

OIL ANALYSIS REPORT

Sample Rating Trend





Component Diesel Engine

Fluid 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.

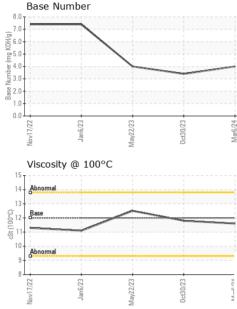
Fluid Condition

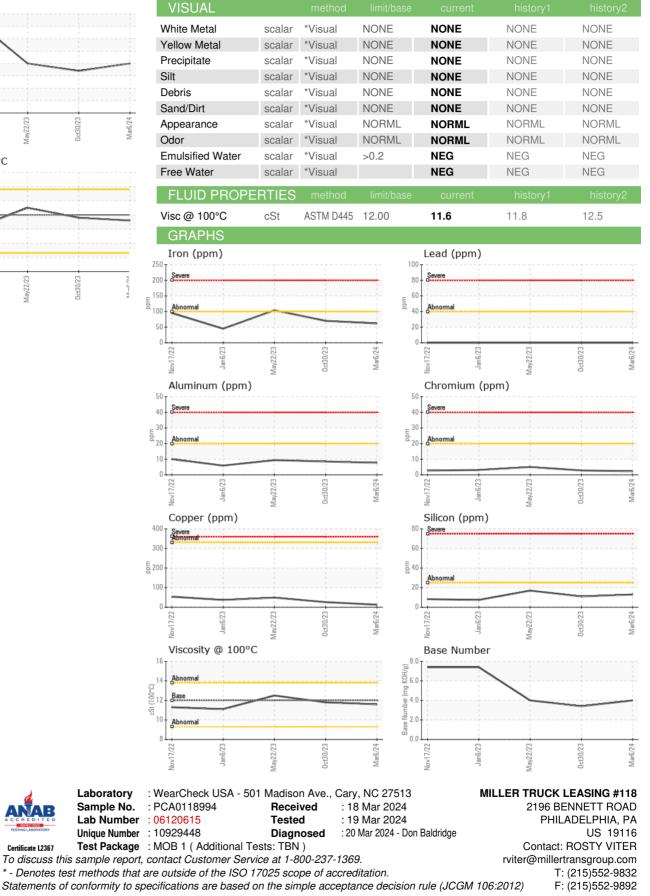
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MAT <u>IO</u> N	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0118994	PCA0108324	PCA0095769
Sample Date		Client Info		06 Mar 2024	30 Oct 2023	22 May 2023
Machine Age	mls	Client Info		349965	282531	221264
Oil Age	mls	Client Info		67434	282531	221264
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
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	>100	62	70	104
Chromium	ppm	ASTM D5185m	>20	2	3	5
Nickel	ppm		>4	0	0	<1
Titanium	ppm	ASTM D5185m		1	5	32
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	8	8	9
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm		>330	13	26	49
Tin	ppm	ASTM D5185m	>15	0	0	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 2	current 4	history1 2	history2 7
Boron	ppm ppm ppm	ASTM D5185m	2	4	2	7
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	4 0	2 0	7 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	4 0 65	2 0 58	7 0 45
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	4 0 65 0	2 0 58 <1	7 0 45 2
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	4 0 65 0 987	2 0 58 <1 854	7 0 45 2 722
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	4 0 65 0 987 1279	2 0 58 <1 854 1194	7 0 45 2 722 1542
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	4 0 65 0 987 1279 1192	2 0 58 <1 854 1194 940	7 0 45 2 722 1542 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	2 0 50 950 1050 995 1180	4 0 65 0 987 1279 1192 1348	2 0 58 <1 854 1194 940 1178	7 0 45 2 722 1542 1014 1257
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 ASTM D5185m	2 0 50 0 950 1050 995 1180 2600	4 0 65 0 987 1279 1192 1348 2786	2 0 58 <1 854 1194 940 1178 2126	7 0 45 2 722 1542 1014 1257 2909
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	4 0 65 0 987 1279 1192 1348 2786 current	2 0 58 <1 854 1194 940 1178 2126 history1	7 0 45 2 722 1542 1014 1257 2909 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 method	2 0 50 0 950 1050 995 1180 2600 limit/base >25	4 0 65 0 987 1279 1192 1348 2786 current 13	2 0 58 <1 854 1194 940 1178 2126 history1 11	7 0 45 2 722 1542 1014 1257 2909 history2 17
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 0 950 1050 995 1180 2600 limit/base >25	4 0 65 0 987 1279 1192 1348 2786 <u>current</u> 13 0	2 0 58 <1 854 1194 940 1178 2126 history1 11 4	7 0 45 2 722 1542 1014 1257 2909 history2 17 0
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 limit/base >25	4 0 65 0 987 1279 1192 1348 2786 current 13 0 14	2 0 58 <1 854 1194 940 1178 2126 history1 11 4 11	7 0 45 2 722 1542 1014 1257 2909 history2 17 0 20
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 ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	4 0 65 0 987 1279 1192 1348 2786 current 13 0 14 current	2 0 58 <1 854 1194 940 1178 2126 history1 11 4 11 4 11 history1	7 0 45 2 722 1542 1014 1257 2909 history2 17 0 20 20
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 ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	4 0 65 0 987 1279 1192 1348 2786 <i>current</i> 13 0 14 <i>current</i>	2 0 58 <1 854 1194 940 1178 2126 history1 11 4 11 4 11 5	7 0 45 2 722 1542 1014 1257 2909 history2 17 0 20 history2 1.8
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 t 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	4 0 65 0 987 1279 1192 1348 2786 <i>current</i> 13 0 14 <i>current</i> 1.5 13.8	2 0 58 <1 854 1194 940 1178 2126 history1 11 4 11 4 11 1 5 15.0	7 0 45 2 722 1542 1014 1257 2909 history2 17 0 20 history2 1.8 1.8 16.9
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 t ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20	4 0 65 0 987 1279 1192 1348 2786 <u>current</u> 13 0 14 5 13.8 26.6	2 0 58 <1 854 1194 940 1178 2126 history1 11 4 11 1.5 1.5 15.0 28.1	7 0 45 2 722 1542 1014 1257 2909 history2 17 0 20 history2 1.8 16.9 31.2
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 ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 imit/base >25 20 >20 >30 >30 imit/base	4 0 65 0 987 1279 1192 1348 2786 current 13 0 14 current 1.5 13.8 26.6 current	2 0 58 <1 854 1194 940 1178 2126 history1 11 4 11 1.5 15.0 28.1 history1	7 0 45 2 722 1542 1014 1257 2909 history2 17 0 20 history2 1.8 16.9 31.2 history2



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Certificate L2367

Contact/Location: ROSTY VITER - MILPHINE