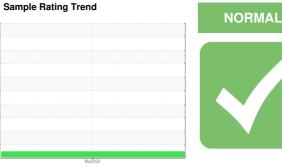


# **OIL ANALYSIS REPORT**



Machine Id Component

**Diesel Engine** 

PETRO CANADA DURON HP 15W40 (--- GA

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

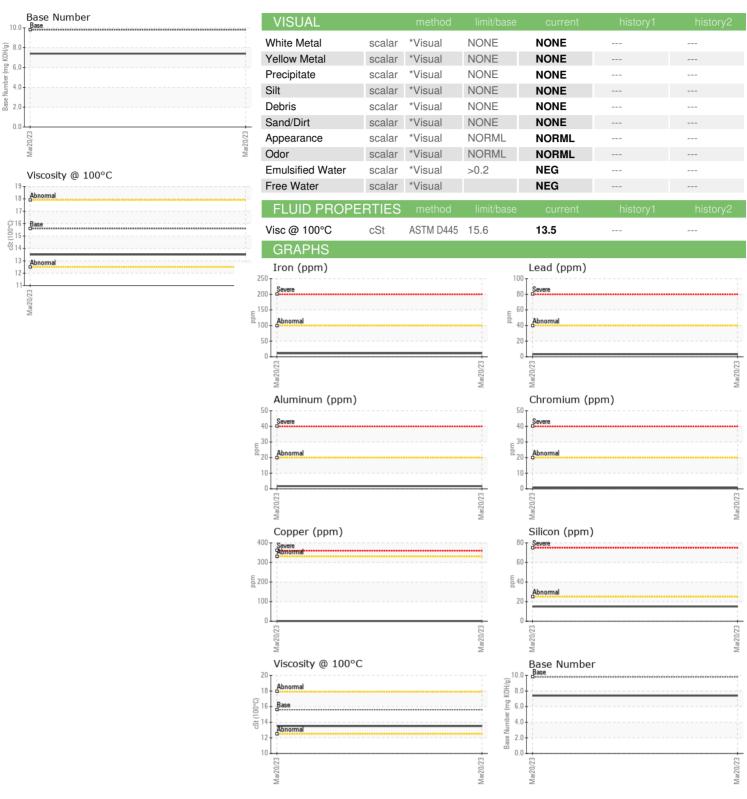
### **Fluid Condition**

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

SAMPLE INFORMATION         method         limit/base         current         history1         history2           Sample Number         Client Info         PCA0066377            Sample Date         Client Info         20 Mar 2023            Machine Age         mls         Client Info         567363            Oil Age         mls         Client Info         Changed            Oil Changed         Client Info         Changed            Sample Status         NORMAL             CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         NEG              Glycol         WC Method         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         11             Iron         ppm         ASTM D5185m         >20         <1             Iron         ppm         ASTM D5185m	AL)				Mar2023		
Sample Date   Client Info   20 Mar 2023	SAMPLE INFOR	MATION	method	limit/base		history1	history2
Machine Age         mls         Client Info         567363	Sample Number		Client Info		PCA0066377		
Oil Age         mls         Client Info         18335	Sample Date		Client Info		20 Mar 2023		
Client Info   Changed   Client Info   Changed   NORMAL	Machine Age	mls	Client Info		567363		
CONTAMINATION	Oil Age	mls	Client Info		18335		
CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >5         <1.0	Oil Changed		Client Info		Changed		
Fuel	Sample Status				NORMAL		
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         11             Chromium         ppm         ASTM D5185m         >20         <1	Fuel		WC Method	>5	<1.0		
Iron	Glycol		WC Method		NEG		
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	11		
Nickel	Chromium		ASTM D5185m	>20	<1		
Description	Nickel		ASTM D5185m	>4	<1		
Aluminum	Titanium	ppm	ASTM D5185m		0		
Lead         ppm         ASTM D5185m         >40         3             Copper         ppm         ASTM D5185m         >330         <1	Silver	ppm	ASTM D5185m	>3	0		
Copper         ppm         ASTM D5185m         >330         -1             Tin         ppm         ASTM D5185m         >15         <1	Aluminum	ppm	ASTM D5185m	>20	2		
Tin	Lead	ppm	ASTM D5185m	>40	3		
Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         6             Barium         ppm         ASTM D5185m         2             Molybdenum         ppm         ASTM D5185m         64             Manganese         ppm         ASTM D5185m         <1             Magnesium         ppm         ASTM D5185m         1245             Phosphorus         ppm         ASTM D5185m         1317             Zinc         ppm         ASTM D5185m         1317             Sulfur         ppm         ASTM D5185m         2813             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         15 <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;330</td> <td>&lt;1</td> <td></td> <td></td>	Copper	ppm	ASTM D5185m	>330	<1		
Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         6             Barium         ppm         ASTM D5185m         2             Molybdenum         ppm         ASTM D5185m         64             Manganese         ppm         ASTM D5185m         965             Magnesium         ppm         ASTM D5185m         1245             Phosphorus         ppm         ASTM D5185m         1088             Zinc         ppm         ASTM D5185m         2813             Sulfur         ppm         ASTM D5185m         2813             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         15             Sodium         ppm         ASTM D5185m         >20 <td>Tin</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;15</td> <td>&lt;1</td> <td></td> <td></td>	Tin	ppm	ASTM D5185m	>15	<1		
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         6             Barium         ppm         ASTM D5185m         2             Molybdenum         ppm         ASTM D5185m         64             Manganese         ppm         ASTM D5185m         965             Magnesium         ppm         ASTM D5185m         1245             Calcium         ppm         ASTM D5185m         1088             Phosphorus         ppm         ASTM D5185m         1317             Zinc         ppm         ASTM D5185m         2813             Sulfur         ppm         ASTM D5185m         2813             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         15             Sodium         ppm         ASTM D5185m         >20	Vanadium	ppm	ASTM D5185m		0		
Boron	Cadmium	ppm	ASTM D5185m		0		
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         64             Manganese         ppm         ASTM D5185m         <1             Magnesium         ppm         ASTM D5185m         965             Calcium         ppm         ASTM D5185m         1245             Phosphorus         ppm         ASTM D5185m         1088             Zinc         ppm         ASTM D5185m         2813             Sulfur         ppm         ASTM D5185m         2813             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         15             Sodium         ppm         ASTM D5185m         >20         4             Potassium         ppm         ASTM D7844         >3         0.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D78	Boron	ppm	ASTM D5185m		6		
Manganese         ppm         ASTM D5185m         <1             Magnesium         ppm         ASTM D5185m         965             Calcium         ppm         ASTM D5185m         1245             Phosphorus         ppm         ASTM D5185m         1317             Zinc         ppm         ASTM D5185m         2813             Sulfur         ppm         ASTM D5185m         >2813             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         15             Sodium         ppm         ASTM D5185m         >20         4             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Nitra	Barium	ppm	ASTM D5185m		2		
Magnesium         ppm         ASTM D5185m         965             Calcium         ppm         ASTM D5185m         1245             Phosphorus         ppm         ASTM D5185m         1088             Zinc         ppm         ASTM D5185m         1317             Sulfur         ppm         ASTM D5185m         2813             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         15             Sodium         ppm         ASTM D5185m         4             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         % ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7415         >30         22.9             FLUID DEGRADATION </td <td>Molybdenum</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>64</td> <td></td> <td></td>	Molybdenum	ppm	ASTM D5185m		64		
Calcium         ppm         ASTM D5185m         1245             Phosphorus         ppm         ASTM D5185m         1088             Zinc         ppm         ASTM D5185m         1317             Sulfur         ppm         ASTM D5185m         2813             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         15             Sodium         ppm         ASTM D5185m         4             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/:nm         *ASTM D7415         >30         22.9             FLUID DEGRADATION         *ASTM D7414         >25         20.7             Oxi	Manganese	ppm	ASTM D5185m		<1		
Phosphorus	Magnesium	ppm	ASTM D5185m		965		
Zinc         ppm         ASTM D5185m         1317             Sulfur         ppm         ASTM D5185m         2813             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         15             Sodium         ppm         ASTM D5185m         20         4             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         10.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25 <th< td=""><td>Calcium</td><td>ppm</td><td>ASTM D5185m</td><td></td><td>1245</td><td></td><td></td></th<>	Calcium	ppm	ASTM D5185m		1245		
Sulfur         ppm         ASTM D5185m         2813             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         15             Sodium         ppm         ASTM D5185m         >20         4             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         10.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	Phosphorus	ppm	ASTM D5185m		1088		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         15             Sodium         ppm         ASTM D5185m         4             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         10.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	Zinc	ppm	ASTM D5185m		1317		
Silicon         ppm         ASTM D5185m         >25         15             Sodium         ppm         ASTM D5185m         4              INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         10.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	Sulfur	ppm	ASTM D5185m		2813		
Sodium         ppm         ASTM D5185m         4             Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         10.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         10.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7		ppm	ASTM D5185m	>25	15		
INFRA-RED	Sodium	ppm	ASTM D5185m		4		
Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         10.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	Potassium	ppm	ASTM D5185m	>20	4		
Nitration         Abs/cm         *ASTM D7624         >20         10.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         20.7	Soot %	%	*ASTM D7844	>3	0.2		
FLUID DEGRADATION method limit/base current history1 history2  Oxidation Abs/.1mm *ASTM D7414 >25 20.7	Nitration	Abs/cm	*ASTM D7624	>20	10.1		
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.9		
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 7.4	Oxidation	Abs/.1mm	*ASTM D7414	>25	20.7		
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.4		



## **OIL ANALYSIS REPORT**







Laboratory Sample No.

Lab Number

**Unique Number** 

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 05808510

: PCA0066377 : 10406039

Received Diagnosed

: 04 Apr 2023 Diagnostician : Wes Davis Test Package : MOB 1 (Additional Tests: TBN)

: 03 Apr 2023

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

Report Id: CENOAK [WUSCAR] 05808510 (Generated: 09/19/2023 15:36:22) Rev: 1

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