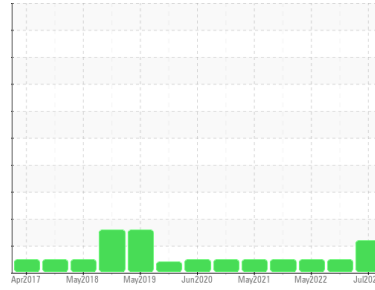




# PROBLEM SUMMARY

## Sample Rating Trend

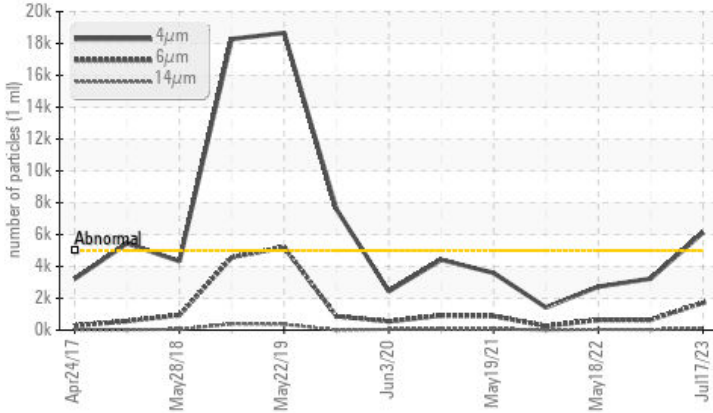
ISO



Area  
**PARTS**  
 Machine Id  
**IOWA PERCISION EXPANDREL (S/N UC0003)**  
 Component  
**Hydraulic System**  
 Fluid  
**ESSO UNIVIS N 46 (150 GAL)**

## COMPONENT CONDITION SUMMARY

### ▲ Particle Trend



## RECOMMENDATION

No corrective action is recommended at this time.  
 Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

Sample Status			ATTENTION	NORMAL	NORMAL
Particles >4µm	ASTM D7647	>5000	▲ 6128	3232	2729
Particles >6µm	ASTM D7647	>1300	▲ 1716	642	644
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 20/18/14	19/17/12	19/17/13

Customer Id: LANNEW  
 Sample No.: WC0830451  
 Lab Number: 05903234  
 Test Package: PLANT



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Angela Borella +1 800-237-1369  
[angela.borella@wearcheckusa.com](mailto:angela.borella@wearcheckusa.com)

To change component or sample information:  
 Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

### 04 Dec 2022 Diag: Jonathan Hester

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 18 May 2022 Diag: Doug Bogart

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 03 Dec 2021 Diag: Don Baldrige

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

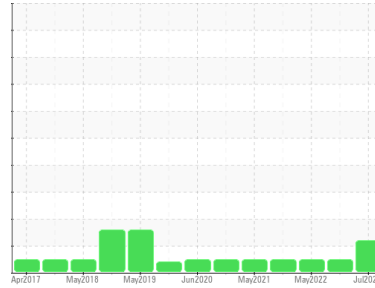
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area  
**PARTS**  
 Machine Id  
**IOWA PERCISION EXPANDREL (S/N UC0003)**  
 Component  
**Hydraulic System**  
 Fluid  
**ESSO UNIVIS N 46 (150 GAL)**

## DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0830451</b>	WC0753857	WC0696336
Sample Date	Client Info		<b>17 Jul 2023</b>	04 Dec 2022	18 May 2022
Machine Age	mths	Client Info	<b>0</b>	0	0
Oil Age	mths	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>ATTENTION</b>	NORMAL	NORMAL

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >20	<b>0</b>	0	0
Chromium	ppm	ASTM D5185m >20	<b>0</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>&lt;1</b>	0	<1
Aluminum	ppm	ASTM D5185m >20	<b>0</b>	0	0
Lead	ppm	ASTM D5185m >20	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >20	<b>&lt;1</b>	0	<1
Tin	ppm	ASTM D5185m >20	<b>0</b>	0	0
Antimony	ppm	ASTM D5185m	<b>---</b>	---	---
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	<b>0</b>	0	0
Barium	ppm	ASTM D5185m	<b>1</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>0</b>	0	0
Manganese	ppm	ASTM D5185m	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185m	<b>0</b>	0	0
Calcium	ppm	ASTM D5185m	<b>50</b>	49	50
Phosphorus	ppm	ASTM D5185m	<b>378</b>	383	399
Zinc	ppm	ASTM D5185m	<b>495</b>	491	507
Sulfur	ppm	ASTM D5185m	<b>2949</b>	3140	2412

## CONTAMINANTS

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

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	<b>▲ 6128</b>	3232	2729
Particles >6µm	ASTM D7647	>1300	<b>▲ 1716</b>	642	644
Particles >14µm	ASTM D7647	>160	<b>112</b>	31	47
Particles >21µm	ASTM D7647	>40	<b>24</b>	17	13
Particles >38µm	ASTM D7647	>10	<b>1</b>	4	0
Particles >71µm	ASTM D7647	>3	<b>1</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	<b>▲ 20/18/14</b>	19/17/12	19/17/13

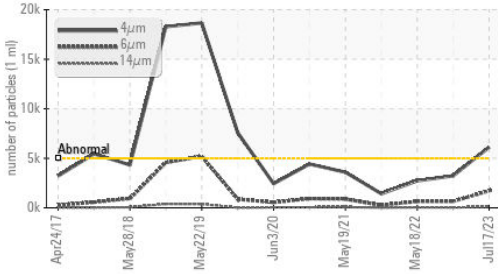
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>0.33</b>	0.33	0.35

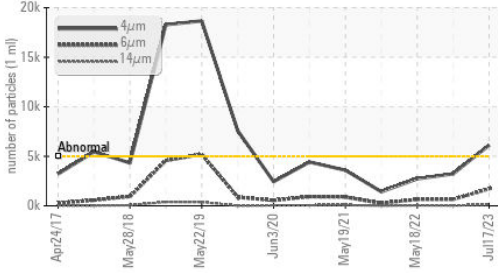


# OIL ANALYSIS REPORT

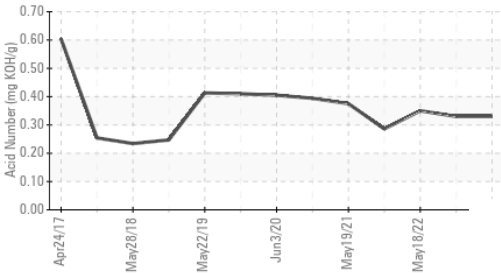
▲ Particle Trend



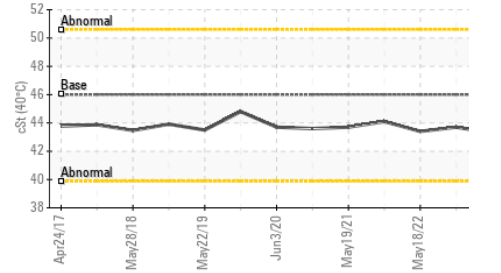
▲ Particle Trend



Acid Number



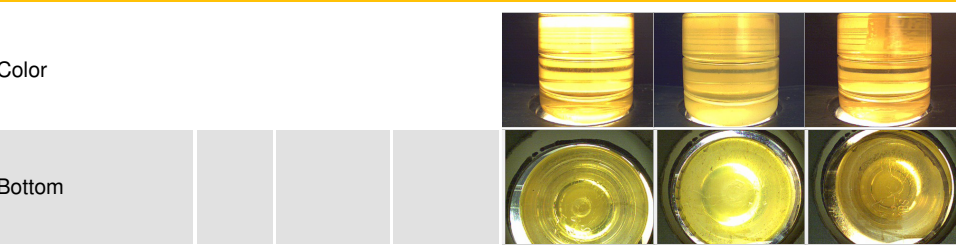
Viscosity @ 40°C



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	VLITE	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

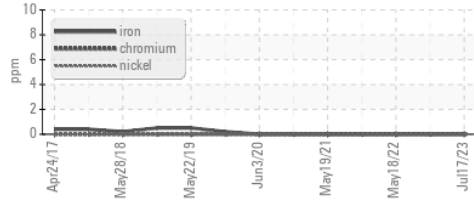
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 46	43.3	43.7	43.4

SAMPLE IMAGES

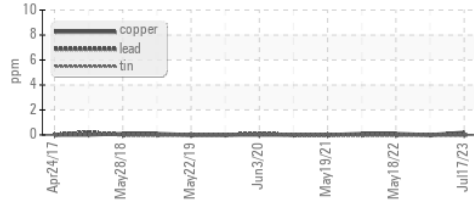


## GRAPHS

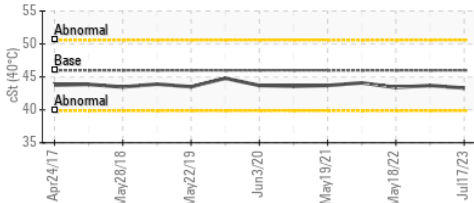
Ferrous Alloys



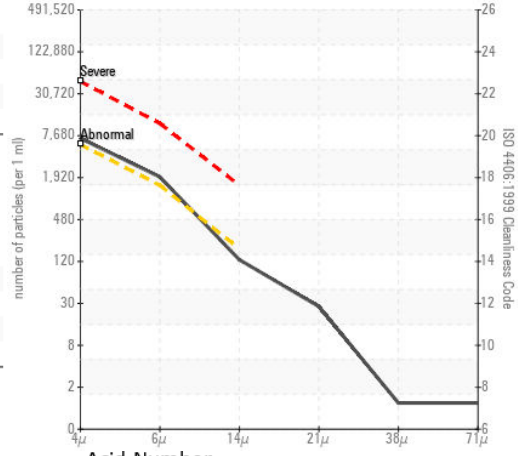
Non-ferrous Metals



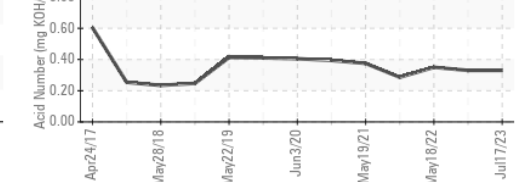
Viscosity @ 40°C



▲ Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : WC0830451 Received : 20 Jul 2023  
 Lab Number : 05903234 Diagnosed : 24 Jul 2023  
 Unique Number : 10564590 Diagnostician : Angela Borella  
 Test Package : PLANT

**LUND BOATS**  
 318 WEST GILMAN ST  
 NEW YORK MILLS, MN  
 US 56567  
 Contact: TODD PITMAN  
 todd.pitman@lundboats.com

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)

T:  
F: