

**Transmission (Auto)** 

Machine Id **1205** Component

Fluic

# **PROBLEM SUMMARY**



COMPONENT CONDITION SUMMARY



PETRO CANADA DuraDrive HD Synthetic 668 (--- GAL)

#### RECOMMENDATION

The fluid change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

PROBLEMATIC TEST RESULTS							
Sample Status				MARGINAL	NORMAL		
Fuel	%	ASTM D7593*		<u> </u>			

Customer Id: STJNEW Sample No.: PC0061465 Lab Number: 02568028 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

*To change component or sample information:* Gloria Gonzalez +1 (289)291-4643 x4643 <u>gloria.gonzalez@wearcheck.com</u> There are no recommended actions for this sample.

#### **HISTORICAL DIAGNOSIS**

#### 29 Jul 2022 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the fluid. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.





## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id 1205

Component

Transmission (Auto)

### PETRO CANADA DuraDrive HD Synthetic 668 (--- GAL)

### DIAGNOSIS

#### Recommendation

The fluid change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

#### Wear

All component wear rates are normal.

#### Contamination

Light fuel dilution occurring. No other contaminants were detected in the fluid.

#### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the fluid. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		PC0061465	PC0052689	
Sample Date		Client Info		24 May 2023	29 Jul 2022	
Machine Age	kms	Client Info		702195	651698	
Oil Age	kms	Client Info		50223	48882	
Oil Changed		Client Info		Changed	Changed	
Sample Status				MARGINAL	NORMAL	
WEAR METAL	S	method	limit/base	current	history 1	history 2
PQ		ASTM D8184*	>50	0	0	
Iron	maa	ASTM D5185(m)	>160	81	57	
Chromium	mag	ASTM D5185(m)	>5	<1	0	
Nickel	mag	ASTM D5185(m)	>5	0	0	
Titanium	ppm	ASTM D5185(m)		<1	<1	
Silver	ppm	ASTM D5185(m)	>5	0	0	
Aluminum	ppm	ASTM D5185(m)	>50	11	10	
Lead	mag	ASTM D5185(m)	>50	<1	1	
Copper	maa	ASTM D5185(m)	>225	10	14	
Tin	mag	ASTM D5185(m)	>10	<1	<1	
Antimony	ppm	ASTM D5185(m)		0	0	
Vanadium	ppm	ASTM D5185(m)		0	0	
Bervllium	ppm	ASTM D5185(m)		0	0	
Cadmium	ppm	ASTM D5185(m)		0	0	
	PP			•		
ADDITIVES		method	limit/base	current	history 1	history 2
_						
Boron	ppm	ASTM D5185(m)	78	58	56	
Boron Barium	ppm ppm	ASTM D5185(m) ASTM D5185(m)	78	58 0	56 0	
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	78 0	58 0 <1	56 0 1	
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	78 0	58 0 <1 <1	56 0 1 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	78 0 0	58 0 <1 <1 1	56 0 1 <1 <1	 
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	78 0 0 113	58 0 <1 <1 1 1 104	56 0 1 <1 <1 70	   
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	78 0 0 113 222	58 0 <1 <1 1 1 104 214	56 0 1 <1 <1 70 222	   
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	78 0 113 222	58 0 <1 <1 1 1 104 214 5	56 0 1 <1 <1 70 222 6	    
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	78 0 0 113 222 1326	58 0 <1 <1 1 104 214 5 1653	56 0 1 <1 <1 70 222 6 2171	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	78 0 113 222 1326	58 0 <1 <1 1 104 214 5 1653 <1	56 0 1 <1 <1 70 222 6 2171 <1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	78 0 113 222 1326 limit/base	58 0 <1 <1 1 104 214 5 1653 <1 <i>current</i>	56 0 1 <1 <21 222 6 2171 <1 history 1	       history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) <b>method</b> ASTM D5185(m)	78 0 0 113 222 1326 imit/base >20	58 0 <1 <1 1 104 214 5 1653 <1 5 1653 <1 2 18	56 0 1 <1 222 6 2171 <1 history 1 7	      history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	78 0 0 113 222 1326 imit/base >20	58 0 <1 <1 1 104 214 5 1653 <1 5 1653 <1 2 18 18	56 0 1 <1 222 6 2171 <1 history 1 7 20	       history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	ASTM D5185(m) ASTM D5185(m)	78 0 0 113 222 1326 iimit/base >20 >20	58 0 <1 <1 1 104 214 5 1653 <1 5 1653 <1 2 18 18 11 1	56 0 1 <1 222 6 2171 <1 history 1 7 20 2	       history 2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	78 0 113 222 1326 iimit/base >20 >20	58 0 <1 <1 1 104 214 5 1653 <1 5 1653 <1 2 18 18 11 1 1 2.8	56 0 1 <1 222 6 2171 <1 history 1 7 20 2 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	78 0 0 113 222 1326 imit/base >20 >20 imit/base	58 0 <1 <1 1 104 214 5 1653 <1 current 18 11 1 1 2.8	56 0 1 <1 222 6 2171 <1 history 1 7 20 2 2  history 1	      history 2      
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7593*	78 0 113 222 1326 iimit/base >20 iimit/base	58 0 <1 <1 1 104 214 5 1653 <1 0 <i>current</i> 18 11 1 1 2.8 <i>current</i> 0	56 0 1 <1 <1 222 6 2171 <1 history 1 7 20 2 2  history 1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7593*	78 0 113 222 1326 imit/base >20 >20 imit/base	58 0 <1 <1 1 104 214 5 1653 <1 current 18 11 1 1 2.8 current 0 5.7	56 0 1 <1 <1 222 6 2171 <1 history 1 7 20 2 2  history 1 	      history 2    history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7593* ASTM D7593*	78 0 0 113 222 1326 imit/base >20 imit/base	58 0 <1 <1 1 104 214 5 1653 <1 5 1653 <1 18 18 11 1 1 2.8 current 0 5.7 30.2	56 0 1 <1 <1 222 6 2171 <1 history 1 7 20 2 2 2  history 1 	       history 2    history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7593* Cmethod ASTM D7844* ASTM D7624*	78 0 0 113 222 1326 imit/base >20 imit/base limit/base	58 0 <1 <1 1 104 214 5 1653 <1 0 0 18 11 1 1 2.8 0 0 5.7 30.2 0 0 5.7 30.2	56 0 1 <1 <1 222 6 2171 <1 history 1 7 20 2 2  history 1   history 1 	       history 2   history 2  history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm %	ASTM D5185(m) ASTM D7593 <sup>+</sup> ASTM D7624 <sup>+</sup> ASTM D7624 <sup>+</sup> ASTM D7414 <sup>+</sup>	78 0 1 1 222 3 222 1 326 1 326 2 20 2 20 2 20 2 20 1 imit/base	58 0 <1 <1 104 214 5 1653 <1 current 18 11 1 2.8 current 0 5.7 30.2 current 40.4	56 0 1 <1 <1 222 6 2171 <1 history 1 7 20 2 2  history 1  history 1	history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation Acid Number (AN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7593* ASTM D7593* ASTM D7593* ASTM D7624* ASTM D7414* ASTM D7414* ASTM D7414*	78 0 0 113 222 1326 imit/base >20 >20 imit/base limit/base	58 0 <1 <1 104 214 5 1653 <1 current 18 11 1 1 2.8 current 0 5.7 30.2 current 40.4 1.39	56 0 1 <1 <1 70 222 6 2171 <1 history 1 7 20 2 2  history 1   history 1   history 1	       history 2    history 2  history 2    
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation Acid Number (AN) Base Number (BN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)         ASTM D76345         ASTM D76244*         ASTM D76244*         ASTM D76244*         ASTM D7414*         ASTM D7414*         ASTM D7414*         ASTM D72896*	78 0 1 1 222 1 222 1 1 222 1 1 222 1 220 20 20 20 20 1 1 20 20 20 1 1 20 20 20 20 20 20 20 20 20 20	58 0 <1 <1 104 214 5 1653 <1 current 18 11 1 2.8 current 0 5.7 30.2 current 40.4 1.39 1.59	56 0 1 <1 <1 70 222 6 2171 <1 * history 1 7 20 2 2  history 1  history 1  history 1  1.79 	       history 2    history 2    history 2    history 2



# **OIL ANALYSIS REPORT**







VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	Visual*	NONE	NONE	NONE	
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	
Precipitate	scalar	Visual*	NONE	NONE	NONE	
Silt	scalar	Visual*	NONE	NONE	NONE	
Debris	scalar	Visual*	NONE	NONE	NONE	
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	
Appearance	scalar	Visual*	NORML	NORML	NORML	
Odor	scalar	Visual*	NORML	NORML	NORML	
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	
Free Water	scalar	Visual*		NEG	NEG	
FLUID PROPE	RTIES	method	limit/base	current	history 1	history 2
Visc @ 40°C	cSt	ASTM D7279(m)	34.8	33.8	34.5	
Visc @ 100°C	cSt	ASTM D7279(m)	7.0	6.6	6.8	
Viscosity Index (VI)	Scale	ASTM D2270*	167	154	159	
SAMPLE IMAG	iES	method	limit/base	current	history 1	history 2
Color						no image
Bottom						no image
GRAPHS						
Ferrous Alloys			50 2014 2014 2014 2014 2014 2014 2014 201	PQ		
Non-ferrous Metals	s		3( 2( 1( c)	23/22		24/23
Viscosity @ 40°C			-1.0 1.1 1.1 1.1 1.1	Acid Number		Are w

#### J 0.5 0.0 Acid May24/23 -Jul29/22 May24/23 : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **Metrobus Transit** : PC0061465 Received : 05 Jul 2023 25 Messenger Drive : 02568028 Diagnosed : 07 Jul 2023 St. John`s, NL Accredited Laboratory Unique Number : 5605074 Diagnostician : Wes Davis CA A1B 0H6 Test Package : IND 2 (Additional Tests: FT-IR, FuelDilution, KV100, PercentFuel, TAN Man, TBN, VI) Contact: Danny Oliver To discuss this sample report, contact Customer Service at 1-800-268-2131. danny.oliver@metrobus.com Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (709)570-2025 Validity of results and interpretation are based on the sample and information as supplied. F: