

OIL ANALYSIS REPORT

[W-00542347] END SIZER 1 (NORTH)

Component Hydraulic System Fluid AW HYDRAULIC OIL ISO 46 (--- GAL)

DIAGNOSIS

Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

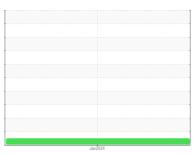
All component wear rates are normal.

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 Rating Trend



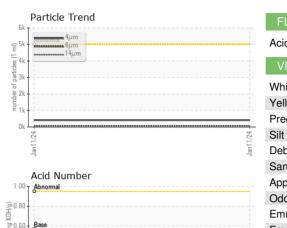
NORMAL

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0874972		
Sample Date		Client Info		11 Jan 2024		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINATION	J	method	limit/base	current	history1	history2
Water		WC Method	>0.05	NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	<1		
Chromium	ppm	ASTM D5185(m)	>20	0		
Nickel	ppm	ASTM D5185(m)	>20	<1		
Titanium	ppm	ASTM D5185(m)		0		
Silver	ppm	ASTM D5185(m)		0		
Aluminum	ppm	ASTM D5185(m)	>20	<1		
Lead	ppm	ASTM D5185(m)	>20	<1		
Copper	ppm	ASTM D5185(m)	>20	16		
Tin	ppm	ASTM D5185(m)	>20	0		
Antimony	ppm	ASTM D5185(m)		0		
Vanadium	ppm	ASTM D5185(m)		0		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	ppm	ASTM D5185(m)		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	5	<1		
Boron Barium	ppm ppm	ASTM D5185(m) ASTM D5185(m)		<1 <1		
		. ,	5			
Barium	ppm	ASTM D5185(m)	5 5	<1		
Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5	<1 0		
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5	<1 0 0		
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 25	<1 0 0 2		
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200	<1 0 0 2 54		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300	<1 0 2 54 348		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370	<1 0 2 54 348 373		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370	<1 0 2 54 348 373 2043		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 25 200 300 370 2500	<1 0 2 54 348 373 2043 <1	 	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 200 300 370 2500	<1 0 2 54 348 373 2043 <1 current	 history1	 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 200 300 370 2500	<1 0 2 54 348 373 2043 <1 current <1	 history1	 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 2500 limit/base >15	<1 0 0 2 54 348 373 2043 <1 current <1 <1	 history1	 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 200 300 370 2500 2500 limit/base >15	<1 0 2 54 348 373 2043 <1 current <1 <1 <1 10	 history1 	 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 2500 imit/base >25 20	<1 0 2 54 348 373 2043 <1 <i>current</i> <1 <1 10 <i>current</i>	 history1 history1	 history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 2500 imit/base >20 imit/base	<1 0 2 54 348 373 2043 <1 <i>current</i> <1 <1 10 <i>current</i> 414	 history1 history1 history1	 history2 history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 200 300 370 2500 2500 1 imit/base >20 1 imit/base >5000 >1300	<1 0 0 2 54 348 373 2043 <1 current <1 <1 <1 10 current 414 54	 history1 history1 history1	 history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 200 300 370 2500 2500 1 imit/base >15 >20 imit/base >5000 >1300 >160	<1 0 2 54 348 373 2043 <1 current <1 <1 <1 10 current 414 54 5	 history1 history1	 history2 history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 25 200 300 370 2500 2500 imit/base >15 >20 imit/base >5000 >1300 >160 >40	<1 0 0 2 54 348 373 2043 <1 current <1 <1 <1 10 current 414 54 5 3	 history1 history1 history1	 history2 history2 history2

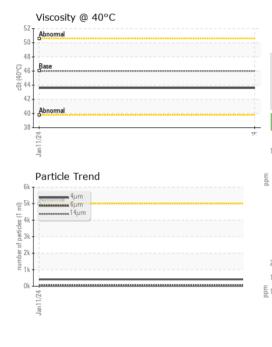
Contact/Location: Jeff Pottruff - DOFWOO



OIL ANALYSIS REPORT







White Metal scalar Visual' NONE NONE	history	story1	history1	current	limit/base	method	TION	FLUID DEGRADA
White Metal scalar Visual* NONE NONE				0.24	0.57	ASTM D974*	mg KOH/g	Acid Number (AN)
Yellow Metal scalar Visual* NONE	history	story1	history1	current	limit/base	method		VISUAL
Precipitate scalar Visual* NONE NONE		-		NONE	NONE	Visual*	scalar	White Metal
Sitt scalar Visual* NONE NONE		-		NONE	NONE	Visual*	scalar	Yellow Metal
Debris scalar Visual* NONE NONE		-		NONE	NONE	Visual*	scalar	Precipitate
Sand/Dirt scalar Visual* NONE NONE		-		NONE	NONE	Visual*	scalar	Silt
Appearance scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Emulsified Water scalar Visual* >0.05 NEG Free Water scalar Visual* NORML NORML Free Water scalar Visual* NORML NORML Free Water scalar Visual* NORML NORML Fullip PROPERTIES method limit/base current history1 Visc @ 40°C cSt ASTMD278(m) 46 43.6 SAMPLE IMAGES method limit/base current history1 Color no image n Bottom Data Alloys Ferrous Alloys Non-ferrous Metals Non-ferrous Metals All All All Color Particle Count 		-		NONE	NONE	Visual*	scalar	Debris
Odor scalar Visual* NORML Emulsified Water scalar Visual* >0.05 NEG Free Water scalar Visual* NORML NEG FLUID PROPERTIES method limit/base current history1 Visc @ 40°C cSt ASTM D229(m) 46 43.6 SAMPLE IMAGES method imit/base current history1 Color Imit/base current history1 GRAPHS Pertoce Alloys Particle Count Mon-ferrous Metals Output		-		NONE	NONE	Visual*	scalar	Sand/Dirt
Emulsified Water scalar Visual* >0.05 NEG Free Water scalar Visual* NEG FLUID PROPERTIES method imit/base current history1 Visc @ 40°C cSt ASTMD7279m 46 43.6 SAMPLE IMAGES method imit/base current history1 Color no image n Bottom no image n GRAPHS Ferrous Alloys Graphic Graphic Source		-		NORML	NORML	Visual*	scalar	Appearance
Free Water scalar Visual* NEG FLUID PROPERTIES method limit/base current history1 Visc @ 40°C cSt ASTM D7279(m) 46 43.6 SAMPLE IMAGES method limit/base current history1 Color no image n Bottom no image n GRAPHS Ferrous Alloys 0		-		NORML	NORML	Visual*	scalar	Odor
FLUID PROPERTIES method limit/base current history1 Visc @ 40°C cSt ASTM D7278(m) 46 43.6 SAMPLE IMAGES method limit/base current history1 Color Imit/base current history1 Color Imit/base current history1 Bottom Imit/base no image n Mon-ferrous Metals Imit/base Particle Count Imit/base Imit/base Imit/base Imit/base Viscosity @ 40°C Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Im		-			>0.05			
Visc @ 40°C oSt ASTMD727(m) 46 43.6 SAMPLE IMAGES method imit/base current history1 Color no image n Bottom Particle Count on image n Particle Count for a standard of the stand		-		NEG		Visual*	scalar	Free Water
SAMPLE IMAGES method limit/base current history1 Color no image n Bottom Particle Count GRAPHS Ferrous Alloys Uscosity @ 40°C	history	story1	history1	current	limit/base	method	IES	FLUID PROPERT
Color Bottom CRAPHS Ferrous Alloys On-ferrous Metals Viscosity @ 40°C Output Discosity @ 40°C Output Discosity @ 40°C		-		43.6	46	ASTM D7279(m)	cSt	Visc @ 40°C
Color Bottom CRAPHS Crous Alloy Origination Non-ferrous Metals Output Non-ferrous Metals Output Non-ferrous Metals Output O	history	story1	history1	current	limit/base	method	6	SAMPLE IMAGES
GRAPHS Ferrous Alloys	no image	mage r	no image					Color
Ferrous Alloys Particle Count Particle Count	no image	mage r	no image					Bottom
491,520 491,520 491,520 491,520 491,520 491,520 491,520 491,520 491,520 491,520 491,520 491,520 491,520 491,520 491,520 491,520 491,520 491,520 490,720 7,680 490,720 490 490 490 490 490 490 490 49								GRAPHS
Viscosity @ 40°C					401 520			
Non-ferrous Metals Viscosity @ 40°C								iron
Non-ferrous Metals Viscosity @ 40°C				Severe	122,880			5 - nickel
Non-ferrous Metals				T	30,720			
Viscosity @ 40°C f_{0} f_{0} $f_$				Abnormal	호 宣 7,680			
Viscosity @ 40°C 550 400 550 400 550 400 550 400 550 400 550 400 550 400 550 400 550 400 550 400 550 400 400 550 400 500 400 400 500 400 500 400 500 400 500 400 500 400 500 400 400 400 400 500 400				· · · · · · ·	11/2 1.920			11/2 1/2
$Viscosity @ 40°C$ $Viscosity @ 40°C$ $\int_{0}^{55} \int_{0}^{45} \int_{0$					name dicles		-	,
$Viscosity @ 40°C$ $Viscosity @ 40°C$ $\int_{000}^{55} \int_{100}^{56} \int_{100}^{45} \int_{1$					of bar		5	
$Viscosity @ 40°C$ $Viscosity @ 40°C$ $\int_{0}^{5} \int_{0}^{1} \int_{0}^{4} \int_{0}^$					a 120			15 - lead
Viscosity @ 40°C Viscosity @ 40°C Abnormal					30			10 tin
Viscosity @ 40°C 4μ 6μ 14μ 21μ 38μ Acid Number Acid Number 4μ 6μ 14μ 21μ 38μ Acid Number 4μ 6μ 14μ 21μ 38μ 4μ 6μ 14μ 14μ 21μ 38μ 4μ 14μ 14μ 21μ 38μ 4μ 14μ 14μ 21μ 38μ 4μ 14μ 14μ 21μ 38μ 4μ 14μ			_		8			5
Viscosity @ 40°C Viscosity @ 40°C 4μ 6μ 14μ 21μ 38μ Acid Number Acid Number 4μ 6μ 14μ 21μ 38μ Acid Number 4μ 6μ 14μ 21μ 38μ 4μ 6μ 14μ				+	2 1/24	****		1/24
Viscosity @ 40°C $55 - 4 - 4 - 4 - 21 \mu - 38 \mu$ Anomal $55 - 4 - 4 - 4 - 21 \mu - 38 \mu$ Acid Number $6 - 4 - 4 - 4 - 21 \mu - 38 \mu$ Acid Number 8 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 -					Jan 11			Jan 1
55 Abnormal 60 Abnormal 70 Abnormal 8ase Abnormal 90 0.00 60 Abnormal	1 7	21µ 38µ	i4μ 21μ		4			
Jan11/L Jan11/L					(^B) 1.00			55
//lnsL //lnsL				Base	ng KO			50 Base
lineL AllineL					ja 0.50			45 Abnormal
Jan 11/1 meL				Abnormal	Mun N			
				1/24	Aci Aci			
				Jan 11	Jan 11,			Jan 11.
WearChack C9 1175 Apploby Line Burlington ONL 7 540					-			-
: WC0874972 Recieved : 12 Jan 2024 193 Givins Street, P.O.Box 1589,, Central S	r celorM i Sotres - Do odstock,	Box 1589,, Central	ireet, P.O.Box 1589		Jan 2024	Í : 12 .	Recieved	: WC0874972

Test Package : IND 2 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.

CA N4S 5Y8 Contact: Jeff Pottruff jeff.pottruff@arcelormittal.com T: (519)537-6671 F: (519)537-7384

CALA

ISO 17025:2017 Accredited Laboratory