

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend

### NORMAL

#### Machine Id 1000447081 - BONE CANNON AMR 2318-250 Component

**Hydraulic System** 

## PETRO CANADA PURITY FG AW HYDRAULIC 46 (--- GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

#### Wear

All component wear rates are normal.

#### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

#### Fluid Condition

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

JLIC 46 ( GAL)				Mar2024			
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		WC0835760			
Sample Date		Client Info		09 Mar 2024			
Machine Age	hrs	Client Info		0			
Oil Age	hrs	Client Info		0			
Oil Changed		Client Info		Filtered			
Sample Status				NORMAL			
CONTAMINATION	J	method	limit/base	current	history1	history2	
Water		WC Method	>0.05	NEG			
WEAR METALS		method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>20	<1			
Chromium	ppm	ASTM D5185(m)	>20	0			
Nickel	ppm	ASTM D5185(m)	>20	<1			
Titanium	ppm	ASTM D5185(m)		0			
Silver	ppm	ASTM D5185(m)		0			
Aluminum	ppm	ASTM D5185(m)	>20	<1			
Lead	ppm	ASTM D5185(m)	>20	<1			
Copper	ppm	ASTM D5185(m)	>20	12			
Tin	ppm	ASTM D5185(m)	>20	0			
Antimony	ppm	ASTM D5185(m)		0			
Vanadium	ppm	ASTM D5185(m)		0			
Beryllium	ppm	ASTM D5185(m)		0			
Cadmium	ppm	ASTM D5185(m)		0			
ADDITIVES		method	limit/base	current	history1	history2	
	ppm	ASTM D5185(m)	0	0			
Boron			0		· · · · · ·		
Boron Barium	ppm	ASTM D5185(m)	0	0			
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0	0 0			
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0	0 0 0 0			
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0	0 0 0 <1			
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0 0	0 0 0 <1 5			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0 0 0 450	0 0 0 <1 5 273	  	  	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0 0 0 450 0	0 0 0 <1 5 273 84	   	  	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0 0 0 450	0 0 0 <1 5 273	    	   	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0 0 450 0 450	0 0 0 <1 5 273 84 1901 <1			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0 0 450 0 450	0 0 0 <1 5 273 84 1901 <1 current	      history1	      history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) <b>method</b> ASTM D5185(m)	0 0 0 0 0 450 0 450	0 0 0 <1 5 273 84 1901 <1 <b>current</b>	      history1		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm	ASTM D5185(m) ASTM D5185(m)	0 0 0 0 450 0 450 5 15	0 0 0 <1 5 273 84 1901 <1 current <1 0	      history1	      history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) <b>method</b> ASTM D5185(m)	0 0 0 0 450 0 450 0 450 5 5 5 5 5 20	0 0 0 <1 5 273 84 1901 <1 current <1 0 <1	      history1  	      history2  	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185(m) ASTM D5185(m)	0 0 0 0 450 0 450 0 450 0 450 0 450 0 450 0 2 0 2 0 2 0 2 0 0 2 0 0 0 0 0 0 0 0	0 0 0 <1 5 273 84 1901 <1 current <1 0 <1 current	      history1	      history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm	ASTM D5185(m) ASTM D5185(m)	0 0 0 0 450 0 450 450 5 5 5 5 5 5 5 0 0 0 0	0 0 0 10 11 5 273 84 1901 <1 <1 <b>current</b> 0 <1 0 <1 0 current 971	      history1  	      history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >6µm	ppm	ASTM D5185(m) ASTM D5185(m)	0 0 0 0 450 0 450 450 3 450 3 450 3 5 5 0 1 1 1 1 1 1 1 1 2 0 1 1 1 1 1 1 1 1 1	0 0 0 2 3 5 273 84 1901 <1 <1 <i>current</i> 2 1 0 <1 0 <1 <i>current</i> 971 245	      history1   history1	<ul> <li></li> <li></li> <li></li> <li></li> <li></li> <li></li> <li></li> <li>history2</li> <li></li> <li></li> <li>history2</li> </ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm	ppm	ASTM D5185(m) ASTM D7647 ASTM D7647	0 0 0 0 450 0 450 450 3 5 5 0 1 5 5 0 1 5 20 5 5 0 0 5 5 0 0 5 1 3 0 5 1 3 0 5 1 3 0 5 1 3 0 5 1 3 0 5 1 3 0 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5	0 0 0 2 3 273 84 1901 <1 current <1 0 <1 0 <1 0 <1 0 21 245 21	      history1  history1  history1	<ul> <li></li> <li></li> <li></li> <li></li> <li></li> <li></li> <li>history2</li> <li></li> <li>history2</li> <li></li> </ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 0 450 450 450 3 450 3 1 5 15 3 1 5 20 3 1 3 1 5 5 0 0 4 3 1 3 0 4 3 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1	0 0 0 2 1 5 273 84 1901 <1 <1 current <1 0 <1 0 <1 971 245 21 6	      history1   history1  history1	<ul> <li></li> <li></li> <li></li> <li></li> <li></li> <li></li> <li></li> <li>history2</li> <li></li> <li>history2</li> <li></li> <li></li> </ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >54µm Particles >21µm Particles >38µm	ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 0 450 450 450 5 5 5 15 5 20 1 5 15 5 20 2 1 5 5 0 0 5 5 0 0 5 10 0 5 10 0 2 10 2 1	0 0 0 2 1 5 273 84 1901 <1 <1 current 2 1 0 <1 2 1 0 2 1 2 45 21 6 6 2	       history1  history1	<ul> <li></li> <li></li> <li></li> <li></li> <li></li> <li></li> <li>history2</li> <li></li> <li>history2</li> <li></li> <li></li></ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 0 450 450 450 5 5 5 15 5 20 1 5 15 5 20 2 1 5 5 0 0 5 5 0 0 5 10 0 5 10 0 2 10 2 1	0 0 0 2 1 5 273 84 1901 <1 <1 current <1 0 <1 0 <1 971 245 21 6		       history2  history2  history2	



# **OIL ANALYSIS REPORT**

Acid Number (AN) VISUAL White Metal Yellow Metal Precipitate Silt	scalar scalar scalar	ASTM D974* method Visual* Visual* Visual*	0.26 limit/base NONE NONE	0.18 current NONE NONE	 history1 	 history 
White Metal Yellow Metal Precipitate Silt	scalar scalar	Visual* Visual*	NONE NONE	NONE NONE		
Yellow Metal Precipitate Silt	scalar scalar	Visual*	NONE	NONE		
Precipitate Silt	scalar			NONE		
Precipitate Silt	scalar		NONE	NONE		
Silt	ooglas			NONE		
N = le st =	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	NONE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	NORML	NORML		
Ddor	scalar	Visual*	NORML	NORML		
Emulsified Water	scalar	Visual*	>0.05	NEG		
Free Water	scalar	Visual*		NEG		
FLUID PROPERT	IES	method	limit/base	current	history1	history
/isc @ 40°C	cSt	ASTM D7279(m)	45.36	43.6		
SAMPLE IMAGES	5	method	limit/base	current	history1	history
			ł			
Color					no image	no image
					no inago	no image
				(Part)		
Bottom					no image	no image
GRAPHS						
				Particle Count		
			491,520	and count		
iron chromium			122,880 -			
nickel				evere		
				1.1.1		
9/24			1 m 1 m 7,680	Abnormal		
Mar			Gren 1.920	1.1.1.1.		
Non-ferrous Metal	s		- 111 480	1		
			120-			
copper			e e			
tin			= 30-			
	*****		8-			
9/24			- 12/6			
Mar			+ 0			
Viscosity @ 40°C			'4μ		4μ 21μ	38µ 71
			<sup>爰0.30</sup> T			
† 9	,		을 및 같0.20-			
			La e o 10			
0			UNU P			
/24				/24+		
Mar9			Mar9	Mar9		
	dor mulsified Water ree Water FLUID PROPERT isc @ 40°C SAMPLE IMAGES olor ottom GRAPHS Ferrous Alloys	dor scalar mulsified Water scalar ree Water scalar FLUID PROPERTIES isc @ 40°C cSt SAMPLE IMAGES olor ottom GRAPHS Ferrous Alloys Ferrous Alloys	dor       scalar       Visual*         mulsified Water       scalar       Visual*         ree Water       scalar       Visual*         FLUID PROPERTIES       method         isc @ 40°C       cSt       ASTM D7279(m)         SAMPLE IMAGES       method         olor       method         model       method         olor       method         model       method     <	dor       scalar       Visual*       NORML         mulsified Water       scalar       Visual*       >0.05         ree Water       scalar       Visual*       >0.05         FLUID PROPERTIES       method       limit/base         isc @ 40°C       cSt       ASTM D7279(m)       45.36         SAMPLE IMAGES       method       limit/base         olor       imit/base       imit/base         olor       imit/base	dor       scalar       Visual*       NORML       NORML         mulsified Water       scalar       Visual*       >0.05       NEG         ree Water       scalar       Visual*       NEG         FLUID PROPERTIES       method       limit/base       current         isc @ 40°C       cSt       ASTM D7279(m)       45.36       43.6         SAMPLE IMAGES       method       limit/base       current         olor       imit/base       current         olor       imit/base       current         ottom       imit/base	dor       scalar       Visual*       NORML       NORML          mulsified Water       scalar       Visual*       >0.05       NEG          ree Water       scalar       Visual*       NORML       NEG          FLUID PROPERTIES       method       limit/base       current       history1         sice @ 40°C       cSt       ASTM D7279(m)       45.36       43.6          SAMPLE IMAGES       method       imit/base       current       history1         olor       imit/base       current       no image         olor       imit/base       current       history1         otom       imit/base       current       history1         into       <

Contact/Location: Jakub Posluszny - CARGUE