

## **OIL ANALYSIS REPORT**

Sample Rating Trend

NORMAL

#### Machine Id 812017 AUTOCAR ACX Component

**Diesel Engine** 

#### Fluid PETRO CANADA DURON SHP 15W40 (48 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

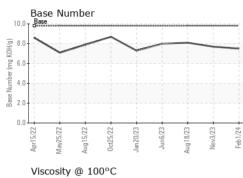
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

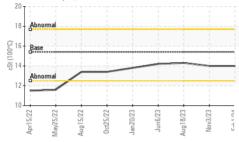
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0103159	GFL0094664	GFL0089356
Sample Date		Client Info		01 Feb 2024	03 Nov 2023	18 Aug 2023
Machine Age	hrs	Client Info		5474	4773	4177
Oil Age	hrs	Client Info		701	596	555
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	21	19	17
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	11	13	23
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	<1	0
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 5	history1 6	history2 4
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	5	6	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	5 0	6 0	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	5 0 61	6 0 63	4 0 74
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	5 0 61 0	6 0 63 <1	4 0 74 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	5 0 61 0 1017	6 0 63 <1 961 1122 1067	4 0 74 0 1120 1326 1212
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	5 0 61 0 1017 1230	6 0 63 <1 961 1122	4 0 74 0 1120 1326 1212 1631
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	0 0 60 0 1010 1070 1150	5 0 61 0 1017 1230 1080	6 0 63 <1 961 1122 1067	4 0 74 0 1120 1326 1212
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	5 0 61 0 1017 1230 1080 1306	6 0 63 <1 961 1122 1067 1304	4 0 74 0 1120 1326 1212 1631
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	5 0 61 0 1017 1230 1080 1306 3107	6 0 63 <1 961 1122 1067 1304 2977	4 0 74 0 1120 1326 1212 1631 4657
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	5 0 61 0 1017 1230 1080 1306 3107 current	6 0 63 <1 961 1122 1067 1304 2977 history1	4 0 74 0 1120 1326 1212 1631 4657 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 <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	5 0 61 0 1017 1230 1080 1306 3107 current 4	6 0 63 <1 961 1122 1067 1304 2977 history1 4	4 0 74 0 1120 1326 1212 1631 4657 history2 3
Boron 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 <b>method</b> ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 Limit/base >25	5 0 61 0 1017 1230 1080 1306 3107 current 4 5	6 0 63 <1 961 1122 1067 1304 2977 history1 4 5 18 history1	4 0 74 0 1120 1326 1212 1631 4657 history2 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	5 0 61 0 1017 1230 1080 1306 3107 current 4 5 13	6 0 63 <1 961 1122 1067 1304 2977 history1 4 5 18	4 0 74 0 1120 1326 1212 1631 4657 history2 3 2 2 9
Boron 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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	5 0 61 0 1017 1230 1080 1306 3107 current 4 5 13 2 current	6 0 63 <1 961 1122 1067 1304 2977 history1 4 5 18 history1	4 0 74 0 1120 1326 1212 1631 4657 history2 3 2 29 history2 0.6 9.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20	5 0 61 0 1017 1230 1080 1306 3107 <i>current</i> 4 5 13 <i>current</i> 0.7	6 0 63 <1 961 1122 1067 1304 2977 history1 4 5 18 18 history1 0.7	4 0 74 0 1120 1326 1212 1631 4657 history2 3 2 29 history2 0.6
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 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	5 0 61 0 1017 1230 1080 1306 3107 <i>current</i> 4 5 13 <i>current</i> 0.7 9.5	6 0 63 <1 961 1122 1067 1304 2977 history1 4 5 18 history1 0.7 9.5	4 0 74 0 1120 1326 1212 1631 4657 history2 3 2 29 history2 0.6 9.0
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 <b>imit/base</b> >3 >20 >3 >20	5 0 61 0 1017 1230 1080 1306 3107 <i>current</i> 4 5 13 <i>current</i> 0.7 9.5 20.7	6 0 63 <1 961 1122 1067 1304 2977 history1 4 5 18 history1 0.7 9.5 20.5	4 0 74 0 1120 1326 1212 1631 4657 <b>history2</b> 3 2 29 <b>history2</b> 0.6 9.0 20.3
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 3 20 20 3 3 20 20 3 3 20 20 20 20 20 20 20 20 20 20 20 20 20	5 0 61 0 1017 1230 1080 1306 3107 <i>current</i> 4 5 13 <i>current</i> 0.7 9.5 20.7 <i>current</i>	6 0 63 <1 961 1122 1067 1304 2977 history1 4 5 18 history1 0.7 9.5 20.5 history1	4 0 74 0 1120 1326 1212 1631 4657 history2 3 2 2 9 history2 0.6 9.0 20.3 history2



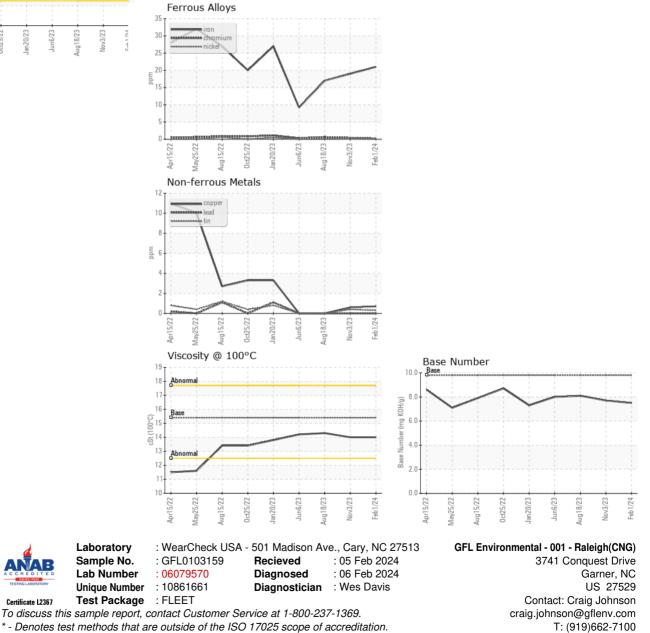
# **OIL ANALYSIS REPORT**

VICLAI





VISUAL		method			history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	14.0	14.3
GRAPHS						



\* - 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)

Certificate L2367

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