

Machine Id  
**ENGEL B-3 (S/N 48988)**  
 Component  
**Hydraulic System**  
 Fluid  
**PETRO CANADA HYDREX AW 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.

**SAMPLE INFORMATION**

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>PCA0058235</b>	PCA0058225	PCA0058256
Sample Date	Client Info		<b>20 Dec 2023</b>	17 Jan 2023	20 Sep 2021
Machine Age	hrs	Client Info	<b>27562</b>	111211	1
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>Filtered</b>	N/A	Filtered
Sample Status			<b>NORMAL</b>	ABNORMAL	NORMAL

**CONTAMINATION**

	method	limit/base	current	history1	history2
Water	WC Method	>0.05	<b>NEG</b>	NEG	NEG

**WEAR METALS**

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >20	<b>&lt;1</b>	<1	<1
Chromium	ppm	ASTM D5185m >20	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m >20	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >20	<b>2</b>	0	4
Lead	ppm	ASTM D5185m >20	<b>0</b>	0	<1
Copper	ppm	ASTM D5185m >20	<b>&lt;1</b>	<1	<1
Tin	ppm	ASTM D5185m >20	<b>0</b>	0	0
Antimony	ppm	ASTM D5185m	<b>---</b>	---	0
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

**ADDITIVES**

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>0</b>	0	1
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 0	<b>0</b>	0	<1
Manganese	ppm	ASTM D5185m 0	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185m 0	<b>2</b>	1	2
Calcium	ppm	ASTM D5185m 50	<b>46</b>	49	51
Phosphorus	ppm	ASTM D5185m 330	<b>341</b>	340	343
Zinc	ppm	ASTM D5185m 430	<b>416</b>	404	436
Sulfur	ppm	ASTM D5185m 760	<b>976</b>	909	898

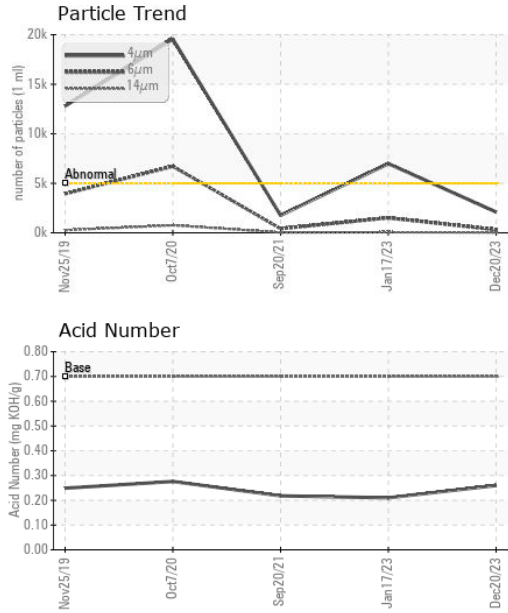
**CONTAMINANTS**

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	<b>2</b>	▲ 23	0
Sodium	ppm	ASTM D5185m	<b>0</b>	0	0
Potassium	ppm	ASTM D5185m >20	<b>&lt;1</b>	<1	0

**FLUID CLEANLINESS**

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	<b>2102</b>	▲ 6983	1765
Particles >6µm	ASTM D7647	>1300	<b>319</b>	▲ 1513	421
Particles >14µm	ASTM D7647	>160	<b>27</b>	61	37
Particles >21µm	ASTM D7647	>40	<b>6</b>	17	10
Particles >38µm	ASTM D7647	>10	<b>0</b>	2	0
Particles >71µm	ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	<b>18/15/12</b>	▲ 20/18/13	18/16/12

# OIL ANALYSIS REPORT

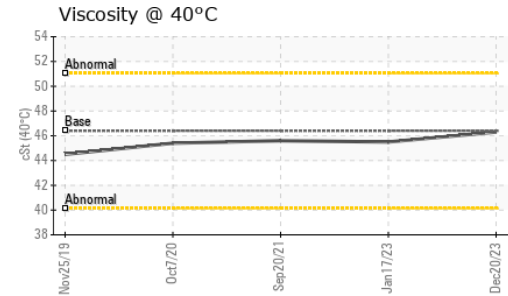
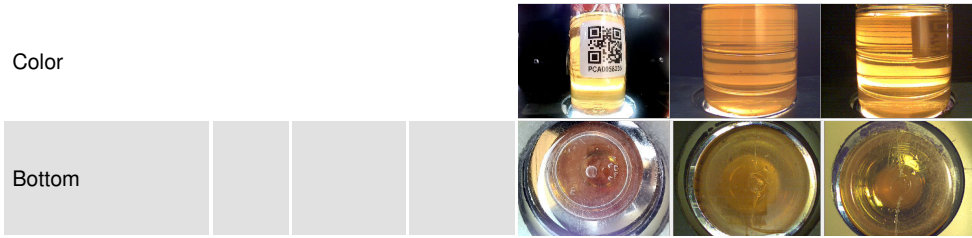


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.70	<b>0.26</b>	0.21	0.218

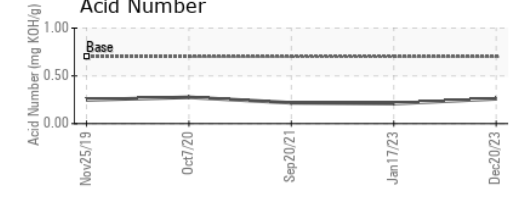
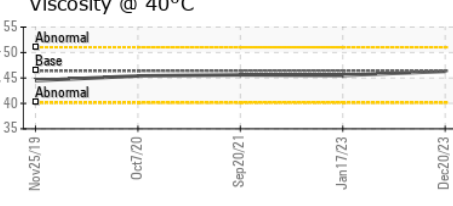
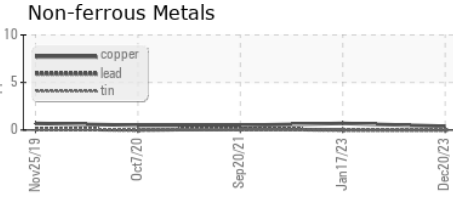
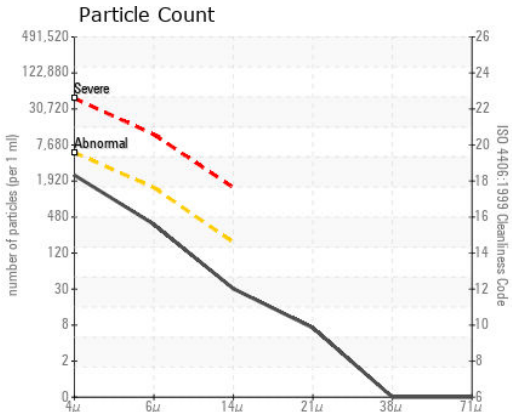
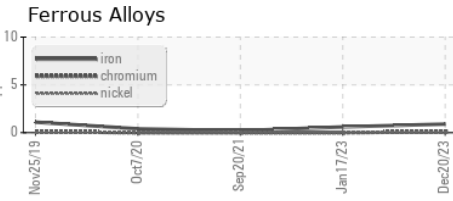
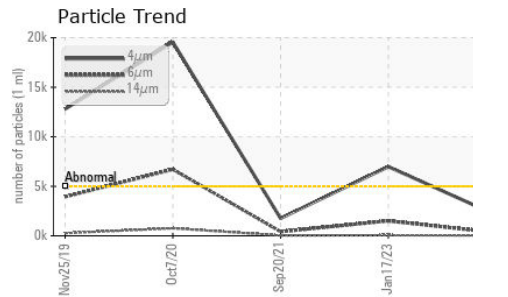
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	<b>NEG</b>	NEG	NEG
Free Water	scalar	*Visual		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46.4	<b>46.3</b>	45.5	45.6

### SAMPLE IMAGES



### GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0058235  
**Lab Number** : 06044759  
**Unique Number** : 10805367  
**Test Package** : IND 2

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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)