

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

#### **108941** Component **Diesel Engine** Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

### 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

There is no indication of any contamination in the oil.

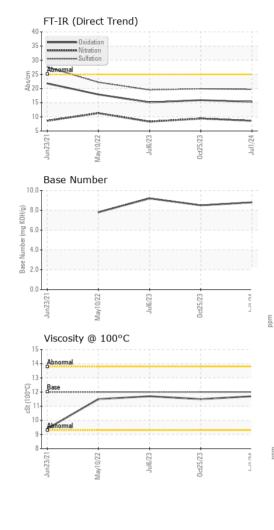
#### Fluid Condition

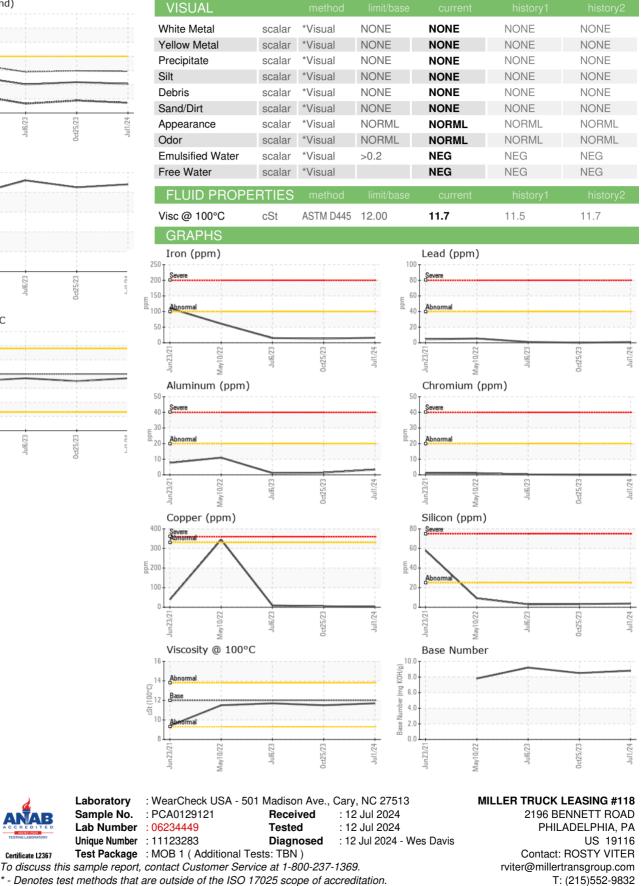
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0129121	PCA0108372	PCA0100755
Sample Date		Client Info		01 Jul 2024	25 Oct 2023	06 Jul 2023
Machine Age	mls	Client Info		6000	50902	0
Oil Age	mls	Client Info		6000	50902	4949
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ON	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	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	16	13	15
Chromium	ppm	ASTM D5185m	>20	0	0	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		4	<1	2
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	1	1
Lead	ppm	ASTM D5185m	>40	<1	0	1
Copper	ppm	ASTM D5185m	>330	1	5	9
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 2	current 8	history1 2	history2 5
	ppm ppm					
Boron		ASTM D5185m	2	8	2	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	8 0	2	5
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	8 0 55	2 0 58	5 0 57
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	8 0 55 0	2 0 58 0	5 0 57 <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	8 0 55 0 914	2 0 58 0 909	5 0 57 <1 952
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	8 0 55 0 914 1161	2 0 58 0 909 1154	5 0 57 <1 952 1229
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	8 0 55 0 914 1161 1099	2 0 58 0 909 1154 994	5 0 57 <1 952 1229 1025
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	8 0 55 0 914 1161 1099 1335	2 0 58 0 909 1154 994 1252	5 0 57 <1 952 1229 1025 1258
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	8 0 55 0 914 1161 1099 1335 3933	2 0 58 0 909 1154 994 1252 3041	5 0 57 <1 952 1229 1025 1258 3712
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	8 0 555 0 914 1161 1099 1335 3933 current	2 0 58 0 909 1154 994 1252 3041 history1	5 0 57 <1 952 1229 1025 1258 3712 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 limit/base >25	8 0 555 0 914 1161 1099 1335 3933 current 4	2 0 58 0 909 1154 994 1252 3041 history1 3	5 0 57 <1 952 1229 1025 1258 3712 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 limit/base >25	8 0 55 0 914 1161 1099 1335 3933 current 4 4	2 0 58 0 909 1154 994 1252 3041 <b>history1</b> 3 8	5 0 57 <1 952 1229 1025 1258 3712 history2 3 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25	8 0 55 0 914 1161 1099 1335 3933 current 4 4 3	2 0 58 0 909 1154 994 1252 3041 <b>history1</b> 3 8 0	5 0 57 <1 952 1229 1025 1258 3712 history2 3 5 1
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 ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b> >3	8 0 55 0 914 1161 1099 1335 3933 current 4 4 3 3 current	2 0 58 0 909 1154 994 1252 3041 <b>history1</b> 3 8 0 0 <b>history1</b>	5 0 57 <1 952 1229 1025 1258 3712 history2 3 5 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 <b>limit/base</b> >25 >20 <b>limit/base</b> >3	8 0 55 0 914 1161 1099 1335 3933 current 4 3 current 0.9	2 0 58 0 909 1154 994 1252 3041 history1 3 8 0 history1 1	5 0 57 <1 952 1229 1025 1258 3712 history2 3 5 1 1 history2 0.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc 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>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	8 0 55 0 914 1161 1099 1335 3933 current 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	2 0 58 0 909 1154 994 1252 3041 history1 3 8 0 history1 1 9.4	5 0 57 <1 952 1229 1025 1258 3712 history2 3 5 1 history2 0.8 8.3
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>imit/base</b> >25 <b>imit/base</b> >3 >20	8 0 55 0 914 1161 1099 1335 3933 current 4 4 3 3 <u>current</u> 0.9 8.6 19.7	2 0 58 0 909 1154 994 1252 3041 history1 3 8 0 history1 1 9.4 19.9	5 0 57 <1 952 1229 1025 1258 3712 <b>history2</b> 3 5 1 <b>history2</b> 0.8 8.3 19.5
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 TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 2600 255 20 220 20 3 20 20 3 3 20 3 3 20 3 3 20 3 3 3 20 3 3 3 20 3 3 3 20 3 3 3 3	8 0 55 0 914 1161 1099 1335 3933 current 4 4 3 current 0.9 8.6 19.7 current	2 0 58 0 909 1154 994 1252 3041 history1 3 8 0 history1 1 9.4 19.9 history1	5 0 57 <1 952 1229 1025 1258 3712 history2 3 5 1 history2 0.8 8.3 19.5 history2



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\* - 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)

Report Id: MILPHINE [WUSCAR] 06234449 (Generated: 07/12/2024 17:30:18) Rev: 1

Certificate 12367

Laboratory

Sample No.

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