

**Butler**

Fluids Analysis Lab | 3630 Miriam Avenue | Bismarck, ND 58501  
 O 701.250.1626 | F 701.250.1610 | www.buttermachinery.com

**S.O.S FLUIDS ANALYSIS**

24097647

## UNIT INFORMATION

Unit:                      Cust No.    C27546    Eng Make:   Caterpillar  
 Equip Make:   Caterpillar    Eng Model:   C9  
 Equip Model:   12H    Eng Serial:   4ZF13130  
 Equip Serial:   CBK00601  
 Component:   Tandem - Left

## PM SERVICE INFORMATION

Job Site:  
 Oil Brand:    Unspec  
 Oil Blend:  
 Oil Viscosity:   Unspec  
 PM:

**Evaluation / Recommendation (for sample taken on 9/18/2014 by Justin)**

Test results indicate normal levels for this compartment. No excessive wear is indicated at this time. Continue to monitor by sampling at the recommended interval.

Butler SOS Analyst  
 Trice Butler

SAMPLE INFORMATION			ELEMENTAL ANALYSIS (parts per million)																				OIL CONDITION								
Date Taken	Hrs/Miles		Cu	Fe	Cr	Ni	Ti	V	Ag	Pb	Sn	Al	Si	Na	K	Mo	B	Ba	Ca	Mg	Mn	P	Sb	Zn	TAN	TBN	FTIR Analysis				
	On Unit	On Oil	Copper	Iron	Chrome	Nickel	Titan	Vanad	Silver	Lead	Tin	Alum	Silicon	Sodium	Potass	Moly	Boron	Barium	Calcium	Magnes	Mangan	Phosph	Antimon	Zinc	Acid	Base	Soot	Sulf	Oxid	Nitr	
09-18-14	4111		0	51	0	0	0	0	0	1	0	1	6	5	2	0	5	0	3021	11	1	1006	2	1265							
03-29-13	3570		2	47	0	0	0	0	0	0	0	1	7	0	1	0	1	0	2949	11	0	983	0	1231							
10-25-05	195	195	0	82	0	0	0	0	0	0	0	2	25	12	2	2	2	4	2901	8	1	1002	2	1189							

OIL CHANGE HISTORY							PARTICLE COUNT (per 1 mL)								ISO	PVI	PQ	PHYSICAL		
Date Taken	Changed		Oil Added	Label Visc	Visc SAE	Visc cSt 100 C	>4u	>6u	>10u	>14u	>21u	>25u	>38u	>70u	ISO Code	Particle Volume	Ferrous Debris	Anti-Freeze	Fuel Dilution	Water
	Oil	Filter																		
09-18-14	No	No		Unspec	30	11.2	84525	51869	16307	3237	264	108	6		24/23/19	16	58	N	N	N
03-29-13	No	Unk		30WT	30	11.1	83152	46831	12184	2471	251	101	7		24/23/18	13	52	N	N	N
10-25-05	No	No				11.2	83436	52478	25158	8493	2829	63	9	3	24/22	94	116	N	N	N

FYI - This sample took 5 days to reach the lab.

When Oil and Coolant sampling, remember to provide complete and accurate information on the Sample Labels.

Emmet Township  
 47307 303rd St  
 Beresford, SD 57004

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UNIT INFORMATION				QUICK EVALUATION		PM SERVICE INFORMATION	
Unit Number:	Equipment Make: Caterpillar	Engine Make: Caterpillar	Overall Evaluation:		Lab Processing Date: 7-Oct-2014		
Job Site:	Equipment Model: 12H	Engine Model: C9	Monitor		Service Interval:		
Compartment: Diesel Engine	Equipment Serial: CBK00601	Engine Serial: 4ZF13130	Continue Using:		Control Number:		
<div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <b>Recommended Action</b>   <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">See Recommendations Below</div> </div>			Choice		WO Number:		
			Maintenance Needed		Target Nitrate:                      Target Glycol: 52%		
			Choice		Current Nitrate                      Current Glycol: 48		
				<b>Coolant Type: Unknown</b>			

SAMPLE INFORMATION			MAINTENANCE ITEMS								PHYSICAL PROPERTIES						
Date Taken	Hours/Miles/KM		CH Changed	Glycol	Freeze F°/C°	Boil F°/C°	pH	Nitrite Inhibitor	Moly Inhibitor	Cond Conductivity	Overall Evaluation	Color	Appearance	Turb	Odor	Foam	Oil
	On Unit	On Fluid															
9/18/14			No	48%	-30/-34	224/107	7.5		900	3410	Monitor	Red	Clear	5	Normal	Normal	None
3/29/13	3570		No	48%	-31/-35	224/107	7.5		900	3440	Action Required	Red	Clear	5	Normal	Normal	None

Gallons	Quarts	Liters	Ounces
<b>SCA to Add</b> <b>Coolant to Drain</b> <b>Glycol to Add</b> <b>Water to Add</b>			
<b>Caterpillar Coolant Additive Needed:</b> <b>Qty &amp; Part No. to Order:</b>  Warning! these calculations are based on a system capacity of 0.00 gallons or 0.00 liters. If your system capacity is different these values will need to be adjusted. Be sure to test this coolant after making adjustments.			

SOLIDS - PRECIPITATE					
Date Taken	Amount	Solids/Precipitate	Appearance	Properties	Other
9/18/14	None				
3/29/13	None				

EVALUATION / RECOMMENDATION (For sample taken 9/18/2014)
No coolant type, i.e. ELC, ELC Nitrite Free, or Conventional (DEAC), was indicated on the sample label. Any potential adjustments needed are dependent on the coolant type and capacity.

**Emmet Township**  
**47307 303rd St**  
**Beresford, SD 57004**

94445

Date Taken 9/18/2014