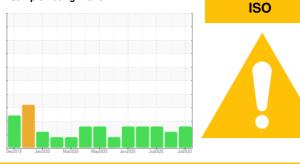


## **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Area STARCH Machine Id A27P202 Component

Pump Fluid

### PETRO CANADA PURITY FG HYDRAULIC AW 68 (--- GAL)

#### DIAGNOSIS

#### Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

There is a high amount of particulates present in the oil.

#### Fluid Condition

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

SAMPLE INFORMA	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0371043	WC0483582	WC0371050
Sample Date		Client Info		28 Jul 2020	16 Jul 2020	01 Jul 2020
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	15	14	14
Chromium	ppm	ASTM D5185m		0	0	<1
Nickel	ppm	ASTM D5185m		<1	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>7	<1	0	0
	ppm	ASTM D5185m	>12	1	<1	<1
Copper	ppm	ASTM D5185m	>30	3	3	4
Tin	ppm	ASTM D5185m	>9	0	0	<1
Antimony	ppm	ASTM D5185m		0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
	ppm	Method ASTM D5185m	limit/base	current 0	history1 0	history2 <1
Boron Barium	ppm ppm		limit/base			
Boron Barium		ASTM D5185m	limit/base	0	0	<1
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	limit/base	0 <1	0	<1 0
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 <1 <1	0 0 0	<1 0 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 <1 <1 <1	0 0 0 <1	<1 0 <1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 <1 <1 <1 <1	0 0 <1 0	<1 0 <1 <1 0
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	0 <1 <1 <1 <1 <1 2	0 0 <1 0 <1	<1 0 <1 <1 0 4 459 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 <1 <1 <1 <1 <1 2 485	0 0 <1 0 <1 462	<1 0 <1 <1 0 4 459
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 <1 <1 <1 <1 <1 2 485 10	0 0 <1 0 <1 462 6	<1 0 <1 <1 0 4 459 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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 <1 <1 <1 <1 2 485 10 414	0 0 <1 0 <1 462 6 678	<1 0 <1 <1 0 4 459 0 442
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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 <1 <1 <1 2 485 10 414 current	0 0 <1 0 <1 462 6 678 history1	<1 0 <1 <1 0 4 459 0 442 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS 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	limit/base >60	0 <1 <1 <1 2 485 10 414 current 10	0 0 0 <1 0 <1 462 6 678 history1 10	<1 0 <1 <1 0 4 459 0 442 history2 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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	limit/base >60	0 <1 <1 <1 2 485 10 414 <u>current</u> 10 0	0 0 0 <1 0 <1 462 6 6 678 history1 10 0	<1 0 <1 <1 0 4 459 0 442 history2 8 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >60 >20	0 <1 <1 <1 2 485 10 414 current 10 0 2	0 0 () () () () () () () () () () () () ()	<1 0 <1 (1 0 4 459 0 442 history2 8 0 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >60 >20 limit/base	0 <1 <1 <1 2 485 10 414 current 10 0 2 2 current	0 0 () () () () () () () () () () () () ()	<1 0 <1 (1) 0 4 459 0 442 history2 8 0 <1 history2
Boron Barium Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLINE Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >60 >20 limit/base >5000	0 <1 <1 <1 <1 2 485 10 414 current 10 0 2 current × 73286	0 0 0 <1 0 <1 462 6 678 history1 10 0 <1 10 0 <1 history1	<1 0 <1 0 4 459 0 442 history2 8 0 <1 8 0 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLINE Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >60 >20 limit/base >5000 >1300 >160	0 <1 <1 <1 <1 2 485 10 414 current 10 0 2 current 10 0 2 current 10 0 2 10 10 10 10 10 10 10 10 10 10	0 0 0 <1 0 <1 462 6 678 history1 10 0 <1 10 0 <1 10 0 <1 10 0 <1 10 0 <1 10 0 <1 10 0 0 <1 10 0 0 <1 0 0 0 0	<1 0 <1 0 4 459 0 442 history2 8 0 <1 8 0 <1 1 1 5 79217 ▲ 79217
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLINE Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >60 >20 limit/base >5000 >1300 >160	0 <1 <1 <1 <1 2 485 10 414 current 10 0 2 current 10 73286 ▲ 73286 ▲ 12672 ▲ 237	0 0 0 <1 0 462 6 678 history1 10 0 <1 10 0 <1 10 0 <1 10 0 <1 10 0 <1 10 0 <1 10 0 <1 10 0 <1 10 0 <1 0 0 0 0	<1 0 <1 0 4 459 0 442 history2 8 0 <1 8 0 <1 × 1 × 79217 ▲ 79217 ▲ 13275 ▲ 399
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLINE Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7647 ASTM D7647	limit/base >60 >20 limit/base >5000 >1300 >160 >40	0 <1 <1 <1 <1 2 485 10 414 current 10 0 2 current × 73286 × 12672 × 237 × 55	0 0 0 <1 0 462 6 678 history1 10 0 <1 10 0 <1 ×1 ×15101 ▲ 76631 ▲ 15101 ▲ 246 38	<1 0 <1 0 4 459 0 442 history2 8 0 <1 history2 ∧ 79217 ∧ 13275 ∧ 399 ∧ 66

ISO 4406 (c) >19/17/14 **23/21/15** 

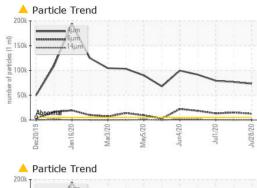
**Oil Cleanliness** 

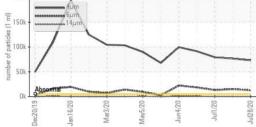
🔺 23/21/15

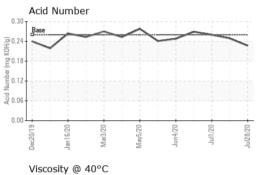
▲ 23/21/16

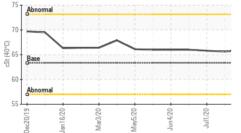


# **OIL ANALYSIS REPORT**





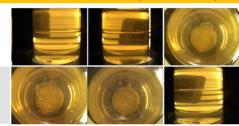


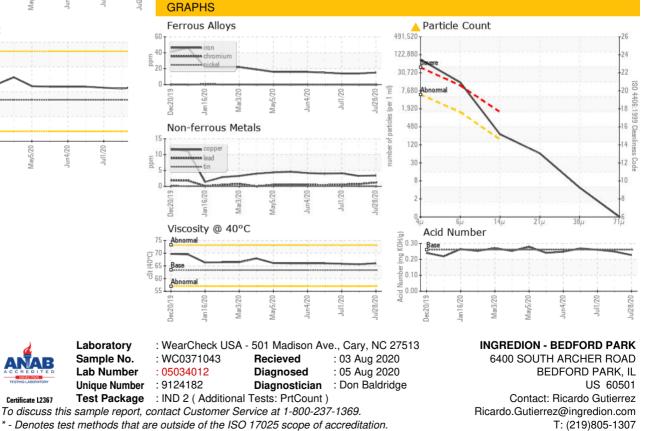


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.26	0.227	0.249	0.260
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	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
Emulsified Water	scalar	*Visual		NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	63.34	66.0	65.6	65.8
SAMPLE IMAGES		method	limit/base	current	history1	history2



Bottom





\* - 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)

Certificate L2367

Contact/Location: Ricardo Gutierrez - INGBED

F: