

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



PETRO CANADA DURON HP 15W40 (11 GAL)

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

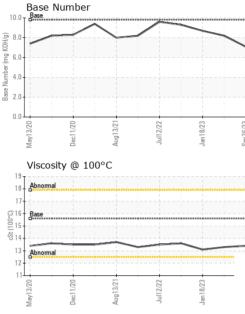
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

AL)		May2020	Dec2020 Aug2021	Jul2022 Jan2023	Sep 2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0082885	PCA0069585	PCA0069530
Sample Date		Client Info		26 Sep 2023	29 May 2023	18 Jan 2023
Machine Age	hrs	Client Info		0	15882	15360
Oil Age	hrs	Client Info		0	370	480
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron		ASTM D5185m	>100	11	17	11
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>20	<1 <1	<1	0
Titanium	ppm	ASTM D5185m	>4	<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>3	0	4	<1
Lead	ppm		>20	4	4 <1	<1
	ppm	ASTM D5185m			<1	< 1
Copper	ppm	ASTM D5185m	>330	<1		
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	3	4	6
Boron Barium	ppm ppm		limit/base	3 2	4	6 0
Boron Barium		ASTM D5185m	limit/base	3 2 63	4 0 67	6 0 63
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	limit/base	3 2 63 <1	4 0 67 <1	6 0 63 <1
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 2 63	4 0 67 <1 1071	6 0 63 <1 954
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 2 63 <1 881 1038	4 0 67 <1	6 0 63 <1 954 1065
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 2 63 <1 881	4 0 67 <1 1071	6 0 63 <1 954
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 2 63 <1 881 1038	4 0 67 <1 1071 1207	6 0 63 <1 954 1065
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 2 63 <1 881 1038 998	4 0 67 <1 1071 1207 1169	6 0 63 <1 954 1065 979
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 2 63 <1 881 1038 998 1172	4 0 67 <1 1071 1207 1169 1413	6 0 63 <1 954 1065 979 1265
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 2 63 <1 881 1038 998 1172 2824	4 0 67 <1 1071 1207 1169 1413 4006	6 0 63 <1 954 1065 979 1265 3410
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 2 63 <1 881 1038 998 1172 2824 current	4 0 67 <1 1071 1207 1169 1413 4006 history1	6 0 63 <1 954 1065 979 1265 3410 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	limit/base >25	3 2 63 <1 881 1038 998 1172 2824 current 15	4 0 67 <1 1071 1207 1169 1413 4006 history1 22	6 0 63 <1 954 1065 979 1265 3410 history2 ▲ 49
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	limit/base >25	3 2 63 <1 881 1038 998 1172 2824 <u>current</u> 15 0	4 0 67 <1 1071 1207 1169 1413 4006 history1 22 2	6 0 63 <1 954 1065 979 1265 3410 history2 ▲ 49 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base	3 2 63 <1 881 1038 998 1172 2824 current 15 0 3	4 0 67 <1 1071 1207 1169 1413 4006 history1 22 2 2 2	6 0 63 <1 954 1065 979 1265 3410 history2 ▲ 49 0 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	3 2 63 <1 881 1038 998 1172 2824 current 15 0 3 3	4 0 67 <1 1071 1207 1169 1413 4006 history1 22 2 2 2 2 2 history1	6 0 63 <1 954 1065 979 1265 3410 history2 ↓ 49 0 <1 <i>history2</i>
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	3 2 63 <1 881 1038 998 1172 2824 current 15 0 3 3 current 0.6	4 0 67 <1 1071 1207 1169 1413 4006 history1 22 2 2 2 2 history1 0.4	6 0 63 <1 954 1065 979 1265 3410 history2 ▲ 49 0 <1 × 19 0.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	<pre>ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm</pre>	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	3 2 63 <1 881 1038 998 1172 2824 current 15 0 3 current 0.6 9.9	4 0 67 <1 1071 1207 1169 1413 4006 history1 22 2 2 2 2 history1 0.4 9.4	6 0 63 <1 954 1065 979 1265 3410 history2 ▲ 49 0 <1 × 19 0 <1 × 10 × 10 × 10 × 10 × 10 × 10 × 10 × 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	<pre>ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm</pre>	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20 >3 >30	3 2 63 <1 881 1038 998 1172 2824 <u>current</u> 15 0 3 <u>current</u> 0.6 9.9 21.3	4 0 67 <1 1071 1207 1169 1413 4006 history1 22 2 2 2 2 1 0.4 9.4 20.4	6 0 63 <1 954 1065 979 1265 3410 history2 ▲ 49 0 <1 kistory2 0.5 8.0 19.5



OIL ANALYSIS REPORT

VISUAL



	1100/12					,	
	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	NORM
	Odor	scalar	*Visual	NORML	NORML	NORML	NORM
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPE		method	limit/base		history1	histor
1	Visc @ 100°C GRAPHS	cSt	ASTM D445	15.6	13.4	13.3	13.1
	Ferrous Alloys						
1	⁸ T						
	6 - iron chromium	•	/	\land			
	4 nickel	\wedge	NI				
		$/ \setminus$		V			
mqq		V					
	6-						
	4						
	2	and a supervision of the local division of t	attantive and				
	/20	3/21	/23	1/23			
	May13/20 Dec11/20	Aug13/21 Jul12/22	Jan 18/23	Sep 26/23			
	Non-ferrous Meta		- 2				
1	0 T	1					
	copper						
	8+						
	6						
hpin				,			
		/	\wedge	1			
	2	1.	/	1			
		~		1			
	/20	3/21	(23	3/23 +			
	May13/20 Dec11/20	Aug 13/21 Juli 2/22	Jan 18/23	Sep26/23			
	Viscosity @ 100°	2		<i></i>	_		
1	⁹]	-		10	Base Numbe	r	
1	8 Abnormal					\sim \angle	-
i	17			(B)	3.0	\sim	
<u>c</u> 1	6 Base			KOH	6.0 -		
cSt (100°C)	5 -			er (mç			
cst	4			nmb.	1.0		
	3 Abnormal		\sim	Base Number (mg KOH/g)			
	2				2.0		
1		22	Jan 18/23	Sep 26/23	May13/20 Dec11/20	Aug 13/21 Jul 12/22	Jan 18/23
1		13/		da	Dec1	Aug	Jan
1	May13/20 Dec11/20	Aug13/21 Jul12/22	Jan	\$	<u> </u>		
1	May13/20 Dec11/20		-		-		
1	02/11/2990 WearCheck USA -	501 Madis	son Ave., Ca	ary, NC 2751	-	- APPLE VAL	
1	02/21/1990 WearCheck USA -	501 Madis Received	son Ave., Ca	ary, NC 275 ⁻ Oct 2023	-	146	698 GALAXY
1	02/21/1990 WearCheck USA	501 Madis Received Diagnose	son Ave., Ca I : 16 ed : 17	ary, NC 275 ⁻ Oct 2023 Oct 2023	-	146	598 GALAXY PLE VALLEY,
1	02(11) WearCheck USA - PCA0082885 05979430 10696725	501 Madis Received	son Ave., Ca I : 16 ed : 17	ary, NC 275 ⁻ Oct 2023	-	146 API	598 GALAXY PLE VALLEY, US 55
СО	0251/1990 WearCheck USA PCA0082885 05979430 10696725 FLEET ntact Customer Serv	501 Madis Received Diagnose Diagnost vice at 1-8	son Ave., Ca I : 16 ed : 17 ician : We	ary, NC 275 ⁻⁷ Oct 2023 Oct 2023 es Davis <i>9.</i>	-	146 API Cont	598 GALAXY PLE VALLEY,
r co are	02(11) WearCheck USA - PCA0082885 05979430 10696725 FLEET	501 Madis Received Diagnose Diagnost vice at 1-8 17025 sco	son Ave., Ca I : 16 ed : 17 ician : We 00-237-136 pe of accred	ary, NC 275 ⁻¹ Oct 2023 Oct 2023 es Davis 9. ditation.	13 AVR	146 API Cont avrconcrete.	598 GALAXY PLE VALLEY US 55 tact: senia zim

