

TransCanada Pipelines
Title: Rectifier and Groundbed Measurements
Date: Tuesday, March 27, 2012



Exhibit C

Operational Region: Western States Region
Area of Influence: North Pipeline
Start Date: 2007-01-01
End Date: 2012-03-27

Enclosure Name	Reading Type	Rectifier Number	Tap Setting	Rectifier Reading (Voll)	Rectifier Type	Groundbed Name	Groundbed Reading (amps)	Groundbed Type	Grounded Circuit Resistance (ohm)	Reading Date	Source	Groundbed Comment	Rectifier Comment
North Pipeline	Rectifier	127.6	A4	67.0000	Normal	Baker Road/Spangle	7.5000	Normal	8.93	03-Jan-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	68.0000	Normal	Baker Road/Spangle	7.5000	Normal	9.07	05-Feb-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	65.0000	Normal	Baker Road/Spangle	5.5000	Normal	11.82	11-Feb-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	68.0000	Normal	Baker Road/Spangle	8.0000	Normal	8.50	01-Mar-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	67.0000	Normal	Baker Road/Spangle	7.8000	Normal	8.59	02-Apr-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	67.0000	Normal	Baker Road/Spangle	7.2000	Normal	8.31	01-May-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	70.0000	Normal	Baker Road/Spangle	6.7000	Normal	10.45	04-Jun-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	62.5000	Normal	Baker Road/Spangle	7.0000	Normal	8.93	02-Jul-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	68.0000	Normal	Baker Road/Spangle	7.0000	Normal	9.43	02-Aug-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	64.0000	Normal	Baker Road/Spangle	5.2500	Normal	12.19	04-Sep-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	65.0000	Normal	Baker Road/Spangle	6.0000	Normal	10.83	01-Oct-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	64.0000	Normal	Baker Road/Spangle	5.5000	Normal	11.64	01-Nov-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	66.0000	Normal	Baker Road/Spangle	6.0000	Normal	11.06	04-Dec-2007 00:00	Manual	unknown	
	Rectifier	127.6	A4	65.0000	Normal	Baker Road/Spangle	5.5000	Normal	11.82	02-Jan-2008 00:00	Manual	unknown	
	Rectifier	127.6	A4	65.0000	Normal	Baker Road/Spangle	5.5000	Normal	11.82	11-Feb-2008 00:00	Manual	unknown	
	Rectifier	127.6	A4	66.0000	Normal	Baker Road/Spangle	7.0000	Normal	9.43	04-Mar-2008 00:00	Manual	unknown	
	Rectifier	127.6	C4	66.5000	Normal	Baker Road/Spangle	5.4000	Normal	12.37	07-Apr-2008 00:00	Manual	unknown	
	Rectifier	127.6	C4	66.1000	Normal	Baker Road/Spangle	5.0500	Normal	13.09	04-Jun-2008 00:00	Manual	UNKNOWN	
	Rectifier	127.6	C4	66.5000	Normal	Baker Road/Spangle	3.4000	Normal	12.31	03-Jul-2008 00:00	Manual	UNKNOWN	
	Rectifier	127.6	C4	66.7000	Normal	Baker Road/Spangle	4.9000	Normal	13.61	17-Sep-2008 00:00	Manual	UNKNOWN	
Rectifier	127.6	C4	66.0000	Normal	Baker Road/Spangle	6.5000	Normal	12.00	03-Nov-2008 00:00	Manual	UNKNOWN		
Rectifier	127.6	C4	66.0000	Normal	Baker Road/Spangle	5.5000	Normal	12.00	12-Jan-2009 00:00	Manual	UNKNOWN		
Rectifier	127.6	C4	65.3000	Normal	Baker Road/Spangle	4.8800	Normal	13.11	06-Mar-2009 00:00	Manual	UNKNOWN		
Rectifier	127.6	C4	64.4000	Normal	Baker Road/Spangle	5.4000	Normal	11.93	04-May-2009 00:00	Manual	UNKNOWN		
Rectifier	127.6	C4	66.7000	Normal	Baker Road/Spangle	4.8000	Normal	13.77	01-Jul-2009 00:00	Manual	UNKNOWN		
Rectifier	127.6	C4	0.0000	Normal	Baker Road/Spangle	0.0000	Normal	N/A	01-Sep-2009 00:00	Manual	Out of service for depolarization survey by Rich Christman, mtr		
Rectifier	127.6	C4	66.7000	Normal	Baker Road/Spangle	4.9600	Normal	13.27	04-Nov-2009 00:00	Manual	UNKNOWN		
Rectifier	127.6	C4	0.0000	Normal	Baker Road/Spangle	0.0000	Normal	N/A	05-Jan-2010 00:00	Manual	Rectifier found out of service. Reason: In Progress Taken By Paul Brown		
Rectifier	127.6	C4	65.5000	Normal	Baker Road/Spangle	4.8000	Normal	13.66	02-Mar-2010 00:00	Manual	Rectifier found out of service. Reason: In Progress Taken By Paul Brown		
Rectifier	127.6	C4	65.8000	Normal	Baker Road/Spangle	4.8000	Normal	13.67	03-May-2010 00:00	Manual	By Scott Aritz		
Rectifier	127.6	C4	65.7800	Normal	Baker Road/Spangle	5.1000	Normal	12.90	06-Jul-2010 00:00	Manual	By James Olson		

Rectifier	127.6	C4	55.0400	Normal	Baker Road/Spangie	4.4000	Normal	14.78	02-Sep-2010 00:00	Manual	
Rectifier	127.6	C4	0.0000	Normal	Baker Road/Spangie	0.0000	Normal	N/A	02-Nov-2010 00:00	Manual	Off for Depot work (Williams PJ)
Rectifier	127.6	C4	55.5700	Normal	Baker Road/Spangie	3.8100	Normal	17.21	04-Jan-2011 00:00	Manual	Off for Depot work (Williams PJ)
Rectifier	127.6	C4	64.7600	Normal	Baker Road/Spangie	4.3100	Normal	15.03	08-Mar-2011 00:00	Manual	
Rectifier	127.6	C4	64.0200	Normal	Baker Road/Spangie	4.6300	Normal	13.83	03-May-2011 00:00	Manual	
Rectifier	127.6	C4	0.0000	Normal	Baker Road/Spangie	0.0000	Normal	N/A	07-Jul-2011 00:00	Manual	Off for Depot work
Rectifier	127.6	C5	89.7000	Normal	Baker Road/Spangie	5.0500	Normal	13.90	02-Sep-2011 00:00	Manual	Off for Depot work
Rectifier	127.6	C5	0.0000	Normal	Baker Road/Spangie	0.0000	Normal	N/A	01-Nov-2011 00:00	Manual	Off For Williams Depot
Rectifier	127.6	D2	78.0500	Normal	Baker Road/Spangie	6.2900	Normal	12.41	04-Jan-2012 00:00	Manual	By Bill Hendrix
Rectifier	127.6	D2	80.2000	Normal	Baker Road/Spangie	5.6100	Normal	14.30	07-Mar-2012 00:00	Manual	By James Olsson