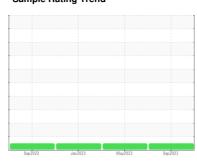


# **OIL ANALYSIS REPORT**

Sample Rating Trend



NORMAL



Machine Id **636781** 

Component **Diesel Engine** 

PETRO CANADA DURON SHP 10W30 (--- GAL)

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

#### Wear

Metal levels are typical for a new component breaking in.

## Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

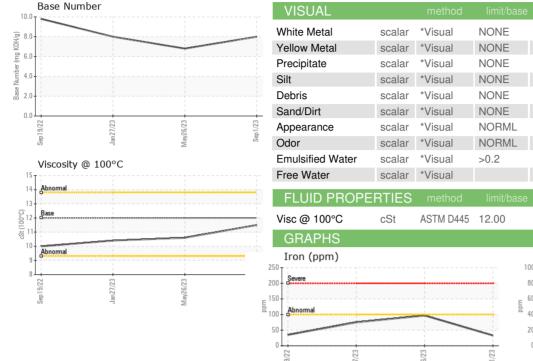
## **Fluid Condition**

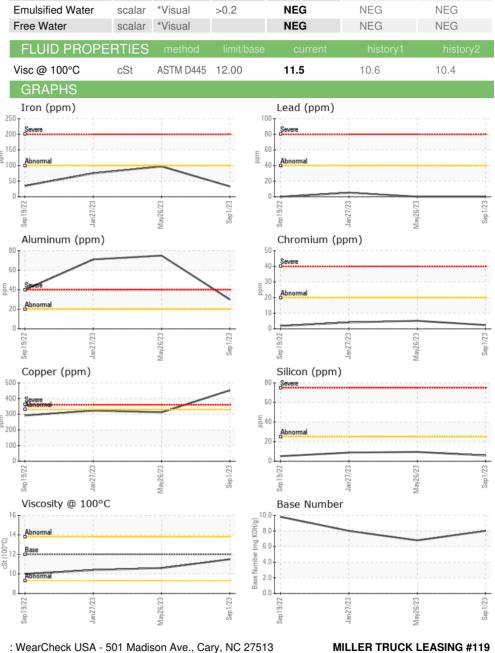
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0104285	PCA0098075	PCA0089711
Sample Number Sample Date		Client Info		01 Sep 2023	26 May 2023	27 Jan 2023
Machine Age	mls	Client Info		69870	50176	31917
Oil Age	mls	Client Info		0	0	0
Oil Changed	11113	Client Info		Not Changd	Changed	Not Changd
Sample Status		Oliciti IIIIo		NORMAL	NORMAL	NORMAL
			11 11 11			
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	33	97	75
Chromium	ppm	ASTM D5185m	>20	2	5	4
Nickel	ppm	ASTM D5185m	>4	1	4	4
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>20	30	75	71
Lead	ppm	ASTM D5185m	>40	<1	<1	5
Copper	ppm	ASTM D5185m	>330	452	312	323
Tin	ppm	ASTM D5185m	>15	4	19	20
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 7	history1 22	history2 29
	ppm					
Boron		ASTM D5185m	2	7	22	29
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2	7 0	22 <1	29 <1
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	7 0 62	22 <1 54 5 591	29 <1 55
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	7 0 62 1 872 1170	22 <1 54 5 591 1684	29 <1 55 5 609 1796
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	7 0 62 1 872 1170 965	22 <1 54 5 591 1684 757	29 <1 55 5 609 1796 745
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 0 950 1050 995 1180	7 0 62 1 872 1170 965 1201	22 <1 54 5 591 1684 757 978	29 <1 55 5 609 1796 745 1012
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	7 0 62 1 872 1170 965	22 <1 54 5 591 1684 757	29 <1 55 5 609 1796 745
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 ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	7 0 62 1 872 1170 965 1201	22 <1 54 5 591 1684 757 978	29 <1 55 5 609 1796 745 1012
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 ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600	7 0 62 1 872 1170 965 1201 2974	22 <1 54 5 591 1684 757 978 2143	29 <1 55 5 609 1796 745 1012 2328
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	2 0 50 0 950 1050 995 1180 2600	7 0 62 1 872 1170 965 1201 2974	22 <1 54 5 591 1684 757 978 2143 history1	29 <1 55 5 609 1796 745 1012 2328 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base	7 0 62 1 872 1170 965 1201 2974 current	22 <1 54 5 591 1684 757 978 2143 history1	29 <1 55 5 609 1796 745 1012 2328 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base	7 0 62 1 872 1170 965 1201 2974 current 6	22 <1 54 5 591 1684 757 978 2143 history1 10 6	29 <1 55 5 609 1796 745 1012 2328 history2 9 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25	7 0 62 1 872 1170 965 1201 2974 current 6 2 68	22 <1 54 5 591 1684 757 978 2143 history1 10 6 178	29 <1 55 5 609 1796 745 1012 2328 history2 9 7 157
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	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20	7 0 62 1 872 1170 965 1201 2974 current 6 2 68	22 <1 54 5 591 1684 757 978 2143 history1 10 6 178 history1	29 <1 55 5 609 1796 745 1012 2328 history2 9 7 157 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m  method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20	7 0 62 1 872 1170 965 1201 2974 current 6 2 68	22 <1 54 5 591 1684 757 978 2143 history1 10 6 178 history1	29 <1 55 5 609 1796 745 1012 2328 history2 9 7 157 history2 0.7
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  method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20	7 0 62 1 872 1170 965 1201 2974 current 6 2 68 current 0.5 8.4	22 <1 54 5 591 1684 757 978 2143 history1 10 6 178 history1 1 12.8	29 <1 55 5 609 1796 745 1012 2328 history2 9 7 157 history2 0.7 11.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m  Method  ASTM D5185m  Method  *ASTM D7844  *ASTM D7844  *ASTM D7844  *ASTM D7844  *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20 >30 limit/base	7 0 62 1 872 1170 965 1201 2974 current 6 2 68 current 0.5 8.4 18.5 current	22 <1 54 5 591 1684 757 978 2143 history1 10 6 178 history1 1 12.8 24.6 history1	29 <1 55 5 609 1796 745 1012 2328 history2 9 7 157 history2 0.7 11.4 23.5
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  Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20 >30 limit/base	7 0 62 1 872 1170 965 1201 2974 current 6 2 68 current 0.5 8.4 18.5	22 <1 54 5 591 1684 757 978 2143 history1 10 6 178 history1 1 12.8 24.6	29 <1 55 5 609 1796 745 1012 2328 history2 9 7 157 history2 0.7 11.4 23.5 history2



## **OIL ANALYSIS REPORT**





NONE

NONE

NONE

NONE

NONE

NONE

**NORML** 

**NORML** 

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML





Laboratory

Sample No. Lab Number

**Unique Number** 

: 05956147 : 10657360

Received : PCA0104285

Diagnosed

: 20 Sep 2023 : 21 Sep 2023

Diagnostician : Wes Davis

Test Package : MOB 1 ( Additional Tests: TBN )

\* - 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)

To discuss this sample report, contact Customer Service at 1-800-237-1369.

39 INDUSTRIAL AVE HASBROUCK HEIGHTS, NJ US 07604

Contact: MIKE LONGETTE mlongette@millertransgroup.com

T: F: (201)528-7053

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

Report Id: MILRUT [WUSCAR] 05956147 (Generated: 09/21/2023 04:33:12) Rev: 1

Contact/Location: MIKE LONGETTE - MILRUT