

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 102251

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (--- 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 INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0110437	PCA0101311	PCA0089651
Sample Date		Client Info		25 Oct 2023	06 Jul 2023	02 Feb 2023
Machine Age	mls	Client Info		122333	113748	99551
Oil Age	mls	Client Info		0	0	0
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
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	19	29	13
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	2	3	2
Lead	ppm	ASTM D5185m	>40	2	2	<1
Copper	ppm	ASTM D5185m	>330	2	3	2
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		and the set	Para la Arra a ca			bistow 0
ADDITIVE5		method				history2
Boron	ppm	ASTM D5185m	limit/base	current	history1 8	16
	ppm ppm		2			
Boron Barium	ppm	ASTM D5185m	2	<1	8	16
Boron		ASTM D5185m ASTM D5185m	2 0 50	<1 <1	8 0	16 <1
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	<1 <1 66	8 0 69	16 <1 65
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	<1 <1 66 <1	8 0 69 <1	16 <1 65 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	<1 <1 66 <1 984	8 0 69 <1 883	16 <1 65 <1 880
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	<1 <1 66 <1 984 1160	8 0 69 <1 883 1187	16 <1 65 <1 880 1097
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	<1 <1 66 <1 984 1160 1078	8 0 69 <1 883 1187 1068	16 <1 65 <1 880 1097 958
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 0 950 1050 995 1180	<1 <1 66 <1 984 1160 1078 1279	8 0 69 <1 883 1187 1068 1251	16 <1 65 <1 880 1097 958 1185
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	<1 <1 66 <1 984 1160 1078 1279 3290	8 0 69 <1 883 1187 1068 1251 3073	16 <1 65 <1 880 1097 958 1185 3468
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	2 0 50 950 1050 995 1180 2600	<1 <1 66 <1 984 1160 1078 1279 3290 current	8 0 69 <1 883 1187 1068 1251 3073 history1	16 <1 65 <1 880 1097 958 1185 3468 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	2 0 50 950 1050 995 1180 2600 limit/base >25	<1 <1 66 <1 984 1160 1078 1279 3290 current 5	8 0 69 <1 883 1187 1068 1251 3073 history1 5	16 <1 65 <1 880 1097 958 1185 3468 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	<1 <1 66 <1 984 1160 1078 1279 3290 current 5 0	8 0 69 <1 883 1187 1068 1251 3073 history1 5 0	16 <1 65 <1 880 1097 958 1185 3468 history2 3 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 -20 imit/base	<1 <1 66 <1 984 1160 1078 1279 3290 current 5 0 2	8 0 69 <1 883 1187 1068 1251 3073 history1 5 0 2	16 <1 65 <1 880 1097 958 1185 3468 history2 3 1 1 <1
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 Imit/base >25 >20 Imit/base >3	<1 <1 66 <1 984 1160 1078 1279 3290 current 5 0 2 current	8 0 69 <1 883 1187 1068 1251 3073 history1 5 0 2 history1	16 <1 65 <1 880 1097 958 1185 3468 history2 3 1 <1 <1 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 Imit/base >25 >20 Imit/base >3	<1 <1 66 <1 984 1160 1078 1279 3290 current 5 0 2 current 1.1	8 0 69 <1 883 1187 1068 1251 3073 history1 5 0 2 history1 1.5	16 <1 65 <1 880 1097 958 1185 3468 history2 3 1 <1 <1 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	2 0 50 0 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i>	<1 <1 66 <1 984 1160 1078 1279 3290 current 5 0 2 current 1.1 9.8	8 0 69 <1 883 1187 1068 1251 3073 history1 5 0 2 history1 1.5 12.1	16 <1 65 <1 880 1097 958 1185 3468 history2 3 1 <1 <1 history2 0.7 8.4
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 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 >30	<1 <1 66 <1 984 1160 1078 1279 3290 current 5 0 2 current 1.1 9.8 21.3	8 0 69 <1 883 1187 1068 1251 3073 history1 5 0 2 <u>history1</u> 1.5 12.1 22.3	16 <1 65 <1 880 1097 958 1185 3468 history2 3 1 <1 <1 history2 0.7 8.4 19.6
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 D7844 *ASTM D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 >30	<1 <1 66 <1 984 1160 1078 1279 3290 current 5 0 2 current 1.1 9.8 21.3 current	8 0 69 <1 883 1187 1068 1251 3073 history1 5 0 2 history1 1.5 12.1 22.3 history1	16 <1 65 <1 880 1097 958 1185 3468 history2 3 1 <1 <1 history2 0.7 8.4 19.6 history2



cSt (100°C) Ba

Jun16/20

Aar1/71

OIL ANALYSIS REPORT

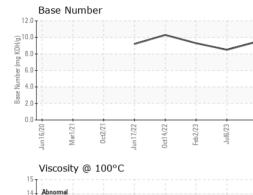
*Visual

scalar

NONE

VISUAL

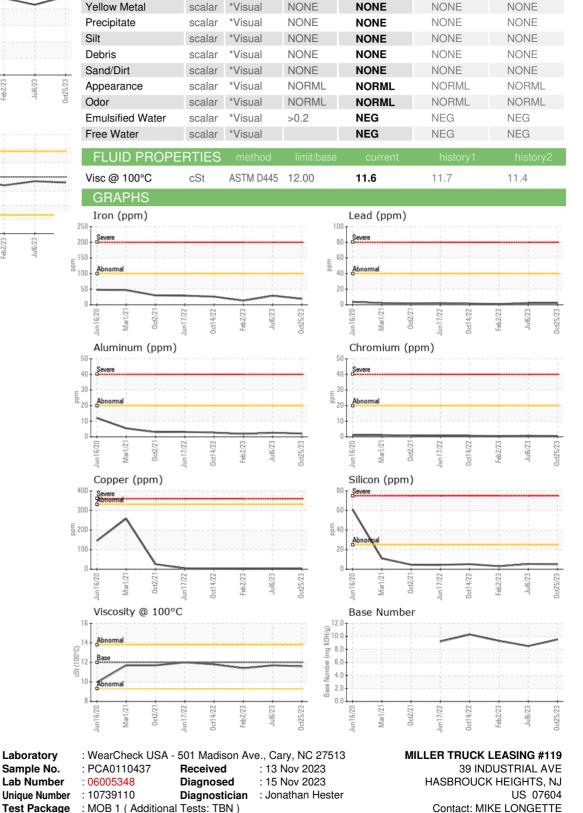
White Metal



Jun17/22

Oct14/22

ul6/23



NONE

NONE

NONE



Test Package : MOB 1 (Additional Tests: TBN) Certificate L2367 mlongette@millertransgroup.com To discuss this sample report, contact Customer Service at 1-800-237-1369. * - 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)

Contact/Location: MIKE LONGETTE - MILRUT

F: (201)528-7053

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