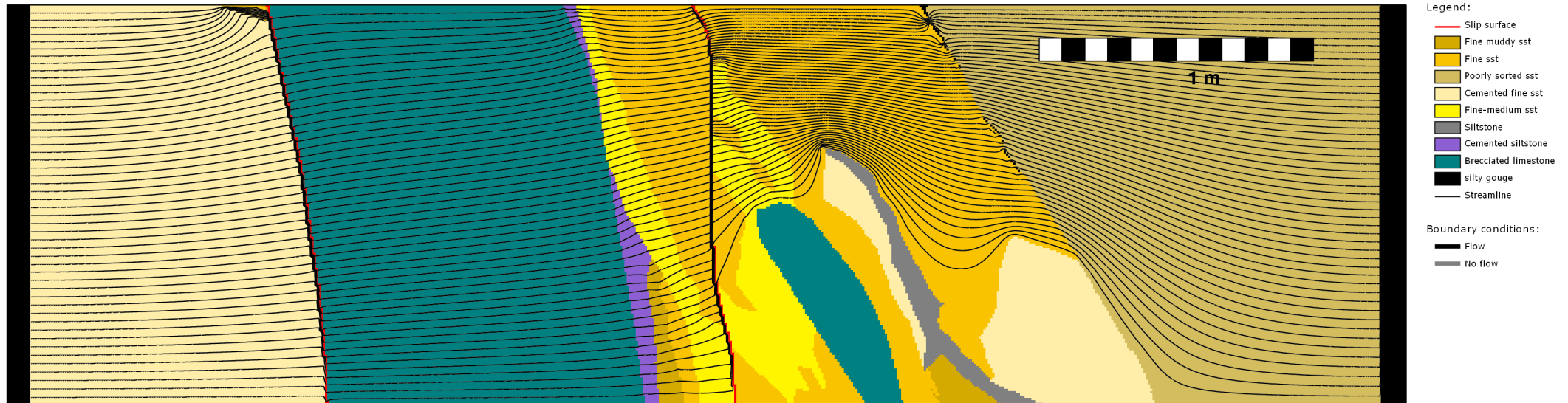
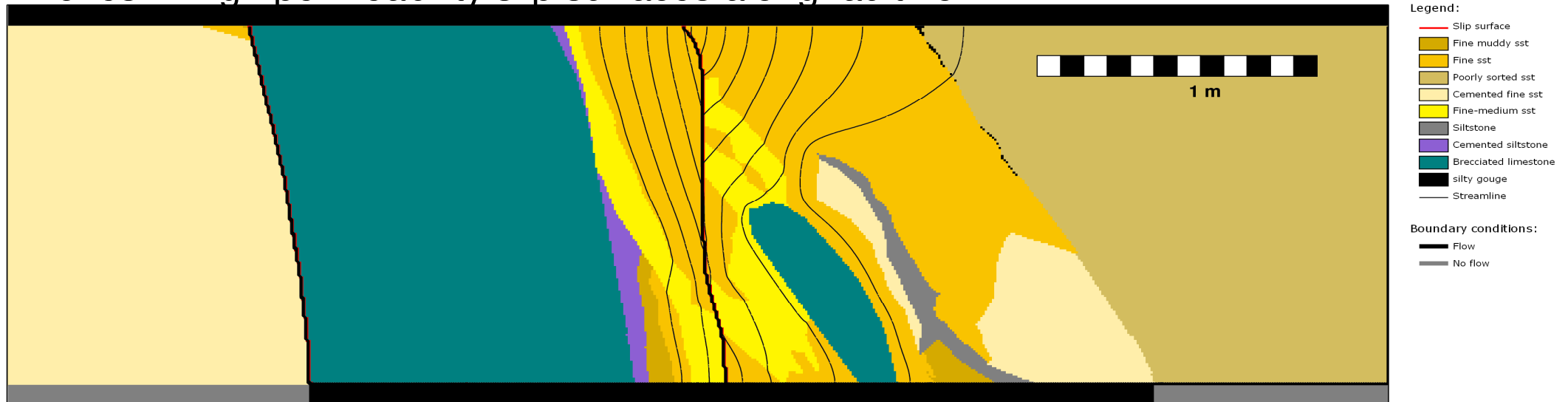


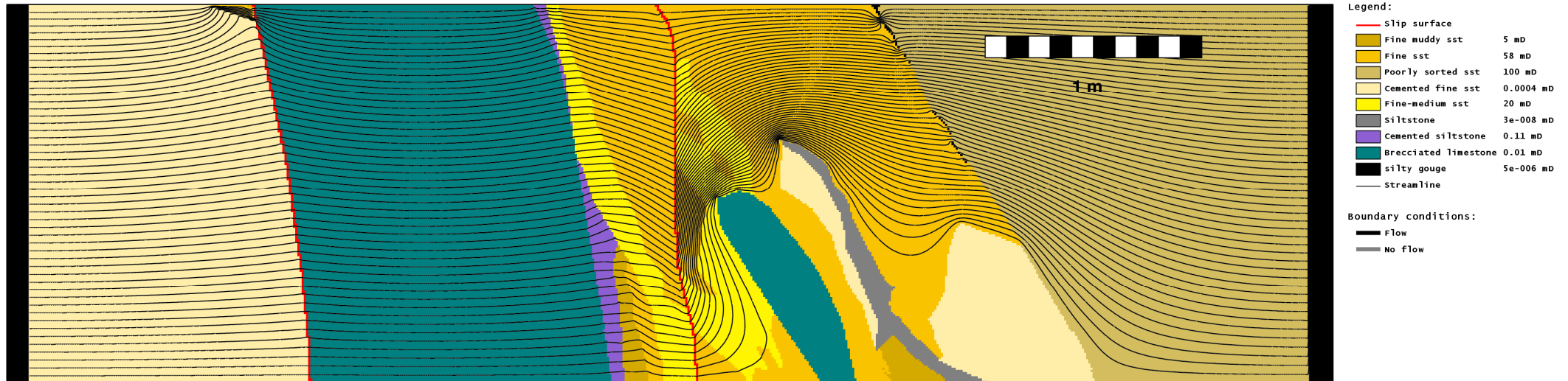
Arches 1 High permeability slip surfaces across fault flow



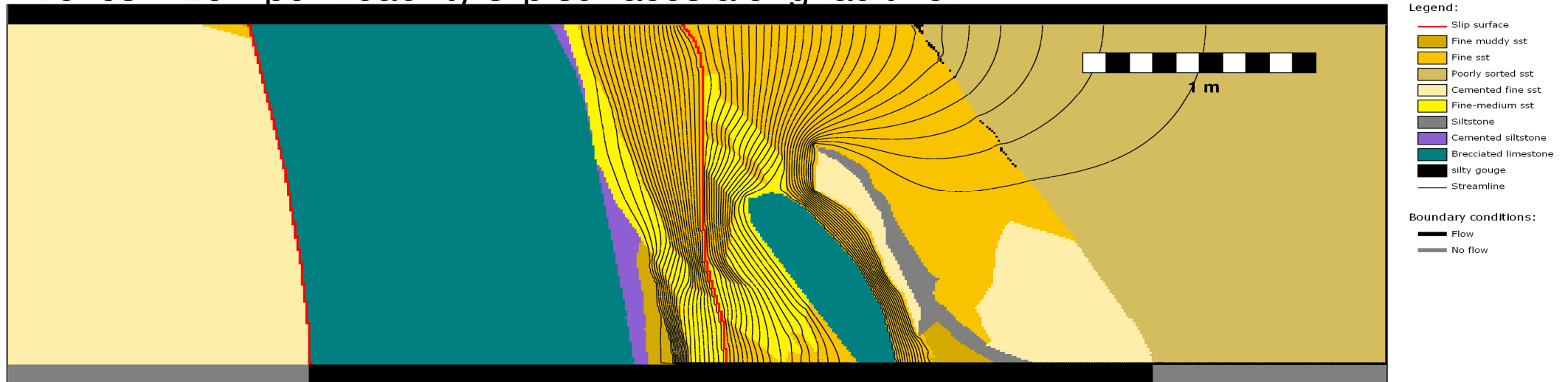
Arches 2 High permeability slip surfaces along fault flow



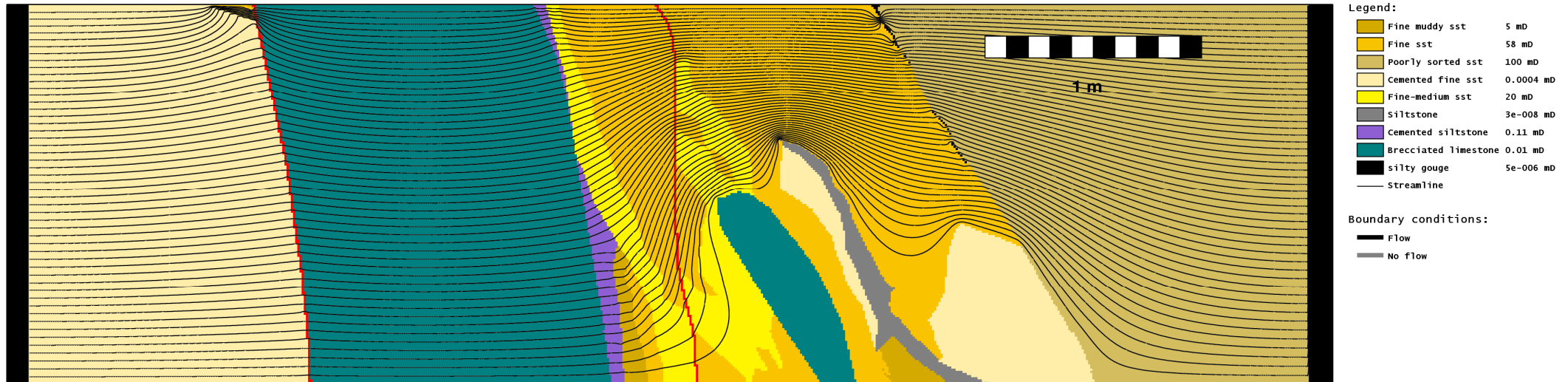
Arches 3 Low permeability slip surfaces across fault flow



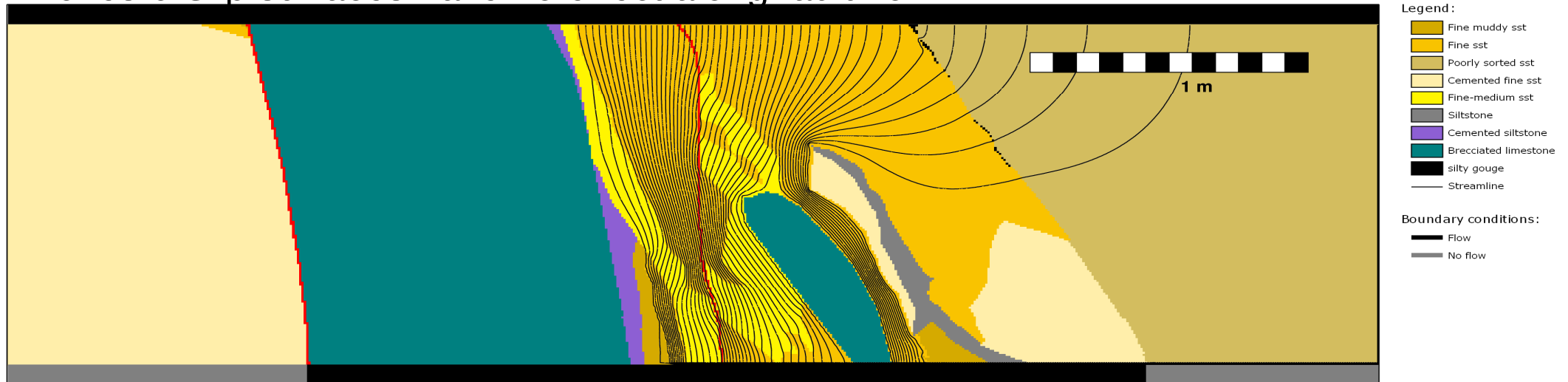
Arches 4 Low permeability slip surfaces along fault flow



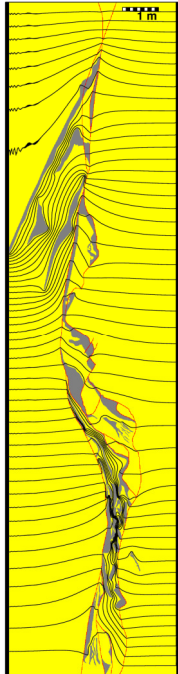
Arches 5 Slip surfaces have no effect across fault flow



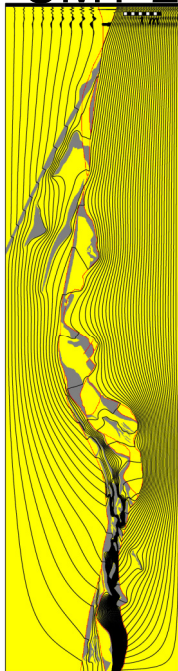
Arches 6 Slip surfaces have no effect along fault flow



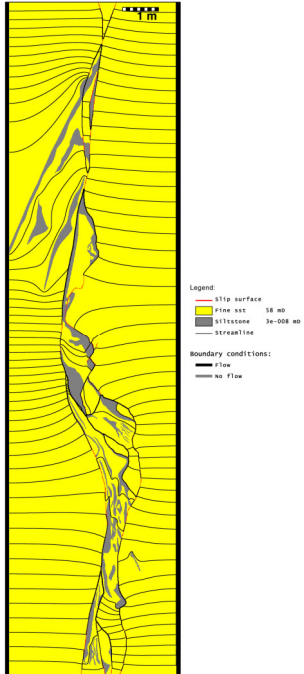
CMT 1 Low permeability slip surfaces across fault flow



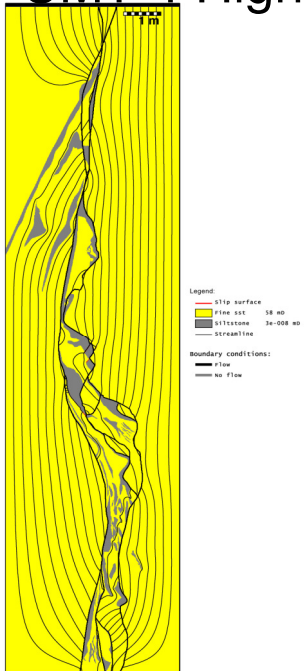
CMT 2 Low permeability slip surfaces along fault flow



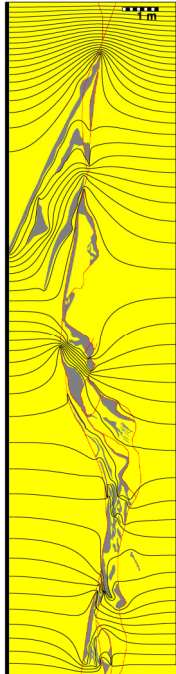
CMT 3 High permeability slip surfaces across fault flow



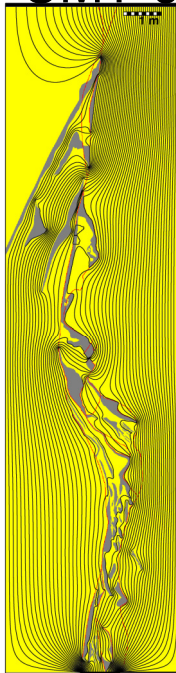
CMT 4 High permeability slip surfaces along fault flow



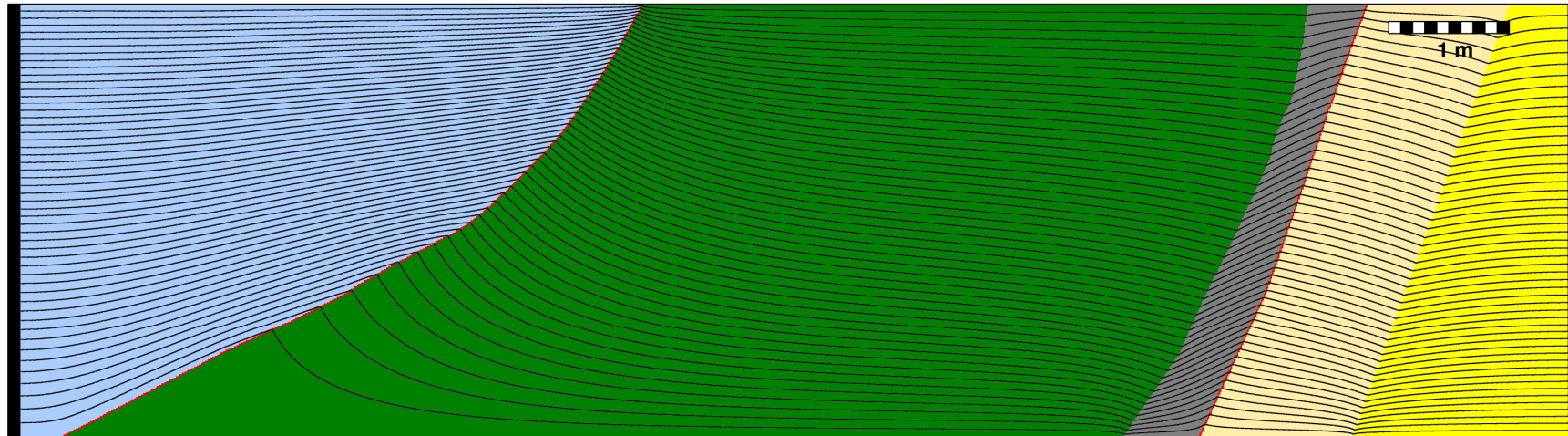
CMT 5 Slip surfaces have no effect across fault flow



CMT 6 Slip surfaces have no effect along fault flow



Corral Canyon 1 No slip surfaces across fault flow



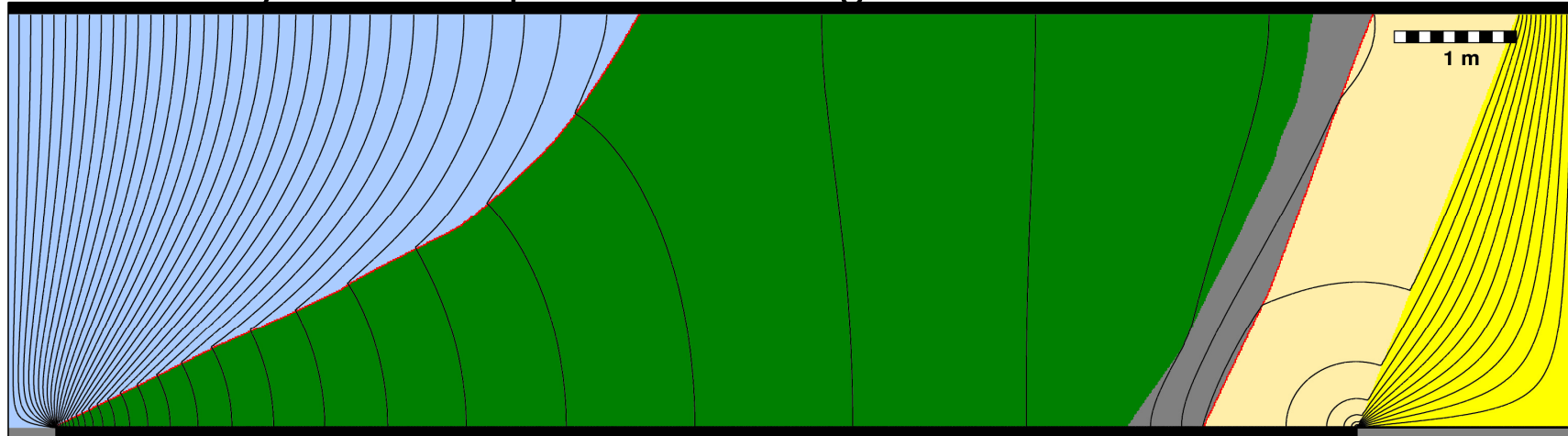
Legend:

Shale	5e-009 mD
Fine sst	50 mD
Siltstone	3e-008 mD
Cemented sst	5e-009 mD
Calcareous sst	49 mD
Streamline	

Boundary conditions:

Flow
No flow

Corral Canyon 2 No slip surfaces along fault flow



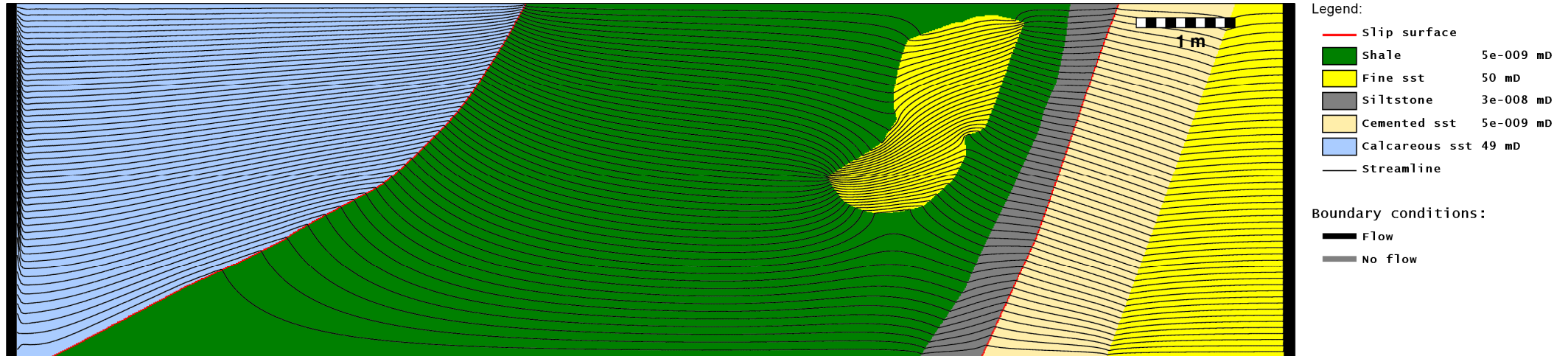
Legend:

Shale	5e-009 mD
Fine sst	50 mD
Siltstone	3e-008 mD
Cemented sst	5e-009 mD
Calcareous sst	49 mD
Streamline	

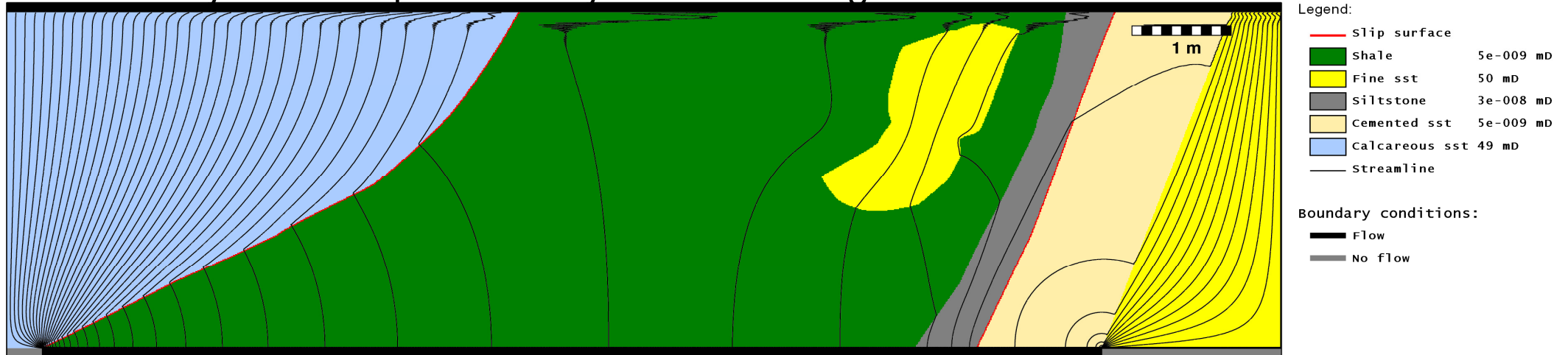
Boundary conditions:

Flow
No flow

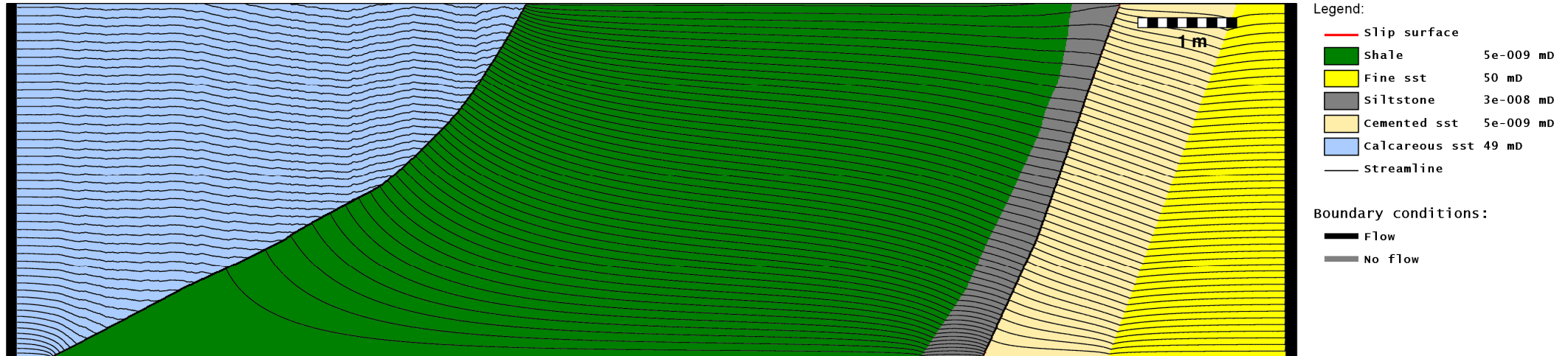
Corral Canyon 3 Low permeability surfaces across fault flow



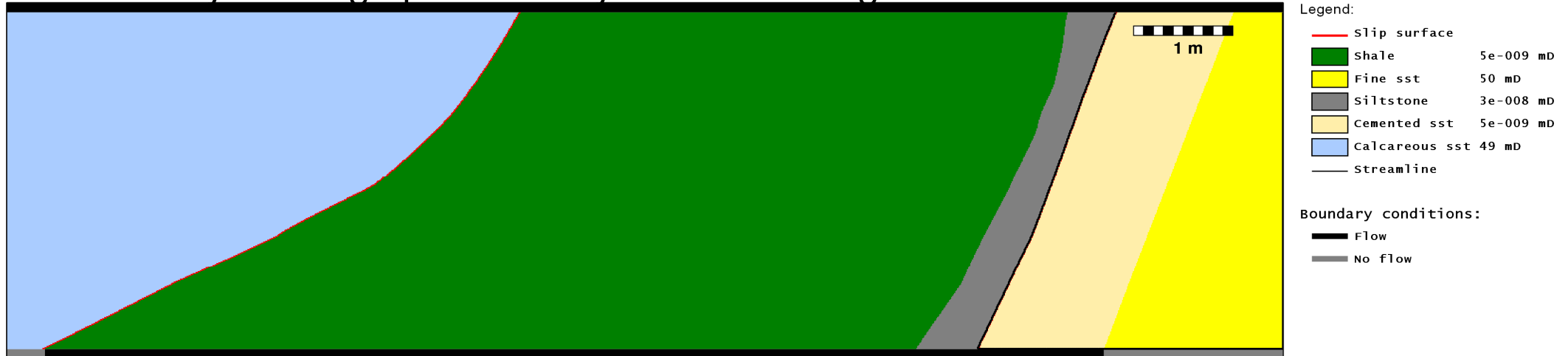
Corral Canyon 4 Low permeability surfaces along fault flow



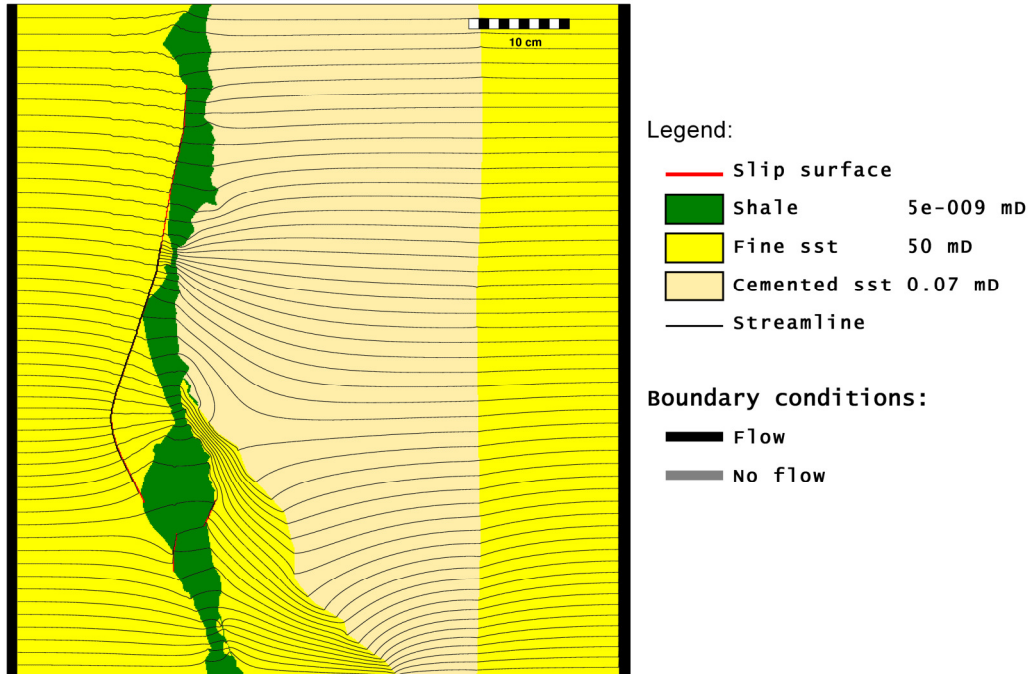
Corral Canyon 5 High permeability surfaces across fault flow



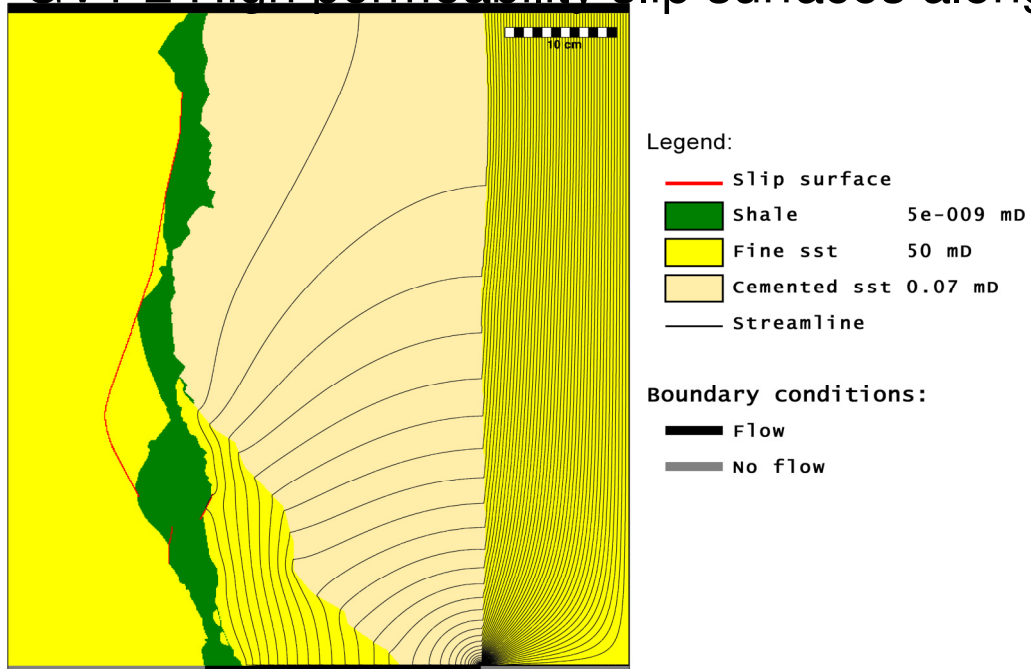
Corral Canyon 6 High permeability surfaces along fault flow



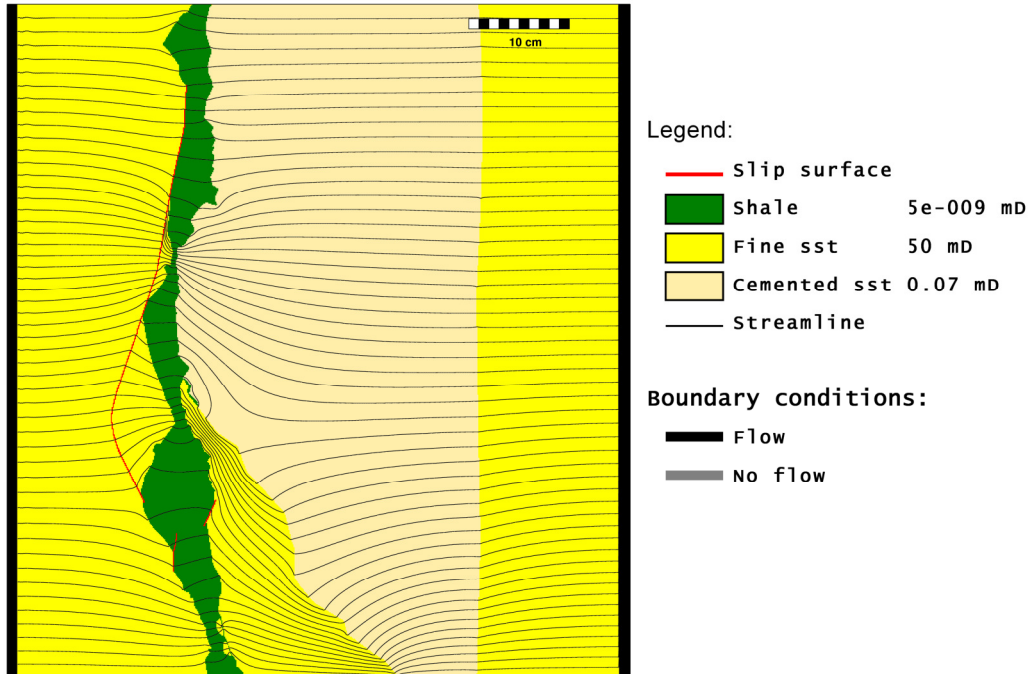
GV1 1 High permeability slip surfaces across fault flow



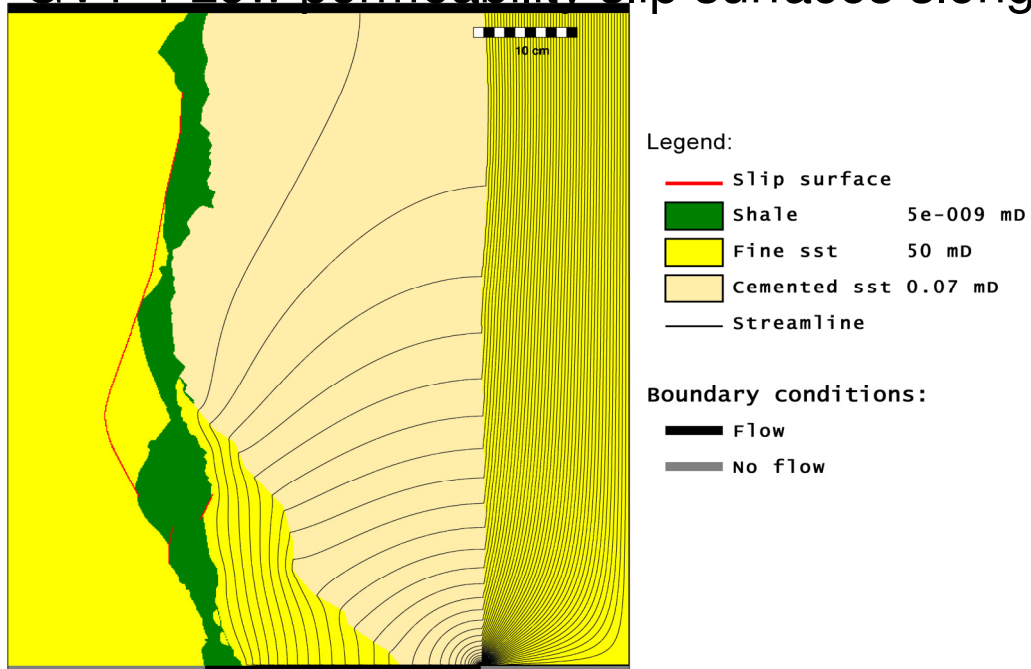
GV1 2 High permeability slip surfaces along fault flow



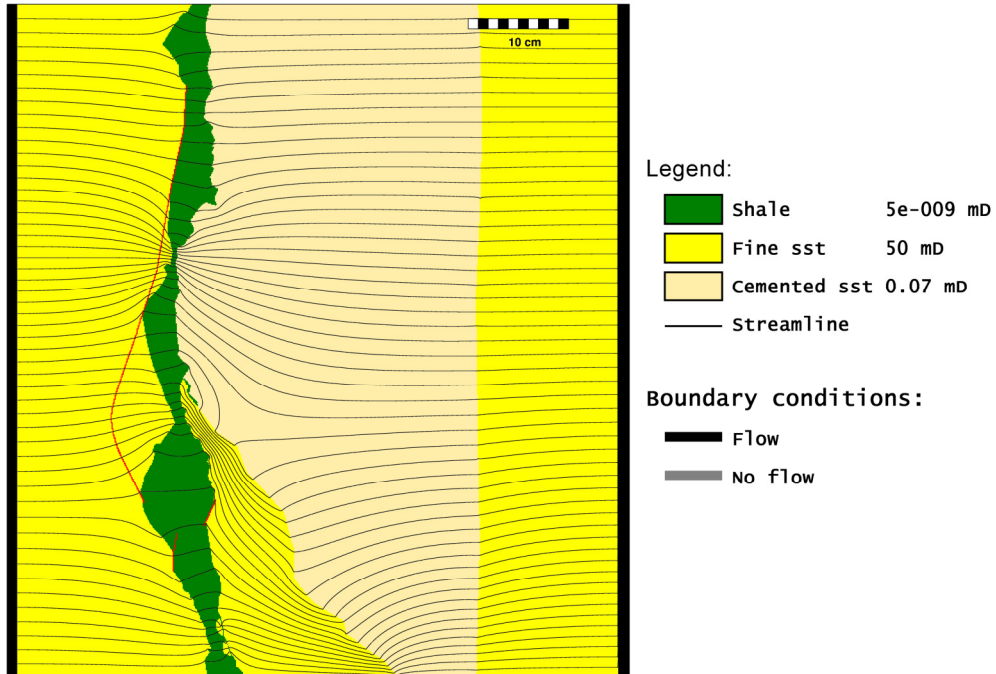
GV1 3 Low permeability slip surfaces across fault flow



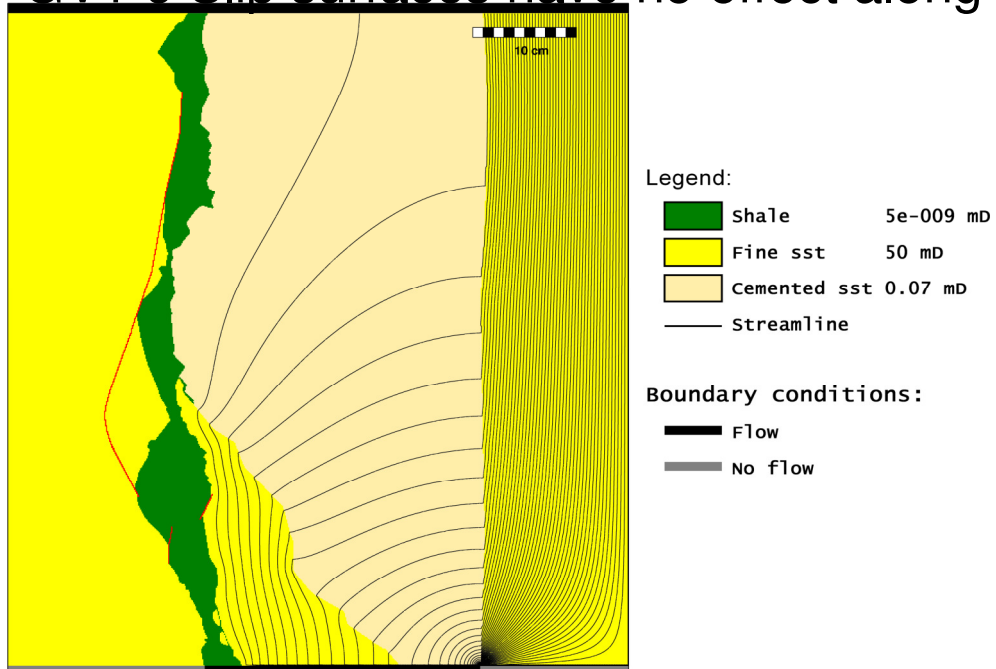
GV1 4 Low permeability slip surfaces along fault flow



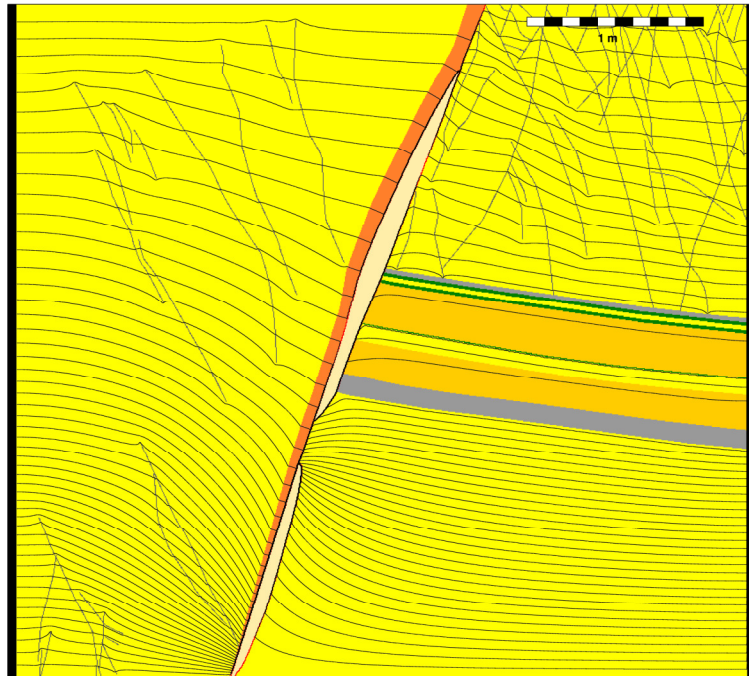
GV1 5 Slip surfaces have no effect across fault flow



GV1 6 Slip surfaces have no effect along fault flow



GV2 1 High permeability slip surfaces Across fault flow



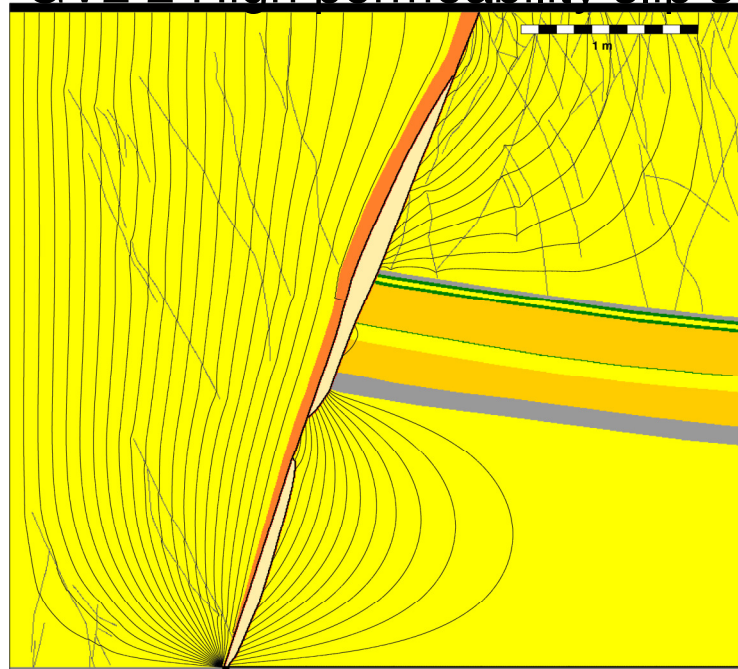
Legend:

Deformation band	5 mD
Slip surface	
Shale	5e-009 mD
Deformation band cluster	0.07 mD
Siltstone	3e-008 mD
Fine sst	50 mD
Medium sst	200 mD
Cemented sst	2.5e-009 mD
Streamline	

Boundary conditions:

Flow
No flow

GV2 2 High permeability slip surfaces along fault flow



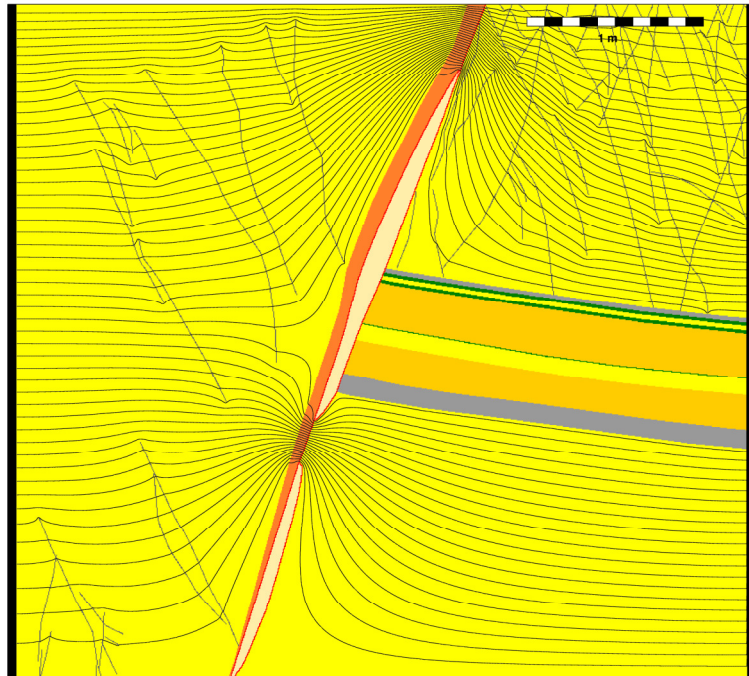
Legend:

Deformation band	5 mD
Slip surface	
Shale	5e-009 mD
Deformation band cluster	0.07 mD
Siltstone	3e-008 mD
Fine sst	50 mD
Medium sst	200 mD
Cemented sst	2.5e-009 mD
Streamline	

Boundary conditions:

Flow
No flow

GV2 3 Low permeability slip surfaces Across fault flow



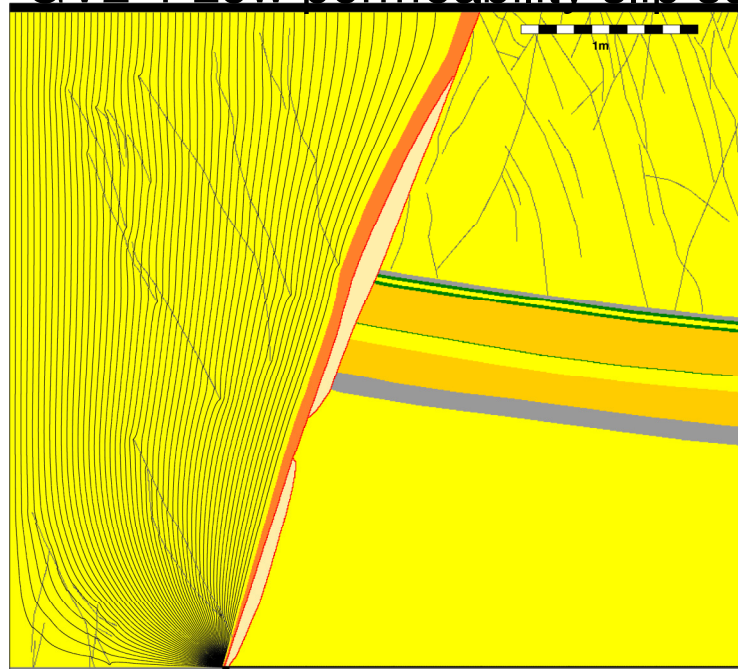
Legend:

— Deformation band	5 mD
— Slip surface	
■ Shale	5e-009 mD
■ Deformation band cluster	0.07 mD
■ Siltstone	3e-008 mD
■ Fine sst	50 mD
■ Medium sst	200 mD
■ Cemented sst	2.5e-009 mD
— Streamline	

Boundary conditions:

— Flow
— No flow

GV2 4 Low permeability slip surfaces along fault flow



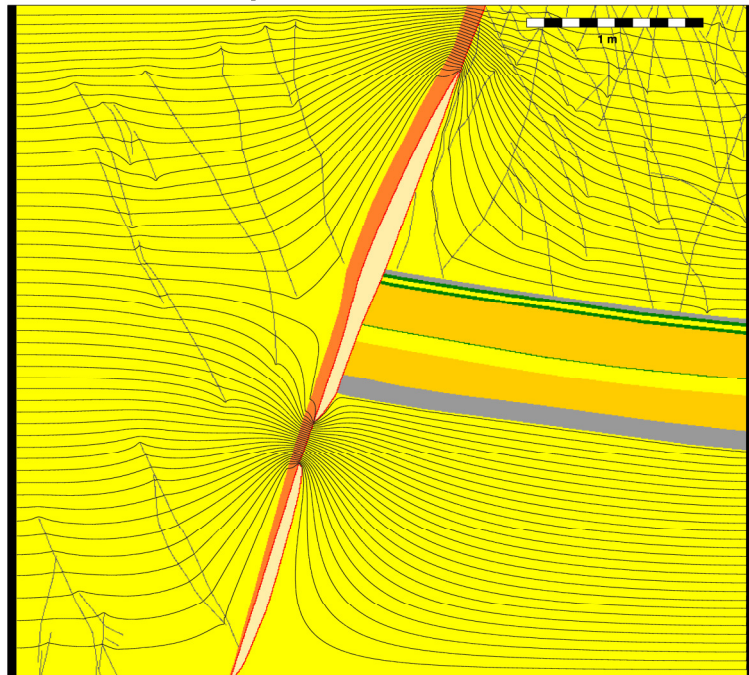
Legend:

— Deformation band	5 mD
— Slip surface	
■ Shale	5e-009 mD
■ Deformation band cluster	0.07 mD
■ Siltstone	3e-008 mD
■ Fine sst	50 mD
■ Medium sst	200 mD
■ Cemented sst	2.5e-009 mD
— Streamline	

Boundary conditions:

— Flow
— No flow

GV2 5 Slip surfaces have no effect across fault flow



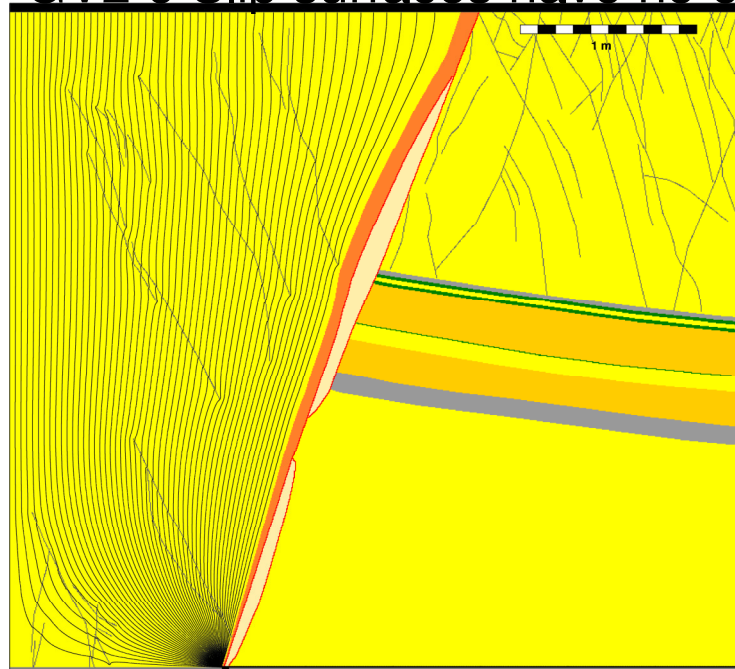
Legend:

Deformation band	5 mD
Shale	5e-009 mD
Deformation band cluster	0.07 mD
Siltstone	3e-008 mD
Fine sst	50 mD
Medium sst	200 mD
Cemented sst	2.5e-009 mD
Streamline	

Boundary conditions:

Flow
No flow

GV2 6 Slip surfaces have no effect along fault flow



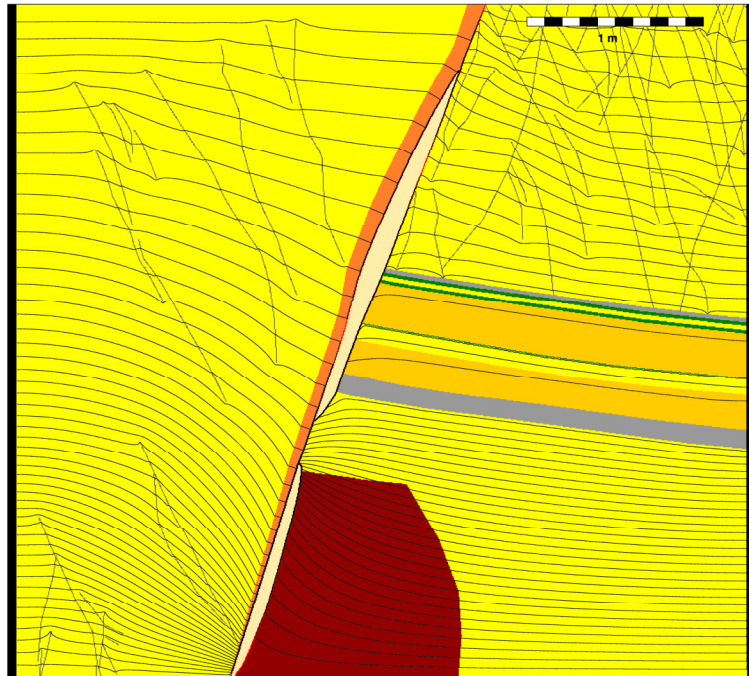
Legend:

Deformation band	5 mD
Shale	5e-009 mD
Deformation band cluster	0.07 mD
Siltstone	3e-008 mD
Fine sst	50 mD
Medium sst	200 mD
Cemented sst	2.5e-009 mD
Streamline	

Boundary conditions:

Flow
No flow

GV2 1 High permeability slip surfaces Across fault flow



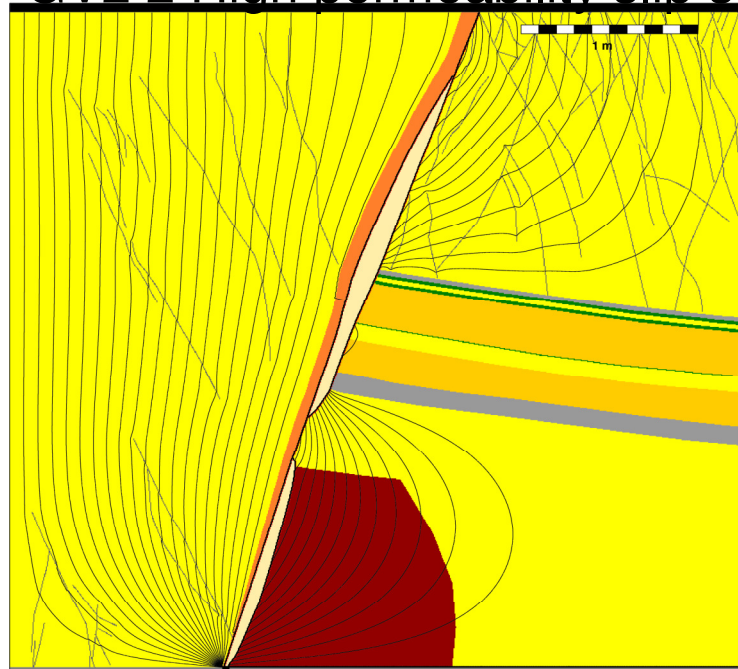
Legend:

Deformation band	5 mD
Slip surface	
Shale	5e-009 mD
Deformation band cluster	0.07 mD
Siltstone	3e-008 mD
Fine sst	50 mD
Medium sst	200 mD
Cemented sst	2.5e-009 mD
Mapped Geochemical Alteration	
Streamline	

Boundary conditions:

Flow	
No flow	

GV2 2 High permeability slip surfaces along fault flow



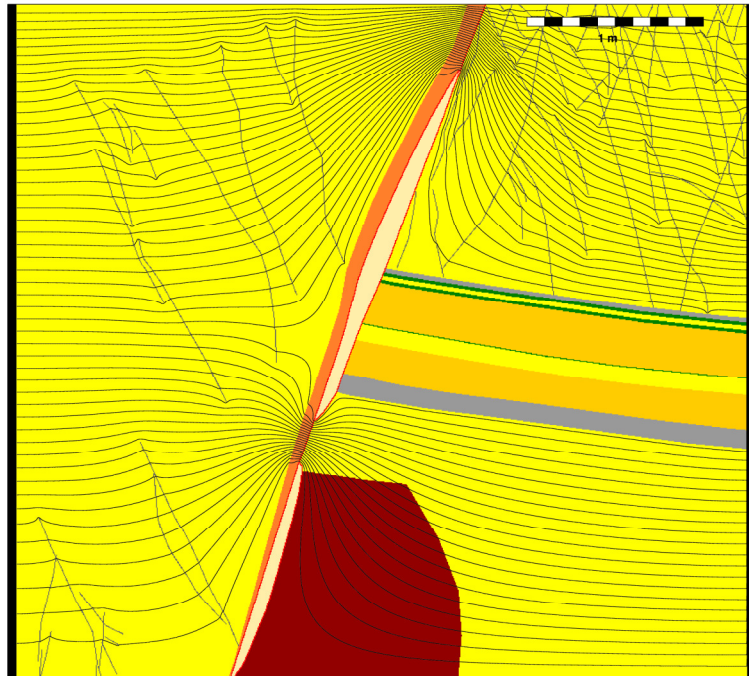
Legend:

Deformation band	5 mD
Slip surface	
Shale	5e-009 mD
Deformation band cluster	0.07 mD
Siltstone	3e-008 mD
Fine sst	50 mD
Medium sst	200 mD
Cemented sst	2.5e-009 mD
Mapped Geochemical Alteration	
Streamline	

Boundary conditions:

Flow	
No flow	

GV2 3 Low permeability slip surfaces Across fault flow



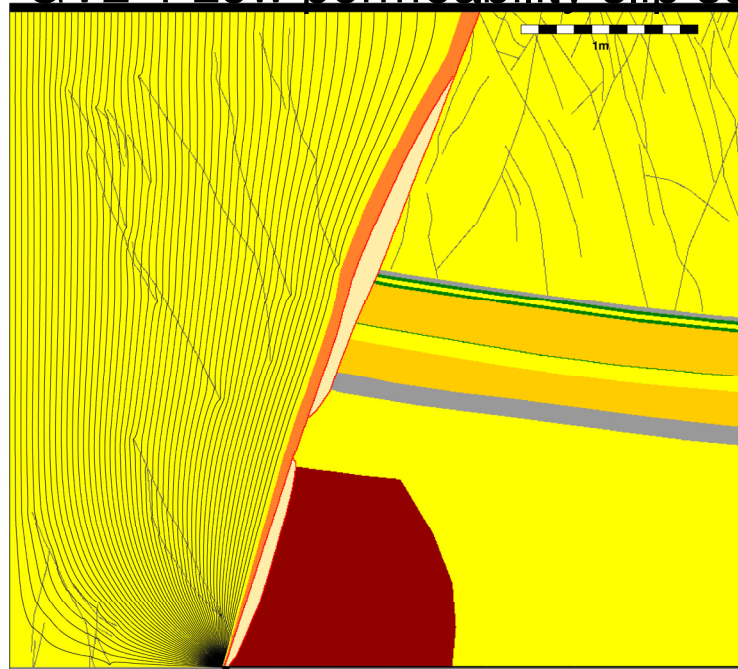
Legend:

Deformation band	5 mD
Slip surface	
Shale	5e-009 mD
Deformation band cluster	0.07 mD
Siltstone	3e-008 mD
Fine sst	50 mD
Medium sst	200 mD
Cemented sst	2.5e-009 mD
Mapped Geochemical Alteration	
Streamline	

Boundary conditions:

Flow	
No flow	

GV2 4 Low permeability slip surfaces along fault flow



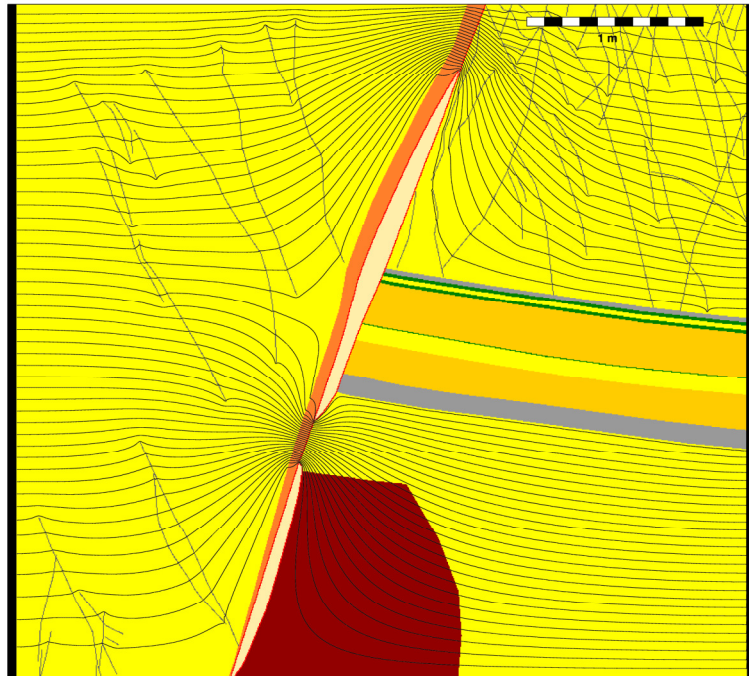
Legend:

Deformation band	5 mD
Slip surface	
Shale	5e-009 mD
Deformation band cluster	0.07 mD
Siltstone	3e-008 mD
Fine sst	50 mD
Medium sst	200 mD
Cemented sst	2.5e-009 mD
Mapped Geochemical Alteration	
Streamline	

Boundary conditions:

Flow	
No flow	

GV2 5 Slip surfaces have no effect across fault flow



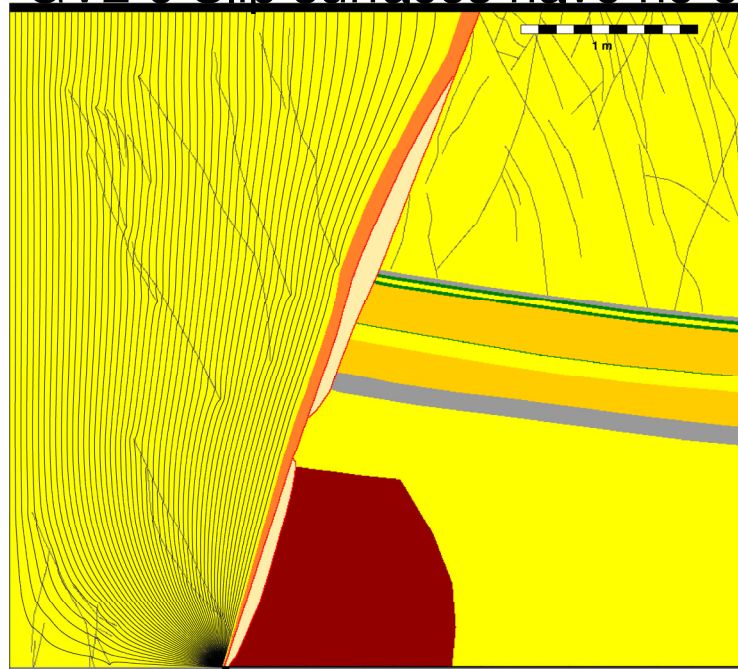
Legend:

— Deformation band	5 mD
— Slip surface	
■ Shale	5e-009 mD
■ Deformation band cluster	0.07 mD
■ Siltstone	3e-008 mD
■ Fine sst	50 mD
■ Medium sst	200 mD
■ Cemented sst	2.5e-009 mD
■ Mapped Geochemical Alteration	
— Streamline	

Boundary conditions:

— Flow
— No flow

GV2 6 Slip surfaces have no effect along fault flow



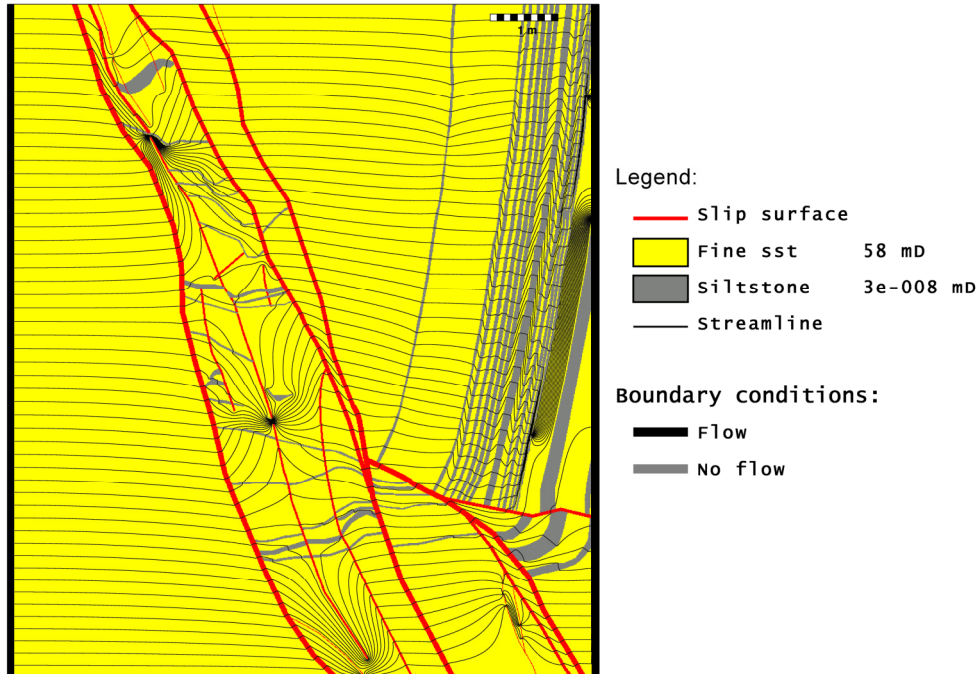
Legend:

— Deformation band	5 mD
— Slip surface	
■ Shale	5e-009 mD
■ Deformation band cluster	0.07 mD
■ Siltstone	3e-008 mD
■ Fine sst	50 mD
■ Medium sst	200 mD
■ Cemented sst	2.5e-009 mD
■ Mapped Geochemical Alteration	
— Streamline	

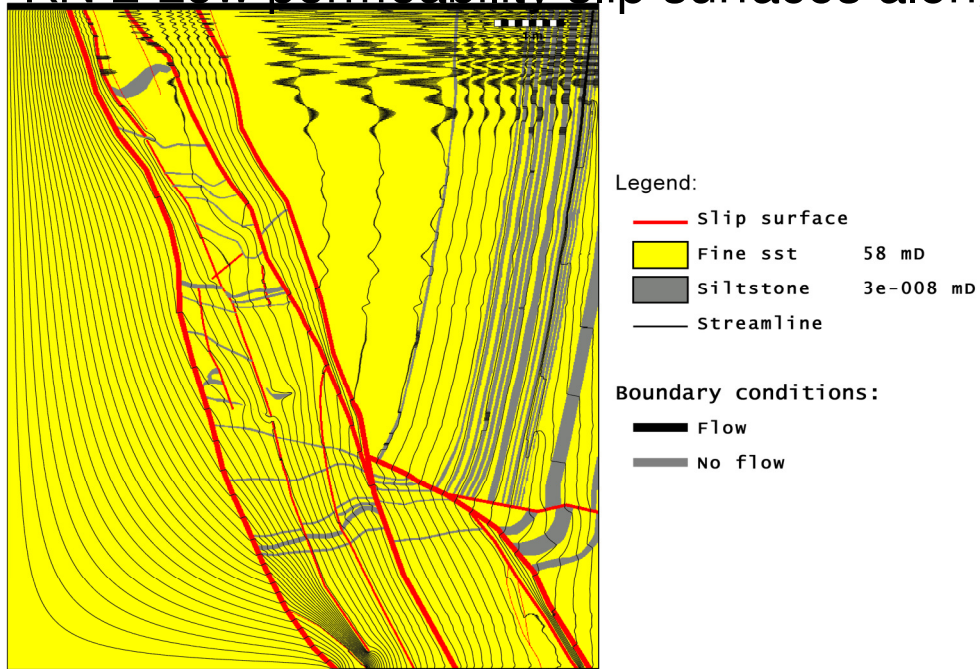
Boundary conditions:

— Flow
— No flow

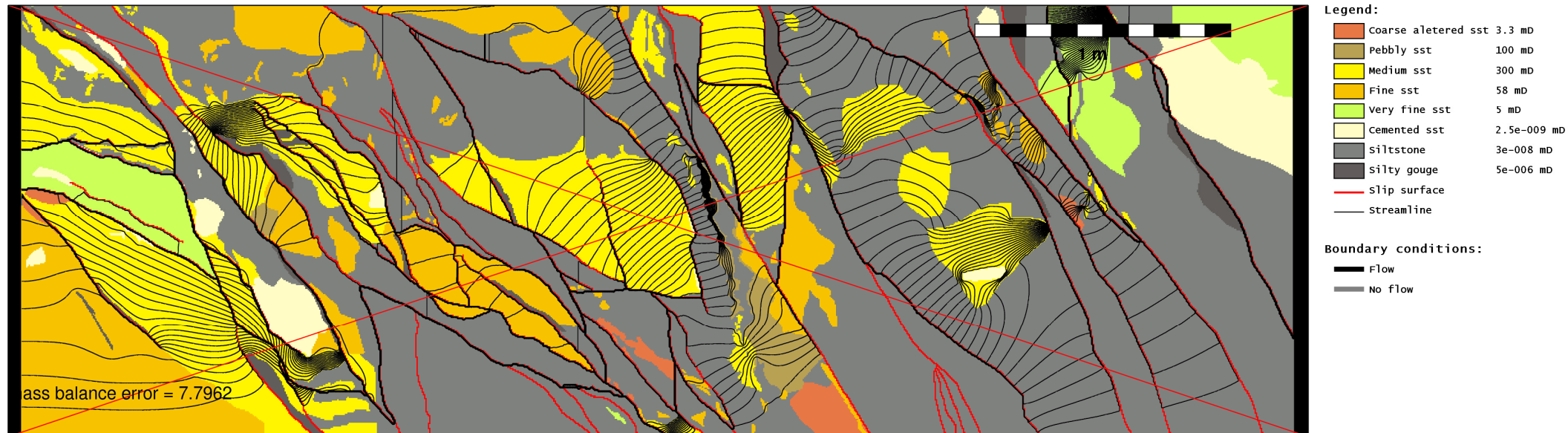
KN 1 Low permeability slip surfaces across fault flow



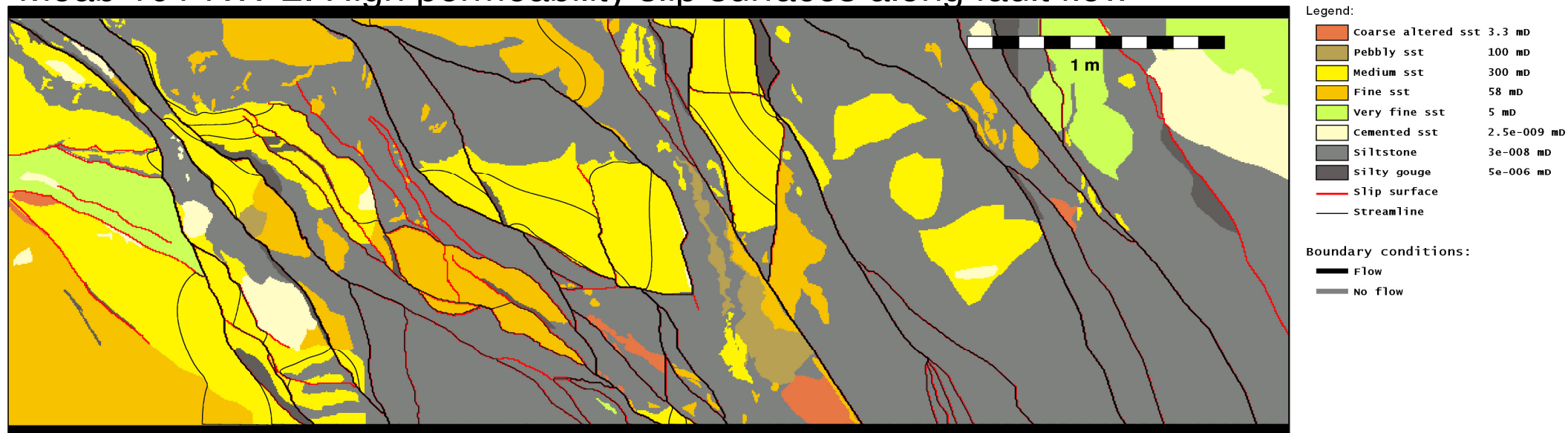
KN 2 Low permeability slip surfaces along fault flow



Moab 191 NW 1. High permeability slip surfaces across fault flow NOT

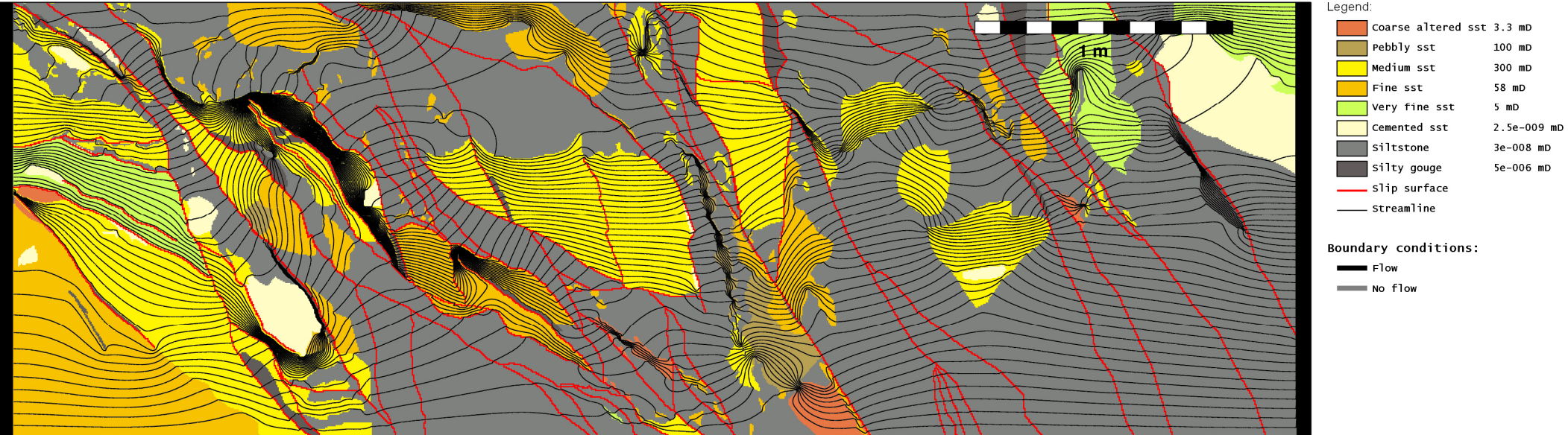


Moab 191 NW 2. High permeability slip surfaces along fault flow

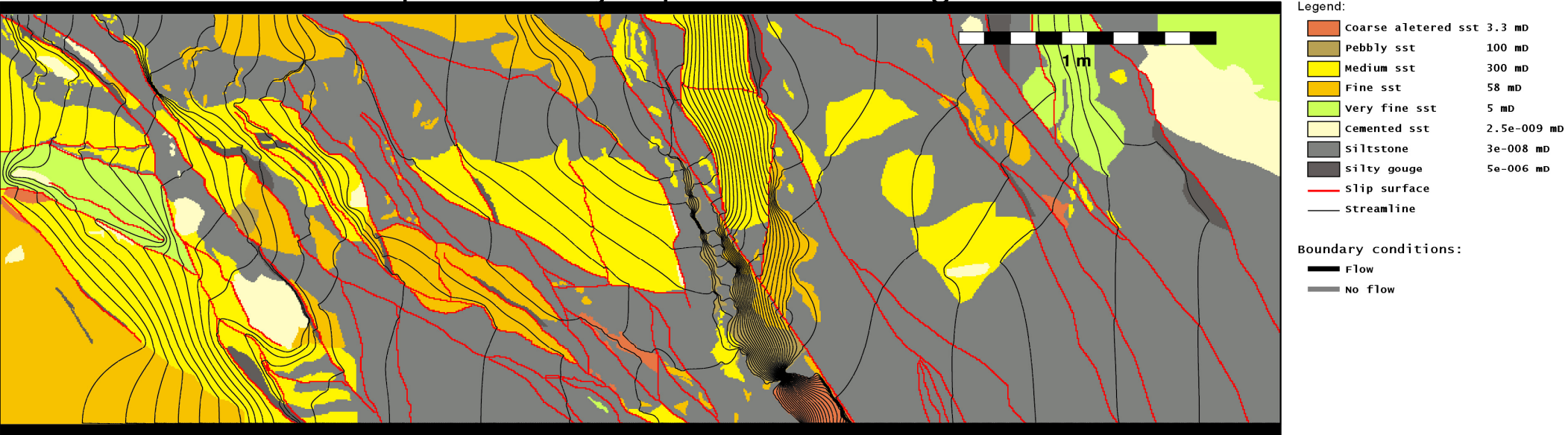


Model Moab 191 NW 1. High permeability slip surfaces across fault flow, does not run properly, it results in a mass balance error of 7.8%. The bulk permeability has been excluded from the dataset.

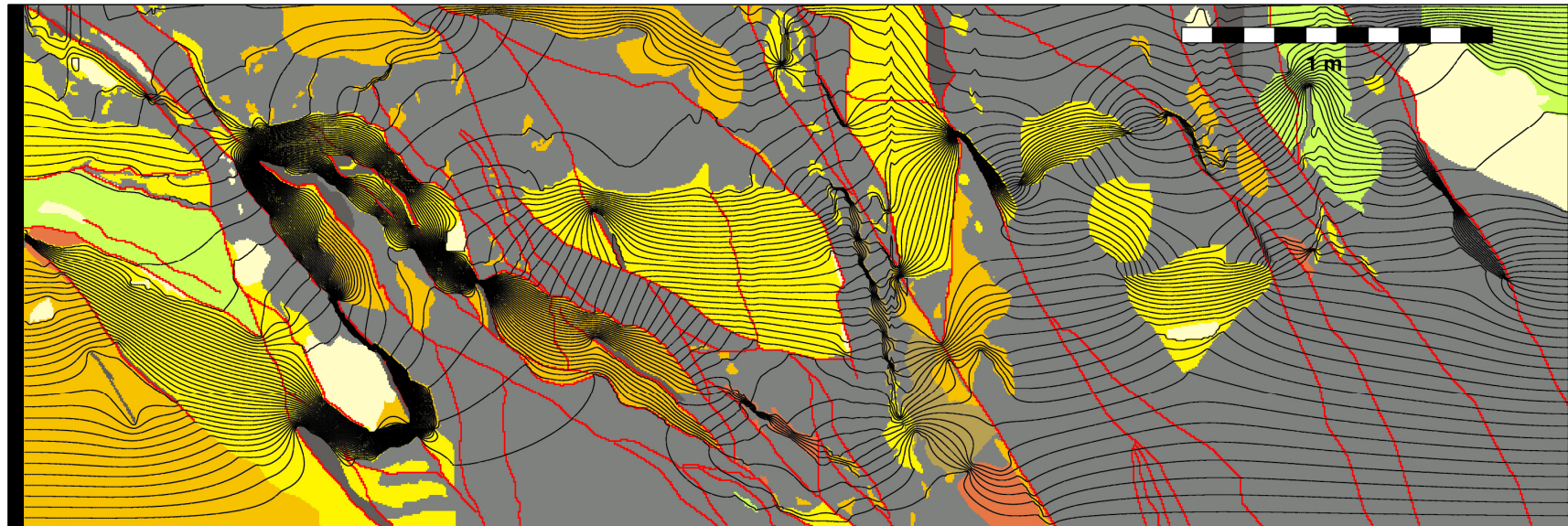
Moab 191 NW 3. Low permeability slip surfaces across fault flow



Moab 191 NW 4. Low permeability slip surfaces along fault flow



Moab 191 NW 5. No slip surfaces across fault flow



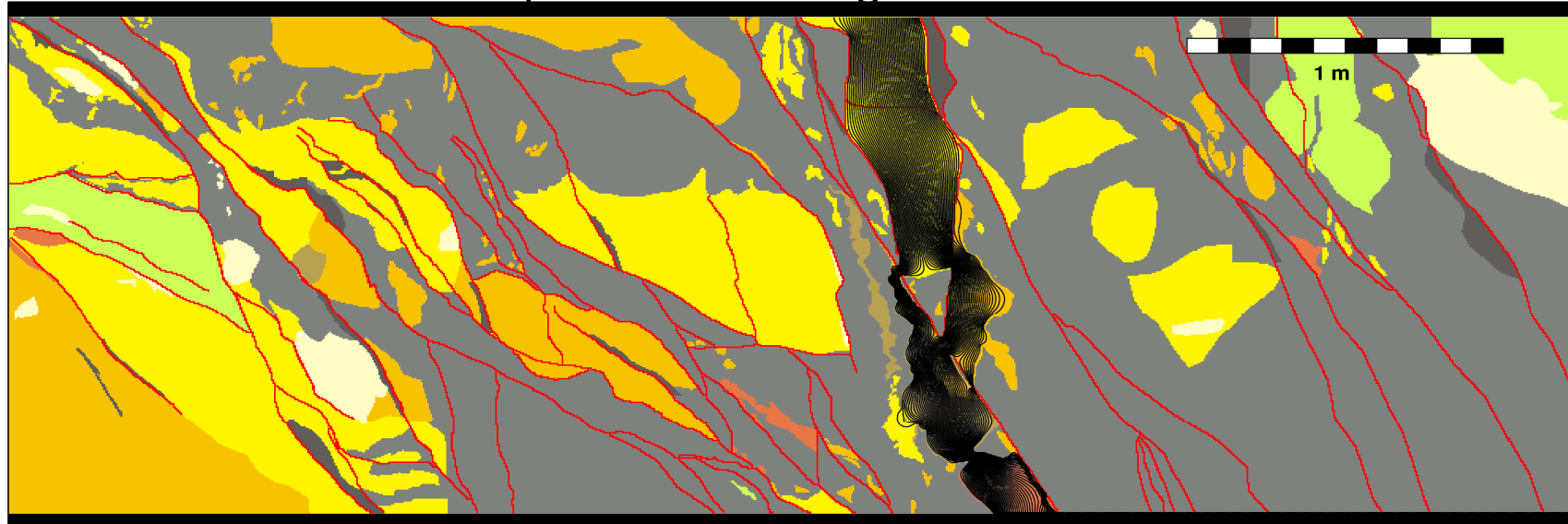
Legend:

Coarse altered sst	3.3 mD
Pebbly sst	100 mD
Medium sst	300 mD
Fine sst	58 mD
Very fine sst	5 mD
Cemented sst	2.5e-009 mD
Siltstone	3e-008 mD
Silty gouge	5e-006 mD
Streamline	

Boundary conditions:

- Flow
- No flow

Moab 191 NW 6. No slip surfaces along fault flow



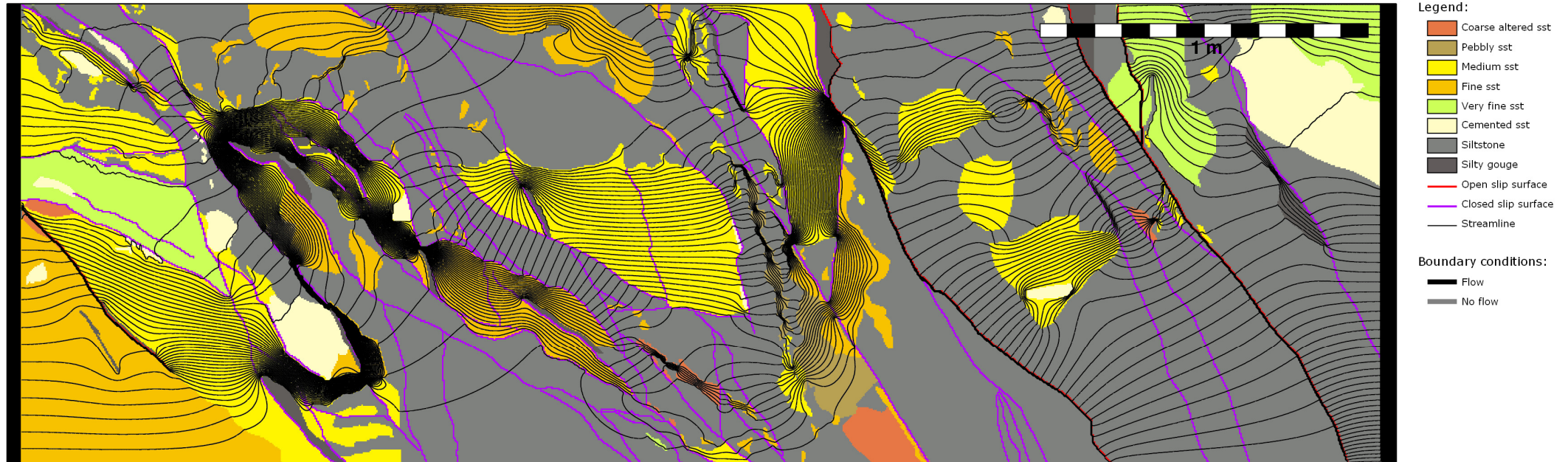
Legend:

Coarse altered sst	3.3 mD
Pebbly sst	100 mD
Medium sst	300 mD
Fine sst	58 mD
Very fine sst	5 mD
Cemented sst	2.5e-009 mD
Siltstone	3e-008 mD
Silty gouge	5e-006 mD
Streamline	

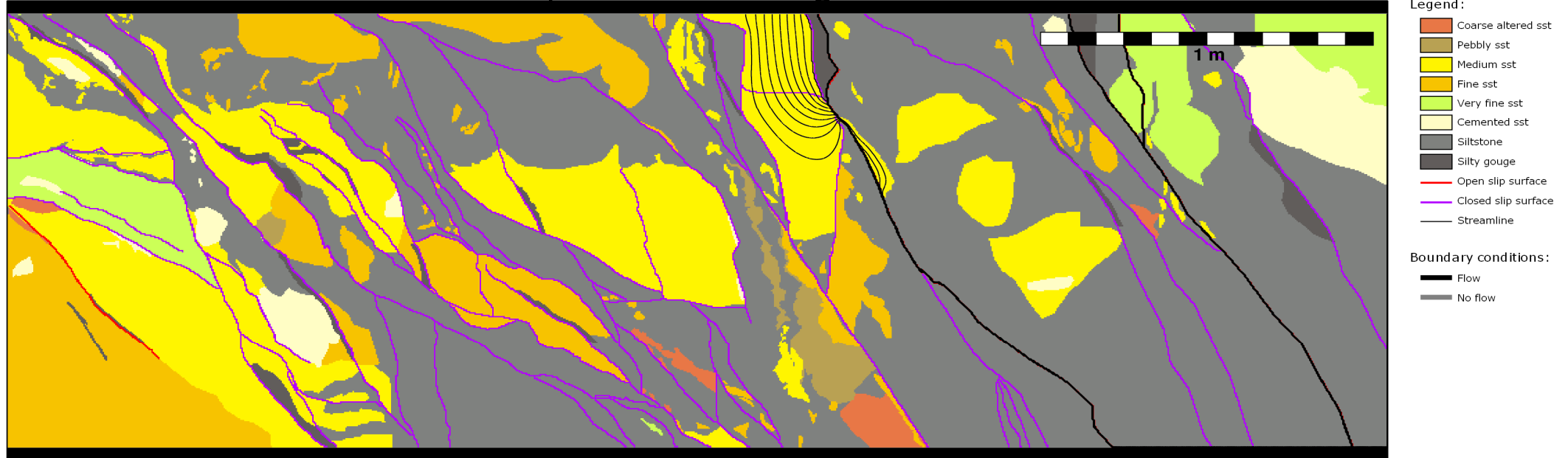
Boundary conditions:

- Flow
- No flow

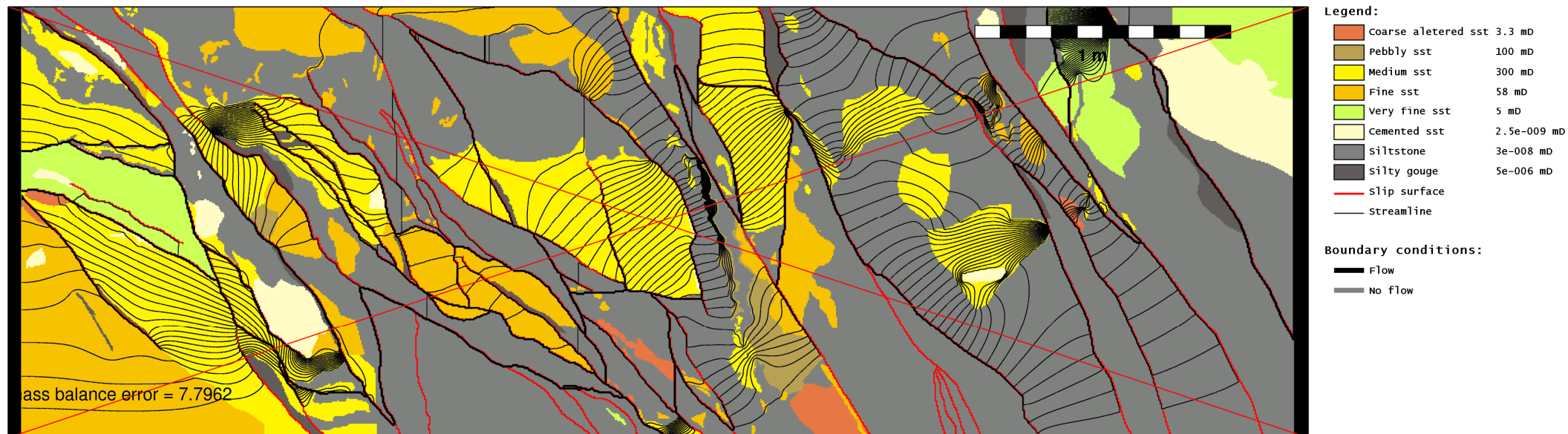
Moab 191 NW 7. Calibrated slip surfaces across fault flow



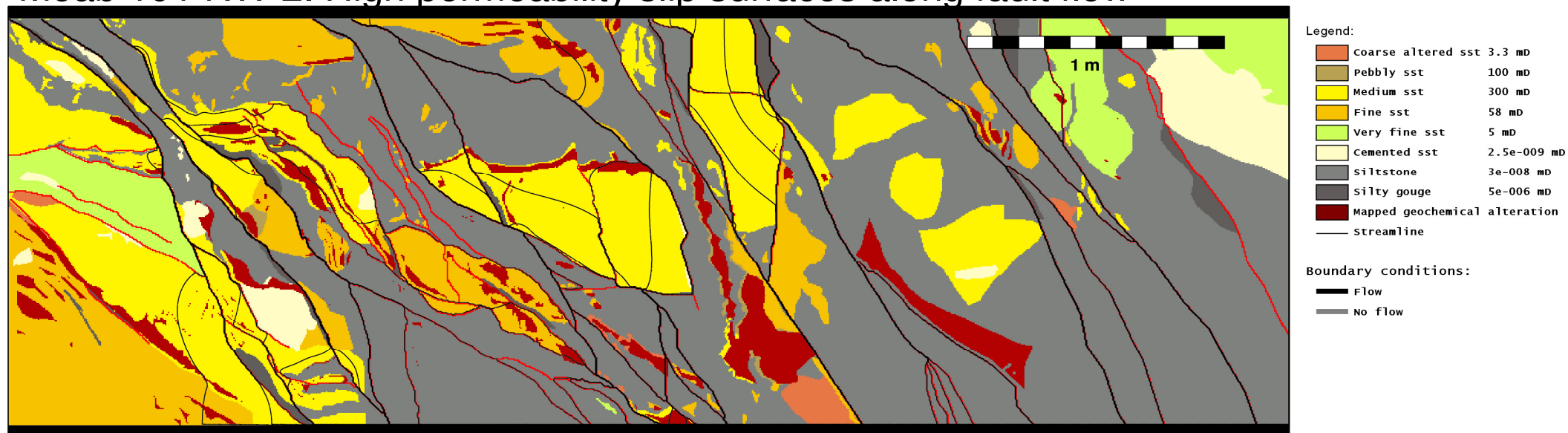
Moab 191 NW 8. Calibrated slip surfaces along fault flow



Moab 191 NW 1. High permeability slip surfaces across fault flow

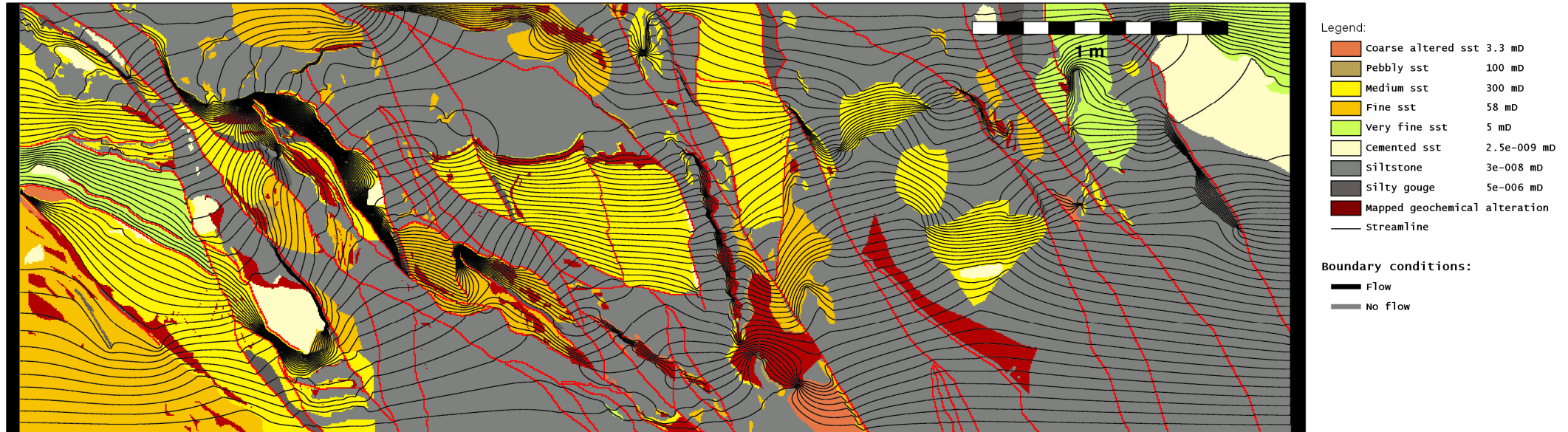


Moab 191 NW 2. High permeability slip surfaces along fault flow

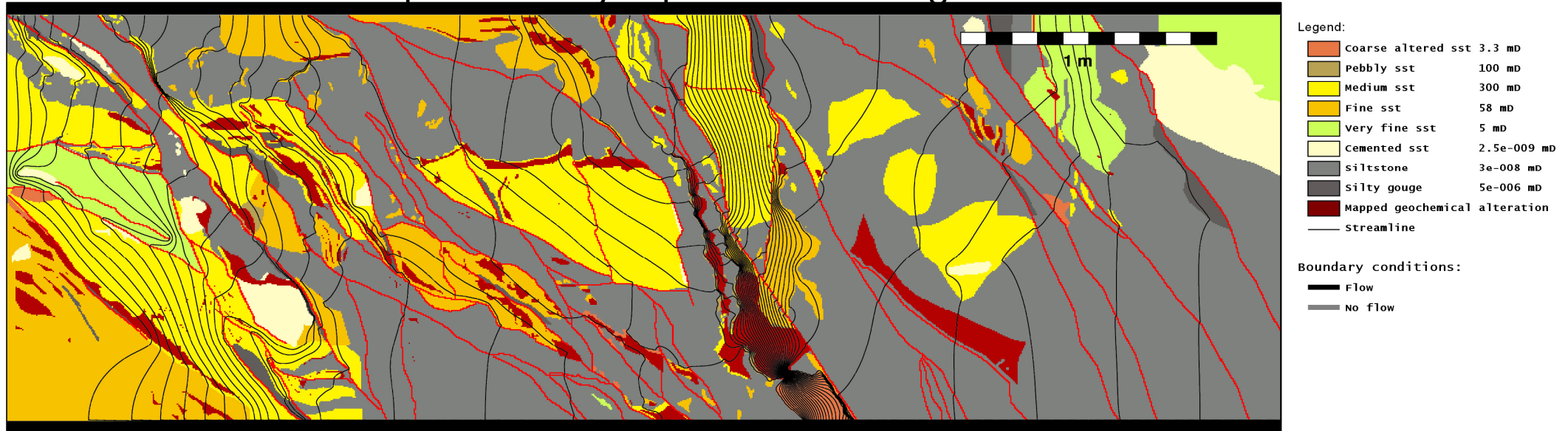


Model Moab 191 NW 1. High permeability slip surfaces across fault flow, does not run properly, it results in a mass balance error of 7.8%

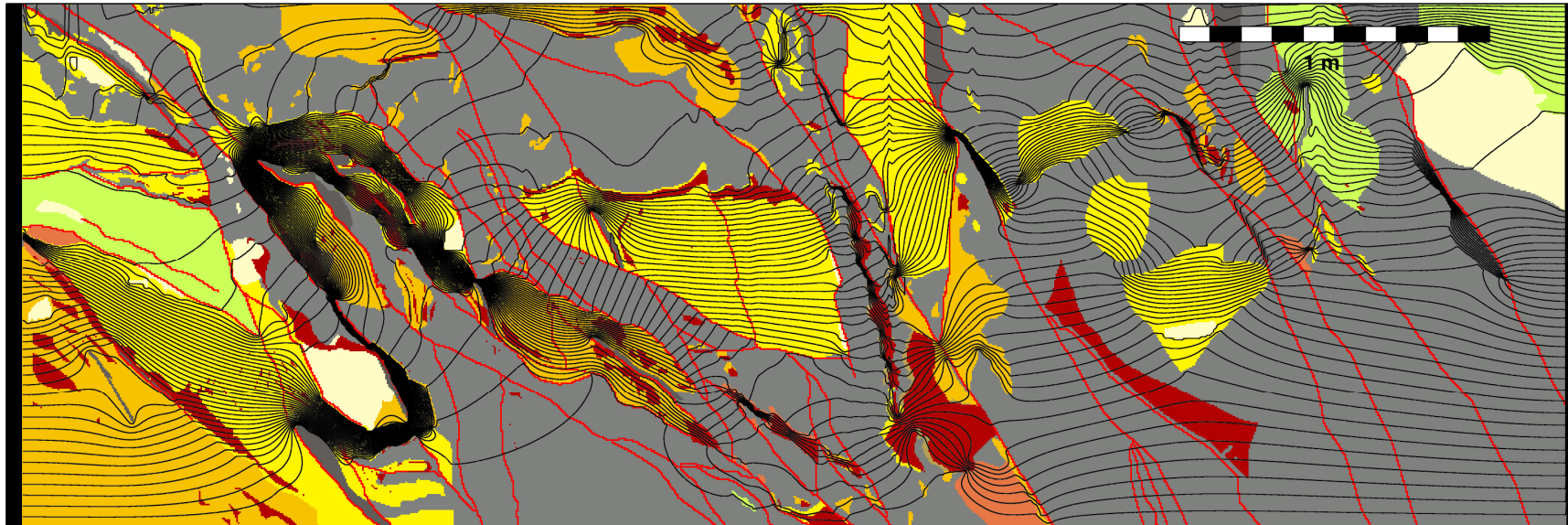
Moab 191 NW 3. Low permeability slip surfaces across fault flow



Moab 191 NW 4. Low permeability slip surfaces along fault flow



Moab 191 NW 5. No slip surfaces across fault flow



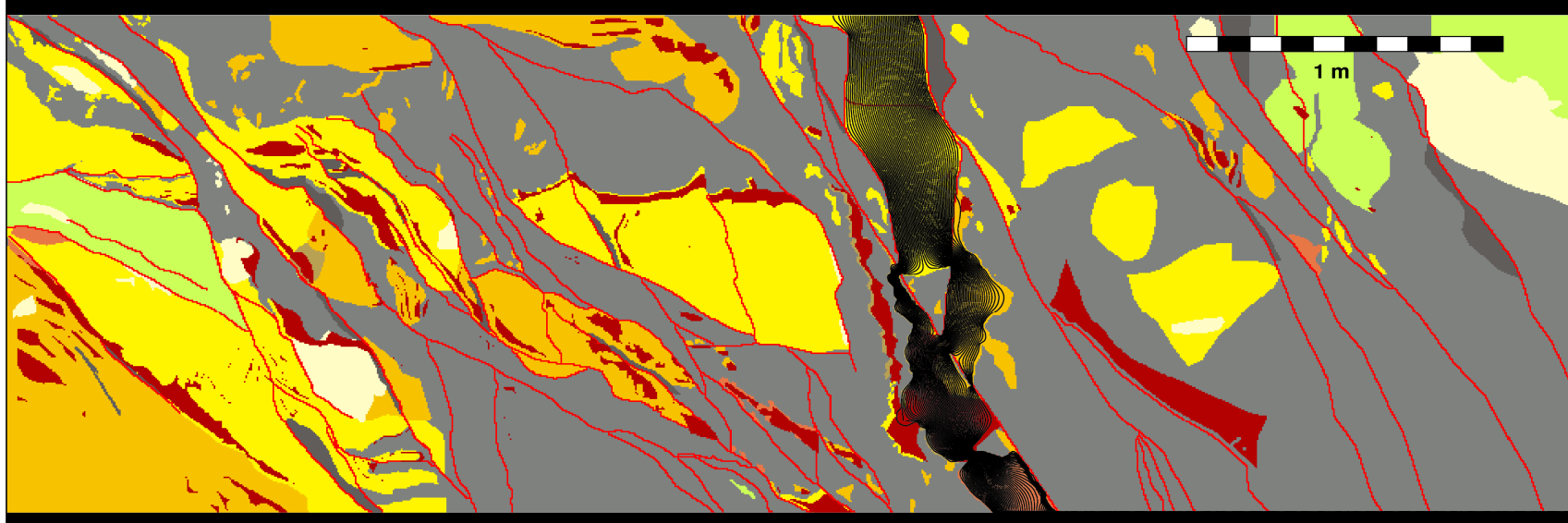
Legend:

Coarse altered sst	3.3 mD
Pebbly sst	100 mD
Medium sst	300 mD
Fine sst	58 mD
Very fine sst	5 mD
Cemented sst	2.5e-009 mD
Siltstone	3e-008 mD
Silty gouge	5e-006 mD
Mapped geochemical alteration	
Streamline	

Boundary conditions:

- Flow
- No flow

Moab 191 NW 6. No slip surfaces along fault flow



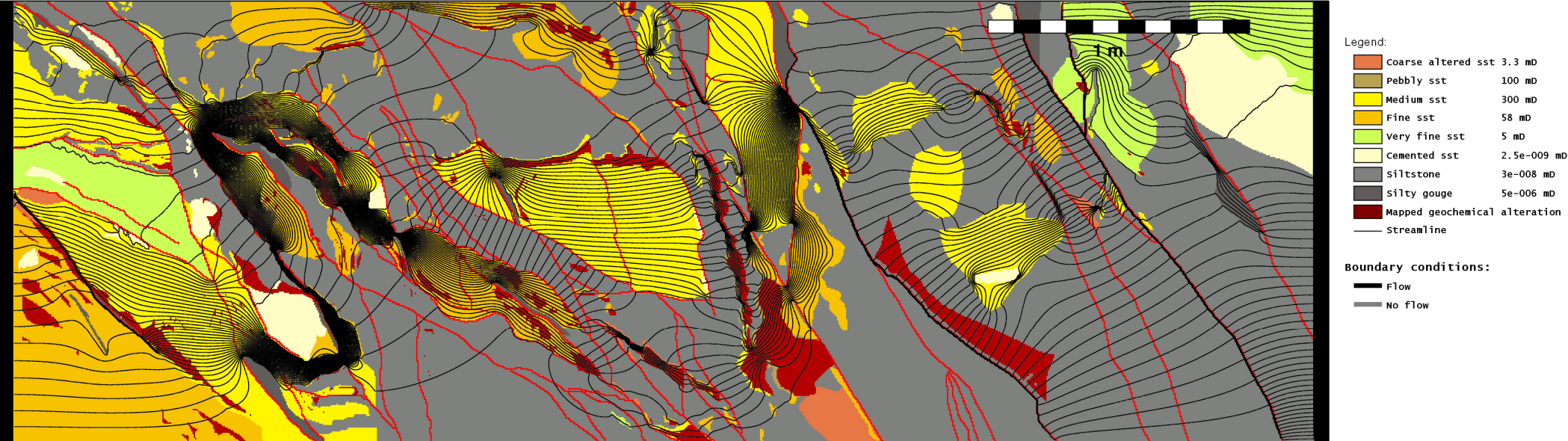
Legend:

Coarse altered sst	3.3 mD
Pebbly sst	100 mD
Medium sst	300 mD
Fine sst	58 mD
Very fine sst	5 mD
Cemented sst	2.5e-009 mD
Siltstone	3e-008 mD
Silty gouge	5e-006 mD
Mapped geochemical alteration	
Streamline	

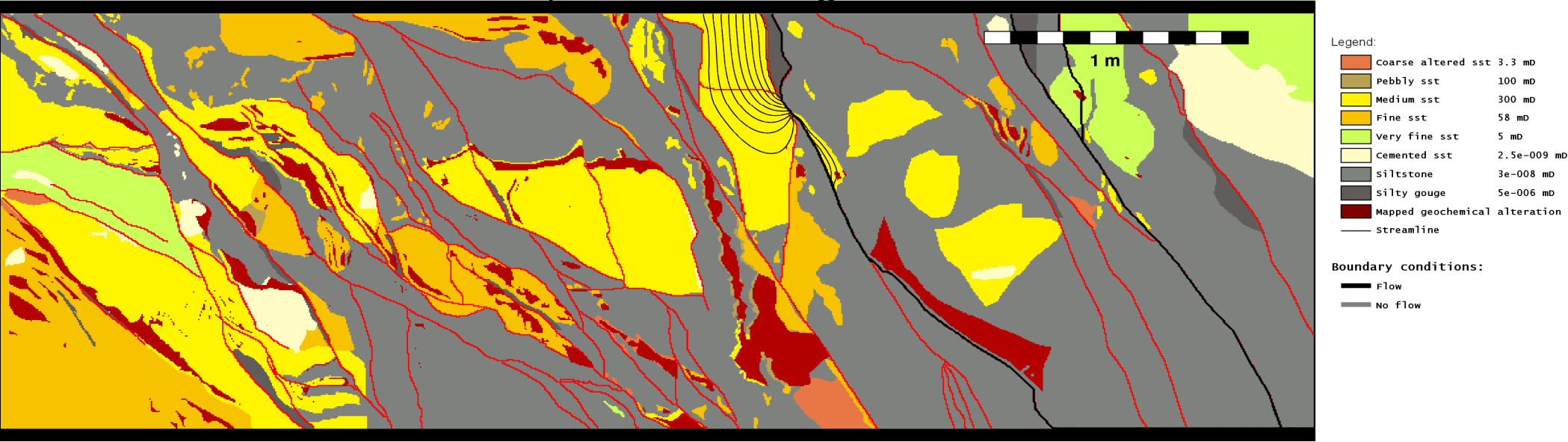
Boundary conditions:

- Flow
- No flow

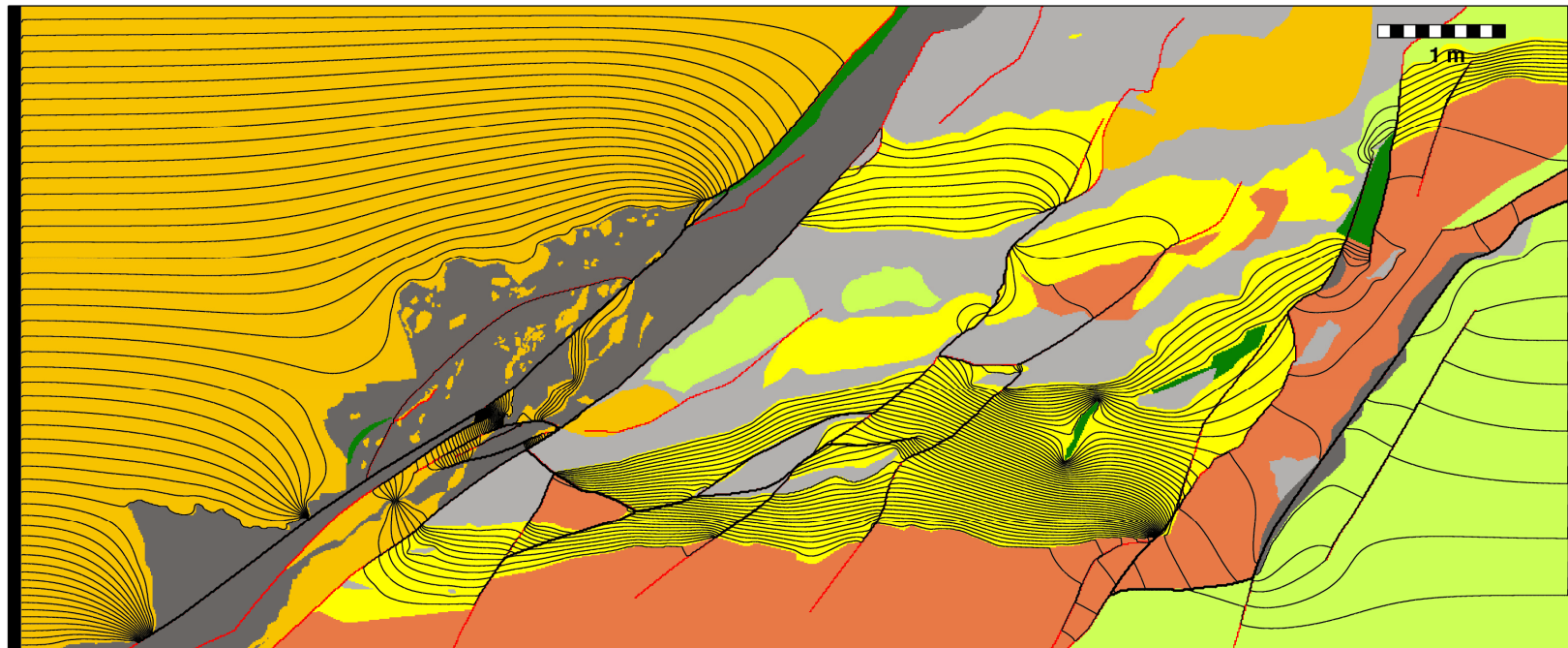
Moab 191 NW 7. Calibrated slip surfaces across fault flow



Moab 191 NW 8. Calibrated slip surfaces along fault flow



Moab 191 SE 1. High permeability slip surfaces across fault flow



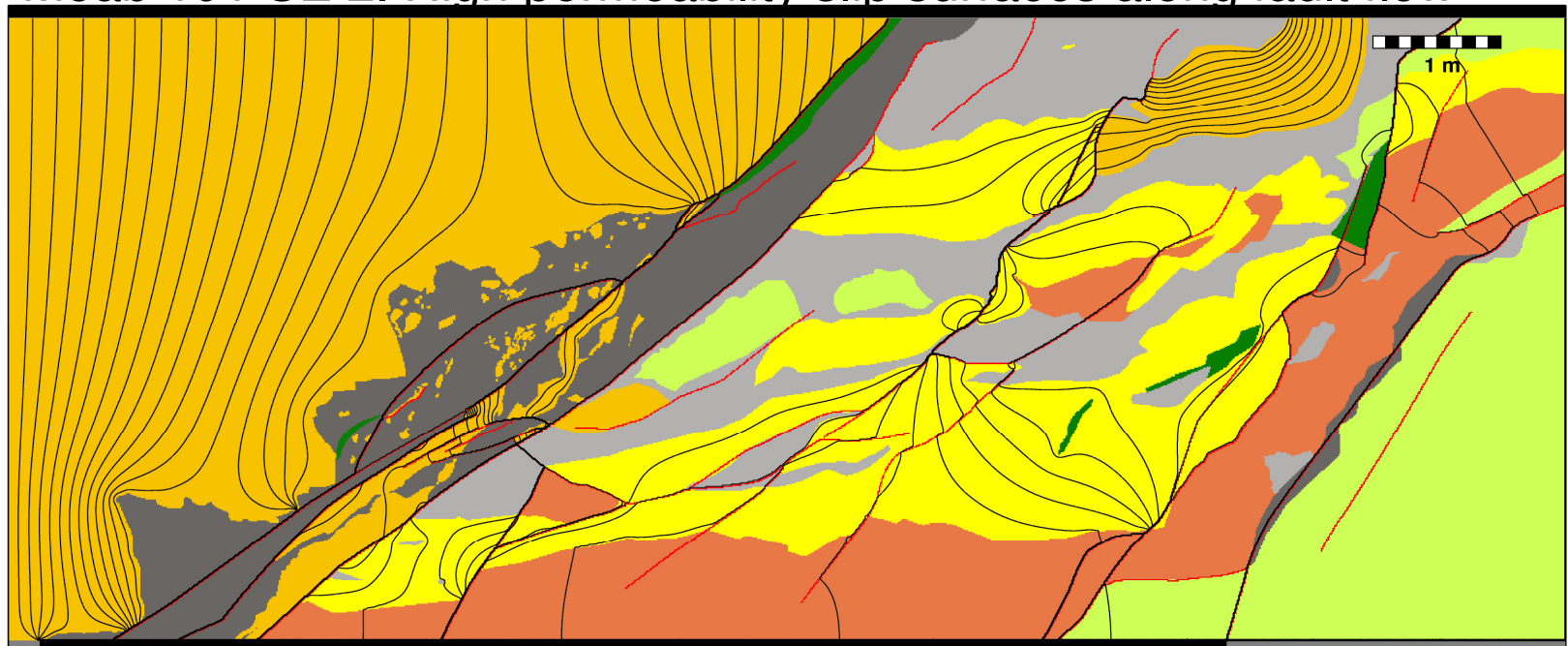
Legend:

— Slip surface	
■ Shale	5e-009 mD
■ Gouge	5e-006 mD
■ Altered coarse sst	3.3 mD
■ Siltstone	3e-008 mD
■ Fine sst	58 mD
■ Very fine sst	5 mD
■ Medium sst	300 mD
— Streamline	

Boundary conditions:

— Flow	
— No flow	

Moab 191 SE 2. High permeability slip surfaces along fault flow



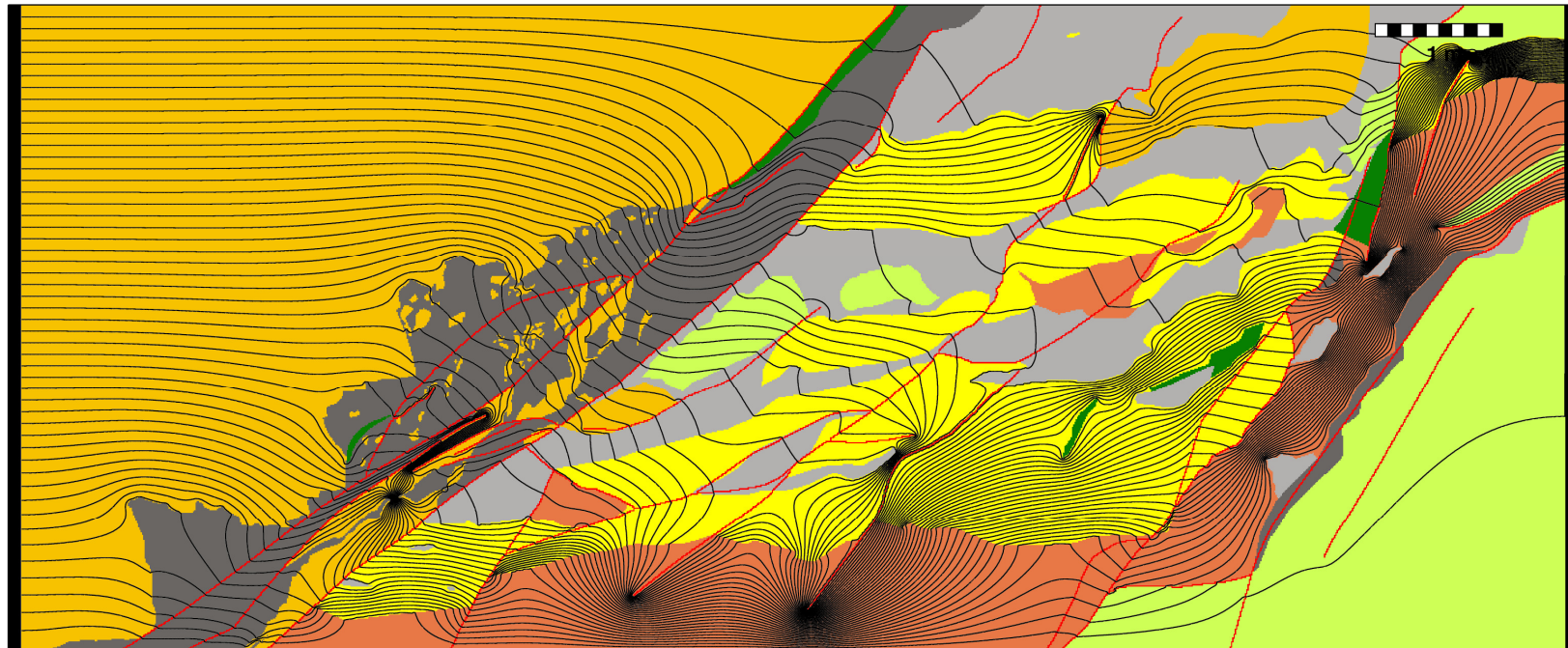
Legend:

— Slip surface	
■ Shale	5e-009 mD
■ Gouge	5e-006 mD
■ Altered coarse sst	3.3 mD
■ Siltstone	3e-008 mD
■ Fine sst	58 mD
■ Very fine sst	5 mD
■ Medium sst	300 mD
— Streamline	

Boundary conditions:

— Flow	
— No flow	

Moab 191 SE 3. Low permeability slip surfaces across fault flow



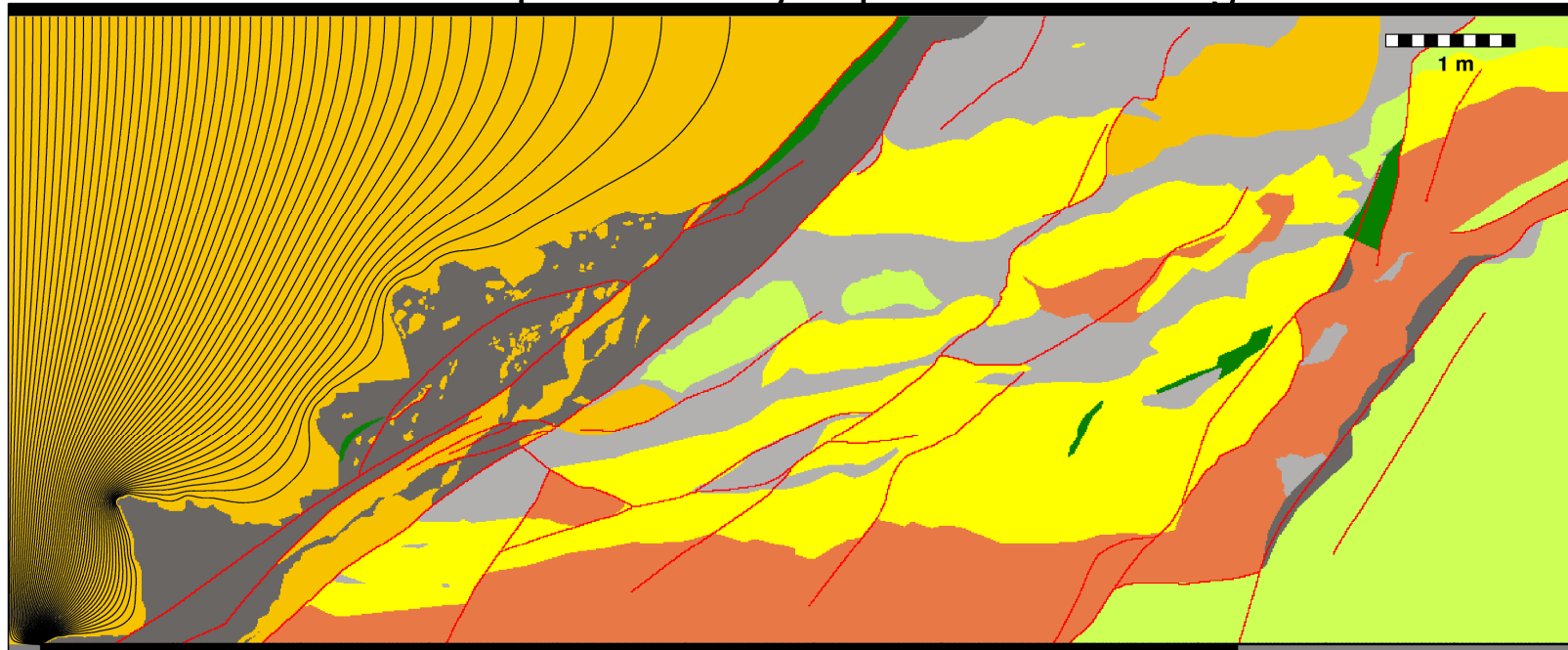
Legend:

Slip surface	
Shale	5e-009 mD
Gouge	5e-006 mD
Altered coarse sst	3.3 mD
Siltstone	3e-008 mD
Fine sst	58 mD
Very fine sst	5 mD
Medium sst	300 mD
Streamline	

Boundary conditions:

Flow	
No flow	

Moab 191 SE 4. Low permeability slip surfaces along fault flow



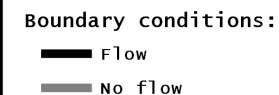
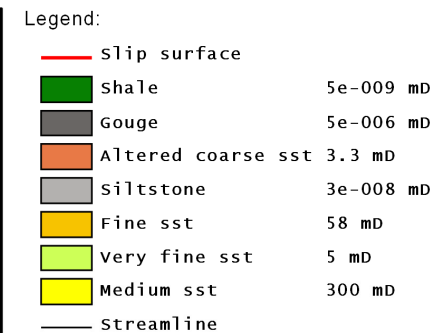
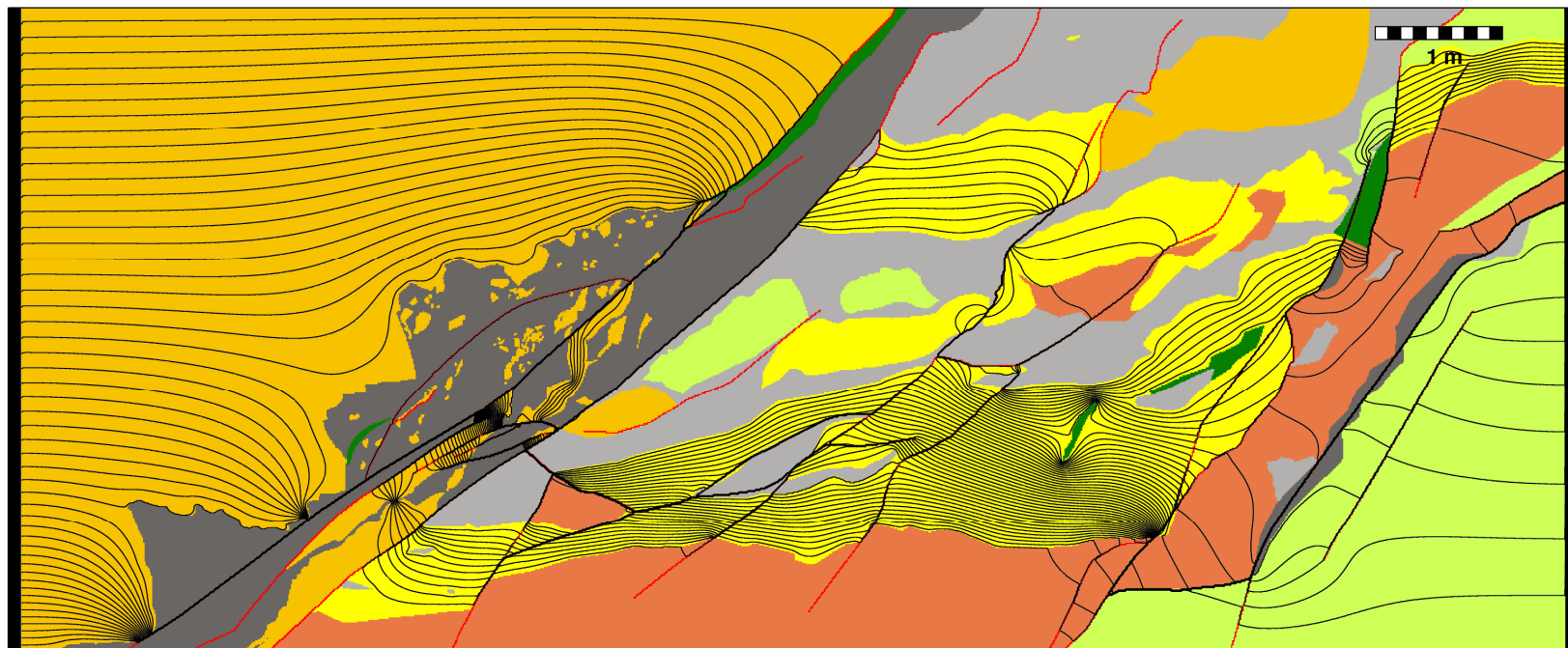
Legend:

Slip surface	
Shale	5e-009 mD
Gouge	5e-006 mD
Altered coarse sst	3.3 mD
Siltstone	3e-008 mD
Fine sst	58 mD
Very fine sst	5 mD
Medium sst	300 mD
Streamline	

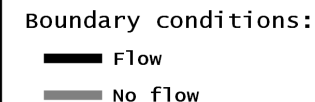
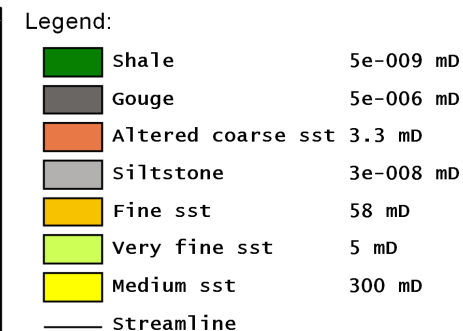
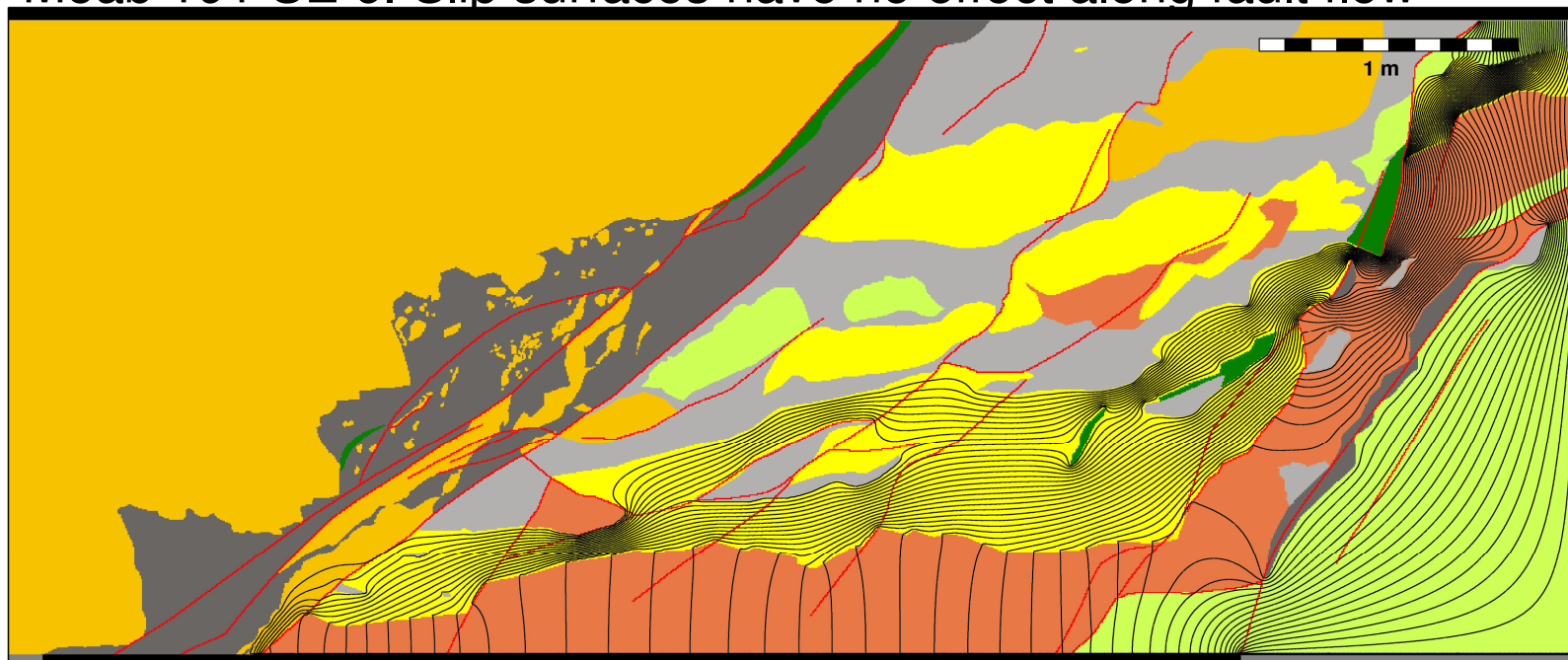
Boundary conditions:

Flow	
No flow	

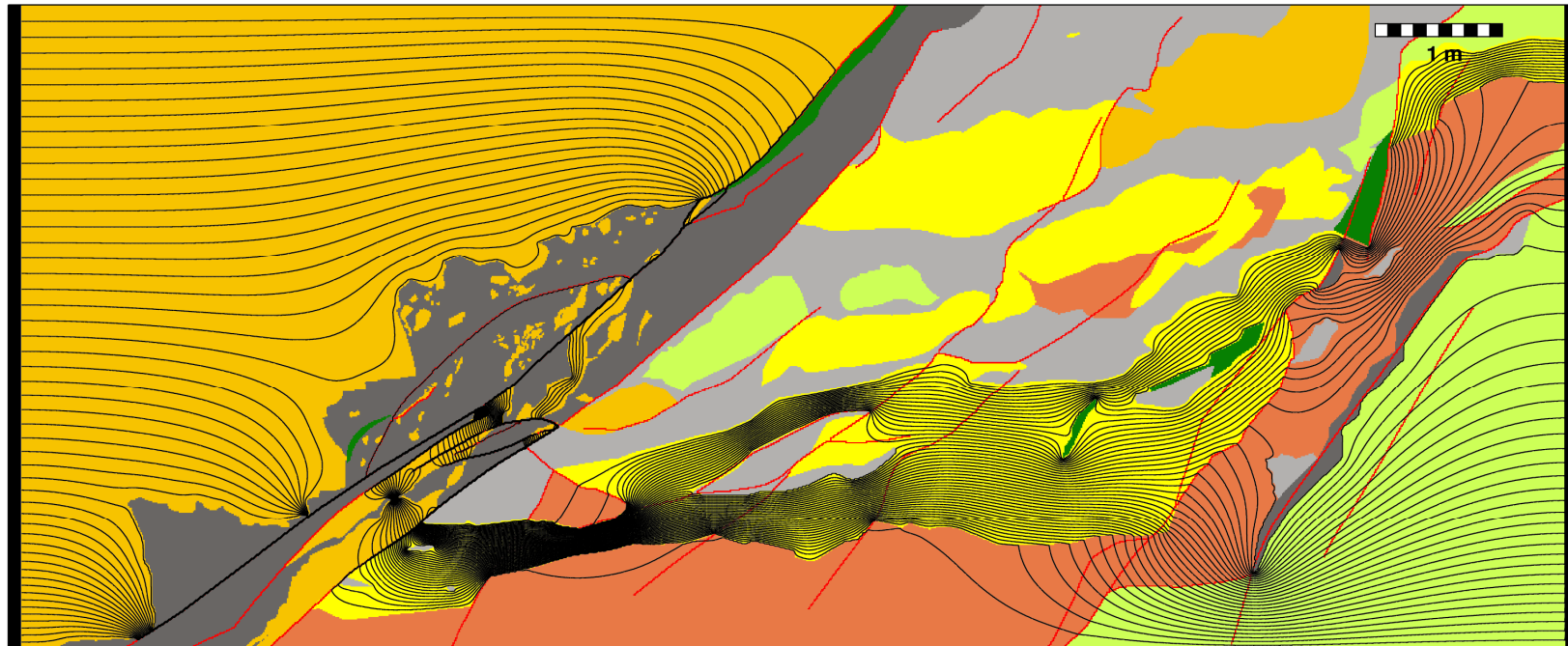
Moab 191 SE 5. Slip surfaces have no effect across fault flow



Moab 191 SE 6. Slip surfaces have no effect along fault flow



Moab 191 SE 7. Calibrated slip surfaces across fault flow



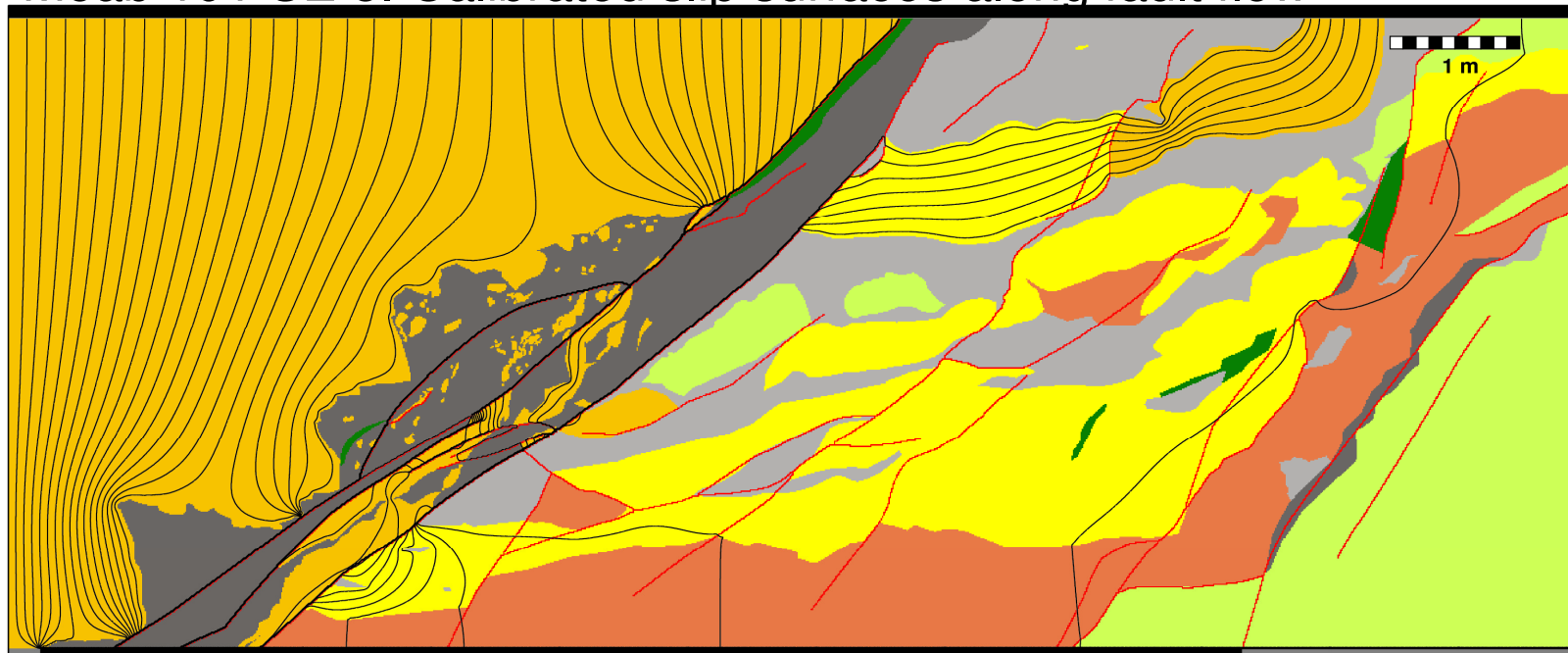
Legend:

— Slip surface	
■ Shale	5e-009 mD
■ Gouge	5e-006 mD
■ Altered coarse sst	3.3 mD
■ Siltstone	3e-008 mD
■ Fine sst	58 mD
■ Very fine sst	5 mD
■ Medium sst	300 mD
— Streamline	

Boundary conditions:

— Flow	
— No flow	

Moab 191 SE 8. Calibrated slip surfaces along fault flow



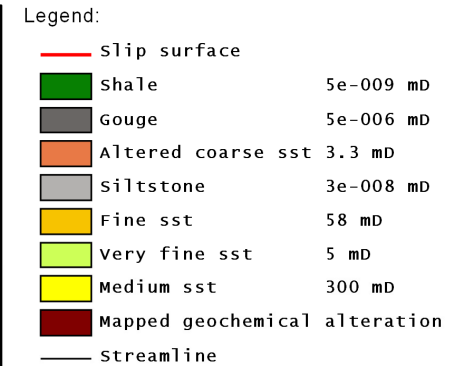
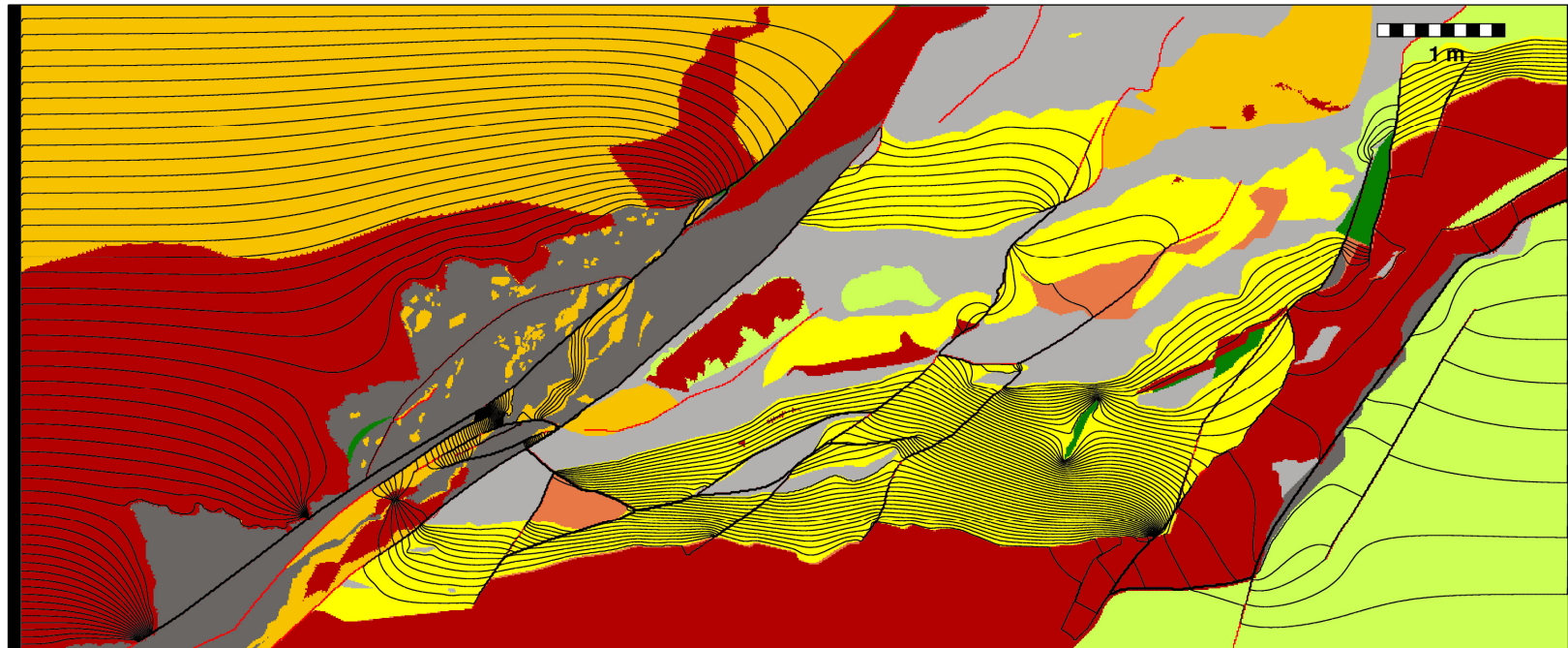
Legend:

— Slip surface	
■ Shale	5e-009 mD
■ Gouge	5e-006 mD
■ Altered coarse sst	3.3 mD
■ Siltstone	3e-008 mD
■ Fine sst	58 mD
■ Very fine sst	5 mD
■ Medium sst	300 mD
— Streamline	

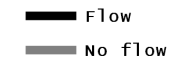
Boundary conditions:

— Flow	
— No flow	

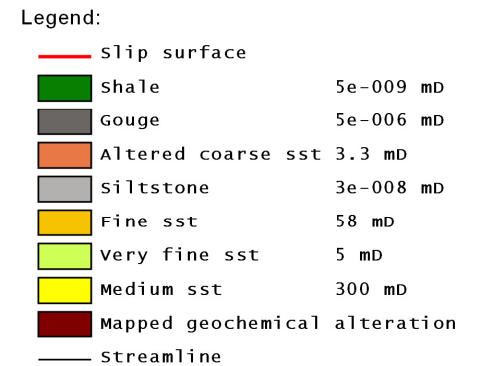
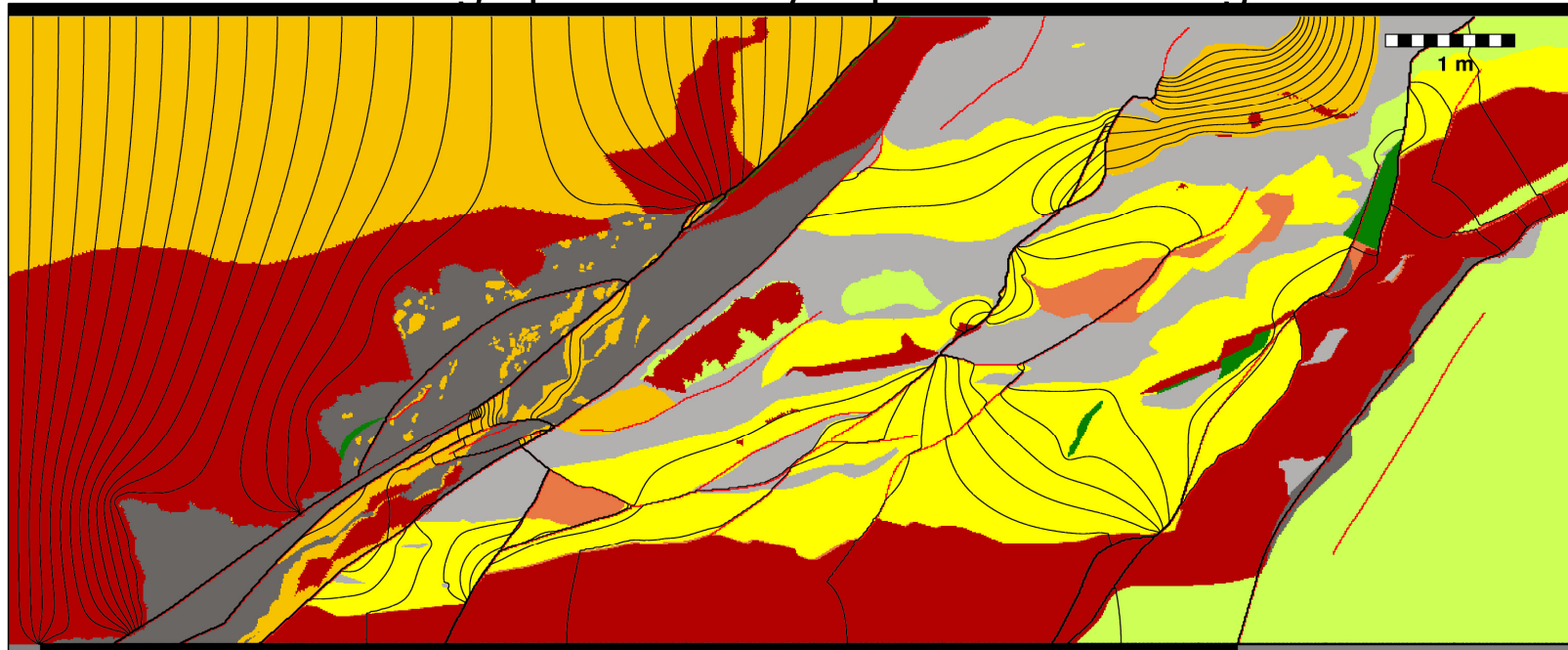
Moab 191 SE 1. High permeability slip surfaces across fault flow



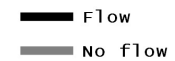
Boundary conditions:



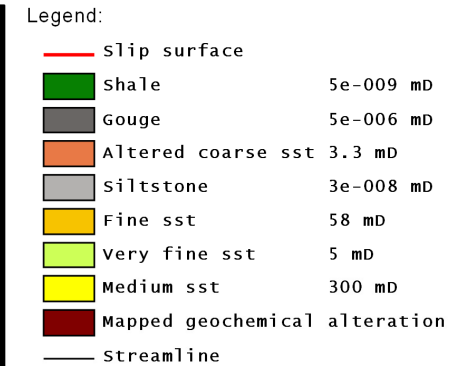
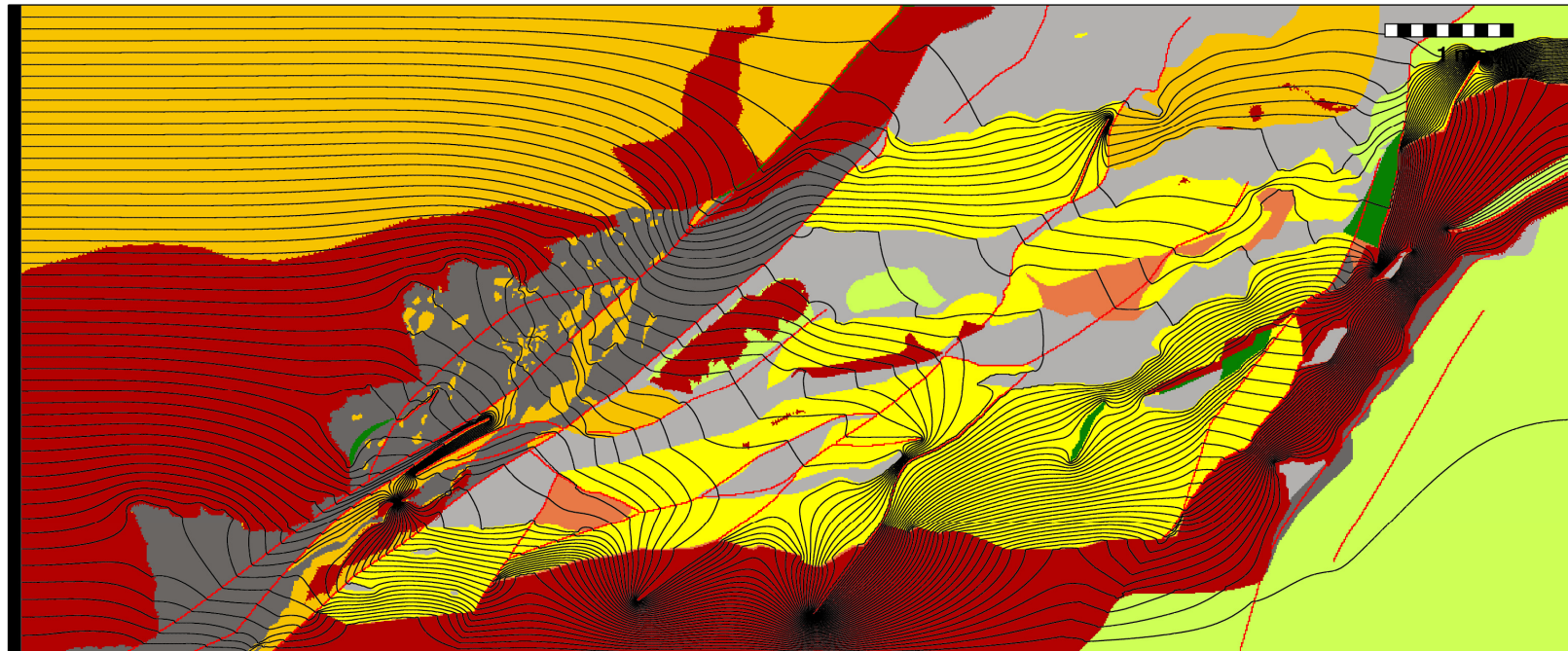
Moab 191 SE 2. High permeability slip surfaces along fault flow



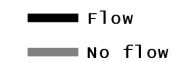
Boundary conditions:



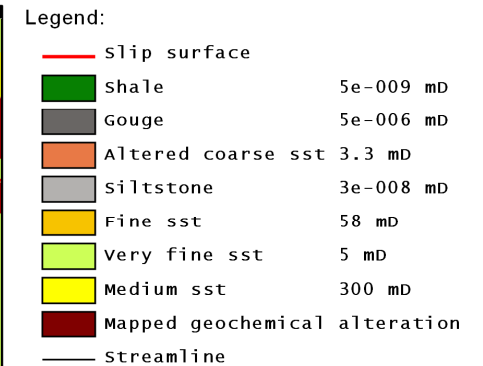
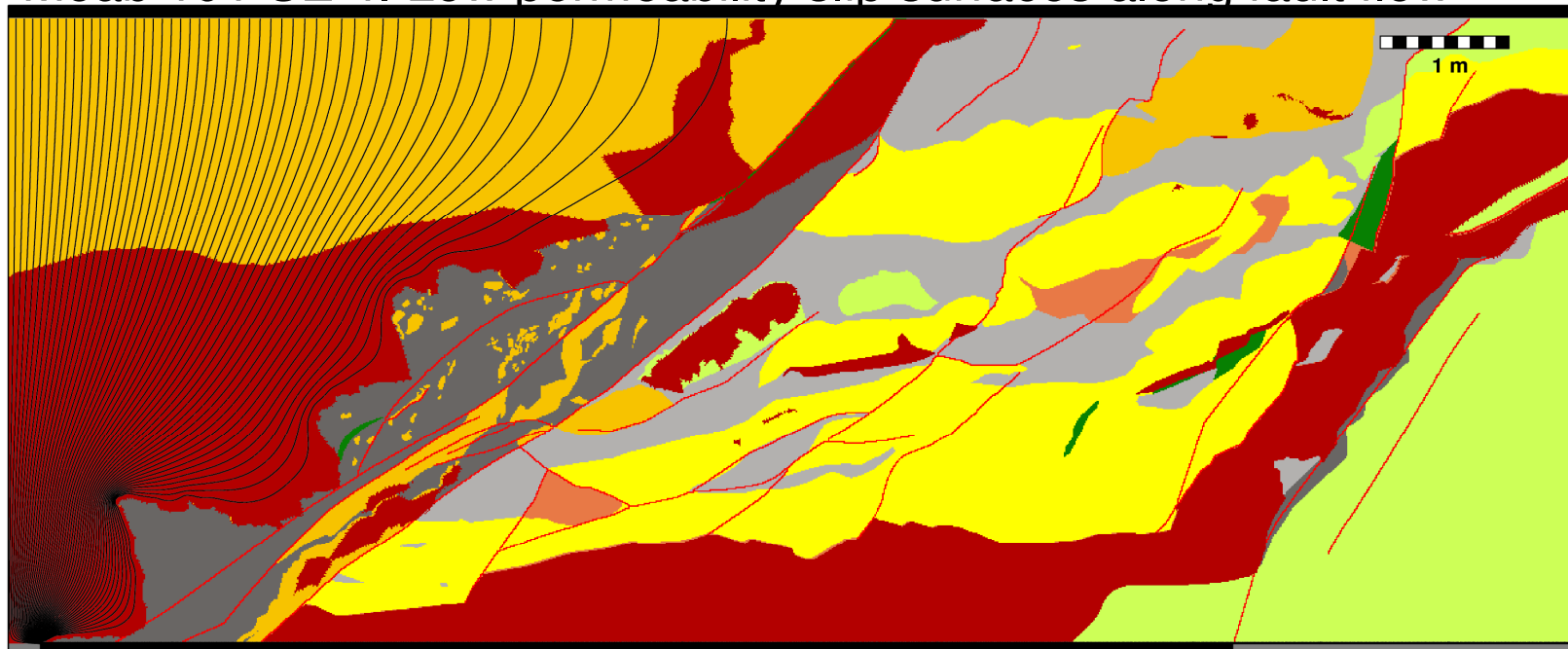
Moab 191 SE 3. Low permeability slip surfaces across fault flow



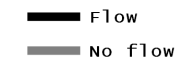
Boundary conditions:



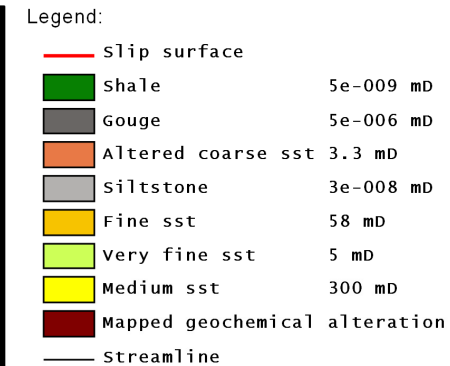
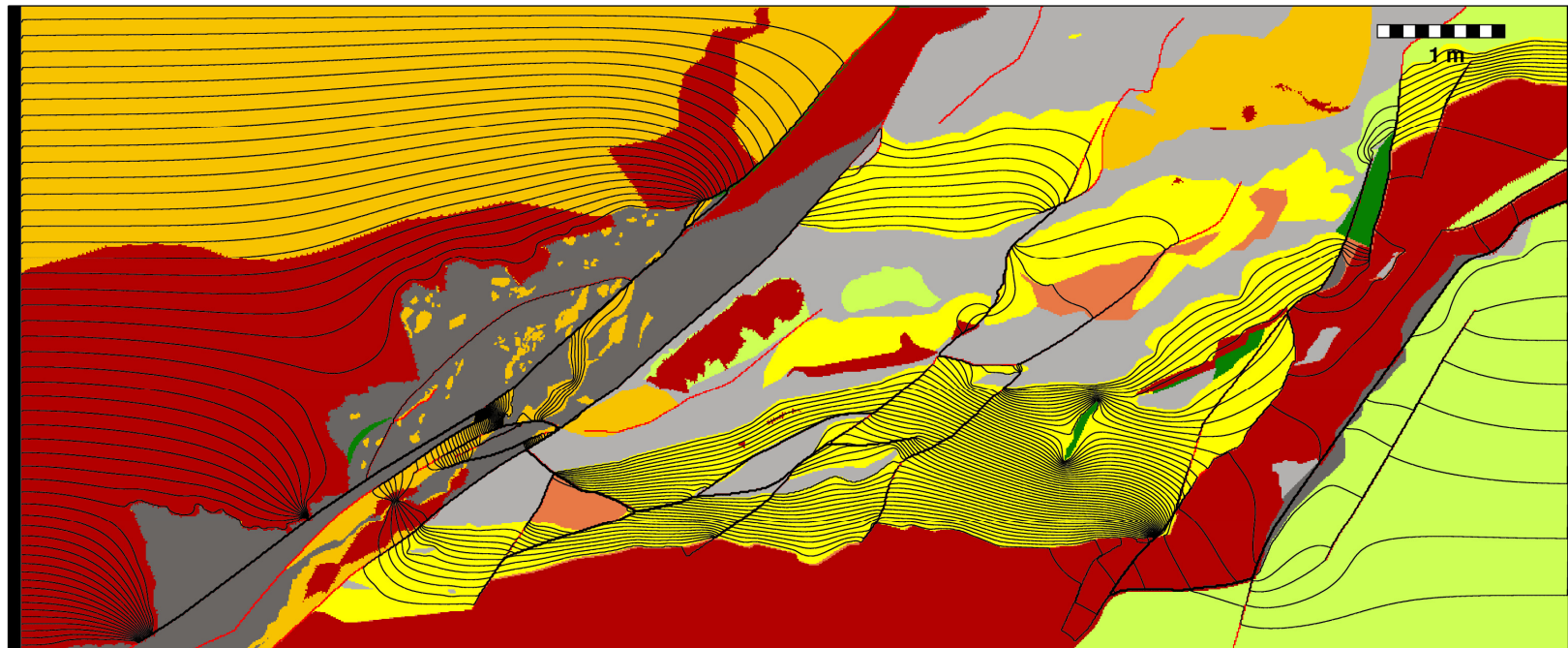
Moab 191 SE 4. Low permeability slip surfaces along fault flow



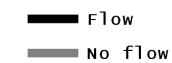
Boundary conditions:



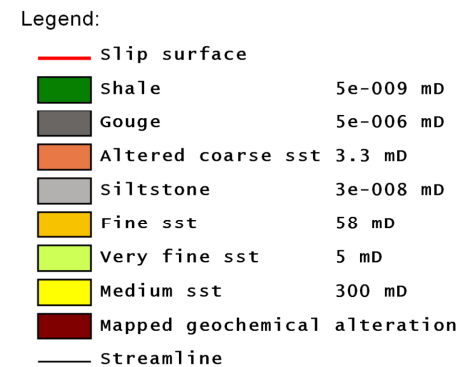
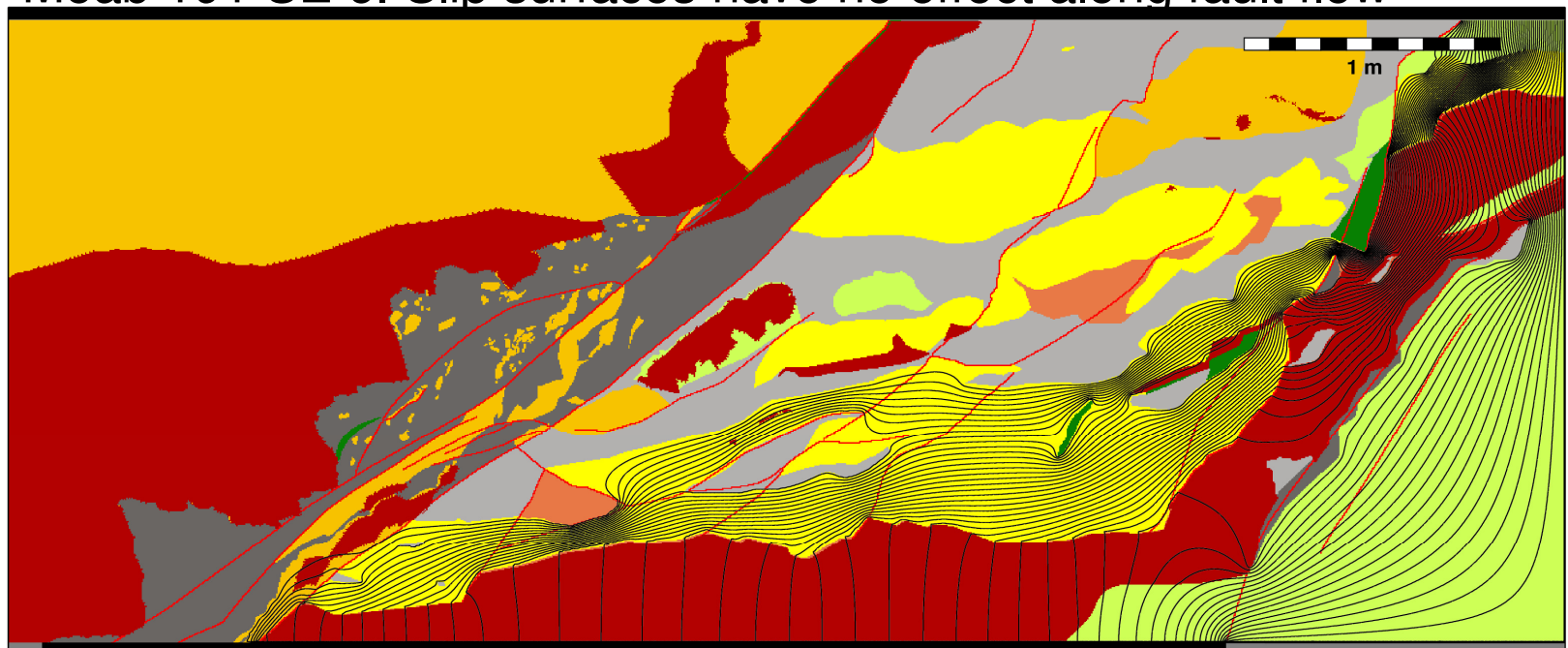
Moab 191 SE 5. Slip surfaces have no effect across fault flow



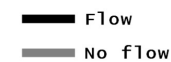
Boundary conditions:



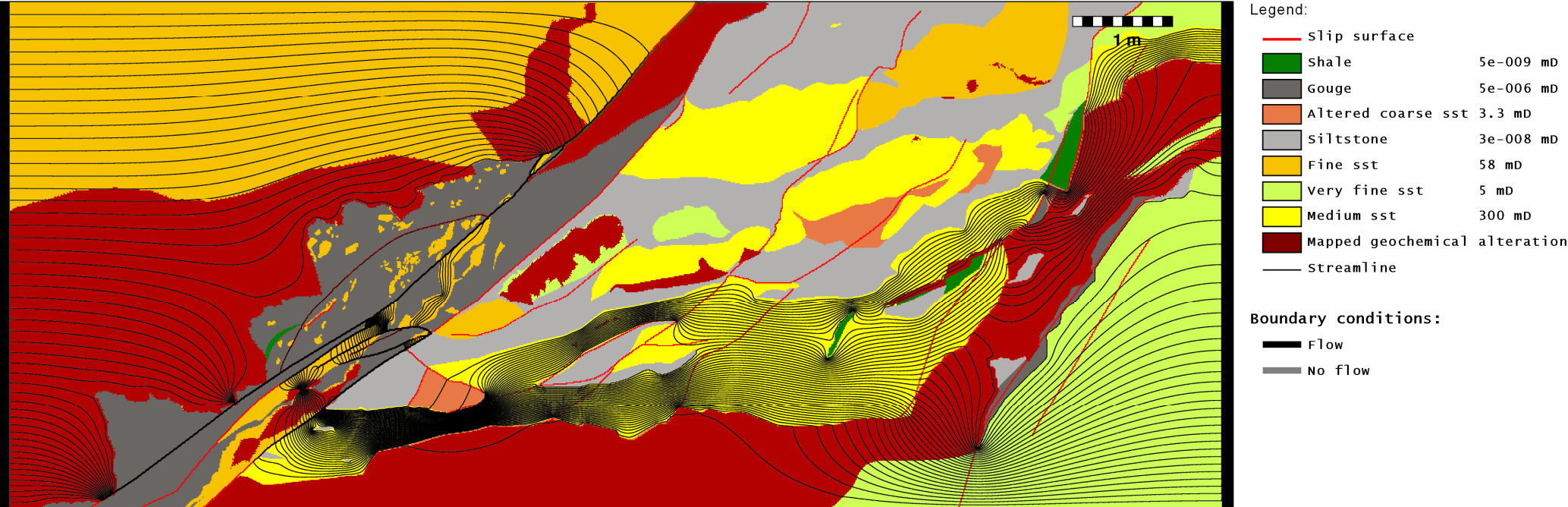
Moab 191 SE 6. Slip surfaces have no effect along fault flow



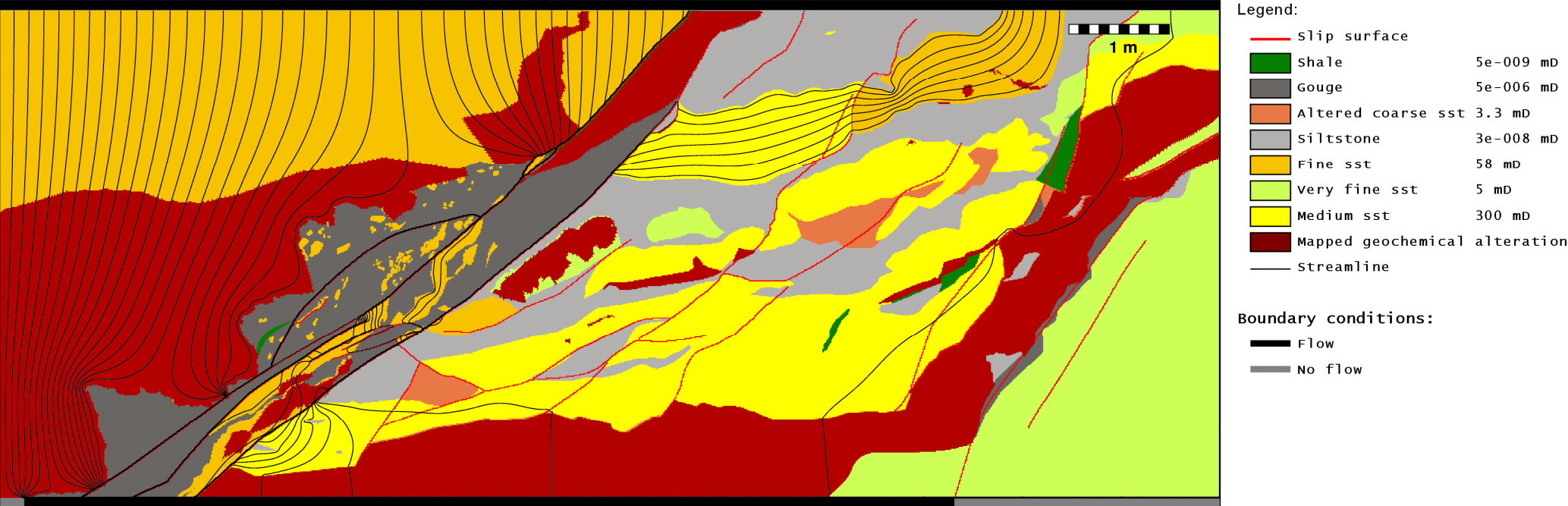
Boundary conditions:



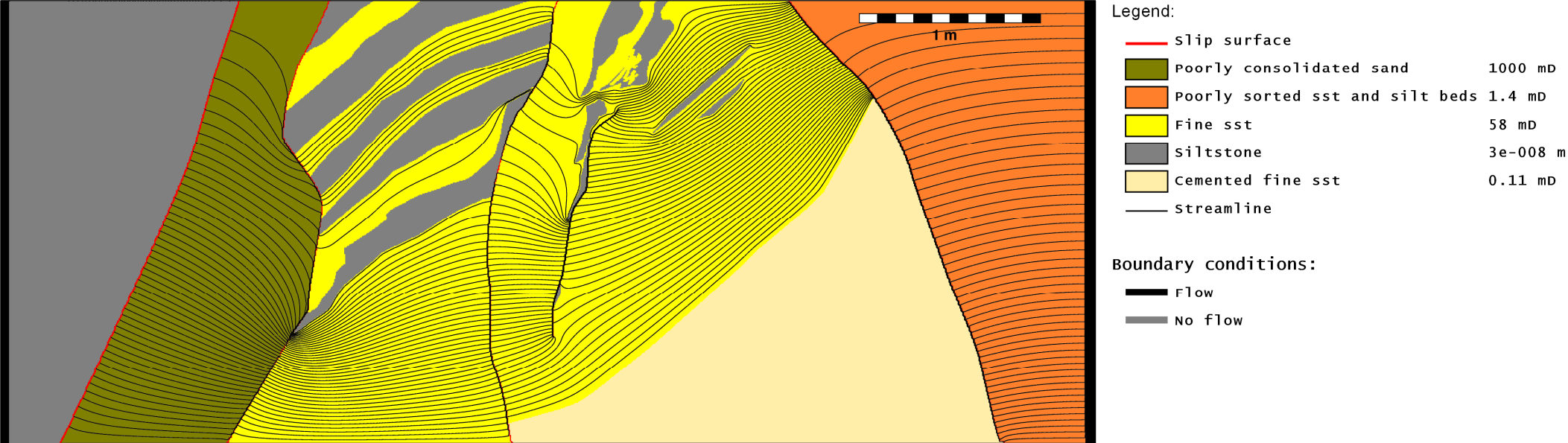
Moab 191 SE 7. Calibrated slip surfaces across fault flow



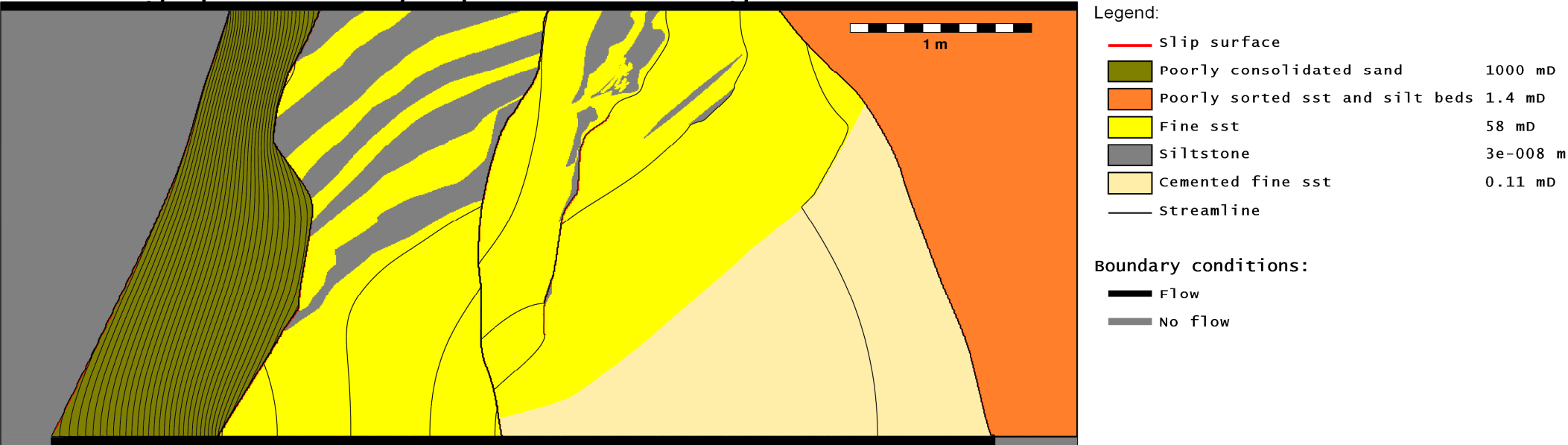
Moab 191 SE 8. Calibrated slip surfaces along fault flow



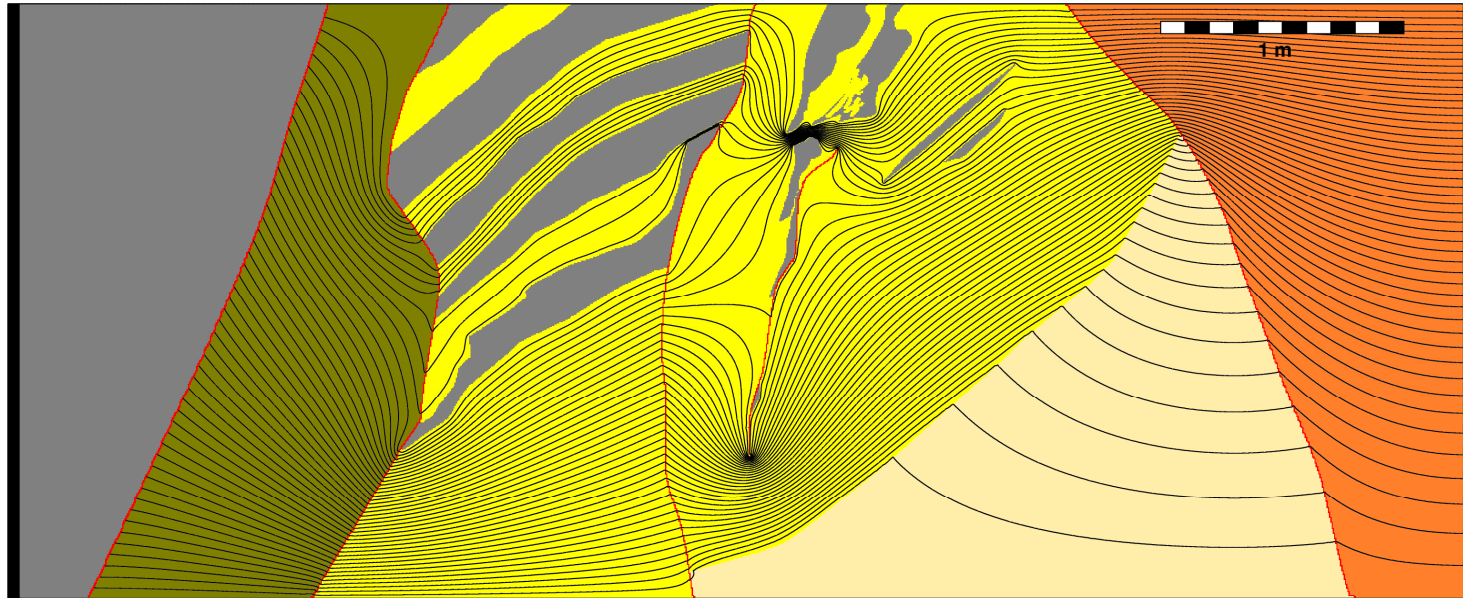
PV 1 High permeability slip surfaces across fault flow



PV 2 High permeability slip surfaces along fault flow



PV 3 Low permeability slip surfaces across fault flow



Legend:

- slip surface
- Poorly consolidated sand 1000 mD
- Poorly sorted sst and silt beds 1.4 mD
- Fine sst 58 mD
- Siltstone 3e-008 m
- Cemented fine sst 0.11 mD
- Streamline

Boundary conditions:

- Flow
- No flow

PV 4 Low permeability slip surfaces along fault flow



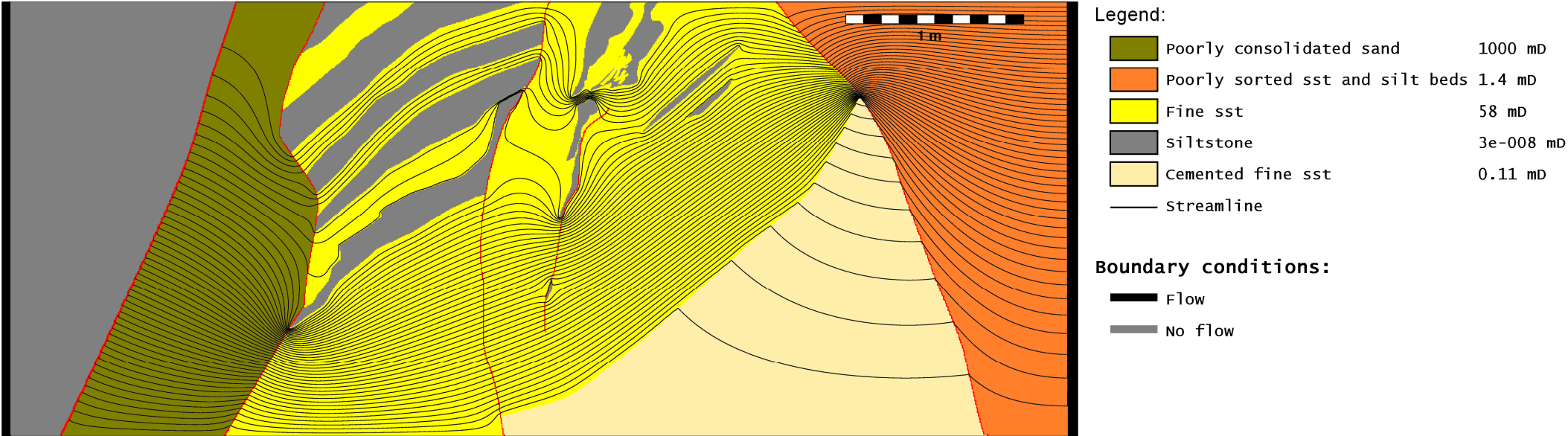
Legend:

- Slip surface
- Poorly consolidated sand 1000 mD
- Poorly sorted sst and silt beds 1.4 mD
- Fine sst 58 mD
- siltstone 3e-008 m
- Cemented fine sst 0.11 mD
- Streamline

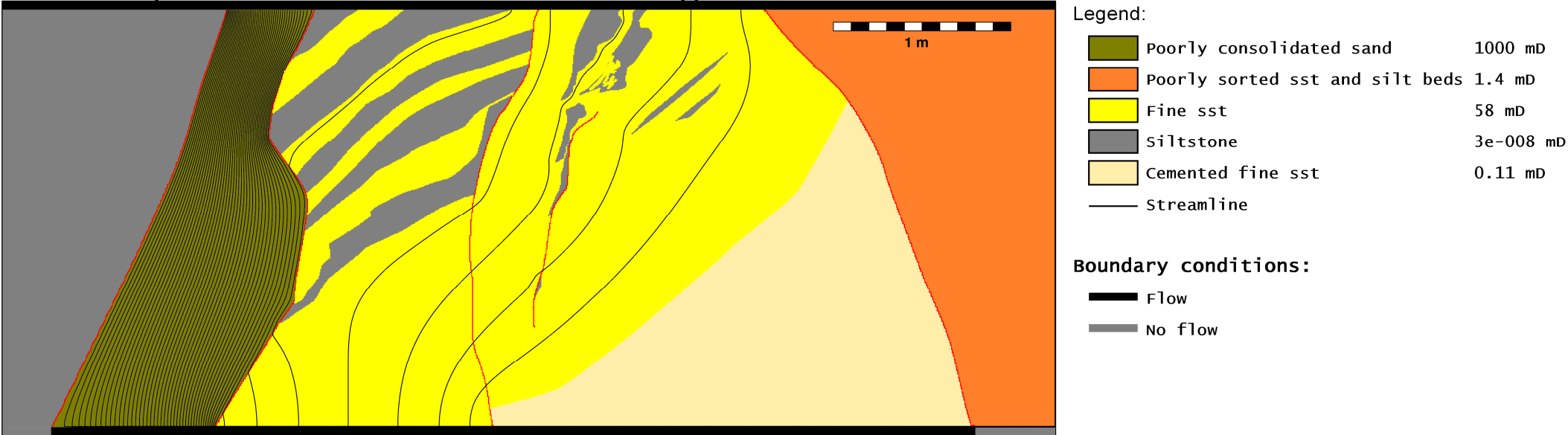
Boundary conditions:

- Flow
- No flow

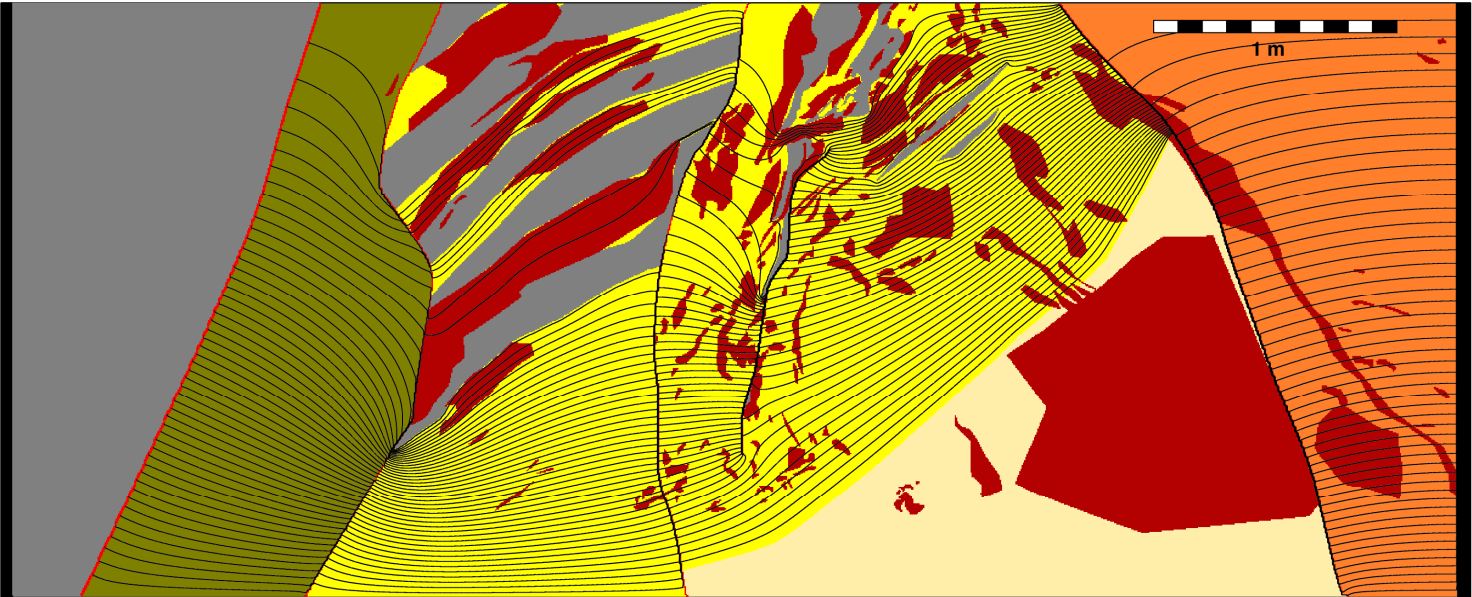
PV 5 Slip surfaces have no effect across fault flow



PV 6 Slip surfaces have no effect along fault flow



PV 1 High permeability slip surfaces across fault flow



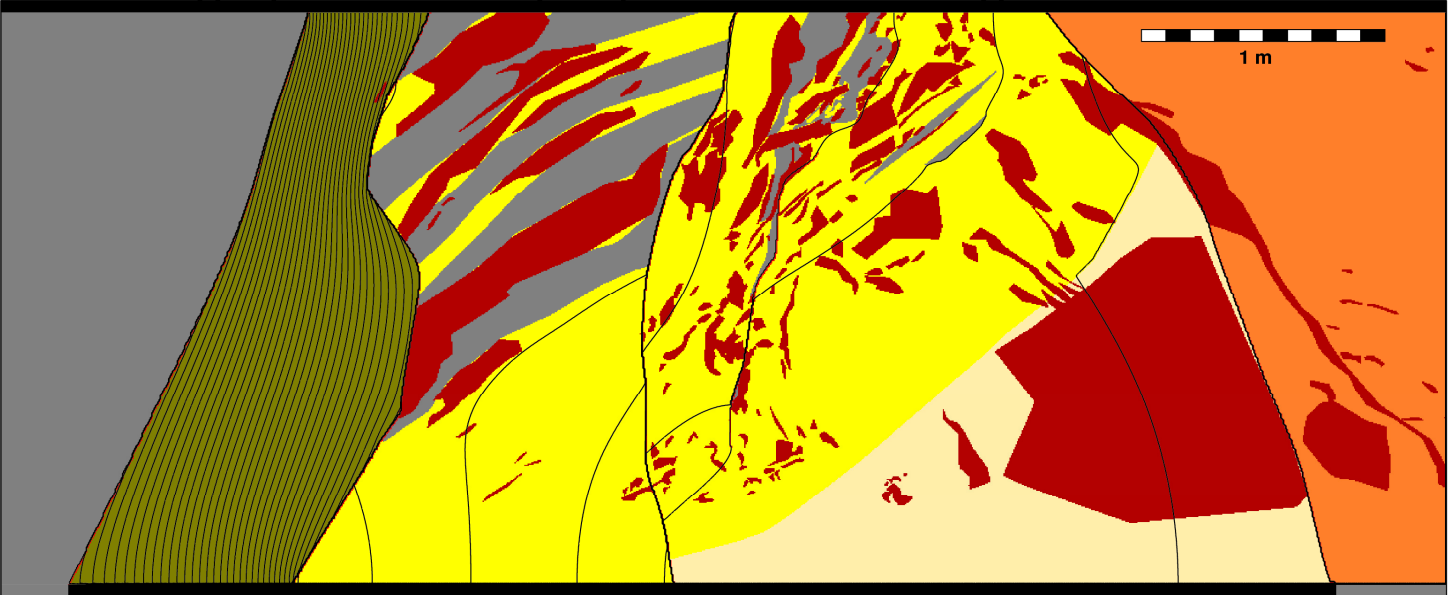
Legend:

- slip surface
- poorly consolidated sand 1000 mD
- poorly sorted sst and silt beds 1.4 mD
- Fine sst 58 mD
- siltstone 3e-008 m
- Cemented fine sst 0.11 mD
- Mapped Geochemical Alteration
- Streamline

Boundary conditions:

- Flow
- No flow

PV 2 High permeability slip surfaces along fault flow



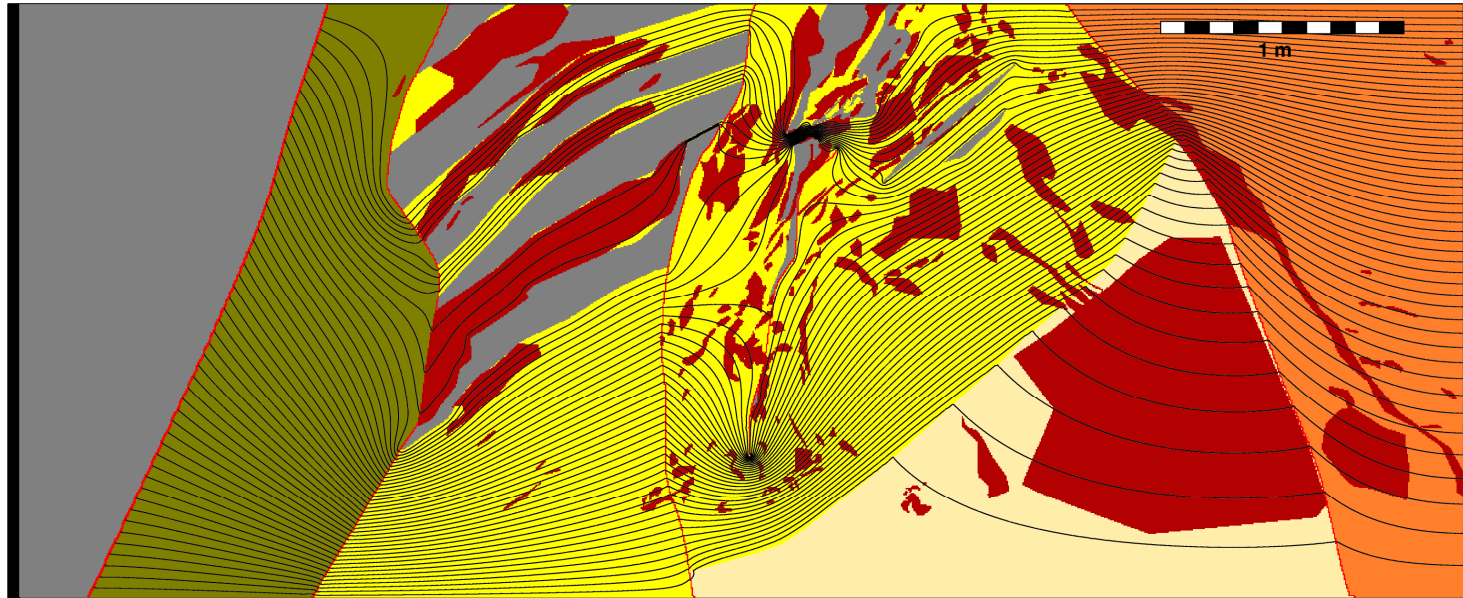
Legend:

- Slip surface
- poorly consolidated sand 1000 mD
- poorly sorted sst and silt beds 1.4 mD
- Fine sst 58 mD
- siltstone 3e-008 m
- Cemented fine sst 0.11 mD
- Mapped Geochemical Alteration
- Streamline

Boundary conditions:

- Flow
- No flow

PV 3 Low permeability slip surfaces across fault flow



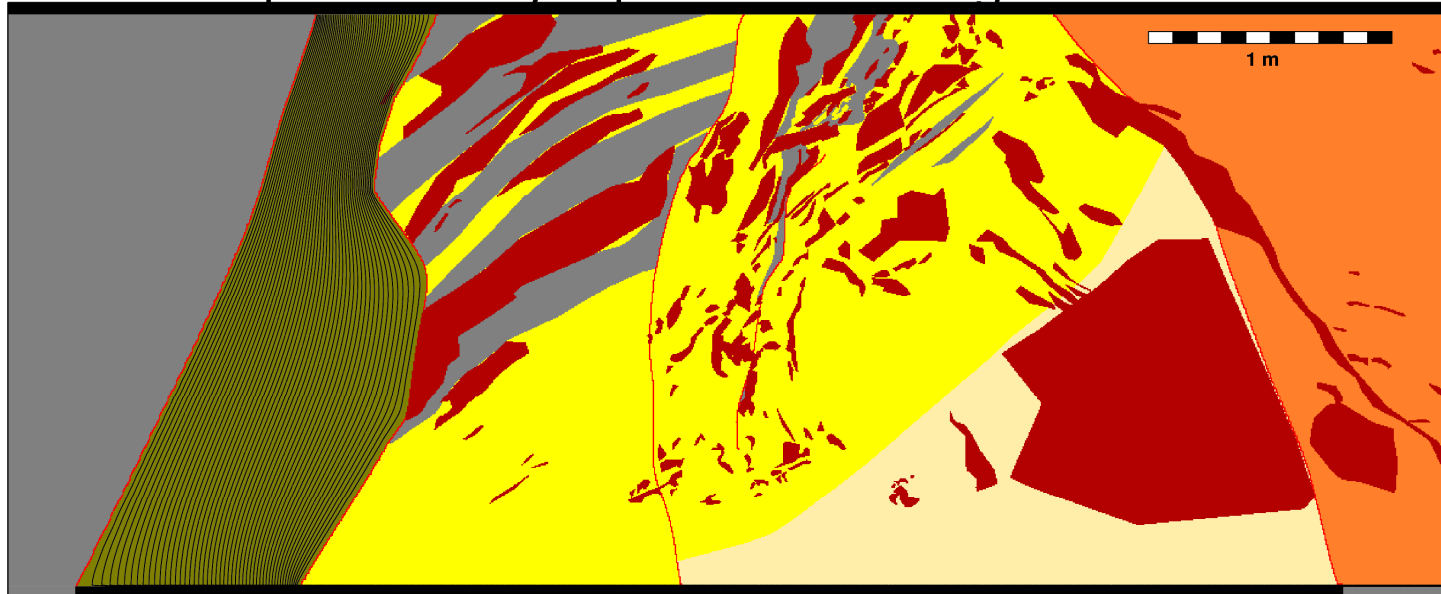
Legend:

- slip surface
- Poorly consolidated sand 1000 mD
- Poorly sorted sst and silt beds 1.4 mD
- Fine sst 58 mD
- Siltstone $3e-008$ m
- Cemented fine sst 0.11 mD
- Mapped Geochemical Alteration
- Streamline

Boundary conditions:

- Flow
- No flow

PV 4 Low permeability slip surfaces along fault flow



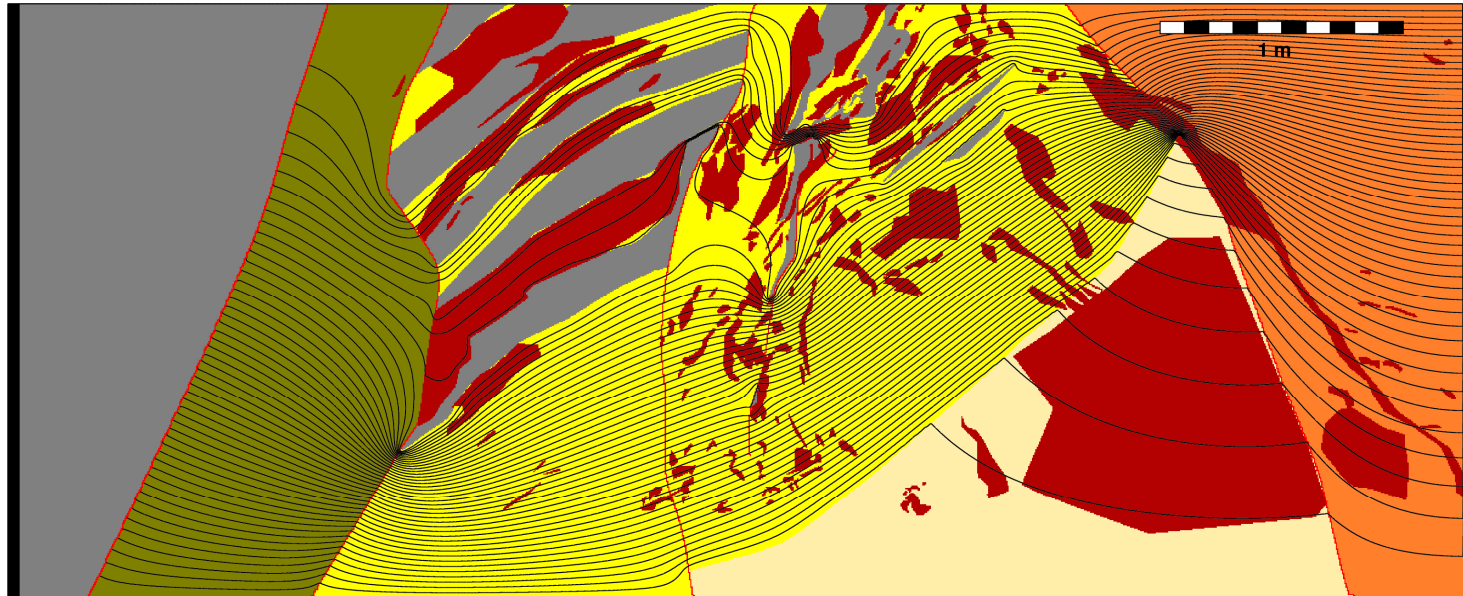
Legend:

- Slip surface
- Poorly consolidated sand 1000 mD
- Poorly sorted sst and silt beds 1.4 mD
- Fine sst 58 mD
- siltstone $3e-008$ m
- Cemented fine sst 0.11 mD
- Mapped Geochemical Alteration
- Streamline

Boundary conditions:

- Flow
- No flow

PV 5 Slip surfaces have no effect across fault flow



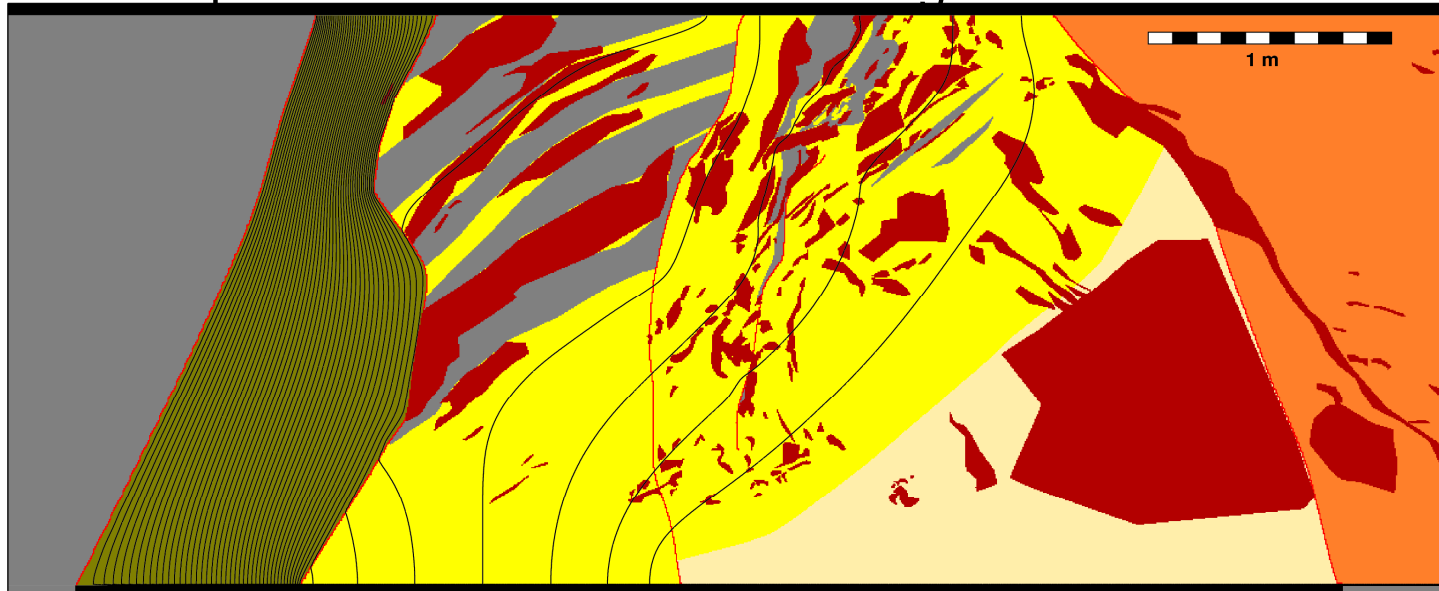
Legend:

- Slip surface
- Poorly consolidated sand 1000 mD
- Poorly sorted sst and silt beds 1.4 mD
- Fine sst 58 mD
- Siltstone $3e-008$ m
- Cemented fine sst 0.11 mD
- Mapped Geochemical Alteration
- Streamline

Boundary conditions:

- Flow
- No flow

PV 6 Slip surfaces have no effect along fault flow



Legend:

- Slip surface
- Poorly consolidated sand 1000 mD
- Poorly sorted sst and silt beds 1.4 mD
- Fine sst 58 mD
- Siltstone $3e-008$ m
- Cemented fine sst 0.11 mD
- Mapped Geochemical Alteration
- Streamline

Boundary conditions:

- Flow
- No flow