

MILLER SPREADER CO.

AEP

Youngstown, OH

Report Date: 03/23/2005

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MILLER SPREADER CO.
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Youngstown, OH
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E-mail: None Provided

The logo for MILLER, featuring the word "MILLER" in a bold, white, sans-serif font centered within a solid red rectangular background.

Ref.: Verb CBerry

Customer #: 4R 3479-0204 HY

Making your PM Program mean... "Profit Making"™ Since 1985

Batch #: 050323 – 92

PdM Analyst: NBR

MILLER SPREADER CO.
AEP
Youngstown, OH

SAMPLES & RECOMMENDATIONS:

PAGE

AEP-BS Insufficient Data to render recommendation.	Before Sample	03064	UKN	1
AEP-AS Insufficient Data to render recommendation.	After Sample	3064 (2)	UKN	2

Customer #: 4R 3479-0204 HY

Making your PM Program mean... "Profit Making"™ Since 1985

Batch #: 050323 – 92

PdM Analyst: NBR

MILLER SPREADER CO.
AEP
Youngstown, OH

UKN

Sample ID: AEP-BS
Equip. Desc.: Before Sample
Lubricant Type: Unknown
Reservoir Cap.: Ukn Gal(s) #VALUE! Ltr(s)
Machine Time: Not Provided Hr(s)
Lube Time: #VALUE! Hr(s)

Sample Date: Before
Received Date: 4/6/2005
Test Date: 4/20/2005
Prev. Sample: #REF! **UKN**
First Sample: 4/5/2005
No. Samples: 1

Recommendation(s):

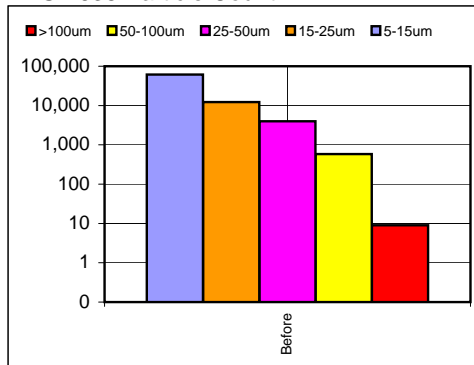
Insufficient Data to render recommendation.

Discussion of Test Results:

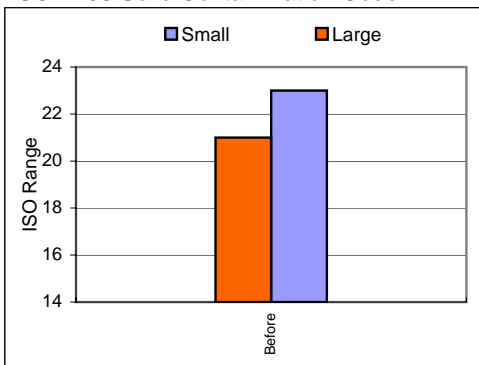
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QUANTITATIVE TESTING:

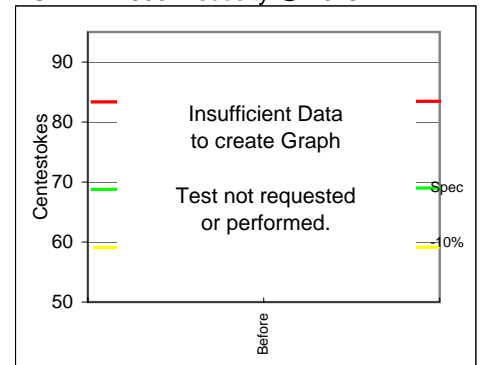
NAS-1638 Particle Count



ISO-4406 Solid Contamination Code



ASTM-D-2893 Viscosity @ 40°C



QUALITATIVE TESTING:

Ferrous Metal Wear:

Classification	Max		
	1	5	10 μm
Rubbing			
Severe Sliding			
Cutting/Plowing			
Rolling Cont (Bearing)			
Spheres			
Gear			
Black Oxides (Fe ₃ O ₄)			
Red Oxides (Fe ₂ O ₃)			
Corrosive (FeO)			
Other			

Non-Ferrous Metal Wear:

Classification	Max		
	1	5	10 μm
Rubbing			
Severe Sliding			
Cutting/Plowing			
Rolling Cont (Bearing)			
Spheres			
Gear			
Oxides			
Other			

Contaminants:

Classification	Max		
	1	5	10 μm
Filming			
Sand & Dirt			
Fibers			
Spheres			
Plastic/Ceramic			
Carbon & Organics			

Non-Ferrous Metal Composition	Copper	White	Babbitt

Particle Data		Lube Data	
5-15 μm	61,364	40°C cSt:	N/A
15-25 μm	12,273	100°F SUS:	#VALUE!
25-50 μm	3,968	Water ppm	N/A
50-100 μm	580	PLP	N/A
>100 μm	9		
EPC:	78,194		
ISO Scale:	23 21		

700 Portage Trail
Cuyahoga Falls, OH
44221.3057

800.483.R7E3A2L5

330.630.3700

Fax: 330.630.3733

www.REALServices.com

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AEP
Youngstown, OH

UKN

Sample ID: AEP-BS
Equip. Desc.: Before Sample
Lubricant Type: Unknown
Reservoir Cap.: Ukn Gal(s) #VALUE! Ltr(s)
Machine Time: Not Provided Hr(s)
Lube Time: #VALUE! Hr(s)

Sample Date: Before
Received Date: 4/6/2005
Test Date: 4/20/2005
Prev. Sample: #REF! **UKN**
First Sample: 4/5/2005
No. Samples: 1

Discussion of Test Results (cont'd):

Note that this was the **FIRST** sample tested from this equipment.

Image 1

Interpretation:

Shown in this image are examples of the metal particles seen in this sample. Note that this image was taken near the entry end of the slid and under low magnification.

Lighting: White Reflected & Green Transmitted

Magnification: 200X |—— 75 um ——|

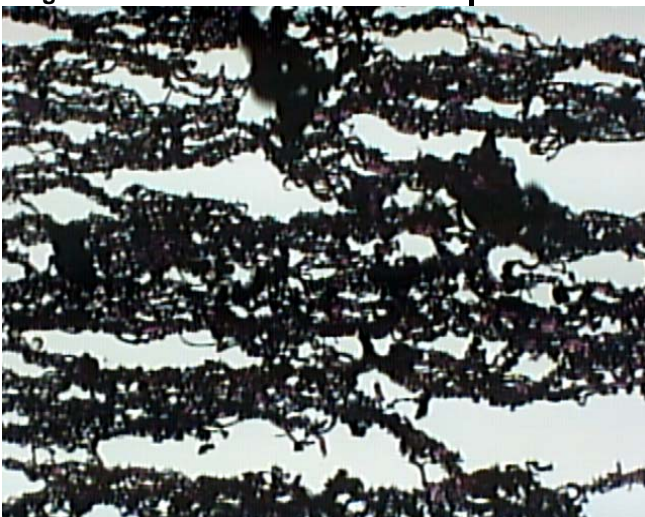


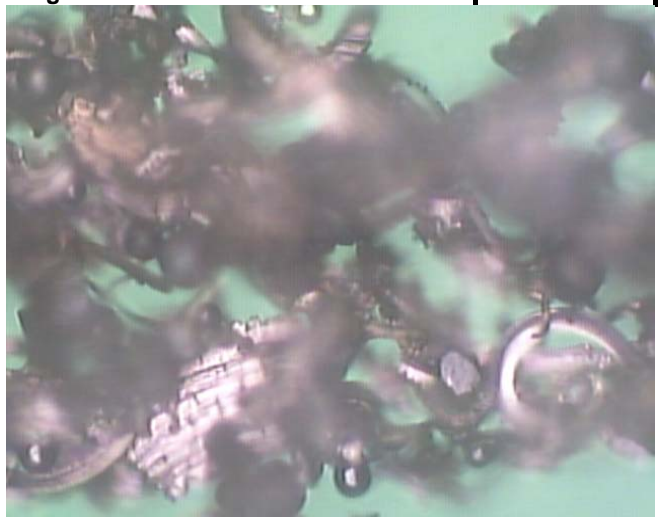
Image 2

Interpretation:

This image displays the same particles seen in Image #1 under higher magnification.

Lighting: White Reflected & Green Transmitted

Magnification: 500X |—— 35 um ——|



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UKN

Sample ID: AEP-AS
Equip. Desc.: After Sample
Lubricant Type: Unknown
Reservoir Cap.: Ukn Gal(s) #VALUE! Ltr(s)
Machine Time: Not Provided Hr(s)
Lube Time: #VALUE! Hr(s)

Sample Date: After
Received Date: 4/18/2005
Test Date: 4/20/2005
Prev. Sample: #REF! **UKN**
First Sample: 4/5/2005
No. Samples: 2

Recommendation(s):

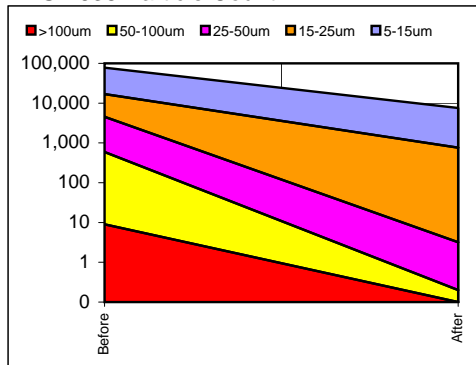
Insufficient Data to render recommendation.

Discussion of Test Results:

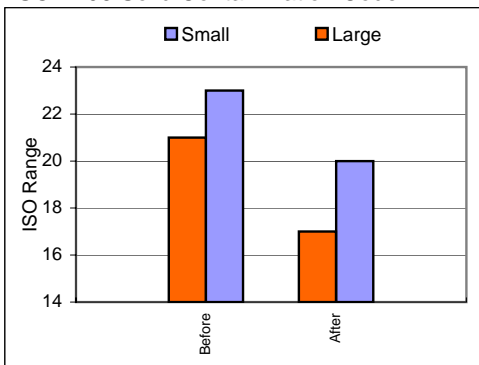
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QUANTITATIVE TESTING:

NAS-1638 Particle Count



ISO-4406 Solid Contamination Code



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Classification	Max		
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Cutting/Plowing			
Rolling Cont (Bearing)			
Spheres			
Gear			
Black Oxides (Fe ₃ O ₄)			
Red Oxides (Fe ₂ O ₃)			
Corrosive (FeO)			
Other			

Non-Ferrous Metal Wear:

Classification	Max		
	1	5	10 μm
Rubbing			
Severe Sliding			
Cutting/Plowing			
Rolling Cont (Bearing)			
Spheres			
Gear			
Oxides			
Other			

Contaminants:

Classification	Max		
	1	5	10 μm
Filming			
Sand & Dirt			
Fibers			
Spheres			
Plastic/Ceramic			
Carbon & Organics			

Non-Ferrous Metal Composition	Copper	White	Babbitt

Particle Data		Lube Data	
5-15 μm	6,783	40°C cSt:	N/A
15-25 μm	755	100°F SUS:	#VALUE!
25-50 μm	3	Water ppm	N/A
50-100 μm	0	PLP	N/A
>100 μm	0		
EPC:	7,541		
ISO Scale:	20 17		

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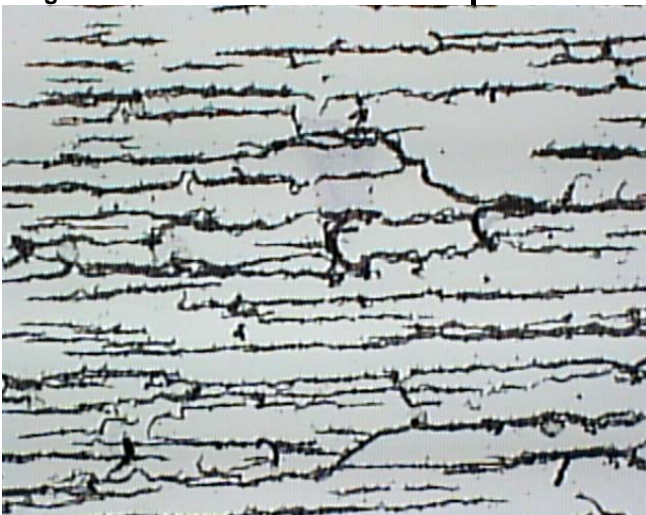


Image 2

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This image displays the same particles seen in Image #1 under higher magnification.

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Magnification: 500X |—— 35 um ——|

