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APPENDIX

The velocity and static pressure contours for the backward flow direction with one scallop have been simulated. The results are presented below in figure A1 and A2 respectively.

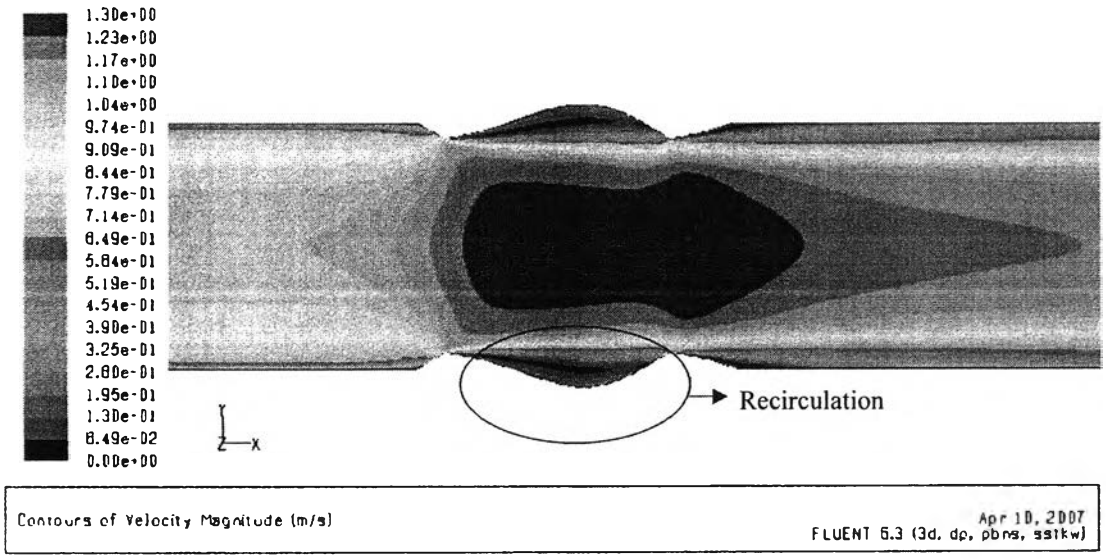

Figure A1 Velocity contour for backward flow direction

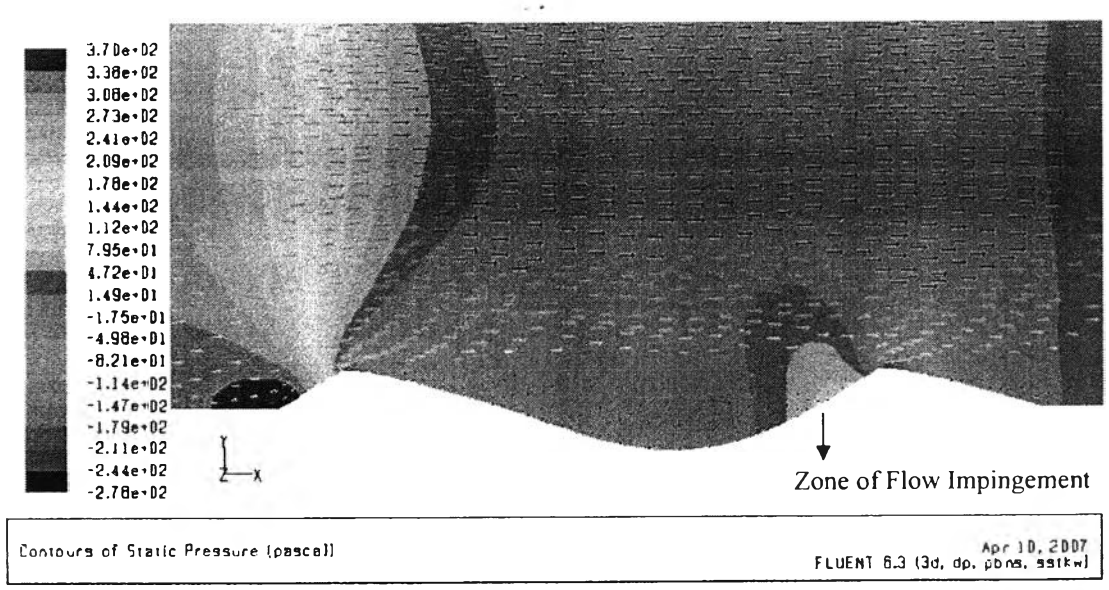

Figure A2 Pressure contour for backward flow direction

Like forward flow direction, the recirculation zone is also observed in backward flow direction. The impingement zone (reattachment zone) which has a higher static pressure than the surround region is almost at the crest of scallop.

The velocity contours for forward and backward flow direction with five scallops are presented in Figure A3 and A4. The pressure contours for forward and backward flow direction with five scallops are presented in Figure A5 and A6.

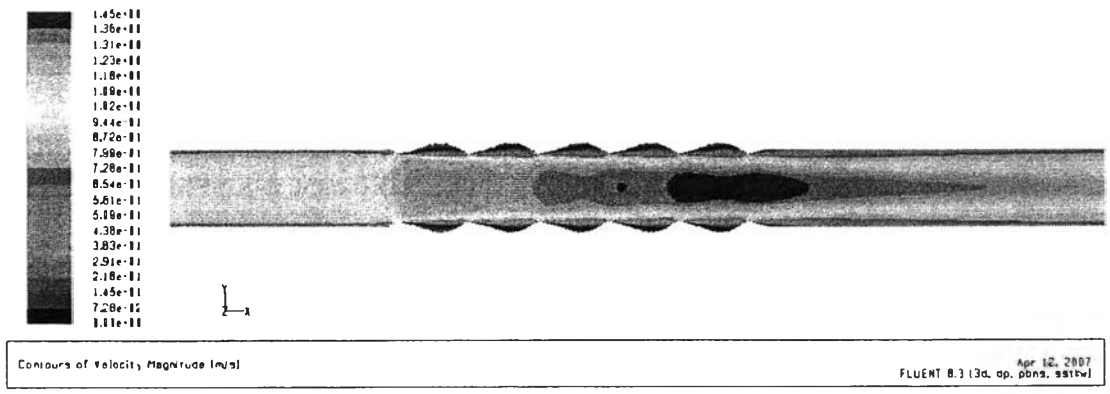

Figure A3 Velocity contour of backward flow direction with five scallop

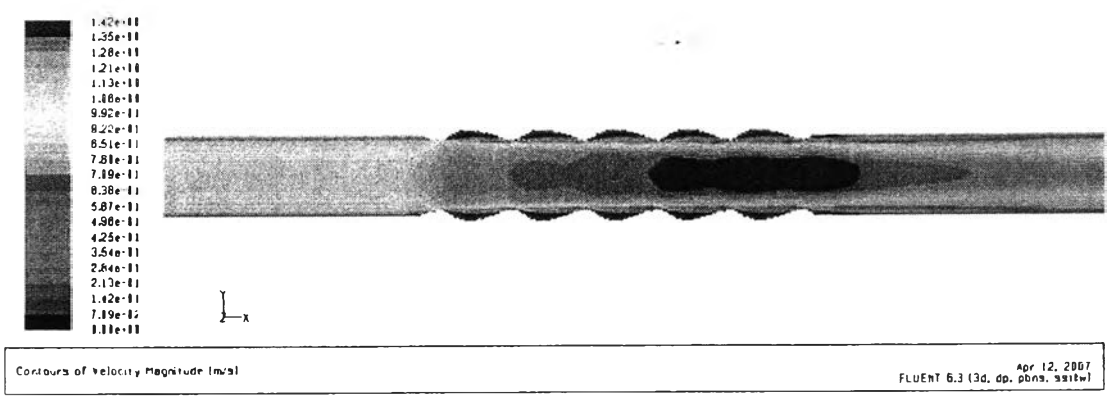

Figure A4 Velocity contour of forward flow direction with five scallop

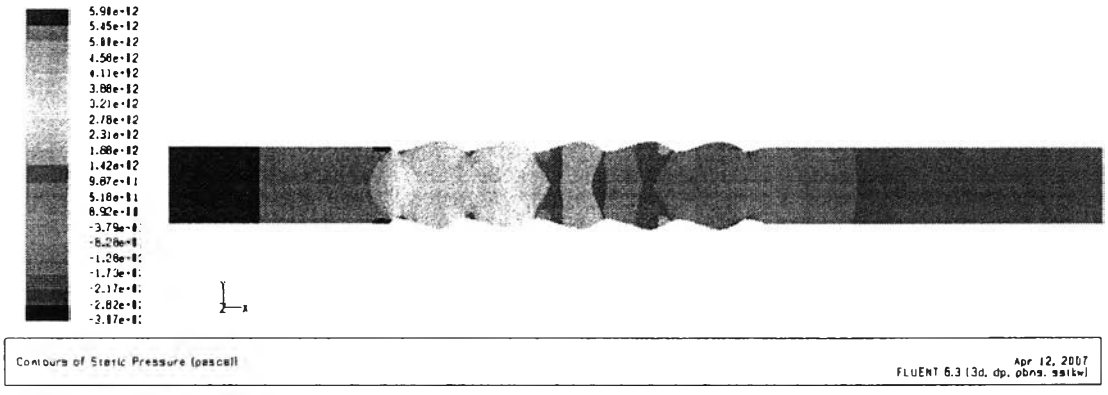

Figure A5 Velocity contour of backward flow direction with five scallop

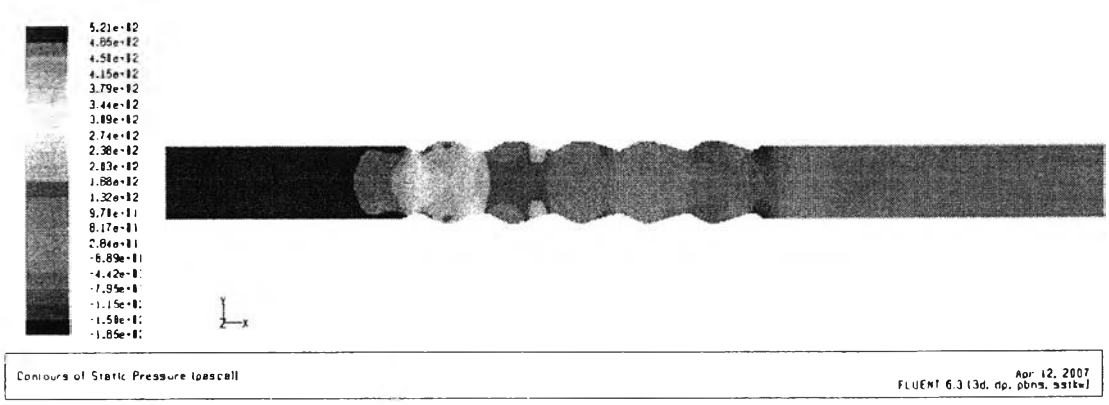

Figure A6 Velocity contour of forward flow direction with five scallop

The same pattern of flow hydrodynamics is observed in every scallop. The flow hydrodynamics of forward flow direction are slightly different from the backward flow direction and backward flow diraction has more pressure drop than forward flow direction.

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1. Chaiwat Lertsurasakda, Thirasak Rirksomboon, Derek H. Lister, Frank R. Steward (2007, April 12) Effect of Surface Scalloping to the Flow Hydrodynamics and Pressure Drop. Paper presented at University of New Brunswick.