

Overall assessment: The general assessment is that the intensity of the eruption continues to decrease. Now only one active vent inside the crater, lava stand inside crater continue to sink, eruption column reach no more than 1000 m above ground, all but the uppermost 2-300 m of the lava channel is crusted over. The closed lava pathways feeding sectors of the lava field to the NE and E remain active, with the predominant mode of emplacement being by inflation. With further reduction in effusion rate, the activity along closed pathway ENE appears to be retracting westward, no longer able to sustain active breakouts by Jökulsá (17-18 km from vent).

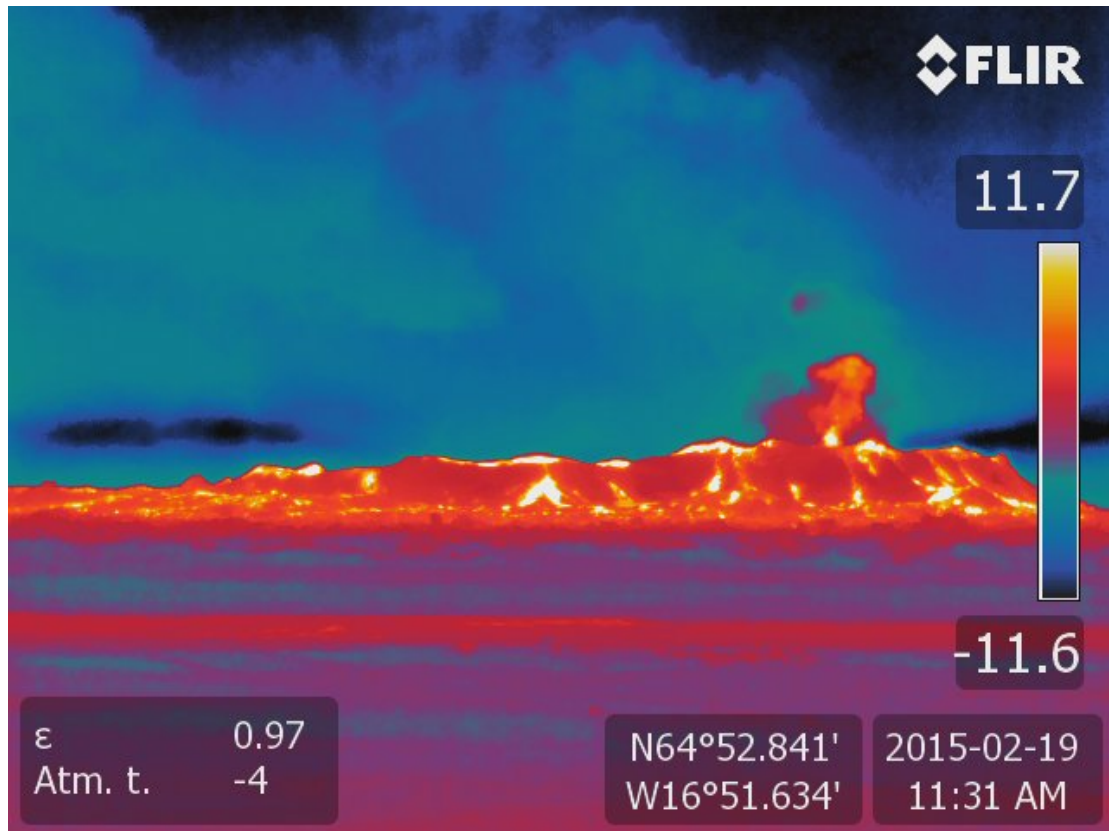
Vent site: Monitoring with thermal camera suggests that outgassing at the crater is now limited to just one vent along the central portion of the highest section of the rampart. The northern vent that was active during FEB 11-12 is seemingly no longer active. Inspection of aerial footage taken on FEB 16 by a client with a private tour operator shows that the lava inside the crater now stands even lower. The open section of the lava channel is limited to the first ~2-300 m outside the vent (footage from FEB 16). Discrete bubble bursting activity occasionally hurled spatter above the crater rim.

Plume: The maximum height of the eruption column was at 10:30-12:00 on FEB 19 estimated to ~900-1000 m above Dyngjusandur. The plume direction was NE.

Gas: While driving under the plume during the morning of FEB 19, gas sensors measured 0.3-0.5 ppm SO₂.

Lava field: The closed lava pathways feeding sectors of the lava field to the NE and ENE remain active, with the predominant mode of emplacement being by inflation, building pronounced escarpments, tumuli and lava-rise pits in the lava field. On FEB 17-18 modest breakouts were observed 15-16 km ENE of the vent at the closed lava pathway on top of the lava field, both through clefts in lava-rise pits and at the northern front. No frontal breakouts were observed by Jökulsá further east. The impression is that due to decreasing effusion rate, the critical length of the closed lava pathway is retracting westward. Max. temp. at the breakouts was measured to 1180-90C.

Measurements/activities: 1) observations of vent and eruption column, FLIR imaging at vent. 2) GPS tracking along aerial radar flight lines (n = 5) into the lava field and mapping of structures in the lava field (pronounced escarpments). During FEB 17-19, the team walked a total distance of 12 km on very rough terrain. Height measurements by kinematic GPS are applied to reconstruction of past effusion rates and volumes. GPS mapping of structures in the lava field is critical for understanding the mode of emplacement, construction of the lava field, and allow linkage to lineaments visible on satellite footage. 3) Observations of active breakouts on the lava field, photo documentation, thermal imaging, and sampling. 4) Sampling of active and recent (DEC-JAN-FEB) lava (n = 11), with the purpose of eliminating temporal gaps in the sample archive during periods with no presence from IES on ground.



Thermal image from FLIR northwest. Outgassing at a single vent in the central section of the high-rise rampart. Compare with FLIR image in report released by ÁH from FEB 11-12. [The temperature scale is irrelevant]



Photos (15:24 17-02-15 (left) 13:00 and 18-02-15 (right), MSR) from breakouts 15-16 km ENE of the vent fed by actively inflating, closed lava pathway. Left: Breakouts overflowing coarse rubble from lava dating back to SEPT. Escarpment in background is the flank of the closed pathway. Right: Squeeze-out through clefts in lava-rise pit surrounded by large tumuli.

IES – Field Volcanology and Natural Hazards group

[Team on site: Jóhann Ingi Jónsson, Elísabet Pálmadóttir, Birgir V. Óskarsson & Morten S. Riishuus]