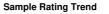


OIL ANALYSIS REPORT



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HINO 398322

Component Diesel Engine Fluid

PETRO CANADA DURON SHP 10W30 (16 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.

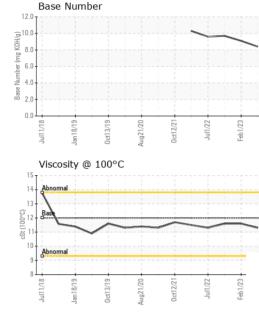
Fluid Condition

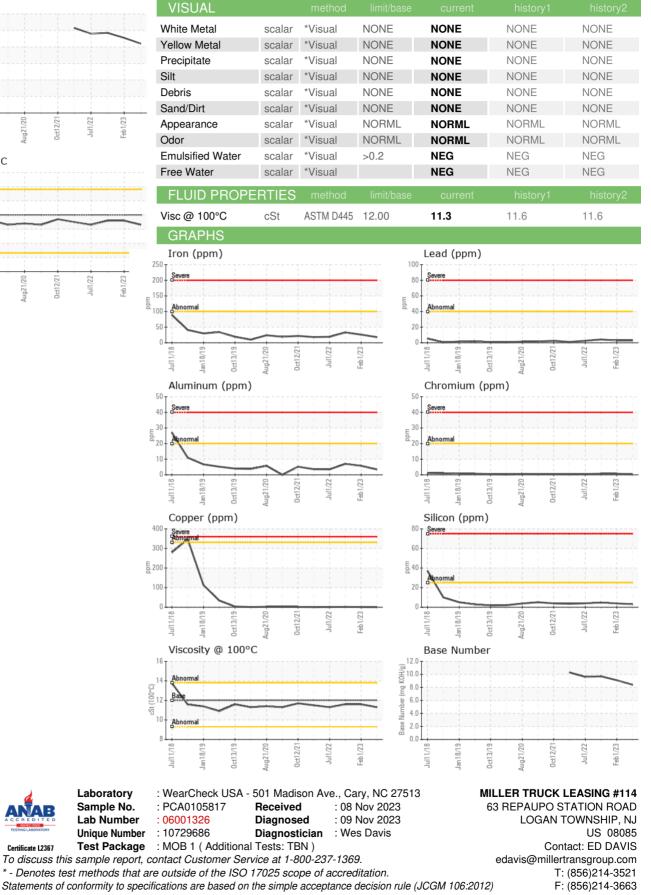
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0105817	PCA0090033	PCA0079750
Sample Date		Client Info		10 Oct 2023	01 Feb 2023	25 Oct 2022
Machine Age	mls	Client Info		206019	0	0
Oil Age	mls	Client Info		5000	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	18	26	33
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		3	6	7
Lead	ppm	ASTM D5185m	>40	3	3	4
Copper	ppm	ASTM D5185m		<1	1	2
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m	210	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
oudinium	ppm			•	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	ASTM D5185m	2	3	8	6
Boron Barium	ppm ppm		2 0	3 0	8 0	6 0
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	2	3	8 0 73	6
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50 0	3 0	8 0 73 <1	6 0 81 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	3 0 60	8 0 73	6 0 81
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	3 0 60 <1	8 0 73 <1	6 0 81 <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	3 0 60 <1 878	8 0 73 <1 967	6 0 81 <1 1056
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	3 0 60 <1 878 1250	8 0 73 <1 967 1249	6 0 81 <1 1056 1307
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	3 0 60 <1 878 1250 913	8 0 73 <1 967 1249 1119	6 0 81 <1 1056 1307 1170
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	3 0 60 <1 878 1250 913 1159	8 0 73 <1 967 1249 1119 1370	6 0 81 <1 1056 1307 1170 1403
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	3 0 60 <1 878 1250 913 1159 3129	8 0 73 <1 967 1249 1119 1370 3375	6 0 81 <1 1056 1307 1170 1403 4103
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	3 0 60 <1 878 1250 913 1159 3129 current	8 0 73 <1 967 1249 1119 1370 3375 history1	6 0 81 <1 1056 1307 1170 1403 4103 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	3 0 60 <1 878 1250 913 1159 3129 current 3	8 0 73 <1 967 1249 1119 1370 3375 history1 4	6 0 81 <1 1056 1307 1170 1403 4103 history2 5
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 ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	3 0 60 <1 878 1250 913 1159 3129 Current 3 5	8 0 73 <1 967 1249 1119 1370 3375 history1 4 7	6 0 81 <1 1056 1307 1170 1403 4103 history2 5 10
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 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 >20	3 0 60 <1 878 1250 913 1159 3129 current 3 5 2	8 0 73 <1 967 1249 1119 1370 3375 history1 4 7 3	6 0 81 <1 1056 1307 1170 1403 4103 history2 5 10 8
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	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20	3 0 60 <1 878 1250 913 1159 3129 current 3 5 2 2	8 0 73 <1 967 1249 1119 1370 3375 history1 4 7 3 3 history1	6 0 81 <1 1056 1307 1170 1403 4103 history2 5 10 8 <i>history2</i>
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 limit/base >25 >20 limit/base >3	3 0 60 <1 878 1250 913 1159 3129 current 3 5 2 2 current 1.3	8 0 73 <1 967 1249 1119 1370 3375 history1 4 7 3 1.8	6 0 81 <1 1056 1307 1170 1403 4103 history2 5 10 8 <u>history2</u> 2.4
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	3 0 60 <1 878 1250 913 1159 3129 current 3 5 2 2 current 1.3 12.0	8 0 73 <1 967 1249 1119 1370 3375 history1 4 7 3 history1 1.8 13.2	6 0 81 <1 1056 1307 1170 1403 4103 history2 5 10 8 <u>history2</u> 2.4 16.0
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20	3 0 60 <1 878 1250 913 1159 3129 current 3 5 2 2 current 1.3 12.0 21.9	8 0 73 <1 967 1249 1119 1370 3375 history1 4 7 3 3 <u>history1</u> 1.8 13.2 22.6	6 0 81 <1 1056 1307 1170 1403 4103 history2 5 10 8 history2 2.4 16.0 27.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 2600 25 20 220 20 20 20 20 20 20 20 20 20 20 20	3 0 60 <1 878 1250 913 1159 3129 current 3 5 2 2 current 1.3 12.0 21.9 current	8 0 73 <1 967 1249 1119 1370 3375 history1 4 7 3 history1 1.8 13.2 22.6 history1	6 0 81 <1 1056 1307 1170 1403 4103 history2 5 10 8 history2 2.4 16.0 27.5 history2



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Certificate L2367

Laboratory

Contact/Location: ED DAVIS - MILLOG