


|                   |  |  |                 |          |
|-------------------|--|--|-----------------|----------|
| <b>PROJECT :</b>  |  |  | <b>DATE :</b>   |          |
| <b>PROJ. NO.:</b> |  |  | <b>BY :</b>     | S.Rahimi |
| <b>CLIENT :</b>   |  |  | <b>REV :</b>    | 0        |
| <b>UNIT :</b>     |  |  | <b>DOC NO.:</b> |          |


### Two Phase Flow Regime Determinator

| Input Data     |                   | Gas   | Water  | Oil    |
|----------------|-------------------|-------|--------|--------|
| Mass Flow Rate | kg/hr             | 3500  | 14000  | 43400  |
| Density        | kg/m <sup>3</sup> | 21.00 | 986.00 | 874.00 |
| Pipe I.D       | m                 | 0.300 |        |        |

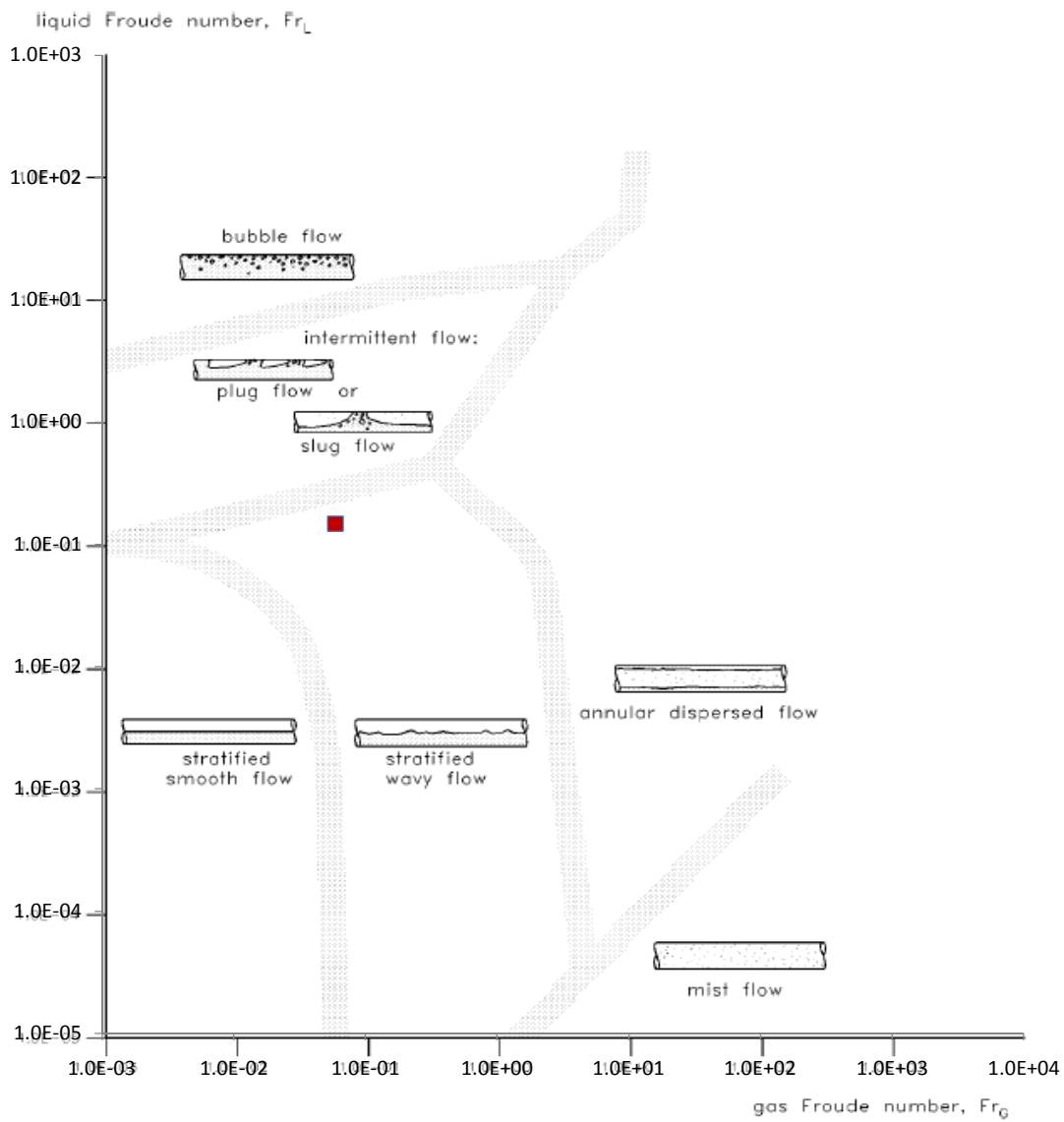
| Flow Regime                   |                    |                |
|-------------------------------|--------------------|----------------|
| Oil Volumetric Flow           | m <sup>3</sup> /hr | 49.66          |
| Water Volumetric Flow         | m <sup>3</sup> /hr | 14.20          |
| Gas Volumetric Flow           | m <sup>3</sup> /hr | 166.67         |
| Gas Superficial Velocity      | m/s                | 0.66           |
| Liquid Superficial Velocity   | m/s                | 0.25           |
| Water Weight Fraction         | -                  | 0.24           |
| Oil Weight Fraction           | -                  | 0.76           |
| Liquid Mixture Density        | kg/m <sup>3</sup>  | 898.90         |
| <b>Gas Froude No (FrG)</b>    | -                  | <b>5.9E-02</b> |
| <b>Liquid Froude No (FrL)</b> | -                  | <b>1.5E-01</b> |


| Mixed Phase Specification |                         |               |
|---------------------------|-------------------------|---------------|
| Water weight fraction     | -                       | 0.23          |
| Oil weight fraction       | -                       | 0.71          |
| Gas weight fraction       | -                       | 0.06          |
| <b>Mixture Density</b>    | <b>kg/m<sup>3</sup></b> | <b>264.18</b> |
| <b>Mixture Velocity</b>   | <b>m/sec</b>            | <b>0.91</b>   |

#### Notes

|            |  |   |          |          |
|------------|--|---|----------|----------|
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### Two Phase Flow Regime in Horizontal Pipe



|            |  |  |          |          |
|------------|--|--|----------|----------|
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### Two Phase Flow Regime in Vertical Pipe

