

Watkins Block Truck Shop Omaha 68 [Watkins Block Truck Shop Omaha] Compo

Middle Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

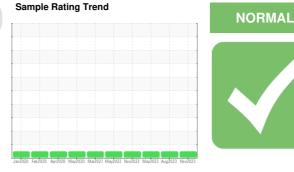
All component wear rates are normal.

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 INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		SBP0005960	SBP0004678	SBP0002226
Sample Date		Client Info		14 Nov 2023	01 Aug 2023	03 May 2023
Machine Age	hrs	Client Info		19115	18468	17831
Oil Age	hrs	Client Info		348	306	385
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION		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 METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	8	37	4
Chromium	ppm	ASTM D5185m	>20	<1	1	0
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	8	<1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	1	3	1
Tin	ppm	ASTM D5185m	>15	<1	1	<1
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	current	history1 3	history2 11
	ppm ppm					
Boron		ASTM D5185m	2	1	3	11
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	1 0	3 0	11 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	1 0 58	3 0 59	11 0 55
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	1 0 58 <1	3 0 59 <1	11 0 55 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	1 0 58 <1 1015	3 0 59 <1 1012	11 0 55 <1 996
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	1 0 58 <1 1015 1117	3 0 59 <1 1012 1087	11 0 55 <1 996 1221
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 50 950 1050 995	1 0 58 <1 1015 1117 1090	3 0 59 <1 1012 1087 1063	11 0 55 <1 996 1221 1054
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	1 0 58 <1 1015 1117 1090 1344	3 0 59 <1 1012 1087 1063 1287	11 0 55 <1 996 1221 1054 1272 3744 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	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	1 0 58 <1 1015 1117 1090 1344 3458	3 0 59 <1 1012 1087 1063 1287 3842	11 0 55 <1 996 1221 1054 1272 3744
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	1 0 58 <1 1015 1117 1090 1344 3458 current	3 0 59 <1 1012 1087 1063 1287 3842 history1	11 0 55 <1 996 1221 1054 1272 3744 history2 3 <
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	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 >25	1 0 58 <1 1015 1117 1090 1344 3458 current 5	3 0 59 <1 1012 1087 1063 1287 3842 history1 22	11 0 55 <1 996 1221 1054 1272 3744 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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 ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	1 0 58 <1 1015 1117 1090 1344 3458 current 5 2	3 0 59 <1 1012 1087 1063 1287 3842 history1 22 2	11 0 55 <1 996 1221 1054 1272 3744 history2 3 <
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20	1 0 58 <1 1015 1117 1090 1344 3458 current 5 2 2 2	3 0 59 <1 1012 1087 1063 1287 3842 history1 22 2 2 2	11 0 55 <1 996 1221 1054 1272 3744 history2 3 < 1 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 -20 limit/base	1 0 58 <1 1015 1117 1090 1344 3458 current 5 2 2 2 2	3 0 59 <1 1012 1087 1063 1287 3842 history1 22 2 2 2 2 2 history1	11 0 55 <1 996 1221 1054 1272 3744 history2 3 <1 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	1 0 58 <1 1015 1117 1090 1344 3458 <u>current</u> 5 2 2 2 2 <u>current</u> 0.1	3 0 59 <1 1012 1087 1063 1287 3842 history1 22 2 2 2 2 history1 0.2	11 0 55 <1 996 1221 1054 1272 3744 history2 3 <1 2 history2 0.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	1 0 58 <1 1015 1117 1090 1344 3458 <i>current</i> 5 2 2 2 <i>current</i> 0.1 6.6	3 0 59 <1 1012 1087 1063 1287 3842 history1 22 2 2 2 2 2 2 2 1 2 2 2 6.3	11 0 55 <1 996 1221 1054 1272 3744 history2 3 <1 2 history2 0.1 7.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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 imit/base >25 20 imit/base >3 >20 33	1 0 58 <1 1015 1117 1090 1344 3458 <u>current</u> 5 2 2 2 2 <u>current</u> 0.1 6.6 17.5	3 0 59 <1 1012 1087 1063 1287 3842 history1 22 2 2 2 2 2 2 2 10.2 6.3 17.4	11 0 55 <1 996 1221 1054 1272 3744 history2 3 <1 2 history2 0.1 7.1 15.6



6 cSt (40°C) 40

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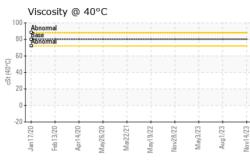
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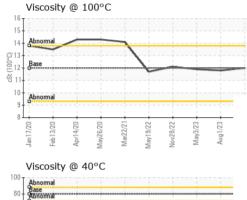
Jan1

Apr14/20

Feb13/20

OIL ANALYSIS REPORT

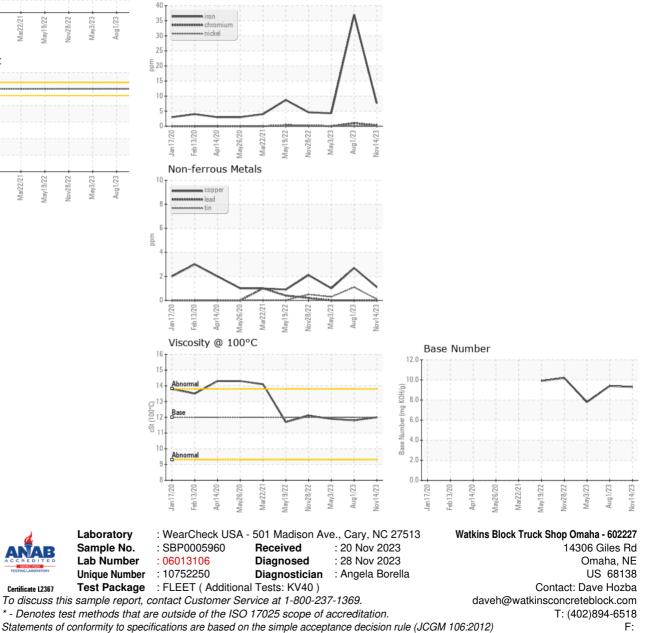




ar22/21 lav19/22

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 PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	12.0	11.8	11.9

GRAPHS Ferrous Alloys





Certificate L2367

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