

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id DT632 Component Diesel Engine

Fluid

PETRO CANADA DURON SHP 10W30 (44 mls)

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.

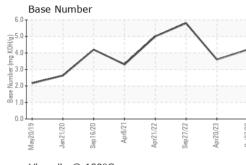
Fluid Condition

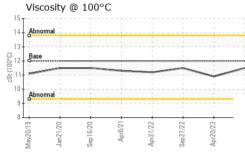
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0103320	PCA0091166	PCA0080928
Sample Date		Client Info		27 Oct 2023	20 Apr 2023	27 Sep 2022
Machine Age	mls	Client Info		267491	242230	215908
Oil Age	mls	Client Info		0	26322	189377
Oil Changed		Client Info		Changed	Changed	Changed
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	>120	19	18	15
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m		4	3	3
Lead	ppm	ASTM D5185m	>20	1	0	<1
	ppm	ASTM D5185m		3	2	2
Copper Tin		ASTM D5185m	>15	۲ ۲	0	<1
Vanadium	ppm ppm	ASTM D5185m	>15	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ррш				-	-
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	2	3	7
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	2 0	3 0	7 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	2 0 60	3 0 68	7 0 65
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	2 0 60 <1	3 0 68 <1	7 0 65 <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	2 0 60 <1 869	3 0 68 <1 946	7 0 65 <1 854
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	2 0 60 <1 869 1150	3 0 68 <1 946 1103	7 0 65 <1 854 1139
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	2 0 60 <1 869 1150 1054	3 0 68 <1 946 1103 982	7 0 65 <1 854 1139 944
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	2 0 60 <1 869 1150 1054 1175	3 0 68 <1 946 1103 982 1244	7 0 65 <1 854 1139 944 1201
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	2 0 60 <1 869 1150 1054 1175 2361	3 0 68 <1 946 1103 982 1244 3016	7 0 65 <1 854 1139 944 1201 2701
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	2 0 60 <1 869 1150 1054 1175 2361 current	3 0 68 <1 946 1103 982 1244 3016 history1	7 0 65 <1 854 1139 944 1201 2701 history2
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 method	2 0 50 950 1050 995 1180 2600	2 0 60 <1 869 1150 1054 1175 2361	3 0 68 <1 946 1103 982 1244 3016	7 0 65 <1 854 1139 944 1201 2701
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	2 0 60 <1 869 1150 1054 1175 2361 current	3 0 68 <1 946 1103 982 1244 3016 history1	7 0 65 <1 854 1139 944 1201 2701 2701 history2 5 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	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	2 0 60 <1 869 1150 1054 1175 2361 current 6	3 0 68 <1 946 1103 982 1244 3016 history1 5	7 0 65 <1 854 1139 944 1201 2701 2701 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	2 0 60 <1 869 1150 1054 1175 2361 current 6 8	3 0 68 <1 946 1103 982 1244 3016 history1 5 4	7 0 65 <1 854 1139 944 1201 2701 2701 history2 5 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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 -25	2 0 60 <1 869 1150 1054 1175 2361 current 6 8 6	3 0 68 <1 946 1103 982 1244 3016 history1 5 4 1	7 0 65 <1 854 1139 944 1201 2701 history2 5 3 3 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	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	2 0 60 <1 869 1150 1054 1175 2361 current 6 8 6 8 6	3 0 68 <1 946 1103 982 1244 3016 history1 5 4 1 1 history1	7 0 65 <1 854 1139 944 1201 2701 history2 5 3 5 5 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 >20 imit/base	2 0 60 <1 869 1150 1054 1175 2361 current 6 8 6 8 6 current 0.8	3 0 68 <1 946 1103 982 1244 3016 history1 5 4 1 1 history1 0.7	7 0 65 <1 854 1139 944 1201 2701 history2 5 3 5 3 5 history2 0.7
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	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	2 0 60 <1 869 1150 1054 1175 2361 <i>current</i> 6 8 6 <i>current</i> 0.8 10.3	3 0 68 <1 946 1103 982 1244 3016 history1 5 4 1 1 history1 0.7 9.5	7 0 65 <1 854 1139 944 1201 2701 history2 5 3 5 3 5 history2 0.7 10.5
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	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 imit/base >4 >20	2 0 60 <1 869 1150 1054 1175 2361 current 6 8 6 6 8 6 current 0.8 10.3 24.1	3 0 68 <1 946 1103 982 1244 3016 history1 5 4 1 1 0.7 9.5 20.9	7 0 65 <1 854 1139 944 1201 2701 history2 5 3 5 5 history2 0.7 10.5 24.6
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	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 2600 25 20 220 20 imit/base >4 >20 >30	2 0 60 <1 869 1150 1054 1175 2361 <i>current</i> 6 8 6 6 <i>current</i> 0.8 10.3 24.1 <i>current</i>	3 0 68 <1 946 1103 982 1244 3016 history1 5 4 1 5 4 1 0.7 9.5 20.9 history1	7 0 65 <1 854 1139 944 1201 2701 history2 5 3 3 5 history2 0.7 10.5 24.6 history2



OIL ANALYSIS REPORT





VISUAL		method	limit/base	current		history2
	a cala r					
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt Debris	scalar scalar	*Visual *Visual	NONE NONE	NONE	NONE NONE	NONE
Sand/Dirt		*Visual	NONE	NONE	NONE	NONE
Appearance	scalar scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual	20.L	NEG	NEG	NEG
			11 - 11/1			
FLUID PROPE		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.5	10.9	11.5
GRAPHS						
Ferrous Alloys						
40 35						
30 - nickel						
25 -						
20 -						
15	\sim					
10-						
5						
O Statement and an and a statement of the statement of th	00000000					
	2	33				
	Apro/21	ep27/22 - pr20/23 -	lct27/23			
May20/19 Jan21/20 Sep16/20	A	Sep27/22 - Apr20/23 -	0ct27/23			
	A	Sep27/22	0ct27/23			
Non-ferrous Metals	A	Sep21722.	0et21/23			
Non-ferrous Metals	A	Sep21/22. Apr20/23.	0ct21/23			
Non-ferrous Metals	A	Sep27/22. Apr20/23.	0et21/23			
Non-ferrous Metals	A	Sep27/22. Apr20/23.	0et31/23			
Non-ferrous Metals	A	Sep27/22. Apr20/23.	0ct21/23			
Non-ferrous Metals	A	Sep27722-	0et21/23			
Non-ferrous Metals	A					
Non-ferrous Metals	5					
Non-ferrous Metals	5					
Non-ferrous Metals 500 1500 1000	5			Base Number		
Non-ferrous Metals	5			Base Number		
Non-ferrous Metals 500 1500 1000	5		0053J/33 6.0]		
Non-ferrous Metals	5		0053J/33 6.0]		
Non-ferrous Metals	5		0053J/33 6.0]		
Non-ferrous Metals	5		0053J/33 6.0]		
Non-ferrous Metals	5		0053J/33 6.0]		
Non-ferrous Metals	5		0qq2323 0qq2323 0,0			
Non-ferrous Metals	5		6.0 (6)(HO)X Bun Jacob Berry 2.0 1.0			
Non-ferrous Metals	Apr21/22		0.0 0000000000000000000000000000000000		Apri6/21	Sep 27/22



Unique Number : 10722474 Test Package : FLEET Certificate L2367 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)

: PCA0103320

: 05994114

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

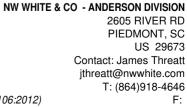
Diagnostician : Wes Davis

Received

Diagnosed

: 31 Oct 2023

: 31 Oct 2023



Laboratory

Sample No.

Lab Number