ppm	ASTM D5185m		0	<1	<1
December   December	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper	Aluminum	ppm	ASTM D5185m	>25	15	13	13
Tin	Lead	ppm	ASTM D5185m	>40	0	1	2
Antimony	Copper	ppm	ASTM D5185m	>330	4	4	6
Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         0         1         4           Barium         ppm         ASTM D5185m         0         2         0         0           Molybdenum         ppm         ASTM D5185m         0         62         60         56           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         950         915         909         862           Calcium         ppm         ASTM D5185m         1050         1077         1048         1118           Phosphorus         ppm         ASTM D5185m         995         943         905         903           Zinc         ppm         ASTM D5185m         2600         2396         2828         2633           CONTAMINANTS         method         limit/base         current         history1         his	Γin	ppm	ASTM D5185m	>15	0	1	<1
Description	Antimony	ppm	ASTM D5185m				
ADDITIVES         method         limit/base         current         history1         history           Boron         ppm         ASTM D5185m         2         0         1         4           Barium         ppm         ASTM D5185m         0         2         0         0           Molybdenum         ppm         ASTM D5185m         50         62         60         56           Manganese         ppm         ASTM D5185m         0         0         <1	Vanadium	ppm	ASTM D5185m		0	0	0
Barium	Cadmium	ppm	ASTM D5185m		0	0	0
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         50         62         60         56           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         950         915         909         862           Calcium         ppm         ASTM D5185m         1050         1077         1048         1118           Phosphorus         ppm         ASTM D5185m         995         943         905         903           Zinc         ppm         ASTM D5185m         995         943         905         903           Zinc         ppm         ASTM D5185m         2600         2396         2828         2633           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         10         11         18           Sodium         ppm         ASTM D5185m         >25         10         11         18           Sodium         ppm         ASTM D5185m         >20         3         <1         1           Potassium         ppm         ASTM D5185m	Boron	ppm	ASTM D5185m	2	0	1	4
Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         950         915         909         862           Calcium         ppm         ASTM D5185m         1050         1077         1048         1118           Phosphorus         ppm         ASTM D5185m         995         943         905         903           Zinc         ppm         ASTM D5185m         1180         1177         1216         1170           Sulfur         ppm         ASTM D5185m         2600         2396         2828         2633           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         10         11         18           Sodium         ppm         ASTM D5185m         >25         10         11         18           Potassium         ppm         ASTM D5185m         >20         3         <1	Barium	ppm	ASTM D5185m	0	2	0	0
Magnesium         ppm         ASTM D5185m         950         915         909         862           Calcium         ppm         ASTM D5185m         1050         1077         1048         1118           Phosphorus         ppm         ASTM D5185m         995         943         905         903           Zinc         ppm         ASTM D5185m         1180         1177         1216         1170           Sulfur         ppm         ASTM D5185m         2600         2396         2828         2633           CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >25         10         11         18           Sodium         ppm         ASTM D5185m         >20         3         <1	Molybdenum	ppm	ASTM D5185m	50	62	60	56
Calcium         ppm         ASTM D5185m         1050         1077         1048         1118           Phosphorus         ppm         ASTM D5185m         995         943         905         903           Zinc         ppm         ASTM D5185m         1180         1177         1216         1170           Sulfur         ppm         ASTM D5185m         2600         2396         2828         2633           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         10         11         18           Sodium         ppm         ASTM D5185m         >25         10         11         18           Potassium         ppm         ASTM D5185m         >20         3         <1	Manganese	ppm	ASTM D5185m	0	0	<1	<1
Phosphorus         ppm         ASTM D5185m         995         943         905         903           Zinc         ppm         ASTM D5185m         1180         1177         1216         1170           Sulfur         ppm         ASTM D5185m         2600         2396         2828         2633           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         10         11         18           Sodium         ppm         ASTM D5185m         >25         10         11         18           Potassium         ppm         ASTM D5185m         >20         3         <1	Magnesium	ppm	ASTM D5185m	950	915	909	862
Zinc         ppm         ASTM D5185m         1180         1177         1216         1170           Sulfur         ppm         ASTM D5185m         2600         2396         2828         2633           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         10         11         18           Sodium         ppm         ASTM D5185m         15         13         12           Potassium         ppm         ASTM D5185m         >20         3         <1	Calcium	ppm	ASTM D5185m	1050	1077	1048	1118
Sulfur         ppm         ASTM D5185m         2600         2396         2828         2633           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         10         11         18           Sodium         ppm         ASTM D5185m         >25         15         13         12           Potassium         ppm         ASTM D5185m         >20         3         <1	Phosphorus	ppm	ASTM D5185m	995	943	905	903
CONTAMINANTS         method         limit/base         current         history1         history.           Silicon         ppm         ASTM D5185m         >25         10         11         18           Sodium         ppm         ASTM D5185m         15         13         12           Potassium         ppm         ASTM D5185m         >20         3         <1	Zinc	ppm	ASTM D5185m	1180	1177	1216	1170
Silicon         ppm         ASTM D5185m         >25         10         11         18           Sodium         ppm         ASTM D5185m         15         13         12           Potassium         ppm         ASTM D5185m         >20         3         <1         1           INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.8         1.1         0.8           Nitration         Abs/cm         *ASTM D7624         >20         10.0         11.0         10.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         23.0         23.3         22.0           FLUID DEGRADATION         method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9         19.3         18.4	Sulfur	ppm	ASTM D5185m	2600	2396	2828	2633
Sodium         ppm         ASTM D5185m         15         13         12           Potassium         ppm         ASTM D5185m         >20         3         <1	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         3         <1         1           INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >3         0.8         1.1         0.8           Nitration         Abs/cm         *ASTM D7624         >20         10.0         11.0         10.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         23.0         23.3         22.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9         19.3         18.4	Silicon	ppm	ASTM D5185m	>25	10	11	18
INFRA-RED	Sodium	ppm	ASTM D5185m		15	13	12
Soot %         %         *ASTM D7844         >3         0.8         1.1         0.8           Nitration         Abs/cm         *ASTM D7624         >20         10.0         11.0         10.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         23.0         23.3         22.0           FLUID DEGRADATION         method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9         19.3         18.4	Potassium	ppm	ASTM D5185m	>20	3	<1	1
Nitration         Abs/cm         *ASTM D7624         >20         10.0         11.0         10.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         23.0         23.3         22.0           FLUID DEGRADATION method limit/base current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9         19.3         18.4	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         23.0         23.3         22.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.9         19.3         18.4	Soot %	%	*ASTM D7844	>3	0.8	1.1	0.8
FLUID DEGRADATION method limit/base current history1 history  Oxidation Abs/.1mm *ASTM D7414 >25 18.9 19.3 18.4	Vitration	Abs/cm	*ASTM D7624	>20	10.0	11.0	10.0
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30			22.0
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.9	19.3	18.4
	Base Number (BN)	mg KOH/g	ASTM D2896		4.8	5.6	6



## **OIL ANALYSIS REPORT**

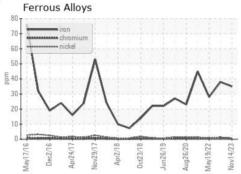


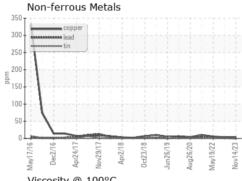


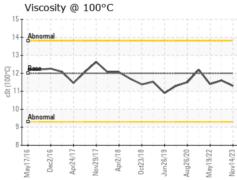
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

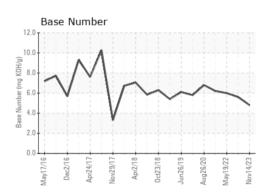
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.3	11.6	11.4

## **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : FLEET

: PCA0094588 : 06026080 : 10775871

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 06 Dec 2023 Diagnosed

: 07 Dec 2023

Diagnostician : Wes Davis

**PERDUE FARMS - WASHINGTON** P.O. BOX 539 WASHINGTON, IN

US 47501 Contact: DEREK RYAN derek.ryan@perdue.com

T: (812)257-3023

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)

F: