

OIL ANALYSIS REPORT







44 Component

Machine Id

Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a components first oil change.

Contamination

Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

Fluid Condition

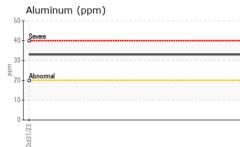
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	VIATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0110774		
Sample Date		Client Info		31 Oct 2023		
Machine Age	hrs	Client Info		28279		
Oil Age	hrs	Client Info		28279		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Glycol		WC Method		NEG		
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	50		
Chromium	ppm	ASTM D5185m	>20	<1		
Nickel	ppm	ASTM D5185m	>4	0		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	<1		
Aluminum	ppm	ASTM D5185m	>20	33		
Lead	ppm	ASTM D5185m	>40	0		
Copper	ppm	ASTM D5185m	>330	60		
Tin	ppm	ASTM D5185m	>15	2		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 16	history1	history2
	ppm ppm					
Boron		ASTM D5185m	2	16		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	16 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	16 0 14		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	16 0 14 2 848 1351		
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	16 0 14 2 848 1351 860		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	16 0 14 2 848 1351 860 996	 	
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	16 0 14 2 848 1351 860	 	
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	16 0 14 2 848 1351 860 996	 	
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	16 0 14 2 848 1351 860 996 2867		
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	16 0 14 2 848 1351 860 996 2867 current		
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 50 950 1050 995 1180 2600 limit/base >25	16 0 14 2 848 1351 860 996 2867 <u>current</u> 21	 history1 	 history2
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	2 0 50 950 1050 995 1180 2600 limit/base >25	16 0 14 2 848 1351 860 996 2867 <u>current</u> 21 3	 history1 	 history2
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 <i>limit/base</i> >25	16 0 14 2 848 1351 860 996 2867 current 21 3 99	 history1 	 history2
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 50 950 1050 995 1180 2600 Imit/base >25 >20 Imit/base >3	16 0 14 2 848 1351 860 996 2867 current 21 3 99 current	 history1 history1	 history2 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 50 950 1050 995 1180 2600 Imit/base >25 >20 Imit/base >3	16 0 14 2 848 1351 860 996 2867 current 21 3 99 current 0.3	 history1 history1 history1	 history2 history2
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>limit/base</i> >25 >20 <i>limit/base</i>	16 0 14 2 848 1351 860 996 2867 <i>current</i> 21 3 99 <i>current</i> 0.3 10.9	 history1 history1 	history2 history2 history2
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 0 50 0 950 1050 995 1180 2600 i mit/base >25 20 i mit/base >3 >20 >30	16 0 14 2 848 1351 860 996 2867 current 21 3 99 current 0.3 10.9 23.3	 history1 history1 history1	 history2 history2 history2
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	ASTM D5185m ASTM D5185m	2 0 0 50 0 950 1050 995 1180 2600 i mit/base >25 20 i mit/base >3 >20 >30	16 0 14 2 848 1351 860 996 2867 <u>current</u> 21 3 99 <u>current</u> 0.3 10.9 23.3	 history1 history1 history1	 history2 history2 history2



0 0ct31/23

OIL ANALYSIS REPORT



Viscosity @ 100°C 15 14 Abnorma 13 cSt (100-C) 11 Ba Abnorma Aluminum (ppm) 50 40 Se 30 ppn Abnorma 20 10

	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
2		scalar	*Visual	NORML	NORML		
2015 2017 2017	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
C	Free Water	scalar	*Visual	>0.2	NEG		
	FLUID PROPE		method	limit/base		history1	history2
	Visc @ 100°C	cSt	ASTM D445	12.00	current		
		001		12.00	1110		
	GRAPHS						
	Ferrous Alloys						
	iron						
	40 - and a chromium						
	30 통						
	20						
	10-						
	0						
	0ct31/23			0ct31/23			
	0ct3			0 et3			
	Non-ferrous Meta	ls					
	60 copper						
	50						
	40						
	<u>Ē</u> 30 -						
	20						
	10						
	10						
	1						
		*****************	***********************	*******			
	0 0)ct31/23			
	0ct31/23	~		*******			
		2		0ct31/23	Base Number		
	Viscosity @ 100°C	2		0ct31/23	Base Number		
	Viscosity @ 100°C	5		6.0 5.0	Base Number		
	Viscosity @ 100°C	2		6.0 5.0	Base Number		
	Viscosity @ 100°C	2		6.0 5.0	Base Number		
	Viscosity @ 100°C	2		6.0 5.0	Base Number		
	Viscosity @ 100°C	5		6.0 5.0	Base Number		
	Viscosity @ 100°C	2		0.0	Base Number		
	Viscosity @ 100°C	2		6.0 5.0 (0) H H M S 2.0 E M M S 2.0 E M M S 2.0 C M M S 2.0 C M M M S 2.0 C M M M M M M M M M M M M M M M M M M	Base Number		
	Viscosity @ 100°C	2		6.0 5.0 (B)HOX Bu HOX BU HOX HOX BU HOX BU H			1/23
	Viscosity @ 100°C	2		6.0 5.0 (B)HOX Bu HOX BU HOX HOX BU HOX BU H	Base Number		0ct31/23
	Viscosity @ 100°C			6.0 5.0 (0)H (0)H ways 1.0 5 2.0 1.0 1.0 5 2.0 1.0 1.0 5 0.0			
Laboratory	Viscosity @ 100°C	501 Madis		6.0 5.0 (0) HOX Bu 3.0 0.0 1.0 5.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0 0,0 0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0	0ct31/23	BLUE MA	AX TRUCKING
Sample No.	Viscosity @ 100°C	501 Madis Received	1 30 : L	6.0 5.0 90 93.0 1.0 5.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0 0.0 1.0 0 0.0 1.0 0 0 0	0ct31/23	BLUE MA 15 E. WESTINGI	AX TRUCKING HOUSE BLVD.
Sample No. Lab Number	Viscosity @ 100°C	501 Madis Received Diagnose	d :06 1 ed :07 1	EZIEP 6.0 5.0 1.0 EZIEP 7, NC 27513 Nov 2023 Nov 2023	0ct31/23	BLUE MA 15 E. WESTINGI	AX TRUCKING HOUSE BLVD. ARLOTTE, NC
Sample No. Lab Number Unique Numbe	Viscosity @ 100°C	501 Madis Received	d :06 1 ed :07 1	6.0 5.0 90 93.0 1.0 5.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0.0 1.0 0 0.0 1.0 0 0.0 1.0 0 0 0	0ct31/23	BLUE MA 15 E. WESTINGI CH.	AX TRUCKING HOUSE BLVD. ARLOTTE, NC US 28273
Certificate L2367 Sample No. Lab Number Unique Number Test Package	Viscosity @ 100°C	501 Madia Receivec Diagnose Diagnost	d : 06 ed : 07 iician : We	EZIEP Ty, NC 27513 Nov 2023 Nov 2023 s Davis	0ct31/23	BLUE MA 15 E. WESTINGI CH. Conta	AX TRUCKING HOUSE BLVD. ARLOTTE, NC US 28273 act: Jody Greer
Certificate L2367 To discuss this sample report * - Denotes test methods that	Viscosity @ 100°C	501 Madis Received Diagnose Diagnost vice at 1-8 17025 sco	d : 06 l ed : 07 l ician : Wes 200-237-1369 pe of accred	EZ/EPP (0) (0) (0) (0) (0) (0) (0) (0)	101	BLUE MA 15 E. WESTINGI CH. conta jgreer@bluema T:	AX TRUCKING HOUSE BLVD. ARLOTTE, NC US 28273 act: Jody Greer axtrucking.com (980)225-9968
Certificate L2367 Condiscuss this sample report	Viscosity @ 100°C	501 Madis Received Diagnose Diagnost vice at 1-8 17025 sco	d : 06 l ed : 07 l ician : Wes 200-237-1369 pe of accred	EZ/EPP (0) (0) (0) (0) (0) (0) (0) (0)	101	BLUE MA 15 E. WESTINGI CH. conta jgreer@bluema T:	AX TRUCKING HOUSE BLVD ARLOTTE, NG US 2827 act: Jody Gree axtrucking.cor