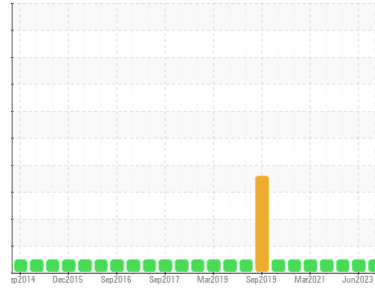




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area

**[124958]**

Machine Id

**0014 HILLE 4 MILL POWER PACK**

Component

**Hydraulic System**

Fluid

**MONARCH PREMIUM HYDRAULIC OIL AW R&O 46 (--- LTR)**

## 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>WC0378094</b>	WC0378092	WC0487126
Sample Date	Client Info		<b>25 Sep 2023</b>	28 Jun 2023	24 Mar 2023
Machine Age	hrs	Client Info	<b>0</b>	0	0
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >20	<b>12</b>	13	12
Chromium	ppm	ASTM D5185(m) >20	<b>2</b>	2	1
Nickel	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	<1	<1
Lead	ppm	ASTM D5185(m) >20	<b>4</b>	5	6
Copper	ppm	ASTM D5185(m) >20	<b>15</b>	18	17
Tin	ppm	ASTM D5185(m) >20	<b>5</b>	6	6
Antimony	ppm	ASTM D5185(m)	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<b>1</b>	1	1
Barium	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185(m)	<b>29</b>	37	37
Calcium	ppm	ASTM D5185(m)	<b>76</b>	79	83
Phosphorus	ppm	ASTM D5185(m)	<b>403</b>	467	470
Zinc	ppm	ASTM D5185(m)	<b>449</b>	474	467
Sulfur	ppm	ASTM D5185(m)	<b>1287</b>	1468	1533
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	<1

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >15	<b>2</b>	2	2
Sodium	ppm	ASTM D5185(m)	<b>3</b>	5	4
Potassium	ppm	ASTM D5185(m) >20	<b>0</b>	<1	<1

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	<b>1209</b>	1002	541
Particles >6µm	ASTM D7647	>1300	<b>265</b>	213	71
Particles >14µm	ASTM D7647	>160	<b>14</b>	20	10
Particles >21µm	ASTM D7647	>40	<b>3</b>	5	3
Particles >38µm	ASTM D7647	>10	<b>0</b>	1	0
Particles >71µm	ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	<b>17/15/11</b>	17/15/11	16/13/10

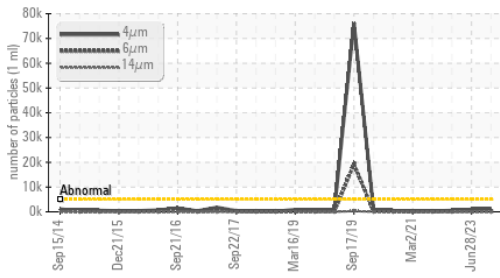
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	<b>0.61</b>	0.57	0.43

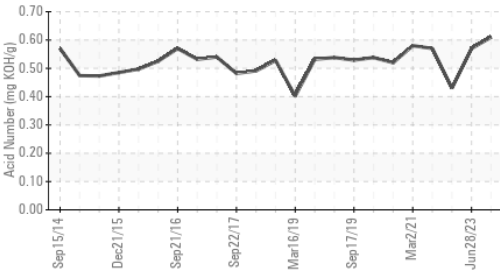


# OIL ANALYSIS REPORT

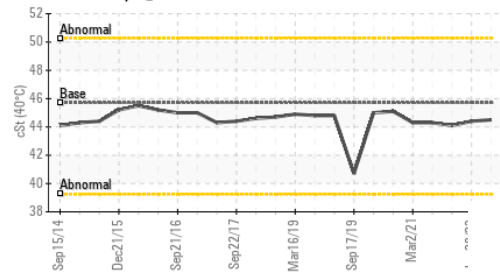
**Particle Trend**



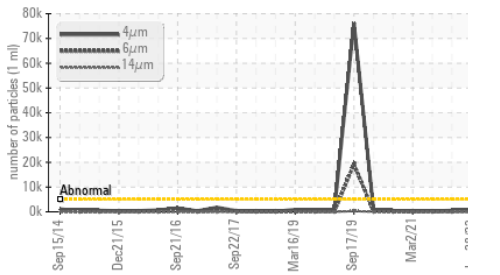
**Acid Number**



**Viscosity @ 40°C**



**Particle Trend**



VISUAL	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	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	45.7	44.4	44.1

SAMPLE IMAGES	method	limit/base	current	history1	history2
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**Color**

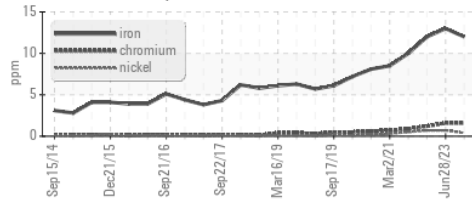


**Bottom**

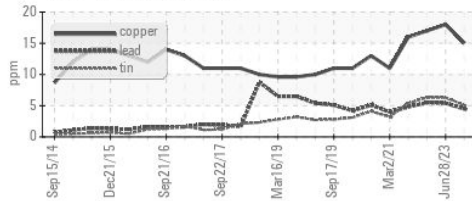


## GRAPHS

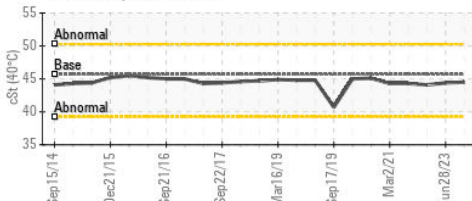
**Ferrous Alloys**



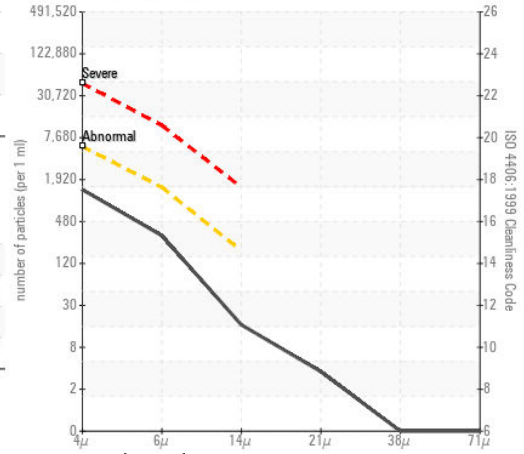
**Non-ferrous Metals**



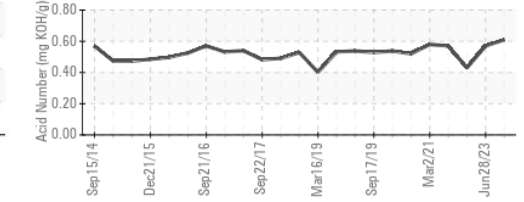
**Viscosity @ 40°C**



**Particle Count**



**Acid Number**



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0378094  
**Lab Number** : 02586797  
**Unique Number** : 5655863  
**Test Package** : IND 2 ( Additional Tests: TAN Man )

**HENDRICKSON CANADA LTD.**  
 532 ROMEO STREET  
 STRATFORD, ON  
 CA N5A 7X1  
 Contact: Sandeep Bhatt  
 sbhatt@hendrickson-intl.com  
 T: (519)273-8707  
 F: (519)271-3103

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.