

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend

NORMAL

#### Area (AU403U) Supermarket - Tractor Machine Id FREIGHTLINER 107A8841 Component

**Diesel Engine** 

PETRO CANADA DURON SHP 10W30 (11 GAL)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

Fluic

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

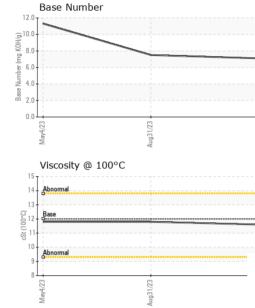
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0111022	PCA0104110	PCA0097059
Sample Date		Client Info		12 Jan 2024	31 Aug 2023	04 May 2023
Machine Age	mls	Client Info		255175	233296	218880
Oil Age	mls	Client Info		21879	14416	16299
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	ATTENTION	SEVERE
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	0.20
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	13	7	18
Chromium	ppm	ASTM D5185m	>5	1	1	2
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	8	3	6
Lead	ppm	ASTM D5185m	>30	0	<1	0
Copper	ppm	ASTM D5185m	>150	6	6	7
Tin	ppm	ASTM D5185m	>5	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method				history2
ADDITIVES	maa	method ASTM D5185m	limit/base			
	ppm ppm			current 17 0	history1 23 0	history2 8 0
Boron Barium	ppm	ASTM D5185m	2	17	23	8
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	2 0	17 0	23 0	8 0
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	17 0 59	23 0 22	8 0 126
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	17 0 59 <1	23 0 22 1	8 0 126 1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	17 0 59 <1 768	23 0 22 1 233	8 0 126 1 880
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	17 0 59 <1 768 1362	23 0 22 1 233 2095	8 0 126 1 880 1052
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	17 0 59 <1 768 1362 1029	23 0 22 1 233 2095 945	8 0 126 1 880 1052 967
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	17 0 59 <1 768 1362 1029 1195	23 0 22 1 233 2095 945 1165	8 0 126 1 880 1052 967 1192
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	2 0 50 950 1050 995 1180 2600	17 0 59 <1 768 1362 1029 1195 3060	23 0 22 1 233 2095 945 1165 4503	8 0 126 1 880 1052 967 1192 3548
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	17 0 59 <1 768 1362 1029 1195 3060 current	23 0 22 1 233 2095 945 1165 4503 history1	8 0 126 1 880 1052 967 1192 3548 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 <b>method</b> ASTM D5185m	2 0 50 950 1050 995 1180 2600	17 0 59 <1 768 1362 1029 1195 3060 current 4	23 0 22 1 233 2095 945 1165 4503 history1 4	8 0 126 1 880 1052 967 1192 3548 history2 7
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 <b>method</b> ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base	17 0 59 <1 768 1362 1029 1195 3060 current 4 30 39	23 0 22 1 233 2095 945 1165 4503 history1 4 4	8 0 126 1 880 1052 967 1192 3548 history2 7 7 1092
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 50 950 1050 995 1180 2600 <b>limit/base</b> >20	17 0 59 <1 768 1362 1029 1195 3060 <i>current</i> 4 30 39 <i>current</i> 0.6	23 0 22 1 233 2095 945 1165 4503 history1 4 4 44 44 79 history1 0.2	8 0 126 1 880 1052 967 1192 3548 history2 7 1092 1385 history2 0.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >20	17 0 59 <1 768 1362 1029 1195 3060 current 4 30 39 29 current	23 0 22 1 233 2095 945 1165 4503 history1 4 4 44 44 79 history1	8 0 126 1 880 1052 967 1192 3548 history2 7 ↑ 1092 1385 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 50 950 1050 995 1180 2600 <b>limit/base</b> >20 <b>limit/base</b> >20	17 0 59 <1 768 1362 1029 1195 3060 <i>current</i> 4 30 39 <i>current</i> 0.6	23 0 22 1 233 2095 945 1165 4503 history1 4 4 44 44 79 history1 0.2	8 0 126 1 880 1052 967 1192 3548 history2 7 1092 1385 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 0 950 1050 995 1180 2600 <b>limit/base</b> >20 <b>limit/base</b> >3 >20	17 0 59 <1 768 1362 1029 1195 3060 <i>current</i> 4 30 39 <i>current</i> 0.6 7.9	23 0 22 1 233 2095 945 1165 4503 history1 4 4 44 44 79 history1 0.2 6.7	8 0 126 1 880 1052 967 1192 3548 history2 7 1092 1385 1385 history2 0.6 12.4
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 50 950 1050 995 1180 2600 <b>limit/base</b> >20 <b>limit/base</b> >3 >20 >3	17 0 59 <1 768 1362 1029 1195 3060 <u>current</u> 4 30 39 <u>current</u> 0.6 7.9 19.9	23 0 22 1 233 2095 945 1165 4503 <b>history1</b> 4 44 44 44 <b>A</b> 79 <b>history1</b> 0.2 6.7 15.9	<ul> <li>8</li> <li>0</li> <li>126</li> <li>1</li> <li>880</li> <li>1052</li> <li>967</li> <li>1192</li> <li>3548</li> <li>history2</li> <li>7</li> <li>1092</li> <li>1385</li> <li>history2</li> <li>0.6</li> <li>12.4</li> <li>20.2</li> </ul>



# **OIL ANALYSIS REPORT**

VISUAL



					iimii/base	current		riistoryz
		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
1/23	2/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Aug31/23	Jan 12/24	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
		Free Water	scalar	*Visual		NEG	NEG	NEG
		FLUID PROP	ERTIES	method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	12.00	11.6	11.8	11.8
		GRAPHS						
		Ferrous Alloys						
<u></u>		18 16						
Aug31/23		14 - management in the						
Au		12		/				
		E <sup>10</sup>						
		8						
		4						
		2						
		0						
		May4/23	Aug31/23		Jan 12/24			
		W	Aug		Jan			
		Non-ferrous Meta	als					
		10 copper 1						
		8 - Incommentation lead						
		6 -						
		E						
		E 4						
		udd 4						
		4 2-						
		4 2 0			2/24			
		4	Aug31/23		Jan 12/24 4			
		Viscosity @ 100°	Aug31/23			Base Number		
		4 0 CCCPFEe	Aug31/23			Base Number		
		Viscosity @ 100°	Aug31/23		12.0	Base Number		
		Viscosity @ 100°	Aug31/23		12.0	Base Number		
		Viscosity @ 100°	Aug31/23		12.0	Base Number		
		Viscosity @ 100°	Aug31/23		12.0	Base Number		
		Viscosity @ 100°	Aug31/23		12.0	Base Number		
		Viscosity @ 100°	Aug31/23		12.0- 10.0- (0)HO 8.0- ) ac 4.0- 9888	Base Number		
		Viscosity @ 100°	Aug31/23		12.0- 10.0- (0)HOX 80.0- Jaquum a 6.0- Jaquum 8 80 2.0-	Base Number		
		Viscosity @ 100°	c		12.0- 10.0- (0)H(0) 8.0- ) 35 40.0- 9 4.0- 2.0- 0.0-			
		Viscosity @ 100°	c		12.0- 10.0- (0)HOX 8.0- 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	Base Number	4ug31/23	
tificate L2367	Laboratory Sample No. Lab Number Unique Number Test Package	Viscosity @ 100°	C	d : 29 . ed : 30 .	12.0- 10.0- (0)H00 K0H(0) 8986 Mmmb et (md K0H(0) 4.0- 2.0- 4.0- 4.0- 4.0- 4.0- 4.0- 4.0- 4.0- 4	Majvi23		