

## **OIL ANALYSIS REPORT**

Sample Rating Trend





Machine Id

# PETRO CANADA DURON HP 15W40 (--- 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.

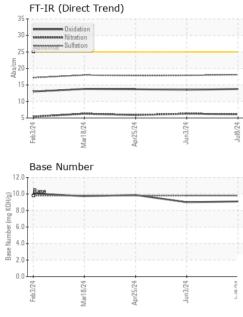
#### Fluid Condition

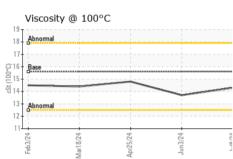
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0128754	PCA0123768	PCA0118462
Sample Date		Client Info		08 Jul 2024	03 Jun 2024	25 Apr 2024
Machine Age	hrs	Client Info		8704	8469	8233
Oil Age	hrs	Client Info		235	236	222
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
		ASTM D5185m	>100		11	6
Iron Chromium	ppm	ASTM D5185m ASTM D5185m	>100	9 <1	<1	6 <1
Nickel	ppm	ASTM D5185m	>20	<1 0	< 1	<1
Titanium	ppm	ASTM D5185m ASTM D5185m		u <1	0	0
Silver	ppm	ASTM D5185m ASTM D5185m	>2	<1	0	0
Aluminum	ppm ppm	ASTM D5185m	>2	5	5	6
Lead		ASTM D5185m	>40	0	0	0
	ppm	ASTM D5185m		1	1	0
Copper Tin	ppm	ASTM D5185m	>330	0	0	<1
Vanadium	ppm ppm	ASTM D5185m	>15	ں <1	0	0
Cadmium		ASTM D5185m		0	0	0
	ppm			-	-	-
ADDITIVES		method	limit/base	current	history1	history2
Boron						
	ppm	ASTM D5185m		<1	0	1
Barium	ppm ppm	ASTM D5185m		0	0	0
Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m		0 59	0 60	0 58
Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m		0 59 0	0 60 0	0 58 <1
Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 59 0 925	0 60 0 953	0 58 <1 952
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 59 0 925 1075	0 60 0 953 1052	0 58 <1 952 971
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 59 0 925 1075 986	0 60 0 953 1052 1066	0 58 <1 952 971 1053
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 59 0 925 1075 986 1186	0 60 0 953 1052 1066 1267	0 58 <1 952 971 1053 1228
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		0 59 0 925 1075 986 1186 2655	0 60 0 953 1052 1066 1267 3531	0 58 <1 952 971 1053 1228 3562
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	limit/base	0 59 0 925 1075 986 1186 2655 current	0 60 953 1052 1066 1267 3531 history1	0 58 <1 952 971 1053 1228 3562 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm 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	0 59 0 925 1075 986 1186 2655 current 2	0 60 953 1052 1066 1267 3531 history1 4	0 58 <1 952 971 1053 1228 3562 history2 3
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	>25	0 59 0 925 1075 986 1186 2655 <u>current</u> 2 2	0 60 0 953 1052 1066 1267 3531 history1 4 0	0 58 <1 952 971 1053 1228 3562 history2 3 <1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm 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 ASTM D5185m	>25 >20	0 59 0 925 1075 986 1186 2655 <u>current</u> 2 2 1	0 60 953 1052 1066 1267 3531 history1 4 0 2	0 58 <1 952 971 1053 1228 3562 history2 3 <1 <1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	>25 >20 limit/base	0 59 0 925 1075 986 1186 2655 <u>current</u> 2 2 2 1 1 <u>current</u>	0 60 0 953 1052 1066 1267 3531 history1 4 0 2 history1	0 58 <1 952 971 1053 1228 3562 history2 3 <1 <1 <1 history2
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	>25 >20 limit/base >3	0 59 0 925 1075 986 1186 2655 <u>current</u> 2 2 2 1 2 1	0 60 953 1052 1066 1267 3531 history1 4 0 2 history1 0.2	0 58 <1 952 971 1053 1228 3562 history2 3 <1 <1 <1 <1 history2 0.2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>25 >20 limit/base >3 >20	0 59 0 925 1075 986 1186 2655 <u>current</u> 2 2 2 1 1 <u>current</u> 0.2 6.1	0 60 0 953 1052 1066 1267 3531 history1 4 0 2 history1 0.2 6.3	0 58 <1 952 971 1053 1228 3562 history2 3 <1 <1 <1 <1 history2 0.2 5.9
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	>25 >20 limit/base >3	0 59 0 925 1075 986 1186 2655 <u>current</u> 2 2 2 1 2 1	0 60 953 1052 1066 1267 3531 history1 4 0 2 history1 0.2	0 58 <1 952 971 1053 1228 3562 history2 3 <1 <1 <1 <1 history2 0.2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>25 >20 limit/base >3 >20	0 59 0 925 1075 986 1186 2655 <u>current</u> 2 2 2 1 1 <u>current</u> 0.2 6.1	0 60 0 953 1052 1066 1267 3531 history1 4 0 2 history1 0.2 6.3	0 58 <1 952 971 1053 1228 3562 history2 3 <1 <1 <1 <1 history2 0.2 5.9
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>25 >20 limit/base >3 >20 >30	0 59 0 925 1075 986 1186 2655 <u>current</u> 2 2 2 1 2 1 0.2 6.1 18.1	0 60 953 1052 1066 1267 3531 history1 4 0 2 history1 0.2 6.3 17.9	0 58 <1 952 971 1053 1228 3562 history2 3 <1 <1 <1 <1 history2 0.2 5.9 17.8



# **OIL ANALYSIS REPORT**





)	VISUAL		method	limit/base	е	current	history1	history2	
	White Metal	scalar	*Visual	NONE	I	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	I	NONE	NONE	NONE	
***************************************	Sand/Dirt	scalar	*Visual	NONE		NONE	NONE	NONE	
Apr25/24 Jun3/24 Jul8/24	Appearance	scalar	*Visual	NORML		NORML	NORML	NORML	
Ap Ju	Odor	scalar	*Visual	NORML		NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2		NEG	NEG	NEG	
	Free Water	scalar	*Visual			NEG	NEG	NEG	
	FLUID PROPE		method	limit/base		current	history1	history2	
	Visc @ 100°C	cSt	ASTM D445	15.6		14.3	13.7	14.8	
	GRAPHS					14 3			
	Iron (ppm)				Le 100 τ :: -	ead (ppm)			
Jun3/24 +	200 - Severe				80 - S	evere		1 1 1	
Apr25/24 Jun3/24	E 150-			mqq	60 -				
	E 150 100 - Abnormal			d	40 - 0	bnormal			
	50				20				
	Feb3/24	Apr25/24 -	Jun3/24 -	Jul8/24 -	Feb3/24	Mar18/24 -	Apr25/24 -	Jun3/24 -	
	2	Apri	Ju	٦٢				η Γ	
	Aluminum (ppm)				СI 50 т	hromium (pr	om)		
	40 - Severe				- I -	evere			
	E 30 Abnormal			ε	30-				
Apr25/24 Jun3/24	E <sup>30</sup> Abnormal			6	30 20 <b>A</b>	bnormal			
Apr Ju	10-				10				
	24+0	24	24 +	24 +	24 0	24	24	24	
	Feb3/24 Mar18/24	Apr25/24	Jun3/24	Jul8/24	Feb3/24	Mar18/24	Apr25/24	Jun3/24	
	Copper (ppm)				Si	licon (ppm)			
	400	1	I	1	80 - 5	evere	1	1	
	300				60-				
	톱 200 -				40				
	100				20-	bnormal			
	6 Feb3/24	5/24	3/24	Jul8/24	Feb3/24	8/24	5/24	Jun3/24	
	2	Apr25/24	Jun3/24	Jul	Feb	Mar18/24	Apr25/24	Jun3/24	
	Viscosity @ 100°C				Ва 12.0 т	ase Number			
	18 - Abnormal			Base Number (mg KOH/g)		ase			
	Co 16 - Base			L (mg	8.0				
	dbnormal			lumbe	4.0				
	12-		· · · · · · · · · · · · · · · · · · ·	ase Base	2.0				
	10 54 54 10	/24-	/24+		0.0	/24 -	24 -	/24-	
	Feb3/24 Mar18/24	Apr25/24	Jun3/24	Jul8/24	Feb3/24	Mar18/24	Apr25/24	Jun3/24	
Laboratory Sample No. Lab Number Unique Number	: PCA0128754 : <mark>06234595</mark> : 11123429	Recei Teste	Madison Ave., Cary, NC 27513 SCRA Received : 12 Jul 2024 Tested : 15 Jul 2024 Diagnosed : 15 Jul 2024 - Wes Davis				AP METAL SERVICES (SMS Mill Services LLC 1500 COMMERCIAL AVI MINGO JUNCTION, OF US 4393		
ertificate L2367 Unique Number		Diagr					US 4393 Contact: STAN MANI nann@scrapmetalservices.cor		

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: TIM RANDOLPH

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