

OIL ANALYSIS REPORT

Sample Rating Trend



THOMAS 002216

Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (18 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.

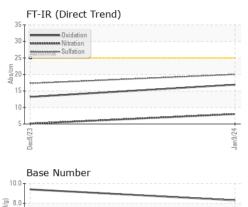
Fluid Condition

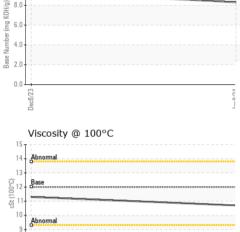
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0112490	PCA0091626	
Sample Date		Client Info		09 Jan 2024	08 Dec 2023	
Machine Age	mls	Client Info		166622	162552	
Oil Age	mls	Client Info		4070	162552	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	33	10	
Chromium	ppm	ASTM D5185m	>20	1	<1	
Nickel	ppm	ASTM D5185m	>4	0	0	
Titanium	ppm	ASTM D5185m		<1	0	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	3	2	
Lead	ppm	ASTM D5185m	>40	<1	<1	
Copper	ppm	ASTM D5185m	>330	<1	<1	
Tin	ppm	ASTM D5185m	>15	0	0	
Vanadium	ppm	ASTM D5185m		<1	<1	
0 1 1		AOTH DELOF			0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES	ppm	method	limit/base	0 current	0 history1	history2
	ppm ppm		limit/base 2	-		
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	2	current 0	history1 5	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0	current 0 0	history1 5 0 58 0	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 0 0 60 <1 991	history1 5 0 58 0 905	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 0 0 60 <1 991 1138	history1 5 0 58 0	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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 0 0 60 <1 991 1138 1099	history1 5 0 58 0 905 984 958	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 0 0 60 <1 991 1138 1099 1350	history1 5 0 58 0 905 984 958 1152	history2
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	2 0 50 0 950 1050 995	Current 0 0 60 <1 991 1138 1099	history1 5 0 58 0 905 984 958	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	current 0 0 60 <1 991 1138 1099 1350 3665 current	history1 5 0 58 0 905 984 958 1152 3017 history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	current 0 0 60 <1 991 1138 1099 1350 3665 current 3	history1 5 0 58 0 905 984 958 1152 3017 history1 4	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25	current 0 0 60 <1 991 1138 1099 1350 3665 current 3 6	history1 5 0 58 0 905 984 958 1152 3017 history1 4 4	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	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	current 0 0 60 <1 991 1138 1099 1350 3665 current 3	history1 5 0 58 0 905 984 958 1152 3017 history1 4	history2 history2
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	current 0 0 60 <1 991 1138 1099 1350 3665 current 3 6 34	history1 5 0 58 0 905 984 958 1152 3017 history1 4 39 history1	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 >3	current 0 0 60 <1 991 1138 1099 1350 3665 current 3 6 34 current 0.6	history1 5 0 58 0 905 984 958 1152 3017 history1 4 39 history1 0.1	history2 history2 history2
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 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	current 0 0 60 <1 991 1138 1099 1350 3665 current 3 6 34 current 0.6 8.0	history1 5 0 58 0 905 984 958 1152 3017 history1 4 39 history1 0.1 5.1	history2 history2 history2 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 >3	current 0 0 60 <1 991 1138 1099 1350 3665 current 3 6 34 current 0.6	history1 5 0 58 0 905 984 958 1152 3017 history1 4 39 history1 0.1	history2 history2 history2 history2
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 TS ppm ppm ppm	method ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	current 0 0 60 <1 991 1138 1099 1350 3665 current 3 6 34 current 0.6 8.0	history1 5 0 58 0 905 984 958 1152 3017 history1 4 39 history1 0.1 5.1	history2 <tr tr=""></tr>
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 TS ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415 method	2 0 50 0 950 1050 995 1180 2600 imit/base >25 20 imit/base >3 >20 >30	current 0 0 60 <1 991 1138 1099 1350 3665 current 3 6 34 current 0.6 8.0 20.0	history1 5 0 58 0 905 984 958 1152 3017 history1 4 39 history1 0.1 5.1 17.3	history2 history2 history2 history2 history2 history2



OIL ANALYSIS REPORT





Dec8/23

VISUAL NONE White Metal *Visual NONE NONE scalar Yellow Metal *Visual NONE NONE NONE scalar Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris *Visual NONE NONE NONE scalar Sand/Dirt NONE NONE scalar *Visual NONE NORML Appearance scalar *Visual NORML NORML Odor *Visual NORML NORML scalar NORML **Emulsified Water** scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NEG NEG **FLUID PROPERTIES** Visc @ 100°C cSt ASTM D445 12.00 10.7 11.3 GRAPHS Ferrous Alloys 35 30 nicke 25 20 10 5 Dec8/23 Non-ferrous Metals lead Viscosity @ 100°C Base Number 10. 14 8 (mg KOH/g) 13 St (100°C) 6 | mber 4 (Base Abnorma 0.0 Dec8/23 lan9/24 Jec8/73 Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 ICSB370 - Alton Sample No. : PCA0112490 Received : 20 Jun 2024 4525 North Alby Road Lab Number : 06215285 Tested : 21 Jun 2024 Godfrey, IL Unique Number : 11088149 Diagnosed : 21 Jun 2024 - Wes Davis US 62035 Test Package : FLEET Contact: Chad Ingold c.ingold@illinois-central.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)

Report Id: ICSB370 [WUSCAR] 06215285 (Generated: 06/21/2024 11:58:39) Rev: 1

Certificate 12367

Submitted By: Chad Ingold Page 2 of 2

T: (618)466-5400

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