

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend





Component Diesel Engine

Fluid 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

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

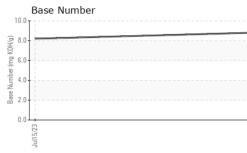
#### Fluid Condition

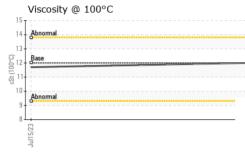
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

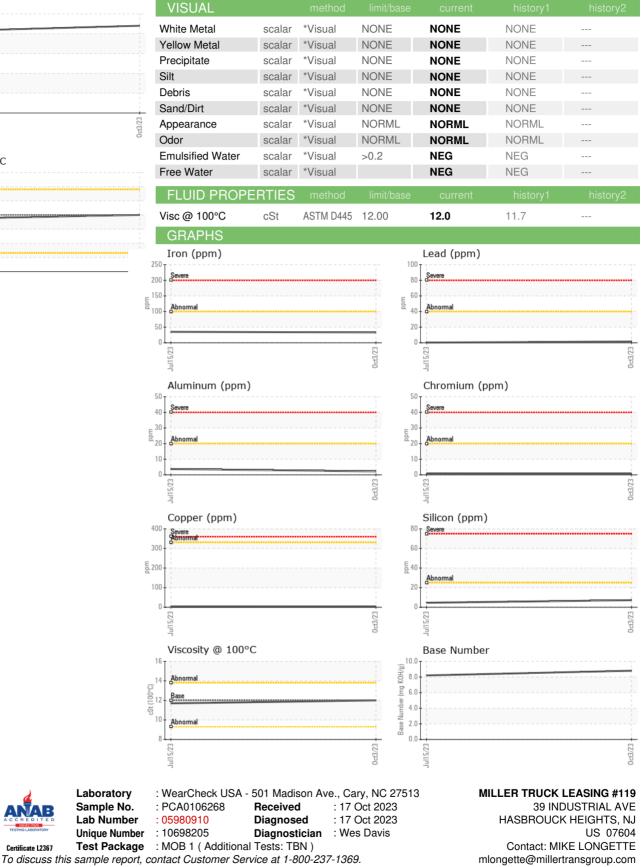
AL)			Jul2023	0ct2023		
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0106268	PCA0101356	
Sample Date		Client Info		03 Oct 2023	15 Jul 2023	
Machine Age	mls	Client Info		0	0	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		N/A	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	
WEAR METAL	s	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	33	35	
Chromium	ppm	ASTM D5185m	>20	<1	<1	
Nickel		ASTM D5185m	>4	0	0	
Titanium	ppm ppm	ASTM D5185m	~	0	0	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	2	4	
Lead	ppm	ASTM D5185m	>40	2	<1	
Copper	ppm	ASTM D5185m	>330	2	2	
Tin	ppm	ASTM D5185m	>15	<u>د</u> <1	0	
1 11 1	ppin	AGTINI DUTUUIII	>15			
Vanadium	nnm	ASTM D5185m		0	0	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm ppm	ASTM D5185m	lineit//e e e e	0	0	
Cadmium ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	 history2
Cadmium ADDITIVES Boron	ppm ppm	ASTM D5185m method ASTM D5185m	2	0 current 11	0 history1 3	 history2 
Cadmium ADDITIVES Boron Barium	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	2 0	0 current 11 0	0 history1 3 0	 history2 
Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	0 current 11 0 60	0 history1 3 0 70	 history2  
Cadmium ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	0 current 11 0 60 <1	0 history1 3 0 70 <1	 history2   
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	0 current 11 0 60 <1 801	0 history1 3 0 70 <1 1013	 history2   
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	0 current 11 0 60 <1 801 1152	0 history1 3 0 70 <1 1013 1263	 history2    
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	0 current 11 0 60 <1 801 1152 919	0 history1 3 0 70 <1 1013 1263 1127	 history2     
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	0 current 11 0 60 <1 801 1152 919 1109	0 history1 3 0 70 <1 1013 1263 1127 1420	 history2       
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 ASTM D5185m	2 0 50 950 1050 995 1180 2600	0 current 11 0 60 <1 801 1152 919	0 history1 3 0 70 <1 1013 1263 1127 1420 3861	 history2        -
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	0 current 11 0 60 <1 801 1152 919 1109	0 history1 3 0 70 <1 1013 1263 1127 1420 3861 history1	 history2       
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 ASTM D5185m method	2 0 50 950 1050 995 1180 2600	0 current 11 0 60 <1 801 1152 919 1109 2614 current 7	0 history1 3 0 70 <1 1013 1263 1127 1420 3861 history1 5	 history2        -
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25	0 current 11 0 60 <1 801 1152 919 1109 2614 current	0 history1 3 0 70 <1 1013 1263 1127 1420 3861 history1 5 2	 history2       history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 ASTM D5185m method	2 0 50 950 1050 995 1180 2600 limit/base	0 current 11 0 60 <1 801 1152 919 1109 2614 current 7	0 history1 3 0 70 <1 1013 1263 1127 1420 3861 history1 5	 history2       history2 
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 ASTM D5185m Method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25	0 current 11 0 60 <1 801 1152 919 1109 2614 current 7 3	0 history1 3 0 70 <1 1013 1263 1127 1420 3861 history1 5 2	 history2       history2  
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	0 current 11 0 60 <1 801 1152 919 1109 2614 current 7 3 0 current 1.7	0 history1 3 0 70 <1 1013 1263 1127 1420 3861 history1 5 2 0 0 history1 1.5	 history2      history2   
Cadmium Cadmium ADDITIVES 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	2 0 50 950 1050 995 1180 2600 limit/base >25 >20 limit/base	0 current 11 0 60 <1 801 1152 919 1109 2614 current 7 3 0 current	0 history1 3 0 70 <1 1013 1263 1127 1420 3861 history1 5 2 0 0 history1	 history2      history2    history2
Cadmium Cadmium ADDITIVES 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 method ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	0 current 11 0 60 <1 801 1152 919 1109 2614 current 7 3 0 current 1.7	0 history1 3 0 70 <1 1013 1263 1127 1420 3861 history1 5 2 0 0 history1 1.5	 history2      history2  history2  history2
Cadmium Cadmium ADDITIVES 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	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25 <b>limit/base</b> >20	0 current 11 0 60 <1 801 1152 919 1109 2614 current 7 3 0 current 1.7 12.3	0 history1 3 0 70 <1 1013 1263 1127 1420 3861 history1 5 2 0 0 history1 1.5 11.7	 history2      history2   history2  history2
Cadmium Cadmium ADDITIVES 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 D5185m	2 0 50 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >20 <b>imit/base</b> >3 >20	0 current 11 0 60 <1 801 1152 919 1109 2614 current 7 3 0 current 1.7 12.3 23.7	0 history1 3 0 70 <1 1013 1263 1127 1420 3861 history1 5 2 0 0 history1 1.5 11.7 22.9	 history2       history2  history2  history2



# **OIL ANALYSIS REPORT**







\* - 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)

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