

# **OIL ANALYSIS REPORT**

# [7811292] PH87218 (S/N 0015291)

**Hydraulic System** 

**NOT GIVEN (400 LTR)** 

# Sample Rating Trend



### Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

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.

Oil Changed Sample Status         Client Info         N/A         N/A         N/A            WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >20         0         <1				May2023	Aug <sup>2</sup> 023		
Sample Date   Client Info   10 Aug 2023   08 May 2023	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         0         0	Sample Number		Client Info		WC0741327	WC0741330	
Oil Age         hrs         Client Info         N/A         N/A         N/A           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         NORMAL         SEVERE            WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >20         0         <1	Sample Date		Client Info		10 Aug 2023	08 May 2023	
Oil Changed Sample Status	Machine Age	hrs	Client Info		0	0	
Sample Status         NORMAL         SEVERE            WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >20         0         <1	Oil Age	hrs	Client Info		0	0	
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >20         0         <1	Oil Changed		Client Info		N/A	N/A	
Iron	Sample Status				NORMAL	SEVERE	
Chromium         ppm         ASTM D5185(m)         >20         0         0	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185(m) >20 0 0  Titanium ppm ASTM D5185(m) 0 0  Silver ppm ASTM D5185(m) 1 0  Aluminum ppm ASTM D5185(m) 20 0  Lead ppm ASTM D5185(m) >20 0  Lead ppm ASTM D5185(m) >20 0  Copper ppm ASTM D5185(m) >20 0  Tin ppm ASTM D5185(m) >20 0 0  Antimony ppm ASTM D5185(m) >20 0 0  Antimony ppm ASTM D5185(m) 0 0 0  Antimony ppm ASTM D5185(m) 0 0 0  Beryllium ppm ASTM D5185(m) 0 0 0  Beryllium ppm ASTM D5185(m) 0 0 0  Beryllium ppm ASTM D5185(m) 0 0 0  ADDITIVES method limit/base current history1 history2  Boron ppm ASTM D5185(m) 0 0 0  Maynesium ppm ASTM D5185(m) 0 0 0  Magnesium ppm ASTM D5185(m) 0 0 0  Magnesium ppm ASTM D5185(m) 0 0 0  Magnesium ppm ASTM D5185(m) 6 22  Calcium ppm ASTM D5185(m) 6 22  Calcium ppm ASTM D5185(m) 6 22  Calcium ppm ASTM D5185(m) 6 22  Sulfur ppm ASTM D5185(m) 368 420  Sulfur ppm ASTM D5185(m) 444 476  Sulfur ppm ASTM D5185(m) 444 476  Sulfur ppm ASTM D5185(m) 444 476  CONTAMINANTS method limit/base current history1 history2  Silicon ppm ASTM D5185(m) 20 0 0  FUID CLEANLINESS method limit/base current history1 history2  Particles >4μm ASTM D5185(m) >20 0 0  FUID CLEANLINESS method limit/base current history1 history2  Particles >21μm ASTM D7647 >5000 649  31848  Particles >21μm ASTM D7647 >100 0  20  Particles >21μm ASTM D7647 >100 0  20  Particles >21μm ASTM D7647 >100 0  20  Particles >21μm ASTM D7647 >100 0  40  Particles >21μm ASTM D7	Iron	ppm	ASTM D5185(m)	>20	0	<1	
Titanium         ppm         ASTM D5185(m)         0         0	Chromium	ppm	ASTM D5185(m)	>20	0	0	
Silver	Nickel	ppm	ASTM D5185(m)	>20	0	0	
Aluminum ppm ASTM D5185(m) >20 <1 0 0 Lead ppm ASTM D5185(m) >20 0 <1 Copper ppm ASTM D5185(m) >20 0 <1 Tin ppm ASTM D5185(m) >20 0 0 0 Tin ppm ASTM D5185(m) >20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Titanium	ppm	ASTM D5185(m)		0	0	
Lead         ppm         ASTM D5185(m)         >20         0         <1	Silver	ppm	ASTM D5185(m)		1	0	
Copper         ppm         ASTM D5185(m)         >20         0         <1         ···           Tin         ppm         ASTM D5185(m)         >20         0         0         ···           Antimony         ppm         ASTM D5185(m)         0         0         ···           Vanadium         ppm         ASTM D5185(m)         0         0         ···           Beryllium         ppm         ASTM D5185(m)         0         0         ···           Cadmium         ppm         ASTM D5185(m)         0         0         ···           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         0         0         ···           Molybdenum         ppm         ASTM D5185(m)          1         3         ···           Mangaese         ppm         ASTM D5185(m)         0         0         ···           Magnesium         ppm         ASTM D5185(m)         6         22         ···           Calcium         ppm         ASTM D5185(m)         66         115         ··           Phosphorus         ppm         ASTM D5185(m)	Aluminum	ppm	ASTM D5185(m)	>20	<1	0	
Tin ppm ASTM D5185(m) >20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Lead	ppm	ASTM D5185(m)	>20	0	<1	
Antimony ppm ASTM D5185(m) 0 0 0  Antimony ppm ASTM D5185(m) 0 0 0  Beryllium ppm ASTM D5185(m) 0 0 0  ADDITIVES method limit/base current history1 history2  Boron ppm ASTM D5185(m) 0 0 0  Manganese ppm ASTM D5185(m) 0 0 0  Manganese ppm ASTM D5185(m) 0 0 0  Manganese ppm ASTM D5185(m) 6 22  Calcium ppm ASTM D5185(m) 66 22  Calcium ppm ASTM D5185(m) 368 420  Phosphorus ppm ASTM D5185(m) 368 420  Zinc ppm ASTM D5185(m) 444 476  Lithium ppm ASTM D5185(m) 41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Copper	ppm	ASTM D5185(m)	>20	0	<1	
Vanadium         ppm         ASTM D5185(m)         0         0            Beryllium         ppm         ASTM D5185(m)         0         0            Cadmium         ppm         ASTM D5185(m)         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         0         0            Barium         ppm         ASTM D5185(m)         0         0            Molybdenum         ppm         ASTM D5185(m)         0         0            Manganese         ppm         ASTM D5185(m)         6         22            Manganesium         ppm         ASTM D5185(m)         66         115            Calcium         ppm         ASTM D5185(m)         368         420            Phosphorus         ppm         ASTM D5185(m)         368         420            Zilico         ppm         ASTM D5185(m)         444         476            Sulfur         ppm         ASTM D5185(m)         <1         <1	Tin	ppm	ASTM D5185(m)	>20	0	0	
Beryllium	Antimony	ppm	ASTM D5185(m)		0	0	
Cadmium         ppm         ASTM D5185(m)         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         <1         7            Barium         ppm         ASTM D5185(m)         0         0            Molybdenum         ppm         ASTM D5185(m)         <1         3            Manganese         ppm         ASTM D5185(m)         0         0            Manganesium         ppm         ASTM D5185(m)         66         22            Calcium         ppm         ASTM D5185(m)         368         420            Phosphorus         ppm         ASTM D5185(m)         368         420            Zinc         ppm         ASTM D5185(m)         368         420            Zinc         ppm         ASTM D5185(m)         833         1388            Lithium         ppm         ASTM D5185(m)         >15         0         3            CONTAMINANTS         method         limit/base         current	Vanadium	ppm	ASTM D5185(m)		0	0	
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         <1	Beryllium	ppm	ASTM D5185(m)		0	0	
Boron ppm ASTM D5185(m)	Cadmium	ppm	ASTM D5185(m)		0	0	
Barium         ppm         ASTM D5185(m)         0         0            Molybdenum         ppm         ASTM D5185(m)         <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185(m)         <1	Boron	ppm	ASTM D5185(m)		<1	7	
Manganese         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         6         22            Calcium         ppm         ASTM D5185(m)         368         420            Phosphorus         ppm         ASTM D5185(m)         3444         476            Zinc         ppm         ASTM D5185(m)         833         1388            Sulfur         ppm         ASTM D5185(m)         <1	Barium	ppm	ASTM D5185(m)		0	0	
Magnesium         ppm         ASTM D5185(m)         6         22            Calcium         ppm         ASTM D5185(m)         368         420            Phosphorus         ppm         ASTM D5185(m)         368         420            Zinc         ppm         ASTM D5185(m)         444         476            Sulfur         ppm         ASTM D5185(m)         833         1388            Lithium         ppm         ASTM D5185(m)         <1	Molybdenum	ppm	ASTM D5185(m)		<1	3	
Calcium         ppm         ASTM D5185(m)         66         115            Phosphorus         ppm         ASTM D5185(m)         368         420            Zinc         ppm         ASTM D5185(m)         444         476            Sulfur         ppm         ASTM D5185(m)         833         1388            Lithium         ppm         ASTM D5185(m)         <1	Manganese	ppm	ASTM D5185(m)		0	0	
Phosphorus         ppm         ASTM D5185(m)         368         420            Zinc         ppm         ASTM D5185(m)         444         476            Sulfur         ppm         ASTM D5185(m)         833         1388            Lithium         ppm         ASTM D5185(m)         <1         <1            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >15         0         3            Sodium         ppm         ASTM D5185(m)         >15         0         3            Sodium         ppm         ASTM D5185(m)         >20         0         <1	Magnesium	ppm	ASTM D5185(m)		6	22	
Zinc ppm ASTM D5185(m) 444 476  Sulfur ppm ASTM D5185(m) 833 1388  Lithium ppm ASTM D5185(m) <1 <1 <-1 <  CONTAMINANTS method limit/base current history1 history2  Silicon ppm ASTM D5185(m) >15 0 3  Sodium ppm ASTM D5185(m) >0 <1  Potassium ppm ASTM D5185(m) >20 0 0  FLUID CLEANLINESS method limit/base current history1 history2  Particles >4μm ASTM D7647 >5000 649  31848  Particles >6μm ASTM D7647 >1300 116 11524  Particles >14μm ASTM D7647 >160 9 1388  Particles >21μm ASTM D7647 >40 4 456  Particles >38μm ASTM D7647 >10 0  20  Particles >71μm ASTM D7647 >3 0 1  Oil Cleanliness ISO 4406 (c) >19/17/14 17/14/10 22/21/18	Calcium	ppm	ASTM D5185(m)		66	115	
Sulfur ppm ASTM D5185(m) 833 1388  Lithium ppm ASTM D5185(m) <1 <1  CONTAMINANTS method limit/base current history1 history2  Silicon ppm ASTM D5185(m) >15 0 3  Sodium ppm ASTM D5185(m) 0 <1  Potassium ppm ASTM D5185(m) >20 0 0  FLUID CLEANLINESS method limit/base current history1 history2  Particles >4μm ASTM D7647 >5000 649 A 31848  Particles >6μm ASTM D7647 >1300 116 11524  Particles >14μm ASTM D7647 >160 9 1388  Particles >21μm ASTM D7647 >40 4 456  Particles >38μm ASTM D7647 >10 0 A 20  Particles >71μm ASTM D7647 >3 0 1  Oil Cleanliness ISO 4406 (c) >19/17/14 17/14/10 22/21/18	Phosphorus	ppm	ASTM D5185(m)		368	420	
Lithium ppm ASTM D5185(m) <1 <1  CONTAMINANTS method limit/base current history1 history2  Silicon ppm ASTM D5185(m) >15 0 3  Sodium ppm ASTM D5185(m) 0 <1  Potassium ppm ASTM D5185(m) >20 0 0  FLUID CLEANLINESS method limit/base current history1 history2  Particles >4μm ASTM D7647 >5000 649 A 31848  Particles >6μm ASTM D7647 >1300 116 11524  Particles >14μm ASTM D7647 >160 9 1388  Particles >21μm ASTM D7647 >40 4 456  Particles >38μm ASTM D7647 >10 0 A 20  Particles >71μm ASTM D7647 >3 0 1  Oil Cleanliness ISO 4406 (c) >19/17/14 17/14/10 222/21/18	Zinc	ppm	ASTM D5185(m)		444	476	
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >15         0         3            Sodium         ppm         ASTM D5185(m)         0         <1	Sulfur	ppm	ASTM D5185(m)		833	1388	
Silicon ppm ASTM D5185(m) >15 0 3 Sodium ppm ASTM D5185(m) 0 <1 Potassium ppm ASTM D5185(m) >20 0 0  FLUID CLEANLINESS method limit/base current history1 history2  Particles >4µm ASTM D7647 >5000 649 △ 31848 Particles >6µm ASTM D7647 >1300 116 11524 Particles >14µm ASTM D7647 >160 9 1388 Particles >21µm ASTM D7647 >40 4 456 Particles >38µm ASTM D7647 >10 0 △ 20 Particles >71µm ASTM D7647 >3 0 1 Oil Cleanliness ISO 4406 (c) >19/17/14 17/14/10 ● 22/21/18	Lithium	ppm	ASTM D5185(m)		<1	<1	
Sodium         ppm         ASTM D5185(m)         0         <1            Potassium         ppm         ASTM D5185(m)         >20         0         0            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         649         Δ 31848            Particles >6μm         ASTM D7647         >1300         116         11524            Particles >14μm         ASTM D7647         >160         9         1388            Particles >21μm         ASTM D7647         >40         4         456            Particles >38μm         ASTM D7647         >10         0         Δ 20            Particles >71μm         ASTM D7647         >3         0         1            Oil Cleanliness         ISO 4406 (c)         >19/17/14         17/14/10         22/21/18	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium         ppm         ASTM D5185(m)         0         <1            Potassium         ppm         ASTM D5185(m)         >20         0         0            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         649         Δ 31848            Particles >6μm         ASTM D7647         >1300         116         11524            Particles >14μm         ASTM D7647         >160         9         1388            Particles >21μm         ASTM D7647         >40         4         456            Particles >38μm         ASTM D7647         >10         0         Δ 20            Particles >71μm         ASTM D7647         >3         0         1            Oil Cleanliness         ISO 4406 (c)         >19/17/14         17/14/10         22/21/18	Silicon	ppm	ASTM D5185(m)	>15	0	3	
Potassium         ppm         ASTM D5185(m)         >20         0         0            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         649         Δ 31848            Particles >6μm         ASTM D7647         >1300         116         11524            Particles >14μm         ASTM D7647         >160         9         1388            Particles >21μm         ASTM D7647         >40         4         456            Particles >38μm         ASTM D7647         >10         0         Δ 20            Particles >71μm         ASTM D7647         >3         0         1            Oil Cleanliness         ISO 4406 (c)         >19/17/14         17/14/10         22/21/18	Sodium				0	<1	
Particles >4μm       ASTM D7647       >5000       649       Δ 31848          Particles >6μm       ASTM D7647       >1300       116       11524          Particles >14μm       ASTM D7647       >160       9       1388          Particles >21μm       ASTM D7647       >40       4       456          Particles >38μm       ASTM D7647       >10       0       20          Particles >71μm       ASTM D7647       >3       0       1          Oil Cleanliness       ISO 4406 (c)       >19/17/14       17/14/10       22/21/18	Potassium	ppm		>20	0	0	
Particles >6μm       ASTM D7647       >1300       116       11524          Particles >14μm       ASTM D7647       >160       9       1388          Particles >21μm       ASTM D7647       >40       4       456          Particles >38μm       ASTM D7647       >10       0       20          Particles >71μm       ASTM D7647       >3       0       1          Oil Cleanliness       ISO 4406 (c)       >19/17/14       17/14/10       22/21/18	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >14μm       ASTM D7647       >160       9       1388          Particles >21μm       ASTM D7647       >40       4       456          Particles >38μm       ASTM D7647       >10       0       20          Particles >71μm       ASTM D7647       >3       0       1          Oil Cleanliness       ISO 4406 (c)       >19/17/14       17/14/10       22/21/18	•		ASTM D7647	>5000			
Particles >21μm       ASTM D7647       >40       4       456          Particles >38μm       ASTM D7647       >10       0       △ 20          Particles >71μm       ASTM D7647       >3       0       1          Oil Cleanliness       ISO 4406 (c)       >19/17/14       17/14/10       ♠ 22/21/18			ASTM D7647	>1300			
Particles >38μm       ASTM D7647       >10       0       Δ       20          Particles >71μm       ASTM D7647       >3       0       1          Oil Cleanliness       ISO 4406 (c)       >19/17/14       17/14/10       22/21/18	Particles >14µm		ASTM D7647	>160			
Particles >71μm       ASTM D7647       >3       0       1          Oil Cleanliness       ISO 4406 (c)       >19/17/14       17/14/10       22/21/18	Particles >21µm		ASTM D7647	>40	4	<b>456</b>	
Oil Cleanliness ISO 4406 (c) >19/17/14 17/14/10 • 22/21/18	Particles >38μm		ASTM D7647	>10	0	<u>^</u> 20	
· · · · · · · · · · · · · · · · · · ·	•			>3	0		
FLUID DEGRADATION method limit/base current history1 history2	Oil Cleanliness		ISO 4406 (c)	>19/17/14	17/14/10	22/21/18	
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2

Acid Number (AN)

mg KOH/g ASTM D974\*

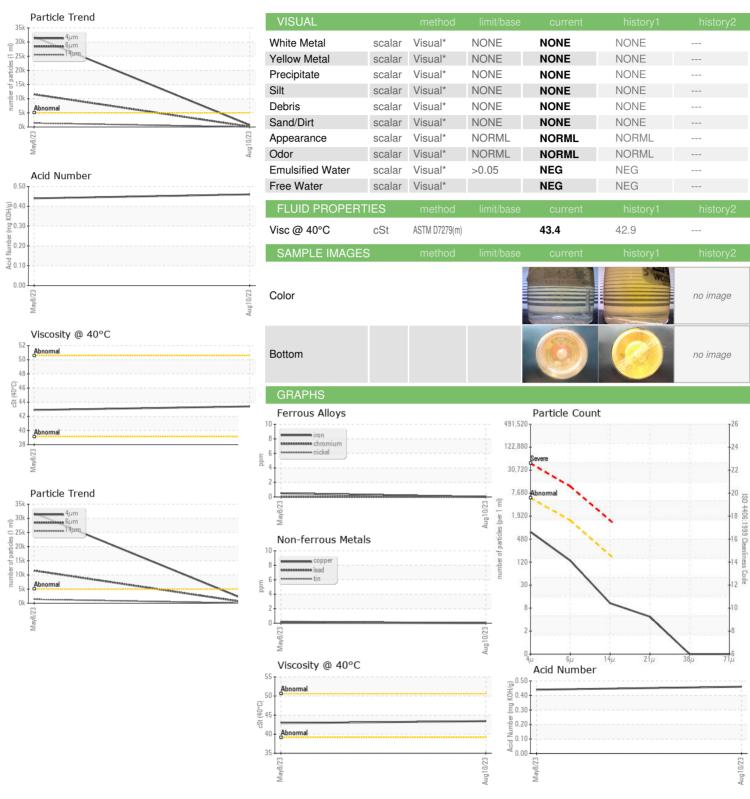
0.44

Report Id: ESCPOR [WCAMIS] 02577727 (Generated: 08/24/2023 08:13:28) Rev: 1

Contact/Location: Paul Dundas - ESCPOR



# **OIL ANALYSIS REPORT**





CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number **Unique Number** 

Test Package

: WC0741327

Received : 02577727 Diagnosed : 5630787 Diagnostician : IND 2

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 : 23 Aug 2023

: Wes Davis

: 24 Aug 2023

ESCO LTD. P.O.BOX 270, 185 HOPE STREET SOUTH PORT HOPE, ON

CA L1A 3W4 Contact: Paul Dundas paul.dundas@mail.weir

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.

T: (647)725-8153 Validity of results and interpretation are based on the sample and information as supplied. F: (905)885-7600

Contact/Location: Paul Dundas - ESCPOR