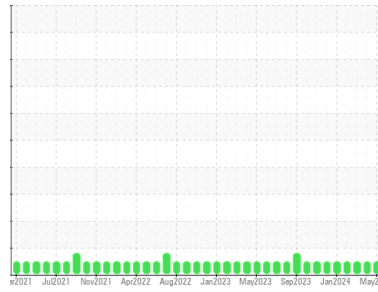


# OIL ANALYSIS REPORT

Area  
**Irrington**  
 Machine Id  
**Unit 03 DB060103E**  
 Component  
**Natural Gas Engine**  
 Fluid  
**PETRO CANADA DURON MONOGRADE HD 40W (250 GAL)**

### Sample Rating Trend



**NORMAL**



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: Top Up Amount: 123 GAL )

### Wear

All component wear rates are normal.

### Contamination

Fuel content negligible. 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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>PCA0105157</b>	PCA0105159	PCA0105161
Sample Date	Client Info		<b>06 May 2024</b>	11 Apr 2024	25 Mar 2024
Machine Age	hrs	Client Info	<b>25186</b>	24757	24598
Oil Age	hrs	Client Info	<b>25186</b>	24757	24598
Oil Changed	Client Info		<b>Oil Added</b>	Oil Added	Oil Added
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.1	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	<b>3</b>	2	5
Chromium	ppm	ASTM D5185m >4	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m >2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m	<b>0</b>	<1	0
Silver	ppm	ASTM D5185m >3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >9	<b>0</b>	2	<1
Lead	ppm	ASTM D5185m >30	<b>0</b>	1	<1
Copper	ppm	ASTM D5185m >35	<b>&lt;1</b>	2	1
Tin	ppm	ASTM D5185m >4	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	<1	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>0</b>	<1	<1
Barium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>&lt;1</b>	2	1
Manganese	ppm	ASTM D5185m	<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	<b>776</b>	1009	907
Calcium	ppm	ASTM D5185m	<b>927</b>	1174	1041
Phosphorus	ppm	ASTM D5185m	<b>986</b>	1247	1153
Zinc	ppm	ASTM D5185m	<b>1075</b>	1417	1328
Sulfur	ppm	ASTM D5185m	<b>2999</b>	3573	3574

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >+100	<b>6</b>	4	13
Sodium	ppm	ASTM D5185m	<b>2</b>	0	2
Potassium	ppm	ASTM D5185m >20	<b>0</b>	1	<1
Fuel	%	ASTM D3524 >4.0	<b>1.4</b>	1.9	1.7

## INFRA-RED

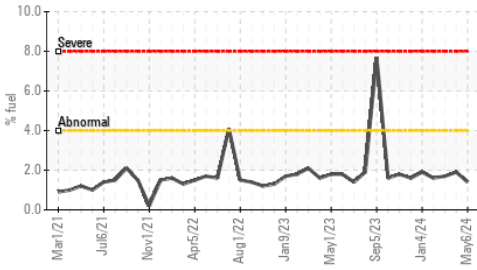
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	<b>0.1</b>	0.1	0
Nitration	Abs/cm	*ASTM D7624 >20	<b>3.8</b>	3.9	3.9
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>12.8</b>	13.1	13.3

## FLUID DEGRADATION

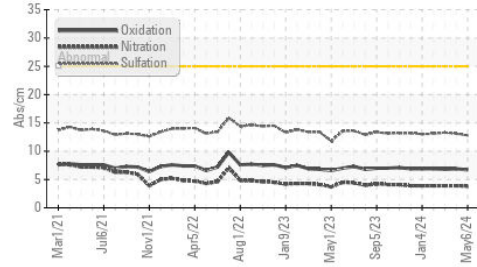
	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>6.7</b>	6.9	6.8
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>1.59</b>	1.65	1.76
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	<b>8.52</b>	8.15	8.40

# OIL ANALYSIS REPORT

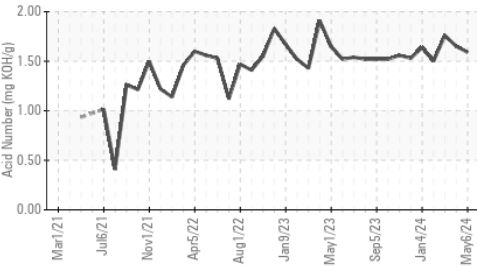
## Fuel Dilution



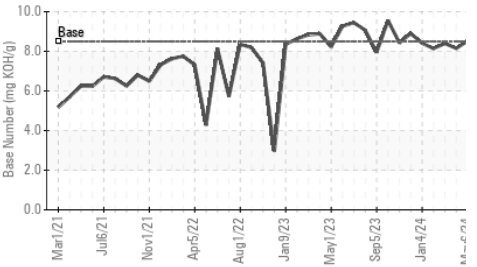
## FT-IR (Direct Trend)



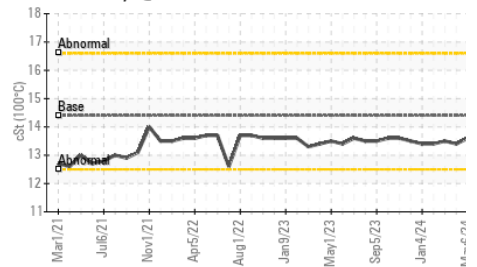
## Acid Number



## Base Number



## Viscosity @ 100°C

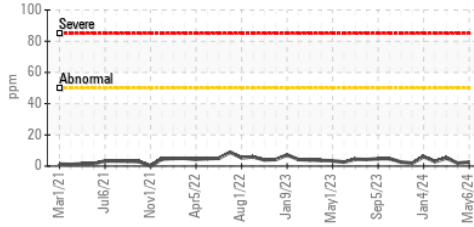


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	LIGHT
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

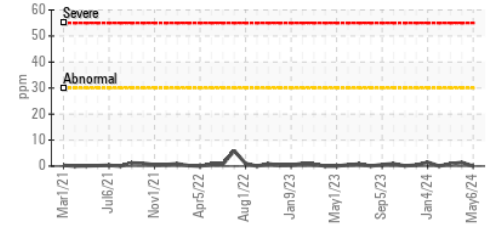
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.6	13.4

## GRAPHS

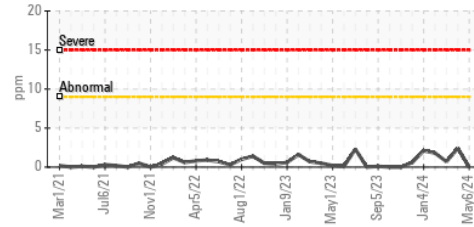
### Iron (ppm)



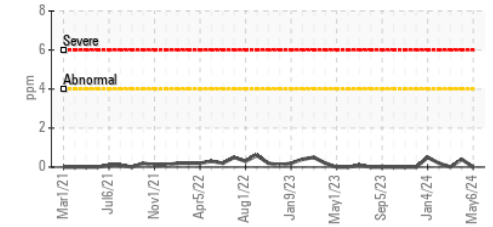
### Lead (ppm)



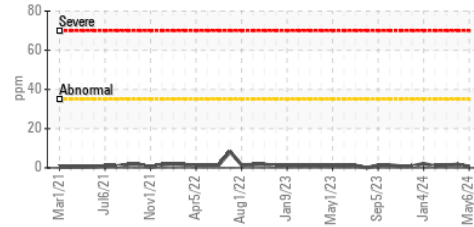
### Aluminum (ppm)



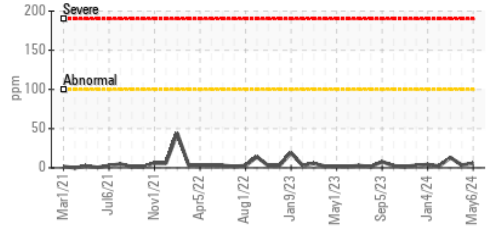
### Chromium (ppm)



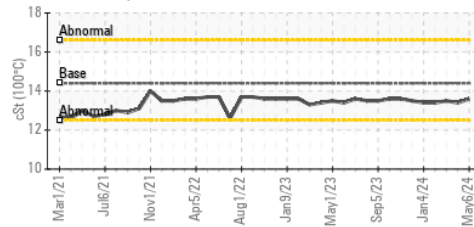
### Copper (ppm)



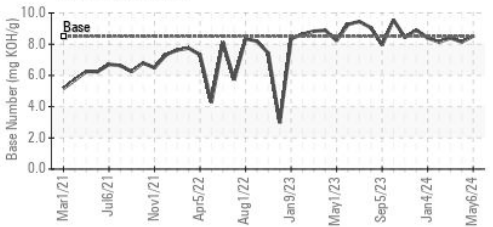
### Silicon (ppm)



### Viscosity @ 100°C



### Base Number



Certificate L2367

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

**Sample No.** : PCA0105157

**Lab Number** : 06175692

**Unique Number** : 11021745

**Test Package** : MOB 2 ( Additional Tests : FuelDilution, PercentFuel )

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)

**Received** : 10 May 2024

**Tested** : 15 May 2024

**Diagnosed** : 15 May 2024 - Sean Felton

**Magellan Midstream LP - Omaha**

9405 Bennington Road

Omaha, NE

US 68122

Contact: Zach Jones

zach.jones@magellanlp.com

T:

F: