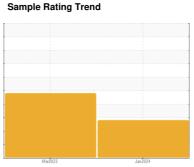


# **OIL ANALYSIS REPORT**





Machine Id **599** Component

**Diesel Engine** 

PETRO CANADA DURON HP 15W40 (--- GA

### **DIAGNOSIS**

### Recommendation

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

#### Wear

All component wear rates are normal.

#### Contamination

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

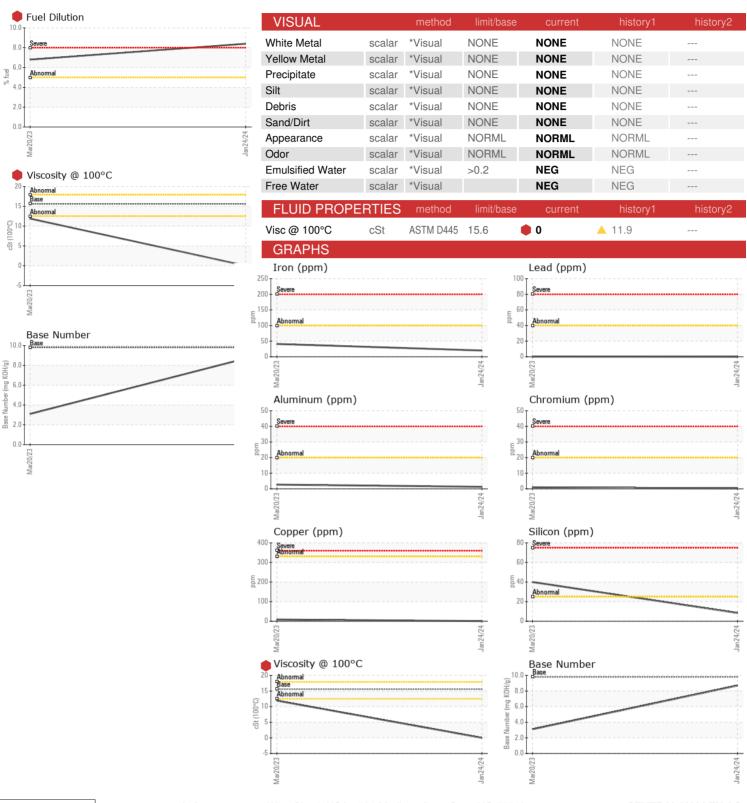
#### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         20         41	L)			Mar <b>2</b> 023	Jan 2024		
Sample Date   Client Info   24 Jan 2024   20 Mar 2023	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Cample Date   Client Info   24 Jan 2024   20 Mar 2023	Sample Number		Client Info		PCA0107193	PCA0066379	
Dil Age			Client Info		24 Jan 2024	20 Mar 2023	
Client Info	Machine Age	hrs	Client Info		19524	17872	
CONTAMINATION   method   mini/base   current   history1   history2	Oil Age	hrs	Client Info		500	908	
CONTAMINATION	Oil Changed		Client Info		Changed	Changed	
Water         WC Method         >0.2         NEG         NEG            Biycol         WC Method         NEG         NEG            WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         20         41            Chromium         ppm         ASTM D5185m         >20         <1         1            Vickel         ppm         ASTM D5185m         >4         4         13            Fitanium         ppm         ASTM D5185m         >4         0         0            Aluminum         ppm         ASTM D5185m         >40         0         <1            Aluminum         ppm         ASTM D5185m         >40         0         <1            Copper         ppm         ASTM D5185m         >330         <1         9            Tin         ppm         ASTM D5185m         0         0             Vanadium         ppm         ASTM D5185m         0         0            Barium <td>Sample Status</td> <td></td> <td></td> <td></td> <td>SEVERE</td> <td>ABNORMAL</td> <td></td>	Sample Status				SEVERE	ABNORMAL	
WEAR METALS	CONTAMINAT	TON	method	limit/base	current	history1	history2
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         20         41	Water		WC Method	>0.2	NEG	NEG	
Description	Glycol		WC Method		NEG	NEG	
Description	WEAR METAL	_S	method	limit/base	current	history1	history2
ASTM D5185m   ASTM D5185m   ASTM D5185m   DO   DO   CONTAMINANTS   MSTM D5185m   DO   DO   CONTAMINANTS   DO   DO   DO   CONTAMINANTS   DO   DO   DO   CONTAMINANTS   DO   DO   DO   CONTAMINANTS   DO   DO   CONTAMINANTS   DO   DO   DO   CONTAMINANTS   DO   DO   DO   CONTAMINANTS   DO   DO   DO   CONTAMINANTS   DO   DO   DO   DO   DO   DO   DO   D	ron	ppm	ASTM D5185m	>100	20	41	
Description	Chromium	ppm	ASTM D5185m	>20	<1	1	
Silver	Nickel	ppm	ASTM D5185m	>4	4	<u> </u>	
Aluminum	Titanium	ppm	ASTM D5185m		0	0	
Lead         ppm         ASTM D5185m         >40         0         <1	Silver	ppm	ASTM D5185m	>3	0	0	
ASTM D5185m   Sand D5185m	Aluminum	ppm	ASTM D5185m	>20	1	3	
Tim	_ead	ppm	ASTM D5185m	>40	0	<1	
Anadium         ppm         ASTM D5185m         0         0            Cadmium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         0            Barium         ppm         ASTM D5185m         0         2            Manganese         ppm         ASTM D5185m         55         55            Magnesium         ppm         ASTM D5185m         931         805            Phosphorus         ppm         ASTM D5185m         1104         1082            Phosphorus         ppm         ASTM D5185m         11259         1106            Sulfur         ppm         ASTM D5185m         1259         1106            Sulfur         ppm         ASTM D5185m         3108         2584            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         8.4 <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;330</td> <td>&lt;1</td> <td>9</td> <td></td>	Copper	ppm	ASTM D5185m	>330	<1	9	
Anadium         ppm         ASTM D5185m         0         0            Cadmium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         0            Barium         ppm         ASTM D5185m         0         2            Molybdenum         ppm         ASTM D5185m         55         55            Manganese         ppm         ASTM D5185m         931         805            Manganesium         ppm         ASTM D5185m         931         805            Calcicium         ppm         ASTM D5185m         1104         1082            Phosphorus         ppm         ASTM D5185m         1259         1106            Sulfur         ppm         ASTM D5185m         1259         1106            Sulfur         ppm         ASTM D5185m         >25         8         40            CONTAMINANTS         method         limit/base         current <t< td=""><td>Γin</td><td>ppm</td><td>ASTM D5185m</td><td>&gt;15</td><td>&lt;1</td><td>&lt;1</td><td></td></t<>	Γin	ppm	ASTM D5185m	>15	<1	<1	
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         0            Barium         ppm         ASTM D5185m         0         2            Molybdenum         ppm         ASTM D5185m         55         55            Manganese         ppm         ASTM D5185m         931         805            Magnesium         ppm         ASTM D5185m         931         805            Calcium         ppm         ASTM D5185m         1001         837            Phosphorus         ppm         ASTM D5185m         1259         1106            Zinc         ppm         ASTM D5185m         3108         2584            Contaction         ppm         ASTM D5185m         >25         8         40            Solicon         ppm         ASTM D5185m         >20         2         3            CONTAMINANTS         method         limit/base         current         history1         history2           Solicon         ppm         ASTM D5185m	/anadium		ASTM D5185m		0	0	
Boron	Cadmium	ppm	ASTM D5185m		0	0	
Barium ppm ASTM D5185m 0 2  Molybdenum ppm ASTM D5185m 55 55  Manganese ppm ASTM D5185m 931 805  Calcium ppm ASTM D5185m 1104 1082  Phosphorus ppm ASTM D5185m 1001 837  Zinc ppm ASTM D5185m 1259 1106  Sulfur ppm ASTM D5185m 3108 2584  CONTAMINANTS method limit/base current history1 history2  Silicon ppm ASTM D5185m 3 8  Fuel % ASTM D5185m >20 2 3  Fuel % ASTM D5185m >20 2 11.2  Soot % *ASTM D5185m >20 9.2 11.2  Sulfation Abs/.mm *ASTM D7415 >30 18.1 29.7  FLUID DEGRADATION method limit/base current history1 history2  Sixidation Abs/.1mm *ASTM D7414 >25 16.6 33.3  FLUID DEGRADATION method limit/base current history1 history2  Dxidation Abs/.1mm *ASTM D7414 >25 16.6 33.3	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         55         55            Manganese         ppm         ASTM D5185m         -1         1            Magnesium         ppm         ASTM D5185m         931         805            Calcium         ppm         ASTM D5185m         1104         1082            Phosphorus         ppm         ASTM D5185m         1001         837            Zinc         ppm         ASTM D5185m         1259         1106            Sulfur         ppm         ASTM D5185m         3108         2584            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         8         40            Solium         ppm         ASTM D5185m         >20         2         3            Fuel         %         ASTM D5185m         >20         2         3            Fuel         %         ASTM D5185m         >20         8.4         0.8            INFRA-RED         method	Boron	ppm	ASTM D5185m		2	0	
Manganese         ppm         ASTM D5185m         <1         1            Magnesium         ppm         ASTM D5185m         931         805            Calcium         ppm         ASTM D5185m         1104         1082            Phosphorus         ppm         ASTM D5185m         1001         837            Zinc         ppm         ASTM D5185m         1259         1106            Sulfur         ppm         ASTM D5185m         3108         2584            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         8         40            Codium         ppm         ASTM D5185m         3         8            Potassium         ppm         ASTM D5185m         20         2         3            Fuel         %         ASTM D5185m         >20         2         3            Potassium         ppm         ASTM D5185m         3         8            Potassium         ppm         ASTM D5185m	Barium	ppm	ASTM D5185m		0	2	
Magnesium         ppm         ASTM D5185m         931         805            Calcium         ppm         ASTM D5185m         1104         1082            Phosphorus         ppm         ASTM D5185m         1001         837            Zinc         ppm         ASTM D5185m         1259         1106            Sulfur         ppm         ASTM D5185m         3108         2584            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         8         40            Sodium         ppm         ASTM D5185m         >20         2         3            Potassium         ppm         ASTM D5185m         >20         2         3            Fuel         %         ASTM D3524         >5         8.4         6.8            Soot %         %         *ASTM D7844         >3         0.4         0.3            Soot %         %         *ASTM D7624         >20         9.2         11.2            Sulfat	Molybdenum	ppm	ASTM D5185m		55	55	
Calcium         ppm         ASTM D5185m         1104         1082            Phosphorus         ppm         ASTM D5185m         1001         837            Zinc         ppm         ASTM D5185m         1259         1106            Sulfur         ppm         ASTM D5185m         3108         2584            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         8         40            Sodium         ppm         ASTM D5185m         3         8            Potassium         ppm         ASTM D5185m         >20         2         3            Fuel         %         ASTM D3524         >5         8.4         6.8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         9.2         11.2            Soulfation         Abs/.1mm         *ASTM D7415         >30         18.1         29.7            <	Manganese	ppm	ASTM D5185m		<1	1	
Phosphorus         ppm         ASTM D5185m         1001         837            Zinc         ppm         ASTM D5185m         1259         1106            Sulfur         ppm         ASTM D5185m         3108         2584            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         8         40            Sodium         ppm         ASTM D5185m         3         8            Potassium         ppm         ASTM D5185m         >20         2         3            Fuel         %         ASTM D5185m         >20         2         3            Fuel         %         ASTM D5185m         >20         2         3            Fuel         %         ASTM D5185m         3         8            Fuel         %         ASTM D5185m         3         8            Fuel         %         ASTM D5185m         3         8            Soot %         %         ASTM D7844         >3	Magnesium	ppm	ASTM D5185m		931	805	
Tinc   ppm   ASTM D5185m   1259   1106       Sulfur   ppm   ASTM D5185m   3108   2584       CONTAMINANTS   method   limit/base   current   history1   history2     Silicon   ppm   ASTM D5185m   >25   8   40       Sodium   ppm   ASTM D5185m   3   8       Potassium   ppm   ASTM D5185m   >20   2   3       Fuel   %   ASTM D3524   >5   8.4   △ 6.8       INFRA-RED   method   limit/base   current   history1   history2     Soot %   % *ASTM D7844   >3   0.4   0.3       Soulfation   Abs/cm *ASTM D7624   >20   9.2   11.2       Sulfation   Abs/.1mm *ASTM D7415   >30   18.1   29.7       FLUID DEGRADATION   method   limit/base   current   history1   history2     Dxidation   Abs/.1mm *ASTM D7414   >25   16.6   33.3	Calcium	ppm	ASTM D5185m		1104	1082	
Gulfur         ppm         ASTM D5185m         3108         2584            CONTAMINANTS         method         limit/base         current         history1         history2           Golicon         ppm         ASTM D5185m         >25         8         40            Godium         ppm         ASTM D5185m         3         8            Potassium         ppm         ASTM D5185m         >20         2         3            Fuel         %         ASTM D5185m         >20         2         3            Fuel         %         ASTM D5185m         >20         2         3            Fuel         %         ASTM D5185m         >20         2         3            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4         0.3            Soot %         %         *ASTM D7624         >20         9.2         11.2            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         29.7        <	Phosphorus	ppm	ASTM D5185m		1001	837	
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         8         40            Sodium         ppm         ASTM D5185m         3         8            Potassium         ppm         ASTM D5185m         >20         2         3            Fuel         %         ASTM D3524         >5         8.4         6.8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4         0.3            Nitration         Abs/cm         *ASTM D7624         >20         9.2         11.2            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         29.7            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.6         33.3	Zinc	ppm	ASTM D5185m		1259	1106	
Solition   ppm   ASTM D5185m   >25   8	Sulfur	ppm	ASTM D5185m		3108	2584	
Sodium         ppm         ASTM D5185m         3         8            Potassium         ppm         ASTM D5185m         >20         2         3            Fuel         %         ASTM D3524         >5         ■ 8.4         ▲ 6.8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4         0.3            Nitration         Abs/cm         *ASTM D7624         >20         9.2         11.2            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         29.7            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.6         33.3	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         2         3            Fuel         %         ASTM D3524         >5         ■ 8.4         ▲ 6.8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4         0.3            Vitration         Abs/cm         *ASTM D7624         >20         9.2         11.2            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         29.7            FLUID DEGRADATION         method         limit/base         current         history1         history2           Dxidation         Abs/.1mm         *ASTM D7414         >25         16.6         33.3	Silicon	ppm	ASTM D5185m	>25	8	<b>4</b> 0	
Fuel % ASTM D3524 >5	Sodium	ppm	ASTM D5185m		3	8	
INFRA-RED	Potassium	ppm	ASTM D5185m	>20	2	3	
Soot %         %         *ASTM D7844         >3         0.4         0.3            Nitration         Abs/cm         *ASTM D7624         >20         9.2         11.2            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         29.7            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.6         33.3	Fuel	%	ASTM D3524	>5	● 8.4	<b>△</b> 6.8	
Nitration         Abs/cm         *ASTM D7624         >20         9.2         11.2            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         29.7            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.6         33.3	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         29.7            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.6         33.3	Soot %	%	*ASTM D7844	>3	0.4	0.3	
FLUID DEGRADATION     method     limit/base     current     history1     history2       Dxidation     Abs/.1mm     *ASTM D7414     >25     16.6     33.3	Nitration	Abs/cm	*ASTM D7624	>20	9.2	11.2	
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.1		
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.6	33.3	
					8.7	<b>△</b> 3.1	



## **OIL ANALYSIS REPORT**







**Unique Number** 

Laboratory Sample No. Lab Number

: PCA0107193 : 06072081 : 10848758

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

: 26 Jan 2024 Diagnosed

: 29 Jan 2024 Diagnostician : Wes Davis

**Test Package**: MOB 1 (Additional Tests: PercentFuel, TBN) 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)

**CENTRAL VALLEY AG** 5707 LANGWORTH

OAKDALE, CA US 95361 Contact: S MCHENRY smchenry@cv-ag.com T: (209)630-8094

Submitted By: LAB TECH