



Mill Test Certificate

Bri-Steel Manufacturing Inc.
 2125-64 Avenue, Edmonton, AB Canada T6P 1Z4
 Tel: 001 (780) 469-6603
 Fax: 001 (780) 469-6986
 www.brichemsteel.com

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0044** Product Size: **NPS 20 STD** Production Date: **2011 Oct 5**

Production Method: **Hot Expansion** Product Heat Treatment: **As-rolled**

Product Standards: **ASTM/ASME A/SA106-2010 Grade B, A/SA53-2010 Grade B Type S, NACE MR0175-2003**

Product Markings: **.BRI-STEEL MFG NPS 20 STD ASTM/ASME A/SA106 GR B A/SA53 GR B HEAT BSM-0044 (PIPE # LENGTH MASS) NDE 800PSI NACE MR0175 2011/09 MADE IN CANADA.**

Product Details				Non-Destructive Testing												
Heat	Test Type	NPS	SCH	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End	
BSM-0044	Heat	20	STD	1	DRL	78.6	µR/hr	Gauss	Insp.	Pass	Pass	ASTM E213	ASTM E309	800 psi/5s	Pass	37.5° Bevel

		Chemical Analysis (wt%)														
Heat	Test Type	Steelmaking Method														
		Blast Furnace; EAF; Ladle Refining; Vacuum Degass														
BSM-0044	Heat	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIV)	CE (CSA)
		0.20	0.86	0.012	0.011	0.22	0.03	0.11	0.03	0.03	0.003	0.001	0.001	0.0002	0.36	0.36

Mechanical Properties								
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test			Elongation (A)
					Transverse: 50mm GL; 38mm x WT			
BSM-0044	Heat	Ferrite & Pearlite	76	Pass	Yield (Rt0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	35
					51,500	51,500	76,000	

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected in accordance with ASTM/ASME A/SA106-2010, A/SA53-2010 and the purchase order requirements, and that the results meet the corresponding requirements.
- ✓ This pipe product meet the sour service requirements of NACE MR0175/ISO 15156-2003 Annex A2 for Region 3 Sour Service, and NACE MR0103-2004 Para. 2.1.

Mill Test Certificate approved by:

[Signature]
 2012 Mar 21
 Kenton Dechant, P. Eng.
 Manager of Quality and R&D