

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend





#### 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

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

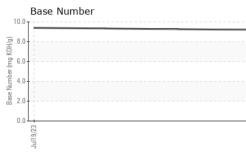
#### Fluid Condition

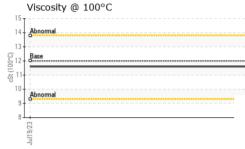
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

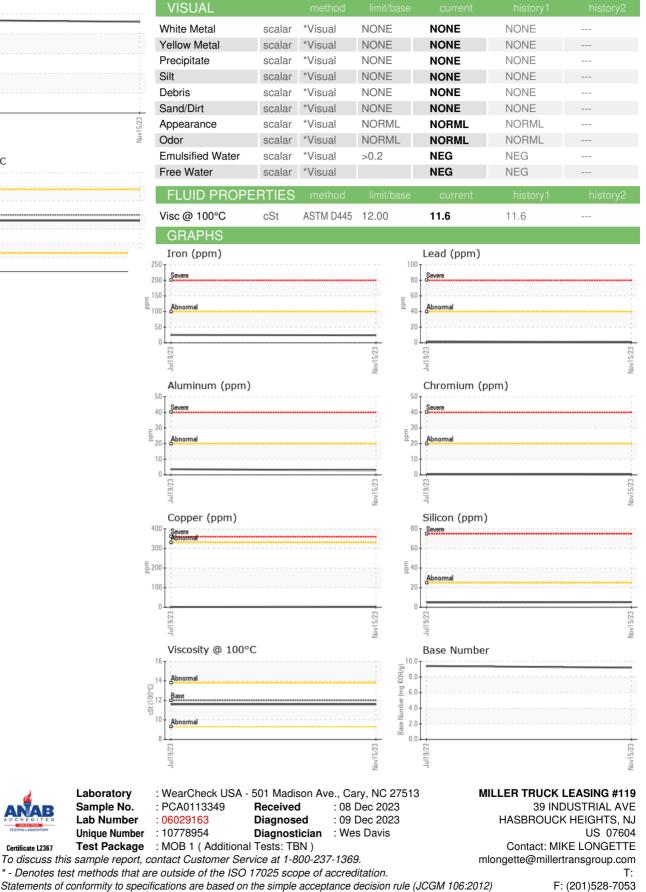
			Jul2023	Nov2023		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0113349	PCA0101370	
Sample Date		Client Info		15 Nov 2023	19 Jul 2023	
Machine Age	mls	Client Info		0	0	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		N/A	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINATI	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	24	25	
Chromium	ppm	ASTM D5185m	>20	<1	<1	
Nickel	ppm	ASTM D5185m	>4	0	<1	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	3	4	
Lead	ppm	ASTM D5185m	>40	<1	2	
Copper	ppm	ASTM D5185m	>330	2	1	
Tin	ppm	ASTM D5185m	>15	<1	<1	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
						,
Boron	ppm	ASTM D5185m	2	15	10	
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	2 0	15 0	10	
Barium				-		
Barium	ppm	ASTM D5185m	0	0	1	
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	0 50	0 63	1 74	
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0	0 63 <1	1 74 <1	
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950	0 63 <1 875	1 74 <1 1028	
Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050	0 63 <1 875 1196	1 74 <1 1028 1312	  
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995	0 63 <1 875 1196 1064	1 74 <1 1028 1312 1187	   
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	0 50 0 950 1050 995 1180	0 63 <1 875 1196 1064 1308	1 74 <1 1028 1312 1187 1394	    
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	0 50 0 950 1050 995 1180 2600	0 63 <1 875 1196 1064 1308 3213	1 74 <1 1028 1312 1187 1394 3473	
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	0 50 950 1050 995 1180 2600	0 63 <1 875 1196 1064 1308 3213 current	1 74 <1 1028 1312 1187 1394 3473 history1	
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	0 50 950 1050 995 1180 2600 limit/base >25	0 63 <1 875 1196 1064 1308 3213 current 5	1 74 <1 1028 1312 1187 1394 3473 history1 5	    history2
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	0 50 950 1050 995 1180 2600 limit/base >25	0 63 <1 875 1196 1064 1308 3213 current 5 70 9 current	1 74 <1 1028 1312 1187 1394 3473 history1 5 4	     history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	0 63 <1 875 1196 1064 1308 3213 current 5 70 9	1 74 <1 1028 1312 1187 1394 3473 history1 5 4 2	    history2
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 ppm	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	0 63 <1 875 1196 1064 1308 3213 current 5 70 9 current	1 74 <1 1028 1312 1187 1394 3473 history1 5 4 2 2 history1	    history2   history2
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	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b>	0 63 <1 875 1196 1064 1308 3213 current 5 70 9 9 current 1.2	1 74 <1 1028 1312 1187 1394 3473 history1 5 4 2 2 history1 1	     history2  history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 50 950 1050 995 1180 2600 <b>imit/base</b> >25 	0 63 <1 875 1196 1064 1308 3213 current 5 70 9 current 1.2 11.1 21.7 current	1 74 <1 1028 1312 1187 1394 3473 history1 5 4 2 2 history1 1 9.6 20.9 history1	     history2  history2
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	ASTM D5185m ASTM D5185m	0 50 950 1050 995 1180 2600 imit/base >25 	0 63 <1 875 1196 1064 1308 3213 <u>current</u> 5 70 9 <u>current</u> 1.2 11.1 21.7	1 74 <1 1028 1312 1187 1394 3473 history1 5 4 2 <u>history1</u> 1 9.6 20.9	     history2  history2  history2



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Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

Contact/Location: MIKE LONGETTE - MILRUT