

OIL ANALYSIS REPORT

Sample Rating Trend



FREIGHTLINER 480764

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.

		May2018	Mar2019 Nov2019	May2020 Sep2021	Aug2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0099122	PCA0050494	PCAM1400155
Sample Date		Client Info		11 Aug 2023	24 Sep 2021	16 May 2020
Machine Age	mls	Client Info		0	266468	174063
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>90	51	50	35
Chromium	ppm	ASTM D5185m	>20	1	2	1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	ppm	ASTM D5185m	>20	3	10	6
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	2	15	2
Tin		ASTM D5185m	>15	2 <1	<1	0
Antimony	ppm ppm	ASTM D5185m	>15		0	0
Vanadium		ASTM D5185m		 <1	0	0
	ppm					
Codmium	nnm	ACTM DE185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
Cadmium ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	0 history2
	ppm ppm	method ASTM D5185m	limit/base			
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	2	current 9	history1 3	history2 2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0	current 9 0	history1 3 0	history2 2 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 9 0 70	history1 3 0 64	history2 2 0 63
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	ourrent 9 0 70 <1	history1 3 0 64 <1	history2 2 0 63 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 9 0 70 <1 985	history1 3 0 64 <1 969	history2 2 0 63 <1 1119
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	current 9 0 70 <1 985 1195	history1 3 0 64 <1 969 1147	history2 2 0 63 <1 1119 1162
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	current 9 0 70 <1 985 1195 1041	history1 3 0 64 <1 969 1147 1034	history2 2 0 63 <1 1119 1162 1072
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	current 9 0 70 <1 985 1195 1041 1265	history1 3 0 64 <1 969 1147 1034 1228	history2 2 0 63 <1 1119 1162 1072 1276
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method 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	ourrent 9 0 70 <1 985 1195 1041 1265 3499	history1 3 0 64 <1 969 1147 1034 1228 2679	history2 2 0 63 <1 1119 1162 1072 1276 2694
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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	9 0 70 <1 985 1195 1041 1265 3499 current	history1 3 0 64 <1 969 1147 1034 1228 2679 history1	history2 2 0 63 <1 1119 1162 1072 1276 2694 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	current 9 0 70 <1 985 1195 1041 1265 3499 current 7	history1 3 0 64 <1 969 1147 1034 1228 2679 history1 5	history2 2 0 63 <1 1119 1162 1072 1276 2694 history2 6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	current 9 0 70 <1 985 1195 1041 1265 3499 current 7 14	history1 3 0 64 <1 969 1147 1034 1228 2679 history1 5 6	history2 2 0 63 <1 1119 1162 1072 1276 2694 history2 6 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25 >20	9 0 70 <1 985 1195 1041 1265 3499 current 7 14 1	history1 3 0 64 <1 969 1147 1034 1228 2679 history1 5 6 9	history2 2 0 63 <1 1119 1162 1072 1276 2694 history2 6 2 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 Imit/base >25 -20 Imit/base	9 0 70 <1 985 1195 1041 1265 3499 current 7 14 1 current 0.7	history1 3 0 64 <1 969 1147 1034 1228 2679 history1 5 6 9 history1	history2 2 0 63 <1 1119 1162 1072 1276 2694 history2 6 2 0 history2 6 2 0 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	9 0 70 <1 985 1195 1041 1265 3499 current 7 14 1 current	history1 3 0 64 <1 969 1147 1034 1228 2679 history1 5 6 9 history1 1	history2 2 0 63 <1 1119 1162 1072 1276 2694 history2 6 2 0 history2 6 2 0 history2 0.9
ADDITIVES 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	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >20	current 9 0 70 <1 985 1195 1041 1265 3499 current 7 14 1 current 0.7 10.9	history1 3 0 64 <1 969 1147 1034 1228 2679 history1 5 6 9 history1 1 12.5	history2 2 0 63 <1 1119 1162 1072 1276 2694 history2 6 2 0 history2 6 2 0 history2 0.9 11
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAM	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	method ASTM D5185m ASTM D76185m *ASTM D7624 *ASTM D7415 method	2 0 50 0 950 1050 995 1180 2600 255 220 220 imit/base >6 >20 >30	9 0 70 <1 985 1195 1041 1265 3499 current 7 14 1 current 0.7 10.9 20.5 current	history1 3 0 64 <1 969 1147 1034 1228 2679 history1 5 6 9 history1 1 12.5 23.1 history1	history2 2 0 63 <1 1119 1162 1072 1276 2694 history2 6 2 0 history2 0 history2 0.9 11 20.7 history2
ADDITIVES 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	method ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 255 220 220 imit/base >6 >20 >30	9 0 70 <1 985 1195 1041 1265 3499 current 7 14 1 current 0.7 10.9 20.5	history1 3 0 64 <1 969 1147 1034 1228 2679 history1 5 6 9 history1 1 12.5 23.1	history2 2 0 63 <1 1119 1162 1072 1276 2694 history2 6 2 0 history2 0 111 20.7

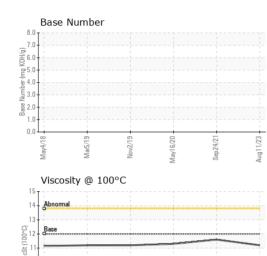


Abnorma

Aav4/18

Mar5/19

OIL ANALYSIS REPORT



Vov2/19

Mav16/20

Sep 24/21

ppm

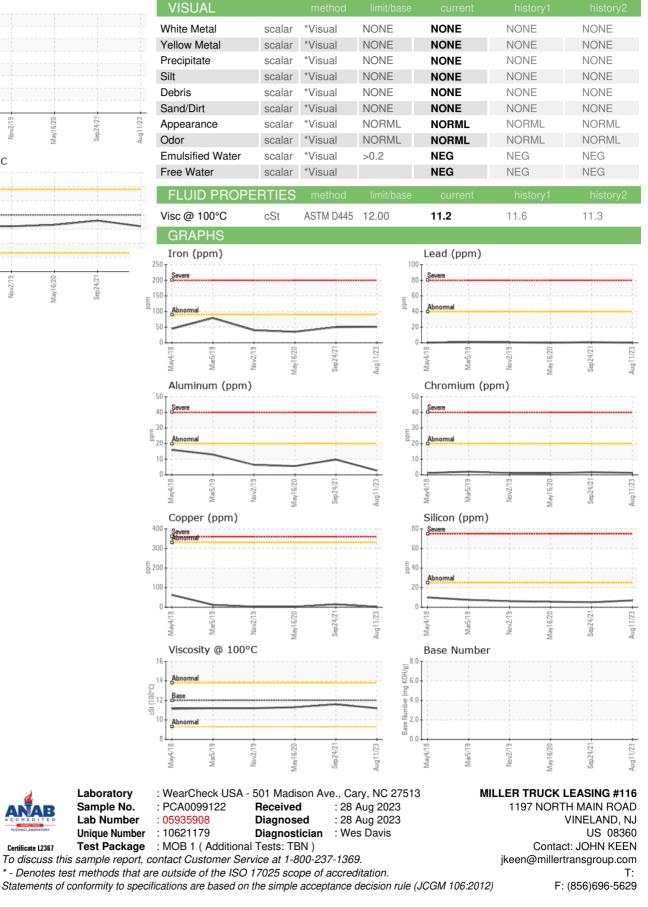
-St (100°C)

Laboratory

Sample No.

Lab Number

Unique Number



Certificate L2367

Contact/Location: JOHN KEEN - MILVIN