

# **OIL ANALYSIS REPORT**

#### Sample Rating Trend



# Machine Id 233196

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

# DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### 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 acceptable for the time in service.

			Aug2023	Dec2023		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0113342	PCA0104252	
Sample Date		Client Info		13 Dec 2023	18 Aug 2023	
Machine Age	mls	Client Info		10439	5879	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		Not Changd	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	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	61	47	
Chromium	ppm	ASTM D5185m	>20	1	1	
Nickel	ppm	ASTM D5185m	>4	- <1	<1	
Titanium	ppm	ASTM D5185m	~ 1	0	0	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	10	8	
Lead		ASTM D5185m	>40	0	0	
Copper	ppm ppm	ASTM D5185m	>330	30	24	
Tin			>15	30	3	
Vanadium	ppm	ASTM D5185m	>15	0	0	
Cadmium	ppm	ASTM D5185m		0	0	
	ppm			-	-	
ADDITIVES	ppin	method	limit/base	-	history1	history2
	ppm	method	limit/base	-	-	
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	2	current 36	history1 52	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0	current 36 0	history1 52 0	history2 
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 36 0 51	history1 52 0 48	history2  
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current           36           0           51           10	history1 52 0 48 9	history2   
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 36 0 51 10 624	history1 52 0 48 9 617	history2    
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	current           36           0           51           10           624           1599	history1 52 0 48 9 617 1658	history2    
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	Current 36 0 51 10 624 1599 872	history1 52 0 48 9 617 1658 852	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	Current 36 0 51 10 624 1599 872 1028 2544	history1 52 0 48 9 617 1658 852 1051	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	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	Current 36 0 51 10 624 1599 872 1028 2544	history1 52 0 48 9 617 1658 852 1051 3253	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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	Current 36 0 51 10 624 1599 872 1028 2544 Current	history1 52 0 48 9 617 1658 852 1051 3253 history1	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600	Current           36           0           51           10           624           1599           872           1028           2544           current           23	history1 52 0 48 9 617 1658 852 1051 3253 history1 12	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b>	Current           36           0           51           10           624           1599           872           1028           2544           current           23           5           10	history1           52           0           48           9           617           1658           852           1051           3253           history1           12           5	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20	Current           36           0           51           10           624           1599           872           1028           2544           current           23           5           10	history1           52           0           48           9           617           1658           852           1051           3253           history1           12           5           8	history2 history2 history2
ADDITIVES 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	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	current           36           0           51           10           624           1599           872           1028           2544           current           23           5           10           current           23           5           10           current	history1         52         0         48         9         617         1658         852         1051         3253         history1         12         5         8         history1	history2 history2 history2 history2 history2
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	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	current           36           0           51           10           624           1599           872           1028           2544           current           23           5           10           current           0.5	history1         52         0         48         9         617         1658         852         1051         3253         history1         12         5         8         history1         0.3	history2 history2 history2 history2 history2
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 <b>TS</b> ppm ppm ppm	method           ASTM D5185m           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b> >3 >20	current           36           0           51           10           624           1599           872           1028           2544           current           23           5           10           current           0.5           9.6           23.1	history1           52           0           48           9           617           1658           852           1051           3253           history1           12           5           8           history1           0.3           7.6	history2 <tr tr=""></tr>
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 <b>TS</b> ppm ppm ppm	method           ASTM D5185m           ASTM D7185M           *ASTM D7624           *ASTM D7415           method	2 0 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 20 20 <b>imit/base</b> >3 20 30	Current           36           0           51           10           624           1599           872           1028           2544           current           23           5           10           current           0.5           9.6           23.1           current	history1         52         0         48         9         617         1658         852         1051         3253         history1         12         5         8         history1         0.3         7.6         21.4         history1	history2   history2            history2
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 <b>TS</b> ppm ppm ppm ppm	method           ASTM D5185m           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >3 >20	current           36           0           51           10           624           1599           872           1028           2544           current           23           5           10           current           0.5           9.6           23.1	history1         52         0         48         9         617         1658         852         1051         3253         history1         12         5         8         history1         0.3         7.6         21.4	history2 history2 history2 history2 history2 history2 history2 history2

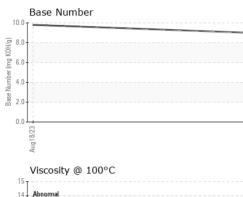


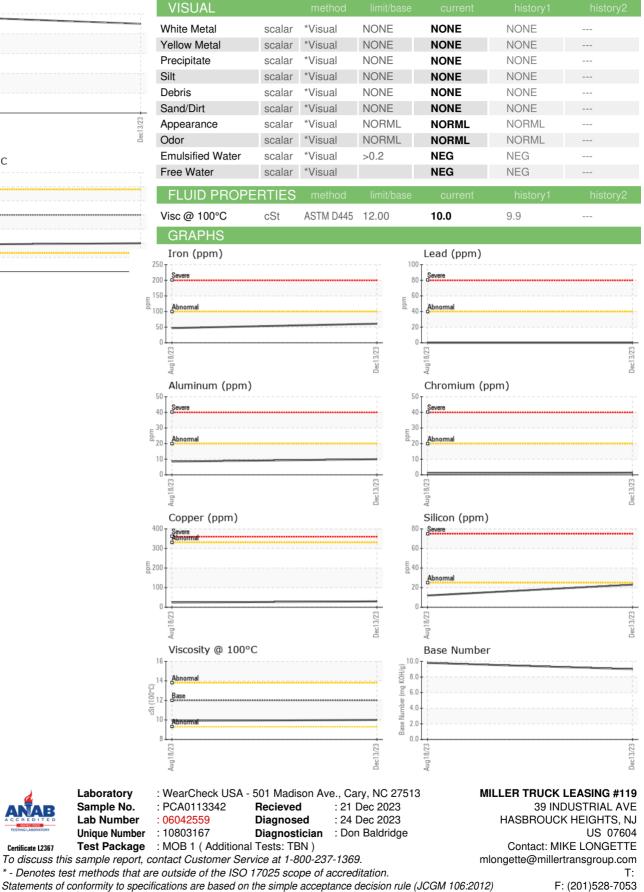
cSt (100°C) Ba

Abnorma

Aug16

# **OIL ANALYSIS REPORT**





Certificate L2367

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