



## SUNOCO PIPELINE L.P.

### BLASTING REQUIREMENTS – BLASTING BY OUTSIDE PARTIES

1. Any outside party contemplating blasting operations within 300 feet of the pipeline right-of-way shall submit a plan to Sunoco Pipeline L.P. for approval.
  - 1.1.1. This plan must include size of holes, depth, spacing, burden, soil types and amounts, type of delays, delay sequence, maximum amount and type of explosives on any one delay period, depth of blast area, and depth of overburden, if any.
  - 1.1.2. **The peak particle velocity of any one component of the three-component seismograph reading must not exceed the U.S. Bureau of Mines RI 8507 criteria limits as recorded on a seismograph placed over the pipeline.**
2. If the outside party anticipates using explosives within 200 feet of our pipelines, test blasts, monitored by a seismograph, must be conducted.
  - 2.1.1. A maximum of one pound per delay charge shall be used during the initial test blast.
  - 2.1.2. Subsequent test blasts may be made if the seismograph readings indicate that further blasting can be safely conducted routine blasting may continue after test blasts, with the allowable charge per delay based on the seismograph vibration recordings of the blasts. All blasting shall be continuously monitored by a seismograph to ensure the recorded peak particle velocity components do not exceed the U.S. Bureau of Mines RI 8507 criteria limits as noted in paragraph 1.1.2.
  - 2.1.3. Seismograph readings over the pipeline are to be recorded and submitted (tapes, reproducible files or print-outs) to Sunoco Pipeline L.P.'s representative each day after blasting.
  - 2.1.4. The blasting operations must be conducted using a drilling pattern and blast initiation procedure that will provide the greatest relief possible in a direction away from the pipeline, to keep the resulting vibration and actual ground movement to the lowest possible level.
  - 2.1.5. In the event that the peak particle velocity of **any one component** exceeds the U.S. Bureau of Mines RI 8507 criteria limits, Sunoco Pipeline L.P.'s Engineering Department must be contacted in order to review results. No additional blasting may take place unless authorization is given by Sunoco Pipeline L.P.
  - 2.1.6. No more than one charge shall be fired during any delay period.
3. No blasting shall be conducted closer than 50 feet to our pipelines unless special precautions are taken, such as hiring a consulting firm that specializes in underground blasting to conduct the seismograph survey, provide calculations showing anticipated impact loads on the pipelines, conduct the seismograph survey, and certify the results.
4. Firms, which conduct the seismographic surveys, shall be approved by Sunoco Pipeline L.P. prior to the commencement of any blasting operations.
5. **A Sunoco Pipeline L.P. inspector must be present when blasting takes place within 300 feet of SPLP's pipeline Right-of-Ways.**
6. If seismographic readings in excess of the limits stated in paragraphs 2.1.2 and 2.1.3 of this section are recorded, Sunoco Pipeline L.P. may elect to expose the pipeline to inspect for damage. The expense of such exposure, and any subsequent repair necessitated by the blasting, shall be borne by the party using the explosives.