

# **OIL ANALYSIS REPORT**

# MCGINN BUS COMPANY 11423 Component

#### **Diesel Engine** Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)

## DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

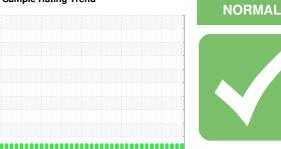
All component wear rates are normal.

#### 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 suitable for further service.





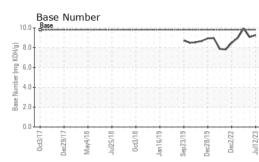
## 

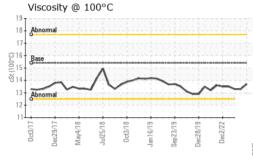
Sample Rating Trend

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0090627	PCA0090737	PCA0071986
Sample Date		Client Info		12 Jul 2023	27 May 2023	23 Mar 2023
Machine Age	mls	Client Info		499317	487112	473955
Oil Age	mls	Client Info		24000	12000	24000
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	15	12	23
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	<1	0
Lead	ppm	ASTM D5185m	>40	8	0	7
Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base		history1 11	history2 7
	ppm ppm		0	current		
Boron		ASTM D5185m	0	current 7	11	7
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	current 7 0	11 0	7 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 7 0 63	11 0 61	7 0 64
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 7 0 63 <1	11 0 61 <1	7 0 64 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	Current 7 0 63 <1 1015	11 0 61 <1 925	7 0 64 <1 1000
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current     7     0     63     <1     1015     1188	11 0 61 <1 925 1135 967 1171	7 0 64 <1 1000 1252 1070 1349
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	0 0 60 0 1010 1070 1150 1270	Current 7 0 63 <1 1015 1188 1068	11 0 61 <1 925 1135 967	7 0 64 <1 1000 1252 1070
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	0 0 60 0 1010 1070 1150 1270	current     7     0     63     <1     1015     1188     1068     1280	11 0 61 <1 925 1135 967 1171	7 0 64 <1 1000 1252 1070 1349
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	0 0 60 1010 1070 1150 1270 2060	current     7     0     63     <1     1015     1188     1068     1280     3692	11 0 61 <1 925 1135 967 1171 3284	7 0 64 <1 1000 1252 1070 1349 3271
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 0 60 1010 1070 1150 1270 2060	current   7   0   63   <1   1015   1188   1068   1280   3692   current	11 0 61 <1 925 1135 967 1171 3284 history1	7 0 64 <1 1000 1252 1070 1349 3271 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 imit/base >25	current     7     0     63     <1     1015     1188     1068     1280     3692     current     4	11 0 61 <1 925 1135 967 1171 3284 history1 4	7 0 64 <1 1000 1252 1070 1349 3271 history2 4
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 imit/base >25	current     7     0     63     <1     1015     1188     1068     1280     3692     current     4     3	11 0 61 <1 925 1135 967 1171 3284 history1 4 3	7 0 64 <1 1000 1252 1070 1349 3271 history2 4 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	current     7     0     63     <1     1015     1188     1068     1280     3692     current     4     3     0	11 0 61 <1 925 1135 967 1171 3284 history1 4 3 0	7 0 64 <1 1000 1252 1070 1349 3271 history2 4 4 0
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	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 <b>limit/base</b> >20	current   7   0   63   <1   1015   1188   1068   1280   3692   current   4   3   0   current	11 0 61 <1 925 1135 967 1171 3284 history1 4 3 0 bistory1	7 0 64 <1 1000 1252 1070 1349 3271 history2 4 4 4 0 bistory2
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	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >25 >20 <b>Imit/base</b> >20	current   7   0   63   <1   1015   1188   1068   1280   3692   current   4   3   0   current   0.4	11 0 61 <1 925 1135 967 1171 3284 history1 4 3 0 history1 0.4	7 0 64 <1 1000 1252 1070 1349 3271 history2 4 4 4 0 history2 0.7
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	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >25 >20 <b>Imit/base</b> >20	current   7   0   63   <1   1015   1188   1068   1280   3692   current   4   3   0   current   0   current   9.1	11 0 61 <1 925 1135 967 1171 3284 history1 4 3 0 history1 0.4 8.6	7 0 64 <1 1000 1252 1070 1349 3271 history2 4 4 4 0 history2 0.7 10.6
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	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 >20 <b>imit/base</b> >6 >20	current   7   0   63   <1   1015   1188   1068   1280   3692   current   4   3   0   current   0.4   9.1   20.9	11 0 61 <1 925 1135 967 1171 3284 history1 4 3 0 history1 0.4 8.6 20.6	7 0 64 <1 1000 1252 1070 1349 3271 history2 4 4 4 0 <u>history2</u> 0.7 10.6 22.8



# **OIL ANALYSIS REPORT**







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

Certificate L2367

Laboratory

Sample No.

Lab Number

Page 2 of 2