

OIL ANALYSIS REPORT

Sample Rating Trend





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.

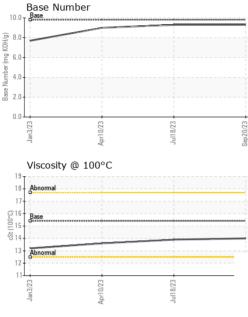
Fluid Condition

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

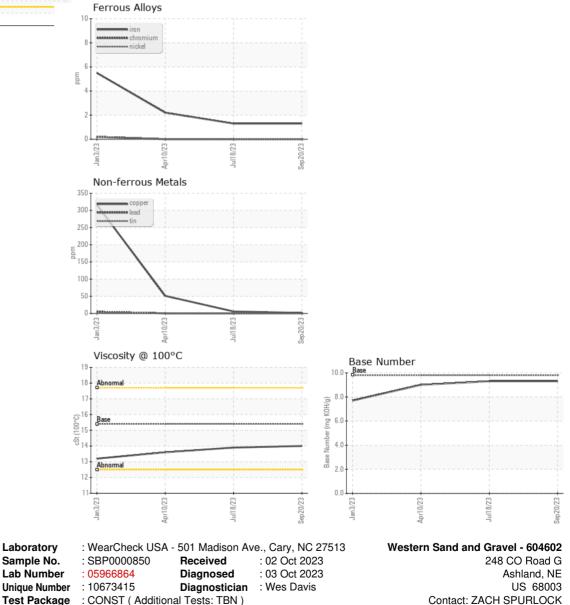
SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		SBP0000850	SBP0003806	SBP0000856
Sample Date		Client Info		20 Sep 2023	18 Jul 2023	10 Apr 2023
Machine Age	hrs	Client Info		8873	8617	8364
Oil Age	hrs	Client Info		256	253	339
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
-		and the set	1			
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	1	1	2
Chromium	ppm	ASTM D5185m	>20	0	0	0
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m		<1	0	0
Aluminum	ppm	ASTM D5185m	>30	0	<1	2
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>20	1	6	<mark>▲</mark> 51
Tin	ppm	ASTM D5185m	>20	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	<1	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 <1	history1 <1	history2 1
	ppm ppm		0			
Boron		ASTM D5185m	0	<1	<1	1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	<1 0	<1 0	1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 58	<1 0 60	1 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 58 <1	<1 0 60 <1	1 0 60 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	<1 0 58 <1 983	<1 0 60 <1 1036	1 0 60 0 961
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 1150	<1 0 58 <1 983 1063	<1 0 60 <1 1036 1150	1 0 60 0 961 1126
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 1270	<1 0 58 <1 983 1063 1031	<1 0 60 <1 1036 1150 1076	1 0 60 0 961 1126 1014
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	<1 0 58 <1 983 1063 1031 1246	<1 0 60 <1 1036 1150 1076 1279	1 0 60 0 961 1126 1014 1233
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	<1 0 58 <1 983 1063 1031 1246 3265	<1 0 60 <1 1036 1150 1076 1279 3822	1 0 60 0 961 1126 1014 1233 3390
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	0 0 60 1010 1070 1150 1270 2060	<1 0 58 <1 983 1063 1031 1246 3265 current	<1 0 60 <1 1036 1150 1076 1279 3822 history1	1 0 60 0 961 1126 1014 1233 3390 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINANTS Silicon	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 kimit/base >20	<1 0 58 <1 983 1063 1031 1031 1246 3265 current 2	<1 0 60 <1 1036 1150 1076 1279 3822 history1 2	1 0 60 0 961 1126 1014 1233 3390 history2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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 kimit/base >20	<1 0 58 <1 983 1063 1031 1246 3265 <u>current</u> 2 2	<1 0 60 <1 1036 1150 1076 1279 3822 history1 2 3	1 0 60 0 961 1126 1014 1233 3390 history2 2 2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20 limit/base	<1 0 58 <1 983 1063 1031 1246 3265 current 2 2 2 0	<1 0 60 <1 1036 1150 1076 1279 3822 history1 2 3 0	1 0 60 0 961 1126 1014 1233 3390 history2 2 2 2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 200 200 200 200 20	<1 0 58 <1 983 1063 1031 1246 3265 current 2 2 0 current	<1 0 60 <1 1036 1150 1076 1279 3822 history1 2 3 0 bistory1	1 0 60 0 961 1126 1014 1233 3390 history2 2 2 2 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Silicon Sodium Potassium INFRA-RED Soot %	ppm i ppm i	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >20	<1 0 58 <1 983 1063 1031 1246 3265 current 2 2 2 0 current 0.1	<1 0 60 <1 1036 1150 1076 1279 3822 history1 2 3 3 0 history1 0.1	1 0 60 0 961 1126 1014 1233 3390 history2 2 2 2 2 0 history2 0.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINANTS 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 limit/base >20 limit/base >20	<1 0 58 <1 983 1063 1031 1246 3265 current 2 2 0 current 0.1 5.1	<1 0 60 <1 1036 1150 1076 1279 3822 history1 2 3 0 history1 0.1 5.3	1 0 60 0 961 1126 1014 1233 3390 history2 2 2 2 2 0 history2 0 0 history2
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	0 0 0 1010 1070 1150 1270 2060 imit/base >20 imit/base >3 >20 >3 >20	<1 0 58 <1 983 1063 1031 1246 3265 0urrent 2 2 2 0 0 0urrent 0.1 5.1 17.3	<1 0 60 <1 1036 1150 1076 1279 3822 history1 2 3 0 <u>history1</u> 0.1 5.3 17.5	1 0 60 0 961 1126 1014 1233 3390 history2 2 2 2 0 history2 0.1 5.9 18.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADAT Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 /////////////////////////////////	<1 0 58 <1 983 1063 1031 1246 3265 <u>current</u> 2 2 2 0 <u>current</u> 0.1 5.1 17.3	<1 0 60 <1 1036 1150 1076 1279 3822 history1 2 3 0 history1 0.1 5.3 17.5 history1	1 0 60 0 961 1126 1014 1233 3390 history2 2 2 2 2 2 0 history2 0.1 5.9 18.6 history2



OIL ANALYSIS REPORT



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	15.4	14.0	13.9	13.6
GRAPHS						



 Certificate L2367
 Test Package
 : CONST (Additional Tests: TBN)

 To discuss this sample report, contact Customer Service at 1-800-237-1369.
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 * - 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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