## Supplemental Figures

Video DR1 caption: The 3-D image of the excess fluid pressure field with the hypocenters of foreshocks and aftershocks.


Figure DR1. The consistency of observed focal mechanisms with the stress pattern: The misfit angles between the observed and theoretical slip vectors (CT < 0.975). The focal mechanisms of the seismic sequence are shown with the lower hemisphere projection of focal spheres.


Figure DR2. The estimation errors (the standard errors) of the fluid pressure field.


Figure DR3A. Map views of the excess fluid pressure field (at depths of $2.5 \mathrm{~km}, 5 \mathrm{~km}$, and 7.5 km ). Circles show foreshocks and aftershock events ( $\mathrm{M}>=2.5$ ) within 1 km from each plane are imposed on the figures. Diamonds show events which we included in the analysis to determine the fluid pressure field.


Figure DR3B. Map views of the excess fluid pressure field (at depths of $10 \mathrm{~km}, 12.5 \mathrm{~km}$, and 15 km ). Circles and diamonds are the same in Figure S3A.


Figure DR4. Map views of the excess fluid pressure field obtained from auxiliary planes (at depths of $5 \mathrm{~km}, 7.5 \mathrm{~km}$, and 10 km ). Aftershock events ( $\mathrm{M}>=2.5$ ) within 1 km from each plane are imposed on the figures. The fault of the main-shock is projected on each plane.


Figure DR5A


Figure DR5B
Figure DR5. Comparison of aftershock data to change in the Coulomb Failure stress and the dilatation. A. Coulomb Failure Stress change and B. the dilatation at depths of 5 km ,
$7.5 \mathrm{~km}, 10 \mathrm{~km}$ and 12.5 km , caused by fault slip of the $\mathrm{M}=6.3$ main event (red rectangle), calculated for SE-NW-striking and $45^{\circ}$ SW-dipping receiver faults in an elastic halfspace with uniform isotropic elastic properties. The green line gives the elongation of the slipped fault towards the surface, while the black line shows the calculation depth relative to the fault. Seismic events ( $M>=2.5$, scaled with magnitude) within 1 km from each plane are imposed on both figures.

