Pipeline Properties	Excavator configuration	Penetration Resistance				No Rupture Clause			
		Multiplication Factor 0.7 - Where penetration resistance is not a governing factor in pipeline wall thickness selection.	Multiplication Factor 0.75 - Where penetration resistance provides adequate resistance to penetration against typical excavator threats, but where puncture may occur under aggressive excavator operation.	Multiplication Factor 1 - Where penetration resistance can be reasonably relied upon to satisfy the requirements of the safety management study, no puncture.	Multiplication Factor 1.3 - Where penetration must never occur.	Multiplication Factor 0.7	Multiplication Factor 0.75	Multiplication Factor 1	Multiplication Factor 1.3
Condition 1	General Tooth Excavator	Penetration resistance to at least 55T	Penetration resistance to at least 55T	Penetration resistance to at least 55T	Penetration resistance to at least 55T	No rupture clause met to at least 55T	No rupture clause met to at least 55T	No rupture clause met to at least 55T	No rupture clause met to at least 55T
Condition 1	Single Tooth from Tiger Tooth Excavator	35T may penetrate	30T may penetrate	20T may penetrate	15T may penetrate	No rupture clause met to at least 55T	No rupture clause met to at least 55T	No rupture clause met to at least 55T	No rupture clause met to at least 55T
Condition 1	Both Teeth from Tiger Tooth Excavator	Penetration resistance to at least 55T	Penetration resistance to at least 55T	Penetration resistance to at least 55T	30T may penetrate	No rupture clause met to at least 55T	No rupture clause met to at least 55T	No rupture clause met to at least 55T	No rupture clause met to at least 55T
Condition 1	Penetration tooth Excavator	35T may penetrate	30T may penetrate	20T may penetrate	15T may penetrate	No rupture clause met to at least 55T	No rupture clause met to at least 55T	No rupture clause met to at least 55T	No rupture clause met to at least 55T
Condition 2	General Tooth Excavator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Condition 2	Single Tooth from Tiger Tooth Excavator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Condition 2	Both Teeth from Tiger Tooth Excavator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Condition 2	Penetration tooth Excavator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Condition 3	General Tooth Excavator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Condition 3	Single Tooth from Tiger Tooth Excavator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Condition 3	Both Teeth from Tiger Tooth Excavator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Condition 3	Penetration tooth Excavator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Condition 4	General Tooth Excavator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Condition 4	Single Tooth from Tiger Tooth Excavator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Condition 4	Both Teeth from Tiger Tooth Excavator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Condition 4	Penetration tooth Excavator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A