**Appendix A: Baseline Pipeline Impact Radius Tables for MAP 9.6.S.1**

**1. High-Pressure Pipelines Transferring Flammable and Combustible Liquids**

**Table 1: Diesel Thermal Radiation ASDs (feet)**

|  |  |
| --- | --- |
| **Diameter (in)** | **ASD (feet)** |
| 4 | 536 |
| 6 | 634 |
| 8 | 713 |
| 10 | 782 |
| 12 | 843 |
| 14 | 898 |
| 16 | 949 |
| 18 | 996 |
| 20 | 1,040 |
| 22 | 1,081 |
| 24 | 1,121 |

**Table 2: Gasoline Thermal Radiation ASDs (feet)**

|  |  |
| --- | --- |
| **Diameter (in)** | **ASD (feet)** |
| 4 | 508 |
| 6 | 600 |
| 8 | 676 |
| 10 | 741 |
| 12 | 798 |
| 14 | 851 |
| 16 | 899 |
| 18 | 943 |
| 20 | 985 |
| 22 | 1,024 |
| 24 | 1,061 |

**Table 3: Crude Oil Thermal Radiation ASDs (feet)**

|  |  |
| --- | --- |
| **Diameter (in)** | **ASD (feet)** |
| 4 | 521 |
| 6 | 616 |
| 8 | 693 |
| 10 | 759 |
| 12 | 819 |
| 14 | 872 |
| 16 | 921 |
| 18 | 967 |
| 20 | 1,010 |
| 22 | 1,050 |
| 24 | 1,089 |
| 26 | 1,125 |
| 28 | 1,160 |
| 30 | 1,193 |
| 32 | 1,225 |
| 34 | 1,256 |
| 36 | 1,286 |
| 38 | 1,315 |
| 40 | 1,343 |
| 42 | 1,369 |
| 44 | 1,397 |
| 46 | 1,423 |
| 48 | 1,448 |

**2. High-Pressure Pipelines Transferring Flammable and Combustible Gasses (Thermal Radiation)**

**Table 1: Natural Gas Pipeline Thermal Radiation ASDs (feet)**

|  |  |
| --- | --- |
| **Diameter (in)** | **Pipeline Pressure (psi)** |
| **60** | **120**  | **240**  | **360**  | **480**  | **600**  | **720**  | **840**  | **960**  | **1,080**  | **1,200**  | **1,320**  | **1,440**  | **1,560**  | **1,680**  | **1,800**  |
| **4** | 71  | 100  | 142  | 173  | 200  | 224  | 245  | 265  | 283  | 300  | 317  | 332  | 347  | 361  | 375  | 388  |
| **6** | 106  | 150  | 212  | 260  | 300  | 336  | 368  | 397  | 425  | 450  | 475  | 498  | 520  | 541  | 562  | 581  |
| **8** | 142  | 200  | 283  | 347  | 400  | 448  | 490  | 530  | 566  | 601  | 633  | 664  | 693  | 722  | 749  | 775  |
| **10** | 177  | 250  | 354  | 433  | 500  | 560  | 613  | 662  | 708  | 751  | 791  | 830  | 867  | 902  | 936  | 969  |
| **12** | 212  | 300  | 425  | 520  | 601  | 671  | 736  | 794  | 849  | 901  | 950  | 996  | 1,040  | 1,083  | 1,124  | 1,163  |
| **14** | 248  | 350  | 495  | 607  | 701  | 783  | 858  | 927  | 991  | 1,051  | 1,108  | 1,162  | 1,214  | 1,263  | 1,311  | 1,357  |
| **16** | 283  | 400  | 566  | 693  | 801  | 895  | 981  | 1,059  | 1,132  | 1,201  | 1,266  | 1,328  | 1,387  | 1,444  | 1,498  | 1,551  |
| **18** | 318  | 450  | 637  | 780  | 901  | 1,007  | 1,103  | 1,192  | 1,274  | 1,351  | 1,424  | 1,494  | 1,560  | 1,624  | 1,685  | 1,744  |
| **20** | 354  | 500  | 708  | 867  | 1,001  | 1,119  | 1,226  | 1,324  | 1,415  | 1,501  | 1,583  | 1,660  | 1,734  | 1,804  | 1,873  | 1,938  |
| **22** | 389  | 550  | 779  | 953  | 1,101  | 1,231  | 1,348  | 1,456  | 1,557  | 1,651  | 1,741  | 1,826  | 1,907  | 1,985  | 2,060  | 2,132  |
| **24** | 425  | 601  | 849  | 1,040  | 1,201  | 1,343  | 1,471  | 1,589  | 1,699  | 1,802  | 1,899  | 1,992  | 2,080  | 2,165  | 2,247  | 2,326  |
| **26** | 460  | 651  | 920  | 1,127  | 1,301  | 1,455  | 1,594  | 1,721  | 1,840  | 1,952  | 2,057  | 2,158  | 2,254  | 2,346  | 2,434  | 2,520  |
| **28** | 495  | 701  | 991  | 1,214  | 1,401  | 1,567  | 1,716  | 1,854  | 1,982  | 2,102  | 2,216  | 2,324  | 2,427  | 2,526  | 2,622  | 2,714  |
| **30** | 531  | 751  | 1,062  | 1,300  | 1,501  | 1,679  | 1,839  | 1,986  | 2,123  | 2,252  | 2,374  | 2,490  | 2,600  | 2,707  | 2,809  | 2,907  |
| **32** | 566  | 801  | 1,132  | 1,387  | 1,601  | 1,790  | 1,961  | 2,119  | 2,265  | 2,402  | 2,532  | 2,656  | 2,774  | 2,887  | 2,996  | 3,101  |
| **34** | 602  | 851  | 1,203  | 1,474  | 1,702  | 1,902  | 2,084  | 2,251  | 2,406  | 2,552  | 2,690  | 2,822  | 2,947  | 3,067  | 3,183  | 3,295  |
| **36** | 637  | 901  | 1,274  | 1,560  | 1,802  | 2,014  | 2,207  | 2,383  | 2,548  | 2,702  | 2,849  | 2,988  | 3,121  | 3,248  | 3,371  | 3,489  |
| **38** | 672  | 951  | 1,345  | 1,647  | 1,902  | 2,126  | 2,329  | 2,516  | 2,689  | 2,853  | 3,007  | 3,154  | 3,294  | 3,428  | 3,558  | 3,683  |
| **40** | 708  | 1,001  | 1,415  | 1,734  | 2,002  | 2,238  | 2,452  | 2,648  | 2,831  | 3,003  | 3,165  | 3,320  | 3,467  | 3,609  | 3,745  | 3,876  |
| **42** | 743  | 1,051  | 1,486  | 1,820  | 2,102  | 2,350  | 2,574  | 2,781  | 2,973  | 3,153  | 3,323  | 3,486  | 3,641  | 3,789  | 3,932  | 4,070  |
| **44** | 779  | 1,101  | 1,557  | 1,907  | 2,202  | 2,462  | 2,697  | 2,913  | 3,114  | 3,303  | 3,482  | 3,652  | 3,814  | 3,970  | 4,120  | 4,264  |
| **46** | 814  | 1,151  | 1,628  | 1,994  | 2,302  | 2,574  | 2,819  | 3,045  | 3,256  | 3,453  | 3,640  | 3,818  | 3,987  | 4,150  | 4,307  | 4,458  |
| **48** | 849  | 1,201  | 1,699  | 2,080  | 2,402  | 2,686  | 2,942  | 3,178  | 3,397  | 3,603  | 3,798  | 3,984  | 4,161  | 4,331  | 4,494  | 4,652  |
| **50** | 885  | 1,251  | 1,769  | 2,167  | 2,502  | 2,798  | 3,065  | 3,310  | 3,539  | 3,753  | 3,956  | 4,150  | 4,334  | 4,511  | 4,681  | 4,846  |

**Table 2: Hydrogen Pipeline Thermal Radiation ASDs (feet)**

|  |  |
| --- | --- |
| **Diameter (in)** | **Pipeline Pressure (psi)** |
| **60**  | **120**  | **240**  | **360**  | **480**  | **600**  | **720**  | **840**  | **960**  | **1,080**  | **1,200**  | **1,320**  | **1,440**  | **1,560**  | **1,680**  | **1,800**  |
| **4** | 58  | 83  | 117  | 143  | 165  | 185  | 202  | 219  | 234  | 248  | 261  | 274  | 286  | 298  | 309  | 320  |
| **6** | 88  | 124  | 175  | 215  | 248  | 277  | 304  | 328  | 350  | 372  | 392  | 411  | 429  | 447  | 464  | 480  |
| **8** | 117  | 165  | 234  | 286  | 330  | 369  | 405  | 437  | 467  | 496  | 522  | 548  | 572  | 596  | 618  | 640  |
| **10** | 146  | 207  | 292  | 358  | 413  | 462  | 506  | 546  | 584  | 620  | 653  | 685  | 715  | 745  | 773  | 800  |
| **12** | 175  | 248  | 350  | 429  | 496  | 554  | 607  | 656  | 701  | 743  | 784  | 822  | 858  | 894  | 927  | 960  |
| **14** | 204  | 289  | 409  | 501  | 578  | 647  | 708  | 765  | 818  | 867  | 914  | 959  | 1,002  | 1,042  | 1,082  | 1,120  |
| **16** | 234  | 330  | 467  | 572  | 661  | 739  | 809  | 874  | 935  | 991  | 1,045  | 1,096  | 1,145  | 1,191  | 1,236  | 1,280  |
| **18** | 263  | 372  | 526  | 644  | 743  | 831  | 911  | 984  | 1,051  | 1,115  | 1,176  | 1,233  | 1,288  | 1,340  | 1,391  | 1,440  |
| **20** | 292  | 413  | 584  | 715  | 826  | 924  | 1,012  | 1,093  | 1,168  | 1,239  | 1,306  | 1,370  | 1,431  | 1,489  | 1,545  | 1,600  |
| **22** | 321  | 454  | 643  | 787  | 909  | 1,016  | 1,113  | 1,202  | 1,285  | 1,363  | 1,437  | 1,507  | 1,574  | 1,638  | 1,700  | 1,760  |
| **24** | 350  | 496  | 701  | 858  | 991  | 1,108  | 1,214  | 1,311  | 1,402  | 1,487  | 1,567  | 1,644  | 1,717  | 1,787  | 1,855  | 1,920  |

**Table 3: Ethane Pipeline Thermal Radiation ASDs (feet)**

|  |  |
| --- | --- |
| **Diameter (in)** | **Pipeline Pressure (psi)** |
| **60**  | **120**  | **240**  | **360**  | **480**  | **600**  | **720**  | **840**  | **960**  | **1,080**  | **1,200**  | **1,320**  | **1,440**  | **1,560**  | **1,680**  | **1,800**  |
| **4** | 87  | 123  | 174  | 213  | 246  | 275  | 301  | 325  | 348  | 369  | 389  | 408  | 426  | 443  | 460  | 476  |
| **6** | 130  | 184  | 261  | 319  | 369  | 412  | 451  | 488  | 521  | 553  | 583  | 611  | 639  | 665  | 690  | 714  |
| **8** | 174  | 246  | 348  | 426  | 492  | 550  | 602  | 650  | 695  | 737  | 777  | 815  | 851  | 886  | 920  | 952  |
| **10** | 217  | 307  | 434  | 532  | 614  | 687  | 752  | 813  | 869  | 922  | 971  | 1,019  | 1,064  | 1,108  | 1,149  | 1,190  |
| **12** | 261  | 369  | 521  | 639  | 737  | 824  | 903  | 975  | 1,043  | 1,106  | 1,166  | 1,223  | 1,277  | 1,329  | 1,379  | 1,428  |
| **14** | 304  | 430  | 608  | 745  | 860  | 962  | 1,053  | 1,138  | 1,216  | 1,290  | 1,360  | 1,426  | 1,490  | 1,551  | 1,609  | 1,666  |
| **16** | 348  | 492  | 695  | 851  | 983  | 1,099  | 1,204  | 1,300  | 1,390  | 1,475  | 1,554  | 1,630  | 1,703  | 1,772  | 1,839  | 1,904  |
| **18** | 391  | 553  | 782  | 958  | 1,106  | 1,236  | 1,354  | 1,463  | 1,564  | 1,659  | 1,749  | 1,834  | 1,916  | 1,994  | 2,069  | 2,142  |
| **20** | 434  | 614  | 869  | 1,064  | 1,229  | 1,374  | 1,505  | 1,626  | 1,738  | 1,843  | 1,943  | 2,038  | 2,128  | 2,215  | 2,299  | 2,380  |
| **22** | 478  | 676  | 956  | 1,171  | 1,352  | 1,511  | 1,655  | 1,788  | 1,912  | 2,028  | 2,137  | 2,242  | 2,341  | 2,437  | 2,529  | 2,618  |
| **24** | 521  | 737  | 1,043  | 1,277  | 1,475  | 1,649  | 1,806  | 1,951  | 2,085  | 2,212  | 2,332  | 2,445  | 2,554  | 2,658  | 2,759  | 2,856  |

**3. High-Pressure Pipelines Transferring Flammable and Combustible Gasses (Blast Overpressure)**

**Table 1: Natural Gas Blast Overpressure ASDs (feet)**

|  |  |
| --- | --- |
| **Diameter (in)** | **Pipeline Pressure (psi)** |
| **60**  | **240**  | **600**  | **720**  | **840**  | **960**  | **1,200**  | **1,560**  | **1,800**  |
| **4** | 42  | 87  | 141  | 156  | 168  | 180  | 204  | 234  | 252  |
| **6** | 96  | 147  | 237  | 261  | 282  | 303  | 342  | 390  | 423  |
| **8** | 144  | 318  | 525  | 555  | 603  | 645  | 729  | 834  | 906  |
| **10** | 186  | 429  | 705  | 774  | 840  | 894  | 1,005  | 1,131  | 1,209  |
| **12** | 237  | 546  | 888  | 981  | 1,056  | 1,119  | 1,239  | 1,398  | 1,488  |
| **14** | 288  | 666  | 1,080  | 1,170  | 1,257  | 1,338  | 1,479  | 1,662  | 1,767  |
| **16** | 345  | 798  | 1,254  | 1,365  | 1,464  | 1,551  | 1,716  | 1,923  | 2,046  |
| **18** | 390  | 930  | 1,434  | 1,554  | 1,668  | 1,770  | 1,950  | 2,184  | 2,328  |
| **20** | 465  | 1,056  | 1,611  | 1,749  | 1,866  | 1,983  | 2,187  | 2,454  | 2,610  |
| **22** | 525  | 1,173  | 1,788  | 1,938  | 2,073  | 2,196  | 2,424  | 2,721  | 2,898  |
| **24** | 585  | 1,293  | 1,965  | 2,127  | 2,274  | 2,415  | 2,664  | 2,991  | 3,192  |
| **26** | 660  | 1,416  | 2,139  | 2,319  | 2,481  | 2,631  | 2,904  | 3,270  | 3,492  |
| **28** | 720  | 1,530  | 2,316  | 2,508  | 2,685  | 2,853  | 3,153  | 3,558  | 3,804  |
| **30** | 780  | 1,653  | 2,493  | 2,703  | 2,895  | 3,078  | 3,408  | 3,852  | 4,125  |
| **32** | 840  | 1,770  | 2,673  | 2,901  | 3,111  | 3,306  | 3,669  | 4,161  | 4,461  |
| **34** | 915  | 1,887  | 2,856  | 3,102  | 3,330  | 3,546  | 3,939  | 4,479  | 4,815  |
| **36** | 975  | 2,007  | 3,042  | 3,309  | 3,555  | 3,789  | 4,221  | 4,815  | 5,184  |
| **38** | 1,050  | 2,127  | 3,234  | 3,519  | 3,789  | 4,041  | 4,512  | 5,163  | 5,808  |
| **40** | 1,110  | 2,244  | 3,429  | 3,738  | 4,029  | 4,302  | 4,818  | 5,808  | 6,336  |
| **42** | 1,170  | 2,370  | 3,630  | 3,963  | 4,278  | 4,575  | 5,133  | 6,336  | 7,392  |
| **44** | 1,230  | 2,493  | 3,837  | 4,194  | 4,533  | 4,854  | 5,280  | 7,392  | 8,448  |
| **46** | 1,290  | 2,616  | 4,047  | 4,434  | 4,800  | 5,148  | 6,336  | 7,920  | 9,504  |
| **48** | 1,350  | 2,742  | 4,266  | 4,683  | 5,076  | 5,280  | 6,864  | 8,976  | 10,560  |
| **50** | 1,470  | 2,871  | 4,491  | 4,938  | 5,280  | 6,336  | 7,920  | 10,032  | 11,616  |

**Table 2: Hydrogen Blast Overpressure ASDs (feet)**

|  |  |
| --- | --- |
| **Diameter (in)** | **Pipeline Pressure (psi)** |
| **350**  | **800**  | **1,100**  | **1,400**  | **1,700**  | **1,800**  |
| **4** | 300  | 465  | 549  | 621  | 687  | 708  |
| **6** | 510  | 792  | 924  | 1,038  | 1,137  | 1,167  |
| **8** | 747  | 1,119  | 1,296  | 1,458  | 1,593  | 1,635  |
| **10** | 981  | 1,452  | 1,680  | 1,881  | 2,055  | 2,109  |
| **12** | 1,212  | 1,788  | 2,070  | 2,316  | 2,535  | 2,604  |
| **14** | 1,449  | 2,130  | 2,475  | 2,778  | 3,048  | 3,135  |
| **16** | 1,686  | 2,493  | 2,907  | 3,270  | 3,603  | 3,711  |
| **18** | 1,935  | 2,874  | 3,366  | 3,804  | 4,209  | 4,338  |
| **20** | 2,187  | 3,279  | 3,858  | 4,380  | 4,866  | 5,022  |
| **22** | 2,454  | 3,711  | 4,389  | 5,004  | 5,808  | 6,336  |
| **24** | 2,730  | 4,167  | 4,956  | 6,336  | 7,392  | 8,448  |
| **26** | 3,018  | 4,656  | 5,808  | 7,920  | 8,976  | 9,504  |

**Table 3: Ethane Blast Overpressure ASDs (feet)**

|  |  |
| --- | --- |
| **Diameter (in)** | **Pipeline Pressure (psi)** |
| **60** | **120** | **240** | **360** | **480** | **600** |
| **4** | 39 | 54 | 90 | 102 | 126 | 135 |
| **6** | 87 | 108 | 141 | 177 | 210 | 240 |
| **8** | 117 | 165 | 243 | 279 | 354 | 393 |
| **10** | 153 | 222 | 324 | 399 | 444 | 474 |
| **12** | 192 | 279 | 402 | 498 | 507 | 534 |
| **14** | 228 | 336 | 462 | 564 | 558 | 621 |
| **16** | 267 | 393 | 513 | 594 | 681 | 747 |
| **18** | 309 | 447 | 594 | 684 | 783 | 867 |
| **20** | 366 | 486 | 666 | 789 | 891 | 1,002 |
| **22** | 396 | 540 | 759 | 885 | 1,017 | 1,167 |
| **24** | 432 | 600 | 858 | 990 | 1,164 | 1,305 |
| \*Ethane is a liquid above 600 psi |  |  |  |  |  |