

## **OIL ANALYSIS REPORT**

Sample Rating Trend

### Area (94709X) Walgreens - Tractor [Walgreens - Tractor] 136A62062

**Diesel Engine** 

Fluid PETRO CANADA DURON SHP 10W30 (11 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 INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0123376	PCA0106144	PCA0095118
Sample Date		Client Info		12 Apr 2024	06 Sep 2023	05 Apr 2023
Machine Age	mls	Client Info		622972	563867	499968
Oil Age	mls	Client Info		59105	63899	59511
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	>80	39	42	8
Chromium	ppm	ASTM D5185m	>5	2	3	2
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>30	22	21	4
Lead	ppm	ASTM D5185m	>30	0	0	0
Copper	ppm	ASTM D5185m	>150	5	6	2
Tin	ppm	ASTM D5185m	>5	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		<1	0	<1
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	maa					
Boron	ppm ppm	ASTM D5185m	2	9	1	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	9 0	1 0	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	9 0 64	1	4
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0	9 0 64 <1	1 0 69	4 0 56
Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	9 0 64	1 0 69 <1	4 0 56 2
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	9 0 64 <1 855	1 0 69 <1 1047	4 0 56 2 806
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	9 0 64 <1 855 1194	1 0 69 <1 1047 1252	4 0 56 2 806 913
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	2 0 50 0 950 1050 995	9 0 64 <1 855 1194 1019	1 0 69 <1 1047 1252 1063	4 0 56 2 806 913 868
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	2 0 50 950 1050 995 1180	9 0 64 <1 855 1194 1019 1189	1 0 69 <1 1047 1252 1063 1348	4 0 56 2 806 913 868 1069
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	2 0 50 950 1050 995 1180 2600	9 0 64 <1 855 1194 1019 1189 2797	1 0 69 <1 1047 1252 1063 1348 3171	4 0 56 2 806 913 868 1069 2927
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	2 0 50 950 1050 995 1180 2600	9 0 64 <1 855 1194 1019 1189 2797 current	1 0 69 <1 1047 1252 1063 1348 3171 history1	4 0 56 2 806 913 868 1069 2927 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>	2 0 50 950 1050 995 1180 2600	9 0 64 <1 855 1194 1019 1189 2797 current 9	1 0 69 <1 1047 1252 1063 1348 3171 history1 8	4 0 56 2 806 913 868 1069 2927 history2 6
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	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >20	9 0 64 <1 855 1194 1019 1189 2797 current 9 2	1 0 69 <1 1047 1252 1063 1348 3171 history1 8 2	4 0 56 2 806 913 868 1069 2927 history2 6 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	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >20	9 0 64 <1 855 1194 1019 1189 2797 current 9 2 2 4	1 0 69 <1 1047 1252 1063 1348 3171 history1 8 2 2 2	4 0 56 2 806 913 868 1069 2927 history2 6 2 2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >20 <b>S</b>	9 0 64 <1 855 1194 1019 1189 2797 current 9 2 2 4 current	1 0 69 <1 1047 1252 1063 1348 3171 history1 8 2 2 2 history1	4 0 56 2 806 913 868 1069 2927 history2 6 2 2 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >20 >20 <b>Imit/base</b> >3	9 0 64 <1 855 1194 1019 1189 2797 current 9 2 4 current 1.1	1 0 69 <1 1047 1252 1063 1348 3171 history1 8 2 2 2 history1 1.2	4 0 56 2 806 913 868 1069 2927 history2 6 2 2 2 history2 0.2
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	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >20 <i>limit/base</i> >3 >20	9 0 64 <1 855 1194 1019 1189 2797 <i>current</i> 9 2 4 <i>current</i> 1.1 1.1	1 0 69 <1 1047 1252 1063 1348 3171 history1 8 2 2 2 history1 1.2 11.2	4 0 56 2 806 913 868 1069 2927 history2 6 2 2 2 history2 0.2 5.4
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	2 0 50 950 1050 995 1180 2600 <b>imit/base</b> >20 <b>imit/base</b> >3 >20 >30	9 0 64 <1 855 1194 1019 1189 2797 <u>current</u> 9 2 4 <u>current</u> 1.1 10.7 26.3	1 0 69 <1 1047 1252 1063 1348 3171 history1 8 2 2 2 <u>history1</u> 1.2 1.2 11.2 23.9	4 0 56 2 806 913 868 1069 2927 history2 6 2 2 2 history2 0.2 5.4 18.1
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	2 0 0 50 0 950 1050 995 1180 2600 2600 20 20 20 20 20 3 20 20 3 3 20 3 3 20 3 3 20 3 3 3 20 3 3 3 20 3 3 3 20 3 3 3 20 3 3 3 3	9 0 64 <1 855 1194 1019 1189 2797 current 9 2 2 4 current 1.1 10.7 26.3 current	1 0 69 <1 1047 1252 1063 1348 3171 history1 8 2 2 history1 1.2 11.2 23.9 history1	4 0 56 2 806 913 868 1069 2927 history2 6 2 2 2 history2 0.2 5.4 18.1 history2



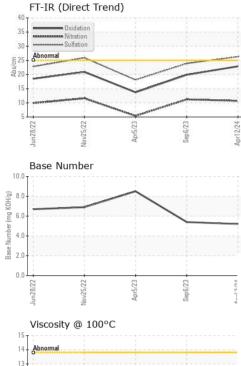
cSt (100°C)

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Jun28/22

Abnorma

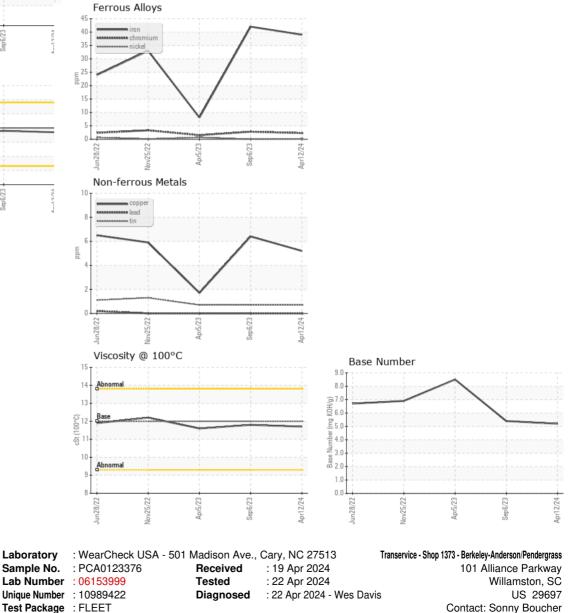
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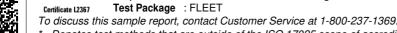


Sep6/23

Apr5/23

VISUAL		method	limit/base	current	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	12.00	11.7	11.8	11.6
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)

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