

# **OIL ANALYSIS REPORT**

# **Charlestown** 562

Component

**Diesel Engine** 

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

# Sample Rating Trend NORMAL

## DIAGNOSIS

## Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

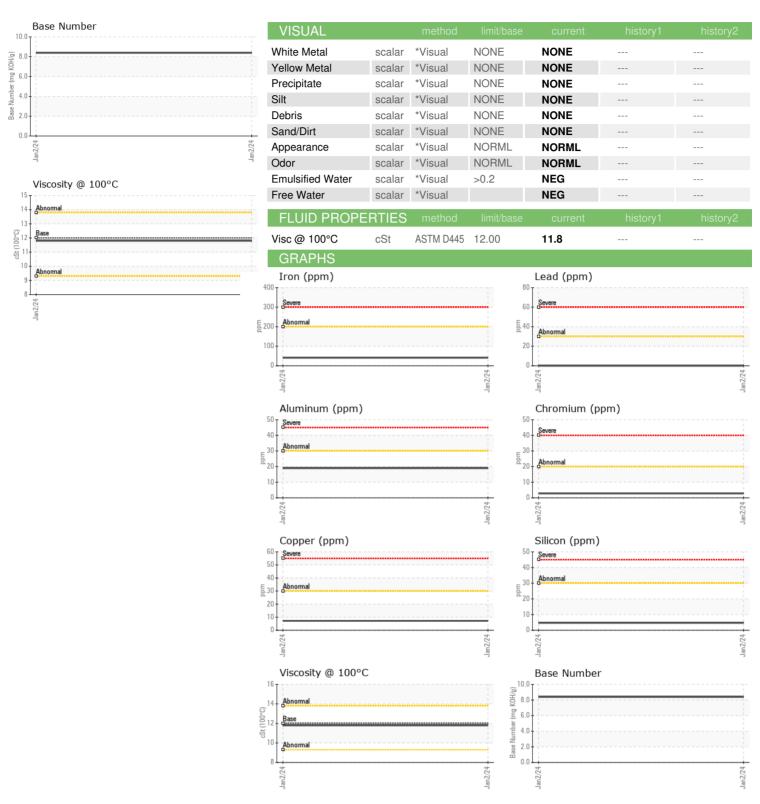
## **Fluid Condition**

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

SAMPLE INFORMATION   method   imitibase   current   history1   history2	āAL)				Jan 2024		
Sample Date   Client Info   02 Jan 2024	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age         mls         Client Info         397689             Oil Age         mls         Client Info         0             Oil Changed         Client Info         Changed             Sample Status         Image: Control of Mode              CONTAMINATION         method         Imitibase         current         history1         history2           Fuel         WC Method         >3.0         <1.0	Sample Number		Client Info		PCA0078290		
Oil Age         mls         Client Info         Changed	Sample Date		Client Info		02 Jan 2024		
Oil Changed Sample Status         Client Info         Changed NORMAL	Machine Age	mls	Client Info		397689		
CONTAMINATION	Oil Age	mls	Client Info		0		
CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0	Oil Changed		Client Info		Changed		
Fuel   WC Method   So.2   NEG   So.2   NEG   So.2   NEG   So.2   NEG   So.2   NEG   So.3   So.3	Sample Status				NORMAL		
Water Glycol         WC Method         >0.2         NEG	CONTAMINA	TION	method	limit/base	current	history1	history2
WEAR METALS   method   limit/base   current   history1   history2	Fuel		WC Method	>3.0	<1.0		
WEAR METALS	Water		WC Method	>0.2	NEG		
Iron	Glycol		WC Method		NEG		
Chromium         ppm         ASTM D5185m         >20         3             Nickel         ppm         ASTM D5185m         >2         0             Titanium         ppm         ASTM D5185m         >2         <1	WEAR META	LS	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>200	41		
Titanium	Chromium	ppm	ASTM D5185m	>20	3		
Silver	Nickel	ppm	ASTM D5185m	>2	0		
Aluminum         ppm         ASTM D5185m         >30         19             Lead         ppm         ASTM D5185m         >30         0             Copper         ppm         ASTM D5185m         >30         7             Tin         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         0         0             Cadmium         ppm         ASTM D5185m         0         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         50         64	Titanium	ppm	ASTM D5185m	>2	<1		
Lead	Silver	ppm	ASTM D5185m	>2	0		
Copper         ppm         ASTM D5185m         >30         7             Tin         ppm         ASTM D5185m         0             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         0         0             Manganese         ppm         ASTM D5185m         0         1             Magnesium         ppm         ASTM D5185m         950         976             Calcium         ppm         ASTM D5185m         1050         1099             Phosphorus         ppm         ASTM D5185m         1180         1306	Aluminum	ppm	ASTM D5185m	>30	19		
Tin	Lead	ppm	ASTM D5185m	>30	0		
Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         0             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         50         64             Manganese         ppm         ASTM D5185m         0         1             Magnesium         ppm         ASTM D5185m         950         976             Calcium         ppm         ASTM D5185m         950         1093             Phosphorus         ppm         ASTM D5185m         995         1033             Sulfur         ppm         ASTM D5185m         2600         2551             CONTAMINANTS         method         limit/base         current         history1 </td <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;30</td> <td>7</td> <td></td> <td></td>	Copper	ppm	ASTM D5185m	>30	7		
Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         0             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         50         64             Manganese         ppm         ASTM D5185m         0         1             Magnesium         ppm         ASTM D5185m         950         976             Calcium         ppm         ASTM D5185m         1050         1099             Phosphorus         ppm         ASTM D5185m         995         1033             Zinc         ppm         ASTM D5185m         2600         2551             Sulfur         ppm         ASTM D5185m         >30         5             Sodium         ppm         ASTM D5185m         >30         5 <td>Tin</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;15</td> <td>0</td> <td></td> <td></td>	Tin	ppm	ASTM D5185m	>15	0		
ADDITIVES	Vanadium	ppm	ASTM D5185m		0		
Boron	Cadmium	ppm	ASTM D5185m		0		
Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         50         64             Manganese         ppm         ASTM D5185m         0         1             Magnesium         ppm         ASTM D5185m         950         976             Calcium         ppm         ASTM D5185m         1050         1099             Phosphorus         ppm         ASTM D5185m         995         1033             Zinc         ppm         ASTM D5185m         2600         2551             Sulfur         ppm         ASTM D5185m         2600         2551             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5             Sodium         ppm         ASTM D5185m         >20         4             Potassium         ppm	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         50         64             Manganese         ppm         ASTM D5185m         0         1             Magnesium         ppm         ASTM D5185m         950         976             Calcium         ppm         ASTM D5185m         1050         1099             Phosphorus         ppm         ASTM D5185m         995         1033             Zinc         ppm         ASTM D5185m         1180         1306             Sulfur         ppm         ASTM D5185m         2600         2551             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5             Sodium         ppm         ASTM D5185m         >20         4             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base </td <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>2</td> <td>0</td> <td></td> <td></td>	Boron	ppm	ASTM D5185m	2	0		
Manganese         ppm         ASTM D5185m         0         1             Magnesium         ppm         ASTM D5185m         950         976             Calcium         ppm         ASTM D5185m         1050         1099             Phosphorus         ppm         ASTM D5185m         995         1033             Zinc         ppm         ASTM D5185m         1180         1306             Sulfur         ppm         ASTM D5185m         2600         2551             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5             Sodium         ppm         ASTM D5185m         >20         4             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         % ASTM D7844         >3	Barium	ppm	ASTM D5185m	0	0		
Magnesium         ppm         ASTM D5185m         950         976             Calcium         ppm         ASTM D5185m         1050         1099             Phosphorus         ppm         ASTM D5185m         995         1033             Zinc         ppm         ASTM D5185m         1180         1306             Sulfur         ppm         ASTM D5185m         2600         2551             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5             Sodium         ppm         ASTM D5185m         >20         4             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         10.8             Sulfation         Abs/.1mm         *ASTM D7414 <td>Molybdenum</td> <td>ppm</td> <td>ASTM D5185m</td> <td>50</td> <td>64</td> <td></td> <td></td>	Molybdenum	ppm	ASTM D5185m	50	64		
Calcium         ppm         ASTM D5185m         1050         1099             Phosphorus         ppm         ASTM D5185m         995         1033             Zinc         ppm         ASTM D5185m         1180         1306             Sulfur         ppm         ASTM D5185m         2600         2551             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5             Sodium         ppm         ASTM D5185m         >0             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.1             Nitration         Abs/cm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         *ASTM D7414         >25	Manganese	ppm	ASTM D5185m	0	1		
Phosphorus         ppm         ASTM D5185m         995         1033             Zinc         ppm         ASTM D5185m         1180         1306             Sulfur         ppm         ASTM D5185m         2600         2551             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5             Sodium         ppm         ASTM D5185m         >0             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.1             Nitration         Abs/cm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         *ASTM D7414         >25         20.2              Soid with the companing of the companing of the companing of the companing o	Magnesium	ppm	ASTM D5185m	950			
Zinc         ppm         ASTM D5185m         1180         1306             Sulfur         ppm         ASTM D5185m         2600         2551             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5             Sodium         ppm         ASTM D5185m         >20         4             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.1             Nitration         Abs/cm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.2	Calcium	ppm	ASTM D5185m	1050	1099		
Sulfur         ppm         ASTM D5185m         2600         2551             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5             Sodium         ppm         ASTM D5185m         0             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.1             Nitration         Abs/cm         *ASTM D7624         >20         10.8             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.2	Phosphorus	ppm	ASTM D5185m	995	1033		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5             Sodium         ppm         ASTM D5185m         0              Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.1             Nitration         Abs/cm         *ASTM D7624         >20         10.8             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.2	Zinc	ppm	ASTM D5185m	1180	1306		
Silicon         ppm         ASTM D5185m         >30         5             Sodium         ppm         ASTM D5185m         0              INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.1             Nitration         Abs/cm         *ASTM D7624         >20         10.8             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.2	Sulfur	ppm	ASTM D5185m	2600	2551		
Sodium         ppm         ASTM D5185m         0             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.1             Nitration         Abs/cm         *ASTM D7624         >20         10.8             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.2	CONTAMINA	NTS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.1             Nitration         Abs/cm         *ASTM D7624         >20         10.8             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.2	Silicon	ppm	ASTM D5185m	>30	5		
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.1             Nitration         Abs/cm         *ASTM D7624         >20         10.8             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.2	Sodium	ppm	ASTM D5185m		0		
Soot %         %         *ASTM D7844         >3         1.1             Nitration         Abs/cm         *ASTM D7624         >20         10.8             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.2	Potassium	ppm	ASTM D5185m	>20	4		
Nitration         Abs/cm         *ASTM D7624         >20         10.8             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.2	Soot %	%	*ASTM D7844	>3	1.1		
FLUID DEGRADATION method limit/base current history1 history2  Oxidation Abs/.1mm *ASTM D7414 >25 20.2	Nitration	Abs/cm	*ASTM D7624	>20	10.8		
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	23.4		
	FLUID DEGRA	ADATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 8.39	Oxidation	Abs/.1mm	*ASTM D7414	>25	20.2		
	Base Number (BN)	mg KOH/g	ASTM D2896		8.39		



# **OIL ANALYSIS REPORT**







Laboratory Sample No. Lab Number Unique Number

: PCA0078290 : 06061397 : 10832779 Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 16 Jan 2024 Recieved Diagnosed : 17 Jan 2024

: Wes Davis Diagnostician

PORTSIDE TRUCK AND AUTO - DIVERSIFIED AUTO 100 TERMINAL ST

CHARLESTOWN, MA US 02129

Contact: BRYAN WINTER

BWINTERS@DIVERSIFIEDAUTO.COM T: 1(857)998-2229

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)

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