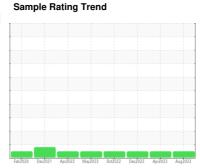


# **OIL ANALYSIS REPORT**

Active 26

Component **Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (10 GAL)





## 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

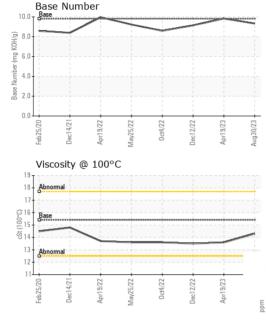
## **Fluid Condition**

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   Imilibase   current   history1   history2	N 30P 13W40 (1	U GAL)	Feb2020 I	0ec2021 Apr2022 May20	22 Oct2022 Dec2022 Apr2023	Aug2023	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date   Client Info   30 Aug 2023   19 Apr 2023   12 Dec 2022   Machine Age   hrs   Client Info   24529   24529   23536   24529   23536   24529   23536   24529   23536   24529   23536   24529   23536   24529   23536   24529   23536   24529   23536   24529   23536   24529   23536   24529   23536   24529   23536   24529   24529   23536   24529   2452	Sample Number		Client Info		PCA0104699	PCA0090773	PCA0083383
Machine Age   hrs   Client Info   18937   19930   18937			Client Info		30 Aug 2023	19 Apr 2023	12 Dec 2022
Dil Age	•	hrs	Client Info		_		23536
Client Info		hrs	Client Info		18937	19930	18937
NORMAL   NORMAL   NORMAL   CONTAMINATION   method   limit/base   current   history1   history2   history2	•						N/A
Fuel							
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >10         72         28         24           Chromium         ppm         ASTM D5185m         >20         2         <1	Fuel		WC Method	>5	<1.0	<1.0	<1.0
Chromium	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	ron	ppm	ASTM D5185m	>100	72	28	24
Silver	Chromium	ppm	ASTM D5185m	>20	2	<1	<1
Silver	Vickel	ppm	ASTM D5185m	>4	1	0	<1
Silver	Titanium		ASTM D5185m		<1	0	<1
Aluminum	Silver		ASTM D5185m	>3			0
Lead	Aluminum		ASTM D5185m	>20	1	<1	<1
Copper	Lead		ASTM D5185m	>40	0	0	1
Tin			ASTM D5185m	>330		4	3
Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         6         6         12           Barium         ppm         ASTM D5185m         0         0         0         0         <1           Molybdenum         ppm         ASTM D5185m         0         6         6         58         61           Manganese         ppm         ASTM D5185m         0         <1         <1         <1         <1           Magnesium         ppm         ASTM D5185m         1010         1022         909         906           Calcium         ppm         ASTM D5185m         1070         1184         1008         1039           Phosphorus         ppm         ASTM D5185m         1270         1349         1198         1221           Sulfur         ppm         ASTM D5185m         2060         3545         3184         3366           CONTAMINANTS         method         limit/base <td></td> <td></td> <td></td> <td></td> <th>&lt;1</th> <td>&lt;1</td> <td></td>					<1	<1	
ADDITIVES							
Boron   ppm   ASTM D5185m   0   0   0   0   0   0   0   0							
Barium         ppm         ASTM D5185m         0         0         0         <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         60         64         58         61           Manganese         ppm         ASTM D5185m         0         <1	Boron	ppm	ASTM D5185m	0	6	6	12
Molybdenum         ppm         ASTM D5185m         60         64         58         61           Manganese         ppm         ASTM D5185m         0         <1	Barium	ppm	ASTM D5185m	0	0	0	<1
Manganese         ppm         ASTM D5185m         0         <1         <1         <1           Magnesium         ppm         ASTM D5185m         1010         1022         909         906           Calcium         ppm         ASTM D5185m         1070         1184         1008         1039           Phosphorus         ppm         ASTM D5185m         1150         1075         945         993           Zinc         ppm         ASTM D5185m         1270         1349         1198         1221           Sulfur         ppm         ASTM D5185m         2060         3545         3184         3366           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         4         4           Sodium         ppm         ASTM D5185m         >20         2         <1	Molybdenum			60	64	58	61
Magnesium         ppm         ASTM D5185m         1010         1022         909         906           Calcium         ppm         ASTM D5185m         1070         1184         1008         1039           Phosphorus         ppm         ASTM D5185m         1150         1075         945         993           Zinc         ppm         ASTM D5185m         1270         1349         1198         1221           Sulfur         ppm         ASTM D5185m         2060         3545         3184         3366           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         4         4           Sodium         ppm         ASTM D5185m         >20         2         <1	•		ASTM D5185m	0	<1	<1	<1
Calcium         ppm         ASTM D5185m         1070         1184         1008         1039           Phosphorus         ppm         ASTM D5185m         1150         1075         945         993           Zinc         ppm         ASTM D5185m         1270         1349         1198         1221           Sulfur         ppm         ASTM D5185m         2060         3545         3184         3366           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         4         4           Sodium         ppm         ASTM D5185m         >20         2         <1	-			1010	1022		
Phosphorus         ppm         ASTM D5185m         1150         1075         945         993           Zinc         ppm         ASTM D5185m         1270         1349         1198         1221           Sulfur         ppm         ASTM D5185m         2060         3545         3184         3366           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         4         4           Sodium         ppm         ASTM D5185m         >20         2         <1	•						1039
Zinc   ppm   ASTM D5185m   1270   1349   1198   1221     Sulfur   ppm   ASTM D5185m   2060   3545   3184   3366     CONTAMINANTS   method   limit/base   current   history1   history2     Silicon   ppm   ASTM D5185m   >25   5   4   4     Sodium   ppm   ASTM D5185m   4   <1   2     Potassium   ppm   ASTM D5185m   >20   2   <1   0     INFRA-RED   method   limit/base   current   history1   history2     Soot %   "ASTM D7844   >3   1.2   0.5   0.5     Nitration   Abs/cm   "ASTM D7624   >20   9.8   8.5   8.6     Sulfation   Abs/.1mm "ASTM D7415   >30   22.9   18.8   21.3     FLUID DEGRADATION   method   limit/base   current   history1   history2     Oxidation   Abs/.1mm "ASTM D7414   >25   18.5   16.5   16.5     Table							
Sulfur         ppm         ASTM D5185m         2060         3545         3184         3366           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         4         4           Sodium         ppm         ASTM D5185m         20         2         <1							
Silicon         ppm         ASTM D5185m         >25         5         4         4           Sodium         ppm         ASTM D5185m         4         <1         2           Potassium         ppm         ASTM D5185m         >20         2         <1         0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.2         0.5         0.5           Nitration         Abs/cm         *ASTM D7624         >20         9.8         8.5         8.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9         18.8         21.3           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.5         16.5         16.5	-						
Sodium         ppm         ASTM D5185m         4         <1         2           Potassium         ppm         ASTM D5185m         >20         2         <1         0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.2         0.5         0.5           Nitration         Abs/cm         *ASTM D7624         >20         9.8         8.5         8.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9         18.8         21.3           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.5         16.5         16.5	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         2         <1         0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.2         0.5         0.5           Nitration         Abs/cm         *ASTM D7624         >20         9.8         8.5         8.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9         18.8         21.3           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.5         16.5         16.5	Silicon	ppm	ASTM D5185m	>25	5	4	4
INFRA-RED	Sodium	ppm	ASTM D5185m		4	<1	2
Soot %         %         *ASTM D7844         >3         1.2         0.5         0.5           Nitration         Abs/cm         *ASTM D7624         >20         9.8         8.5         8.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9         18.8         21.3           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.5         16.5         16.5	Potassium	ppm	ASTM D5185m	>20	2	<1	0
Nitration         Abs/cm         *ASTM D7624         >20         9.8         8.5         8.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9         18.8         21.3           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.5         16.5         16.5	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9         18.8         21.3           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.5         16.5         16.5	Soot %	%	*ASTM D7844	>3	1.2	0.5	0.5
Sulfation         Abs/.1mm         *ASTM D7415         >30         22.9         18.8         21.3           FLUID DEGRADATION method limit/base current         bistory1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.5         16.5         16.5	Vitration	Abs/cm	*ASTM D7624	>20	9.8	8.5	8.6
Oxidation							
	FLUID DEGRA	OATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.5	16.5	16.5
	Base Number (BN)	mg KOH/g			9.33	9.83	9.15



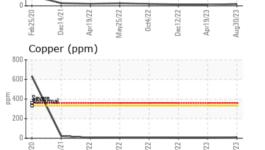
# **OIL ANALYSIS REPORT**

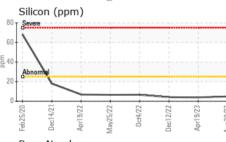


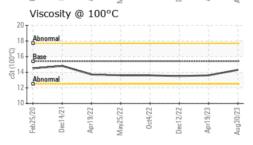
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
	DTIES	mothod	limit/base	current	history1	history?

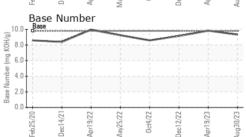
I LOID I HOI	LITTLO					
Visc @ 100°C	cSt	ASTM D445	15.4	14.3	13.6	13.5

GRAPHS	
Iron (ppm)	Lead (ppm)
Severe	80 - Severe
Abnomal	E 60 Abnormal
	20
Feb25;20 - Dec14/21 - Apr19;22 - MayZ5;22 - Oc4;22 -	Aug30/23 + Aug30/23 + Eeb25/20 - Eeb25/20 - Apr19/22 + Apr19/22 - Oct4/22 - Oct4/22 - Apr19/25 - Apr19/25 - Oct4/22
Aluminum (ppm)	Chromium (ppm)
Severe	40 Severe
Abnormal	E 30 - Abnormal
	10











Certificate L2367

Laboratory Sample No. Lab Number Test Package : MOB 2

**Unique Number** 

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0104699 : 05942411

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Received : 10633023

: 05 Sep 2023 : 06 Sep 2023 Diagnosed Diagnostician : Wes Davis

**REDI MIX SERVICES** 120 BERKLEY ST TAUNTON, MA US 02780 Contact: HENRY HOLLER

hholler@glopes.com

\* - 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) T:

F: