

### **OIL ANALYSIS REPORT**

# Sample Rating Trend DIRT

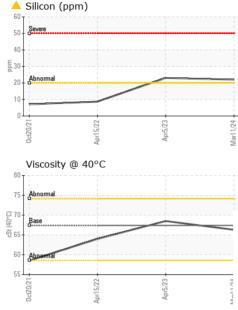
# KEMP QUARRIES / SELIGMAN [65165] CATERPILLAR OHT114 Component Hydraulic System

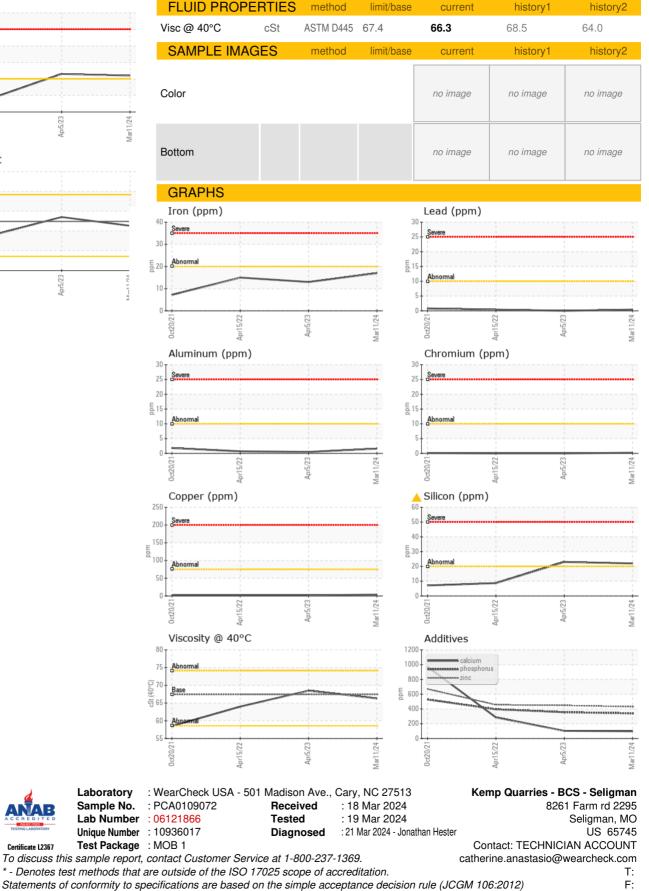
PETRO CANADA HYDREX AW 68 (--- GAL)

DIAGNOSIS							
	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Recommendation	Sample Number		Client Info		PCA0109072	PCA0086069	PCA0037564
No corrective action is recommended at this time. Resample at the next service interval to monitor. ( Customer Sample Comment: PM-3 sampled fluid )	Sample Date		Client Info		11 Mar 2024	05 Apr 2023	15 Apr 2022
	Machine Age	hrs	Client Info		37902	37377	36878
	Oil Age	hrs	Client Info		37902	37377	36878
Wear	Oil Changed		Client Info		N/A	N/A	N/A
All component wear rates are normal.	Sample Status				ABNORMAL	ABNORMAL	NORMAL
Contamination Elemental level of silicon (Si) above normal.	CONTAMINAT	ION	method	limit/base	current	history1	history2
Fluid Condition	Water		WC Method	>0.1	NEG	NEG	NEG
The condition of the oil is acceptable for the time in service.	WEAR METAL	S	method	limit/base	current	history1	history2
	Iron	ppm	ASTM D5185m	>20	17	13	15
	Chromium	ppm	ASTM D5185m	>10	<1	0	0
	Nickel	ppm	ASTM D5185m	>10	<1	<1	<1
	Titanium	ppm	ASTM D5185m		<1	0	0
	Silver	ppm	ASTM D5185m		0	0	0
	Aluminum	ppm	ASTM D5185m		2	<1	<1
	Lead	ppm	ASTM D5185m	>10	<1	0	<1
	Copper	ppm	ASTM D5185m	>75	4	2	1
	Tin	ppm	ASTM D5185m	>10	<1	0	<1
	Antimony	ppm	ASTM D5185m				
	Vanadium	ppm	ASTM D5185m		0	0	0
	Cadmium	ppm	ASTM D5185m		0	0	0
	ADDITIVES		method	limit/base	current	history1	history2
	Boron	ppm	ASTM D5185m	0	0	0	0
	Barium	ppm	ASTM D5185m	0	0	0	0
	Danam	ppin	AGTIVI DOTODITI	0	-	0	0
	Molybdenum	ppm	ASTM D5185m		<1	<1	<1
				0			
	Molybdenum	ppm	ASTM D5185m	0 0	<1	<1	<1
	Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	0 0 0	<1 0	<1 <1	<1 <1
	Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	<1 0 6	<1 <1 5	<1 <1 8
	Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 50	<1 0 6 98	<1 <1 5 104	<1 <1 8 286
	Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 50 330	<1 0 6 98 340	<1 <1 5 104 356	<1 <1 8 286 396
	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	0 0 50 330 430 760	<1 0 6 98 340 430 894 current	<1 <1 5 104 356 448 1108 history1	<1 <1 8 286 396 456
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	0 0 50 330 430 760	<1 0 6 98 340 430 894	<1 <1 5 104 356 448 1108	<1 <1 8 286 396 456 983
	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	0 0 50 330 430 760	<1 0 6 98 340 430 894 current	<1 <1 5 104 356 448 1108 history1	<1 <1 8 286 396 456 983 history2
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ypm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	0 0 0 50 330 430 760 limit/base >20	<1 0 6 98 340 430 894 current 22	<1 <1 5 104 356 448 1108 history1 23	<1 <1 8 286 396 456 983 history2 9 0 0
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL	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	0 0 0 50 330 430 760 Iimit/base >20 Iimit/base	<1 0 6 98 340 430 894 <u>current</u> 22 0 1 1	<1 <1 <1 5 104 356 448 1108 history1    ▲ 23 0 0 0 history1	<1 <1 8 286 396 456 983 history2 9 0 0 0 history2
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal	ppm ppm ppm ppm ppm ppm ppm vTS	ASTM D5185m ASTM D5185m XSTM D5185m	0 0 50 330 430 760 Iimit/base >20 Iimit/base NONE	<1 0 6 98 340 430 894 current 22 0 1 current NONE	<1 <1 5 104 356 448 1108 history1  23 0 0 history1 NONE	<1 <1 8 286 396 456 983 history2 9 0 0 0 history2 NONE
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m <b>method</b> *Visual	0 0 0 50 330 430 760 <b>limit/base</b> >20 <b>limit/base</b> NONE NONE	<1 0 6 98 340 430 894 Current 22 0 1 current NONE NONE NONE	<1 <1 <1 5 104 356 448 1108 history1    23 0 0 history1 NONE NONE NONE	<1 <ul> <li>&lt;1</li> <li>&lt;1</li> <li>8</li> <li>286</li> <li>396</li> <li>456</li> <li>983</li> </ul> history2 <ul> <li>9</li> <li>0</li> <li>0</li> <li>history2</li> <li>NONE</li> <li>NONE</li> </ul>
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate	ppm ppm ppm ppm ppm ppm ppm ppm yTTS ppm ppm ppm ppm scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual	0 0 0 50 330 430 760 Imit/base >20 S20 Imit/base NONE NONE NONE NONE	<1 0 6 98 340 430 894 Current 22 0 1 Current NONE NONE NONE NONE NONE	<1 <li>&lt;1 </li> <li>5 </li> <li>104 </li> <li>356 </li> <li>448 </li> <li>1108 </li> <li>history1 </li> <li>23 </li> <li>0 </li> <li>0 </li> <li>history1 </li> <li>NONE </li> <li>NONE </li> <li>NONE&lt;</li> <li>NONE&lt;</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NONE</li>	<1 <ul> <li>&lt;1</li> <li>&lt;1</li> <li>8</li> <li>286</li> <li>396</li> <li>456</li> <li>983</li> </ul> history2 <ul> <li>9</li> <li>0</li> <li>0</li> </ul> history2 NONE <ul> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> </ul>
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm ppm ppm ppm ppm ppm ytts ppm ppm ppm ppm scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual	0 0 0 50 330 430 760 Imit/base >20 >20 Imit/base NONE NONE NONE NONE NONE	<1 0 6 98 340 430 894	<1 <li>&lt;1 </li> <li>&lt;1 </li> <li>5 </li> <li>104 </li> <li>356 </li> <li>448 </li> <li>1108 </li> <li>history1 </li> <li>23 </li> <li>0 </li> <li>0 </li> <li>history1 </li> <li>NONE</li>	<1 <li>&lt;1 </li> <li>8</li> <li>286</li> <li>396</li> <li>456</li> <li>983</li> <li>history2</li> <li>9</li> <li>0</li> <li>0</li> <li>history2</li> <li>NONE</li>
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAM Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris	ppm ppm ppm ppm ppm ppm ppm ppm yTTS ppm ppm ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual	0 0 0 50 330 430 760 imit/base >20 imit/base >20 imit/base NONE NONE NONE NONE NONE NONE	<1 0 6 98 340 430 894	<1 <p>&lt;1</p> 5 104 356 448 1108 history1 23 0 0 history1 NONE	<1  <1 8 286 396 456 983 history2 9 0 0 0 history2 NONE NONE NONE NONE NONE IONE
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	ppm ppm ppm ppm ppm ppm ppm ppm yTTS ppm ppm ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual *Visual *Visual	0 0 0 50 330 430 760 <b>imit/base</b> >20 <b>imit/base</b> >20 <b>imit/base</b> NONE NONE NONE NONE NONE NONE NONE	<1 0 6 98 340 430 894 22 0 1 22 0 1 2 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 0 1 0	<1 <li>&lt;1 </li> <li>&lt;1 </li> <li>5 </li> <li>104 </li> <li>356 </li> <li>448 </li> <li>1108 </li> <li>history1</li> <li>23 </li> <li>0 </li> <li>0 </li> <li>history1</li> <li>NONE</li>	<1 <li>&lt;1 </li> <li>8 </li> <li>286 </li> <li>396 </li> <li>456 </li> <li>983 </li> <li>history2 </li> <li>9 </li> <li>0 </li> <li>0 </li> <li>history2 </li> <li>NONE </li>
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance	ppm ppm ppm ppm ppm ppm ppm ppm yTTS ppm ppm ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual	0 0 0 50 330 430 760 760 760 760 760 760 760 760 760 76	<1 0 6 98 340 430 894 22 0 1 22 0 1 2 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0	<1 <p>&lt;1</p> 5 104 356 448 1108 history1 23 0 0 history1 NONE NORML	<1 <li>&lt;1 </li> <li>&lt;1 </li> <li>8 </li> <li>286 </li> <li>396 </li> <li>456 </li> <li>983 </li> <li>history2 </li> <li>9 </li> <li>0 </li> <li>0 </li> <li>history2 </li> <li>NONE </li> <li>NORML </li>
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor	ppm ppm 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 Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	0 0 0 50 330 430 760 <b>imit/base</b> >20 <b>imit/base</b> >20 <b>imit/base</b> NONE NONE NONE NONE NONE NONE NONE NON	<1 0 6 98 340 430 894	<1 <p>&lt;1</p> <1 5 104 356 448 1108 history1 23 0 0 history1 NONE NORML NORML	<1 <li>&lt;1 </li> <li>8 </li> <li>286 </li> <li>396 </li> <li>456 </li> <li>983 </li> <li>history2 </li> <li>9 </li> <li>0 </li> <li>0 </li> <li>history2 </li> <li>NONE </li> <li>NONE </li> <li>NONE </li> <li>LIGHT </li> <li>NONE </li> <li>NORML </li> <li>NORML </li> <li>NORML</li>
Report Id: KEMSEL [WUSCAR] 06121866 (Generated: 03/21/2024	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm ppm 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 Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	0 0 0 50 330 430 760 760 760 760 760 760 760 760 760 76	<1 0 6 98 340 430 894 22 0 1 22 0 1 2 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0	<1 <p>&lt;1</p> 5 104 356 448 1108 history1 23 0 0 history1 NONE NORML	<1 <li>&lt;1 </li> <li>&lt;1 </li> <li>8 </li> <li>286 </li> <li>396 </li> <li>456 </li> <li>983 </li> <li>history2 </li> <li>9 </li> <li>0 </li> <li>0 </li> <li>history2 </li> <li>NONE </li> <li>NORML </li>



## **OIL ANALYSIS REPORT**







Certificate L2367