

2021 LA PALMA VOLCANIC ERUPTION



Archive of official updates from the Government of the
Canary Islands and PEVOLCA Scientific Committee (English
Translations)



Collated and prepared by Ben Ireland for the GeoTenerife
'Volcano Stories' project

Cover Photo: The main eruptive cone as seen 30th November 2021 at 18:43 GMT, by Ben Ireland (GeoTenerife) from the LP-3 road near Mirador de Tajuya.

About this collection and Table of Contents

This report contains a record of all official updates published on the Government of the Canary Islands website documenting the volcanic unrest and eruption on La Palma from September 2021 onwards. The reports were originally published online in Spanish and have been automatically translated to English using Google Translate. We do not accept any liability for the accuracy of the translations nor any changes to the interpretation of the reports as a result. In any case, for accuracy, the original reports in Spanish preside over the translations presented here, which are available as supplementary PDF documents for each day on the GeoTenerife website. For convenience, a (non-exhaustive) list of common mistranslations from the reports is given in the next section.

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Common mistranslations:

- Casting = channel i.e. lava channel
- Laundry = lava flow or lava flow front
- Wash = lava flow or lava flow front
- Runoff = lava flow
- Jameo(s) = Sunken terrain area where a volcanic conduit opens to the surface. Also used to describe where the roof of a lava tube has collapsed
- Building(s) = when talking about the main cone and edificies, these words are occasionally translated to building(s)
- Seasons = stations or places (sometimes seen when describing air quality across all stations)

Notes:

1. These translated reports are supplemented by the original Spanish versions of these articles from the Canarian Government website, and also the official daily PEVOLCA updates in Spanish which the reports are based on, both in PDF format. Prior to 30th September, some original PEVOLCA updates were not published in tandem with the Canarian Government report for that day. In some periods, they were published in English, Spanish and German, whereas in later periods they were only published in Spanish.

2. The dates of reports relate to the day they were published. Generally, they were published after the PEVOLCA press briefing at 2pm local time on each day of the eruption. Thus, some information contained within them may relate to previous days, so care is needed to identify where this is the case. For example, the estimates of SO₂ flux given on a set day actually relates to values representative of the previous day.

General recommendations for the population:

These are the recommendations given as of 7th December 2021. Earlier versions of this advice are available in PDF format under the days they were issued by PEVOLCA.

OBLIGATIONS AND RECOMMENDATIONS

Respect for land and maritime exclusion zones continues to be imperative in order to maintain the physical integrity of people.

The population on the island of La Palma is recommended to use FFP2 masks outdoors.

SEISMIC MOVEMENTS:

- The PEVOLCA scientific committee carries out continuous monitoring of volcanic activity.
- Both at home and in the workplace, take preventive measures: reinforce the shelves, fix lamps and remove large objects from the furniture.

Outside:

If you are outside and there is an earthquake, find an open place and stay away from structures that could fall to the road and from areas at risk of collapse.

For your safety, remember these self-protection tips:

- Go to open spaces.
- Stay away from buildings, balconies, traffic lights, streetlights, power lines or trees.
- Do not go near areas with danger of landslides.
- Follow the recommendations of the authorities and find out through official channels and the media.
- If you are in a vehicle, slow down and stop the engine when possible, away from buildings and steep areas. Set the emergency indicators and stay in the vehicle until the earthquake ends.

Inside:

If you are surprised by an earthquake inside your home, stay calm and follow these self-protection tips:

- While the shaking lasts, do not go outside.
- Protect yourself under a door frame or some solid piece of furniture, such as a table.
- Do not stand near windows.
- If you have to leave your house, disconnect water, electricity and gas.
- In case of evacuation, go down the stairs and do not use the elevator.

- Follow the recommendations of the authorities and find out through official channels and the media.

FALL OF PYROCLASTS:

- The exclusion radius is updated, after evaluating the current activity, at 2.0 km around the emission centers to minimize the risk of impact from pyroclasts and exposure to gases. The LP-2 highway will be used as a limit on the south side. On the north side, access to the core of Tacande de Abajo will be allowed, establishing the limit at km 2.9 of the LP-212.
- In the event of increased explosive activity, it is possible that some violent detonations could break the glass in the windows. It is recommended to stay away from the windows up to a radius of 5 km from the cone.
- In areas affected by intense ash fall (a clear deposition is observed on the ground) and even more so if mist is observed, it is recommended to stay indoors. Outdoors, the use of FFP2 masks and eye protection systems is also recommended.
- It is recommended to clean roofs where ash thicknesses of several centimeters accumulate. It is insisted that the procedure for removing ash from roofs and soil indicated by Civil Protection be followed precisely (moisten ash, eye protection, wear a mask, protect the skin, see attached documentation). For removal, use FFP2 masks, gloves, dampen slightly for sweeping and avoiding the use of blowers, except for cleaning the airport facilities by specialized personnel with their corresponding PPE. The use of blowers increases the re-suspension of the particles most harmful to health.

Before the arrival of ashes to other islands, it is recommended in those affected, the use of surgical masks

MARINE PLUMES:

- It is suggested to pay close attention to the wind forecast to monitor possible changes in the direction of the plume and act accordingly, especially those with a weakened respiratory system (for example, asthmatics) as they are more vulnerable to lower concentrations.
- Eye flushing is also recommended after any exposure, as symptoms are often not noticed until later.

- These marine plumes can be seen up to several kilometers from the source, although more diluted. In the event that the marine plume reaches population centers, it is recommended to stay indoors whenever possible and close all doors and windows.
- For the safety of the navigation of scientific vessels that carry out scientific work in this area, it is recommended to maintain a distance of at least 500 m for the active areas of the lava deltas (with contribution of lava and visible manifestations), reducing said distance 200 m for the most stable areas. Navigation for scientific purposes for emergency management can be carried out at shorter distances, under the responsibility of the owner and the captain or skipper of the boat, as long as it has the approval of the Technical Directorate of PEVOLCA and Captaincy Maritime.

LAVIC WASHES:

- It is also recommended not to approach lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures.
- Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of lava flow, which can detach from the face of the flow and sudden form reaching distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur.

For the safety of scientists on the ground within the exclusion zone, it is recommended to maintain a distance of at least 1000 m from the main emission center. The approach to shorter distances can be carried out, for scientific observation purposes for emergency management, with the approval of the PEVOLCA Technical Directorate.

Continuous monitoring of activity has been strengthened and any significant changes observed will be reported. Stay tuned to the information provided by the corresponding Civil Protection authorities”.

Government of the Canary Islands website link for new reports:

PEVOLCA Reports:

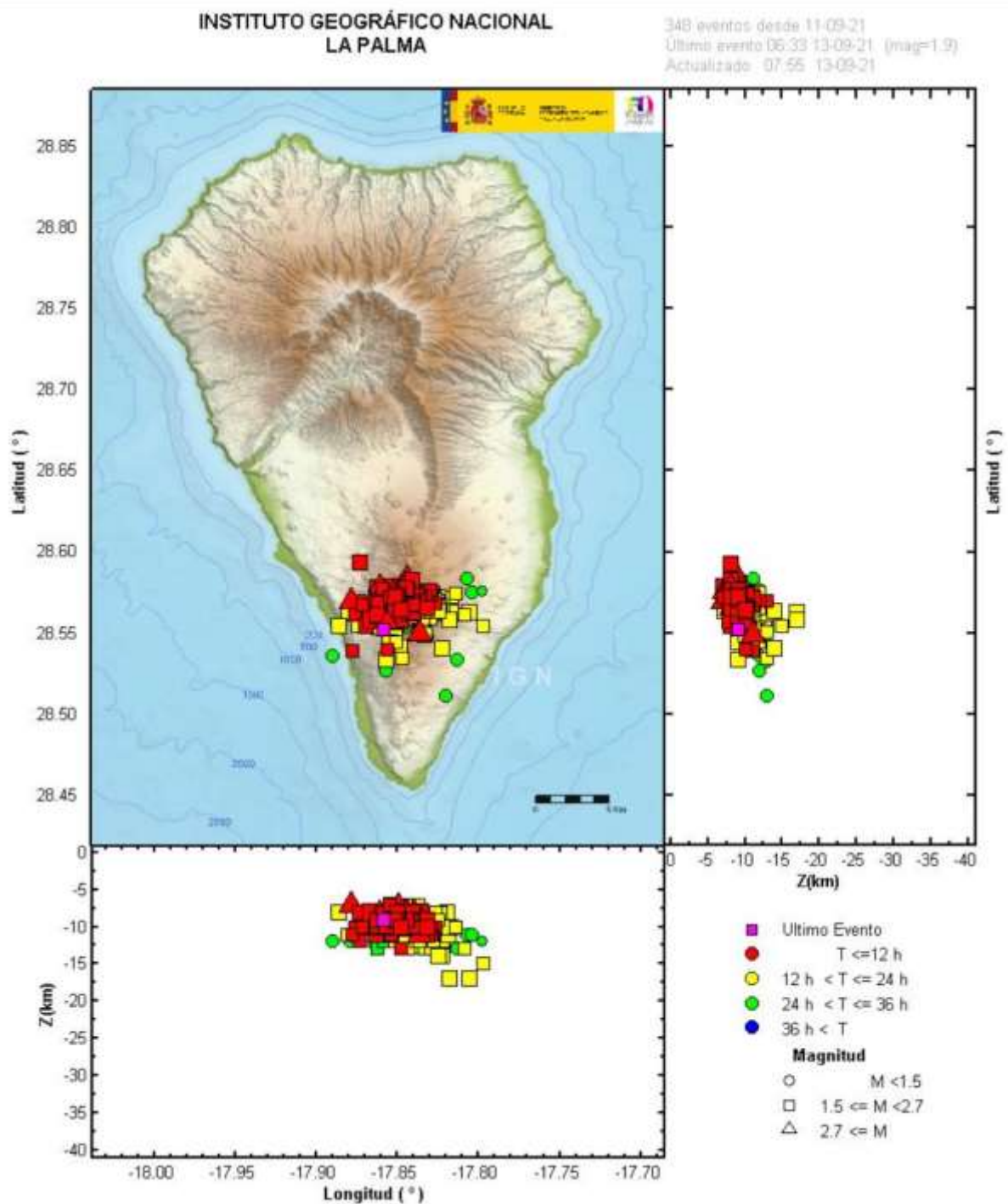
<https://www3.gobiernodecanarias.org/noticias/tag/pevolca-prensa/>

General news about the Volcanic Emergency

<https://www3.gobiernodecanarias.org/noticias/tag/infovolcan/>

September 13th

The Government activates PEVOLCA in the Cumbre Vieja area of La Palma to monitor seismic activity



The Scientific Committee has recommended changing the traffic light from green to yellow for the municipalities of Los Llanos de Aridane, Fuencaliente, El Paso and Mazo

The yellow traffic light does not imply an increased risk for the population

Given the increase in seismic activity registered on the island of La Palma, the Ministry of Public Administrations, Justice and Security, the Government of the Canary Islands today convened the Scientific Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk (PEVOLCA) to assess the situation, agreeing to activate this Plan in a situation of Alert for Fuencaliente, Los Llanos de Aridane, El Paso and Mazo and the change of the traffic light from green to yellow for said municipalities.

PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk. In yellow, information to the population, surveillance measures and monitoring of volcanic and seismic activity are intensified. At the current level, the activity does not imply an increased risk for the population.

The Scientific Committee reported that since 2017 an anomalous seismic activity has been recorded in the south of the island of La Palma, which since the summer of 2020 has increased with the occurrence of 8 seismic swarms. The last one, which began last Saturday the 11th, has been the most intense, both due to the number of earthquakes located (more than 400 until this morning), and because of their magnitude, the largest being felt by the population. In addition, the Committee indicated that the depth of the earthquakes, which until now had oscillated between 20-30 km, has decreased to 12 km during this swarm. Regarding the geochemical monitoring of volcanic gases, he highlighted that the Helium-3 emission data recorded confirm the magmatic nature of this process, registering the highest value observed in the last 30 years.

Due to all of the above, the Committee recommended to the Plan Directorate to change the volcanic traffic light from green to yellow in the Cumbre Vieja area, and it cannot be ruled out that the seismic activity felt in the coming days will intensify, depending on the evolution.

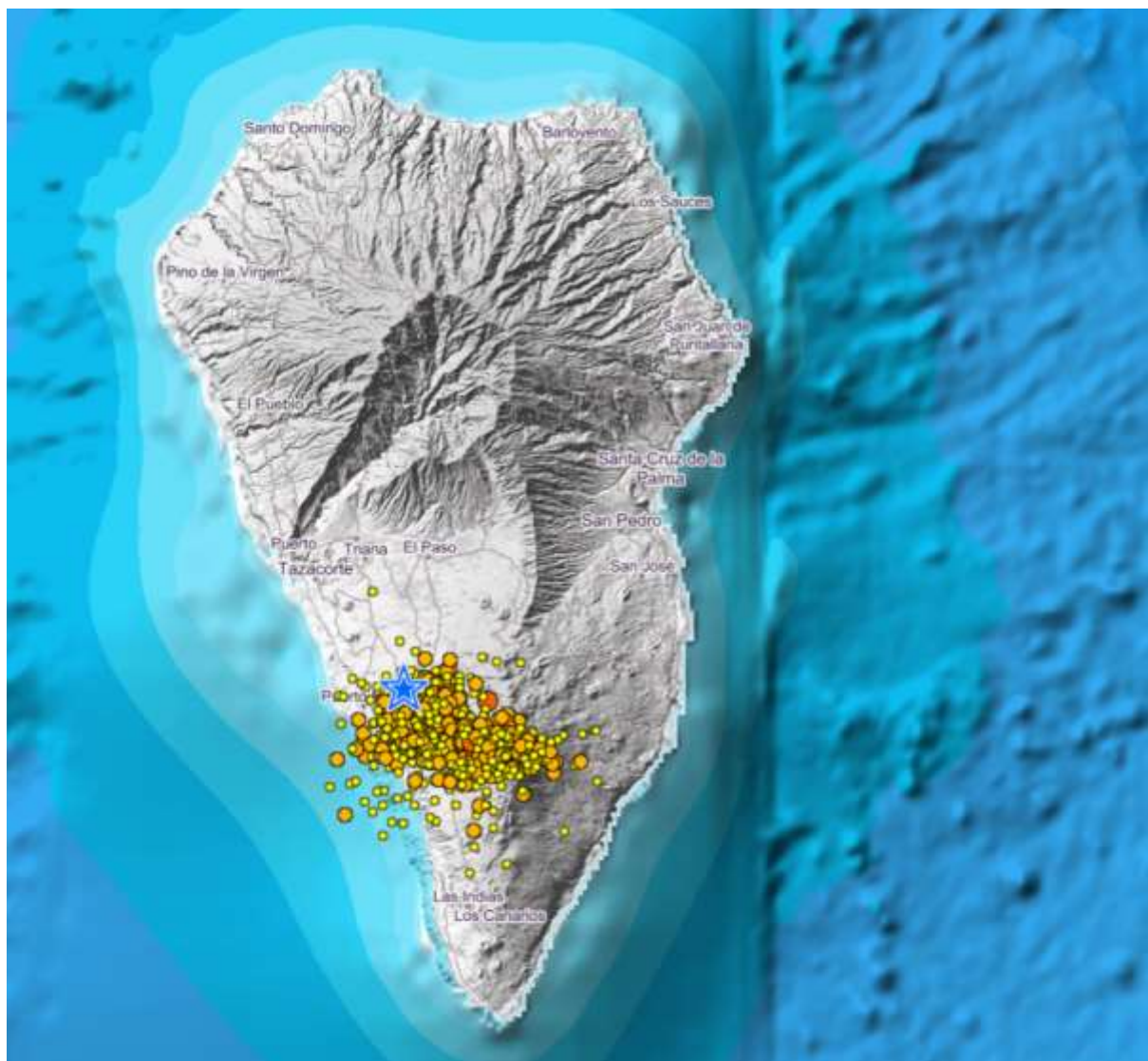
From this moment on, the monitoring of the phenomenon is increased and any significant change will be communicated. The population must remain attentive to the information provided by the Civil Protection authorities.

Representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC) have participated in the Scientific Committee,

coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands; Canary Islands Volcanological Institute (Involcan), State Meteorology Agency (AEMET), Spanish Institute of Oceanography (IEO) and the University of La Laguna, as well as the Security Council of the Cabildo de La Palma Delegation, Subdelegation and Insular Directorate of the Government of Spain on the Island.

September 15th

PEVOLCA maintains the yellow traffic light and the volcanic risk alert for the Cumbre Vieja area, in La Palma



The Scientific Committee reports that the process has intensified, but that there is still no clear evidence of an imminent eruption

The territorial scope is maintained for the municipalities of El Paso, Los Llanos de Aridane, Mazo and Fuencaliente

The yellow traffic light reinforces information to the population, surveillance measures and monitoring of volcanic and seismic activity

The Scientific Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk (PEVOLCA), meeting today, has recommended to the Directorate of the Plan to keep the traffic light in yellow and the Alert situation for the municipalities of the Cumbre Vieja, specifically Fuencaliente, Los Llanos de Aridane, El Paso and Mazo. Experts note that the process has intensified and may evolve rapidly in the short term, but add that there is still no clear evidence for an imminent eruption.

The committee has reported that in this situation it is expected that felt earthquakes of greater intensity will occur. The indicators show an intense seismic record, with a slight displacement towards the northwest, with shallower depths than in previous days, between 6 and 8 km. In addition, today some shallow earthquakes (1-3 km) of low magnitude are also being recorded and that the surface deformation data have reached a cumulative maximum of 6 cm, predominantly vertical, in the same area in which the locate seismicity.

The Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC); The Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), the State Meteorological Agency (AEMET), the Spanish Institute of Oceanography (IEO), the University of La Laguna and the University of Las Palmas de Gran Canaria.

PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk: green, yellow, orange and red. In yellow, information to the population, surveillance measures and monitoring of volcanic and seismic activity are intensified.

At this level, activity monitoring is reinforced to communicate any significant changes that are observed. The population must be attentive to the communications of the competent authorities in Civil Protection, through official channels and the media.

Before a volcanic eruption, there is a gradual increase in seismic activity, which can last for a long time and can be perceived by the population, so you must remain calm.

At a yellow traffic light, it is recommended to know the communications network of the environment in which you reside for a possible evacuation and to have a family home located outside the risk areas.

A small backpack or travel bag must be planned in case evacuation is determined, with a mobile phone with charger, personal medications and important documentation.

If any significant changes are observed (noise, gases, ash, change in the water level of the wells, small tremors in the ground, etc.), you should contact 1-1-2. Remember this is an emergency phone number.

If you live with people with reduced mobility who need a special evacuation (ambulance), notify the Department of Social Affairs of your City Council.

In case of evacuation, your City Council will inform you of the routes and the established meeting point. It will only be evacuated when the indications are given to do so.

September 16th

The Security Councilor of the Government of the Canary Islands presides over the constitution of the PEVOLCA Steering Committee



Miguel Ángel Morcuende, from the Cabildo de La Palma, is appointed as technical director of the Plan

The Government reinforces the Canary Islands Emergency and Security Network with the increase of repeater stations, as well as communication terminals

The Minister of Public Administrations, Justice and Security of the Government of the Canary Islands, Julio Pérez, has chaired today the constitution and launch of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to volcanic risk in the Autonomous Community of the Canary Islands (PEVOLCA) on the occasion of the seismic swarm of La Palma. Present at this meeting were the highest representatives of the Cabildo de La Palma, the municipalities of Fuencaliente, Los Llanos de Aridane, El Paso and Villa de Mazo; the Delegation of the Government of Spain in the Canary Islands, the General Directorate of Security and Emergencies of the Government of the Canary Islands, the Canary Health Service, the Ministry of Ecological Transition, Fight against Climate Change and Territorial Planning of the Government of the Canary Islands, the Canary Islands

Emergency Service (SUC) and the 1-1-2 CECOES. Likewise, technicians from the different administrations have been present.

The Steering Committee is constituted to analyze and achieve the best development of the actions contemplated within the action plans provided by each of the municipal, island, autonomous and state administrations.

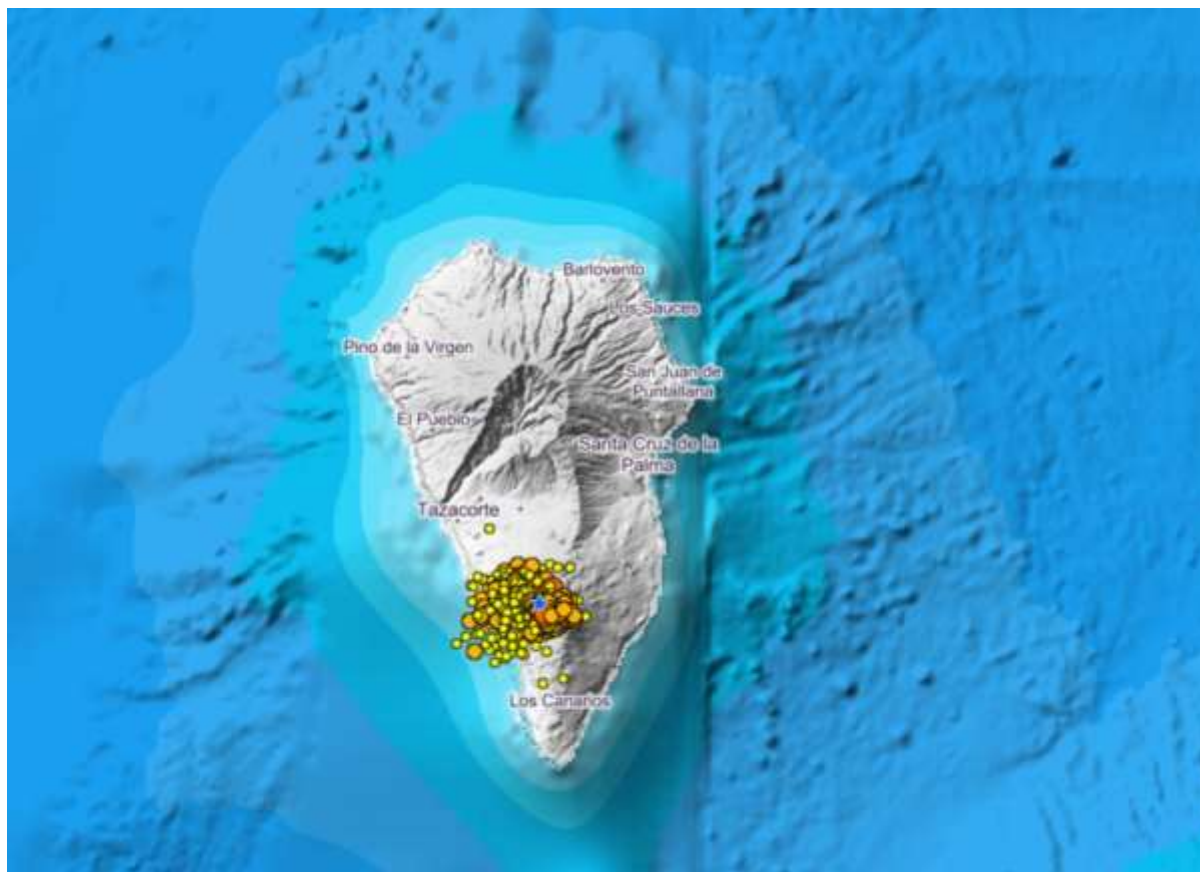
Miguel Ángel Morcuende, head of the Environment and Emergencies service of the Cabildo de La Palma, has been appointed technical director of PEVOLCA and will be responsible for directing and coordinating all actions carried out under the Plan itself.

At this meeting the general situation was addressed based on the reports provided by the Scientific Committee, which also met this Thursday. The Government of the Canary Islands has decided to reinforce the Canary Islands Emergency and Security Network (RESCAN) with the increase of repeater stations, as well as communication terminals that are made available to the Technical Directorate.

In addition, it has become aware of the increase in the means of surveillance by the National Geographic Institute and the Volcanological Institute of the Canary Islands, who have deployed seismic instruments in the Cumbre Vieja area. This Friday, both the Steering Committee and the Scientific Committee will meet again.

The Plan Directorate has also recommended to the Technical Directorate the activation of emergency plans at the municipal and island level in the affected area. This alert phase of the PEVOLCA, yellow traffic light, includes the preparation of a possible evacuation of the population. In this sense, both the Cabildo and the municipalities intensify information to the population about their self-protection plans, meeting points and evacuation routes, as well as the travel needs of people with reduced mobility.

The PEVOLCA traffic light remains yellow for the Cumbre Vieja area, on La Palma



The Scientific Committee reports that there is a decrease in the number of earthquakes and in their magnitude, but that the accumulated deformation increases to 10 cm

The process continues and can have a rapid evolution in the short term, which is why felt earthquakes of greater intensity can be registered.

The yellow traffic light reinforces information to the population, surveillance measures and monitoring of volcanic and seismic activity

The Scientific Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk (PEVOLCA), meeting today, has recommended to the Directorate of the Plan to maintain the volcanic traffic light in yellow in the Cumbre Vieja area, covering the municipalities of Fuencaliente , Los Llanos de Aridane, El Paso and Mazo, and it cannot be ruled out that activity will intensify in the short term. The traffic light will be revised in accordance with the evolution of the process.

According to experts, in the last few hours the record of seismic activity has continued, verifying a decrease in the number of earthquakes and in their magnitude. Shallow seismicity (1-3 km) of low magnitude continues, adding in the last 12 hours a seismicity at intermediate depths (4-5 km). The deformation has increased reaching an accumulated value of 10 cm, very localized in the environment of the seismicity.

The committee explains that the process continues and may have a rapid evolution in the short term, with the occurrence of felt earthquakes of greater intensity being expected.

In this situation, PEVOLCA has reinforced the continuous monitoring of the activity and any significant changes observed will be communicated. Stay tuned to the information provided by the corresponding Civil Protection authorities.

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PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk: green, yellow, orange and red. In yellow, information to the population, surveillance measures and monitoring of volcanic and seismic activity are intensified.

At this level, activity monitoring is reinforced to communicate any significant changes that are observed. The population must be attentive to the communications of the competent authorities in Civil Protection, through official channels and the media.

Before a volcanic eruption, there is a gradual increase in seismic activity, which can last for a long time and can be perceived by the population, so you must remain calm.

At a yellow traffic light, it is recommended to know the communications network of the environment in which you reside for a possible evacuation and to have a family home located outside the risk areas.

A small backpack or travel bag must be planned in case evacuation is determined, with a mobile phone with charger, personal medications and important documentation.

If any significant changes are observed (noise, gases, ash, change in the water level of the wells, small tremors in the ground, etc.), you should contact 1-1-2. Remember this is an emergency phone number.

If you live with people with reduced mobility who need a special evacuation (ambulance), notify the Department of Social Affairs of your City Council.

In case of evacuation, your City Council will inform you of the routes and the established meeting point. It will only be evacuated when the indications are given to do so.

September 17th

The PEVOLCA Steering Committee examines the evacuation plans prepared by the Cabildo and municipalities of La Palma



The City Council of Tazacorte has been present at the meeting, along with the rest of the municipalities that are included in the yellow volcanic traffic light

Tomorrow there will be new sessions of the Scientific Committee and the Steering Committee

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to volcanic risk in the Autonomous Community of the Canary Islands (PEVOLCA) met this Friday, chaired by the Minister of Public Administrations, Justice and Security of the Government of the Canary Islands, Julio Pérez, to analyze the latest conclusions of the Scientific Committee on the evolution of seismic activity on La Palma, which continues at a yellow volcanic traffic light, as well as advance actions for a possible evacuation of the population if necessary, which is coordinated by the Cabildo from La Palma, next to the municipalities of Fuencaliente, Los Llanos de Aridane, El Paso and Villa de Mazo.

Preventive action includes the organization and data collection of the affected population, both resident and tourist, alternative accommodation possibilities, means of transport, in addition to establishing the strategy to follow for the evacuation of domestic animals and livestock.

The technical director of the Plan, Miguel Ángel Morcuende, explained that the City Council of Tazacorte was present for the first time at this meeting, given that the La Bombilla neighborhood is located within the scope of a possible eruption in the Cumbre area. Old.

Likewise, those responsible for the PEVOLCA Operational Action Groups have been appointed within this emergency. These are the Intervention Group, made up of material and human resources; Volcanic Vigilance Group, responsible for the permanent monitoring and assessment of the volcanic danger; Security Group, a set of material and human resources to guarantee citizen security, control of the areas affected by the emergency and their accesses, as well as collaboration in a possible evacuation; Health Group, which would provide health care in the event that it was affected by the emergency; Logistics Group, in charge of evacuation, mobilization and demobilization, provisioning, shelter, replacement of material resources of the intervention groups and support in the transfer of the population; Group for the Rehabilitation of Essential Services, which will maintain water, electricity, fuel and telephony for the normal continuity of the population's activity; and the Technical Support Group, which facilitates the information mechanisms for decision-making by the Technical Director.

Given the increase in seismic activity on La Palma, the Government of the Canary Islands activated PEVOLCA on Monday in a situation of Alert with a

yellow traffic light for the municipalities of Fuencaliente, Los Llanos de Aridane, El Paso and Villa de Mazo. For its part, yesterday, the Cabildo de La Palma preventatively activated the PEINPAL Insular Emergency Plan, in a Pre-alert situation. This Saturday the Steering Committee will meet again, as well as the Scientific Committee.

PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk: green, yellow, orange and red. In yellow, information to the population, surveillance measures and monitoring of volcanic and seismic activity are intensified.

The PEVOLCA scientific committee maintains the alert despite the decrease in activity at Cumbre Vieja, on La Palma



Experts insist that this scenario may be transitory and does not imply a stoppage of the volcanic reactivation

The yellow traffic light is maintained for the municipalities of El Paso, Los Llanos de Aridane, Mazo and Fuencaliente

In this phase, information to the population, surveillance measures and monitoring of volcanic and seismic activity are reinforced.

The Scientific Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk (PEVOLCA), meeting today, has verified a decrease in seismic activity, but has insisted that the scenario may be transitory and does not imply a stoppage of volcanic reactivation. In this sense, it has recommended to the Plan Directorate to maintain the Alert situation and the yellow volcanic traffic light in the Cumbre Vieja area, on La Palma, in the municipalities of Fuencaliente, Los Llanos de Aridane, El Paso and Mazo, intensifying the surveillance and monitoring tasks. The Scientific Committee, as well as the Steering Committee, will meet again this Saturday.

In their report, they indicate that in the last hours a clear decrease in seismic activity has been observed, although a pulse of notable intensity has been recorded with localized events, both at depths of 6-8 km, and on the surface. Today's seismicity is located NE of that of the previous day. Shallow seismicity is found to be predominant. The deformation continues at a lower speed, being compatible with a more superficial source of deformation.

The process continues and may evolve rapidly in the short term. The decrease in seismicity may be temporary and does not necessarily imply a stoppage of volcanic reactivation.

As indicated in the previous bulletin, the occurrence of felt earthquakes of greater intensity is expected. At the same time, the beginning of observable phenomena on the surface cannot be ruled out.

The scientific committee has also ruled on the news appeared in the media about a possible great collapse of the west flank of Cumbre Vieja and consequent formation of a mega tsunami, highlighting that there is no data to support this hypothesis and that it lacks any basis. proven scientist.

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orange and red. In yellow, information to the population, surveillance measures and monitoring of volcanic and seismic activity are intensified.

At this level, activity monitoring is reinforced to communicate any significant changes that are observed. The population must be attentive to the communications of the competent authorities in Civil Protection, through official channels and the media.

Before a volcanic eruption, there is a gradual increase in seismic activity, which can last for a long time and can be perceived by the population, so keep calm.

At a yellow traffic light, it is recommended to know the communications network of the environment in which you reside for a possible evacuation and to have a family home located outside the risk areas.

A small backpack or travel bag must be planned in case evacuation is determined, with a mobile phone with charger, personal medications and important documentation.

If any significant changes are observed (noise, gases, ash, change in the water level of the wells, small tremors in the ground, etc.), you should contact 1-1-2. Remember this is an emergency phone number.

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In case of evacuation, your City Council will inform you of the routes and the established meeting point. It will only be evacuated when the indications are given to do so.

The Security Council incorporates a monitoring and follow-up plane of the seismic activity of La Palma



The counselor Julio Pérez emphasizes that, in this phase, the Government's priorities are focused on reinforcing the means of surveillance and preparing the evacuation device, if necessary.

The General Directorate of Security and Emergencies of the Government of the Canary Islands, dependent on the Ministry of Public Administrations, Justice and Security, has requested the Ministry for the Ecological Transition and the Demographic Challenge to incorporate a coordination and observation plane (ACO) for the monitoring and follow-up of volcanic activity on the island of La Palma.

This request is part of the agreements reached in the Directorate of the Special Plan for Civil Protection and Attention to Volcanic Risk Emergencies (PEVOLCA), in coordination with all the administrations involved.

The Minister of Public Administrations, Justice and Security of the regional Executive, Julio Pérez, stressed that "the priorities of the Government at this time go through the reinforcement of the surveillance means, with the

incorporation of this plane, the improvement of the RESCAN, or the increase of scientific teams on the ground and the preparation of the evacuation device, if necessary ". In this alert phase of PEVOLCA, yellow traffic light, the preparation of this possible evacuation is being coordinated by the Island Council with the municipalities involved.

The plane, model Cessna 337G Skymaster, departed this Friday early in the morning from its base in Muchamiel, in Alicante, from where it took off bound for Córdoba for a first stopover prior to its journey to the Canary Islands. In Lanzarote he plans to make a technical stop before arriving in La Palma late this afternoon.

This coordination and observation plane plans to fly over the island to transmit photographs and videos via GPRS / 3G / 4G mobile telephony and microwaves, both in the visible and infrared spectrum, to the Operations Center of the Ministry of Agriculture, Fisheries and Food and the Mobile Analysis and Planning Units (UMAP) deployed on the ground.

September 18th

The PEVOLCA Steering Committee analyzes the progress made in the evacuation plans for the affected population on La Palma

The yellow traffic light is maintained after the recommendations of the Scientific Committee

Today the first surveillance flights of the plane requested from MITECO and of the drones with infrared cameras of the General Directorate of Security and Emergencies were carried out.

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to volcanic risk in the Canary Islands (PEVOLCA), chaired this Saturday by the Minister of Public Administrations, Justice and Security of the Government of the Canary Islands, Julio Pérez, has analyzed the progress in the preparation of the evacuation plans for the population in the area affected by the seismic swarm on La Palma, with special attention to the most vulnerable areas defined by the Scientific Committee. The traffic light remains yellow and the Plan activated in an Alert situation.

Present at this meeting were the technical director of the Plan, Miguel Ángel Morcuende, and the highest representatives of the Cabildo de La Palma and the municipalities of Fuencaliente, Los Llanos de Aridane, El Paso, Villa de Mazo and Tazacorte. In the current yellow traffic light phase, the Island Council, in coordination with the affected consistories, has the competence of directing this alert situation. The Delegation of the Government of Spain in the Canary Islands, the General Directorate of Security and Emergencies of the Government of the Canary Islands, the Canary Health Service, the Ministry of Ecological Transition, Fight against Climate Change and Territorial Planning of the Government of the Canary Islands were also at the meeting. , the Canary Islands Emergency Service (SUC) and the 1-1-2 CECOES. Likewise, technicians from the different administrations have attended.

The Cabildo de La Palma and the five affected municipalities have intensified the preparation of the various evacuation and emergency plans. Likewise, they have made progress in inter-administrative coordination in order to preserve in the decisions made the safety of the population, buildings and animals that could be affected by both the increase in seismic activity and a possible volcanic eruption.

On the other hand, this Saturday the first flight took place over the Cumbre Vieja area and surroundings of the coordination and observation plane (ACO), requested this Friday by the Ministry for the Ecological Transition and the Demographic Challenge (MITECO) and which arrived in the Archipelago yesterday afternoon. In addition, the General Directorate of Security and Emergencies has also started the first flights of drones with infrared cameras.

Given the increase in seismic activity on La Palma, the Canary Islands Government activated PEVOLCA last Monday in a situation of Alert with a yellow traffic light for the municipalities of Fuencaliente, Los Llanos de Aridane, El Paso and Villa de Mazo. Yesterday, the town councils of these municipalities activated their respective municipal emergency plans (PEMU), while the Cabildo de La Palma preventatively activated the Insular Emergency Plan (PEINPAL), in a Pre-alert situation, last Thursday . This Sunday the Steering Committee will meet again, as well as the Scientific Committee.

PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk: green, yellow, orange and red. In yellow, information to the population, surveillance measures and monitoring of volcanic and seismic activity are intensified.

The Scientific Committee recommends keeping the yellow traffic light and warns of the probability of felt earthquakes



Experts do not rule out the beginning of other phenomena observable on the surface (changes in temperature, odor and color of the water)

The process continues and may have a rapid evolution in the short term

The Scientific Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk (PEVOLCA) meeting today Saturday has recommended keeping the volcanic traffic light in yellow in the Cumbre Vieja area, in La Palma, since the process continues and is not ruled out that may have a rapid evolution in the short term.

Experts have indicated that overall a low seismicity is maintained, although since 03:00 UTC (04:00 in the Canary Islands) after the occurrence of a magnitude 3.2 earthquake with intensity III, an intensification of seismicity has begun, with numerous earthquakes with events located both at depths of 6-8 km, and superficial (0-2 km).

In this scenario, the committee considers the occurrence of higher intensity felt earthquakes likely, which can cause damage to buildings. They can also cause rockfalls in the surroundings of Puerto Naos (from La Bombilla to El Remo).

In addition, the experts pointed out that the deformations are still ongoing, maintaining the speed of yesterday, being compatible with a source of surface deformation. Nor have they ruled out the beginning of other observable phenomena on the surface (changes in temperature, odor and color of the water, anomalous behavior of animals, etc.).

In this sense, they ask the public to notify the authorities if they observe any anomaly.

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The population must be attentive to the communications of the competent authorities in Civil Protection, through official channels and the media.

Before a volcanic eruption, there is a gradual increase in seismic activity, which can last for a long time and can be perceived by the population, so keep calm.

At a yellow traffic light, it is recommended to know the communications network of the environment in which you reside for a possible evacuation and to have a family home located outside the risk areas.

A small backpack or travel bag must be planned in case evacuation is determined, with a mobile phone with charger, personal medications and important documentation.

If any significant changes are observed (noise, gases, ash, change in the water level of the wells, small tremors in the ground, etc.), you should contact 1-1-2. Remember this is an emergency phone number.

If you live with people with reduced mobility who need a special evacuation (ambulance), notify the Department of Social Affairs of your City Council.

In case of evacuation, your City Council will inform you of the routes and the established meeting point. It will only be evacuated when the indications are given to do so.

In the case of feeling an earthquake inside a house, take cover under a door frame or a solid piece of furniture, such as a table, and stand away from windows. Do not use the elevator. If you have to leave your house, disconnect water, electricity and gas.

If you are outside, stay away from tall buildings, utility poles, billboards, etc. and so you are close to the sea, stay away from the shore.

September 19th

The PEVOLCA Directorate begins the preventive evacuation of people with reduced mobility in areas of risk

It is launched for Las Manchas (Manchas de Abajo, Jedey, San Nicolás and El Paraíso), in the municipalities of El Paso and Los Llanos de Aridane; El Charco (Fuencaiente); La Bombilla (Los Llanos and Tazacorte) and El Remo and Puerto Naos (Los Llanos de Aridane)

The PEVOLCA Scientific Committee informs that we are still in a pre-eruptive phase, with dangers associated with seismicity and landslides.

Preventive measures are intensified, but the yellow traffic light remains in the affected municipalities

This afternoon the Scientific Committee and the PEVOLCA Steering Committee meet again

The Scientific Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk (PEVOLCA), meeting today Sunday, has recommended to the Steering Committee of the Plan the preventive evacuation of the population at risk, after verifying that seismic activity has reached the maximum since start of the swarm on La Palma. Based on this information, the Steering Committee has decided to begin evacuating, as a priority, people with reduced mobility in the population centers of Las Manchas (Las Manchas de Abajo, Jedey, San Nicolás and El Paraíso), which includes the municipalities of El Paso and Los Llanos de Aridane; El Charco (Fuencaliente), La Bombilla (Los Llanos de Aridane and Tazacorte) and El Remo and Puerto Naos (Los Llanos de Aridane).

The volcanic traffic light remains yellow, although civil protection actions are intensifying and the Technical Directorate is empowered to program the selective evacuation of other areas of the Cumbre Vieja, if necessary, under the coordination of the Cabildo and city councils. The estimated population is one thousand people.

The different administrations have also taken measures to control roads, with access cuts and suspension of activities.

This afternoon the Scientific Committee and the PEVOLCA Steering Committee meet again.

Experts have indicated that seismic activity continues to intensify with events located on the surface to depths of 8 km. The earthquakes felt with maximum intensity III-IV are countable. There are also surface manifestations such as noise, vibrations, associated with surface seismicity. Seismic activity has peaked since the start of the swarm.

Furthermore, the deformations have increased, with a cumulative deformation of 15 cm (5 cm in the last 24 hours). The center of pressure

coincides with the area in which the earthquakes are superficially perceived: Las Manchas and Jedey.

In this scenario, the committee considers the occurrence of higher intensity felt earthquakes likely, which can cause damage to infrastructures. They can also cause rockslides on the LP-2 highway sections between Fuencaliente and Las Manchas and also on the LP-3 in the access to the Santa Cruz de La Palma-El Paso tunnel. Earthquakes are not ruled out in areas with steep slopes, especially if the seismicity exceeds magnitude 4.0

The experts ask the public to inform the authorities if they observe any anomaly, and that the process continues and may have a short-term evolution. At this time we are in the pre-eruptive phase, increasing the probability that it will culminate in an eruption, without being able to establish a time window.

The Scientific Committee insists on the current relevance of the dangers associated with seismicity and landslides. The intensification of measures with the preventive evacuation of the population at risk is recommended.

The continuous monitoring of the activity has been reinforced and any significant changes observed will be communicated.

The population must be attentive to the communications of the competent authorities in Civil Protection, through official channels and the media.

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Before a volcanic eruption, there is a gradual increase in seismic activity, which can last for a long time and can be perceived by the population.

In the case of feeling an earthquake inside a house, take cover under a door frame or a solid piece of furniture, such as a table, and stand away from windows. Do not use the elevator. If you have to leave your house, disconnect water, electricity and gas.

If you are outside, stay away from tall buildings, utility poles, billboards, etc. and so you are close to the sea, stay away from the shore.

In case of evacuation, your City Council will inform you of the evacuation routes and the established meeting point. It will only be evacuated when the indications are given to do so.

From a preventive point of view, choose a family member or friend as a point of reference to let you know where you are going in the event of an evacuation and make sure the rest of your family knows about it. If you live with disabled people who need a special evacuation (ambulance), notify the Department of Social Affairs of the City Council.

Have a means of communication available, preferably a mobile phone with a charger, as well as a battery-operated radio, flashlight, candles and spare batteries and follow the instructions transmitted by the competent authorities through television and radio. The communication of the evacuation will be made through mobile public address with Local Police, broadcasting media or any other that is established.

Make sure you have enough medication for family members who need it on a regular basis. It is advisable to keep the personal documentation of the whole family and the home in a folder.

It is convenient to have bottled water. The drinking water supply could be affected.

It is recommended to have basic and non-perishable foods for a few days.

All adults must know how to disconnect gas, water and electricity. It will be necessary to close them in case of evacuation.

If possible, keep your vehicle's fuel tank full. Gas stations could be closed.

If you have farm animals, notify your Agrarian Extension Agency or the Cabildo information telephone number, in order for them to indicate the actions to be carried out. In case you have to evacuate, do not leave them tied up. Let go of them.

If you have pets, entrust their care to family or friends who reside outside the municipalities at risk. If you do not have accommodation for these animals, the authorities will take care of them. For hygiene reasons, they cannot be in the shelters.

Remember that 1-1-2 is a telephone number of the Government of the Canary Islands only for emergencies, if you want some type of general information about the situation you should call 0-12 or inquire through the media.

September 20th

Sánchez chairs again the PEVOLCA Steering Committee: safety, main objective



Eviction in Tacande, El Paso, due to the appearance of a new eruptive mouth

The Steering Committee reported this afternoon that the speed of the lava flow was slowing down on its way to the sea and it will not reach the coast tonight.

Maritime Captaincy has extended the exclusion radius to 2 nautical miles and it is recalled that the area cannot be accessed for security reasons

Basic services are working normally for the moment and a contingency plan for irrigation water is being worked on.

The Steering Committee meeting this afternoon, with the presence of the President of the Government of Spain, Pedro Sánchez, and the President of the Canary Islands, Ángel Víctor Torres, has reiterated that security is the main objective of all the actions that are being carried out. PEVOLCA, after the eruption registered yesterday Sunday on the island of La Palma.

The traffic light remains red, in an emergency situation, and the eruptive process continues. In this regard, late in the afternoon today a new eruptive mouth has been registered 900 meters from the main one, which has forced the preventive eviction of the residents of Tacande, close to the area, in the municipality of El Paso. . The population is recommended to follow the instructions of the authorities at all times and move away from the delimited area.

At the meeting held this afternoon, the Steering Committee of the Special Plan for Civil Protection and Emergency Attention for Volcanic Risk (PEVOLCA) reported that the latest scientific data indicates that the speed of the lava flow seems to have slowed down, remaining half the way to reach the sea, so it will not occur tonight. It is still unknown when and if it will be above or below the Todoque Mountain. In any case, the Maritime Captaincy has extended the exclusion radius to 2 nautical miles and it is recalled that the area cannot be accessed for security reasons.

Regarding the houses affected, the Steering Committee is currently focused on identifying the number of houses and buildings damaged. At this meeting, President Torres announced that the Government of the Canary Islands will study a regulation to help recover the homes of those who have lost them.

The Steering Committee pointed out that basic services, telecommunications and electricity lines work normally for the moment, although the continuity of the irrigation water supply is of concern. A contingency plan is being worked on to alleviate the possible impact on

supply with the Insular Water Council and the Government of the Canary Islands.

Likewise, the PEVOLCA Steering Committee announced that since the danger of forest fire associated with the eruption has decreased, part of the forest fire fighting personnel displaced to La Palma, mainly from the Cabildos de Gran Canaria and Tenerife.

Finally, this afternoon he realized the evacuation, so far, of more than 400 head of goats, in addition to some pigs and cattle. The animals have been transferred to a safe area authorized by the Cabildo.

Traffic light in red

PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk: green, yellow, orange and red. In red the mandatory evacuation of risk areas is carried out.

In this sense, you must follow the instructions and collaborate with the Security Forces in the evacuation, remain calm and do not spread rumors. In case of evacuation, your City Council will inform you of the evacuation routes and the established meeting point. It will only be evacuated when the indications are given to do so.

Recommendations include closing all exterior windows and doors, lowering blinds, and shutting off water, gas, and electricity supplies.

Carry in a backpack your documentation and medicines for daily use, mobile phone and its charger, battery-powered radio, flashlight, clothes for about three days. Only use telephones for what is strictly necessary

Go to the established meeting points and if you have to go to a shelter, go to the affiliation points.

The red traffic light also provides indications to protect against falling ash. Do not go near the volcano or the lava flows for any reason.

In this sense, they must remain in their homes until they have settled, unless there is danger of the roof collapsing.

Avoid going out and if you do, cover your nose and mouth with a mask to avoid inhaling the ashes directly. Protect your eyes with goggles, wear

glasses instead of contact lenses, or place a damp cloth over your mouth. Avoid exercising outdoors.

When ash is falling, close doors, windows and all ventilation in the house (fireplaces, heating, air conditioners, etc.). Remove accumulated ash from flat roofs and rain gutters and keep water tanks and cisterns covered.

Ash must be prevented from coming into contact with food. Wash fruits and vegetables well and do not eat food outdoors.

The accumulated ash must be collected in plastic bags, deposited in containers and avoid throwing it into the public sewer.

While the phenomenon lasts, avoid driving. If you have to, use extreme caution and do not exceed 40 km / h.

Volcanic ash consists of very fine fragments that can cause injury to the respiratory tract, eyes and open wounds, as well as irritation to the skin.

Keep vehicle engines off. Driving can kick up ash, engines can clog, and vehicles can break down.

In the case of feeling an earthquake inside a house, take cover under a door frame or a solid piece of furniture, such as a table, and stand away from windows. Do not use the elevator. If you have to leave your house, disconnect water, electricity and gas.

If you are outside, stay away from tall buildings, utility poles, billboards, etc. and so you are close to the sea, stay away from the shore.

Remember that 1-1-2 is a telephone number of the Canary Islands Government only for emergencies, if you want some kind of general information about the situation you should call 012 or find out through the media.

Safety, priority of the PEVOLCA Steering Committee chaired again today by Sánchez and Torres



40 homes have been evicted in Tazacorte and the number of evacuees stands at around 5,500 people

The most vulnerable nuclei so far have been El Paraíso and Todoque (Los Llanos de Aridane), although lava flows enter Tazacorte and are expected to reach the coast tonight

The Scientific Committee recommends an exclusion radius of 2 km around the emission centers to minimize the impact of pyroclasts and the exposure of gases and not to approach the coast

Citizens are reminded that at a red traffic light they must follow the instructions of the authorities

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk (PEVOLCA) met today, Monday, with the presence of the President of the Government of Spain, Pedro Sánchez, and the President of the Canary Islands, Ángel Víctor Torres, among other authorities, announced that priorities are focused on guaranteeing the security perimeter and relocating evacuated neighbors, counting that there

are families who will lose their homes. In this sense, they indicated that today 40 homes have been evicted in Tzacorte, since the lava flows enter the municipality following their way to the sea, where they are expected to arrive tonight. The number of evacuees stands at around 5,500 people.

The members of the committee agreed to highlight the coordination in the PEVOLCA evacuation plan and stressed that the most relevant thing is that the eruption of the volcano has not caused personal damage, thanks to the anticipation that the scientists have contributed, although it has materials in houses, crops and farms. In this regard, they pointed out that the administrations will put all the necessary means to help alleviate the consequences.

The device will intensify during the arrival of the lava to the sea, which can generate explosions and emission of harmful gases. Maritime Captainty has already established a perimeter of exclusion by sea from the south by Punta del Pozo (Puerto Naos) to the north by Las Viñas beach (Tzacorte) and parallel to the coast half a nautical mile from the coast, while by land the security forces will prevent access.

The Steering Committee maintains the alert for forest fires, where both firefighters and forest brigades from different administrations and the UME act, accompanying the laundry and controlling the perimeter.

The Scientific Committee continues to recommend a 2 km exclusion radius around emission centers to minimize the risk of pyroclastic impact and gas exposure. Citizens are also reminded that they should not go near lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures.

Experts reported that the eruption that began yesterday continues to show the same fissure eruptive style, two fissures aligned NS and about 200m apart, with various emission points. The surface temperature of the emitted lava reaches 1113°. For now, the formation of a main cone is confirmed. The coordinates provided for the first emission point are: 28° 36 58.6''N, 17° 52 '0.6''W, at an altitude of 900 meters. It is estimated that the volcanic gases emitted can reach 3000m in height (Toulouse VAAC). The first estimates of sulfur dioxide (SO₂) emission into the atmosphere have been made by this eruptive process, reaching emission rates between 6,000 and 9,000 tons per day.

Since the beginning of the eruption, a volcanic tremor signal of great amplitude has been maintained, which is recorded in all seismic stations. Since its inception, a decrease in seismicity has been observed, although some earthquakes of lesser magnitude than those observed yesterday continue to be recorded. The occurrence of felt earthquakes is not ruled out. Likewise, it is found that the deformations continue to be registered, mainly in the area closest to the eruption, reaching a maximum accumulated deformation of 20cm.

Regarding the meteorological conditions, the surface wind is expected to be from the northeast with an intensity between 15 and 30 km / h. At higher levels (between 1,000 and 3,000m) the wind is forecast from the northwest between 20 and 25 km / h.

Work is continuing on the numerical modeling of the extent of lava efflux and the monitoring of the advance rate of lava flows and their extent. In addition, the daily monitoring of the emission of sulfur dioxide (SO₂) from the eruptive foci is continued by means of remote optical sensors mounted on helicopters and the chemical composition of the plume by means of multigas sensors.

The Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC); The Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), the State Meteorological Agency (AEMET), the Spanish Institute of Oceanography (IEO), the University of La Laguna and the University of Las Palmas de Gran Canaria.

The continuous monitoring of the activity has been reinforced and any significant changes observed will be communicated.

The population must be attentive to the communications of the competent authorities in Civil Protection, through official channels and the media.

PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk: green, yellow, orange and red. In red the mandatory evacuation of risk areas is carried out.

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PEVOLCA evacuation plans prevent personal injury in the volcanic eruption of La Palma



About five thousand residents have been evicted in a preventive manner

The Scientific Committee recommends an exclusion radius of 2 km around emission centers to minimize the impact of pyroclasts and gas exposure

Citizens are reminded that at a red traffic light they must follow the instructions of the authorities for the evacuation of risk areas

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk (PEVOLCA), meeting today, highlighted that the eruption registered this afternoon on La Palma has not caused personal injury, thanks to the coordination work of the device, that has allowed to advance the answer. Although the eruption occurred in an unpopulated area, for safety reasons, some 5,000 people have been evacuated. The lava has affected eight homes so far and the focus is now on the advance of the lava flows towards the coast and the forest fires that the phenomenon itself generates. In this sense, the steering committee insisted that all the instruments and material and human means are in place to deal with this situation safely.

Tonight, members of the Emergency Military Unit, Environment of the Cabildos of Tenerife and Gran Canaria, as well as Firefighters from the Gran Canaria Emergency Consortium and agents of the General Corps of the Canary Police who will join the device deployed, in which the Tenerife Firefighters Consortium is already participating together with the local media.

The Scientific Committee has recommended an exclusion radius of 2 km around emission centers to minimize the risk of pyroclastic impacts and gas exposure. Citizens are also reminded that they should not go near lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures.

The experts reported that at 15:12 a fissure eruption of basic magma with a typically strombolian mechanism began, with some phreatomagmatic pulses. With the information currently available, two hundred-meter-long fissures have been observed, aligned in a NS direction and about 200 meters apart, with various emission points from pyroclastic sources and lava flows. The surface temperature of the emitted lava reaches 1075°. The formation of a main cone is also observed. The given coordinates of the first emission point are: 28°36'N, 17°52'W. It is estimated that the volcanic ash

column reaches a height of 1500m and the gases emitted reach 3000m (according to VAAC of Toulouse).

The committee reported that the beginning of the eruption coincided with a volcanic tremor signal that was recorded in all seismic stations. A decrease in seismicity is observed, although some low-magnitude earthquakes continue to be recorded. The occurrence of felt earthquakes is not ruled out. Likewise, it is found that the deformations continue to be registered, mainly in the area closest to the eruption, reaching a cumulative deformation of 19cm.

Once the start of the eruption was verified, the numerical modeling of the extent of lava flows was carried out. Depending on the eruptive dynamics, the advance speed of the lava flows and their extension will be monitored. The emission of sulfur dioxide (SO₂) from the eruptive foci will be monitored daily using remote optical sensors, mounted on a helicopter. This methodology, together with other techniques, will allow us to estimate daily the volume of magma emitted and the duration of the eruption.

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The continuous monitoring of the activity has been reinforced and any significant changes observed will be communicated.

The population must be attentive to the communications of the competent authorities in Civil Protection, through official channels and the media.

After the intensification of the seismic activity, in the morning the preventive evacuation of the population with reduced mobility was agreed in the population centers of Las Manchas de Abajo, Jedey, San Nicolás and El Paraíso (El Paso and Los Llanos de Aridane); El Charco (Fuencaliente), La Bombilla (Los Llanos de Aridane and Tazacorte) and El Remo and Puerto Naos (Los Llanos de Aridane). The Technical Directorate was also

empowered to schedule the selective evacuation of other areas of the Cumbre Vieja, under the coordination of the Cabildo and city councils. In this sense, four houses located under the slope, in the La Bombilla area (Los Llanos de Aridane), had to be evicted, due to the serious risk of landslides.

The Technical Directorate has also reported on the meeting points set up in the soccer field of the town of Mazo and the soccer field of El Paso, where the affiliation of displaced persons is being carried out.

Farm animals can be transferred to the El Paso and San Isidro livestock fairgrounds in Breña Alta and information is provided at the CECOPIN on La Palma.

The Ministry of Education of the Government of the Canary Islands has suspended the teaching activity in all the educational centers of the municipalities of El Paso, Los Llanos de Aridane and Tazacorte as a result of the volcanic eruption. This measure will be applied initially during the day of tomorrow, Monday, September 20, although its continuity will be conditioned to the evolution of this situation.

Regarding the state of the roads, the LP-212 road to Tacande is closed to traffic; LP-301, San Isidro-El Pilar highway, from La Pavona to the junction with LP-3, El Paso; LP-2014, Los Brecitos road and LP-105, Los Tilos.

In addition, it is recommended not to travel along the LP-2, between the fighting field crossing of Las Manchas and El Sombrero, in Tajuya, as well as on LP-213 and LP-212, which go up to Todoque and Las Manchas.

Since this morning the network of trails on La Palma and forest tracks that run through the municipalities of Fuencaliente, El Paso, Los Llanos de Aridane and Villa de Mazo have been closed. Also the recreational area of the Refugio del Pilar and the Caños de Fuego Center and access to the Cueva de las Palomas. The small game day is suspended in these same municipalities.

The Canary Islands Health Service, attached to the Ministry of Health of the Government of the Canary Islands, has provided the resources and health equipment provided to respond to the actions contemplated in the evacuation plan of La Palma (PLEVAPAL) and the health teams, with support from Red Cross personnel, they are already assisting some 50 people with reduced mobility previously evacuated and who have been transferred,

along with their companions, to the old barracks of El Fuerte. The transfer has been carried out without incident and the general condition of all the evacuees is good.

The Canary Islands Emergency Service (SUC) has activated a preventively sanitized ambulance to the Fort and a medicalized ambulance to the Los Llanos soccer field, in addition to the ten non-urgent health transport ambulances to carry out evacuations. Tomorrow, two advanced life support ambulances will be incorporated into the health facility.

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Recommendations include closing all exterior windows and doors, lowering blinds, and shutting off water, gas, and electricity supplies.

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In this sense, they must remain in their homes until they have settled, unless there is danger of the roof collapsing.

Avoid going out and if you do, cover your nose and mouth with a mask to avoid inhaling the ashes directly. Protect your eyes with goggles. Do not stay in open areas and avoid exercising outdoors.

When ash is falling, you must close the doors, windows and all the ventilation of the house (chimneys, heating, air conditioners, etc.). We must

remove accumulated ash from flat roofs and rain gutters and keep water tanks and cisterns covered.

Ash must be prevented from coming into contact with food. Wash fruits and vegetables well and do not eat food outdoors.

The accumulated ash must be collected in plastic bags, deposited in containers and avoid discharging into the public sewer.

While the phenomenon lasts, avoid driving. If you have to, use extreme caution and do not exceed 40 km / h.

Volcanic ash consists of very fine fragments that can cause injury to the respiratory tract, eyes and open wounds, as well as irritation to the skin.

In case of ash fall, wear long-sleeved shirts and long pants, protective goggles and goggles instead of contact lenses, a dust mask, or place a damp cloth over your mouth.

Keep vehicle engines off. Driving can kick up ash, engines can clog, and vehicles can break down.

In the case of feeling an earthquake inside a house, take cover under a door frame or a solid piece of furniture, such as a table, and stand away from windows. Do not use the elevator. If you have to leave your house, disconnect water, electricity and gas.

If you are outside, stay away from tall buildings, utility poles, billboards, etc. and so you are close to the sea, stay away from the shore.

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September 21st

750 personnel work in the PEVOLCA for security on La Palma, together with the town councils



The authorities insist on maintaining caution and stay away from the area for self-protection and to let the device work

The deformation on the island could have reached 28 centimeters

The authorities meeting today in the PEVOLCA Steering Committee have agreed that the most important thing is the safety of the people and that all precautionary measures must be maintained because the emergency continues. In the appearance before the media, the President of the Government of Spain, Pedro Sánchez, insisted that the population not approach the area of the eruption and leave the roads free so that the Civil Protection device can work and carry out evacuations if necessary. Sánchez stressed that the management of the crisis will not end when the lava reaches the sea, but with the implementation of all the aid that is necessary to alleviate the damage.

For his part, the President of the Canary Islands, Ángel Víctor Torres, recalled that the important thing is that so far no personal injuries have

occurred, so the population must continue to take extreme security measures and follow the recommendations of the authorities.

A total of 743 security and emergency personnel make up the device of the different administrations that work in shifts in the volcanic eruption in La Palma, among them the Cabildo de La Palma, Volunteer Firefighters of La Palma, Tenerife and Gran Canaria Firefighters Consortium , BIFROR Units, UME, PREA Units, Civil Guard, Emergency Intervention Group (GES), Civil Guard, National Police, Local Police and General Corps of the Canarian Police. To these are added the municipal officials, civil protection and other services of the island's consistories.

In addition, the operation has a total of 138 vehicles, an Advanced Command Post of the General Directorate of Security and Emergencies of the Government of the Canary Islands from where the actions are coordinated and 18 aircraft of the Government, councils and the State.

The Steering Committee reported that 5,700 people have been evacuated so far, including the 200 from Tacande carried out last night. 132 people remain in the enabled shelters. In addition, the first days about 400 tourists who were staying in risk areas were relocated to Tenerife.

Among the population centers affected by the evacuations are La Bombilla, El Remo, Puerto Naos, Las Manchas, Jedey, Charco Verde, El Charco, Todoque, La Laguna, San Nicolás and Tacande de Arriba to Echedey, from the municipalities of Los Plains of Aridane, El Paso and Tazacorte.

Currently the supply of irrigation water is conditional on the Los Guirres water pipe not being affected and work is being done on the design of alternative pipelines, authorizing irrigation actions in nearby areas but not yet affected by the eruption.

In a first provisional assessment of the material damage, it is estimated that 185 buildings could have been affected, of which 63 would be homes according to the cadastre.

The technical director of PEVOLCA, Miguel Ángel Morcuende, pointed out that at the moment there are two languages or streams: one further north, which is closer to Todoque, and another further south that has practically no movement.

In this sense, the Scientific Committee of PEVOLCA reported that at the moment in which the lava flows reach the coast, the interaction of the sea with the lava can generate explosions, gas emanations and detachment of the lava front.

It is recommended to maintain a radius of exclusion of two kilometers around the emission centers to minimize the risk of impact from pyroclasts and exposure to gases. They also insist on not approaching the lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures and reinforcing the information to the population so that they can take self-protection measures against the danger posed by the emission of ashes by the eruptive centers.

The Scientific Committee report indicates that the eruption continues to show the same fissure eruptive style, with a strombolian mechanism, in a fissure in a NW-SE direction. Activity is currently concentrated in four main eruptive centers (mouths), the last of which opened yesterday at 7:56 p.m. (local time). This new center shows effusive activity and emission of lava flows parallel to the previous flows. This new center is very close to the other assets. An approximate average speed of advance of the front of the lava flow of 200 meters every hour has been verified, continuing its advance towards the sea. It reaches maximum thicknesses of around 10-12 m.

On the day of this Monday, later at 9:32 p.m., a surface earthquake of magnitude 3.8 mbLg was registered in the southeast of Tazacorte, felt with intensity III-IV, followed in the following hours by two earthquakes also felt southwest of El Paso .

The value given in previous estimates that the volcanic gases emitted can reach 3,000 meters in height (according to VAAC of Toulouse) is maintained. The current estimate of the emission rate of sulfur dioxide (SO₂) into the atmosphere by this eruptive process is between 8,000 and 10,600 tons per day.

Experts indicate that the volcanic tremor signal shows a tendency to decrease in amplitude at seismic stations, probably due to the concentration of strombolian activity in a smaller number of centers. Likewise, it is found that the deformations have decreased their speed, showing relative stability

in the last 12 hours. The deformation measured by the INSAR technique shows an average cumulative maximum of 28 cm.

Regarding the meteorological conditions, in the last hours there has been a change in the direction of the flow in the lower-middle levels of the troposphere, around 3,000 meters, rotating from west to north / northeast, causing a displacement of the plume. to the southwest of the emission source. On the west slope affected by the eruption, a regime of breezes with intensities between 10 and 20 km / h is expected and in the upper levels there is a predominance of northeast winds. Acid rain is ruled out for the next 24 hours.

The Scientific Committee notes that work is continuing on numerical modeling of the extent of lava flows and monitoring of the advance rate of lava flows and their extent. In addition, the daily monitoring of the emission of sulfur dioxide (SO₂) from the eruptive foci is continued by means of remote optical sensors mounted on helicopters and the chemical composition of the plume by means of multigas sensors. Ash and lava samples are taken regularly and by field inspections and observations by drones.

Given the large thicknesses of lava flow observed in some points, collapses of the face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and reach greater distances. . Also in steep areas, small pyroclastic flows can occur.

Ongoing activity monitoring has been strengthened and any significant changes observed will be reported. Stay tuned to the information provided by the corresponding Civil Protection authorities.

Traffic light in red

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routes and the established meeting point. It will only be evacuated when the indications are given to do so.

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The accumulated ash must be collected in plastic bags, deposited in containers and avoid throwing it into the public sewer.

While the phenomenon lasts, avoid driving. If you have to, use extreme caution and do not exceed 40 km / h.

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Keep vehicle engines off. Driving can kick up ash, engines can clog, and vehicles can break down.

In the case of feeling an earthquake inside a house, take cover under a door frame or a solid piece of furniture, such as a table, and stand away from windows. Do not use the elevator. If you have to leave your house, disconnect water, electricity and gas.

If you are outside, stay away from tall buildings, utility poles, billboards, etc. and so you are close to the sea, stay away from the shore.

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September 22nd

Currently the lava advances at 4 meters per hour and last night it traveled only 15 meters



The authorities have insisted on the safety of the people: respect the exclusion radius and do not approach the laundry

The Steering Committee reported that the evacuated neighbors who are in the shelter will be relocated today in a hotel in Fuencaliente

People with reduced mobility will be transferred to a social health center

The PEVOLCA Steering Committee, which was attended by the Minister of the Interior, Fernando Grande-Marlaska and the President of the Canary Islands, Ángel Víctor Torres, insisted on prevention as a security measure, since the La Palma volcano is alive and we continue in an emergency situation, with the red traffic light. Currently the lava advances at 4 meters per hour and last night it only traveled 15 meters. For scientists it is not feasible to redirect the lava and no action can be taken in this regard.

The president of the Canary Islands, Ángel Víctor Torres, announced today that evacuated people who are in the shelter will be transferred to a hotel in Fuencaliente during the day, while people with reduced mobility will go to a social health center. The intention of the authorities is to keep the shelter only as the first point of affiliation in case of new evictions due to the eruption on La Palma and to continue studying housing alternatives for people staying in family homes.

The authorities recalled the need to let the emergency services work and maintain the exclusion radius of 2.5 kilometers from the emission centers (mouths) recommended by scientists to minimize the risk of impact from pyroclasts and exposure to gases. of the volcano. It is also necessary to stay away from lava flows in the event of possible landslides and high temperatures, in addition to taking extreme precautions against falling ashes to avoid harmful effects on health.

The affected area covers 140.44 hectares, with a front of 600 meters. The technical director of PEVOLCA, Miguel Ángel Morcuende, stated that the volcano is still active, releasing lava, and the two flows continue to advance, but very slowly, due to the increase in viscosity and because it is filling in the natural holes of the terrain that is to his step. Mathematical models indicate that it will continue to advance, but it cannot be guaranteed that it will reach the sea.

Morcuende explained that there is only one fissure, with 9 mouths or emission centers, although not all are active. There has been a small movement of the lava that was standing in the southern area during the night, but minimal and there is no variation from the previous night. Last night there have been several explosive episodes that may continue, although the deformity has not grown and remains at 28

centimeters. According to Morcuende, we are in a zone of mini stability, which is not known how long it can last.

Regarding the measurements of sulfur dioxide, he indicated that they do not reflect a danger to human health. The plume is at 3,000 meters of altitude.

scientific Committee

The Scientific Committee report indicates that the eruption continues to show the same fissure eruptive style, with a strombolian mechanism, in a fissure in a NW-SE direction. Yesterday the main broadcasting center had a phase of greater explosiveness that intensifies at 7:00 p.m. (local time), reaches its maximum at 9:00 p.m. and ends coinciding with the partial collapse of the upper part of the cone today at 02:00 (local time). In the last hours, a decrease in the average forward speed of the lava flow front has been observed to values of 4 m / h. continuing its advance towards the sea.

It reaches thicknesses between 8 and 15 m. Seismicity continues at low levels. Today at 01:25 (local time) an earthquake of magnitude 2.2 mbLg, felt with intensity II, has been located. The estimate of the emission rate of sulfur dioxide (SO₂) into the atmosphere by this eruptive process during yesterday was between 6,140 and 11,500 tons per day. These values, although correctly measured, are underestimated by the large dimension of the sulfur dioxide plume observed by satellite. The emission of materials reaches 3,000 m according to the Toulouse VAAC.

The volcanic tremor signal shows a tendency to decrease in amplitude at seismic stations, probably due to the concentration of strombolian activity in a smaller number of centers. Likewise, it is found that the deformations have decreased their speed, showing relative stability in the last 12 hours. The deformation measured by the INSAR technique shows an average cumulative maximum of 28 cm.

Regarding the meteorological information, the anticyclonic situation continues, with winds from the northeast from the surface up to 3000 meters, with intensities around 20 - 30 km / h (decreasing with height). On the west slope affected by the eruption, the breeze regime continues to predominate, that is, westerly winds during the day and downward mountain winds at night. The most significant is the turn of the wind from north / northeast to west increasing its intensity at this level from 5 km / h

to 10-15 km / h, during the next morning at the level of 700 hPa (3000 meters approx.). This factor will influence the ash movement to the east of La Palma. It is ruled out that the precipitations that can be registered during the next 24 hours are acidic.

Work continues on the numerical modeling of the extent of lava flows and the monitoring of the advance rate of lava flows and their extent. In addition, the daily monitoring of the emission of sulfur dioxide (SO₂) from the eruptive foci is continued by means of remote optical sensors mounted on helicopters and the chemical composition of the plume by means of multigas sensors. Ash sampling and washing is done regularly. Field inspections and drone observations are underway.

It is possible that explosive episodes such as those that occurred yesterday (09/21) will be repeated. Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the wash and suddenly reaching distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur.

If the lava flows reached the coast, the scientists warn that the interaction of the sea with the lava could generate columns of water vapor with acid gases, detachment of the lava front, and the emission of fragments could be produced in the vicinity of the contact (fragmentation snapshot and emission of ballistic fragments).

In this sense, the continuous monitoring of the activity has been reinforced and any significant changes observed will be communicated.

Follow the red light

PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk: green, yellow, orange and red. In red the mandatory evacuation of risk areas is carried out.

In this sense, you must follow the instructions and collaborate with the Security Forces in the evacuation, remain calm and do not spread rumors. In case of evacuation, your City Council will inform you of the evacuation routes and the established meeting point. It will only be evacuated when the indications are given to do so.

Recommendations include closing all exterior windows and doors, lowering blinds, and shutting off water, gas, and electricity supplies.

Carry in a backpack your documentation and medicines for daily use, mobile phone and its charger, battery-powered radio, flashlight, clothes for about three days. Only use telephones for what is strictly necessary

Go to the established meeting points and if you have to go to a shelter, go to the affiliation points.

The red traffic light also provides indications to protect against falling ash. Do not go near the volcano or the lava flows for any reason.

In this sense, they must remain in their homes until they have settled, unless there is danger of the roof collapsing.

Avoid going out and if you do, cover your nose and mouth with a mask to avoid inhaling the ashes directly. Protect your eyes with goggles, wear glasses instead of contact lenses, or place a damp cloth over your mouth. Avoid exercising outdoors.

When ash is falling, close doors, windows and all ventilation in the house (fireplaces, heating, air conditioners, etc.). Remove accumulated ash from flat roofs and rain gutters and keep water tanks and cisterns covered.

Ash must be prevented from coming into contact with food. Wash fruits and vegetables well and do not eat food outdoors.

The accumulated ash must be collected in plastic bags, deposited in containers and avoid throwing it into the public sewer.

While the phenomenon lasts, avoid driving. If you have to, use extreme caution and do not exceed 40 km / h.

Volcanic ash consists of very fine fragments that can cause injury to the respiratory tract, eyes and open wounds, as well as irritation to the skin.

Keep vehicle engines off. Driving can kick up ash, engines can clog, and vehicles can break down.

In the case of feeling an earthquake inside a house, take cover under a door frame or a solid piece of furniture, such as a table, and stand away from windows. Do not use the elevator. If you have to leave your house, disconnect water, electricity and gas.

If you are outside, stay away from tall buildings, utility poles, billboards, etc. and so you are close to the sea, stay away from the shore.

Remember that 1-1-2 is a telephone number of the Canary Islands Government only for emergencies, if you want some type of general information about the situation you should call 012 or inquire through the media.

September 23rd

The Kings preside over the PEVOLCA Steering Committee and meet with the Scientific Committee



The sulfur dioxide values reflect that the air quality is good and "acid rain" is ruled out.

In the case of ash fall, it is recommended to stay indoors and if you are outdoors, use FFP2 masks and eye protection systems. In the rest of the island, the use of surgical masks is recommended

The wash has a length of 3,800 meters and is 2,100 meters from the coast

Their Majesties the Kings of Spain have chaired today the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk (PEVOLCA)

where they reported on the evolution of the eruptive process in La Palma and the emergency situation that exists in the Island. The Kings were accompanied by the President of the Government of Spain, Pedro Sánchez, the President of the Canary Islands, Ángel Víctor Torres, and the President of the Island Council, Mariano Zapata, and the Security Councilor and director of the Canary Islands Volcanic Emergency Plan (PEVOLCA), Julio Pérez.

During the meeting, the Technical Director of the plan, Miguel Ángel Morcuende, presented the current situation and the immediate perspectives of the emergency, and the spokesperson for the scientific committee, María José Blanco, conveyed the latest conclusions of the committee to the attendees.

It was explained that the eruption continues its course adjusted to its strombolian nature, with more explosive phases, with four emission centers and a column or plume that reaches up to 4,500 meters in height, with a strong emission of ash. Acid rain processes are not to be expected given the current trade wind meteorological conditions.

In the area most affected by ashfall, the population is recommended to stay indoors and, if outdoors, use FFP2 masks and eye protection systems. In the rest of the island, the use of surgical masks is recommended.

Regarding the lava flows, the director and the spokesperson indicated that there are two relatively slow active fronts that move away from the emitting center and one of which has a front of approximately 500 meters. One of the languages, the one located more to the north, is almost stopped and advanced yesterday at 1 meter / hour, and reaches a maximum height of 12 meters. The southern front, which surrounds Montaña Rajada, advanced at 4-5 meters / hour yesterday.

The area affected today is around 220 hectares, with a perimeter of 15.7 kilometers. The wash has a length of 3,800 meters and is 2,100 meters from the coast.

Regarding the evacuees, the Steering Committee reported that the number remains at 5,700. Of the total, only 135 were housed in the El Fuerte barracks (Breña Baja) and of these, 86 have been relocated to a hotel in Fuencaliente. The 49 people still in the shelter, 28 of them are in charge of the Canary Health Service and the other 19 have preferred to continue in that location.

The teams involved in the operation amount to 789 security and emergency personnel from different institutions of the Town Halls, Island Councils, the Government of the Canary Islands and the Government of Spain, in addition to volunteering.

The administrations have launched initiatives to face the housing emergency of families who have lost their homes. It is estimated that there could be about 300 homes within the perimeter of the coladas.

The authorities recalled the need to let the emergency services work and maintain the exclusion radius of 2.5 kilometers from the emission centers (mouths) recommended by scientists to minimize the risk of impact from pyroclasts and exposure to gases of the volcano. It is also necessary to stay away from lava flows in the event of possible landslides and high temperatures, in addition to taking extreme precautions against falling ash to avoid harmful effects on health.

The perimeter of exclusion by sea is maintained, from the south by Punta del Pozo (Puerto Naos), to the north by Las Viñas beach (Tazacorte), and parallel to the coast, two nautical miles from the coast, established by Maritime Captaincy.

In addition, ENAIRE, air navigation manager in Spain, has established two restricted areas of airspace in the municipalities of El Paso and Los Llanos de Aridane, temporarily until the end of the emergency, in the land and sea area below 3,000 feet, which can only be entered by State security forces and bodies, emergency services, State aircraft and those duly authorized, which does not affect commercial aviation, which does not fly over these two restricted areas.

The Kings meet with the Scientific Committee

After the Steering Committee, the Kings met personally with the members of the Scientific Committee, who had been present by videoconference, to receive additional information and request clarifications and opinions on the course of the eruption.

The Scientific Committee's opinion was as follows: the eruption continues to show the same fissure eruptive style, with a strombolian mechanism, in a fissure in a NW-SE direction, with intermittent phases of greater explosiveness in the last hours as has happened on previous occasions. The

eruptive column has reached a height of 5 km above sea level measured today at 08:00 hours.

There is a lava flow with two active fronts. The one located more to the north, which is the most extensive, advanced yesterday with less speed (approximately 1 m / h) and has a maximum height of 12 m. The one located furthest south (surrounding Montaña Rajada) advanced yesterday with a higher speed, approximately 5 m / h, and has a maximum height of 10 m.

Regarding meteorological information, at low levels (between surface and 2000 meters) the wind continues to blow in a northeast direction between 15-25 km / h. On the west slope, close to the eruptive zone, breezes will predominate (sea-land direction during the day and vice versa at night). At 3000 meters, the wind is weak from the northwest at 05-13 km / h, and will turn southwest from night, with speeds of up to about 20 km / h. Due to this predominant direction in the lower-middle levels of the troposphere (3000-5000 meters), volcanic ash has affected aeronautical operations during this morning. Acid rain is ruled out for the next 24 hours. In addition, it is important to note that the effect of acid rain on vegetation has to do with persistence,

Seismicity continues at low levels, with few earthquakes felt, although it is not ruled out that they continue to occur. Long-term earthquakes were recorded yesterday, associated with explosive activity. The volcanic tremor signal has increased during the explosive phases, reflecting the eruptive dynamics. The deformations continue to show a stable trend.

The estimate of the rate of emission of sulfur dioxide (SO₂) into the atmosphere by this eruptive process during yesterday increased compared to the previous day, exceeding 12,000 tons per day. Linear concentrations of SO₂ have also increased. The emission of gases and ash reaches 4,500 m according to the Toulouse VAAC. The SO₂ values measured by the air quality surveillance network reflect that the air quality is good.

It is not ruled out that the increase in the emission of ash and its fall into the sea may be affecting the marine ecosystem on the coasts of La Palma, causing drastic changes in the productivity of marine ecosystems. In this sense, surveillance systems for volcanic materials in the seawater column will be strengthened.

Work continues on the numerical modeling of the extent of lava flows and the monitoring of the advance rate of lava flows and their extent. In addition, the daily monitoring of the emission of sulfur dioxide (SO₂) from the eruptive foci is continued by means of remote optical sensors mounted on helicopters and the chemical composition of the plume by means of multigas sensors. Ash and lava are sampled regularly and field inspections and drone observations are underway.

Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and that They suddenly reach distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur.

At the moment in which the lava flows reach the coast, the interaction of the sea with the lava will generate columns of water vapor with acid gases, detachment of the lava front, and the emission of fragments may occur in the vicinity of the contact (fragmentation snapshot and emission of ballistic fragments).

In this sense, the continuous monitoring of the activity will continue to be reinforced and any significant changes observed will be communicated.

Follow the red light

PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk: green, yellow, orange and red. In red the mandatory evacuation of risk areas is carried out.

In this sense, you must follow the instructions and collaborate with the Security Forces in the evacuation, remain calm and do not spread rumors. In case of evacuation, your City Council will inform you of the evacuation routes and the established meeting point. It will only be evacuated when the indications are given to do so.

Recommendations include closing all exterior windows and doors, lowering blinds, and shutting off water, gas, and electricity supplies.

Carry in a backpack your documentation and medicines for daily use, mobile phone and its charger, battery-powered radio, flashlight, clothes for about three days. Only use telephones for what is strictly necessary

Go to the established meeting points and if you have to go to a shelter, go to the affiliation points.

The red traffic light also provides indications to protect against falling ash. Do not go near the volcano or the lava flows for any reason.

In this sense, they must remain in their homes until they have settled, unless there is danger of the roof collapsing.

Avoid going out and if you do, cover your nose and mouth with a mask to avoid inhaling the ashes directly. Protect your eyes with goggles, wear glasses instead of contact lenses, or place a damp cloth over your mouth. Avoid exercising outdoors.

When ash is falling, close doors, windows and all ventilation in the house (fireplaces, heating, air conditioners, etc.). Remove accumulated ash from flat roofs and rain gutters and keep water tanks and cisterns covered.

Ash must be prevented from coming into contact with food. Wash fruits and vegetables well and do not eat food outdoors.

The accumulated ash must be collected in plastic bags, deposited in containers and avoid throwing it into the public sewer.

While the phenomenon lasts, avoid driving. If you have to, use extreme caution and do not exceed 40 km / h.

Volcanic ash consists of very fine fragments that can cause injury to the respiratory tract, eyes and open wounds, as well as irritation to the skin.

Keep vehicle engines off. Driving can kick up ash, engines can clog, and vehicles can break down.

In the case of feeling an earthquake inside a house, take cover under a door frame or a solid piece of furniture, such as a table, and stand away from windows. Do not use the elevator. If you have to leave your house, disconnect water, electricity and gas.

If you are outside, stay away from tall buildings, utility poles, billboards, etc. and so you are close to the sea, stay away from the shore.

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information about the situation you should call 012 or inquire through the media.

September 24th

The PEVOLCA evacuation plan transfers 160 people with residences near the volcano for their safety



Most of the people will spend the night in accommodation of family and friends, 12 of them in the Fuencaliente hotel and 10 with mobility problems in the Barracks.

PEVOLCA's technical director insists on protective measures against falling ash

The eruptive process of the Cumbre Vieja volcano during the afternoon of today has forced to launch the evacuation designed by the Special Plan for Civil Protection and Attention to Emergencies for Volcanic Risk of the Canary Islands (PEVOLCA) for the nuclei of Tajuya, Tacande de Abajo and the area so far not evacuated of Tacande de Arriba, in the municipality of Los Llanos de Aridane. In total, some 160 people have been evacuated, most of whom will spend this night in the homes of relatives or friends by their own decision, 12 at the Teneguía

Princess hotel, in Fuencaliente, and another 10 with mobility problems who will be accommodated in the Quartering. Since the eruption began last Sunday, an estimated 6,000 people have been evacuated.

According to the records of the volcanic surveillance that has been carried out since the beginning of the eruption, this afternoon the most energetic moment of the eruptive process took place. For this reason, the PEVOLCA management decided, following the recommendations of the Scientific Committee, to proceed with the evacuation of these people, as a preventive measure, which would be extended in case the evolution of the process requires extreme precautions.

This civil protection measure was adopted in view of the existing risk, according to the scientists, that the emitted materials could reach a greater distance and occur phenomena such as ash arrivals and high-temperature volcanic material beyond the zone established as an exclusion zone, in addition to feeling vibrations and detonations.

The director of the National Geological Institute (IGN) in the Canary Islands, María José Blanco, explained that around 1:00 p.m. the highest seismic signal had been recorded so far in the main cone of Cumbre Vieja. In this sense, and after the appearance of violent processes, it was decided, first, to protect the people who lived in an area near the broadcasting center and who had not yet been evacuated. The first decision was the confinement of the population to protect them from the emission of volcanic particles, closing doors and windows, and recommending that people stay away from windows due to the possible breakage of glass due to pressure waves.

Blanco added that, shortly after the confinement, and after verifying the two new emission centers that emitted lava with intensity and fluidity, as well as a possible opening of a fracture that could cause the destabilization of a sector of the main cone, it was decided to proceed to evacuation.

Among the dangers that the population could face are lava flows of high temperature and gas content, low viscous and that can jump over topographic spaces, as well as the greater range of ballistic fragments and a dense ash fall. The worst scenario, according to Blanco, would have been the total or partial collapse of the eruptive cone, generating high-speed flows that could have spread laterally.

For his part, the technical director of PEVOLCA, Miguel Ángel Morcuende, indicated that PEVOLCA follows the evolution of the phenomenon intensively and that, after the warning of an increase in the intensity of the volcano that was reflected in a projection of pyroclasts larger, it was first decided on confinement but, due to the change in the situation, they proceeded to evacuate. He insisted that it is a dynamic phenomenon that forces people's safety to always be prioritized.

Pedro Sánchez chaired the Steering Committee in the morning

The Steering Committee held this Friday was attended by the President of the Government of Spain, Pedro Sánchez, who highlighted the magnificent collaboration and coordination of all administrations to solve the immediate and future problems of the population and relaunch La Palma after the volcanic eruption. Sánchez, who was accompanied by the president of the Canary Islands, Ángel Víctor Torres, the Security Councilor and director of PEVOLCA, Julio Pérez, and the president of the Island Council, Mariano Hernández Zapata, highlighted that an example of unity is being shown in this emergency of all the administrations that must endure to tackle the reconstruction of the Island.

The administrations have launched the necessary initiatives to face the housing emergency of families who have lost their homes. It is estimated that there could be some 400 damaged or partially damaged buildings / infrastructures within the perimeter of the flows. This figure includes homes, tool rooms, swimming pools or reservoirs, as well as other facilities yet to be defined.

The teams involved in the operation amount to almost 800 security and emergency personnel from different institutions of the Town Halls, Island Councils, the Government of the Canary Islands and the Government of Spain, as well as volunteers.

The perimeter of exclusion by sea is maintained, from the south by Punta del Pozo (Puerto Naos), to the north by Las Viñas beach (Tazacorte), and parallel to the coast, two nautical miles from the coast, established by Maritime Captaincy.

In addition, ENAIRE, air navigation manager in Spain, has established two restricted areas of airspace in the municipalities of El Paso and Los Llanos de Aridane, temporarily until the end of the emergency, in the land and sea

area below 3,000 feet, which can only be entered by State security forces and bodies, emergency services, State aircraft and those duly authorized, which does not affect commercial aviation, which does not fly over these two restricted areas.

September 25th

The increase in explosive activity that occurred yesterday focuses the meetings of the PEVOLCA committees



Experts recommend reinforcing protection measures when collecting ash, using FFP2 masks and goggles.

Counselor Julio Pérez stressed that the Government has two objectives: the first is security for people and the second, reconstruction

The increase in explosive activity registered yesterday was the central issue of the meetings of the Scientific Committee and the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary

Islands (PEVOLCA) chaired by its director and counselor. of Public Administrations, Justice and Security of the Government of the Canary Islands, Julio Pérez. Based on its conclusions, it was agreed to maintain for now the evacuations carried out yesterday afternoon in Tajuya, Tacande de Abajo and Tacande de Arriba as a preventive measure, until the situation was evaluated and guarantees of a safe relocation could be guaranteed. These people are mostly in the homes of family and friends and only 16 are staying at the Fuencaliente hotel.

Previously, in statements to the media, Julio Pérez stressed that the Civil Protection device is working, in his opinion, correctly, despite the fact that the impact of the volcano is enormous and the risk and damage is great. The government, he said, "has two objectives: the first is security and the second is reconstruction." Especially for the first, he added, the coordination effort of all the people and institutions involved has been very important.

The technical director of the plan, Miguel Ángel Morcuende, insisted on the importance of reinforcing protection measures against falling ash, especially during handling. Ash collection should always be done with a FFP2 mask and goggles, to avoid respiratory and eye damage. He also recalled that the air quality is still good and that there is no risk of acid rain. He added that from Public Health it is recalled that eventual respiratory damage requires extreme precautions related to Covid-19 and complete vaccination processes.

Morcuende recalled that "we are facing a strombolian fissure-type volcanic event with different emission centers, some of which are activated and deactivated and can reactivate, that is, a typical eruption in the Canary Islands." In addition, he added that yesterday evening, on the NW face of the crater, there was the opening of two mouths that have merged into one and that has given rise to a new stream that runs over the previous one. This wash is more fluid than the others because it is at a higher temperature and faster initially, but it slows down like the previous ones when it cools on the surface.

He explained that this new laundry traveled one kilometer last night, which means an approximate average speed of 80 m / h, a speed that has decreased during the morning. In addition, he stressed that the scientific

committee continues to monitor and study the emitting center above Montaña Rajada.

More than 800 security and emergency personnel from different institutions of the Town Halls, Island Councils, the Government of the Canary Islands and the Government of Spain participate in the emergency operation, in addition to volunteering. The coordination operations are managed from the Advanced Command Post of the General Directorate of Security and Emergencies of the Government of the Canary Islands, as well as more than a dozen aircraft of the Autonomous Community, councils and the State.

The perimeter of exclusion by sea is maintained, from the south by Punta del Pozo (Puerto Naos), to the north by Las Viñas beach (Tazacorte), and parallel to the coast, two nautical miles from the coast, established by Maritime Captaincy.

ENAIRE, air navigation manager in Spain, has established two restricted areas of airspace in the municipalities of El Paso and Los Llanos de Aridane, temporarily until the end of the emergency, in the land and sea area below 3,000 feet, which can only be entered by State security forces and bodies, emergency services, State aircraft and those duly authorized, which does not affect commercial aviation, which does not fly over these two restricted areas.

Scientific Committee

Before the Steering Committee, the Scientific Committee had met for almost four hours, which was also attended by the counselor. In today's session, the nature and scope and consequences of the phenomena that occurred mid-day yesterday were the object of analysis and discussion.

The Scientific Committee reports the following: "The fissure eruption continues to show a strombolian mechanism, currently concentrating its activity in the volcanic cone. The eruptive process over time has shown, and may show, episodes of increased explosive activity, which reached the highest levels recorded so far yesterday afternoon. After the most explosive episode, 2 new nearby emission points are observed in the NW sector of the cone, in its lower part. Currently these two new centers have been

merged into a single one. Since yesterday, it has shown effusive phases of the Hawaiian type from one of the emission points, generating highly fluid lava flows, which run mainly over the previous flows, having traveled 3.6 km up to now, advancing since last night with an average speed of 40 m / h. Currently, at least 3 emission points are observed in the crater and one more on the volcanic cone, as well as two active lava flows. The oldest is almost stopped.

At present, the cone shows a different morphology, caused by a process of rupture in its southern sector after yesterday's most explosive episodes.

Atmospheric stability will be the dominant trend for the next few hours and even days. The entry of an African air mass will cause an increase in temperatures during the next few days. On the surface, a weak northeast wind of about 10 km / h that throughout the day will tend to the east component. On the west side, close to the eruptive zone, the influence of the breezes will continue according to the diurnal cycle (sea-land direction during the day and vice versa at night). At the lower-middle (1500-3000 meters) and medium (5000 meters) levels of the troposphere, the wind will have a southern component of 20 km / h that will turn southwest, intensifying up to 60 - 70 km / h (at 3000 meters). This behavior of the wind, causes the distribution of ash at low levels (up to 1500 meters) to affect mainly the island of La Palma and its airport. At higher levels (between 1500 and 3600 meters), the wind configuration disposes the SO₂ cloud from the southwest-northeast from the focus, and this produces a lesser impact on aeronautical operations in the rest of the Canary Islands airports. Acid rain is ruled out for the next 24 hours. In addition, it is important to note that the effect of acid rain on vegetation has to do with persistence, and therefore a specific event does not produce affections. and this produces a lesser impact on aeronautical operations in the rest of the Canarian airports. Acid rain is ruled out for the next 24 hours. In addition, it is important to note that the effect of acid rain on vegetation has to do with persistence, and therefore a specific event does not produce affections. and this produces a lesser impact on aeronautical operations in the rest of the Canarian airports. Acid rain is ruled out for the next 24 hours. In addition, it is important to note that the effect of acid rain on vegetation has to do with persistence, and therefore a specific event does not produce affections.

Seismicity continues at low levels, showing a slight increase that is located further east, close to the first days, about 10 km deep. The possibility of felt seismicity is not ruled out. The volcanic tremor signal has increased during the explosive phases, reaching a high level yesterday afternoon, currently being between a medium and high level with an increasing trend. Pressure waves associated with explosive activity may cause window breakage within a radius of 3 km around the emitting center. The deformations continue to show a stable behavior.

The estimate of the rate of emission of sulfur dioxide (SO₂) into the atmosphere by this eruptive process during yesterday continues at relatively high values, above 28,000 tons per day. The emission of gases and ashes exceed 4000 m. The SO₂ values measured by the air quality surveillance network reflect that the air quality is good. The ash has reached other parts of the archipelago.

Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and that sudden reaching distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur.

An exclusion radius of 2.5 km around emission centers is recommended to minimize the risk of pyroclastic impact and exposure to gases. It is also recommended not to approach the lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures. It is still necessary to maintain the evacuation agreed yesterday.

In areas affected by intense ash fall (a clear deposition is observed on the ground), it is recommended to stay indoors. Outdoors, the use of FFP2 masks and eye protection systems is also recommended. Before the arrival of ashes to other islands, it is recommended in those affected, the use of surgical masks. It is recommended to clean roofs where ash thicknesses of several centimeters accumulate, following the procedure indicated by Civil Protection (see attached documentation).

Ongoing activity monitoring has been strengthened and any significant changes observed will be reported. Stay tuned to the information provided by the corresponding Civil Protection authorities ”.

Follow the red light

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In this sense, you must follow the instructions and collaborate with the Security Forces in the evacuation, remain calm and do not spread rumors. In case of evacuation, your City Council will inform you of the evacuation routes and the established meeting point. It will only be evacuated when the indications are given to do so.

Recommendations include closing all exterior windows and doors, lowering blinds, and shutting off water, gas, and electricity supplies.

Carry in a backpack your documentation and medicines for daily use, mobile phone and its charger, battery-powered radio, flashlight, clothes for about three days. Only use telephones for what is strictly necessary.

You have to go to the established meeting points and if you have to go to a shelter, you have to go to the affiliation points.

The red traffic light also provides indications to protect against falling ash. Do not go near the volcano or the lava flows for any reason.

In this sense, they must remain in their homes until they have settled, unless there is danger of the roof collapsing.

Avoid going out and, if you do, cover your nose and mouth with a mask to avoid inhaling the ashes directly. You should also protect your eyes with mask-type protective glasses, wear glasses instead of contact lenses, or place a damp cloth over your mouth. Also, avoid exercising outdoors.

When ash is falling, close doors, windows and all ventilation in the house (fireplaces, heating, air conditioners, etc.). Remove accumulated ash from flat roofs and rain gutters and keep water tanks and cisterns covered.

Ash must be prevented from coming into contact with food. Wash fruits and vegetables well and do not eat food outdoors.

The accumulated ash must be collected in plastic bags, deposited in containers and avoid throwing it into the public sewer. Volcanic ash consists of very fine fragments that can cause injury to the respiratory tract, eyes and open wounds, as well as irritation to the skin.

Keep vehicle engines off. Driving can kick up ash, engines can clog, and vehicles can break down.

In the case of feeling an earthquake inside a house, protect yourself under the frame of a door or a solid piece of furniture, such as a table, and stand away from the windows. If you have to leave your house, you have to avoid using the elevator and you have to disconnect water, electricity and gas.

If you are outdoors, you have to move away from tall buildings, utility poles, billboards, etc., and so you are close to the sea, you have to move away from the shore.

Remember that 1-1-2 is a telephone number of the Canary Islands Government only for emergencies, if you want some type of general information about the situation you should call 012 or inquire through the media.

The lava emitted by the La Palma volcano slows its speed



In the crater there are at least three simultaneous emission points and the two points that appeared on Friday have merged into a single emission point

The lava emitted by the Cumbre Vieja volcano, on La Palma, has seen its speed slow down in the last hours after yesterday, after the collapse of the upper part of the volcanic cone, an increase in speed was caused, reaching speeds between the 250 and 300 meters per hour.

According to the director of the National Geography Institute (IGN) in the Canary Islands, María José Blanco, in the crater there are at least three simultaneous emission points and the two points that appeared on Friday at the base of the cone, on its skirt, have melted at a single point of issue.

To these emission points it is necessary to add one more on the volcanic cone, as well as two active lava flows, the oldest being almost stopped.

According to the Scientific Committee this Friday, the fissure eruption continues to show a strombolian mechanism, currently concentrating its activity in the volcanic cone. The eruptive process over time has shown, and may show, episodes of increased explosive activity, which reached the highest levels recorded so far yesterday afternoon.

This Sunday, the Scientific Committee and the Steering Committee, chaired by its director and counselor for Public Administrations, Justice and Security

of the Government of the Canary Islands, Julio Pérez, will meet again, as every day.

September 26th

The PEVOLCA agrees to the return of the evicted neighbors on Friday in the areas of Tajuya and Tacande, in El Paso



Almost a thousand personnel continue to work in the management of the emergency within the framework of the Plan

The volcano is permanently monitored in case new decisions need to be made

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) meeting this morning agreed, based on the report of the Scientific Committee of the same morning, the return of the residents

evacuated last Friday from the nuclei from Tajuya, Tacande de Abajo and Tacande de Arriba, in the municipality of El Paso, which are estimated at about 160.

For the director of the National Geographic Institute in the Canary Islands (IGN), María José Blanco, the most important change that motivates the return of the last evacuees to their homes is due to the disappearance of the instability of the process. Indicators such as tremor, seismic signals and deformations have been found since yesterday at levels, in general, less elevated and more stable.

Both meetings were chaired by its director and counselor for Public Administrations, Justice and Security of the Government of the Canary Islands, Julio Pérez.

The Technical Director of PEVOLCA, Miguel Ángel Morcuende, recalled that in terms of Civil Protection, some 850 personnel from different entities and administrations are working on the management of this emergency, to which we must add Civil Protection volunteers and other staff from municipalities of the Island, which as a whole is close to a thousand people. Many of these people have already been relieved and replaced by the corresponding replacements.

Morcuende explained that the ash fall observed today and since yesterday afternoon has not only affected the municipalities near the eruption, but has also spread to the eastern slope of the island, such as Villa de Mazo, Breña Alta and Breña Baja, Santa Cruz de La Palma or Puntallana. This is due to the prevailing high-altitude wind that comes from the southwest and moves them to locations on the other side of the ridge. In this sense, he stressed that current conditions do not affect air quality, which is still good, so people who are on the island should know it.

The Technical Director added that although the fall of ash does not affect health, its incorrect handling can cause respiratory and eye problems, so he insisted on the use of FFP2 masks, protective glasses and gloves and long-sleeved clothing, when perform roof and street cleaning jobs.

He recalled that the eruptive process has moments of greater explosiveness. The explosions could be felt within a radius of 5 kilometers from the emitting center, so extreme precautions should be taken, especially not standing near windows when these explosions are perceived.

Morcuende reiterated that we are facing a strombolian fissure eruption, typical of the Canary Islands, and that the same variables are still being handled as in previous days. There is a stream to the north that flows more fluidly than the stream to the south, which moves more slowly. The lava comes from more inland areas of the volcano and is estimated to be at a temperature of 1,200 degrees according to scientists.

Regarding the management of the flows, Blanco reported that a new digital modeling of the land will be carried out by Civil Protection and the Cabildo de La Palma, which will allow more information to be obtained. The trend is that the new laundry tries to join the old one.

Scientific Committee conclusions

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC); Canary Islands Volcanological Institute (Involcan), Spanish Geological and Mining Institute (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna, University of Las Palmas de Gran Canaria.

Such conclusions were: "The fissure eruption continues to show a strombolian mechanism, currently concentrating its activity in the volcanic cone. The eruptive process continues to show and may show episodes of increased explosive activity. There are two active lava flows. The northern one maintains its high fluidity and continues to flow mainly on the previous flows. The southern stream advances at 30 m / h, having traveled a distance of less than 2.5 km. There are still several strombolian emission points in the crater and another point of lava emission (salidero), which feeds the southern lava flow. The first wash whose front reached Todoque, is currently almost stopped and reaches a maximum height on its front of 15 m.

The ashfall has also occurred in other areas of the island, such as Santa Cruz de La Palma, Mazo, with episodes of intense deposition. Changes in wind

speed with height can cause volcanic explosions to be audible at a greater distance, something common in this type of volcanic phenomenon.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration.

The predominance of atmospheric stability continues. On the surface, wind from northeast to east 10 to 15 km / h. On the west side, close to the eruptive zone, the influence of the breezes will continue according to the diurnal cycle (sea-land direction during the day and vice versa at night). At levels between 1500 and 3000 meters (approximately 850 and 700 hPa), southwest winds between 40-65 km / h will predominate. At 500 hPa (5500 meters approximately) southwest wind, less intense than at lower levels (20-30 km / h). The intensification of the wind in the lower-middle levels of the troposphere, as described above, favors the transport of ash at a greater focus distance, and therefore will affect the eastern slope of the island. What's more, the configuration of the wind disposes the SO₂ cloud southwest-northeast from the focus, and this produces a less impact on aeronautical operations in the rest of the Canarian airports. The presence of a marked thermal inversion (5-7 ° C, located around 900 meters), predominance of subsidence (decrease in air masses) and weak winds at low levels, are unfavorable meteorological conditions from the point of view of air quality, mainly on the west side of the island. Acid rain is ruled out for the next 24 hours. In addition, it is important to note that the effect of acid rain on vegetation has to do with persistence, and therefore a specific event does not produce affections. and this produces a lesser impact on aeronautical operations in the rest of the Canarian airports. The presence of a marked thermal inversion (5-7 ° C, located around 900 meters), predominance of subsidence (decrease in air masses) and weak winds at low levels, are unfavorable meteorological conditions from the point of view of air quality, mainly on the west side of the island. Acid rain is ruled out for the next 24 hours. In addition, it is important to note that the effect of acid rain on vegetation has to do with persistence, and therefore a specific event does not produce affections. and this produces a lesser impact on aeronautical operations in the rest of the Canarian airports. The presence of a marked thermal inversion (5-7 ° C, located around 900 meters), predominance of subsidence (decrease in air masses) and weak winds at low levels, are unfavorable meteorological conditions from the point of view of

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Seismicity continues at low levels, locating, mainly, close to that of the first days, at a depth of over 10 km. The volcanic tremor signal has decreased and shows a stable trend. The deformations show a clear stabilization.

The estimate of the rate of emission of sulfur dioxide (SO₂) into the atmosphere by this eruptive process during yesterday continues at relatively high values, above 25,000 tons per day. The emission of gases and ash exceeds 3,300 m (according to the Toulouse VAAC). The SO₂ values measured by the air quality surveillance network reflect that the air quality is good.

Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and that sudden reaching distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur.

An exclusion radius of 2.5 km around emission centers is recommended to minimize the risk of pyroclastic impact and exposure to gases. It is also recommended not to approach the lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures. It is possible that some violent detonations could break the glass of the windows, up to a radius of 5 km from the cone. Therefore, in case of

intensification of explosive activity, it is recommended to stay away from windows.

Given the stabilization of the process, it is not considered necessary to maintain the evacuation that took place on September 24 (Tajuya, Tacande de Abajo and the non-evacuated population of Tacande de Arriba).

In areas affected by intense ash fall (a clear deposition is observed on the ground), it is recommended to stay indoors. Outdoors, the use of FFP2 masks and eye protection systems is also recommended. Before the arrival of ashes to other islands, it is recommended in those affected, the use of surgical masks. Cleaning of roofs where ash thicknesses of several centimeters accumulate is recommended. It is insisted that the ash removal procedure indicated by Civil Protection be followed precisely (moisten ash, eye protection, wear a mask, protect the skin, ..., see attached documentation).

Ongoing activity monitoring has been strengthened and any significant changes observed will be reported. Stay tuned to the information provided by the corresponding Civil Protection authorities ”.

Follow the red light

PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk: green, yellow, orange and red. In red the mandatory evacuation of risk areas is carried out.

In this sense, you must follow the instructions and collaborate with the Security Forces in the evacuation, remain calm and do not spread unfounded rumors. In case of evacuation, the town councils will communicate the evacuation routes and the established meeting point. It will only be evacuated when the indications are given to do so.

Recommendations include closing all exterior windows and doors, lowering blinds, and shutting off water, gas, and electricity supplies.

Carry in a backpack your documentation and medicines for daily use, mobile phone and its charger, battery-powered radio, flashlight, clothes for about three days. Only use telephones for what is strictly necessary.

You have to go to the established meeting points and if you have to go to a shelter, you have to go to the affiliation points.

The red traffic light also provides indications to protect against falling ash. Do not go near the volcano or the lava flows for any reason.

In this sense, they must remain in their homes until they have settled, unless there is danger of the roof collapsing.

Avoid going out and, if you do, cover your nose and mouth with a mask to avoid inhaling the ashes directly. You should also protect your eyes with mask-type protective glasses, wear glasses instead of contact lenses, or place a damp cloth over your mouth. Also, avoid exercising outdoors.

When ash is falling, close doors, windows and all ventilation in the house (fireplaces, heating, air conditioners, etc.). Remove accumulated ash from flat roofs and rain gutters and keep water tanks and cisterns covered.

Ash must be prevented from coming into contact with food. Wash fruits and vegetables well and do not eat food outdoors.

The accumulated ash must be collected in plastic bags, deposited in containers and avoid throwing it into the public sewer. Volcanic ash consists of very fine fragments that can cause injury to the respiratory tract, eyes and open wounds, as well as irritation to the skin.

Keep vehicle engines off. Driving can kick up ash, engines can clog, and vehicles can break down.

In the case of feeling an earthquake inside a house, protect yourself under the frame of a door or a solid piece of furniture, such as a table, and stand away from the windows. If you have to leave your house, you have to avoid using the elevator and you have to disconnect water, electricity and gas.

If you are outdoors, you have to move away from tall buildings, utility poles, billboards, etc., and so you are close to the sea, you have to move away from the shore.

Remember that 1-1-2 is a telephone number of the Canary Islands Government only for emergencies, if you want some type of general information about the situation you should call 012 or inquire through the media.

The wash exceeds Todoque, evacuated for days, and is located 1,600 meters from the coast



People who are within a radius of 5 kilometers from the emission center are recommended to take extreme precautions against the possibility of moments of greater explosiveness that can cause glass breakage

The Technical Director of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), Miguel Ángel Morcuende, reports that this afternoon the central area of the Todoque nucleus, in the municipality of Los llanos de Aridane , evacuated days ago, has been overtaken by the lava flow of the volcano, after 7:00 p.m., crossing the LP-213 highway at the height of the town, and runs approximately 150 meters to the west of the center of said population center .

Morcuende explains that the front of the wash was at about 8:15 p.m. at about 1,600 meters in a straight line from the coast, in a NE direction, bordering the Todoque mountain, but points out that the trajectory of the lava will be adapted to the characteristics of the land. This situation has not generated new evictions given that the direction of the wash remains within

the established exclusion zone, and all the inhabitants had been evicted previously.

The Technical Director of the Plan indicates that the lava follows the path of the main stream and its average speed is about 100 m / h because it is hotter because it emanates from a greater depth of the volcano -about 10 kilometers-, which increases your fluency. In this regard, he details that the front of the tongue is being pushed by new lava that, although the front of the wash is cooling, its interior is still very hot, around 1,200 degrees, which makes it more fluid. The average height of the casting is situated, in front of it, between about four and six meters, and the maximum width of the tongue is about 600 meters, he points out.

Morcuende recalls that moments of greater explosiveness can continue to occur, which can be felt within a radius of about 5 kilometers from the emitting center and generate glass breakage, so he reminds that precautions are taken.

Regarding the fall of ash in other areas of the Island, he explains that this circumstance will depend on the direction of the wind, and remember that although it does not affect health, it is important, to avoid respiratory and eye problems, its correct handling: wear FFP2 masks, goggles, gloves and long-sleeved clothing.

September 27th

The PEVOLCA will maintain the safety device, "with the same intensity", for the duration of the eruption.



"In this crisis we are functioning as if we were a single administration," said the counselor Julio Pérez after the Steering Committee attended again today by the President of the Canary Islands, Ángel Víctor Torres

The measure of confinement of the nuclei of Tzacorte near the coast continues in force

Air quality is still good, but you must continue to take precautions when handling ash

The counselor responsible for the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA), Julio Pérez, highlighted this Monday that, while the eruption lasts on La Palma, the administrations will maintain the current device "with the same intensity" security deployed on the island.

Pérez appeared before the media after presiding over the meetings of the Scientific Committee and the Steering Committee, the latter with the

presence by videoconference of the President of the Canary Islands, Ángel Víctor Torres. The counselor took stock of the two weeks that the Plan has been activated and stressed that the decisions taken during this time by the institutions affected in the emergency have all been adopted "with the greatest consensus and after a detailed and precise debate in which all the administrations have been able to intervene".

He also described as "magnificent" the monitoring and observation work carried out at this time by the scientists involved in the area since the knowledge they transfer is "very useful" for the decision-making of the Steering Committee.

The counselor insisted that the Government of the Canary Islands has two primary objectives in this emergency: the first, since the Plan was activated, is that citizens are safe; while the second is to prepare the reconstruction of the area. To achieve both, it is essential to know the extent of the pouring, how far it can run and at what time it could reach the sea, if it does, as well as accurately determine the homes and buildings affected.

For his part, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, commented that the air quality continues to be good and there are no health problems. Regarding the ash fall in other areas of the island, he explained that this circumstance will depend on the direction of the wind, and recalled that although it does not affect health, it is important, to avoid respiratory and eye problems, to carry out a correct handling: wear FFP2 masks, goggles, gloves and long-sleeved clothing. He also indicated that the population at this time is safe and that citizens must remain attentive to official statements.

In relation to the eruptive process, Morcuende explained that it shows continuities and discontinuities. The lava is at a distance of between 800 and 1,000 meters from the coast in a straight line, although it will adapt to the characteristics of the terrain. The north stream, which emanates from the main cone, began to move rapidly yesterday and reached the Todoque mountain, and is now very slowed down.

In this sense, the Technical Director added that given the possibility that the lava would reach the sea and produce certain explosions or vaporizations, the Steering Committee decided late yesterday the confinement of some 300 residents of the coastal areas of the municipality of Tazacorte,

specifically San Borondón, Marina Alta, Marina Baja and La Condesa, given the risk that they could suffer exposure to certain gases (hydrochloric acid) that would mainly affect the bronchial tubes and the eyes. In that sense, he clarified that these gas clouds are rapidly diluted and that this measure is taken preventively, as required by the Civil Protection Law and PEVOLCA.

Meanwhile, the director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, gave part of the conclusions of the Scientific Committee, explaining that the eruption is concentrated in the volcanic cone and that the eruptive process continues to show episodes of increase and decrease of activity, which are characteristic of the volcanic activity of the Islands.

Regarding seismicity, the director of the IGN commented that a sharp decrease in the tremor signal has been observed in the last hours. This morning a seismic swarm has been registered, which returns to retake the same surface area and the same depths of the beginning of this seismic period, on September 11.

After the latest changes in the eruptive process on La Palma and the increased possibility of volcanic flows coming into contact with the sea, the General Directorate of the Merchant Navy last night modified the no-navigation zone one mile further north .

Regarding the number of people evacuated, the Technical Director recalled that yesterday the people evicted last Friday in Tajuya and Tacande de Arriba and Tacande de Abajo were able to return to their homes, approximately 200, but that 5,600 are still evacuated preventively. people from the first day. Regarding those sheltered, the Steering Committee reported that at the moment there is no one in the El Fuerte barracks, although it remains operational for first affiliation and referrals, and that there are about 160 people in the Fuencaliente hotel.

Scientific Committee conclusions

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic

Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were: "The fissure eruption continues to show a strombolian mechanism, currently concentrating its activity in the volcanic cone. There have been some pulses of phreatomagmatic activity that are manifested by columns of water vapor (whiter in color). The eruptive process continues to show and can show episodes of increased and decreased activity. Although the strombolian explosions have ceased in the last few hours, it is possible that they can suddenly occur again in the form of pulses. The first cessation of activity was observed this morning at 04:10, starting again at 04:30. This process has been reproduced in the last hours on several occasions. The total volume of emitted material (cone and streams) has been estimated at 46.3 million m³.

The changes observed may be related to the closure of the conduit and the low availability of gas and less contribution of magmatic material to the system.

There are still two active lava flows. The one to the north continues to run mainly on the previous flows, having reached the surroundings of the Todoque Mountain, where it has slowed down. It has two lobes. One that tries to overcome the Todoque Mountain, to the north, but encounters a certain slope. The other moves south, towards a trough that runs from east to west, south of the Todoque Mountain. The southern wash continues to advance at low speed.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration.

Regarding the meteorological conditions, at low levels (below 1000 meters) the wind continues to blow from the northeast to the east at around 15 - 20 km / h, more intense (between 25 to 40 km / h) in the extreme northwest and on the southeast coast, with a tendency to increase in intensity in the coming days. On the west side, close to the eruptive zone, the influence of the breezes will continue according to the diurnal cycle (sea-land direction during the day and vice versa at night). The most significant will be the turn

of the wind at levels between 850-700 hPa (1500-3000 meters approx.), Which will go from having a southwest to west direction and later to a north component as of the next morning. This wind turn in the lower-middle levels of the troposphere, it will displace the ash cloud and SO₂ towards the southeast of the emitter focus, and therefore, the plume could affect the area between La Palma, La Gomera and Tenerife. The presence of a marked thermal inversion (8-9 ° C, located between 500-1000 meters), predominance of subsidence (decrease in air masses) and weak winds at low levels, are unfavorable meteorological conditions from the point of view of air quality, mainly on the west side of the island. Acid rain is ruled out for the next 24 hours. These are unfavorable meteorological conditions from the point of view of air quality, mainly on the west side of the island. Acid rain is ruled out for the next 24 hours. These are unfavorable meteorological conditions from the point of view of air quality, mainly on the west side of the island. Acid rain is ruled out for the next 24 hours.

Between 05 and 07:30 this morning a seismic swarm has been registered, with locations, mainly, close to the seismicity of the first days, at a depth of over 10 km. With the change in activity, a sharp decrease in the amplitude of the tremor is observed. Signals are observed in the tremor that coincide with the ash emission pulses (exhalations). The deformations show in the last days, a clear stabilization of the horizontal components and a decrease in the vertical component.

The estimate of the rate of emission of sulfur dioxide (SO₂) into the atmosphere by this eruptive process during yesterday continues to register relatively high values, of 16,380 tons per day. The emission of gases and ash exceeds 3000 m (according to the Toulouse VAAC).

The SO₂ values measured by the air quality surveillance network reflect that the air quality is good. Regarding PM₁₀ particles in air, high values are recorded, as is expected in an eruptive process that emits ashes into the atmosphere that are subsequently deposited.

Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and that sudden reaching distances of several meters from the pouring face,

depending on the topography. Also in steep areas, small pyroclastic flows can occur.

An exclusion radius of 2.5 km around emission centers is recommended to minimize the risk of pyroclastic impact and exposure to gases. It is also recommended not to approach the lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures. It is possible that some violent detonations could break the glass of the windows, up to a radius of 5 km from the cone. Therefore, in case of intensification of explosive activity, it is recommended to stay away from windows.

In areas affected by intense ash fall (a clear deposition is observed on the ground), it is recommended to stay indoors. Outdoors, the use of FFP2 masks and eye protection systems is also recommended. Before the arrival of ashes to other islands, it is recommended in those affected, the use of surgical masks. Cleaning of roofs where ash thicknesses of several centimeters accumulate is recommended. It is insisted that the ash removal procedure indicated by Civil Protection be followed precisely (moisten ash, eye protection, wear a mask, protect the skin, ...)

Ongoing activity monitoring has been strengthened and any significant changes observed will be reported. Stay tuned to the information provided by the corresponding Civil Protection authorities ”.

Follow the red light

PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk: green, yellow, orange and red. In red the mandatory evacuation of risk areas is carried out.

In this sense, you must follow the instructions and collaborate with the Security Forces in the evacuation, remain calm and do not spread unfounded rumors. In case of evacuation, the town councils will communicate the evacuation routes and the established meeting point. It will only be evacuated when the indications are given to do so.

Recommendations include closing all exterior windows and doors, lowering blinds, and shutting off water, gas, and electricity supplies.

Carry in a backpack your documentation and medicines for daily use, mobile phone and its charger, battery-powered radio, flashlight, clothes for about three days. Only use telephones for what is strictly necessary.

You have to go to the established meeting points and if you have to go to a shelter, you have to go to the affiliation points.

The red traffic light also provides indications to protect against falling ash. Do not go near the volcano or the lava flows for any reason.

In this sense, they must remain in their homes until they have settled, unless there is danger of the roof collapsing.

Avoid going out and, if you do, cover your nose and mouth with a mask to avoid inhaling the ashes directly. You should also protect your eyes with mask-type protective glasses, wear glasses instead of contact lenses, or place a damp cloth over your mouth. Also, avoid exercising outdoors.

When ash is falling, close doors, windows and all ventilation in the house (fireplaces, heating, air conditioners, etc.). Remove accumulated ash from flat roofs and rain gutters and keep water tanks and cisterns covered.

Ash must be prevented from coming into contact with food. Wash fruits and vegetables well and do not eat food outdoors.

The accumulated ash must be collected in plastic bags, deposited in containers and avoid throwing it into the public sewer. Volcanic ash consists of very fine fragments that can cause injury to the respiratory tract, eyes and open wounds, as well as irritation to the skin.

Vehicle engines should be kept off. Driving can kick up ash, engines can clog, and vehicles can break down.

In the case of feeling an earthquake inside a house, protect yourself under the frame of a door or a solid piece of furniture, such as a table, and stand away from the windows. If you have to leave your house, you have to avoid using the elevator and you have to disconnect water, electricity and gas.

If you are outdoors, you have to move away from tall buildings, utility poles, billboards, etc., and so you are close to the sea, you have to move away from the shore.

Likewise, given the risk of the lava reaching the sea and in anticipation of possible emanations of gases that are harmful to health, it is recommended in confined areas to close doors, windows, shutters and any air intake from outside and confine, if necessary possible, in the innermost rooms of the house.

Likewise, it is necessary to disconnect the ventilation and heating, interrupting any system that brings in air from outside. For added security, it is possible to seal, using adhesive tape, the joints of doors and windows.

If you are abroad, you must take into account that a vehicle is not a safe place and it is necessary to take refuge in the first building you find, an action that you must also do if you are moving on foot.

In this situation it is essential not to travel until instructions are given and only use the 1-1-2 telephone for emergency situations.

September 28th

The lava front is located on the border between the municipalities of Los Llanos and Tazacorte



The eruptive process alternates Strombolian behaviors, with greater explosiveness, and Hawaiian, with greater fluidity of the lava.

The confinement measures are maintained in the coastal centers of Tazacorte and no more preventive evacuations have been carried out

The counselor responsible for the Plan appeared today in the Parliament of the Canary Islands to report on the actions carried out and the evolution of the situation

The front of the lava is currently located on the road to El Pampillo, on the border of the municipalities of Los Llanos and Tazacorte, about 1,000 meters from the coast in a straight line, as announced by the Technical Director of the Special Protection Plan Civil and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA), Miguel Ángel Morcuende, after attending the meetings of the Scientific Committee and the Steering Committee of the Plan.

Although it is not possible to know when it will reach the sea, Morcuende pointed out that the confinement of the coastal neighborhoods of Tazacorte is maintained in a preventive way, given the possibility that contact with the sea generates hydrochloric acid emanations and explosions, and indicated that there have not been performed new evacuations.

The director of the Plan and counselor of Public Administrations, Justice and Security of the Government of the Canary Islands, Julio Pérez, could not preside today the meetings of the PEVOLCA Committees as he had to appear before the Parliament of the Canary Islands to report on the actions carried out since the activated the Plan on September 13, and on the impact of the volcano eruption on September 19. However, Pérez has been permanently informed about the evolution of the situation.

Morcuende also reported on the emanation of gases and explained that despite the fact that in the area of the eruption there are higher ratios of suspended particles, the plume is above 4,000 meters, so the quality of the air remains within of the established limit values. He also reported that during the morning the laundry front -located in an area vacated days ago-, has begun to burn plastic and other materials from banana greenhouses. In

that sense, he explained that this toxic cloud has been monitored by the UME and that it is being diluted and that it has not affected people, since those that could be found in the area collecting belongings or perishable products were evacuated.

The director recalled the possibility that homes located within a radius of less than 5 km may suffer glass breakage due to the volcano's explosions, so he insisted on moving away from the windows and taking extreme measures of self-protection due to the ashes: "The best thing is not to go out when ash is falling and if we do, we must take extreme precautions with suitable clothing, masks, gloves and caps".

Regarding the activity of the volcano, he commented that during the afternoon of yesterday the activity was very low, almost null in relation to previous days and that it was from the late evening when it was reactivated with the expulsion of magma from the inner layers of the volcano, which is at a higher temperature and therefore causes more fluid flows.

For her part, the director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, explained that the fissure eruption continues to show strombolian character but now presents a Hawaiian behavior with phases of fluid lava flows. In this sense, he indicated that both mechanisms are simultaneous in this eruption and, although the strombolian explosions have ceased in the last few hours, it is possible that they may return to occur suddenly in time.

Regarding the route that the lava follows, Blanco pointed out that according to what has been seen in the flights made by drones of the different institutions, the lava follows the previous lava flows, which favors it moving faster. In this sense, the emission point on the north flank is the one that is most active, although it continues to emit in the crater.

Scientific Committee conclusions

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the

Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were: "The fissure eruption continues to show a strombolian mechanism with a more effusive character compared to the previous days, especially in the emission center of the north flank. From 8 a.m. to 6 p.m. there was a sharp decrease in tremor. Important degassing begins at 18:15, manifested by columns of water vapor (whiter in color), followed a few minutes after the emission of ash in the main crater and at 19:15 the emission of lava flows. from the north flank with the appearance of an important source of lava (Hawaiian activity). The eruptive process continues to show and can show episodes of increased and decreased activity, as well as pulses with phreatomagmatic activity. Although the strombolian explosions have stopped in the last hours, it is possible that they may suddenly reoccur in the form of pulses. The volume of the cone has been estimated to be 10 million m³.

The data and observables of yesterday are related to the drop in the level of the magma in the conduit, causing its temporary plugging. Uncapping is observed with the emission of water vapor and ash, an increase in tremor and subsequent emission of lava.

Since yesterday the emission of a new lava flow from the north flank began with a high rate. It runs over previous streams, which facilitates its progress, having reached the center of Todoque, at a distance of 2 km from the coast (distance calculated on its possible trajectory). The previous washes are practically stopped.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration.

Regarding the meteorological conditions for the next 24 hours, the most remarkable thing is the following: below 1000 meters the northeast will continue to blow with intensities between 25 to 40 km / h with strong intervals on the southeast coast and in the northwest slope (45-60 km / h, gusts may reach 75 km / h on day 29). On the west side, close to the eruptive zone, the influence of the breezes will continue according to the diurnal cycle (sea-land direction during the day and vice versa at

night). Between the levels of 1500 to 3000 meters (between the stratum between 850 - 700 hPa) the flow will be of a northern component with intensities around 30-45 km / h. Above this level (5000 meters) the flow is expected to be a weak western component (less than 10-15 km / h). This distribution of the wind with height will cause the ash cloud and SO₂ to move to the south / southeast with respect to its position occupied yesterday. Therefore, as it moves, it is likely that it may affect the airspace between La Palma, La Gomera and west of Tenerife, without ruling out that fine ash may reach La Gomera mainly, and west of Tenerife. At the end of the prediction period, the probable disposition of the ash cloud will be north-south (from the emission area) and may affect the island of El Hierro. The presence of a marked thermal inversion (6-8 ° C, based on 600 meters), predominance of subsidence (decrease in air masses) and weak winds at low levels, These are unfavorable meteorological conditions from the point of view of air quality, mainly on the west side of the island. The thermal inversion will rise to 1,200 meters on the 29th. Precipitation is ruled out for the next 24 hours, and a low probability of light rains at the end of the day tomorrow (09-29-21) in the north and east of La Palm.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at a depth of over 10 km. Some shallow earthquakes are also recorded around the eruptive center. The deformations show in the last days, a clear stabilization of the horizontal components and a decrease in the vertical component.

The estimation of the emission rate of sulfur dioxide (SO₂) to the atmosphere by this eruptive process yesterday registered a clear decrease, with values of 567 tons per day. The emission of gases and ash exceeds 5,200 m (according to the Toulouse VAAC).

Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and that sudden reaching distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur.

An exclusion radius of 2.5 km around emission centers is recommended to minimize the risk of pyroclastic impact and exposure to gases. It is also

recommended not to approach the lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures. It is possible that some violent detonations could break the glass of the windows, up to a radius of 5 km from the cone. Therefore, in case of intensification of explosive activity, it is recommended to stay away from windows.

Regarding air quality, no exceedance of the established limit values was detected. Air quality is being recorded by the air quality network, reinforced with mobile stations. In areas affected by intense ash fall (which is observed a clear deposition on the ground) and even more if mist is observed, it is recommended to stay indoors. Outdoors, the use of FFP2 masks and eye protection systems is also recommended. Before the arrival of ashes to other islands, it is recommended in those affected, the use of surgical masks. Cleaning of roofs where ash thicknesses of several centimeters accumulate is recommended. It insists that the ash removal procedure indicated by Civil Protection be followed precisely (moisten ash,

Ongoing activity monitoring has been strengthened and any significant changes observed will be reported. Stay tuned to the information provided by the corresponding Civil Protection authorities ”.

Red light

PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk: green, yellow, orange and red. In red the mandatory evacuation of risk areas is carried out.

In this sense, you must follow the instructions and collaborate with the Security Forces in the evacuation, remain calm and do not spread unfounded rumors. In case of evacuation, the town councils will communicate the evacuation routes and the established meeting point. It will only be evacuated when the indications are given to do so.

Recommendations include closing all exterior windows and doors, lowering blinds, and shutting off water, gas, and electricity supplies.

Carry in a backpack your documentation and medicines for daily use, mobile phone and its charger, battery-powered radio, flashlight, clothes for about three days. Only use telephones for what is strictly necessary.

You have to go to the established meeting points and if you have to go to a shelter, you have to go to the affiliation points.

The red traffic light also provides indications to protect against falling ash. Do not go near the volcano or the lava flows for any reason.

In this sense, they must remain in their homes until they have settled, unless there is danger of the roof collapsing.

Avoid going out and, if you do, cover your nose and mouth with a mask to avoid inhaling the ashes directly. You should also protect your eyes with mask-type protective glasses, wear glasses instead of contact lenses, or place a damp cloth over your mouth. Also, avoid exercising outdoors.

When ash is falling, close doors, windows and all ventilation in the house (fireplaces, heating, air conditioners, etc.). Remove accumulated ash from flat roofs and rain gutters and keep water tanks and cisterns covered.

Ash must be prevented from coming into contact with food. Wash fruits and vegetables well and do not eat food outdoors.

The accumulated ash must be collected in plastic bags, deposited in containers and avoid throwing it into the public sewer. Volcanic ash consists of very fine fragments that can cause injury to the respiratory tract, eyes and open wounds, as well as irritation to the skin.

Vehicle engines should be kept off. Driving can kick up ash, engines can clog, and vehicles can break down.

In the case of feeling an earthquake inside a house, protect yourself under the frame of a door or a solid piece of furniture, such as a table, and stand away from the windows. If you have to leave your house, you have to avoid using the elevator and you have to disconnect water, electricity and gas.

If you are outside, stay away from tall buildings, utility poles, billboards, etc. and so it is close to the sea, you have to move away from the shore.

Likewise, given the risk of the lava reaching the sea and in anticipation of possible emanations of gases that are harmful to health, it is recommended in confined areas to close doors, windows, shutters and any air intake from outside and confine, if necessary possible, in the innermost rooms of the house.

In addition, it is necessary to disconnect the ventilation and heating, interrupting any system that brings in air from outside. For added security, it is possible to seal, using adhesive tape, the joints of doors and windows.

If you are abroad, you must take into account that a vehicle is not a safe place and it is necessary to take refuge in the first building you find, an action that you must also do if you are moving on foot.

In this situation it is essential not to travel until instructions are given and only use the 1-1-2 telephone for emergency situations.

September 29th

PEVOLCA highlights that, although the lava has reached the sea, the eruption is not stabilized and it continues to be monitored



The nuclei of San Borondón, Marina Alta, Marina Baja and La Condesa remain confined until there are definitive studies of the effects of gases

Lava, running down the cliff next to Los Guirres beach, has created a delta that extends south

The population is reminded of the use of masks to protect themselves from the ashes

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), chaired by its director and counselor for Public Administrations, Justice and Security of the Government of the Canary Islands, Julio Pérez, agreed this Wednesday to maintain all the devices of civil protection and security despite the fact that last night the lava reached the sea, since scientists do not see evidence that the dynamics of the eruptive process is stable, so they continue to monitor and take measures related to this process.

For this reason, the PEVOLCA technical director, Rubén Fernández - who will relieve Miguel Ángel Morcuende for 48 hours - announced that the maritime and land exclusion zones will be maintained, the evacuation of neighbors decreed last week and the confinement from the population centers of San Borondón, Marina Alta, Marina Baja and La Condesa to guarantee their complete safety. "We are constantly conducting studies and monitoring and until we know that these areas are out of risk, these measures will be maintained."

Rubén Fernández said that the return of some residents will be allowed to collect belongings and feed the animals, but always under strict control of the Civil Guard and outside the exclusion perimeter of 2.5 kilometers. Likewise, starting tomorrow, irrigators will be authorized to access their farms in El Remo, Puerto Naos and Las Hoyas for irrigation tasks by means of a security convoy of the Civil Guard and the UME provided that, after their measurements, can ensure that the air quality allows this activity to be carried out.

The area affected by the eruption is approximately 476 hectares, and according to data from the Copernicus satellite, there are 744 buildings damaged: 656 in their entirety and 88 partially, including homes, warehouses and tool rooms, among others.

As for air quality, so far they have not exceeded the permitted values required by current legislation. The values emitted by the different stations are available on the website of the Government of the Canary Islands and

any variation that poses a risk to the population will be communicated by the management of the Plan. However, due to the ashes, the use of FFP2 masks is recommended throughout the Aridane Valley environment.

Regarding the evacuees, he pointed out that 185 people continue to be rehoused in the Teneguía Princess Hotel in Fuencaliente and that there are currently no people housed in the El Fuerte barracks, although it is operational. Fernández also stressed the importance of not relaxing sanitary measures regarding COVID-19, that is, maintaining a safe distance and reinforcing the use of masks.

Finally, he specified that the emergency services are collaborating in the rescue of animals that have been isolated, but always respecting the security perimeter.

The director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, explained that the cloud of gases originating after the lava reached the sea is limited to the contact area, has not spread laterally, and has not affected any population.

In addition, regarding the seismicity registered in the Fuencaliente area, he pointed out that it is evident that it is related to the ongoing emission, but that the volcanic system has an open exhaust valve and does not have the need to look for a new path to the Earth's surface. In this sense, he explained that we cannot forget that, in the case of the eruption of the underwater volcano of El Hierro, seismicity began in the El Golfo area in July and advanced across the island from north to south, ending in an eruption in the Mar de Las Calmas. "Once the eruption had started, seismicity resumed in the El Golfo area, with magnitudes even greater than the pre-eruptions. Therefore, this is a behavior that has already occurred and it is not objectionable that it may occur in this eruption of Cumbre Vieja".

scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic

Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were: "The fissure eruption continues to show a strombolian mechanism with an effusive prevalence for two days in the emission center of the north flank. At 11:00 p.m. after crossing the Todoque mountain to the south, the lava flow came into contact with the sea in the area of Playa de Los Guirres. The active stream maintains a continuous cascading flow and a lava delta is forming at the base of the cliff, extending southward. Clouds of water vapor and other possibly toxic gases are being produced in the contact area, concentrating in a small area around the contact. Along the fronts of this active wash that has reached the sea, significant advances can be made. Although the active laundry has reached the sea, the eruptive process continues its activity. The rest of the washes are practically inactive.

The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration.

The measured height of the ash and gas column today is 3,500 m. Regarding the meteorological conditions, the anticyclonic situation continues with winds at low levels from the moderate northeast, which will be strong on the southeast coast and on the northwest slope, with probable gusts that could reach 75 km / h. In the area close to the eruption, due to the orographic effect on the west slope, prevalence of breezes according to the diurnal cycle (sea-land direction during the day and vice versa at night) except in the El Paso area, where it is expected Eastern component with probable occasional values of maximum gust between 65 and 75 km / h. At levels between 1500 to 3000 meters the wind will be from the northeast between 35 to 45 km / h turning southeast at the end of the period. Above this stratum (between 3,000 to 5.000 meters) northwest wind turning south with intensities around 30 km / h. The wind configuration described above will move the ash cloud and SO₂ from the current position, south of

the eruption area to the northwest of the volcano. Due to the turning of the wind during the next few hours, fine ash could reach the island of El Hierro during the afternoon-night today. This disposition of the wind at the end of the period would mean a lesser impact on the operation of the Canarian airports and airspace. Presence of thermal inversion, of about 5 or 6 ° C, will remain around 1,300-1,500 meters. Probability of weak and occasional rains, especially in the northeastern midlands, throughout the forecast period. The wind configuration described above will move the ash cloud and SO₂ from the current position, south of the eruption area to the northwest of the volcano. Due to the turning of the wind during the next few hours, fine ash could reach the island of El Hierro during the afternoon-night today. This disposition of the wind at the end of the period would mean a lesser impact on the operation of the Canarian airports and airspace. Presence of thermal inversion, of about 5 or 6 ° C, will remain around 1,300-1,500 meters. Probability of weak and occasional rains, especially in the northeastern midlands, throughout the forecast period. The wind configuration described above will move the ash cloud and SO₂ from the current position, south of the eruption area to the northwest of the volcano. Due to the turning of the wind during the next few hours, fine ash could reach the island of El Hierro during the afternoon-night today. This disposition of the wind at the end of the period would mean a lesser impact on the operation of the Canarian airports and airspace. Presence of thermal inversion, of about 5 or 6 ° C, will remain around 1,300-1,500 meters. Probability of weak and occasional rains, especially in the northeastern midlands, throughout the forecast period. Fine ash could reach the island of El Hierro during the afternoon-night today. This disposition of the wind at the end of the period would mean a lesser impact on the operation of the Canarian airports and airspace. Presence of thermal inversion, of about 5 or 6 ° C, will remain around 1,300-1,500 meters. Probability of weak and occasional rains, especially in the northeastern midlands, throughout the forecast period. Fine ash could reach the island of El Hierro during the afternoon-night today. This disposition of the wind at the end of the period would mean a lesser impact on the operation of the Canarian airports and airspace. Presence of thermal inversion, of about 5 or 6 ° C, will remain around 1,300-1,500 meters. Probability of weak and occasional rains, especially in the northeastern midlands, throughout the forecast period.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths greater than 10 km. Of the earthquakes located yesterday, 6 exceeded the magnitude of 3 mbLg, with 7 being the senses with maximum intensity III. Some shallow earthquakes are also recorded around the eruptive center. The tremor remains stable at medium levels. The deformations show a slight growth of the horizontal components in the SW direction, and of the vertical ones in the environment of the eruptive center.

The estimate of the emission rate of sulfur dioxide (SO₂) to the atmosphere by this eruptive process during yesterday registered an increase, reaching values of 16,757 tons per day. The chemical composition of the plume is being measured with drone-mounted sensors and the results are consistent with the type of magma involved in this eruption.

Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and that sudden reaching distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur.

An exclusion radius of 2.5 kilometers around emission centers is recommended to minimize the risk of impact from pyroclasts and exposure to gases. It is also recommended not to approach the lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures. It is possible that some violent detonations could break the glass of the windows, up to a radius of 5 km from the cone. Therefore, in case of intensification of explosive activity, it is recommended to stay away from windows.

Yesterday the daily particle threshold (50 µg / m³) was exceeded at the Los Llanos mobile station. This does not imply an excess of the limits established in the regulations, but it is recommended to continue with the precautionary measures indicated in previous reports. Air quality can be monitored through the website that the Government of the Canary Islands has for this purpose:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/inicio.do>

In areas affected by intense ash fall (a clear deposition on the ground is observed) and even more so if mist is observed, it is recommended to stay indoors. Outdoors, the use of FFP2 masks and eye protection systems is also recommended. Before the arrival of ashes to other islands, it is recommended in those affected, the use of surgical masks. Cleaning of roofs where ash thicknesses of several centimeters accumulate is recommended. It is insisted that the ash removal procedure indicated by Civil Protection be followed precisely (moisten ash, eye protection, wear a mask, protect the skin, etc.).

Respect for the land and maritime exclusion zones remains imperative in order to maintain the physical integrity of people.

Ongoing activity monitoring has been strengthened and any significant changes observed will be reported. Stay tuned to the information provided by the corresponding Civil Protection authorities ”.

Red light

PEVOLCA establishes a volcanic traffic light as an alert system to the population based on four colors depending on the risk: green, yellow, orange and red. In red the mandatory evacuation of risk areas is carried out.

In this sense, you must follow the instructions and collaborate with the Security Forces in the evacuation, remain calm and do not spread unfounded rumors. In case of evacuation, the town councils will communicate the evacuation routes and the established meeting point. It will only be evacuated when the indications are given to do so.

Recommendations include closing all exterior windows and doors, lowering blinds, and shutting off water, gas, and electricity supplies.

Carry in a backpack your documentation and medicines for daily use, mobile phone and its charger, battery-powered radio, flashlight, clothes for about three days. Only use telephones for what is strictly necessary.

You have to go to the established meeting points and if you have to go to a shelter, you have to go to the affiliation points.

The red traffic light also provides indications to protect against falling ash. Do not go near the volcano or the lava flows for any reason.

In this sense, they must remain in their homes until they have settled, unless there is danger of the roof collapsing.

Avoid going out and, if you do, cover your nose and mouth with a mask to avoid inhaling the ashes directly. You should also protect your eyes with mask-type protective glasses, wear glasses instead of contact lenses, or place a damp cloth over your mouth. Also, avoid exercising outdoors.

When ash is falling, close doors, windows and all ventilation in the house (fireplaces, heating, air conditioners, etc.). Remove accumulated ash from flat roofs and rain gutters and keep water tanks and cisterns covered.

Ash must be prevented from coming into contact with food. Wash fruits and vegetables well and do not eat food outdoors.

The accumulated ash must be collected in plastic bags, deposited in containers and avoid throwing it into the public sewer. Volcanic ash consists of very fine fragments that can cause injury to the respiratory tract, eyes and open wounds, as well as irritation to the skin.

Vehicle engines should be kept off. Driving can kick up ash, engines can clog, and vehicles can break down.

In the case of feeling an earthquake inside a house, protect yourself under the frame of a door or a solid piece of furniture, such as a table, and stand away from the windows. If you have to leave your house, you have to avoid using the elevator and you have to disconnect water, electricity and gas.

If you are outside, stay away from tall buildings, utility poles, billboards, etc. and so it is close to the sea, you have to move away from the shore.

Likewise, given the risk of the lava reaching the sea and in anticipation of possible emanations of gases that are harmful to health, it is recommended in confined areas to close doors, windows, shutters and any air intake from outside and confine, if necessary possible, in the innermost rooms of the house.

In addition, it is necessary to disconnect the ventilation and heating, interrupting any system that brings in air from outside. For added security, it is possible to seal, using adhesive tape, the joints of doors and windows.

If you are abroad, you must take into account that a vehicle is not a safe place and it is necessary to take refuge in the first building you find, an action that you must also do if you are moving on foot.

In this situation it is essential not to travel until instructions are given and only use the 1-1-2 telephone for emergency situations

September 30th

PEVOLCA agrees to maintain exclusion zones, confinement and intensify surveillance of air quality



It is recommended to use the FFP2 mask and pay special attention to vulnerable people, who should avoid open spaces

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), meeting this morning, agreed, based on the report of the previous Scientific Committee, to maintain the exclusion zones and confinement of the coastal neighborhoods of Tazacorte and intensify the surveillance of air

quality, among other protection measures, to guarantee the health and safety of the population and those involved.

The PEVOLCA technical director during the days yesterday and today, Rubén Fernández, announced that the wash flows with some stability towards the sea following the course of the previous wash, but that the eruptive process continues to develop in the same conditions as yesterday, with some overflow points, so it is necessary to continue with access restrictions, except for emergency services and scientific personnel, in order to ensure the safety of people.

Regarding the emission of gases, he indicated that some measurements in Tzacorte have given at specific moments peaks of sulfur dioxide that exceed the thresholds set out in the air quality regulations, so the PEVOLCA reiterates to the population that use FFP2 masks Stay indoors and pay greater attention to vulnerable populations such as children, the elderly, pregnant women and people with chronic respiratory diseases.

In this regard, María José Blanco explained that the weak winds expected on the west slope will be unfavorable meteorological conditions from the point of view of air quality, since this weekend a phenomenon of thermal inversion is forecast that will not allow the dispersion of particles.

Today the community of irrigators and owners of farms located between La Bombilla and El Remo have been allowed to carry out irrigation work. These tasks have also been carried out to the north of the La Laguna mountain, where collection work has also been authorized, which will be extended tomorrow, if conditions allow, to the area between La Bombilla and El Remo.

Likewise, today the access of some residents to their homes has only been authorized for very specific and urgent matters, as well as to feed the animals with a security convoy, and always outside the exclusion area.

PEVOLCA continues to constantly monitor parameters such as air quality, explosiveness and the emission of pyroclasts, among others.

Rubén Fernández pointed out that according to the latest data from the Copernicus satellite, there would be a total of 981 buildings affected, of which 855 would be totally damaged, although he recalled that these data

have to be contrasted with the cadastre and municipalities and a detailed analysis the type of building.

Regarding the sheltered, he pointed out that 186 people remain in the Fuencaliente hotel, with the support of the Spanish Red Cross.

Rubén Fernández stressed the importance of not relaxing sanitary measures regarding COVID-19, that is, maintaining a safe distance and reinforcing the use of masks.

The PEVOLCA technical director thanked, on behalf of the Cabildo de La Palma and the affected municipalities, the solidarity of the people who have donated clothes or other belongings. In this regard, he pointed out that these needs are already covered and said that collaboration can continue to be made with donations through the accounts set up by the Cabildo, city councils and other official entities.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism with an effusive prevalence for two days in the emission center of the north flank. The stream that reached the sea maintains a continuous flow towards the sea in the form of a waterfall. At the base of the cliff, a lava delta is forming with a wide front that has reached the 24 m depth visible on the surface. In the contact area, clouds of water vapor and other possibly toxic gases are being produced, which are concentrated in a small area around the contact (marine plume).

Along the fronts of this active wash that has reached the sea, significant advances can be made. Although the active stream has reached the sea, the eruptive process continues its activity. The rest of the washes are practically inactive. Since this morning, the appearance of an extensive fumarolic field on the northeast flank has been observed.

The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration.

The measured height of the ash and gas column today is 2500 m. The predominance of atmospheric stability continues with the presence of a marked thermal inversion (about 5 to 7 ° C).

This investment is located around 1500 meters and will descend tomorrow to about 700 meters, due to the entry of a warm and dry mass in height of African origin and that may be accompanied by haze at high levels. The wind will continue from the northeast around 30-40 km / h, with strong intervals in the extreme southeast and northwest (in these areas the gusts can occasionally reach 70 km / h). In the area close to the eruption, due to the orographic effect, on the west slope, there is a predominance of breezes according to the diurnal cycle (sea-land direction during the day and vice versa at night). Between 1500 - 5000 meters the east to southeast component will predominate with intensities between 25 - 35 km / h. The wind configuration described above will dispose the ash cloud and SO₂ towards the north-northwest from the eruption area, mainly affecting the west slope of La Palma. The high stability in the lower layers of the troposphere, together with the weak winds on the west slope, will be unfavorable meteorological conditions from the point of view of air quality.

Low probability of light rain in the north and east, for the day today.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths greater than 10 km. In the last 24 h, a few dozen earthquakes have been located, the largest of 3.3 mbLg, felt with intensity II EMS. Some shallow earthquakes are also recorded around the eruptive center. The tremor remains stable at medium levels. Some seismic stations near the lava delta register a high frequency tremor. The deformations show a stable pattern.

The estimation of the rate of emission of sulfur dioxide (SO₂) into the atmosphere by this eruptive process yesterday continues to register relatively high values and in line with the eruptive process, reaching values of 7149 tons per day.

The daily threshold for particles below 10 microns (PM₁₀) established according to the air quality regulations in force (50 µg / m³), was once again exceeded yesterday at the Los Llanos mobile station.

This daily exceedance does not mean, for now, that air quality limits for health are exceeded, but it is recommended to continue with the precautionary measures established in yesterday's report. During this day, the PM₁₀ and PM_{2.5} particle values are decreasing in the set of stations, in comparison with previous days effect (<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/inicio.do>).

Regarding sulfur dioxide (SO₂), in the measurement booth located in Tazacorte, high and very high values are being measured for several consecutive hours, reaching over 500 µg / m³ at the hourly average of 8:00. At the moment, hourly values higher than 300 µg / m³ are being measured at said station.

At the station located in Los Llanos, an increase in the concentration of sulfur dioxide has been observed since last morning, reaching values of around 100 µg / m³ from that moment. This does not mean exceeding the hourly limit values, but if you continue in this way, the daily limit value could be exceeded.

The smell of "rotten eggs" reported by some citizens in Los Llanos de Aridane, is due to hydrogen sulfide in the air. These values, which are continuously recorded by air quality stations, do not currently represent a health hazard. The smell of "rotten eggs" and the increase in SO₂ is due to the affection of the volcanic plume in the area.

With respect to the rest of the stations located on La Palma, the SO₂ values are low and do not present a problem at this time.

The marine plume generated by the encounter of the lava with the sea should not be underestimated, but neither should it cause alarm. It is

suggested to pay close attention to the wind forecast to monitor possible changes in direction of the plume and act accordingly.

Emergency services working within 1 km of the delta should wear goggles and gas masks. Eye washing is also recommended after any exposure, as symptoms are often not noticed until later.

These marine plumes can be felt up to several kilometers away from the source, although of course more diluted. If the marine plume were to reach population centers, it would be very beneficial to stay indoors whenever possible and close all doors and windows. We believe that careful management of plume exposure can be achieved, rather than the need to expand the exclusion zone. Those with weakened respiratory systems (eg asthmatics) should pay close attention to plume forecasts as they are more vulnerable at lower concentrations.

To avoid the possible effect of these events on the safety of the navigation of BO Ramón Margalef, which carries out its scientific work in this area, it is recommended to maintain a distance of at least 500 m.

Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and that sudden reaching distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur.

An exclusion radius of 2.5 km around emission centers is recommended to minimize the risk of pyroclastic impact and exposure to gases. It is also recommended not to approach the lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures. It is possible that some violent detonations could break the glass of the windows, up to a radius of 5 km from the cone. Therefore, in case of intensification of explosive activity, it is recommended to stay away from windows.

In areas affected by intense ash fall (a clear deposition on the ground is observed) and even more so if mist is observed, it is recommended to stay indoors.

Outdoors, the use of FFP2 masks and eye protection systems is also recommended. Before the arrival of ashes to other islands, it is recommended in those affected, the use of surgical masks. Cleaning of roofs where ash thicknesses of several centimeters accumulate is recommended. It is insisted that the ash removal procedure indicated by Civil Protection be followed precisely (moisten ash, eye protection, wear a mask, protect the skin, ..., see attached documentation).

Respect for land and maritime exclusion zones continues to be imperative in order to maintain the physical integrity of people.

Ongoing activity monitoring has been strengthened and any significant changes observed will be reported. Stay tuned to the information provided by the corresponding Civil Protection authorities ”.

October 1st

The PEVOLCA monitors the progress of a new casting after the appearance of two emission centers



These two new nozzles gush out lava that could join the original wash

The air quality in the Aridane Valley, outside the exclusion zone, continues within the limit values allowed by the regulations

The area affected by the eruption may represent between 8% and 10% of the island of La Palma

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), meeting this Friday after analyzing the conclusions of the Scientific Committee regarding the evolution of volcanic activity, agreed to reinforce the monitoring and surveillance work after the appearance of a new laundry and two new broadcasting centers last night. This new casting advances about 450 meters apart

at the beginning of the original casting but seeking unity. At 10:00 this morning, this wash passed the LP-212 highway and continues to evolve towards lower levels.

The President of the Canary Islands, Ángel Víctor Torres, chaired the PEVOLCA Steering Committee, which was attended by the Minister of the Presidency Félix Bolaños, the counselor responsible for the Plan, Julio Pérez, and the rest of the representatives of the state, regional, island and local.

The director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, reported the appearance of two new mouths and the set of observed data, geophysical and geochemical, such as the volume of material emitted so far, which is estimated at about 80 million of m³.

The technical director of PEVOLCA, Miguel Ángel Morcuende, explained that the volcano continues with intense activity and the main novelty compared to yesterday is the appearance, this morning, of two new mouths separated by about 15 meters, which are located next to each other. northwest of the main cone, at a distance of about 600 meters and below elevation.

These mouths are emitting effusive lava that advances taking advantage of the favorable topography, apparently approaching the initial flow, the one that reached the sea, and that from now on we will call primitive.

The PEVOLCA Management continues to monitor and supervise this laundry, and it is indicated that it continues to work, as from the beginning, on the development of a mathematical model that allows having a probability of monitoring it if necessary. adopt new measures in the field of Civil Protection.

Therefore, at the moment there are four active mouths counting these two new emission centers.

Regarding air quality on the island of La Palma, Morcuende indicated that the indicators in the Aridane Valley are within healthy and breathable limits. He also added that obviously in the area of the eruption and the closer we are to the broadcasting center, the air quality is worse, and for that reason, from day one, an exclusion radius and safety distance of 2.5 have been established. km.

On the other hand, there are certain variables in the air, such as particles smaller than 10 microns, which, in areas with the greatest damage to the eruption, will be higher. For this reason, he insisted that in those cases the recommendations established by the Canary Islands Health Service must be followed, both for protection and handling of ashes, to avoid problems. In this sense, he recalled the use of FFP2 masks and protective glasses, among other measures.

Finally, he insisted that you always have to follow the instructions of the public administrations and the Civil Protection authorities to guarantee the safety of the population. According to the latest data from the Copernicus satellite, there may be about 1,005 buildings affected, 870 in their entirety and 135 partially. There are also 27.7 km of damaged roads.

The area affected today is more than 246 hectares, with a perimeter of 26.2 km and a maximum width of 900 meters. In this regard, he pointed out that this area can represent between 8% and 10% of La Palma.

The number of evacuees remains unchanged at 5,700 people, mainly from neighborhoods of El Paso and Los llanos de Aridane, of which there are 189 in the Fuencaliente hotel and the rest in the homes of family and friends. As for the confined nuclei of Tazacorte they also do not suffer variation, with about 300 neighbors, approximately.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, with simultaneous explosive and effusive phases. This morning at 02:30 a.m., two new lava emission centers emerged about 15 m apart, located at a distance of 600 m from the base of the cone in a northwesterly direction. The new stream runs west, parallel to the stream that reaches the sea, having reached the LP212 highway this morning. In addition, 3 active centers are observed inside the main crater and two located in the northwestern sector of the side of the cone. The volume of the material emitted, until the morning of September 30 (cone + casts), is estimated at $80 \pm 24 \text{ M m}^3$.

The front of the lava delta (fajana) is at a distance greater than 475 m from the coastline, reaching a depth of 30 m. The surface covered by the lava delta reached this morning the value of 27.7 Ha. The marine plume continues along the edge of the lava delta, producing clouds of water vapor and other possibly toxic gases, which are concentrated in a small area around contact.

The extensive fumarolic field on the north-northwest flank remains active.

The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration.

The measured height of the ash and gas column today is 6000 m.

The expected wind configuration will probably dispose the ash cloud and SO₂ towards the north-northwest from the eruption area, mainly affecting the north slope of La Palma and it will rotate towards the southwest as of tonight (1 / 10/21). With the turn of the cloud from tonight towards the southwest, it is not ruled out that fine ash could reach the island of El Hierro. The high stability in very low layers (below 500-700 meters) of the troposphere, together with the weak winds on the west slope, are unfavorable meteorological conditions from the point of view of air quality.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. In the last 24 h, a few dozen earthquakes have been located, the largest of 3.5 mbLg, felt with intensity III-IV EMS. Some shallow earthquakes are also recorded around the eruptive center. Since 3 o'clock today the tremor level has increased. High-

frequency tremor is recorded in some seismic stations near the lava delta. The deformations show, at stations far from the eruptive center, a slight downward trend in the vertical component. Nearby stations show pulses possibly related to eruptive dynamics.

The estimation of the emission rate of sulfur dioxide (SO₂) into the atmosphere continues to register relatively high values and consistent with the eruptive process, reaching values of 8,700 tons per day. In the volcanic plume, the relationship between carbon dioxide and sulfur dioxide (CO₂ / SO₂) reflects that the origin of the gas comes from a deep magmatic system, rich in volatiles, which is consistent with geophysical observables.

Yesterday the highest SO₂ values to date were measured, which has meant that the daily thresholds of 125 µg / m³ are exceeded at the Tzacorte and Los Llanos stations. At the Tzacorte station, the daily average was 219 µg / m³ and three hourly thresholds of 350 µg / m³ were exceeded between 7:00 and 10:00. From that maximum, the values have decreased, but always being above 100 µg / m³.

At the Los Llanos station, there were 2 exceedances of the hourly thresholds, between 2:00 p.m. and 4:00 p.m. and the daily threshold was exceeded with an average of 198 µg / m³.

No high Hydrogen Sulfide (SH₂) values have been observed in either of the two stations.

Regarding the rest of the stations located on the island, punctually high values have been measured at the El Paso station, which have not meant that the legal thresholds were exceeded. In the stations of Las Balsas (Los Sauces), El Pilar and la Grama (Santa Cruz de La Palma), the values have been low. Regarding particles smaller than 10 microns (PM₁₀), yesterday there was a slight initial decrease in general concentrations compared to previous days that subsequently increased, causing the daily thresholds to be exceeded at the El Pilar and of La Grama. Currently, an increase in particle values is observed at the Los Llanos station. The values are still relatively high, so it is still recommended to continue with the precautions indicated so far.

The marine plume generated by the encounter of the lava with the sea should not be underestimated, but neither should it cause alarm. It is suggested to pay close attention to the wind forecast to monitor possible

changes in direction of the plume and act accordingly. Emergency services working within 1 km of the delta should wear goggles and gas masks. Eye washing is also recommended after any exposure, as symptoms are often not noticed until later.

These marine plumes can be seen up to several kilometers from the source, although more diluted. If the marine plume were to reach population centers, it would be very beneficial to stay indoors whenever possible and close all doors and windows. We believe that careful management of plume exposure can be achieved, rather than the need to expand the exclusion zone. Those with weakened respiratory systems (eg asthmatics) should pay close attention to plume forecasts as they are more vulnerable at lower concentrations.

To avoid the possible effect of these facts on the safety of navigation of scientific vessels that carry out scientific work in this area, it is recommended to maintain a distance of at least 500 m.

Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and that sudden reaching distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur. An exclusion radius of 2.5 km around emission centers is recommended to minimize the risk of pyroclastic impact and exposure to gases. It is also recommended not to approach the lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures. It is possible that some violent detonations could break the glass of the windows, up to a radius of 5 km from the cone. Therefore, in case of intensification of explosive activity, it is recommended to stay away from windows.

In areas affected by intense ash fall (a clear deposition on the ground is observed) and even more so if mist is observed, it is recommended to stay indoors. Outdoors, the use of FFP2 masks and eye protection systems is also recommended. Before the arrival of ashes to other islands, it is recommended in those affected, the use of surgical masks. Cleaning of roofs where ash thicknesses of several centimeters accumulate is recommended. It is insisted that the ash removal procedure indicated by

Civil Protection be followed precisely (moisten ash, eye protection, wear a mask, protect the skin, etc.).

Respect for land and maritime exclusion zones continues to be imperative in order to maintain the physical integrity of people.

Ongoing activity monitoring has been strengthened and any significant changes observed will be reported. Stay tuned to the information provided by the corresponding Civil Protection authorities ”.

October 2nd

Minister Bolaños presided over the PEVOLCA that lifted all the confinements of the last week



The authorities may recommend that the population stay in their homes locally, taking into account the evolution of the volcanic process and the meteorology and, where appropriate, they will be notified by the public address system.

The laundry has broken the last irrigation connection that was in El Remo. Desalination plants are expected shortly to ensure the affected irrigation

The new flow registered yesterday has flowed towards the west, has had lateral contact with the previous flows and has not reached the sea

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) meeting this morning agreed, based on the report of the Scientific Committee, to lift the confinement decreed last night in various areas of Los Llanos de Aridane and El Paso, as well as the stipulated one, on September 26, in the coastal towns of Tazacorte. This decision is adopted after registering favorable meteorological conditions that have allowed an improvement in air quality, as reflected in the measurements that are carried out permanently both in the affected areas and in the rest of the Island.

Today's session, chaired by the Minister of the Presidency, Félix Bolaños, and directed by the counselor responsible for the Plan, Julio Pérez, determined to replace the confinements with a special vigilance. In this sense, from now on, when there are episodes in which the air quality is occasionally altered, the population will be notified by public address to take the precautionary measures recommended by the authorities: stay inside the houses with the doors and windows closed and, if you have to be outside, wear masks and protective glasses.

The PEVOLCA Technical Director, Miguel Ángel Morcuende, thanked the nearly 4,000 people who have been affected these days for their high degree of civility during these confinements. In that sense, he added that the levels of pollution registered have not been excessive, although they could cause itchy eyes and respiratory problems in general and with greater affection in vulnerable people such as chronically ill, elderly, children and pregnant women.

Thus, this Saturday the confinement of the towns of San Borondón, Marina Alta, Marina Baja and La Condesa, in Tazacorte, decreed six days ago due to the emanation of gases due to the arrival of the lava to the sea, has ended.

In the municipalities of Los Llanos de Aridane and El Paso, the confinement is lifted in the space between the intersection of Camino Cruz Chica with

the LP-2 highway, continuing west to the intersection with Nicolás Brito Pais, and from this road to the Bypass and through this until the Hoyas Hondas roundabout. In addition, and from this point on, the entire area affected by the August fire up to the El Paso soccer field and the area to the west of LP-3 up to the Sombrero roundabout. These areas were confined due to the meteorological conditions that prevailed with a thermal inversion that prevented the dispersion of gases from the combustion of the contact of the lava with fertilizers and greenhouse plastics.

The Technical Director sent a message of reassurance regarding seismicity, stating that "we are facing an eruptive process with an associated seismicity that is inherent to the process. If this seismicity were more outcrop, at ground level, we would be facing another scenario, but currently it does not suggest other possibilities".

For its part, the national responsible for volcanic surveillance of the National Geographic Institute (IGN), Carmen López, reported that the new wash recorded yesterday has not reached the sea, has flowed west and has had lateral contact with the previous flows. At the moment, it cannot be confirmed if it will continue to run laterally or may even join the previous casting.

In relation to the previous wash, which has reached the sea, its layout remains the same, the flow is constant and it seems that there are no changes in its extension. Only the strip is growing in its extension and, according to the information from the oceanographic vessels, it is being seen that it can go into the sea and occupy lower levels.

In his speech he recalled the need to always follow the instructions of public administrations and Civil Protection authorities to guarantee the safety of the population. In areas affected by the intense fall of volcanic ash, it is recommended to stay indoors, as well as the use of FFP2 masks and protective glasses if you are outdoors.

Finally, Morcuende explained that, according to the latest data provided by the Copernicus satellite - as of yesterday at 6:45 pm - there would be 1,005 buildings affected by the eruption, 880 of them destroyed and 105 damaged. As for the people housed, there are 201 housed in the Fuencaliente hotel. He also specified that there are 28.3 km of roads that have been disabled on roads LP-2, LP-212, LP-211, LP-213 and LP-2132.

On the other hand, the wash has broken the last irrigation connection that was in El Remo, which generated a significant focus of white smoke in the vicinity of this town as a result of the contact of the lava with the water. In the next few days, the installation of desalination plants will begin that will allow the continuity of irrigation in the area.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, with simultaneous explosive and effusive phases. The new wash that appeared yesterday runs to the west, parallel to the wash that reaches the sea, having reached the end of the Camino de Los Campitos at 9:00, establishing lateral contact with the previous flows. In addition, several active centers are observed inside the main crater and two located in the northwest sector of the side of the cone. The appearance of new broadcasting centers is not ruled out.

The front of the lava delta (fajana) is at a distance greater than 540 m from the coastline, reaching a depth of 35 m. The surface covered by the lava delta reached the value of 27.7 Ha, observing its lateral increase to the north and south.

The marine plume continues along the edge of the lava delta, producing clouds of water vapor and hydrochloric acid (HCl), which are concentrated in a small area around the contact. The extensive fumarolic field on the north-northwest flank remains active. This morning between 9 a.m. and 10 a.m. the opening of a small ash and gas emission center, located in its upper

part, was verified. Fumarolic activity can promote destabilization of the upper part of the cone. The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration.

The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column measured today is 4500 m.

The expected wind configuration will likely dispose the ash cloud and SO₂ to the south from the eruptive zone. The most affected area of the island of La Palma will be the southern half, mainly the southwest slope. In addition, this arrangement of the cloud could lead to the arrival of fine ash to the island of El Hierro. The high stability in low layers (below 400-900 meters) of the troposphere, together with the weak winds and breezes on the west slope are unfavorable meteorological conditions from the point of view of air quality.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 kilometers. In the last 24 h, a few dozen earthquakes have been located, the largest of 3.6 mbLg, felt with intensity III-IV EMS. Sense earthquakes can occur that can cause small landslides in sloping areas. High-frequency tremor is recorded in some seismic stations near the lava delta. The deformations show, at stations far from the eruptive center, a slight downward trend in the vertical component. Nearby stations show pulses possibly related to eruptive dynamics.

The emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register relatively high values and consistent with the eruptive process, reaching values of 2330 tons per day. The diffuse emission of carbon dioxide (CO₂) associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions) has reached values of 1,870 tons per day.

During yesterday the SO₂ measured values at the Tazacorte, Los Llanos and El Paso stations were gradually reduced to the current values that are below 20 ug / m³. In the rest of the island's stations, SO₂ values continue to be low.

Regarding particles smaller than 10 microns (PM10), we are measuring high PM10 values in all of the island's stations, with yesterday the daily threshold being exceeded ($50 \mu\text{g} / \text{m}^3$) at the Los Llanos, Las Balsas (Los Willows), El Pilar and La Grama (Santa Cruz de La Palma). Los Llanos station being the one with the highest daily average ($171 \mu\text{g} / \text{m}^3$). It should be noted that at this time there is an intrusion of Saharan dust that is added to the values of particles from the volcanic eruption.

The marine plume generated by the encounter of the lava with the sea should not be underestimated, but neither should it cause alarm. It is suggested to pay close attention to the wind forecast to monitor possible changes in direction of the plume and act accordingly. Emergency services working within 1 km of the delta should wear goggles and gas masks. Eye washing is also recommended after any exposure, as symptoms are often not noticed until later.

These marine plumes can be seen up to several kilometers from the source, although more diluted. If the marine plume were to reach population centers, it would be very beneficial to stay indoors whenever possible and close all doors and windows. We believe that careful management of plume exposure can be achieved, rather than the need to expand the exclusion zone. Those with weakened respiratory systems (eg asthmatics) should pay close attention to plume forecasts as they are more vulnerable at lower concentrations. To avoid the possible effect of these facts on the safety of navigation of scientific vessels that carry out scientific work in this area, it is recommended to maintain a distance of at least 500 m.

Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and that sudden reaching distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur.

An exclusion radius of 2.5 km around emission centers is recommended to minimize the risk of pyroclastic impact and exposure to gases. It is also recommended not to approach the lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures. It is possible that some violent detonations could break the glass of the

windows, up to a radius of 5 km from the cone. Therefore, in case of intensification of explosive activity, it is recommended to stay away from windows.

In areas affected by intense ash fall (a clear deposition on the ground is observed) and even more so if mist is observed, it is recommended to stay indoors. Outdoors, the use of FFP2 masks and eye protection systems is also recommended. Before the arrival of ashes to other islands, it is recommended in those affected, the use of surgical masks. Cleaning of roofs where ash thicknesses of several centimeters accumulate is recommended. It is insisted that the ash removal procedure indicated by Civil Protection be followed precisely (moisten ash, eye protection, wear a mask, protect the skin, etc.).

Respect for land and maritime exclusion zones continues to be imperative in order to maintain the physical integrity of people.

Ongoing activity monitoring has been strengthened and any significant changes observed will be reported. Stay tuned to the information provided by the corresponding Civil Protection authorities ”.

October 3rd

Pedro Sánchez chaired the PEVOLCA Steering Committee this Sunday two weeks after the eruption



The wash has a maximum width of almost a kilometer and an area of about 400 hectares

The fajana, which has four lava feeding points, continues to increase its surface

Air quality in non-evacuated areas continues to be good

The eruption on the island of La Palma has completed two weeks this Sunday under the strict monitoring of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA), which reflects the magnitude of the event and its power. Today, after the daily meeting of the Scientific Committee, the Steering Committee met, chaired by the President of the Government of Spain, Pedro Sánchez, and with the presence of the President of the Canary Islands, Ángel Víctor Torres, and the director responsible for the Plan, Julio Pérez, as well as those responsible for the other public administrations involved in the emergency. The President of the Government announced that the State will approve in the next Council of Ministers 206 million euros for the island that will be allocated to areas such as infrastructure, water supply, employment, agriculture,

At the press conference, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, reiterated that the eruption and air quality in the area continue to be monitored. Proof of this is that this Sunday, thanks to this constant monitoring of the air, it was decided, in order to reach values that were not optimal for people, to evict some areas near the laundry that were previously evacuated, the scientific staff and the emergencies and neighbors who had been authorized to access, within security convoys, to remove belongings from their homes.

However, the Technical Director stressed that the air quality in the non-evacuated areas is still good, although he recommended extreme precautions and keep people with respiratory problems, pregnant women, minors, and the elderly and elderly people under cover at home. He also recalled that the population must always follow the instructions of public administrations and Civil Protection authorities to guarantee their safety.

Up to now, some 400 hectares have already been affected by volcanic lava and the maximum width of the wash at certain points is almost 1 kilometer. According to the latest data provided by the Copernicus satellite - as of today at 02.07 am - there would be 1,074 buildings affected by the eruption, 946 of them destroyed and 128 damaged. The satellite also calculated that there are 30.7 km of roads that have been disabled on roads LP-2, LP-212, LP-211, LP-213 and LP-2132. As for the people housed, there are 205 housed in the Fuencaliente hotel.

For her part, the national responsible for volcanic surveillance of the National Geographic Institute (IGN), Carmen López, reported that the tremor activity is more intense, but has not reached that registered from September 24 to 27, at which time there were explosions. violent This alternation of phases is within what is expected and it is not ruled out that it will occur again.

He added that the two new eruptive nozzles have not created a new casting, but rather add their contribution in the descent to the initial casting. However, he explained that the appearance of new broadcasting centers in the vicinity of the current one is not ruled out either.

On the fajana that has been formed, and that at 8:00 p.m. yesterday had an area of 29.7 hectares, it continues to increase its extension and has four feeding points. In addition, the marine plume continues along the edge of

the lava delta, producing clouds of water vapor and hydrochloric acid that are concentrated in a small area around the contact.

Regarding the eruptive process, it can show episodes of increase and decrease in strombolian activity.

On the other hand, there are still no problems in the electricity supply and in telecommunications, not being the case in the supply of drinking water and irrigation for some localities of El Paso and Los Llanos de Aridane due to the intersection of the streams in their advance to the south. The Government of the Canary Islands, together with the Cabildo de La Palma and the Ministry for the Ecological Transition and the Demographic Challenge, announced this Saturday night that, to guarantee the maintenance irrigation of the banana plantations affected by the damage to the network of distribution, they will install two portable desalination plants in the Puerto Naos area, apart from moving a tanker from the Peninsula that will allow a substantial increase in the flow of water for irrigation.

The Steering Committee was informed of all this and President Torres added that other additional measures are also being studied, such as Kamov helicopters being immediately available to transfer risky water from other ponds on the island to those that may suffer supply problems.

The insular director of Education, Alberto Taño, reported on the preparations for the full recovery of school activity, preparations that begin tomorrow, Monday with the purpose of ensuring that said activity can begin in the middle of this week.

On the 132 students of the CEIP of Las Manchas de Abajo, Jedey, Los Campitos, Todoque and María Milagros Acosta, the Ministry of Education, Universities, Culture and Sports of the Government of the Canary Islands works on the temporary transfer to the old CEE Princesa Acerina, in Los Llanos de Aridane, with transport services and school canteen.

Daily opinion of the Scientific Committee

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Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, with simultaneous explosive and effusive phases. The new stream, which appeared on 10/01, runs west, parallel to the stream that reaches the sea, having reached the previous streams at the height of the Camino de Los Campitos, observing a lower emission rate in relation to previous days . In addition, several active centers are observed inside the main crater and two located in the northwest sector of the side of the cone. Explosive activity has increased. The appearance of new emission centers is not ruled out.

The extensive fumarolic field on the north-northwest flank remains active. Fumarolic activity can promote destabilization of the upper part of the cone. The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. Currently the main cone is wider, lower and closed. The lava delta (fajana) continues to increase in size, with four feeding points. The marine plume continues along the edge of the lava delta, producing clouds of water vapor and hydrochloric acid (HCl), which are concentrated in a small area around the contact.

The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity. Emissions from volcanic bombs (a type of pyroclast) of large size (several meters) were observed reaching the base of the cone.

The height measured today of the ash and gas column is 3,000 meters, showing a more dispersed part that reaches a height of 5,000 meters. The predominance of the north component wind in the lower and middle levels of the troposphere (from surface to 5,000 meters) will place the cloud of ash and SO₂ towards the south of the eruptive focus. The area most affected by the ash fall will be the southern slope of the island of La Palma. This configuration could cause the arrival of fine ash to the island of El Hierro. On the west slope, in the areas close to the eruption and in the

pouring areas, the predominant wind regime will be breezes (sea-land during the day, and land-sea at night). The presence of a marked thermal inversion (around 10 degrees Celsius, with a base and top at 500 and 1,000 meters respectively),

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 kilometers. There are also earthquakes located at depths greater than 20 kilometers. In the last 24 hours, a few dozen earthquakes have been located, the largest of 3.6 mbLg, felt with intensity III EMS. Sense earthquakes can occur that can cause small landslides in sloping areas. Yesterday the volcanic tremor increased. Some seismic stations near the lava delta register high frequency tremor. The deformations show, at stations far from the eruptive center, a slight downward trend in the vertical component. Nearby stations show pulses possibly related to eruptive dynamics.

The emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register relatively high values and consistent with the eruptive process, reaching values of 3,401 tons per day. The visible gas emission is becoming increasingly S-rich and C-poor over time reflecting the effusion of progressively more degassed magma from a shallow conduit. The diffuse emission of carbon dioxide (CO₂) associated with the 220 km² of the Cumbre Vieja volcanic ridge (not visible emissions) has reached values of 1,813 tons per day. The emission of NO visible gases does not represent a danger to people.

During the day of yesterday they have remained stable, gradually reducing the measured values of SO₂ in the stations of Tzacorte, Los Llanos and El Paso to the current values that are below 20 ug / m³. In the rest of the island's stations, SO₂ values continue to be low.

Regarding particles smaller than 10 microns (PM₁₀), we are measuring high PM₁₀ values in all of the island's stations, with the daily threshold being exceeded yesterday (50 ug / m³) at the Los Llanos, Las Balsas stations (Los Sauces), El Pilar and La Grama (Santa Cruz de La Palma). Los Llanos station is the one with the highest daily average. It should be noted that at this time there is an intrusion of Saharan dust that is added to the values of particles from the volcanic eruption.

The marine plume generated by the encounter of the lava with the sea should not be underestimated, but neither should it cause alarm. It is suggested to pay close attention to the wind forecast to monitor possible changes in direction of the plume and act accordingly. Emergency services working within 1 kilometer of the delta should wear goggles and gas masks. Eye washing is also recommended after any exposure, as symptoms are often not noticed until later.

These marine plumes can be seen up to several kilometers from the source, although more diluted. If the marine plume were to reach population centers, it would be very beneficial to stay indoors whenever possible and close all doors and windows. We believe that careful management of plume exposure can be achieved, rather than the need to expand the exclusion zone. Those with weakened respiratory systems (eg asthmatics) should pay close attention to plume forecasts as they are more vulnerable at lower concentrations. To avoid the possible effect of these facts on the safety of navigation of scientific vessels that carry out scientific work in this area, it is recommended to maintain a distance of at least 500 meters.

Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and that sudden reaching distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur.

An exclusion radius of 2.5 kilometers around emission centers is recommended to minimize the risk of impact from pyroclasts and exposure to gases. It is also recommended not to approach the lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures. It is possible that some violent detonations could break the glass of the windows, up to a radius of 5 kilometers from the cone. Depending on the direction of the wind, they can be felt more intensely in some areas than in others. Therefore, in case of intensification of explosive activity, it is recommended to stay away from windows.

In areas affected by intense ash fall (which is observed a clear deposition on the ground) and even more if mist is observed, it is recommended to stay indoors. Outdoors, the use of FFP2 masks and eye protection systems is

also recommended. Before the arrival of ashes to other islands, it is recommended in those affected, the use of surgical masks. Cleaning of roofs where ash thicknesses of several centimeters accumulate is recommended. It is insisted that the ash removal procedure indicated by Civil Protection be followed precisely (moisten ash, eye protection, wear a mask, protect the skin, etc.).

Respect for land and maritime exclusion zones continues to be imperative in order to maintain the physical integrity of people. Ongoing activity monitoring has been strengthened and any significant changes observed will be reported.

Stay tuned to the information provided by the corresponding Civil Protection authorities ”.

October 4th

The PEVOLCA continues the intense monitoring of the course of the laundry



The meteorological conditions for the next few hours are favorable from the point of view of air quality and for air navigation

Currently, the appearance of new emission centers in the surroundings of the cone is not ruled out

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), chaired by the counselor responsible for the Plan, Julio Pérez, today analyzed the latest data provided by the Scientific Committee after the collapse, at the last hours yesterday afternoon, from part of the cone, which produced a spill from the lava lake and a very fluid contribution of it, so the intense monitoring and surveillance of the flow continues to anticipate any significant change that forces to take civil protection measures. All this to fulfill the main objective of safeguarding the safety of the population and the personnel involved and ensuring that the end of the eruptive process is resolved without regretting personal injury.

Said Committee also examined the verified increase in the number of earthquakes and their magnitude, which may increase the probability that they will be more felt. The seismicity is located deep in the crust, not near the surface, and in the precursor zone of the eruption, linked to the current process.

In addition, according to the experts and with the current data, the appearance of new emission centers is not ruled out, which would arise, in any case, in the environment of the existing cone, a cone that changes repeatedly due to the successive processes of growth and reconfiguration .

The Technical Director of PEVOLCA, Miguel Ángel Morcuende explained that yesterday afternoon there was a partial collapse of the cone that originated a contribution of very fluid lava, with explosive peaks and gases, which is within the usual in a Strombolian eruption. Since then, he said, the monitoring of the laundry has been reinforced to anticipate any significant change in its direction.

For her part, the director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, confirmed that “it has been verified, through satellite images, the existence of lava tubes that facilitate quick access because the thermal conditions are maintained from the lava to lower heights, but following the courses that are established right now ”.

Blanco stressed that the meteorological conditions forecast for the next few hours are favorable from the point of view of air quality and for the operation of the Canarian airports.

The area affected by the eruptive process continues to increase and now amounts to about 413 hectares, with a perimeter of more than 36

kilometers and a maximum width of 1,250 meters, 300 more than the previous day.

Morcuende reported that the fajana, which reaches 32.7 hectares in area, is being formed from four lobes of the wash and is being observed and monitored by ships of the Canary Islands Government and the State, which also analyze the CO₂ levels and hydrochloric acid.

As for the people housed in the Fuencaliente hotel, they are in good condition and assisted at all times while the island, regional and state administrations look for alternatives of rehousing for them

Regarding the affected infrastructures, he pointed out that the Copernicus satellite has not been able to update it due to the cloudiness in the area, and for the moment yesterday's figure remains at 1,074, of which 946 have been completely destroyed and 128 have been damaged. partial

The PEVOLCA Technical Director thanked on behalf of the Steering Committee thanked the selfless collaboration of all the volunteers who are working altruistically around the emergency.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows). In volcanology, the magnitude of volcanic eruptions is measured on

the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The pouring that began on October 1 from the two more NW centers, some 600 m apart from the main cone, shows less signs of activity. Several active centers are observed inside the main crater and two located in the northwest sector of the side of the cone (one of them in the shape of a conelet). Yesterday around 7:00 p.m. a process began that culminated at 7:45 p.m. with the collapse of one side of the conelet, producing a spill of the interior lava lake and dragging the blocks of the cone. The appearance of new emission centers in the environment of the existing cone is not ruled out. Yesterday afternoon there was an increase in the frequency and intensity of the explosive activity, lasting around several minutes, verifying the emission of ballistic bombs of decimetric sizes, with ranges of up to 800 m.

The lava delta (fajana) continues its growth fed from several points, exceeding 29 Ha. The marine plume continues along the edge of the lava delta, producing clouds of water vapor and hydrochloric acid (HCl), which are concentrated in a small area around the contact.

The fumarole field on the southeast flank remains active, although weakened. Fumarolic activity can promote destabilization of the upper part of the cone. The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration.

The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column measured today is 4500 m.

The wind between the surface levels and 5000 meters is expected to be north. This predominance of the wind with the height will configure the ash plume and SO₂ towards the south-southwest of the eruptive focus. The area most affected by the ash fall would be the south-southwest slope of the island of La Palma. This provision of the plume is favorable for the operation of the Canarian airports. The entry of a humid maritime air mass will decrease atmospheric stability today in the lower levels of the troposphere and raise the height of the inversion top to 2000 meters. This decrease in stability is favorable from the point of view of air quality. Weak

rains on the north and east coasts, less likely in the southwest during the day today.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 kilometers. In the last 24 h, a few dozen earthquakes have been located, the largest of 3.7 mbLg, felt with intensity III-IV EMS. The increase in the number of earthquakes and their magnitude may indicate an increase in the probability that more felt earthquakes will occur, which may cause small landslides in sloping areas.

At the stations close to the eruptive center, the deformations show stability in the vertical component.

During yesterday, the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register high values in line with the eruptive process, reaching values of 16,000 tons per day. Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions), is 1748 tons per day.

Yesterday the SO₂ values remained low in all the stations on the island except for specific peaks in the Los Llanos and El Paso stations, but of low intensity and far from the thresholds established in the regulations. Regarding particles smaller than 10 microns (PM₁₀), yesterday lower values were measured compared to previous days, although the daily threshold was once again exceeded at the Los Llanos station, with an average of 96 µg / m³. It is the only station where the daily thresholds have been exceeded.

The marine plume generated by the encounter of the lava with the sea should not be underestimated, but neither should it cause alarm. It is suggested to pay close attention to the wind forecast to monitor possible changes in direction of the plume and act accordingly. Emergency services working within 1 km of the delta should wear goggles and gas masks. Eye washing is also recommended after any exposure, as symptoms are often not noticed until later.

These marine plumes can be seen up to several kilometers from the source, although more diluted. If the marine plume were to reach population centers, it would be very beneficial to stay indoors whenever possible and

close all doors and windows. We believe that careful management of plume exposure can be achieved, rather than the need to expand the exclusion zone. Those with weakened respiratory systems (eg asthmatics) should pay close attention to plume forecasts as they are more vulnerable at lower concentrations. To avoid the possible effect of these facts on the safety of navigation of scientific vessels that carry out scientific work in this area, it is recommended to maintain a distance of at least 500 m.

Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and that sudden reaching distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur.

An exclusion radius of 2.5 km around emission centers is recommended to minimize the risk of pyroclastic impact and exposure to gases. It is also recommended not to approach the lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures. It is possible that some violent detonations could break the glass of the windows, up to a radius of 5 km from the cone. Therefore, in case of intensification of explosive activity, it is recommended to stay away from windows.

In areas affected by intense ash fall (a clear deposition on the ground is observed) and even more so if mist is observed, it is recommended to stay indoors. Outdoors, the use of FFP2 masks and eye protection systems is also recommended. Before the arrival of ashes to other islands, it is recommended in those affected, the use of surgical masks. Cleaning of roofs where ash thicknesses of several centimeters accumulate is recommended. It is insisted that the ash removal procedure indicated by Civil Protection be followed precisely (moisten ash, eye protection, wear a mask, protect the skin, ..., see attached documentation).

Respect for land and maritime exclusion zones continues to be imperative in order to maintain the physical integrity of people.

Ongoing activity monitoring has been strengthened and any significant changes observed will be reported. Stay tuned to the information provided by the corresponding Civil Protection authorities ”.

October 5th

PEVOLCA monitoring confirms that the flows continue to flow through the same channels



The air quality registers an improvement compared to previous days, thanks to the influence of the trade wind

Regarding the increase in seismicity in Mazo and Fuencaliente, there are no parameters to date that indicate that a new emission center may appear at some point in the south of the Island

The first data from the Cadastre encrypt a total of 726 buildings destroyed by the wash, most of them residential.

The Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA), chaired by the counselor responsible for the Plan, Julio Pérez, reported today that lava flows continue to flow through the same channels towards the sea.

As explained by the Technical Director of the Plan, Miguel Ángel Morcuende, the lava that is located above the original lava flow is circulating well, it is fluid and does not seem to widen, so for the moment it is not contemplated that it can reach the Callejón from La Gata, in Los Llanos de Aridane.

Regarding the flows, the director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, indicated that one of them, the one that originated on day 1 to the northwest of the main cone, shows no activity. The emission centers of the main crater and those located on the sides of the cone are still active, and it has been verified, according to the Scientific Committee, the construction of lava tubes, which favor drainage from the main emission center to the coast. On the lava delta (fajana), he pointed out that it continues its growth fed from various points, exceeding 36 hectares.

Blanco also indicated that current data on seismicity, deformity and geochemistry do not point to a near end of the eruptive process.

Likewise, the Steering Committee analyzed the scientists' data on seismicity, concluding that, despite the increase registered in Mazo and Fuencaliente, there are no parameters to date that indicate that a new emission center may appear at some point in the south of the island.

Morcuende clarified that the seismic swarm is very centered in the vicinity of the first days, due to the relocation of the magma, a little more inclined towards the southeast, being more felt in Fuencaliente and Mazo, but that the important thing is that the depth remains between 10 and 15 kilometers and it is not shallow.

Regarding the opening of a fissure zone, María José Blanco explained that it is not an eruptive fissure, but rather the emission of gases that produce some deposits in the observable on the surface of the earth and in that environment the soil temperature is high. "They are fissures that are not important in the sense that they do not have any emission and are in the environment of the currently active cone," he remarked.

In addition, Blanco emphasized that, although it is not possible to know the volume of lava in the cone since it cannot be flown over it, there are different indirect measurements to estimate the total volume of lava

expelled by the volcano, which can vary depending on the technique used for this assessment.

As for air quality, there is a drop in the parameters of the previous days thanks to the influence of the trade wind, although in the coming days a slight deterioration will take place that may affect the airport. Specifically, as contributed by the director of the IGN, during the day yesterday the low SO₂ values have been maintained, as in previous days, in all the stations of the island except for specific peaks in the Los Llanos station of low intensity and far from the thresholds established in the regulations.

Regarding particles smaller than 10 microns (PM₁₀), values below the daily thresholds were recorded in all cases, and there were no exceedances in any of the stations.

Morcuende explained that 553 personnel are currently working in the emergency device on the ground, after reducing the initial troops when those related to forest fires withdrew, and the device has been reorganized with a shift system.

The area affected by the eruptive process continues to increase and now amounts to about 420.12 hectares, with a perimeter that exceeds 36.24 kilometers and a maximum width of 1,250 meters.

Regarding the affected infrastructures, Morcuende announced the first data provided by the Cadastre that reflects, as of Monday, a total of 726 destroyed buildings. Of the total, 605 are for residential use, 58 for agricultural use, 30 industrial, 18 for leisure and hospitality, seven for public use and eight not included in the previous categories. These data are different from those provided by the Copernicus satellite, which reports 1,154 buildings affected, 1,046 destroyed and 108 partially damaged, this is because it does not differentiate the type of construction.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic

Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows). In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The pouring that began on October 1 from the two more NW centers, some 600 m apart from the main cone, shows no activity. The emission centers of the main crater and those located on the sides of the cone are still active. The appearance of new emission centers in the environment of the existing cone is not ruled out. The construction of lava tubes has been confirmed, which favor drainage from the main emission center to the sea. The opening of a fissure zone about 100 m to the northwest of the already inactive centers with emission of gases and soil at high temperature has been verified.

The lava delta (fajana) continues its growth fed from various points, exceeding 36 Ha. The last measure of the distance measured from the front of the fajana to the coastline is 540 m. The marine plume continues along the edge of the lava delta, producing clouds of water vapor and hydrochloric acid (HCl), which are concentrated in a small area around the contact. The affection of the lava delta to the marine environment, verified in some physical-chemical parameters and acidity at depths 0-30 meters, seems to affect only a sheet of water of less than 5 meters and reaching a distance of 200 m from the front.

Visible activity in the fumarolic field on the southeast flank has ceased. The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration.

The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The measured height of the ash and gas column today is 4000 m.

At this time, the arrangement of the ash cloud and SO₂ is northeast-southwest from the eruptive focus. Starting tomorrow (second half of the day), the wind is expected to turn from the northeast to the eastern component and the southern component, above 1500 meters, decreasing its intensity. This change will distribute the plume to the north and northeast of La Palma. Therefore, the expected distribution of the ash cloud, from the second half of tomorrow, could affect the operation of the La Palma airport and the north slope of the island. An increase in atmospheric stability and a decrease in the height of the thermal inversion are expected during the next few days. The above, together with the prevailing breeze regime in low areas of the west slope of La Palma,

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 kilometers with an increase in the value of their magnitudes. In the last 24 h, a few dozen earthquakes have been located, the largest of 3.9 mbLg, felt with intensity IV EMS. The increase in the number of earthquakes and their magnitude may indicate an increase in the probability that more felt earthquakes will occur, which may cause small landslides in sloping areas. No significant deformations are observed.

During yesterday, the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register high values in line with the eruptive process, reaching values of 1200 tons per day. The accumulated SO₂ emission since the beginning of the eruption has reached 250,000 tons. Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions), is 1600 tons per day.

During the day yesterday, the low SO₂ values have been maintained, as in previous days, in all the stations on the island except for specific peaks in the Los Llanos station of low intensity and far from the thresholds established in the regulations.

Regarding particles smaller than 10 microns (PM₁₀), yesterday we continued to measure lower values compared to previous days, below the daily thresholds in all cases, with no exceedances occurring in any of the stations.

The marine plume generated by the encounter of the lava with the sea should not be underestimated, but neither should it cause alarm. It is suggested to pay close attention to the wind forecast to monitor possible changes in direction of the plume and act accordingly. Emergency services working within 1 km of the delta should wear goggles and gas masks. Eye washing is also recommended after any exposure, as symptoms are often not noticed until later.

These marine plumes can be seen up to several kilometers from the source, although more diluted. If the marine plume were to reach population centers, it would be very beneficial to stay indoors whenever possible and close all doors and windows. We believe that careful management of plume exposure can be achieved, rather than the need to expand the exclusion zone. Those with weakened respiratory systems (eg asthmatics) should pay close attention to plume forecasts as they are more vulnerable at lower concentrations. To avoid the possible effect of these facts on the safety of navigation of scientific vessels that carry out scientific work in this area, it is recommended to maintain a distance of at least 500 m.

Given the large thicknesses of lava flow observed in some points, collapses of its face can occur which, in steeper areas, can lead to the formation of large fragments of the lava flow, which can detach from the face of the flow and that sudden reaching distances of several meters from the pouring face, depending on the topography. Also in steep areas, small pyroclastic flows can occur.

An exclusion radius of 2.5 km around emission centers is recommended to minimize the risk of pyroclastic impact and exposure to gases. It is also recommended not to approach the lava flows due to the risk of being exposed to the gases emitted, possible landslides and high temperatures. It is possible that some violent detonations could break the glass of the windows, up to a radius of 5 km from the cone. Therefore, in case of intensification of explosive activity, it is recommended to stay away from windows.

In areas affected by intense ash fall (a clear deposition on the ground is observed) and even more so if mist is observed, it is recommended to stay indoors. Outdoors, the use of FFP2 masks and eye protection systems is also recommended. Before the arrival of ashes to other islands, it is

recommended in those affected, the use of surgical masks. Cleaning of roofs where ash thicknesses of several centimeters accumulate is recommended. It is insisted that the ash removal procedure indicated by Civil Protection be followed precisely (moisten ash, eye protection, wear a mask, protect the skin, ..., see attached documentation).

Respect for land and maritime exclusion zones continues to be imperative in order to maintain the physical integrity of people.

Ongoing activity monitoring has been strengthened and any significant changes observed will be reported. Stay tuned to the information provided by the corresponding Civil Protection authorities ”.

October 6th

The flows remain stable and a lava tube connects the emission center with the sea



The lava has affected some 93 hectares of crops, mainly banana trees, vineyards and avocados

PEVOLCA recalls that the changing reality of the volcano forces us to continue to constantly monitor the evolution of the eruption

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, chaired by the counselor responsible for the Plan, Julio Pérez, analyzed the latest data from the Scientific Committee that suggest that the process. At the moment, the eruption is in a stable situation and with a slight decrease in seismicity. At present there is a single stream that runs smoothly from the cone to the sea, in addition to confirming the existence of a lava tunnel that allows a direct connection between the emitting center and the sea, which reduces the chances of widening of this stream.

In this sense, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, recalled that the Plan continues to monitor its evolution and any modification of the wastes in case new Civil Protection measures have to be adopted. Thus, he insisted that it must be taken with prudence and within the changing reality of the volcano, which maintains an effusive and strombolian activity that at the moment does not allow to foresee the cessation of the volcanic episode.

Regarding the small part of the stream that ran north of the Todoque mountain and the other attempt to grow in the area closest to the Camino de la Gata, Morcuende stressed that both attempts have been paralyzed, at least for now. Likewise, he clarified that no changes have been observed in the wash that appeared from the north, with two fingers, one on Paraíso street and another on the LP-2 highway, which are stopped at the same points.

In relation to seismicity, the director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, a regular spokesperson for the Scientific Committee, explained that in the last 24 hours the number of earthquakes and the maximum observed magnitude have decreased and that it continues to be located at depths between 10-15 kilometers.

Regarding air quality, Morcuende pointed out that in the last two days it has registered good parameters, although a change in the direction of the wind suggests a worsening of the situation. Suspended particles can reach municipalities such as Santa Cruz de La Palma, Puntallana, Las Breñas and San Andrés y Sauces, for which he recalled the need for the population to

adopt self-protection measures for the ashes, such as the use of masks. , if possible FFP2.

The Technical Director also pointed out that the latest data recorded for the emission of sulfur dioxide in the plume does not allow to foresee the end of the event in the short term, since it is related to the duration of the eruptive process.

93.4 hectares of affected crops

According to the latest measurements, the area affected by the eruption reaches 421.93 hectares, the perimeter is located at 35.92 kilometers and its maximum width is 1,250 meters. Meanwhile, the lava delta is already approaching 38 hectares.

Regarding the total area of crops, data that is available for the first time, Morcuende announced that there are 93.4 hectares affected, mainly banana trees (35.6 ha.), Vineyards (32.9 ha.) And avocados (6 , 7 ha.).

The last number of people housed in the Fuencaliente Hotel is 214 people.

Likewise, a security device continues to accompany the owners and irrigators for the collection of belongings, the irrigation of crops and the removal of ashes from the homes, depending on the possibilities, and outside the exclusion zone.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows). In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The emission centers of the main crater and those located on the sides of the cone are still active. The appearance of new emission centers in the environment of the existing cone is not ruled out. Lava tubes have been built, which favor drainage from the main emission center to the sea. The opening of a fissure zone has been observed about 100 m to the northwest of the already inactive centers with emission of gases and soil at high temperatures.

The lava delta (fajana) continues its growth fed from various points, extending in a north-south direction. The marine plume continues along the edge of the lava delta, producing clouds of water vapor and hydrochloric acid (HCl), which are concentrated in a small area around the contact. The observed effect of the lava delta on the water column of the marine environment in some physical-chemical and biological parameters up to depths of 250 m and a distance of 500 m from the front of the fajana.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration.

The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The measured height of the ash and gas column today is 3000 m.

A decrease in the height of the thermal inversion is expected (it will go from 1200 to 900 meters) and an increase in stability at low levels of the atmosphere. The increased stability coupled with the prevailing breeze regime on the west coast are unfavorable conditions from an air quality point of view. At the upper levels (between 1500 to 5000 meters) the wind will turn south-southwest today. This wind configuration will dispose the ash cloud and SO₂ in a southwest-northeast direction from the eruptive focus. Therefore, the slopes most affected by the ash fall would be the eastern and northern slopes of the island of La Palma. The foreseen disposal of the ash cloud may affect the operation of the La Palma airport.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 kilometers with an increase in the value of their magnitudes. In the last 24 hours, the number of earthquakes and the maximum magnitude observed have decreased. The largest of 3.7 mbLg, felt with intensity III EMS. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The deformations at the stations closest to the eruptive center do not show any significant pattern.

During yesterday, the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register high values in line with the eruptive process, reaching values of 5,849 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂) measured on October 3, associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions), is 1650 tons per day. The CO₂ emission at the Los Llanos station (LP10) reflects that it has a deeper origin than that measured at the Fuencaliente station (LP08). These measures are consistent with the current eruptive process.

Since the beginning of the eruptive process, the existing air quality network on the island of La Palma has been reinforced with the incorporation of two new stations, located in Los Llanos de Aridane and El Paso. Various pollutants indicative of air quality have been monitored with special attention to SO₂ (levels measured in the air we breathe) and particles smaller than 10 microns (PM₁₀), the main pollutants emitted by the volcano.

As a consequence of the emissions from the volcano, there have been episodes with high concentrations of particles and sulfur dioxide in the two new stations, which have not posed an immediate risk to the population.

In recent days, the meteorological conditions have been favorable and the values of SO₂ and PM₁₀ have been reduced, finding us with values much lower than the legislated thresholds in SO₂ and no exceedances of the daily thresholds of PM₁₀ particles. Work is still continuing to obtain more information on air quality, such as the metals contained in PM₁₀ particles, which we are currently awaiting laboratory results in order to evaluate

them. Likewise, in the coming days a campaign to measure hydrochloric acid (HCl) in the populations potentially affected by the marine plume will begin.

October 7th

The King appreciates the institutional and technical strength of PEVOLCA



The stream has broken off to the south at the end of the route, affecting banana trees and reaching the fajana of the 1949 eruption.

The increase in the number of earthquakes and the magnitude is due to the feedback of the system and does not imply the opening of a new emitting center.

The meteorological conditions are unfavorable from the point of view of air quality and there is an emphasis on protection measures for the most vulnerable people

King Felipe VI participated today via telematics from the Parliament of the Canary Islands, together with the regional president, Ángel Víctor Torres, in the meeting of the Steering

Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of Canarias, led by Julio Pérez, Minister of Public Administrations, Justice and Security, showing his confidence in the institutional and technical strength that the Plan is showing to attend to the emergency and the future needs of the palm trees. In that sense, he thanked all the administrations for their intense efforts, which work aligned, sharing the same objective of the island's recovery.

Regarding the evolution of the process, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that the laundry moves permanently through the lava tube of the last days and maintains the previous routes. In this sense, the novelty is that at the end of it, about 350 meters from the arrival at the sea, there has been a fork and it has ended up flowing between Los Guirres and El Charcón, which has caused the lava to have washed away more banana plantations, some deposits and some buildings.

The Technical Director of the Plan commented that the fork is located almost at the end of the casting and in all probability it has been as a consequence of the finger having reached a dividing area that has finished filling and has passed over it and that, probably, the The area between the finger and the laundry can also be filled.

Regarding this aspect, the spokesperson for the Scientific Committee and director of the IGN in the Canary Islands, María José Blanco, pointed out that it is located in a completely flat area, in the fajana area of the 1949 eruption, and the topography does not favor high speed. of lava.

In relation to seismicity, Blanco explained that the number and maximum magnitude observed has increased and that at 12.17 hours an earthquake of magnitude 4.3 and intensity III was recorded in Villa de Mazo and that it has been felt practically in the entirety of the city. island of La Palma.

In this sense, the director of the IGN commented that it is possible that there is a feedback mechanism or adjustment of the active volcanic system. "We must not forget, as I have commented on previous occasions, that in the only process that we have a complete instrumental monitoring of an eruption in the Canary Islands is the Tagoro volcano in El Hierro. In this sense, this eruption was preceded by a very intense seismic activity that decreased in magnitudes once the eruption began on the surface but that, later, seismicity reoccurred where it had been recorded at the beginning and with magnitudes higher than the previous period. eruptive. That is, in

principle this pattern is repeating itself and this does not mean that the system has to search for a new exit to the surface,

Faced with this increase in seismicity, Morcuende announced that this weekend meetings will be held with the residents of Mazo and Fuencaliente to transfer peace of mind and explain the situation.

Regarding air quality, Morcuende reported that we have had episodes with peaks that have crossed the sustainable sulfur threshold during the night as a result of the atmospheric situation. This means that today there has been a worsening of the air quality, which does not mean that it is bad, but regular. In this sense, Morcuende stressed that, although people in general are not affected, those who are most vulnerable, with lung, bronchial, asthmatic or heart diseases should remain at home and if they have to go out, wear a FFP2 mask. The rest of the citizenry can continue to wear surgical masks.

Morcuende also reported that the affected area has grown by just over 9 hectares compared to the previous day and at the moment 431.2 and that the width remains at 1,250 meters.

The kilometers of roads affected add up to a total of 26.47 kilometers, of which 5.63 correspond to the municipality of El Paso; 17.13 to Los Llanos de Aridane and 3.71 to Tazacorte.

The latest number of people housed in the Fuencaliente hotel is 219 people.

October 8th

The new branch of the colada expands the area affected by lava to 471 hectares



According to the scientists, the parameters analyzed today do not show new emission centers outside the environment of the main cone.

Tomorrow the weather conditions will improve, which today have been unfavorable from the point of view of air quality and air navigation

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, headed by the Minister of Public Administrations, Justice and Security, Julio Pérez, this morning analyzed the latest data provided by the Scientific Committee on the eruptive process, which is still active around the Cumbre Vieja crater, with no evidence to suggest the opening of a new emission center away from the main cone. The affected area has increased

since yesterday by more than 40 hectares due to the fork that is near the coast and exceeds 471, maintaining the maximum width of the wash at 1,250 meters.

In this sense, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that the overflow of the lower part of the wash that occurred yesterday has continued its advance towards the south and is already on El Charcón, the fajana of the eruption of the San Juan volcano in 1949, about 150 meters from the sea. As indicated, this main stream is filling gaps and looking for headwaters of small basins, taking advantage of the changes in slope and also growing in height, which suggests that yesterday's new branch can be joined to the main stream.

The route of the new branch of the colada has mainly damaged the agricultural area that already reaches 120 hectares of crops, half of them banana trees (59.39 ha), followed by vineyards (33 ha) and avocado (7.39 ha).), among others.

In relation to the buildings totally or partially damaged, the data of 726 is maintained until a new update of the Copernicus satellite. Likewise, there is no variation in the kilometers of roads affected, with a total of 26.47 kilometers, of which 5.63 correspond to the municipality of El Paso; 17.13 to Los Llanos de Aridane and 3.71 to Tazacorte.

The spokeswoman for the Scientific Committee and director of the IGN in the Canary Islands, María José Blanco, pointed out that the emission centers are maintained in the vicinity of the main cone, with no evidence to date that another mouth can be registered outside of it. He also added that there are no significant changes in the mechanism of the strombolian eruption, with explosive phases that produce pyroclastic deposits and effusive phases, which produce lava flows, simultaneously.

Regarding the moment in which the eruptive process is located, the spokesperson for the Scientific Committee explained that, apart from the increase in seismicity, both in the number of earthquakes located and in magnitude, the tremor signal continues to have average values. low and quite stable, with very infrequent peaks in the increase of its amplitude. In this sense, he added that the deformations are now stable and, as regards the emission of gases, most of them present values similar to yesterday, although the meteorological conditions have affected the air quality in the Valley of Aridane.

In this sense, Morcuende added that seismicity is still located at great depth, and that the largest earthquake of 4.3 was recorded at 35 km, so there is no surface seismicity, nor deformity outside the current zone, which therefore rules out that additional Civil Protection measures have to be adopted, although all the prohibitions and land and maritime limitations established until now are fully and rigorously maintained.

As anticipated yesterday, the meteorological conditions have not been favorable, due to the fact that the thermal inversion hinders the dispersion of pollutants. In this sense, Morcuende pointed out that, although the air quality today remains regular in the municipalities closest to the volcano, people can lead a normal life, maintaining the usual protection measures, but paying special care and protection of vulnerable people, staying indoors whenever possible and in case of going out, use a FFP2 mask.

Blanco indicated that, due to the meteorological conditions and the direction of the wind, at the moment an accumulation of ash is observed at the airports of La Palma and Tenerife North, thus affecting the operation of both aerodromes, and it is not ruled out that ash falls on Tenerife Sur airport during the afternoon today and on La Gomera during the night, outside the latter's operating hours. The spokesperson for the Scientific Committee pointed out that as of tomorrow the expected distribution of the ash cloud is favorable for the operation of the Canarian airports.

The Technical Director of the Plan recalled the protection measures against falling ash, its cleaning and handling, and stressed the need to always be attentive to any notification from the health and civil protection authorities.

Finally, Morcuende reported that 218 people are staying at the Fuencaliente hotel, out of the total of 5,700 evacuated, and that the same number of troops is maintained in the security and emergency operation, with the necessary relief teams.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic

Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows). In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

At least 3 emission centers are still active in the main crater and one located on the north side of the cone. The appearance of new emission centers around the main cone is not ruled out. Lava tubes have been built, which favor drainage from the main emission center to the sea.

The lava delta (fajana) continues its growth fed from various points, extending in a north-south direction. As the limit of the insular platform has been reached, if the advance continues at greater depths, a collapse of its front could occur, which could be accompanied by the sudden release of gases, hydromagmatic explosions and wave generation. The advance of the lava flow branch that ran further south, over the lava delta from the 1949 eruption continues. The marine plume continues along the edge of the lava delta, producing clouds of water vapor and hydrochloric acid (HCl), which are concentrated in a small area around the contact. The observed affection of the lava delta to the water column of the marine environment continues.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration.

The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height measured today of the column of ash and gases, as well as its dispersion, reaches 3,500 m.

Unfavorable weather conditions continue from an air quality point of view. This is due to the presence of a pronounced thermal inversion (6-7 °

C), with a base located around 700-900 m., Together with the weak winds on the west slope, which hinder the dispersion of pollutants, mainly in areas little ventilated. The wind between levels 1500 to 5500 m. it will rotate from the west direction to the north component. This distribution of the wind will cause the ash plume and SO₂ to rotate in a clockwise direction and it will be disposed in a north-south direction from the eruptive focus starting tomorrow. At the moment, ash accumulation is being observed at the airports of La Palma and Tenerife North, thus affecting the operation of both airports. With the turning of the wind and the ash plume, it is not ruled out that ash falls on the Tenerife South airport during the afternoon today and La Gomera during the night (outside the airport's operating hours). As of tomorrow, the expected distribution of the ash cloud is favorable for the operation of the Canarian airports.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 kilometers with an increase in the value of their magnitudes. In the last 24 hours, the number of earthquakes has increased. The maximum magnitude observed was 4.3mbLg, felt with intensity III EMS and the maximum intensity was IV EMS associated with several earthquakes this morning. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The deformations at the stations closest to the eruptive center do not show any significant pattern.

During yesterday, the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register high values in line with the eruptive process, reaching values of 4,994 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂) measured on October 6, associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions), is 1668 tons per day. The diffuse emission of CO₂ at the Los Llanos station (LP10) reflects that it has a deeper origin than that measured at the Fuencaliente station (LP08). These measures are consistent with the current eruptive process.

Regarding air quality, yesterday, after the measurement of maximum sulfur dioxide (SO₂) values of 667 µg / m³ at 07:00 at the El Paso station, 364 µg / m³ at 08:00 at the Los Llanos station and 368 µg / m³ at 06:00 at the Tazacorte station, the measured SO₂ values at these stations were

gradually reduced to below $50 \mu\text{g} / \text{m}^3$. During the shift yesterday, the hourly SO_2 threshold (established at $350 \mu\text{g} / \text{m}^3$) was exceeded on 5 occasions at the El Paso station, 1 time in Tzacorte and 2 times in Los Llanos, and the daily threshold was exceeded (established at $125 \mu\text{g} / \text{m}^3$ as a daily average) at the El Paso station, with a daily average of $162 \mu\text{g} / \text{m}^3$. Starting at 22:00 of yesterday and during the morning of today there has been an increase in the measured values of SO_2 at the El Paso and Los Llanos stations, with a maximum concentration of $283 \mu\text{g} / \text{m}^3$ at 05:00 and $242 \mu\text{g} / \text{m}^3$ at 06:00, respectively. At these stations, the concentration seems to be decreasing at the moment and in the rest of the stations on the island the SO_2 values continue to be low.

Regarding particles smaller than 10 microns (PM_{10}), an increase in PM_{10} concentrations is observed in all the stations on the island, which do not imply an exceedance of the thresholds except in the Los Llanos station, where it occurred yesterday exceeding the daily threshold (established at $50 \mu\text{g} / \text{m}^3$) with a daily average of $59 \mu\text{g} / \text{m}^3$ and a maximum hourly value of $118 \mu\text{g} / \text{m}^3$.

October 9th

The new wastes run through areas that have already been evacuated and within the exclusion area



The partial collapse of the wall of the main cone has caused the exit of large blocks of material and the appearance of two new castings

The rupture of the lava delta front, if it occurs, and its effects would be limited to its environment and the restricted land and maritime zone

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, led by the Minister of Public Administrations, Justice and Security, Julio Pérez, this morning analyzed the latest data provided by the Scientific Committee on the eruptive process, which is still active in the surroundings of the Cumbre Vieja crater, after the collapse last night of part of the cone, which has originated new flows that run through areas already evacuated and within the exclusion area and that they are constantly motorized and monitored.

The Technical Director of the Plan, Miguel Ángel Morcuende, reported that during the night the partial rupture of the wall of the cone occurred, which has caused new blocks of material to be incorporated into the main casting and the emergence of new flows that run in the northern part of the cone. One of them, the one located more to the northwest and which has been monitored since this morning, runs towards El Paraíso street in the municipality of El Paso, on the previous flows, and has been losing strength. The other, located further south of this, has also lost a lot of intensity during the morning.

Likewise, he reported that the stream located to the south of the cone is constantly being monitored and that it is sticking to the main one, at the height of the clean point of the La Gata alley, in the industrial estate, since it is a mass of lava important. This runs through an area where there is a pronounced gully that the lava is expected to fill in the next 24 or 36 hours. If the wash forces its exit, Morcuende affirmed, it would be studied with mathematical and dangerous models what its course towards the sea would be and the necessary Civil Protection measures would be taken, for which he reminded the population to be attentive to the recommendations of the authorities of PEVOLCA and the General Directorate of Security and Emergencies of the Government of the Canary Islands, as responsible for the Plan.

On the other hand, Morcuende commented that the southern branch of the wash has not reached the sea and is standing still, but is growing in thickness. In this regard, he pointed out that it is loading mass and it is expected that soon, with the weight and inertia, it will continue its way to the sea.

María José Blanco, director of the IGN in the Canary Islands and spokesperson for the Scientific Committee, explained in her appearance that the crater emission centers are still active and the appearance of new emission centers around the main cone, as well as other observables, is not ruled out surface, such as visible gas emissions, within the exclusion zone.

In this sense, he pointed out that the morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration, such as the one that has suffered last morning. The eruptive process can

show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

Regarding the growth of the lava delta (fajana), the spokesperson added that it continues to expand in a north-south direction, fed from various points and yesterday reaching an area of 32 ha. Likewise, it specified that, having reached the limit of the insular platform, if the advance continues to greater depths, a collapse of its front could occur, which could be accompanied by the sudden release of gases, hydromagmatic explosions and generation of waves, in the environment of the lava delta and always within the already established exclusion zone.

In this sense, Morcuende wanted to make a call for tranquility for the population, and explained the probability that a wave of up to 5 m could occur at the breaking point, which would affect a radius of 100-150 m exclusively. He specified that the intensity of the same would be inversely proportional to the distance, that is, as the distance increases, its intensity decreases very quickly, so that half a mile from the area where a possible break occurs there would be waves of less than 2 m. probably a mile and a half maximum half a meter. At the mouth of the port of Tazacorte, in the worst case, a wave of 25 cm could be generated at that time.

He reported that air quality has improved compared to yesterday and will continue to do so tomorrow, thanks to the fact that the thermal inversion is higher and the weather conditions improve. This improvement has made it possible for the La Palma airport to be operational again.

In relation to seismicity, the IGN spokesperson reported that it continues to be located, mainly, close to the seismicity of the first days, at depths of between 10 and 15 km, and said that there has been a slight increase in the number of earthquakes in the last 24 hours. The current level of seismicity continues to indicate that it is possible that they will produce more felt earthquakes, he said.

Morcuende explained that the surface affected by the lava amounts to 492.75 ha -20.9 hectares more than yesterday-, and maintains a maximum casting width of 1,250 meters, according to the latest available measurements.

Finally, he indicated that 225 people are staying at the Fuencaliente hotel, six more than yesterday, of the total of 5,700 evacuated.

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows). In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

Last morning, the wall that contained the lava lake was partially broken, causing large blocks to come out and the emission of a new lava flow further north than the previous one, which follow new paths within the exclusion zone. The emission centers of the crater are still active and the appearance of new emission centers in the surroundings of the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out. Lava tubes have been built, which favor drainage from the main emission center to the sea.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height measured today of the column of ash and gases, as well as its dispersion, reaches 3,500 m.

The lava delta (fajana) continues its growth fed from various points, extending in a north-south direction, reaching an area of 32 Ha yesterday. As the limit of the insular platform has been reached, if the advance continues to greater depths, it could produce a collapse of its front, which could be accompanied by the sudden release of gases, hydromagmatic explosions and wave generation, in the surroundings of the lava delta and always within the already established exclusion zone. The advance of the branch of the lava flow that ran further south, over the lava delta of the 1949 eruption continues. The marine plume continues along the edge of the lava delta, with variable intensity depending on the flow of lava that enters the sea, producing clouds of water vapor and hydrochloric acid (HCl). They are concentrated in a small area around the contact. The observed affection of the lava delta to the water column of the marine environment continues.

The gradual rise in the height of the thermal inversion continues and is expected to be around 1200-1300 m during the next few hours and will be less marked than in previous days. This factor favors the vertical dispersion of pollutants. Therefore, the meteorological conditions evolve favorably from the point of view of air quality. The distribution of wind in height (between 1500 to 5500 m), with a predominance of the north component, has the ash plume and SO₂ in a north-south direction from the eruptive focus. This scenario is favorable for the operation of Canarian airports (at least for the next 36 hours). The southern slope of the island of La Palma will be the most affected by the ashfall during the next few hours. Fine ash fall is not ruled out in La Gomera and El Hierro.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 kilometers with an increase in the value of their magnitudes. In the last 24 hours, the number of earthquakes has increased. The maximum magnitude observed was 4.1 mbLg, felt with intensity III EMS. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The deformations at the stations closest to the eruptive center do not show any significant pattern.

During yesterday, the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register high values in line with the eruptive process, reaching values of 6,876 tons per day

(underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂) measured on October 6, associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations), is 1837 tons per day. The diffuse emission of CO₂ at the Los Llanos station (LP10) reflects that it has a deeper origin than that measured at the Fuencaliente station (LP08). These measures are consistent with the current eruptive process.

On October 6, the emission of HCl from the volcanic and marine plumes could be estimated, reaching values of 497 and 43 tons per day, respectively. These measures are also consistent with the current eruptive process.

Regarding air quality, yesterday and this morning the behavior of previous days was repeated but with less intensity. Yesterday we had a peak in sulfur dioxide (SO₂) between 6:00 and 8:00, at the El Paso and Los Llanos stations, not exceeding the hourly thresholds at any time. After these maximums, the concentrations measured were reduced to values below 20 µg / m³ to later increase again during yesterday night and today morning, reaching maximum values lower than those of yesterday in the Llanos at 6 o'clock: 00 and 7:00 in El Paso. At the moment these values are decreasing. In the rest of the island's stations, SO₂ values continue to be low.

Relatively high values continue to be recorded for particles smaller than 10 microns (PM₁₀) at the Los Llanos station, slightly exceeding the daily threshold yesterday (established at 50 µg / m³). In the rest of the stations we continue with daily values around 30 µg / m³.

A large group of residents of Mazo and Fuencaliente attend the informative meetings on the volcano



Members of PEVOLCA explain with scientific data what the true situation of the eruption is and ask that the population of both municipalities remain attentive to the indications of the authorities

This afternoon a large group of people from the municipalities of Mazo and Fuencaliente attended the informative meetings on the volcanic phenomenon in La Palma that have been promoted by the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) within the framework of the dissemination plan for the emergency caused by the eruption of the Cumbre Vieja volcano. The main objective of the same was to explain to the population, with veracity and scientific data, what is the real situation in both municipalities after the eruption, clarify the doubts of their neighbors and transmit tranquility.

The technical director of PEVOLCA, Miguel Ángel Morcuende, accompanied by members of the Scientific Committee of the Plan, pointed out that, as of today, there are no parameters that indicate that a new emitting center may appear outside the environment of the cone, and assured that it is carrying out permanent monitoring and surveillance of the volcano and that all the necessary preventive and security measures are contemplated to safeguard the integrity of the people.

Morcuende nevertheless asked the neighbors to inform themselves through official sources and maintain permanent attention to the indications emanating from the Civil Protection authorities of any of the administrations - municipal, insular, autonomous and state -, which will be in charge to communicate, if necessary, any measure that had to be adopted.

The meetings were also attended by the mayor of Mazo and the mayor of Fuencaliente, Goretti Pérez and Gregorio Alonso, respectively, as well as representatives of the Cabildo de La Palma, the UME, the CECOPIN and the Red Cross, who answered the questions and the uncertainties raised by attendees.

October 10th

Minister Robles highlights in La Palma the absolute commitment of the Armed Forces with the Island



The Minister of Defense and President Ángel Víctor Torres attended the daily session of the Steering Committee today

PEVOLCA continues to permanently monitor the flows and especially watches the route of the branch of the one located in the industrial park of Los Llanos de Aridane

The surface affected by the lava exceeds 525.77 hectares three weeks after the eruption

Sulfur dioxide (SO₂) values are decreasing and far from the maximum permitted thresholds in terms of air quality

The Minister of Defense, Margarita Robles, chaired on Sunday in La Palma the meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Canary Islands Government, led by the Minister of Public Administrations, Justice and Security, Julio Pérez, and conveyed his appreciation and gratitude to all the professionals who work in this emergency, while highlighting the commitment of the Armed Forces to the Island, where they will continue with maximum availability and absolute collaboration. This meeting was also attended by the President of the Canary Islands, Ángel Víctor Torres, via telematics.

Along with the members of the Steering Committee, the members of the Scientific Committee were also present at today's session. Robles referred to both of them with words of gratitude and admiration and encouraged them to continue with the work they have been developing so far.

At the meeting in which the evolution of the eruptive process is analyzed every day with the data provided by the Scientific Committee, Robles said that the Ministry's commitment will be until the last minute. "As long as La Palma needs us, the UME and the Armed Forces will be here," he emphasized.

In this regard, the counselor Julio Pérez recalled that this Sunday was three weeks after the eruption and valued the essential role of the Amadas Forces and the complete response of the Military Emergency Unit (UME), as an essential element in the emergency management device. In addition to its speed in the intervention and the number of troops deployed from the first moment, he remarked, the UME provides tools for a better understanding of scientific data -such as gas analysis or drone flights- and carries out important work of psychological support to the affected populations, generating proximity to the population and strengthening the feeling of security on the island.

Regarding the evolution of the eruptive phenomenon, the Technical Director of the Plan, Miguel Ángel Morcuende, explained that the constant effusive activity has expanded the streams to the north, continuing its

descent towards the part of Todoque that had not been affected by the main stream . In this regard, he added that there are two branches in the north stream; the southern one that has joined the previous casting and the northern one that is within the industrial estate, at the height of the cement factory. In this sense, Morcuende stated that this last branch advances at about 5 m / h and that its movement is monitored, as is that of the rest of the flows, since it can reach a mini-basin and vary its route.

The lower part of the stream has already crossed the LP-213 highway, said Morcuende, who indicated that the forecast is that it will advance parallel to the northern arm of the Todoque mountain, which has stopped for days.

The Technical Director of the Plan, Miguel Ángel Morcuende, explained that the area affected by the lava exceeds 525.77 hectares, which is 33 more than yesterday, with a maximum width of the wash of 1,520 meters, 270 more, after the increase of the lava by the rupture of the cone. Regarding the fajana, he explained, it measures 34 hectares.

María José Blanco, director of the IGN in the Canary Islands and spokesperson for the Scientific Committee, recalled that the morphology of the cone changes repeatedly due to successive growth and reconfiguration processes. In this sense, Blanco explained that yesterday a process of destruction of the wall of the lava lake began, due to the increase in the volume of the same emitted from the emitting center, causing the exit of large blocks that were dragged by the wash, going down by the northern part of the previous flows, following trajectories towards the west, within the exclusion zone. If the flow remains the same, Blanco indicated that a change in surface runoff is not expected.

Regarding air quality, the spokesperson for the Scientific Committee stressed that today the sulfur dioxide (SO₂) values are decreasing and far from the maximum permitted thresholds. With regard to particles smaller than 10 microns (PM₁₀), he added that yesterday and today morning values lower than previous days have been measured in all the stations, and there has not been any exceedance of the daily threshold. The area most affected by the ash fall today is the southern slope of La Palma, while tomorrow it will be the east.

In this regard, Morcuende recalled that the air quality is reasonably good, taking into account that we are moving in a volcanic eruption zone, but that

self-protection measures must be maintained at all times, paying special attention to vulnerable people, who must stay indoors and always wear a FFP2 mask if you go out.

Regarding the meteorological conditions, Blanco pointed out that this Sunday they are favorable for the operation of the Canarian airports. However, he added, as of tomorrow the expected changes in the wind regime and in the arrangement of the plume may affect the operation of the La Palma aerodrome and it cannot be ruled out that it also affects the operation in Tenerife.

Regarding seismicity, Blanco and Morcuende highlighted that it continues to be high in number, but that it moves at medium or deep levels, without any superficial events.

Morcuende pointed out that there are no updated data from the cadastre - whose last figure was 726 destroyed buildings-, and that the latest data provided by Copernicus refers to 1,281 buildings affected (1,186 destroyed and 95 at risk), although without being able to detail the type of construction.

Regarding the cultivated area, it is estimated that 132 hectares are affected. Of these, 70 are banana trees, 33 vineyards and almost 8 avocados.

Miguel Ángel Morcuende revealed the civic behavior of all the people affected by this eruptive process, especially in the Aridane Valley area and especially the residents of Tacande de Abajo, Tacande de Arriba, Tajuya and La Laguna, among others. , which have been supporting in a very direct way the explosive mechanism of the volcano.

Morcuende recalled that all citizens of the area with a red traffic light must be attentive to any change in the situation and follow the recommendations of the authorities and Civil Protection.

In this sense, yesterday the training plan was also continued among the residents, with talks in the municipalities of Mazo and Fuencaliente, where first-hand information on the eruptive process was transferred, both by the Technical Directorate and by scientists, in addition to advancing in the evacuation plans of the population, if necessary.

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows). In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

At 2:30 p.m., a process of destruction of the wall of the lava lake began, due to an increase in the volume of lava emitted from the emitting center, causing the exit of large blocks that were dragged by the lava flow, descending through the Northern part of the previous flows, following trajectories towards the west, within the exclusion zone. The emission centers of the crater are still active and the appearance of new emission centers in the surroundings of the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out. The existing lava tubes favor the drainage of the lava flows towards the sea.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height measured today of the column of ash and gases, as well as its dispersion, reaches 3,500 m.

The lava delta (fajana) continues its growth fed from various points, yesterday reaching a surface of 34 Ha and extending superficially in a north-south direction, advancing its front over the head of an underwater canyon. As the limit of the insular platform has been reached, if the advance continues at greater depths, a collapse of its front could occur, which could be accompanied by the sudden release of gases, hydromagmatic explosions and generation of waves, in the surroundings of the delta lava and always within the already established exclusion zone. The advance of the branch of the lava flow that ran further south, over the lava delta of the 1949 eruption continues. The marine plume continues along the edge of the lava delta, with variable intensity depending on the flow of lava that enters the sea, producing clouds of water vapor and hydrochloric acid (HCl), which are concentrated in a small area around the contact. The observed affection of the lava delta to the water column of the marine environment continues.

During today's session, the prevalence of north wind will continue. Starting tomorrow (between 7 and 13) a turn to the west component is expected between the levels of 2500 to 5500 m. The expected turn of the wind will cause a displacement of the ash plume and SO₂ from the current position (it is arranged north-south from the eruptive focus) until it has a west-east distribution (throughout tomorrow, day 11). Today, the scenario is favorable for the operation of the Canarian airports. However, the expected changes in the wind regime and in the arrangement of the plume, may affect the operation of La Palma airport as of tomorrow (not ruled out that it affects the operation in Tenerife). Today the area most affected by ashfall is the southern slope of La Palma,

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km with an increase in their number. In the last 24 hours, the number of earthquakes has increased. The maximum magnitude observed was 3.9 mbLg, the maximum intensity was IV EMS. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The deformations at the stations closest to the eruptive center do not show any significant pattern.

During yesterday (10/09), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register high

values and in line with the eruptive process, reaching values of 4522 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions), has been estimated at 1958 tons per day as of 10/09. These invisible carbon dioxide (CO₂) fumes do not pose any danger to residents and visitors. The diffuse CO₂ emission at the Los Llanos geochemical station (LP10) reflects a higher magmatic-hydrothermal fraction than that observed at the Fuencaliente geochemical station (LP08). All these geochemical observations are consistent with the current eruptive process.

On October 6, the emission of HCl from the volcanic and marine plumes could be estimated, reaching values of 497 and 43 tons per day, respectively. These measures are also consistent with the current eruptive process.

Regarding air quality, after the maximum sulfur dioxide (SO₂) measured yesterday morning at the El Paso and Los Llanos stations, the values were decreasing during the rest of the day, with low SO₂ values in the set of stations. During the early hours of today and until 8:00 am, there has been an increase in SO₂ in these two stations with maximum values close to the hourly threshold (established at 350 µg / m³) but without exceeding it. At this time, the values are decreasing and far from the thresholds.

In relation to particles smaller than 10 microns (PM₁₀), during yesterday and today morning values lower than previous days are being measured in all the stations, and there has not been any exceedance of the daily threshold (established at 50 µg / m³) in any of them. The highest values are being measured at the Los Llanos station, mainly due to specific events with a high concentration of particles.

October 11th

The initial flows weaken while the new one, further north, approaches the sea more quickly



The fire of a cement plant due to the arrival of the lava forced PEVOLCA to confine circumstantially several population centers of Los Llanos de Aridane and El Paso

It is expected to be able to lift said confinement in a short period of time.

The area affected by the lava already exceeds 591 hectares, 65 more than yesterday, and the maximum width of the wash is around 1,520 meters

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, led by the Minister of Public Administrations, Justice and Security, Julio Pérez, has analyzed the daily report of the Scientific Committee that notes that the initial flows are weakening while the new one, located further north, approaches the sea more quickly. The

advance of this north flow has caused the fire in the cement factory of the Callejón de la Gata industrial park and the consequent release of gases by combustion of materials, which were initially estimated as possibly toxic.

The cement plant fire has forced PEVOLCA to confine circumstantially several population centers of Los Llanos de Aridane and El Paso, a situation that will be lifted as soon as the air quality parameters improve in those areas, which is expected to happen soon. . Specifically, the confinement of about 3,500 people has been declared in the space between the crossing of Camino Cruz Chica with the LP-2 highway, continuing west to the crossing with Nicolás Brito Pais, continuing this road to the ring road and through it until the Hoyas Hondas roundabout. From this point on, the entire area affected by the August fire is included up to the El Paso soccer field, including the area to the west of the LP-3 up to the Sombrero roundabout.

Among the recommendations of the authorities is to close the doors, windows, blinds and all air inlets from outside; If possible, confine yourself to the innermost rooms and interrupt any system that brings in air from outside. In case of being outside, it must be taken into account that a vehicle is not a safe place and it is necessary to seek refuge in the first building that is found. No travel should be made until instructed to do so, and only use the 1-1-2 phone for emergency situations. If due to force majeure any of the confined persons must interrupt the confinement, it must be communicated to 1-1-2.

PEVOLCA Technical Director, Miguel Ángel Morcuende, pointed out that there are three active streams, all of them through the exclusion zone evacuated since the beginning of the eruption. In addition to the original one, which ended in the sea and created the lava delta, there is another one further south that is on the fajana of the San Juan eruption in 1949 that goes towards the Charcón, and the third one, further north, with two branches. One of them is burning the cement plant and the other is advancing in the direction of the sea, above the Todoque mountain, Morcuende explained, who explained that this north stream has a greater supply of lava, which has increased damage to crops and buildings. and obliged to take this last measure of civil protection of confinement.

In this sense, the spokesperson for the Scientific Committee and director of the IGN in the Canary Islands, María José Blanco, explained that, after the

overflow of the lava lake, the main flow runs along the north flank, mainly towards the sea, going down the north side of the previous casting, following trajectories towards the west, within the exclusion zone. He indicated that the distance from the front of this lava flow to the sea is of the order of 300 meters, so that it can form another lava delta (fajana) on the beach of El Perdido, in case the current emission rate is maintained from the eruptive center.

Likewise, he pointed out that the lava field that fed the lava delta of the beaches of Los Guirres seems to have reduced its activity, as well as the wash that runs over the fajana of the 1949 eruption in the El Charcón area.

Morcuende explained that the surface affected by the lava already exceeds 591 hectares, which is 65.33 more than yesterday, with a maximum width of the wash of 1,520 meters.

In addition, he pointed out that the updated data from the cadastre on Copernicus puts 753 buildings affected. Of these, 620 are for residential use, 70 for agricultural use, 29 for industrial use, 19 for leisure / hospitality and 7 for public use, among others.

As for the area of crops, he said, it is estimated at 150 hectares affected. Of these, half are banana trees, 45 hectares are vineyards and almost 9 are avocados.

Regarding seismicity, since yesterday there has been a high number of earthquakes located slightly south of the area where the swarms that gave rise to the eruption began. "The most relevant thing is that they are at medium and high depth," he explained.

Regarding air quality, he added that except for the measure adopted at the last minute of confinement of a very localized area due to the fire that affected the cement factory, the values recorded since yesterday indicate that the quality it is reasonably good, except for a very specific peak. On the suspended particles, he explained, they are below the permissible threshold.

However, Morcuende indicated that the thermal inversion layer is currently at lower levels than in recent days, which will not help the dispersion of gases.

The wind configuration disposes the ash plume and SO₂ in a west-east direction from the eruptive focus. According to Blanco, the expected

position of the plume will affect the operation of the La Palma Airport and he spoke of the fact that the area most affected by the ash fall is the eastern slope of the island. Although it is unlikely, the fine ash fall could reach the north of Tenerife and affect airport operations on the island, he said.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows). In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

Since yesterday's overflow of the lava lake, the main flow runs along the north flank, mainly towards the sea, down the northern part of the previous flows, following trajectories towards the west, within the exclusion zone. The distance from the front of this lava flow to the sea is of the order of 300 m, so it can form another lava delta (fajana) on the beach of El Perdido, in case the current emission rate is maintained from the eruptive center. Large blocks carried by lava flow further north are still being observed, albeit less frequently. The emission centers of the crater are still active and the appearance of new emission centers in the surroundings of the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out. The lava field that fed the lava

delta of the beaches of Los Guirres seems to have reduced its activity. The lava flow that runs over the lava delta of 1949 in the El Charcón area, also seems to have reduced its activity.

During the eruptive process, the estimated emitted volume (up to 10/10) through the SEVIRI sensor of the HOTSAT system is $75 \pm 25 \text{ Mm}^3$

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column measured today, as well as its dispersion, reaches 4000 m.

As the lava delta has reached the limit of the insular platform, if the advance continues to greater depths, partial collapses of its front could occur, which could be accompanied by sudden release of gases, hydromagmatic explosions and generation of waves, in the environment of the lava delta and always within the already established exclusion zone. The marine plume is severely weakened along the edge of the lava delta.

The weak wind continues at low levels, with a predominance of the breeze regime on the west slope of La Palma. The thermal inversion will remain at around 1000-1200 m and is more pronounced (approximately 3°C) in the early hours. These meteorological conditions have an unfavorable local effect in the areas of El Paso and Los Llanos regarding air quality, since together with the surrounding orography, the dispersion of pollutants is prevented during the early hours and early hours of the morning. At altitude (between 1500 and 5500 m), the wind will continue from the west and no changes are expected for the next 72 hours (at least). This wind configuration disposes the ash plume and SO_2 in a west-east direction from the eruptive focus. The expected position of the plume will affect the operation of the La Palma airport and the area most affected by the ash fall is the eastern slope of the island. The fall of fine ash in the north of Tenerife and the effect on airport operations on the island is unlikely.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km with an increase in their number. In the last 24 hours, the number of earthquakes has increased. The maximum magnitude

observed was 4.3 mbLg, the maximum intensity was III-IV EMS. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The deformations at the stations closest to the eruptive center do not show any significant pattern.

During yesterday (10/10), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register high values and in line with the eruptive process, reaching values of 7652 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations), has been estimated at 1884 tons per day as of 10/10. These invisible carbon dioxide (CO₂) fumes do not pose any danger to residents and visitors. The diffuse CO₂ emission at the Los Llanos geochemical station (LP10) reflects a higher magmatic-hydrothermal fraction than that observed at the Fuencaliente geochemical station (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, yesterday there was a peak in sulfur dioxide (SO₂) during the morning at the El Paso and Los Llanos stations with maximum values close to the hourly threshold (established at 350 µg / m³) but without reaching exceeding it, throughout the day the values remained far from the threshold. During this morning there has been a peak of great intensity at the El Paso station with an hourly maximum at 8:00 am of 830 µg / m³ that exceeds the alert threshold (established at 500 µg / m³) but at a only occasion. At the moment the values are decreasing and below the hourly threshold.

With regard to particles smaller than 10 microns (PM₁₀), yesterday and today we continue with values below the daily threshold (set at 50 µg / m³), so there has been no exceedance of said threshold at neither station.

October 12th

The advance of the north wash forces PEVOLCA to a preventive evacuation in new areas of La Laguna



This morning the confinement of the population near the Callejón de la Gata industrial estate was lifted, once the lava had surpassed the area and the air quality was checked

The area affected by lava already exceeds 612 hectares, of which 169 correspond to crops

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, headed by the Minister of Public Administrations, Justice and Security, Julio Pérez, and after analyzing the daily report of the Scientific Committee, has agreed in the meeting this morning the preventive evacuation in new areas of La Laguna, in the municipality of Los Llanos de Aridane, given the advance of the wash towards the northwest and its proximity to the limit of the exclusion perimeter. This pouring forced the confinement of the population near the Callejón de la Gata industrial estate yesterday, due to the emanation of gases that could be dangerous due to the combustion of materials, a measure that was lifted this morning once the lava overcame the area and air quality could be checked.

The new evacuation order affects an estimated population of 700-800 people, according to the census, although many residents had already left

the area voluntarily in previous days. In the first place, the Canary Emergency Service is carrying out the transfer of people with reduced mobility to the El Fuerte Barracks, while the rest will be attended by the device coordinated by the Red Cross at the established meeting point, located in the Campo de Lucha Camino de León.

The area affected by the order is comprised between Camino de Cruz Chica at the junction with Camino Nicolás Brito Pais and from this point to the junction with the LP-213 (Las Martelas - Casa Kiko); descending until the junction with the general highway from Los Llanos de Aridane to Puerto Naos. Also included are the streets Camino los Breñuscos, Camino del Monte up to number 21 (included), Camino las Casitas and Camino los Barretos.

The order details that the affected people must vacate their homes, with their belongings and pets, and have to go to the established meeting point. Likewise, it is reported that those people who are unable to collect their belongings today may do so in subsequent days, gradually and accompanied, provided that security conditions allow it.

Among the advice to the population is to close all exterior windows and doors, lower the blinds and close the water, gas and electricity supplies. It is important that you bring personal documentation and also that of the home, as well as medicines for daily use, mobile phone, charger, flashlight and clothing for several days. In case of having animals, the evacuation will be carried out following the guidelines of the Animal Action Protocol that will be indicated at the Meeting Point.

Regarding the washes, all of them are being permanently monitored, explained the Technical Director of PEVOLCA, Miguel Ángel Morcuende, who explained in a press conference that there is a wash, the original one, which has lost power and clearly does not have lava input, that it moves through the south and north of the Todoque Mountain, with two appendages. The first of these appendages reached the sea creating the fajana, while the second is 200 meters from the cliff.

The second casting goes down with power, parallel to and northwest of the original one. According to Morcuende, this wash -which is specially guarded and monitored- is causing significant damage in cultivation and residential

areas, but it runs through a previously evacuated area and therefore cannot cause personal injury.

The third wash runs very fast as it contributes most of the lava flow from the volcano. Inside it, there is an arm that has crossed the Callejón de La Gata diagonally and that could move to areas not previously evacuated. "Although it is evident that the laundry will take time to reach that area, its tendency is that it approaches a population area of La Laguna, and for this reason, this morning, the PEVOLCA Directorate has ordered, as a preventive measure, the evacuation of these population centers", he indicated.

For her part, the director of the IGN in the Canary Islands and spokesperson for the Scientific Committee, María José Blanco added in this regard that the main flow of lava flows runs along the north flank, descending through the northern part of the previous flows, following trajectories towards the west and northwest. Blanco pointed out that the distance from the front of this lava flow to the sea is close to 200 meters, but that progress is very slow.

Regarding the lava field that fed the lava delta (fajana) of the beaches of Los Guirres, he said that it seems to have no activity, as well as the lava flow that runs over the lava delta of 1949 in the El Charcón area. Finally, the spokeswoman for the scientific committee explained that the absence of activity in the lava delta seems to be corroborated by the underwater videos and the data of temperature and pH of the sea at short distances.

Regarding seismicity, Morcuende pointed out that, although it is still high, it remains at medium and high depth.

Regarding air quality, the PEVOLCA Directorate recalled that intense surveillance of all parameters is maintained to protect people's health and adopt, where appropriate, the necessary civil protection measures.

The area affected by lava already exceeds 612 hectares, which is 21 more than yesterday.

Morcuende indicated that there is no new data on affected buildings and recalled those from yesterday's cadastre, carried out on Copernicus, which puts the number of affected buildings at 753. Of these, 620 are for

residential use, 70 for agricultural use, 29 for industrial use, 19 for leisure / hospitality and 7 for public use, among others.

As for the area of crops, he said, they already exceed 169 destroyed hectares. Of these, 90.25 are banana trees, 48.37 hectares are vineyards and 9.45 are avocados, among other crops.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows). In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

Preliminary chemical analysis and visual inspection of the different lava flows and pyroclasts show a temporal evolution of the magma from more differentiated to more primitive terms along the basite-tephrite magmatic series. This evolution is common in historical eruptions on La Palma.

The main flow of the lava flows runs along the north flank, down the northern part of the previous flows, following trajectories towards the west and northwest, within the exclusion zone. The distance from the front of this lava flow to the sea is of the order of 200 m, but with a very slow advance. Large blocks carried by lava flow further north are still being observed, albeit less frequently. The emission centers of the crater are still

active and the appearance of new emission centers in the surroundings of the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out. The lava field that fed the lava delta (fajana) of the beaches of Los Guirres seems to have no activity, as well as the lava flow that runs over the lava delta of 1949 in the area of El Charcón. The absence of activity in the lava delta seems to be corroborated by underwater videos and close range sea pH and temperature data.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column measured today, as well as its dispersion, reaches 3,500 m.

The weak wind is expected to continue in the lower and middle troposphere (from surface to 5500 m). In low-lying areas, the breeze regime will predominate with a slight thermal inversion that will be around 1300-1700 m. This rise in the height of the inversion provides a favorable condition from the point of view of air quality. In the stratum between 1500 to 5500 m, variable loose wind and a predominance of the west component above 2500 m. The expected arrangement of the ash cloud and SO₂ is west-east and partially southward from the eruptive focus. The areas most affected by the ashfall will be the eastern and southern slopes of La Palma. Fine ash fall is not ruled out in the west of Tenerife. Due to the expected position of the plume, the operability of La Palma airport is likely to be compromised (unlikely to affect Tenerife). No significant changes are expected until next Thursday.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km. In the last 24 h the amplitude of the tremor signal has increased. The maximum magnitude observed was 4.1 mbLg and the maximum intensity was IV EMS. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The deformations at the stations closest to the eruptive center do not show any significant pattern.

During yesterday (10/11), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register high values and in line with the eruptive process, reaching values of 21,868 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions), has been estimated at 1844 tons per day as of 10/11. These invisible carbon dioxide (CO₂) fumes do not pose any danger to residents and visitors. The diffuse CO₂ emission at the Los Llanos geochemical station (LP10) reflects a higher magmatic-hydrothermal fraction than that observed at the Fuencaliente geochemical station (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, yesterday there was a peak of great intensity of sulfur dioxide (SO₂) at 8:00 in the morning at the El Paso station, with a value of 830 µg / m³ exceeding the hourly threshold (set at 350 µg / m³). It was a one-off episode that subsided in the following hours, with no further improvement occurring throughout the day. In the rest of the stations, the values were kept below the thresholds at all times.

Regarding particles smaller than 10 microns (PM₁₀), between 09:00 and 12:00 yesterday morning there was an episode of high concentration of PM₁₀ particles at the Los Llanos station, with a maximum of 225 µg / m³, which remitted from that moment on and did not imply an exceedance of the daily threshold (established at 50 µg / m³). In the rest of the stations this threshold was not exceeded yesterday.

October 13th

Sánchez chairs the PEVOLCA committees on La Palma for the fourth time: the uneven progress of the coladas continues



The president of the Canary Islands, Ángel Víctor Torres, was also present at the meeting

According to data from the cadastre there are 937 buildings destroyed, more than 80% of residential use

The area affected by the lava amounts to 640.27 hectares and the maximum width of the wash is 1,770 meters.

The President of the Government of Spain, Pedro Sánchez, chaired today in La Palma the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, in which the president of Canarias, Ángel Víctor Torres, and the director responsible for the Plan, Julio Pérez, as well as members of the Scientific Committee and those responsible for the other public administrations involved in the emergency. At this meeting, the daily report of the Scientific Committee was analyzed, which indicates that it follows the uneven progress of the flows and reflects, with the latest indicators, that the eruption does not show signs of exhaustion in the short and medium term.

During the meeting, which is the president's fourth visit to the island since the eruption, Sánchez thanked the scientists for the contribution and the work of all those involved and the administrations to safeguard people's lives, give an immediate response to those affected and address the reconstruction of the island. The president actively intervened in it and asked various questions to the operational and scientific leaders, as well as to those of the Spanish Red Cross, from whom he requested information on the people sheltered.

In subsequent statements, Sánchez affirmed that either with physical presence or through the mixed commission, in which the administrations involved are present, he is kept informed on a daily basis to respond instantly to any new eventuality that may occur so that the palmeros and palm trees have the greatest of certainties and security.

The spokesperson for the Scientific Committee and director of the IGN in the Canary Islands, María José Blanco, explained that the three variables or energies that intervene in a volcano are seismicity, deformation and the emission of gases and that, based on current parameters, no the end of the eruption is in sight neither in the short nor in the medium term. "The sulfur dioxide that is released in the plume, at 4,000 meters high, exceeds 17,000 tons per day and would have to be below 100 a day to find ourselves at the beginning of the end," he explained.

Regarding seismicity, the Technical Director stated that the swarm of earthquakes collected by the IGN is located slightly to the south and east of the initial swarm, where the eruption took place. He indicated that, according to the depth data, ground deformation and fumaroles, among others, the probability that new emission centers will appear outside the vicinity of the current cone is currently low. However, he added, in the event of any change, the necessary civil protection measures would be adopted to preserve the integrity of the people.

Regarding the advance of the streams, Miguel Ángel Morcuende pointed out that the northwest arm, which crossed the Callejón de La Gata diagonally and which yesterday prompted the evacuation of residents in new areas of La Laguna, is advancing very slowly and is losing power. In this regard, he added that it remains monitored while waiting to see its evolution, since at the moment it is not close to the evacuated area and

could even abort. However, he explained, the arm that runs further south accumulates the maximum energy from the emitting center and moves at about 50 meters per hour.

María José Blanco pointed out that the main flow of the lava flows runs along the north flank, descending through the northern part of the previous flows, following trajectories towards the west and northwest within the current exclusion zone. The distance from the front of this lava flow to the sea remains at 200 meters as yesterday.

Morcuende stressed that the eruption is affecting only 8% of the territory of La Palma and is limited to the Aridane Valley. In this sense, he insisted on the absolute stability of the island building, from the geological point of view, and stressed that the Island is safe.

The area affected by the lava amounts to 640.27 hectares, which is 27.94 more than yesterday and the maximum width of the wash is 1,770 meters, about 250 meters more than the last calculation, due to the broadening of the wash that proceed northwest.

The total number of evacuees, on the population census, is around 6,000 people, since of the initial 400 were tourists who were referred to Tenerife. He specified that at the moment there are 280 people housed in the Fuencaliente hotel and the rest are in other residences or accommodation of family and friends.

Morcuende indicated that the affected buildings amount to 937 according to data from yesterday's cadastre. Of these, 763 (81.4%) are for residential use, 89 for agricultural use, 45 for industrial use, 42 for leisure / hospitality and 7 for public use, among others. Data from the Copernicus satellite put the figure at 1,541, of which 1,458 are destroyed and 83 partially damaged, but without distinguishing the type of construction.

As for air quality, Morcuende said it is reasonably good. "Except for a small peak in the emission of sulfur dioxide registered yesterday, during the rest of the day the levels were very low, as were the suspended particles of less than 10 microns, which behaved within the threshold," he said. The Technical Director indicated that this situation will worsen as of tomorrow with the entry of a Saharan condition and the decrease in the thermal inversion layer, which will generate problems in the dispersion of

gases. However, he stressed, the parameters are still being monitored in case it is necessary to adopt new confinement measures.

The operation of the airport will not be compromised in the next four days, due to the entry of air from the east that will send the ash from the volcano to the west and the sea. In this sense, Blanco added that the areas most affected by the ash fall will be the western and southern slopes of La Palma.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows). In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The main flow of lava flows runs along the north flank, down the northern part of the previous flows, following trajectories towards the west and northwest, within the current exclusion zone. The distance from the front of this lava flow to the sea is kept at 200 m. Large blocks are still being seen being washed away by the lava flow further north. The emission centers of the crater are still active and the reactivation of one is confirmed on the SE flank of the main cone. The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out. The front of the lava delta remains practically inactive.

The estimate of the total volume emitted up to 10/10 distal tephra (scattering pyroclast) is 8-9 Mm³.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column measured today, as well as its dispersion, reaches 3000 m.

The weak wind continues and the most significant thing for the next few hours will be the turn of the wind from the north component to the east component, at levels between 1500-4000 m. According to the prevailing wind regime for the next few hours, the probable disposition of the ash plume and SO₂ will be to the west from the eruptive focus. Therefore, the areas most affected by the ash fall will be the west and south slopes of La Palma. The expected disposition of the plume is favorable for the operation of the Canarian airports. The current meteorological conditions are favorable from the point of view of air quality (a slight inversion of about 2 ° C located between 1300-1600 m). As of days 15-16, the entry of a dry continental air mass is expected. The above,

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km. In the last 24 h the amplitude of the tremor signal has increased. The maximum magnitude observed was 3.9 mbLg and the maximum intensity was EMS III-IV. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The deformations at the stations closest to the eruptive center do not show any significant pattern.

During yesterday (10/12), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register high values in line with the eruptive process, reaching values of 17,774 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations), has been estimated at 1234 tons per day as of 10/12. The diffuse CO₂ emission at the Los Llanos geochemical station

(LP10) reflects a higher magmatic-hydrothermal fraction than that observed at the Fuencaliente geochemical station (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, yesterday morning there was a low intensity peak of sulfur dioxide (SO₂) at the Los Llanos, El Paso and Tazacorte stations, far away in all cases from the hourly threshold (established at 350 µg / m³). It was a one-off episode that subsided in the following hours, maintaining very low values, less than 10 µg / m³, in all the stations throughout the day. During the early hours of yesterday and the morning of today a small rise in values is observed in the Los Llanos station, but of very low intensity and a peak in the Balsa la Zamora station in the north of Tenerife, far from the thresholds. . In the rest of the stations, the values remain low.

Regarding particles smaller than 10 microns (PM₁₀), we are measuring low PM₁₀ values in all the stations on the island, with no surpassing of the daily threshold occurring yesterday (50µg / m³).

October 14th

The main stream is almost paralyzed and that of the northwest, with a greater contribution of lava, forces new evacuations



The affected area exceeds 674 hectares, 34 more than yesterday

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, led by the Minister of Public Administrations, Justice and Security, Julio Pérez, analyzed the daily report of the Scientific Committee that serves base to take the necessary measures of civil protection in order to guarantee the safety of people. In this sense, it was reported that the original stream and the appendages that surround the Todoque mountain hardly contribute lava on the surface and have stopped their advance, while the one located to the northwest presents greater fluidity. With the information provided by the traceability and hazard maps of the wastes, the Plan Directorate ordered new preventive evacuations last night and this morning in La Laguna,

Taking into account these latest evacuations, which have affected, according to the census, about 400 people, the total number of evicted people is around 6,400. At the moment there are 287 people housed in the Fuencaliente hotel and the rest are in other residences or accommodation of family and friends.

Regarding the flows, the Technical Director of PEVOLCA, Miguel Ángel Morcuende recalled that there is an original wash with little contribution of lava that has three arms: two are to the south of the Todoque mountain, one converted into a lava delta (fajana) and another on El Charcón without reaching the sea, while the other arm is located above Todoque mountain and is stopped.

The one with the most activity at the moment is to the north of the primal stream, moving in a northwesterly direction, and has two appendages. One, which presents high intensity and a wide travel, has lost fluidity and gained viscosity, slowing down. The other appendix, located to the northwest, crossed the industrial park of the Callejón de La Gata diagonally and arrived last night at the soccer field.

Regarding seismicity, the spokesperson for the Scientific Committee and director of the IGN in the Canary Islands, María José Blanco pointed out that it continues to be located in the same area of the first days, at depths between 10 and 15 km, although earthquakes are also recorded at higher depths. 20 km. In the last 24 hours, the high values of the amplitude of the tremor signal have been maintained, with intensification pulses. The maximum magnitude observed was 4.5 mbLg, with a maximum intensity of IV EMS and at a depth of 37 km.

Regarding the data on terrain deformation, María José Blanco highlighted that a deformation of slightly more than 5 centimeters vertically has been observed that only affects a specific station, located between Jedey and Las Manchas, and since it is an area exclusion from the Steering Committee, a recommendation has been made not only to scientists, but also to security and emergency services, which are the only ones who pass through that area carrying out work to clean ash from roofs and roofs, so that they are especially attentive to any observable particularity and communicate it to PEVOLCA.

For the spokesperson of the scientific committee, the meteorological situation, with high winds, is being favorable for the operation of the airport and air quality, but the situation worsens in the coming days with an east component, associated with the intrusion of a mass of warm and dry continental air, which will produce a decrease in the superficial boundary layer that makes dispersion difficult.

Regarding air quality, Morcuende pointed out that in general it is reasonably good, considering that we are under a very active volcano. The PEVOLCA Technical Director insisted that in certain areas such as Los Llanos de Aridane, depending on the wind, we can have suspended particles that require the use of masks by the population and preferably of the FFP2 type in the case of people with respiratory problems. health, so the advice is reminded to attend to the recommendations that the civil protection authorities may give.

The area affected by the lava already exceeds 674 hectares, which is 34 more than yesterday and the maximum width of the wash remains the same as yesterday at 1,770 meters.

Regarding the buildings affected, Morcuende indicated that, according to the Copernicus satellite, there are a total of 1,634 buildings: 1,548 destroyed and 86 partially. Once filtered by the cadastre, the figure rises to 922 buildings affected. Of these, 809 are for residential use, 95 for agricultural use, 47 for industrial use, 22 for leisure / hospitality and 8 for public use, among others.

As for the area of crops, he said, the 179 hectares destroyed are already exceeded. Of these, 92.97 are banana trees, 50.17 hectares are vineyards and 12.21 are avocados, among other crops.

The highways have been affected so far in 43,185 meters of which 65% correspond to Los Llanos de Aridane, 20% correspond to the municipality of El Paso and 14.68% to Tazacorte.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General

Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows). In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The main flow of lava flows runs along the north flank, down the northern part of the previous flows, following trajectories towards the west and northwest, within the current exclusion zone. The distance from the front of this lava flow to the sea is maintained. Large blocks are still being seen being washed away by the lava flow further north. The emission centers of the crater are still active and the reactivation of one is confirmed on the SE flank of the main cone. The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out. The lava delta front remains practically inactive.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column measured today, as well as its dispersion, reaches 2,600 m.

The synoptic NE wind continues with a breeze regime in the area of interest; weak, in any case, which will favor the dispersion of ashes towards the SW and W. This provision is favorable for the operation of the Canarian airports. At higher levels, between 1000 and 5000 m, the weak W component is maintained. Thermal inversion of 5 ° C located between

1200-1800 m, favorable for limiting the vertical extension of the volcanic plume and for air quality. In the coming days, an E component will be imposed associated with the intrusion of a warm and dry continental air mass, which will cause a decrease in the surface boundary layer that will contribute to the deterioration of air quality.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km. In the last 24 h, the high values of the amplitude of the tremor signal were maintained, with intensification pulses. The maximum magnitude observed was 4.5 mbLg, with a maximum intensity of IV EMS and at a depth of 37 km. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The high seismicity recorded at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded.

The local deformation at the station closest to the eruptive center has increased by several centimeters, the rest of the stations show no significant deformation.

During yesterday (10/13), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register high values in line with the eruptive process, reaching values of 15,995 tons per day (underestimated value). The diffuse CO₂ emission at the Los Llanos geochemical station (LP10) reflects a higher hydrothermal magmatic fraction than that observed at the Fuencaliente geochemical station (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, yesterday we had low sulfur dioxide (SO₂) values in all the stations on the island. However, at the Izaña Atmospheric Research Center, very high SO₂ values were recorded during the early morning of the 12th, reaching hourly values above the saturation thresholds of the equipment (7,500 µg / m³). The episode subsided throughout yesterday morning. During the morning of today we are observing an episode with high SO₂ values in the stations of Tzacorte, Los Llanos and El Paso, which for the moment have not supposed an exceeding of the hourly threshold (established in 350 µg / m³).

Regarding particles smaller than 10 microns (PM10), yesterday at all stations low PM10 values were measured, except at the Los Llanos station, where an event with very high values occurred from 10:00 until 4:00 p.m. This event meant that yesterday the daily threshold for PM10 particles (established at $50 \mu\text{g} / \text{m}^3$) was exceeded. The event that occurred yesterday night at the Izaña Atmospheric Research Center was also accompanied by high PM10 values, reaching $300 \mu\text{g} / \text{m}^3$. During this morning we are measuring an increase in PM10 values at the Los Llanos station, with an hourly average value, at this time, around $100 \mu\text{g} / \text{m}^3$.

October 15th

The eruptive process now shows a predominance of the effusive phase, with more lava and fewer pyroclasts and ash



The meteorological conditions in the coming days will be unfavorable for air quality, due to the thermal inversion and entry of a Saharan air mass

PEVOLCA will continue with the informative actions and tomorrow will hold a meeting with residents of Tazacorte to resolve their doubts and concerns about the evolution of the eruption

The Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, led by the Minister of Public Administrations, Justice and Security, Julio Pérez, analyzed the daily report of the Scientific Committee in the It is stated that the fissure eruption continues to show a strombolian mechanism, with alternation of explosive phases and effusive phases, but now with a predominance of the effusive phase, which originates more lava and fewer pyroclasts and ash.

From the point of view of civil protection, the Technical Director of PEVOLCA, Rubén Fernández -who will relieve Miguel Ángel Morcuende for 48 hours-, reported that the monitoring of the streams that run further north indicates that both can converge and reach the sea . In addition, there is a stream that has separated from the one that is further north, which has taken a northwesterly direction and is currently at the height of the El Cumplido road. In this sense, the forecast, depending on the orography of the environment, is that it does not advance further towards the northwest, although it continues to be watched and monitored permanently in case of any change.

During the night, the stream located further north has advanced at different speeds due to the fluidity of the lava, reaching 250m / hour in some moments, although it has slowed down to about 20-30 m / hour according to the latest measurements carried out by the teams of the Military Emergency Unit (UME).

In this regard, the spokesperson for the Scientific Committee and director of the IGN in the Canary Islands, M^a José Blanco pointed out that large blocks are observed that are dragged by the north stream and pointed out that at the outlet of the emission center the flow is concentrated in a stepped lava channel This causes clogging and specific overflows that form ephemeral, short-haul runoffs perpendicular to the current lava canal.

The streams that flowed in the direction of the sea and that in previous days had stopped, at this time it is observed that it has a contribution of material and it is not ruled out that they may have a short-term evolution, he explained.

Fernández reported that the area affected by the lava already exceeds 696 hectares, which is 22 more than yesterday and the maximum width of the wash remains at 1,770 meters.

Regarding the data on ground deformation, the technical director of the Plan commented that there has been a slight reversal of the deformation observed yesterday. In this sense, Blanco revealed that the horizontal deformation registered in the station closest to the eruptive center has partially reversed, but that its behavior and observable phenomena in the area will continue to be studied until more information is available. The rest of the stations, he said, show no significant deformation.

Regarding seismicity, Blanco pointed out that earthquakes have increased in frequency and magnitude, but they occur at intermediate and deep depths and surface seismicity is almost non-existent. However, Blanco said that earthquakes will continue to occur and that they will be felt by the population.

The spokesperson for the Scientific Committee indicated that for the next few days a thermal inversion is observed, a predominance of weak winds towards the southwest and entry of a Saharan air mass that will accompany the ashes, conditions that will be unfavorable from the point of view of quality. from air.

Regarding the values of sulfur dioxide (SO₂) and particles smaller than 10 microns (PM₁₀), he pointed out that the indicators registered during yesterday have been low and have not exceeded the maximum thresholds, beyond specific peaks.

The disposal of the ash plume and SO₂ is towards the north from the eruptive focus but according to the forecast it could migrate to the east, which could affect the operation of La Palma Airport during the next 24-36 hours.

The total number of evicted people is around 6,400, of which 321 are currently housed in the Fuencaliente hotel and the rest are in other residences or accommodation of family and friends.

PEVOLCA will continue with the informative actions in the population and tomorrow at 7:00 p.m. a meeting will be held with neighbors in the Tazacorte pavilion, to resolve their doubts and concerns about the eruptive process, which will be attended by representatives of the Technical Directorate and members of the Scientific Committee.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The main flow of lava flows runs along the north flank, down the northern part of the previous flows, following trajectories towards the west and northwest, within the current exclusion zone. Currently one of the active fronts has reached the base of La Laguna Mountain, bordering it to the west. Large blocks are still being seen being washed away by the lava flow further north. At the outlet of the emission center, the flow is concentrated in a stepped lava channel. Its momentary clogging and the oscillations of the

lava flow, originate specific overflows that form ephemeral flows that spill laterally on the main cone. The emission centers of the crater are still active. The appearance of new emission centers around the main cone is not ruled out,

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column measured today, as well as its dispersion, reaches 4000 m.

During the next few days, a marked atmospheric stability will predominate in the lower layers of the troposphere. The presence of a pronounced thermal inversion (about 3-5 ° C located between 600-1000 m) and the predominance of weak wind, provide conditions for an unfavorable scenario from the point of view of air quality. What is described above is caused by the entry of a Saharan air mass that will be accompanied by haze and this will have a direct implication with the increase in PM10 due to desert dust. At altitude (between 1500 to 3000 m) the loose wind from the south will predominate, turning towards the southwest (this turn will be clearer around 1500 m). At this time, the disposition of the ash plume and SO₂ is towards the north from the eruptive focus. This plume is expected to migrate slightly to the east, and it is not ruled out that it could affect the operation of La Palma airport during the next few hours (24-36 h). Due to the fact that the wind is not very intense, the areas most affected by the ash fall will be the areas surrounding the volcano, which may affect the eastern slope mainly from tomorrow.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km, which in recent hours have increased in frequency and magnitude. The high values of the amplitude of the tremor signal are maintained, with intensification pulses. The maximum magnitude observed was 4.5 mbLg, with a maximum intensity of IIIIV EMS and at a depth of 36 km. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The high seismicity recorded at intermediate and

deep depths is part of the same current eruptive process. No significant surface seismicity is recorded.

The local deformation at the station closest to the eruptive center has partially reversed the horizontal deformation accumulated yesterday. The rest of the stations do not show significant deformation.

During yesterday (10/14), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations) continues to register high values in line with the eruptive process, reaching values of 14,542 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions), has been estimated at 1,184 tons per day as of 10/14. The diffuse CO₂ emission at the Los Llanos geochemical station (LP10) reflects a higher magmatic-hydrothermal fraction than that observed at the Fuencaliente geochemical station (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, yesterday there was an event with a high concentration of sulfur dioxide (SO₂) in the stations of Tazacorte, Los Llanos and El Paso between 06:00 and 11:00 whose maximum was close to the hourly threshold (established at 350 µg / m³) but not exceeding it. The daily average of SO₂ at the Los Llanos station was close to reaching the daily threshold (established at 125 µg / m³), but it did not exceed it. During the night of yesterday and the morning of today an event of high concentration of SO₂ is being registered in these three stations but of less intensity than yesterday.

Regarding particles smaller than 10 microns (PM₁₀), yesterday in all stations low PM₁₀ values were measured, so there have been no exceedances of the daily PM₁₀ threshold (established at 50 µg / m³). During the morning of today an event of high concentration of PM₁₀ particles has been registered in Los Llanos around 10:00, reaching 242 µg / m³, it is currently in remission. The first preliminary results of the metals campaigns, carried out from September 29 to October 3 (arsenic, nickel, cadmium, mercury and lead) on PM₁₀ particles have been received at the Los Llanos station. The values obtained are below the annual objective values established in the regulations for those regulated pollutants.

The Government acquires gas measurement equipment for police and intervention personnel deployed in La Palma

The devices are connected to the Advanced Command Post, from where the readings of the devices and their position are controlled.

The kits also allow users to use them as radio stations

The Ministry of Public Administrations, Justice and Security of the Government of the Canary Islands, through the General Directorate of Security and Emergencies, has acquired 24 portable gas detection equipment for the police and intervention troops deployed in the volcanic emergency on La Palma.

These equipment have been purchased from the Sensotran company, which held training at the Forward Command Post (PMA) on October 7. At this meeting they explained to users that the devices are configured with sensors for carbon monoxide, sulfur dioxide, chlorine, carbon dioxide, oxygen, flammable gases and hydrogen sulfide.

In addition, they also include an accelerometer to detect user falls, GPS for their positioning and a transmission system via SIM card. The devices also have PTT (*Push to Talk*) functionality that will allow users to communicate with each other as if they were radio stations.

All the data collected by the sensors, as well as the position of the devices, are sent to the PMA through a screen that controls all the readings of the devices and their position. Thus, if there is an alarm, it will be notified and the operator must follow the established protocol, being able to contact the wearer of the device by voice and even send automatic emails and sms from the computer that monitors the devices deployed to predetermined contacts depending on the severity of the alarm.

Likewise, all data can be analyzed during the duration of the event and even later for in-depth analysis for the preparation of reports and conclusions. The self-monitoring function as well as the ability to transmit voice and PTT calls are provided free of charge by the Sensotran company for the duration of the volcanic emergency in the form of a donation.

October 16th

The contribution of lava makes the streams grow in height, although their forehead hardly advances



The emission point reactivated yesterday 300 meters from the base of the main cone only emits ash and today its activity is lower

The current meteorological conditions are unfavorable for air quality, with anticipation that this circumstance will extend for the next 24/36 hours

The Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, led by the Minister of Public Administrations, Justice and Security, Julio Pérez, analyzed the daily report of the Scientific Committee in the that the strombolian mechanism of the eruption is verified, observing an increase in the effusive phases compared to the explosive ones, which is causing a greater contribution of lava and less expulsion of pyroclasts and ashes.

According to the experts, the existence of lava tubes, and the fact that the flows have increased in height and are slightly widened, makes the front of these hardly advance.

The PEVOLCA Technical Director during the sessions yesterday and today, Rubén Fernández, indicated that if there are no new deviations from the path of the lava, nor do gas concentrations increase, no new evacuations are planned for the moment.

For her part, the spokeswoman for the Scientific Committee and director of the IGN in the Canary Islands, María José Blanco, clarified that yesterday afternoon an old emission point located about 300 meters southeast of the base of the main cone was reactivated, manifesting a phreatomagmatic activity although only with ash emission and not lava. Scientists who have seen this center confirm that it is simply emitting ash and has decreased its activity.

In this regard, the Technical Director reported that a continuous monitoring of this point of emission is being carried out and that for the moment it has not affected the actions related to the irrigation or removal of belongings by the evacuated population in the entire southern area of the primal laundry.

He also explained that the flows that are located south of the La Laguna mountain are still being monitored. Specifically, he said that the one closest to the mountain has continued to evolve towards the west and is currently located at a distance of about 300 or 400 meters from the sea, with a forward speed that is slower than yesterday.

Regarding the stream located further north and from which an appendix emerged, Fernández indicated that it has continued to advance at a slow pace and stressed that the PEVOLCA is conducting a very intense monitoring in this area, already evacuated, as it is the more active in terms of casting advance.

Regarding seismicity, Blanco explained that it is maintained at a depth located around 36 - 37 kilometers and there is no data that suggests that this trend will change and stressed that there is a clear probability that more earthquakes will occur in the coming days. felt by the population due to its intensity. "A ceiling of 4.6 magnitude and an intensity of V has already been reached and this can be overcome in the next few days," he insisted.

The spokesperson for the Scientific Committee pointed out that the current meteorological conditions are unfavorable from the point of view of air quality, due to the presence of a marked thermal inversion, the increase in the suspension of particles smaller than 10 microns (PM10) due to the presence of desert dust as a consequence of the entry of an air mass of Saharan origin. Forecasts point to this situation extending over the next 24 - 36 hours.

For this reason, Rubén Fernández pointed out that the values provided by the air quality measurement stations are being permanently monitored and added that in the event of a possible worsening of these values, the PEVOLCA could adopt specific measures to confine the population in the environment. risk, as has been done on other occasions. Meanwhile, the technical director insisted that the population should continue to use self-protection measures, paying special attention to vulnerable population groups, who should stay abroad for as little time as possible.

Regarding air connections, Blanco added that the current and planned disposition of the plume has caused the fall of ashes at the La Palma airport, affecting its operation in the immediate days. In addition, it is likely that the ash cloud could damage the airspace between La Palma, La Gomera and the north of Tenerife.

Regarding the area affected by the eruptive process, Rubén Fernández reported that today it amounts to 724.41 hectares, 27.85 more than the previous day. The maximum width is 2,350 meters between the lower flows. He also explained that in terms of damage to infrastructure, according to the Copernicus satellite, 1826 buildings are destroyed and 97 are partially damaged or in danger, for a total of 1,923 buildings affected. For its part, according to the data provided by the cadastre, there are 1,058 buildings affected, of which 854 are for residential use.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic

Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The main flow of lava flows runs along the north flank, down the northern part of the previous flows, following trajectories towards the west and northwest, within the current exclusion zone. Currently one of the active fronts has reached the base of La Laguna Mountain, bordering it to the west. At the outlet of the emission center, the flow is concentrated in a stepped lava channel. Its momentary clogging and the oscillations of the lava flow, originate specific overflows that form ephemeral flows that spill laterally on the main cone. The emission centers of the crater are still active. Yesterday afternoon, an old emission point was reactivated some 300 m SE from the base of the main cone, showing a phreatomagmatic activity with ash emission. The beginning of this event was simultaneous to a greater phreatomagmatic activity of the emission centers of the main cone crater that habitually show strombolian activity. Currently, the new center has decreased its activity. The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column measured today, as well as its dispersion, reaches 4500 m.

The wind from the south and west components is expected to continue in height (between 1500 to 3000 m). The configuration of the ash plume and SO₂ is expected to continue towards the north and northeast during the next hours (24 - 36 h). The current and planned layout of the plume cause ash to fall at La Palma airport, affecting its operation. Furthermore, it is probable that the ash cloud could affect a stratum (around flight level 100) of the airspace between La Palma, La Gomera and the north of Tenerife. The meteorological conditions are unfavorable from the point of view of air quality due to the presence of a pronounced thermal inversion (of about 4-5 ° C situated between 300-500 m). Particulate matter up to 10 microns (PM₁₀) will be increased due to the presence of desert dust,

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km, which in recent hours have increased in frequency and magnitude. The high values of the amplitude of the tremor signal are maintained, with intensification pulses. The maximum magnitude observed was 4.6 mbLg for an event at a depth of 37 km, and the maximum intensity of V EMS also for a deep event. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The high seismicity recorded at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded.

The local deformation in the station closest to the eruptive center, produced in recent days, has reversed. The rest of the stations do not show significant deformation.

During yesterday (10/15), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values and in line with the eruptive process, reaching values of 2882 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), has been estimated at 1,224 tons per day as of 10/15. The diffuse CO₂ emission at the Los Llanos geochemical station (LP10) reflects a higher magmatic-hydrothermal fraction than that observed at the Fuencaliente geochemical station (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, during the early morning and early hours of yesterday morning high values of sulfur dioxide (SO₂) were measured, which in no case did not exceed the hourly threshold (established at 350 µg / m³), at the Los Llanos, El Paso, Tzacorte and Puntagorda stations. These values were reduced throughout the day to low values, rising again at the Puntagorda and Fuencaliente stations during the night until reaching values close to the hourly threshold, although without exceeding it.

Regarding particles smaller than 10 microns (PM₁₀), yesterday morning an event of high concentration of PM₁₀ particles was registered in Los Llanos at around 10:00, reaching 242 µg / m³, which later was remitting, but finally it supposed the surpassing of the daily threshold (established in 50 µg / m³). In the set of stations, PM₁₀ concentrations have been increasing yesterday, coinciding with the entry of a Saharan air mass.

OBLIGATIONS AND RECOMMENDATIONS

MARINE PENACHO:

- It is suggested to pay close attention to the wind forecast to monitor possible changes in the direction of the plume and act accordingly, especially those with weakened respiratory systems (for example, asthmatics) as they are more vulnerable to lower concentrations.
- It is also recommended to wash the eyes after any exposure, since symptoms are often not noticed until later.
- These marine plumes can be perceived up to several kilometers from the source, although more diluted. In the event that the marine plume reaches population centers, it is recommended to stay indoors whenever possible and close all doors and windows.
- For the safety of the navigation of scientific vessels that carry out scientific work in this area, it is recommended to maintain a distance of at least 500 m for the active areas of the lava deltas (with contribution of lava and visible manifestations), reducing said distance 200 m for the most stable areas. Navigation for scientific purposes for emergency management can be carried out at shorter distances, under the responsibility of the owner and the captain or skipper of the boat, as long as it has the approval of the Technical Directorate of PEVOLCA and Captaincy Maritime.

October 17th

The wash to the southwest of La Laguna Mountain presents the highest activity and advances towards the sea



If it reached the sea, the confinement of the population of some coastal neighborhoods of Tazacorte would be agreed

The phenomena observed yesterday in the surroundings of Cumbre Vieja are due to ash movements due to seismicity and do not indicate the opening of new emission centers.

The deformation shows a pattern of stability around the eruptive center

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, led by the Minister of Public Administrations, Justice and Security, Julio Pérez, analyzed the daily report of the Scientific Committee and the last thermal images made on the wastes and made the decisions in the field of Civil Protection to safeguard the population. In this sense, it could be observed that the original stream continues to be fed, but in a very weak way, and that the two streams with the highest energy load and lava contribution are the one in the vicinity of La Laguna and that, at this time, they continue to advance in a west and northwest direction, although during the morning they have slowed down.

The Technical Director of PEVOLCA, Miguel Ángel Morcuende, indicated that the stream that surrounds the Mountain of La Laguna to the southwest was at noon about 200 meters from the coast and that its progress is monitored to take, if necessary, the measures preventive measures for the population. In this sense, he stated that, as is known, the contact of lava with the sea can cause explosions and the emanation of gases that are harmful to the nearby population, which is why, in this case, the confinement of some coastal nuclei of Tazacorte would be decreed, as was done with the previous wash that reached the sea.

For her part, the spokesperson for the Scientific Committee and director of the IGN in the Canary Islands, María José Blanco, explained that the main flow of lava flows runs along the north flank, descending through the northern part of the previous flows, within the area current exclusion. He added that, at the outlet of the emission center, the flow is concentrated in a stepped lava channel, with momentary plugging and oscillations of its lava flow, which originates occasional overflows giving rise to ephemeral flows that spill laterally in the place where occur.

Blanco also said that the surveillance of the emitting center located to the southeast of the cone continues, which was reactivated two days ago, which presents an intermittent activity, but less, with emission of gases and pyroclasts but without the contribution of lava. Regarding other phenomena observable yesterday, Blanco added that they were due to the "remobilization" of specific ash along Cumbre Vieja (Barranco de Tamanca, Llano de Las Moscas, Volcán Martín). In this regard, María José Blanco pointed out that with the level of seismicity that exists at the moment and the ash deposits that exceed 10 centimeters in height, together with the thermal currents, it is not ruled out that new landslides and ash movements may occur such as those registered yesterday in Mazo.

Regarding seismicity, it is still maintained in the same area of the swarm that gave rise to the eruption, but slightly to the south and east of the area of the eruption, and the appearance of new emission centers is not ruled out, but within this zone. In any case, Morcuende stressed that the earthquakes that are being registered are of medium depth, between 10 and 15 kilometers and high, above 20 kilometers.

Regarding the deformation, Morcuende indicated that at the moment it is stable and there has even been a decrease in it. In fact, Blanco added that it presents a pattern of stability in the surroundings of the eruptive center.

The Technical Director pointed out that the meteorological conditions continue to be unfavorable from the point of view of air quality, but for the moment in the non-evacuated areas the maximum values of SO₂ have not been exceeded, which would force the adoption of protective measures for the population. However, the thermal inversion and the values of particles lower than PM₁₀ have had some point peaks as a consequence of the sum of the Saharan dust in suspension.

With regard to the operation of the airport, the forecast indicates that, thanks to the expected turn of the wind to the east component during the next morning, a more favorable scenario for the operation of the island's airport would be reached.

On the surface affected by the eruptive process, this amounts to 742.95 hectares and the maximum width of the flows is approximately 2,350 meters.

Regarding the buildings destroyed or damaged by the volcanic eruption, according to the data provided by the Cadastre there are 1,086, of which 878 are for residential use, 108 for agriculture, 54 for industrial use, 25 for leisure and hospitality, nine for public use and 12 from other uses. For its part, the data extracted from the Copernicus satellite, which only analyzes buildings without specifying the type that it is, places 1,835 buildings destroyed and 100 partially damaged or in danger, making a total of 1,935 buildings affected.

Regarding the sheltered, at the moment there are 324 people staying at the Fuencaliente hotel and 17 at the Los Llanos de Aridane hotel, all of them cared for by the Red Cross in coordination with municipal social services.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary

Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The main flow of lava flows runs along the north flank, down the northern part of the previous flows, following trajectories towards the west and northwest, within the current exclusion zone. Currently one of the active fronts has reached the base of La Laguna Mountain, bordering it to the west. At the outlet of the emission center, the flow is concentrated in a stepped lava channel. Its momentary clogging and the oscillations of the lava flow, originate specific overflows that form ephemeral flows that spill laterally on the main cone. The emission centers of the crater are still active. The center that was reactivated 2 days ago continues with less intermittent activity. The distance from the north stream (bordering La Laguna Mountain to the southwest) to the sea is 200 m.

The streams that have the greatest activity are those that surround the Montaña de La Laguna and the one that has crossed the football field. Overflows to higher levels are not ruled out.

Yesterday there were several observable events of specific ash remobilization along Cumbre Vieja (Barranco de Tamanca, Llano de Las Moscas, Martín Volcano). These events do not indicate the opening of new broadcast centers.

The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column measured today, as well as its dispersion, reaches 4,200 m.

During today, the meteorological conditions exposed yesterday will continue. Accused thermal inversion (about 4-5 ° C located around 300 m) and weak winds with a predominance of the breeze regime. In addition, the entry of Saharan dust is causing an increase in particulate matter of up to 10 microns (PM10), which will gradually subside from the 19th. Unfavorable weather conditions will continue from the air quality point of view and it is expected that the investment will go up in height and recover normal values for the time of year from days 21-22. Currently, the south and west component winds in height (between 1500 - 3000 meters) are disposing the ash cloud and SO₂ towards the north and northeast of the eruptive focus. This position is affecting the operation of La Palma airport and a stratum (around flight levels 070-100) of the airspace between La Palma, north of La Gomera and northwest of Tenerife. The wind is expected to turn to the east component during the next morning and this would mean a more favorable scenario for the operation of the La Palma airport.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km, which in the last hours continue to have a high magnitude. The high values of the amplitude of the tremor signal are maintained, with intensification pulses. The maximum magnitude observed was 4.3 mbLg of an event 35 km deep, and with intensity of IV EMS. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The high seismicity recorded at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded.

The deformation shows a pattern of stability around the eruptive center.

During yesterday (10/16), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to

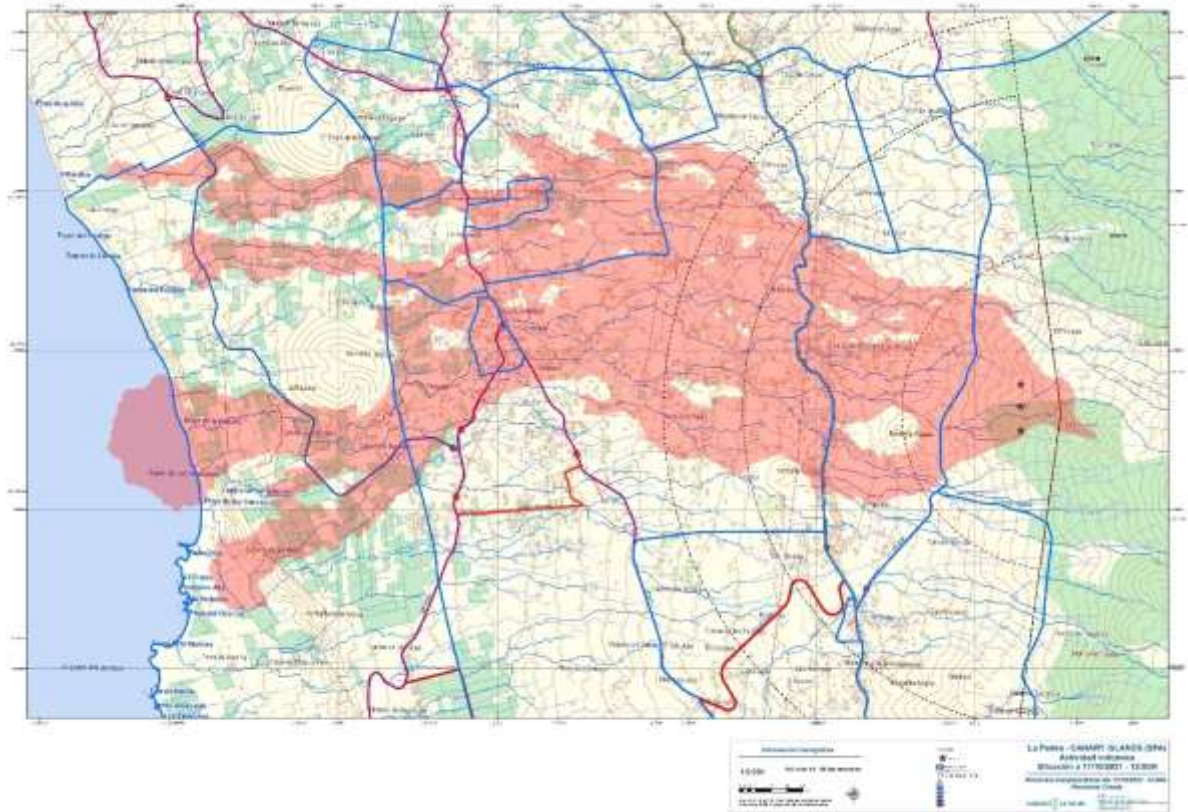
register high values in line with the eruptive process, reaching values of 8278 tons per day (underestimated value). The combination of measurements carried out (10/14) with remote optical sensors such as miniDOAS and OP-FTIR allows to know the emission of other volatiles into the atmosphere by this eruptive process, reaching 43,000 tons per day for carbon dioxide (CO₂), 2,360 tons per day for hydrochloric acid (HCl) and 490 tons per day for carbon monoxide (CO). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), it has been estimated at 992 tons per day as of 10/16. The diffuse CO₂ emission at the Los Llanos geochemical station (LP10) reflects a higher magmatic-hydrothermal fraction than that observed at the Fuencaliente geochemical station (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, during the early hours and early hours of yesterday morning, high values of sulfur dioxide (SO₂) were measured, close at certain times to the hourly threshold (established at 350 µg / m³), in the stations of Puntagorda and Fuencaliente, but the threshold was not exceeded at any time. SO₂ values decreased throughout the day, remaining low throughout the rest of the day and into the morning today. In the rest of the stations the values have been low since yesterday.

In relation to particles smaller than 10 microns (PM₁₀), the values measured in the set of stations increased yesterday, coinciding with the entry of a Saharan air mass, which has led to the threshold being exceeded. daily (set at 50 µg / m³) at the Los Llanos, El Pilar (Santa Cruz de La Palma) and La Grama (Breña Alta) stations. Yesterday the daily PM₁₀ threshold was exceeded in other stations of the air quality measurement network located on other islands and with similar values, so the exceedances that occurred on the island of La Palma seem to be associated with said intrusion of Saharan air.

October 18th

The situation of the north colada shows stability and moves slowly towards the sea



The speed and distance at which it is found does not suggest that it will reach the coast today, although PEVOLCA continues to monitor for the taking of confinement measures in Tazacorte

Weather conditions are unfavorable to air quality and the population of El Paso has been encouraged to stay indoors whenever possible.

The emission centers remain the same and the one located to the southeast of the main cone remains intermittent, but without lava input.

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, headed by the Minister of Public Administrations, Justice and Security, Julio Pérez, today analyzed the situation of the different lines of work carried out by all institutions to

respond to social and infrastructure needs, as a result of the damage caused by the eruption on the island. In this sense, the resumption of classes in Los Llanos de Aridane was reviewed , El Paso and Tazacorte, the progress in the start-up of water treatment plants to guarantee cultivation water, as well as the state of the electricity supply and telephony on the island.

Regarding the classes, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that today there have been no incidents in the return to the classrooms of the students in the three municipalities, which have followed the Action Plan in the school environment before the emissions of the volcanic activity created for this situation. However, for tomorrow, given the possibility that the lava reaches the coast of Tazacorte, the Ministry of Education, Universities, Culture and Sports has suspended the face-to-face activity and the classes will be taught online at CEO Juan XXIII, in the hull area, and in the CEIP El Puerto, in the port area.

Regarding the damage to the power lines, Morcuende reported the fall of the medium voltage line in La Condesa (Tazacorte), which has been solved with the installation of a generator set and thus ensure the supply of electricity for a hundred people who live in this neighborhood.

Regarding the adoption of Civil Protection measures, PEVOLCA does not propose, at this time, new evacuations or confinements, although the progress of the flows is monitored, which according to Miguel Ángel Morcuende are characterized at this time by their stability and slow, no new spills. The stream that could reach the sea is the one located to the southwest of La Laguna Mountain and at the moment it is located about 160 meters from the coast, although it has slowed down its progress compared to the previous day and its speed at noon today is It was about 2 meters per hour, so if it continued in this state, it would not reach the coast today. Anyway, Morcuende recalled that the confinement of San Borondón, La Condesa, Marina Alta, would be ordered.

With respect to the northwest arm, which was on the La Laguna football field, it has barely registered progress in the last hours. In the rest of the castings there is no novelty in the advance, although they increase in height and width.

Air quality

During the day today, and at least until this Tuesday, PEVOLCA has recommended to the population of El Paso that between 2:00 p.m. and 9:00

p.m. they stay indoors as long as possible and, if they have to go out, that they wear a FFP2 mask. The affected areas are those located within a perimeter delimited between Benehauno towards Camino de Taburiente, Crossing the Fuente road, Camino de Gámez, Crossing the San Nicolás road, Camino Tacande, Camino de La Juliana and Piedras Blancas, Camino de Las Moraditas, Caldera de Taburiente Interpretation Center, Virgen del Pino and Valencia streets, San Martín de Porres hermitage, Barranco del Rincón, La Montañita, North of the cemetery by Barranco de Tenisca and Sombrero de Pico street.



perimeter El Paso

Morcuende explained that this measure has been taken because the meteorological conditions are unfavorable from the point of view of air quality, due to the high concentration of suspended particles PM₁₀. This situation is due to the addition of the particles from the volcano with the particles due to Saharan affection (haze). In addition, the thermal inversion layer causes the wind currents from the sea to drag the gases inland, which is why PEVOLCA has made this recommendation to the public.

According to the spokesperson of the Scientific Committee and director of the IGN in the Canary Islands, María José Blanco, it is expected that the haze episode will subside tomorrow, but the thermal inversion will continue at low altitudes until the next day 22, when it will recover values typical for the time of year. For Blanco, these circumstances, together with the poor ventilation that exists in low-lying areas of western La Palma, are unfavorable conditions from the air quality point of view.

Regarding sulfur dioxide, SO₂, the hourly records for the last 24 hours have remained far from the maximum recommended threshold in all the island's stations. With regard to particles smaller than 10 microns (PM₁₀), Blanco indicated that the exceedances of the daily PM₁₀ threshold are being generalized in other stations of the air quality measurement network

located in the rest of the Archipelago as it is associated with the Saharan air intrusion.

In this sense, he explained that the values measured in the set of stations continued at high levels, according to the trend already detected since last Saturday, and as a consequence of the entry of a Saharan air mass. Thus, yesterday there were exceedances of the daily threshold in all the stations on the island of La Palma except that of San Antonio (Breña Baja). Particularly for the Los Llanos de Aridane station, the daily mean of PM10 has doubled the daily threshold, with records significantly higher than those of the rest of the island's stations, predictably due to the influence of the volcano.

Regarding the areas most affected by the ash fall, Blanco highlighted that it would be the western half of La Palma, mainly to the north and southwest from the eruptive focus. In this sense, Blanco pointed out that, while the haze episode lasts, it is necessary to avoid sweeping the ash because this practice increases the level of suspended particles.

Regarding seismicity, the swarm continues in the usual areas, being located slightly more to the south and east than in the areas where the eruption is. Most of them are at medium or high depths, being the maximum of yesterday, with 4.6, at a depth of 36 kilometers. Regarding the deformation, Blanco pointed out that it shows a pattern of stability in the surroundings of the eruptive center.

Regarding the emission centers, the spokesperson for the Scientific Committee stated that they are still the same and that the one located in the southeast of the main cone continues with intermittent activity, expelling gases and ashes, but without the contribution of lava.

Regarding the operation of the island's airport, the expected disposition is favorable for its operation although, due to the expected fluctuations in the wind, it is not ruled out that it could be affected during the central hours of tomorrow.

Regarding the area affected by the eruptive process, Morcuende said that it amounts to 763.32 hectares, 20 more than yesterday, and the maximum width between the two flows is approximately 2,900 meters, although there are areas that have not been damaged by lava.

With regard to destroyed or damaged buildings, according to the data obtained from the Copernicus satellite, which only analyzes buildings without specifying the type it is, they place in 1,956 buildings destroyed and 60 partially damaged or in danger, which makes a total of 2,016 buildings affected.

Regarding crops, the updated data exceeds the 228.09 hectares affected, 128.07 of bananas, 52.02 of vines and 19.90 of avocados.

Regarding the sheltered, at the moment there are 344 people, 327 people staying at the Fuencaliente hotel and 17 at the Los Llanos de Aridane hotel, all of them served by the Red Cross in coordination with municipal social services.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The main flow of lava flows runs along the north flank, down the northern part of the previous flows, following trajectories towards the west and northwest, within the current exclusion zone. At the outlet of the emission

center, the flow is concentrated in a stepped lava channel. Its momentary clogging and the oscillations of the lava flow, originate specific overflows that form ephemeral flows that spill laterally on the main cone. The emission centers of the crater are still active. The center, which was reactivated on 10/16, continues with its intermittent ash emission activity. The distance from the north stream (bordering La Laguna Mountain to the southwest) to the sea is 160 m. With current data, it is not expected to reach the sea today.

The streams that have the greatest activity are those that surround the Montaña de La Laguna and the one that has crossed the football field. Overflows to higher levels are not ruled out.

The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column measured today, as well as its dispersion, reaches 4000 m.

Today, the effect of the Saharan air mass continues, contributing particulate matter up to 10 microns (PM10) due to desert dust. It is expected that the haze episode will subside tomorrow. The thermal inversion will continue at low altitudes (below 500-1000 m) until the next day 22, which will recover typical values for the time of year. The above, together with the scarce ventilation that exists in low areas of the west of La Palma, are unfavorable conditions from the point of view of air quality. At altitude (between 1500-3000 m) the wind from east to south will predominate with slight fluctuations throughout the forecast period. The most likely position of the ash plume and SO₂ is a north and west-southwest arrangement. The expected disposition is favorable for the operation of the La Palma airport. However, due to the expected fluctuations in the wind, it is not ruled out that it may be affected during the central hours of tomorrow. The areas most affected by the ash fall would be the western half of La Palma,

mainly to the north and southwest from the eruptive focus. It is unlikely that fine ash will reach El Hierro during the early morning.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km, which in the last hours continue to have a high magnitude. The high values of the amplitude of the tremor signal are maintained, with intensification pulses. The maximum magnitude observed was 4.6 mbLg of an event at a depth of 36 km, and with intensity of IV EMS. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The high seismicity recorded at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded.

The deformation shows a pattern of stability around the eruptive center.

During yesterday (10/17), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values and in line with the eruptive process, reaching values of 3,929 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), reflects a downward trend from 10/12 to 10/17 and it has been estimated at 842 tons per day as of 10/17. The diffuse CO₂ emission at the Los Llanos geochemical station (LP10) reflects a higher magmatic-hydrothermal fraction than that observed at the Fuencaliente geochemical station (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, regarding sulfur dioxide (SO₂), yesterday the trend towards the reduction of the levels of this pollutant that had been registered last Saturday was consolidated, in such a way that the records scheduled for the last 24 hours have remained far from the hourly threshold (established at 350 µg / m³) in all the island's stations.

With regard to particles smaller than 10 microns (PM₁₀), the values measured in the set of stations continued at high levels, according to the trend already detected since last Saturday, and as a consequence of the entry of a Saharan air mass. Thus, yesterday there were exceedances of the

daily threshold (established at $50 \mu\text{g} / \text{m}^3$) in all stations on the island of La Palma except San Antonio (Breña Baja). Particularly for the Los Llanos station, the daily mean of PM₁₀ has doubled the daily threshold, with records significantly higher than those of the rest of the island's stations, predictably due to the influence of the volcano.

The exceedances of the daily PM₁₀ threshold are being generalized in other stations of the air quality measurement network located in the rest of the islands, associated with the aforementioned Saharan air intrusion.

October 19th

The PEVOLCA Steering Committee reviews the security plans with the intervention of the director of the Civil Guard



The director of the Civil Guard highlighted the coordination work of about 400 troops who intervene in the Plan's Security group

The advance of the wash that approaches the sea from the south of the La Laguna Mountain is monitored to take, where appropriate, confinement measures in Tazacorte

The recommendation to stay indoors is maintained for the population of El Paso due to the air quality

The Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands,

led by the Minister of Public Administrations, Justice and Security, Julio Pérez, analyzed today, when one month has passed since that the volcanic eruption began in Cumbre Vieja, all the actions carried out by the institutions to prioritize the safety of the people and respond to the basic services of the population of La Palma.

Today's meeting was attended by the general director of the Civil Guard, María Gámez, who highlighted the coordination between all the institutions, with special recognition to the town councils, and thanked the inestimable contribution of the Scientific Committee and all the participants and volunteers who have allowed no personal injury to be regretted. Gámez congratulated the population of La Palma for their exemplary behavior and highlighted the absence of incidents during this month.

The counselor Julio Pérez appointed the Civil Guard as the person in charge of coordinating the Plan's Security group. The chief general of the Canary Islands area, Juan Miguel Arribas, today presented a summary of the actions carried out to date, detailing on a map the land and maritime control points and systems where about 370 troops are involved, 280 of them from the own Civil Guard. The rest correspond to members of the National Police Corps, who have displaced 50 agents from Tenerife who have joined those based in La Palma, as well as local police officers and agents of the General Corps of the Canary Police.

Regarding Civil Protection measures, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, recalled the importance of maintaining the self-protection recommendations for the population of El Paso today, due to unfavorable weather conditions for air quality. He also stressed that the thermal inversion at low altitude and the permanence of the Saharan air mass makes it difficult for the correct dispersion of gases and the circulation of suspended particles. In this sense, especially between 2:00 p.m. and 9:00 p.m. it is advisable to stay indoors as long as possible and, if you have to go outside, wear a FFP2 mask.



El Paso perimeter for news portal

Regarding the evolution of the streams, Morcuende explained that the stream closest to the sea and that runs south of the Montaña de La Laguna, has been receiving greater energy input since this morning, advancing at about 3-5 meters per hour and It was at noon about 100-110 meters from the coast. In this sense, as indicated yesterday from PEVOLCA, as soon as it reaches this area, the nuclei of San Borondón, La Condesa, Marina Alta, Marina Baja and the nucleus of Tazacorte will be confined, in anticipation of the emission of gases that produces the contact of the lava with the sea.

In addition, Morcuende explained the progress of the upper train of the streams, where he highlighted that the one that broke away from the industrial park and circulates towards the center of La Laguna, is being monitored at all times since in the next few hours it could take advantage of two troughs of the land and join the stream that runs towards the sea and, in this way, deviate from the center of La Laguna. On the other hand, the overflows that are above the more north-western stream, number 8, are also worrying, since they are gaining more strength and, although the trend is that they join it, depending on the direction they take, they will cause more or less damage. For the moment, these two advances have not forced the ordering of new population evictions and are constantly monitored.

The Technical Director also pointed out that one of the arms of the original wash, which runs above the Todoque mountain, is receiving little lava supply.

Regarding seismicity, Morcuende clarified that the seismic swarm is still located in the same areas, slightly more to the south and east than the place of the eruption, and that the stations do not show significant changes in the deformations.

For her part, the spokesperson for the Scientific Committee and director of the IGN in the Canary Islands, María José Blanco, explained that the seismicity recorded at intermediate and deep depths is part of the same current eruptive process and that the deformation shows a pattern of stability in the environment. from the eruptive center and a slight regional deflation of deep origin detected in the stations furthest from the eruptive center.

Blanco pointed out that the current situation in the cone, with loss of power in the column, may be ephemeral and recalled that on September 27 there

was even a total stoppage of the tremor signal and of the surface signs, but that it was later reactivated with greater force.

Regarding the decrease in sulfur dioxide emissions, Blanco stressed that this parameter still has to reach much lower values to consider that we are facing the beginning of the end of the eruptive activity.

About 780 hectares affected

Regarding the area affected by the eruptive process, Morcuende said that it amounts to 779.89 hectares, 16.57 more than yesterday, and the maximum width between the extreme points of the flows remains at 2,900 meters, approximately, although within this extension there are areas that have not been damaged.

The director of PEVOLCA reported that the damaged crop area currently reaches 234.26 hectares, 6.17 more than the last day. Of these, 133.42 hectares correspond to banana plantations, 52, 27 to vineyards and 17.07 to avocado trees.

The total number of sheltered people amounts to 353, of which 336 are in the Fuencaliente hotel and 17 in another hotel center in Los Llanos de Aridane, all of them served by the Red Cross in coordination with municipal social services. Of those staying in Fuencaliente, 20 will be transferred to Los Llanos de Aridane in the next few hours.

As for road infrastructure, there are 50.18 kilometers of roads affected. Of these, 7.16 kilometers are island roads and 43 are streets, crossings and other municipal roads.

The Steering Committee meeting also discussed the current status of basic services and gave an account of the evolution of the work carried out to connect the desalination plants with the existing risk network and thus be able to irrigate the crops in the affected area. Regarding electricity, the entire service was reviewed and it was verified that the entire population that is outside the exclusion zone maintains the supply. The telephone repeaters have also been reinforced to ensure the communications of the neighbors and the intervening parties themselves.

On the other hand, the PEVOLCA Steering Committee approved the authorization granted for the rescue by drones of the hounds that are isolated in the exclusion zone, after receiving the formal request from the company to carry out this operation by air.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

Preliminary chemical analyzes and visual inspection of the different lava flows and pyroclasts emitted so far continue to confirm the temporal evolution of magma from more differentiated to more primitive terms along the baseite-tephrite magmatic series. Prior to the temporary interruption for a few hours after the eruption of 09/27, more differentiated lavas were emitted with abundant amphibole and little olivine, while later, the lavas emitted have been more primitive (less differentiated), with abundant olivine. This evolution is common in historical eruptions on La Palma.

The main flow of lava flows runs along the north flank, down the northern part of the previous flows, following trajectories towards the west and northwest, within the current exclusion zone. At the outlet of the emission center, the flow is concentrated in a stepped lava channel. Its momentary clogging and the oscillations of the lava flow, originate specific overflows that form ephemeral flows that spill laterally on the main cone. The emission centers of the crater are still active. The center, which was reactivated on 10/16, continues with its intermittent ash emission activity. The stream that ran north of Montaña Todoque is apparently stopped. On the other hand, the one that runs through the south of Montaña de La Laguna is advancing, and at the beginning of the morning he was 130 m from the coastline. The wash towards La Laguna continues active.

The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column measured today, as well as its dispersion, reaches 5000 m.

During this day, the Saharan air mass is expected to be remitting, which is contributing particulate material (due to desert dust) of up to 10 microns (PM10). The thermal inversion will continue at low altitudes (below 500-1000m) until next day 22, which will recover typical values for the time of year. The above, together with the scarce ventilation that exists in low areas of the west of La Palma, are unfavorable conditions from the point of view of air quality. The upper wind is from the northeast (at 1500 m) and from the southwest (at 3000 m) and the current arrangement of the ash plume and SO₂ is to the north from the eruptive focus. The wind is expected to turn north-northeast at levels between 1500 to 3000 m, and this distribution of the wind will probably dispose of the plume towards the southwest of La Palma. It is not ruled out that the ashes may affect the

operation of La Palma airport today and early tomorrow. As of tomorrow morning, the scenario is more favorable for the operation of the airport.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km, which in the last hours continue to have a high magnitude. The high values of the amplitude of the tremor signal are maintained, with intensification pulses. The maximum magnitude observed was 4.3 mbLg of an event at a depth of 37 km, with intensity III-IV EMS. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, which may cause small landslides in sloping areas. The high seismicity recorded at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded.

The deformation shows a pattern of stability around the eruptive center and a slight regional deflation of deep origin detected in the stations furthest from the eruptive center.

During yesterday (10/18), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values and in line with the eruptive process, reaching values of 9938 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), reflects a downward trend from 10/12 to 10/18 and it has been estimated at 822 tons per day as of 10/18. The diffuse CO₂ emission at the Los Llanos geochemical station (LP10) reflects a higher magmatic-hydrothermal fraction than that observed at the Fuencaliente geochemical station (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, regarding sulfur dioxide (SO₂), yesterday the values remained far from the hourly threshold (established at 350 µg / m³). It should be noted that the maximum hours on the 18th were recorded in the stations on the east side of the island, with a specific hourly value of 102 µg / m³ at 4:00 p.m. local time at the La Grama station, which was significantly reduced in the hours later. The daily means collected on day 18 do not show exceeding the average daily threshold (established at 125 µg / m³) in

any of the island's stations. Throughout this morning, values around $100 \mu\text{g} / \text{m}^3$ have been registered in Puntagorda (9:00 am) and San Antonio (4:00 am), the evolution of which will have to be monitored in the next few hours.

With regard to particles smaller than 10 microns (PM10), the values measured in the set of stations continue at high levels, according to the trend already detected since last Saturday, and as a consequence of the entry of a Saharan air mass. Thus, yesterday the daily threshold (set at $50 \mu\text{g} / \text{m}^3$) was once again exceeded at all stations on the island. Particularly for the Los Llanos station, the incident due to the cleaning operations in the vicinity of the station caused the daily average data to be lost, so it was not possible to determine the concentration differential with the rest of the stations, if Well, the valid accumulated hourly data showed the influence of the volcano, with hourly maximums of $270 \mu\text{g} / \text{m}^3$.

The exceedances of the daily PM10 threshold are being generalized in other stations of the air quality measurement network located in the rest of the islands, associated with the aforementioned Saharan air intrusion.

October 20th

Ángel Víctor Torres chaired the Steering Committee, focused on the study of the advances of the lava towards La Laguna



The President of the Government of the Canary Islands highlighted the fortitude of the palm trees in the face of the harshness of the eruptive process

The scientific committee recalls the recommendations for self-protection against earthquakes, since earthquakes felt with greater intensity can be registered

Surveillance of the wash that goes to the coast is maintained to adopt, if it reaches the sea, the measures of confinement of the population of the coastal centers of Tazacorte

The president of the Canary Islands, Ángel Víctor Torres, participated today in the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, which is headed by the Minister of Public Administrations, Justice and Security, Julio Pérez. In this committee, the evolution of the wastes and the risk scenarios were analyzed to take the

necessary civil protection measures to guarantee the safety of people, the state of basic services for the population and the lines of work to solve the emergency.

Ángel Víctor Torres highlighted the fortitude of the palm trees in the face of a “tremendously active” volcano, without symptoms that show that it is near the end. For this reason, Torres insisted that both the Government of the Canary Islands and the rest of the institutions "will do what is humanly possible and almost what is humanly impossible" to alleviate the pain of the palm trees and rebuild this island. " Along these lines, the President of the Canary Islands reported that this afternoon he will meet with the mayors in the search for housing solutions for people who have lost their homes and also with the agricultural sector to study the various aid that will be given to this sector. Likewise, he stressed that, given the destructive power of the volcano, the Executive is working on a decree for the planning of the territory, with the utmost urgency and within the current legislative framework,

Regarding the state of the streams, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that, at this time, the two streams that run through the northwest are worrying, receiving a lot of heat input and heading to the urban center of La Laguna. One of them passed the soccer field and is near the public school and there is a more powerful intermediate appendix between the two flows that is feeding the other, which has reached the La Laguna gas station.

Morcuende pointed out that the overflows that are above the stream more to the northwest are monitored since it grows in height and spills towards the north.

The PEVOLCA technical director recalled that this entire area has been evacuated and that at the moment two scenarios are contemplated: the most desirable is that the group of streams follow the current topography, taking advantage of two troughs in the terrain and run south of the mountain of La Lagoon. At worst, the flows can be headed north of the La Laguna mountain.

Regarding the state of the low stream that runs through the south of the Laguna Mountain, Morcuende pointed out that it presents a slow movement and that at noon it was about 80 meters from the cliff. In the event that this wash reaches the sea, it is planned that the confinement of

San Borondón, La Condesa, Marina Alta, Marina Baja and the nucleus of Tazacorte will be ordered.

The rest of the castings move slowly, they continue to gain viscosity and therefore lose speed due to the amount of material that they accumulate. At the moment, no further evictions are planned.

Improved air quality

Morcuende announced the improvement of air quality as the Saharan disease declined and particles in suspension decreased. In this sense, he affirmed that, at the moment, it is "moderately good and, in the worst case scenario, fair," but that there are no problems in the municipalities of El Paso, Los Llanos de Aridane and Tazacorte, therefore the recommendations self-confinement on Monday and Tuesday in the municipality of El Paso are not necessary at this time.

For the spokesperson of the Scientific Committee, María Jose Blanco, the haze has been subsiding during the last hours and it is expected that the thermal inversion will rise in altitude with the passing of the hours and days, recovering normal values for the time, starting from the day 22. The increase in the altitude of the inversion, together with the intensification of the northeast wind, favors the dispersion of pollutants.

Winds are forecast from the NE in the midlands and summits and from the North at high altitudes, which are favorable aeronautical conditions, with thermal inversion on the rise and probability of weak rains in the N and NE. For the Scientific Committee, this wind configuration will dispose the ash cloud and SO₂ towards the southwest of the eruptive focus and the expected position of the plume will mean a favorable scenario, both for the operation of La Palma airport, as for the rest of the airports. canaries. The areas most affected by the ash fall would be those located in the vicinity of the eruptive focus and to the southwest. The arrival of fine ash to El Hierro is not ruled out.

Regarding seismicity, María José Blanco pointed out that it remains in the same depth environment as in previous days, the 4.8 magnitude event recorded yesterday at 39 km depth being the one that has been felt with greater intensity since the beginning of the eruption. However, he stressed

that they do not rule out earthquakes of intensity 6 (EMS). For his part, Morcuende pointed out in this regard that the seismic swarm is a short distance from the one that gave rise to the eruption, so there is "minimal or zero" probability that a new eruptive focus will emerge far from the current emitter cone.

In this sense, the Steering Committee has reminded the population to take self-protection measures against the possibility of increased earthquakes felt and to be attentive to the recommendations of the authorities and the 1-1-2 Emergency and Security Coordination Center.

María José Blanco also explained that the Scientific Committee's assessment rules out an end to the process in the next two weeks, although the volcano exhibits a more stable behavior in terms of surface deformation or volcanic tremor.

Blanco pointed out that the crater's emission centers are still active. In this regard, he added that, between the center that was reactivated on October 16 and the main cone, a new emission center was opened yesterday afternoon with initial phreatomagmatic and later strombolian activity. The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The deformation shows a pattern of stability around the eruptive center and a slight regional deflation of deep origin detected in the stations furthest from the eruptive center.

Regarding basic services to the population, the Steering Committee reviewed the state of the electricity supply in the area, with incidents in two distribution centers in La Laguna and in Cruz Chica, which have been resolved. In this sense, the Cabildo has made a plot of land available to Endesa so that it can install an emergency plant, should the need arise.

On the other hand, it is planned that the Advanced Command Post, which is located in the El Paso Visitor Center, will be moved to the warehouse of the old tobacco factory (JTI) of the same municipality, located on the LP-3 , with avenida Venezuela.

Regarding the area affected by the eruptive process, Morcuende said that it amounts to 807.85 hectares, 27.96 more than yesterday, and the maximum width between the extreme points of the flows remains at 2,900 meters, approximately, although within this extension there are areas that have not been damaged.

Regarding the destroyed or damaged buildings, according to the data provided by the Cadastre there are 1,132 buildings, of which 902 are for residential use, 115 for agriculture, 56 for industrial use, 25 for leisure and hospitality, nine for public use and another 23.

The PEVOLCA Technical Director reported that the affected crop area currently reaches 245.88 hectares, 11.62 more than the last day. Of these, 139.59 hectares correspond to banana plantations, 52.93 to vineyards and 19.49 to avocado trees.

As for the banana plantations, in addition to the 139 ha buried by lava, 153 hectares must be added without immediate production due to lack of access or irrigation water, so the affected area amounts to 292.69 hectares.

The total number of sheltered people amounts to 369, of which 337 are in the Fuencaliente hotel and 32 in another hotel center in Los Llanos de Aridane, all of them served by the Red Cross, in coordination with municipal social services.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The main flow of lava flows runs along the north flank, down the northern part of the previous flows, following trajectories towards the west and northwest, within the current exclusion zone. At the outlet of the emission center, the flow is concentrated in a stepped lava channel. Its momentary clogging and the oscillations of the lava flow, originate specific overflows that form ephemeral flows that spill laterally on the main cone. Later this channel branches out into channels, some of which have developed volcanic tubes. The emission centers of the crater are still active. Between the center that was reactivated on 10/16 and the main cone, a new emission center was opened last afternoon with initial phreatomagmatic and later strombolian activity. The stream that ran north of Montaña Todoque is apparently stopped. On the other hand, the one that runs through the south of Montaña de La Laguna is advancing, and at the beginning of the morning it was 90 m from the coastline. The wash towards La Laguna continues active.

The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The underwater site of the lava flow has reached at least 120 m depth, and probably continues to receive input of volcanic material. Although rock fragments from these flows have been located at least 360 m deep. Significant thicknesses have been detected, from at least 10 m up to 250 m deep and maximum up to 30 m. Materials from the lava delta have

filled the upper and middle reaches of some underwater ravines and cover a minimum area of 11 hectares.

Regarding the affection in the marine environment, a decrease of up to 48% in fluorescence (approximation of chlorophyll or photosynthetic organisms - first component of the oceanic food web) has been observed in the first 150 m depth in the column. of water with respect to the values prior to the arrival of the lava in the same place. In the entire environment of the underwater lava delta from 40-120 meters deep, the presence of any benthic (linked to the bottom) or pelagic (in a water column) life is not visually detected. In the entire area analyzed so far and up to depths of 400 m, an important deposit of ash / hyaloclastites has been observed that disturb, to different degrees, the marine ecosystem. The height of the ash and gas column measured today, as well as its dispersion, reaches 3,500 m.

The northeast wind is expected to dominate the lower and mid-lower troposphere for at least the next 48 hours (up to about 3000-4000 m). This wind configuration will dispose the ash cloud and SO₂ to the southwest of the eruptive focus. The expected position of the plume will suppose a favorable scenario, both for the operation of the La Palma airport, and for the rest of the Canarian airports. The areas most affected by the ash fall would be those located in the vicinity of the eruptive focus and to the southwest. Arrival of fine ash to El Hierro is not ruled out. The haze has been subsiding during the last hours and it is expected that the thermal inversion will rise in altitude with the passing of the hours and days, recovering normal values for the time, from the 22nd. The increase in the altitude of the inversion together with the intensification of the northeast wind causes the dispersion of pollutants to be favored. Chance of light rains in the north and east of La Palma on Friday.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km, which in the last hours continue to have a high magnitude. The high values of the amplitude of the tremor signal are maintained, with intensification pulses. The maximum magnitude observed was 4.8 mbLg of an event at a depth of 39 km, with intensity V EMS. The high seismicity recorded at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that more felt

earthquakes are possible, being able to reach VI intensities (EMS) and cause small landslides in sloping areas.

The deformation shows a pattern of stability around the eruptive center and a slight regional deflation of deep origin detected in the stations furthest from the eruptive center.

During yesterday (10/19), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values in line with the eruptive process, reaching values of 7,513 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), reflects a downward trend from 10/12 to 10/19 and it has been estimated at 703 tons per day as of 10/19. The diffuse CO₂ emission at the Los Llanos geochemical station (LP10) reflects a higher magmatic-hydrothermal fraction than that observed at the Fuencaiente geochemical station (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, regarding sulfur dioxide (SO₂), yesterday morning values higher than 170 µg / m³ were registered at 9:00 in Puntagorda and around 100 µg / m³ between 5:00 a.m. and 4:00 p.m. in San Antonio (Breña Baja), from that moment the values were falling during the afternoon but there was a rise again around 10:00 p.m. punctual and moderate in the La Grama station , but of great intensity and that lasted all night in Puntagorda, where maximum values close to the alert threshold (established at 500 µg / m³) were reached at 00:00 but without exceeding it. During the night of yesterday and the morning of today the values in Puntagorda have remained high, with three exceedances of the hourly threshold (established at 350 µg / m³) between 00:00 and 03:00, at this time, the values remain in the vicinity of 250 µg / m³. In the rest of the network stations, the values remain low. With regard to particles smaller than 10 microns (PM₁₀), yesterday a decrease in the values measured in the set of stations began to be seen, due to the weakening of the Saharan intrusion episode, however there was a high intensity event in the Los Llanos and El Pilar stations (Santa Cruz de La Palma) at 10:00 with hourly values above 450 µg / m³. Finally, the daily threshold (established at 50 µg / m³) was exceeded at the Los Llanos, El Pilar and La Grama stations (Breña Alta). With regard to particles

smaller than 10 microns (PM₁₀), yesterday a decrease in the values measured in the set of stations began to be seen, due to the weakening of the Saharan intrusion episode, however there was a high intensity event in the Los Llanos and El Pilar stations (Santa Cruz de La Palma) at 10:00 with hourly values above 450 $\mu\text{g} / \text{m}^3$. Finally, the daily threshold (established at 50 $\mu\text{g} / \text{m}^3$) was exceeded at the Los Llanos, El Pilar and La Grama stations (Breña Alta). With regard to particles smaller than 10 microns (PM₁₀), yesterday a decrease in the values measured in the set of stations began to be seen, due to the weakening of the Saharan intrusion episode, however there was a high intensity event in the Los Llanos and El Pilar stations (Santa Cruz de La Palma) at 10:00 with hourly values above 450 $\mu\text{g} / \text{m}^3$. Finally, the daily threshold (established at 50 $\mu\text{g} / \text{m}^3$) was exceeded at the Los Llanos, El Pilar and La Grama stations (Breña Alta). 00 with hourly values above 450 $\mu\text{g} / \text{m}^3$. Finally, the daily threshold (established at 50 $\mu\text{g} / \text{m}^3$) was exceeded at the Los Llanos, El Pilar and La Grama stations (Breña Alta). 00 with hourly values above 450 $\mu\text{g} / \text{m}^3$. Finally, the daily threshold (established at 50 $\mu\text{g} / \text{m}^3$) was exceeded at the Los Llanos, El Pilar and La Grama stations (Breña Alta).

During the night of yesterday and the morning of today there has been an event of very high concentration of PM₁₀ in Los Llanos, with hourly values close to 1,000 $\mu\text{g} / \text{m}^3$ at 05:00, these values have been decreasing and in these moments are close to 250 $\mu\text{g} / \text{m}^3$. These high PM₁₀ values in Los Llanos could be related to an increase in the intensity of the wind yesterday and this morning, which causes the accumulated ashes to re-suspend.

October 21st

The Minister of Science attends the daily session of the Scientific Committee



416 people sheltered after yesterday's evacuations. Of these, 375 are in the Fuencaliente hotel and 41 in Los Llanos de Aridane

The streams that run northwest have joined and are advancing in a southwest direction under La Laguna Mountain

The possibility of earthquakes felt by the population continues

The Government of the Canary Islands insists on the obligation to respect the exclusion zones to avoid putting people's safety at risk

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, led by the Minister of Public Administrations, Justice and Security, Julio Pérez, analyzed this morning in their daily meeting the evacuations ordered yesterday in La Palma, as well as the evolution of the washes and the risk scenarios to take the necessary civil protection measures that guarantee the safety of people and basic services for the population.

The Scientific Committee had previously met, whose session was attended, from the Advanced Command Post, by the Minister of Science and Innovation, Diana Morant, and the Secretary General for Research, Raquel Yotti, who, after greeting the members, they watched the debates. Morant

appreciated the work they provide in this emergency, and valued their quality, apart from attending a good part of the session before embarking on the oceanographic vessel Ángeles Alvariño.

This Steering Committee evaluated the evacuation ordered last night in the nuclei of Las Martelas, in Los Llanos de Aridane, and of Marina Alta, Marina Baja, La Condesa and Cuesta Zapata, in Tazacorte, which forced to evacuate around to 50 homes in which 150 people were registered, of which 45 were taken into the PEVOLCA shelters.

Both the residents and the companies and workers of these areas have been allowed access during the day today to collect their belongings and to go to their workplace, under the control and supervision of security personnel.

The total number of people evicted today is around 6,600, to which must be added the 400 tourists evicted and transferred to Tenerife on the first day. At the moment there are 416 people housed in hotel centers. Of these, 41 are in a hotel in Los Llanos de Aridane and 375 are staying in a hotel in Fuencaliente. All are being cared for by the Red Cross, in coordination with municipal social services.

Regarding the evolution of the flows, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, explained that the two flows that run through the northwest grew a lot in the contribution of lava during the afternoon yesterday, which forced the direction of the Plan to order the evacuation preventive against the possibility that the wash would skip the next basin and end up going down the coastal road to the north, although this did not happen in the end.

Morcuende added that these flows have already coalesced and appear to run in a southwesterly direction, below La Laguna Mountain, but it cannot yet be ruled out that they extend northward due to the topography of the terrain.

On the other hand, the low stream, which is very close to the sea, at noon today was kept at the same distance from the cliff as yesterday, at about 80 meters, since it has had a minimal contribution from its side. more to the north.

The spokesperson for the Scientific Committee, María José Blanco, recalled that five emission centers remain active in the surroundings of the eruption, one of lava and the remaining four of pyroclasts and gases.

Regarding the current level of seismicity, Blanco warned that more earthquakes felt by the population may continue to occur. However, he pointed out that there has been an apparent decrease in those of greater depth that must continue to be studied, for which he recalled that the population must take self-protection measures in the face of the possibility of increased earthquakes felt and be attentive to the recommendations from the authorities.

Regarding the deformation, a tendency to deflation is being registered in some of the stations furthest from the eruption while in those near the volcano it remains stable.

Improved air quality

The director of PEVOLCA, Miguel Angel Morcuende, affirmed that the air quality "is reasonably good and, in the worst case scenario, regular" because the Saharan air condition does not end. However, he stressed that the use of FFP2 masks is mandatory in the affected areas for those who have a health problem that may be aggravated by this situation and recommended for the rest of the population in order to avoid respiratory problems.

Aeronautical conditions are favorable for all airports in the Canary Islands since the thermal inversion will reach about 1,200 meters and winds will be produced from the northeast, in the midlands and summits, and from the north at high altitudes.

More than 800 hectares affected

Regarding the area affected by the eruptive process, Morcuende said that it amounts to 825.23 hectares, 17.38 more than the data given yesterday, and the maximum width between the extreme points of the flows remains at 2,900 meters, approximately. although within this extension there are areas that have been isolated by lava.

Regarding the buildings destroyed or damaged, according to the data provided by the Cadastre, these amount to 1,196 buildings, of which 963 are for residential use, 124 for agriculture, 57 for industrial use, 27 for leisure and hospitality, 10 for public use and 14 from other uses.

Faced with the weak rains forecast for the next few days, which will mainly affect the north and northeast of the island, Morcuende insisted on the importance of cleaning the covers since the rainfall increases the weight of the ashes, while warning of the risk of possible runoff due to the impermeability of the wastes.

On the other hand, the director of PEVOLCA emphasized the need to respect the exclusion zones by the population since not doing so puts people's safety at risk. In this sense, Morcuende affirmed that bypassing this limitation violates the first objective of PEVOLCA: to prevent victims from occurring.

Regarding basic services to the population, the Steering Committee analyzed the state of the electricity supply in the affected areas without significant incidents having been detected while improvements have been made in the telephone network, with the location of a mobile phone in the area of Tajuya, which has made it possible to improve the voice and data coverage of the emergency services working on the eruption of the volcano. He also gave an account of the works of the portable desalination plants in Puerto Naos, which will foreseeably come into operation next Saturday if there are no setbacks in the coming days.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, as has already been said, with the presence of the Minister of Science, Diana Morant, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET),

Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The main flow of lava flows runs along the north flank, down the northern part of the previous flows, following trajectories towards the west and northwest, within the current exclusion zone. At the outlet of the emission center, the flow is concentrated in a stepped lava channel. Its momentary clogging and the oscillations of the lava flow, originate specific overflows that form ephemeral flows that spill laterally on the main cone and previous flows. Later this channel branches out into channels, some of which have developed volcanic tubes. The emission centers of the crater are still active. Currently there are four pyroclastic emission centers, with intermittent activity, and one with lava emission. The lava flow that runs through the south of Montaña de La Laguna slowly advances towards the coast. The wash towards La Laguna continues active. The area covered by lava flows is 840 Ha (10/20).

The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column measured today, as well as its dispersion, reaches 4000 m.

The prevalence of the north-northeast wind continues in the lower and middle-lower troposphere (up to about 3000-4000 m). The ash and SO₂

cloud is disposed towards the south-southwest of the eruptive focus and is expected to continue like this for the next 36-48 hours. This plume position represents a favorable scenario, both for the operation of La Palma airport, and for the rest of the Canary Islands airports. The areas most affected by the ash fall would be those in the vicinity of the eruptive focus and to the south and southwest. Arrival of fine ash to El Hierro is not ruled out. The thermal inversion continues its gradual rise in altitude, recovering normal values for the time as of tomorrow. The increase in the altitude of the inversion together with the intensification of the northeast wind causes the dispersion of pollutants to be favored. Probability of light rains in the north and east of La Palma on Friday and Saturday.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km, which in the last hours continue to be of high magnitude and less frequent. The high values of the amplitude of the tremor signal are maintained, with intensification pulses. The maximum magnitude observed was 4.3 mbLg of an event at a depth of 37 km, with intensity IV EMS. The high seismicity recorded at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that more felt earthquakes are possible, being able to reach intensities VI (EMS) and originate small landslides in sloping areas. Relevant information on this topic is included in the Recommendations section of the report.

The deformation shows a pattern of stability around the eruptive center and a slight regional deflation of deep origin detected in the stations furthest from the eruptive center.

During yesterday (10/20), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values, reaching values of 2710 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), reflects a downward trend during the last 8 days and has been estimated at 663 tons per day as of 10/20. The monitoring of the diffuse flow of carbon dioxide (CO₂) in the geochemical station of Los Llanos (LP10) reflects a greater magmatic-hydrothermal fraction than that observed in the geochemical station of Fuencaliente

(LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, with regard to sulfur dioxide (SO₂), during the early hours and yesterday morning high values were recorded at the Puntagorda station, with an hourly threshold exceeded (established at 350 µg / m³) at 03:00 and that maintained high values until approximately 13:00. This event ultimately meant that the daily threshold (established at 125 µg / m³) was exceeded at said station. In the rest of the stations, values were kept low and there was no exceedance of the hourly or daily thresholds. During this day, low SO₂ values are being recorded in all of the island's stations.

With regard to particles smaller than 10 microns (PM₁₀), yesterday a general decrease in concentrations was observed, due to the weakening of the Saharan intrusion episode that we have been observing in recent days. However, high intensity episodes were recorded in PM₁₀ concentrations at the Los Llanos and El Pilar stations (Santa Cruz de La Palma), mainly related to the resuspension of the ashes due to the increase in wind intensity as well as due to road traffic on the roads near the stations. These events have caused the daily threshold (established at 50 µg / m³) to be exceeded in these two stations. In the rest of the stations this threshold has not been exceeded. Today, hourly values lower than the daily threshold are being recorded.

October 22nd

The Minister of Territorial Policy participates in the PEVOLCA Steering Committee



The flows experience an apparent slowdown, which produces a growth in height and widening of the same

The affected area reaches 845 hectares after adding 20.49 more compared to the previous available data

There are a total of 415 people housed in hotels, 56 of which are in Los Llanos de Aridane and 359 in Fuencaliente, and another 46 in social health centers

The Minister of Territorial Policy and spokesperson for the Government of Spain, Isabel Rodríguez, participated today in the meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, led by the counselor of Public Administrations, Justice and Security, Julio Pérez. In this meeting, the information on the eruptive process was updated based on the report of the Scientific Committee and the maps of the advance of the streams, where the course of the closest to La Laguna is especially monitored, which presents a large lava contribution despite the fact that until this noon it has slowed down.

The Minister of Territorial Policy highlighted the work carried out by all the services involved in the emergency, the scientists and by the PEVOLCA Steering Committee whose main objective has been, at all times, to guarantee the safety of people. "That good work," he insisted, "is what has allowed no personal injury."

Likewise, Rodríguez valued the unity and coordination that exists between the different institutions and stressed that this must continue - he affirmed - "until we recover normality after achieving the reconstruction of La Palma".

The counselor Julio Pérez made a chronological review of the actions carried out since the activation of the Canary Islands Government Plan on Monday, September 13. In this sense, the person in charge of the Council on which the Plan depends recalled that the first week was decisive so that the Steering Committee, with the advice of the Scientific Committee, could anticipate the emergency, review the evacuation plans of the population, establish meeting points and shelters, both for people and animals, in addition to studying the responses that would ensure basic services and hold various informational meetings in the towns where it was expected that the eruption could affect. All this under the Island Council of La Palma, which in that first week corresponded such preparation activities.

For his part, the technical director of PEVOLCA, Miguel Ángel Morcuende, assured that during the last hours there has been an apparent slowdown in the advance of the flows, which is presumably the cause of their growth in height and their widening.

Morcuende pointed out that the main danger is found, at the moment, in the evolution of the wash that affects La Laguna, which, although at noon was very stopped, the records of the thermal cameras that analyze it show that it may be under strong pressure . This wash continues to be monitored especially while waiting for the course that it definitely takes, among which the most convenient is the one that goes to the south of the Montaña de La Laguna.

At the moment there are 415 people housed in hotel centers. Of these, 56 are in a hotel in Los Llanos de Aridane and 359 are staying in a hotel in Fuencaliente. All are being cared for by the Red Cross, in coordination with municipal social services. In addition, there are 46 dependents housed in insular health centers.

Carmen López, national responsible for volcanic surveillance of the National Geographic Institute (IGN) who appeared today at the press conference after the Steering Committee as spokesperson for the Scientific Committee, reported that seismicity remains stable at intermediate levels and has decreased in the events deeper, although he did not rule out that earthquakes felt by the population would continue to occur.

Regarding the deformation, López clarified that it continues to show stability around the eruptive center and a tendency to deflation in the most remote areas.

Although air quality is improving due to the elevation of the thermal inversion layer and the evolution of the winds, the PEVOLCA Technical Director recalled that people with health and respiratory problems should use FFP2 masks, although their use is also recommended. , in general, for the entire population.

Infrastructures affected

Regarding the area affected by the eruptive process, it is 845.72 hectares, 20.49 hectares more than the data made public yesterday, and the maximum width between the extreme points of the flows remains at 2,900 meters, approximately, although within of this extension there are areas that have not been affected by lava.

The buildings destroyed or damaged, according to the data provided by the Land Registry, amount to 1,280 buildings, of which 1,030 are for residential use, 132 for agriculture, 64 for industrial use, 30 for leisure and hospitality, 11 for public use and 14 for other uses.

The affected crop area currently reaches 258.23 hectares, of which more than 56%, 144, 93 hectares, correspond to banana crops.

The Steering Committee also analyzed the state of basic services (electricity, telephony, schools and colleges) in which no relevant incidents have been registered, as well as the works of the portable desalination plants in Puerto Naos that are progressing at a good pace and that will foreseeably enter in operation tomorrow Saturday if there are no setbacks.

Likewise, the work being carried out by the Insular Water Council was analyzed to send water over the runoff, taking advantage of the available fire protection network and the Las Cuevas reservoir and pumping station to reach the Jedey area. There, another reservoir will be built that will allow water to be brought to the Cuatro Caminos reservoir.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands, and made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), The Canary Islands Volcanological Institute (Involcan), the Geological and Mining Institute of Spain (IGME), the State Meteorological Agency (AEMET), the Spanish Institute of Oceanography (IEO), the University of La Laguna and the University of Las Palmas de Gran Canaria.

Their conclusions were as follows:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The main flow of lava flows runs along the north flank, down the northern part of the previous flows, following trajectories towards the west and northwest, within the current exclusion zone. At the outlet of the emission center, the flow is concentrated in a stepped lava channel, which later branches into channels and volcanic tubes. The cone emission centers remain active, with intermittent pyroclastic expulsion and one with lava emission, with less explosiveness and flow, respectively. The active fronts of the lava flows have slowed their advance speed, but increased their thickness.

The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column, measured today, reaches 2800 m.

The prevalence of the north-northeast wind continues in the low and medium-low troposphere (up to about 3000-5000 m) and is expected to turn east with height. The ash and SO₂ cloud is arranged to the south-southeast of the eruptive focus and is expected to turn west during the early morning. During today there is a low probability of affecting the aeronautical operation and from the early morning the scenario will be favorable for the operation of the Canarian airports. The areas most affected by the ash fall would be those in the vicinity of the eruptive focus and to the south and southeast. Today the arrival of fine ash to El Hierro, La Gomera and west of Tenerife is not ruled out. Probability of weak rains in the north and east of La Palma today,

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. This seismicity has increased in frequency. There are also earthquakes located at depths greater than 20 km, which in the last hours continue to have a high magnitude, although with less frequency. The high values of the amplitude of the tremor signal are maintained, with intensification pulses. The maximum magnitude observed was 4.4 mbLg of an event at a depth of 38 km, with intensity IV EMS. The seismicity registered at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that more felt earthquakes are possible, being able to reach intensities VI (EMS) and originate small landslides in sloping areas. Relevant information on this topic is included in the Recommendations section of the report.

The deformation shows a pattern of stability around the eruptive center and a slight regional deflation of deep origin detected in the stations furthest from the eruptive center.

During yesterday (10/21), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values and in line with the eruptive process, reaching values of 28,745 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), continues to reflect a downward trend during the last 9 days and has been estimated at 633 tons per day as of 10/21. The monitoring of the diffuse flow of carbon dioxide (CO₂) in the geochemical station of Los Llanos (LP10) reflects a greater magmatic-hydrothermal fraction than that observed in the geochemical station of Fuencaliente (LP08).

Regarding air quality, regarding sulfur dioxide (SO₂), yesterday and today morning low values have been registered in all the island's stations, far from the hourly threshold (established at 350 µg / m³).

With regard to particles smaller than 10 microns (PM₁₀), yesterday concentrations lower than previous days were generally observed, but close to the daily threshold (established at 50 µg / m³). At the El Pilar station (Santa Cruz de La Palma), high concentrations of PM₁₀ were recorded, with an hourly average maximum of 260 µg / m³ at 3:00 p.m. The daily threshold was exceeded at the El Pilar and Los Llanos stations.

October 23rd

Sánchez meets again with the PEVOLCA Director and Scientific Committees and reiterates his commitment to La Palma



The flows until noon this Saturday have slowed down and a redistribution of the lava contribution from the volcano is taking place in several of them

The affected area is estimated at 848 hectares, 3.4 more than the previous available data.

There are a total of 429 people housed in hotels, 56 of which are in Los Llanos de Aridane and 373 in Fuencaliente, and there are also another 46 in social health centers

The President of the Government of Spain, Pedro Sánchez, and that of the Canary Islands, Ángel Víctor Torres, participated today in the meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, headed by the Minister of Public Administrations, Justice and Security, Julio Pérez. In this meeting, the evolution of the eruptive process was analyzed based on the report of the Scientific Committee, detecting

a slowdown in the flows and a redistribution of the lava contribution in them. The progress of the streams continues to be monitored, with special attention to the one closest to La Laguna to determine its possible course.

The President of the Government of Spain, Pedro Sánchez, who visited La Palma for the fifth time, thanked the Palm tree citizens, the scientists and all the services involved in the management of this emergency for the work carried out in the face of a “situation that continues to be critical” . For this reason, he reiterated the commitment of the Government of Spain with the entire palm tree society and its institutions to rebuild this island.

Regarding the evolution of the eruptive process The Technical Director of PEVOLCA, Miguel Ángel Morcuende, affirmed that there has been a slowdown in the flows and a redistribution of the lava contribution by several of them, including the original one, due to small partial breaks in the conelet located on the northwest slope of the main cone and the existence of volcanic tubes. This slowdown has made it possible to carry out the accompaniments to the owners for the removal of belongings from their homes with relative normality.

The wash that affects La Laguna continues to slow down in the center of the neighborhood but it continues to be monitored to determine its possible course towards the southern or northern slopes of La Laguna Mountain.

The number of people housed in hotel centers is currently 429. Of these, 56 are in a hotel center in Los Llanos de Aridane and 373 are staying in a hotel in Fuencaliente. All are being cared for by the Red Cross, in coordination with municipal social services. In addition, there are 46 dependent people in insular health centers.

At a press conference, the national responsible for Volcanic Surveillance of the National Geographic Institute (IGN), Carmen López, reported that seismicity continues to be recorded in the same areas although an increase in intensity is seen in the intermediate. It is not ruled out that earthquakes of greater magnitude felt by the population may occur.

The deformation remains stable in the stations close to the volcanic cone but with a downward trend in the areas furthest from the eruptive focus.

Air quality continues to improve due to increased inversion layer and reduced particulate matter reduction. However, the PEVOLCA Technical

Director recalled that people with health and respiratory problems should use the FFP2 masks, although their use in general is also recommended.

Given the forecast of weak rains in the Aridane Valley, they insisted on the importance of cleaning the roofs since the rainfall increases the weight of the ashes, at the same time that they were alerted to the risk of possible runoff due to the impermeability of the lava flows.

Infrastructures affected

Regarding the area affected by the eruptive process, it is estimated at 848.96 hectares, 3.4 hectares more than the data made public yesterday, and the maximum width between the extreme points of the flows remains at 2,900 meters, approximately. although within this extension there are areas that have not been affected by lava.

Regarding the number of destroyed or damaged buildings provided by the Cadastre, there are no variations, so they amount to 1,280 buildings. Of these, 1,030 are for residential use, 132 for agriculture, 64 for industrial use, 30 for leisure and hospitality, 11 for public use and 14 for other uses.

The Steering Committee also analyzed the state of basic services (electricity, telephony, schools and colleges) in which no relevant incidents have been registered, as well as the works of the portable desalination plants in Puerto Naos that have begun to carry out the first tests of connection today.

On the other hand, the Emergency Advanced Command Post has been moved from the El Paso Visitor Center to the warehouse of the old tobacco factory (JTI) of the same municipality, located on LP-3, with Avenida Venezuela . This transfer is carried out to improve the operations of the intervening services and the comfort of the users.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary

Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The main flow of lava flows runs along the north flank, down the northern part of the previous flows, following trajectories towards the west and northwest, within the current exclusion zone. At the outlet of the emission center, the flow is concentrated in a stepped lava channel, which later branches into channels and volcanic tubes. The cone emission centers are still active, with continuous pyroclastic expulsion and intermittent phreatomagmatic pulses and one with lava emission.

The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. Since last night, small partial breaks have been taking place in the conelet (cone of welded pyroclasts), located on the NW slope of the main cone. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The height of the ash and gas column, measured today, reaches 3000 m.

Prevalence of wind from the northeast to the east component with the height. The wind is expected to turn south in the stratum between 3000 to 5000 m. The current arrangement of the ash cloud and SO₂ is to the

southwest of the eruptive focus and is expected to be arranged to the west / northwest in the next few hours. The expected position of the plume represents a favorable scenario for aeronautical operations. Generally weak rainfall has been recorded on the northern and eastern slopes of La Palma and these precipitations (weak to locally moderate) will continue to be probable for the remainder of Saturday, Sunday and Monday. Mainly the precipitations will be registered in the north and east slopes, as well as in the interior and west areas.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. This seismicity has increased in frequency and magnitude. There are also earthquakes located at depths greater than 20 km, which in the last hours continue to have a high magnitude, although with less frequency. The high values of the amplitude of the tremor signal are maintained, with intensification pulses. The maximum magnitude observed was 4.3 mbLg of an event at a depth of 36 km, with intensity IV EMS. The seismicity registered at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that more felt earthquakes are possible, being able to reach intensities VI (EMS) and originate small landslides in sloping areas. Relevant information on this topic is included in the Recommendations section of the report.

The deformation shows a pattern of stability around the eruptive center and a slight regional deflation of deep origin detected in the stations furthest from the eruptive center.

During yesterday (10/22), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values and in line with the eruptive process, reaching values of 31,600 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), continues to reflect a downward trend during the last 10 days and has been estimated at 623 tons per day as of 10/22. The monitoring of the diffuse flow of carbon dioxide (CO₂) in the geochemical station of Los Llanos (LP10) reflects a greater magmatic-hydrothermal fraction than that observed in the geochemical station of Fuencaliente (LP08).

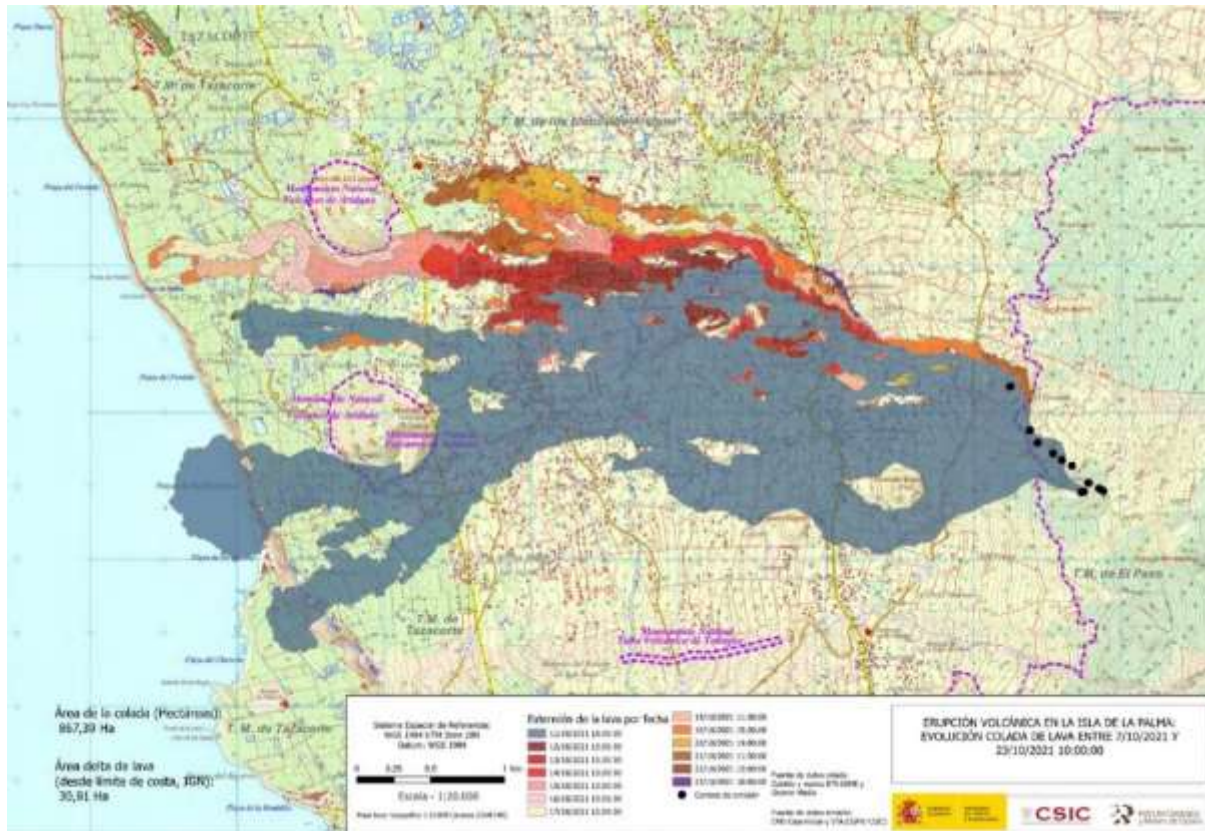
Regarding air quality, regarding sulfur dioxide (SO₂), since last night high concentration values have been registered at the Los Llanos, El Paso, Tzacorte and Puntagorda stations. The hourly average values have increased significantly during the last hours of the morning and the first hours of the morning, so that, in the case of Los Llanos, at 9:00 hours the third consecutive hourly value of concentration was registered above of the 500 µg / m³, which is the reference value of the alert threshold for the population.

During this period, the values recorded at the Tzacorte and El Paso stations have also recorded hourly averages above the value of 500 µg / m³. Although they have not done so for three consecutive hours, it is considered that there is a risk of reaching these levels, so the circumstances would arise to alert the population of the Aridane Valley.

With regard to particles smaller than 10 microns (PM₁₀), yesterday concentrations lower than those of previous days were generally observed, without exceeding the daily threshold (established at 50 µg / m³), in any of the stations of the air quality network.

October 24th

The PEVOLCA especially watches the progress of the new wash that emerged yesterday and is slowly moving south



It is estimated that the area affected by the lava has grown by more than 3 hectares due to the lava spill from the south and the voids that the lava has filled in intermediate zones

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, headed by the Minister of Public Administrations, Justice and Security, Julio Pérez, analyzed the daily report of the Scientific Committee that indicates that during the last 24 hours the effusive phases alternated, with intense explosive episodes. In the meetings of the Committees, the new lava flow that emerged yesterday was analyzed, which is currently slowly moving south towards Corazoncillo, an area that is evacuated, and which is being specially watched and monitored.

The Technical Director of PEVOLCA, Miguel Ángel Morcuende reported that after the reconfiguration of the main cone yesterday, there has been a redistribution of the magma to other points. In addition to this, he said, a

new emission of lavas has arisen towards the south that began yesterday and that, although it stopped in the middle of the afternoon, currently has flow and moves slowly. This new stream, named the tenth, runs parallel to the stream that arose at the time in the south of the initial emission center and runs through areas where there is a high pyroclastic and ash density, so that its progress gains viscosity. and it runs slowly at the moment.

Experts point out that there is an important contribution of flow that runs through lava channels, mainly in the runoff that ended in the lava delta; in the one that goes by the north of the Mountain of Todoque; and the one that is stopped in La Laguna.

Of the nine emission points that have arisen throughout the eruptive process, at the moment there are four that continue to contribute load to the flows.

In this sense, the national director of Volcanic Surveillance of the National Geographic Institute (IGN) and spokesperson for the Scientific Committee, Carmen López, pointed out that the main flow of lava flows runs along the north flank, descending on the previous flows. In addition, he explained that a new lava flow has emerged from the center located at the SE end of the eruptive fissure, moving towards the SW, attached to the first lava flows emitted in the eruptive process. In addition, throughout the day yesterday there were partial ruptures of the conelet (cone of welded pyroclasts), located on the NW slope of the main cone, which generated large blocks that fell on the lower lava emission point, producing lava spills.

Regarding seismicity, there has been a notable increase in the intermediate and deep, with an increase in the magnitudes in the intermediate zone, the maximum magnitude observed yesterday being 4.9 to 38 kilometers deep and an intensity of six (EMS) .

The deformation of the terrain, on the other hand, shows a pattern of stability in the surroundings of the eruptive center and a slight regional deflation of deep origin detected in the stations furthest from the eruptive center.

On the other hand, the thermal inversion above 1,500 favors the dispersion of gases in Los Llanos de Aridane, El Paso and Tazacorte and the concentration of PM10 particles has also improved after the end of the

Saharan air episode recorded in recent days. However, SO₂ measurement stations are continuously monitored.

Regarding the meteorological situation, no substantial changes in rainfall are foreseen. These will continue to be weak in the north and east of the island and there is a low probability of rain in the west.

The current arrangement of the ash cloud and SO₂ is to the W-NW and the upper wind (at approximately 3,000 meters) is expected to turn to the NE and, therefore, the plume would be disposed towards the SW from the eruptive focus. This expected disposition of the ash cloud and SO₂ represents a favorable scenario for the operation of the Canarian airports.

Infrastructures affected

Regarding the area affected by the eruptive process, it is estimated at 852.27 hectares, 3.31 hectares more than the previous day, and the maximum width between the extreme points of the flows remains at approximately 2,900 meters. The increase in hectares responds to the lava spill in the south and the gaps that have been filled in the intermediate areas.

According to the latest Copernicus data regarding the number of buildings destroyed or damaged, it is estimated that the eruptive process has affected approximately a total of 2,270 buildings, of which 2,143 destroyed and 127 damaged or at risk.

Regarding crops, the total of affected hectares is around 260ha, almost 14 more than in the previous record. Of these, 145.61 correspond to banana plantations, 53.54 vineyards and 22.89 avocados.

The number of people housed in hotel centers is currently 439. Of these, 63 are in a hotel center in Los Llanos de Aridane and 376 are staying in a hotel in Fuencaliente. All are being cared for by the Red Cross, in coordination with municipal social services. In addition, there are 46 dependent people in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), with alternation of effusive phases and intense explosive episodes. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The main flow of the lava flows runs along the north flank, descending on the previous flows. At the outlet of the emission center, the flow is concentrated in a lava channel that has changed position towards the west and that, later, branches out into volcanic channels and tubes. A new lava flow has arisen from the center located at the SE end of the eruptive fissure, moving towards the SW along with the first lava flows emitted in the eruptive process. The cone emission centers are still active, with continuous pyroclastic expulsion and intermittent phreatomagmatic pulses and two with lava emission (found at the NW and SE ends of the fissure).

The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. Throughout yesterday there were partial ruptures of the conelet (cone of welded pyroclasts), located on the

NW slope of the main cone, which generated large blocks that fell on the lower lava emission point, producing lava spills.

The height of the ash and gas column, measured today, reaches 3,200 m.

The current disposition of the ash cloud and SO₂ is towards the W-NW. The upper wind (at approximately 3000 m) is expected to turn to the NE, and therefore the plume would be disposed towards the SW from the eruptive focus. The expected disposition of the ash cloud and SO₂ supposes a favorable scenario for the operation of the Canarian airports. During the last 24 hours there have been precipitation, in general, of a weak nature in the N and E slopes. moderate), mainly in slopes N and E, without ruling out in inland areas and O.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. This seismicity has notably increased in frequency and magnitude. There are also earthquakes located at depths greater than 20 km, which in the last hours continue to have a high magnitude. The high values of the amplitude of the tremor signal are maintained, with more intense pulses in relation to previous days. The maximum magnitude observed was 4.9 of an earthquake that occurred at 4:34 p.m. at a depth of 38 km, reaching an intensity IV (EMS). The seismicity registered at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and cause small landslides in sloping areas. Relevant information on this topic is included in the Recommendations section of the report.

The deformation shows a pattern of stability around the eruptive center and a slight regional deflation of deep origin detected in the stations furthest from the eruptive center.

During yesterday (10/23), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values and in line with the eruptive process, reaching values of 3,200 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases) has been estimated at 799 tons per day as of 10/23. The monitoring of the diffuse flow of

carbon dioxide (CO₂) in the geochemical station of Los Llanos (LP10) reflects a higher magmatic-hydrothermal fraction than that observed in the geochemical station of Fuencaliente (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, regarding sulfur dioxide (SO₂), the situation of hourly concentrations exceeding the reference value of the alert threshold for the population (established at 500 µg / m³ for three consecutive hours) that It occurred during the early hours of yesterday morning at the Los Llanos station, it remitted from 12 noon, without any further exceedances of the hourly limit value at this station (established at 350 µg / m³) or alert threshold. The stations of Puntagorda, Tzacorte and El Paso also registered during yesterday specific hourly exceedances of the alert threshold to the population, although this situation did not last for the three hours established in the regulations. As a consequence of yesterday's pollution episode, The hourly limit value for air quality has been exceeded in all the stations of the Aridane Valley, with a notable improvement in the situation after 4:00 pm, and levels maintained at low values last night and early in the morning. During this morning there is a slight rebound in concentrations at the Puntagorda station, the evolution of which should be monitored. Likewise, yesterday's episode means that the daily reference values of SO₂ (established at 125 µg / m³) have been exceeded at the Los Llanos, Puntagorda and Tzacorte stations. During this morning there is a slight rebound in concentrations at the Puntagorda station, the evolution of which should be monitored. Likewise, yesterday's episode means that the daily reference values of SO₂ (established at 125 µg / m³) have been exceeded at the Los Llanos, Puntagorda and Tzacorte stations. During this morning there is a slight rebound in concentrations at the Puntagorda station, the evolution of which should be monitored. Likewise, yesterday's episode means that the daily reference values of SO₂ (established at 125 µg / m³) have been exceeded at the Los Llanos, Puntagorda and Tzacorte stations.

With regard to particles smaller than 10 microns (PM₁₀), the 24-hour moving average reflects a consolidation of the improvement in the situation after the removal of the Saharan air mass, highlighting only the high PM₁₀ values recorded between 11 and 12 13 hours at the Los Llanos station, with an hourly maximum close to 200 µg / m³, a reflection of the ash fall from

the volcano, and which motivates the daily threshold (established at $50 \mu\text{g} / \text{m}^3$) to be exceeded at this station . Throughout the early morning and tomorrow today the values remain low in all stations.

October 25th

The reconfiguration of the cone and the opening of new emission centers feed lava to existing flows



Increases the probability of earthquakes felt for the population, given the trend in the rate of earthquakes, their depth and magnitude

Weather conditions are favorable from the point of view of airport operations and air quality

The opening of new emission centers on the slope of the cone, which feed the central flows, and the southern flow, which yesterday began to emit lava, is slowed down in Corazoncillo and has a low speed of advance, were today some of the issues addressed in the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, based on the report of the Scientific Committee. Today, the Steering Committee was chaired by the General Director of Security and Emergencies, Gustavo Armas.

The PEVOLCA Technical Director, Miguel Ángel Morcuende, reported that the reconfiguration of the cone continues, with the emission of a large amount of lava, especially towards the west, on the original stream and on the one that runs above the Todoque mountain. This great contribution of lava has also filled in some areas that remained as islands between the flows, as is the case of Alcalá. The lava channels remain active, feeding these streams and the lava delta.

The La Laguna stream does not undergo significant changes and, like the rest of the streams, its route continues to be monitored in case it is necessary to adopt new civil protection measures. The same happens with the one that runs next to the cliff towards the Perdido beach, which remains about 110 meters from the sea.

The spokesperson for the Scientific Committee and director of the National Geological Institute (IGN) in the Canary Islands, María José Blanco, pointed out that the current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and originate small landslides in sloping areas. According to the trend of the number of events, depth and magnitude, there is a greater probability of earthquakes of intensity VI.

The seismicity located between 10 and 15 km increased very notably yesterday, being the highest rate of release of seismic energy. Regarding earthquakes located at depths greater than 20 km, they continue to have a high magnitude. In addition, yesterday there were notable amplitudes in the tremor signal, the highest for a month.

The deformation of the terrain shows a pattern of stability around the eruptive center and a slight regional deflation of deep origin detected in the stations furthest from the eruptive center.

The meteorological conditions, with a weakened thermal inversion and moderate to strong upper winds, are favorable from the point of view of airport operations and air quality. In this sense, emissions of SO₂ and PM₁₀ particles remain high, but have not exceeded permitted thresholds, although the population of Los Llanos de Aridane and El Paso is recommended to use FFP2 masks outdoors, which should be mandatory for risk groups.

Services

Regarding the landslides registered yesterday on the LP-2 at the height of El Charco, Fuencaliente, which forced the closure of the road, the Steering Committee reported that it has been reopened this noon, once the IGME and the Cabildo Highways service de La Palma have ruled out risks of possible landslides in the upper part of the slope and the road has been cleaned.

The Canary Islands Emergency Service (SUC) has reinforced urgent assistance in the southern area of the island with the incorporation of a new basic life support ambulance in Fuencaliente, which will be located in the health center from Monday to Sunday, from 8: 00 to 20:00 hours.

The buildings destroyed or damaged, according to the data provided by the Cadastre, are estimated at 1,287 buildings, of which 1,036 are for residential use, 133 for agriculture, 64 for industrial use, 30 for leisure and hospitality, 11 for public use and 14 for other uses. .

The number of people housed in hotel centers is currently 453. Of these, 63 are in a hotel center in Los Llanos de Aridane and 390 are staying in a hotel in Fuencaliente. All are being cared for by the Spanish Red Cross, in coordination with municipal social services. In addition, dependents evacuated by the eruptive process have been transferred to insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), with alternation of effusive phases and intense explosive episodes. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The main flow of the lava flows runs along the west and north flanks, descending on the previous flows. At the exit from the northernmost emission center, the flow is concentrated in a lava channel that has changed position to the west and later branches into volcanic channels and tubes. Yesterday afternoon, new lava flow emission points were opened on the west flank of the main cone, with a high emission rate. During the night one of these, went up in elevation, widening the width and the length of the opening. The center located at the SE end of the eruptive fissure emits lavas towards the SW attached to the first streams emitted in the eruptive process with low speed. The cone emission centers are still active,

The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. Given the high rate of emission of lava flows in the last hours, the partial rupture of the upper part of the cone is not ruled out.

The height of the ash and gas column, measured today, reaches 3800 m.

The prevalence of the wind from the N to NE component continues from the surface to the middle levels (from the surface at 5500 m). This wind configuration disposes the ash plume and SO₂ toward the S from the eruptive focus. The arrival of fine ash to El Hierro is not ruled out. The meteorological scenario is favorable for the operation of the Canarian airports. From the point of view of air quality, the meteorological conditions are favorable, this is due to the fact that the thermal inversion will be very weak and at an altitude of approximately 2000 m and the trade wind will blow with moderate to strong intensity (except in the western coastline where it will predominate the breeze regime). For today, weak to locally

moderate rainfall is expected to continue, mainly affecting the N and E slopes,

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. This seismicity, yesterday increased VERY notably in its frequency and magnitude, being the highest rate of release of seismic energy. There are also earthquakes located at depths greater than 20 km, which in the last hours continue to have a high magnitude. During the day yesterday, notable amplitudes were recorded in the tremor signal, being the highest for 1 month. The maximum magnitude observed was 4.0 mbLg of earthquake that occurred at a depth of 10 km, reaching an intensity IV (EMS). The seismicity registered at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and cause small landslides in sloping areas. Relevant information on this topic is included in the Recommendations section of the report.

The deformation shows a pattern of stability around the eruptive center and a slight regional deflation of deep origin detected in the stations furthest from the eruptive center.

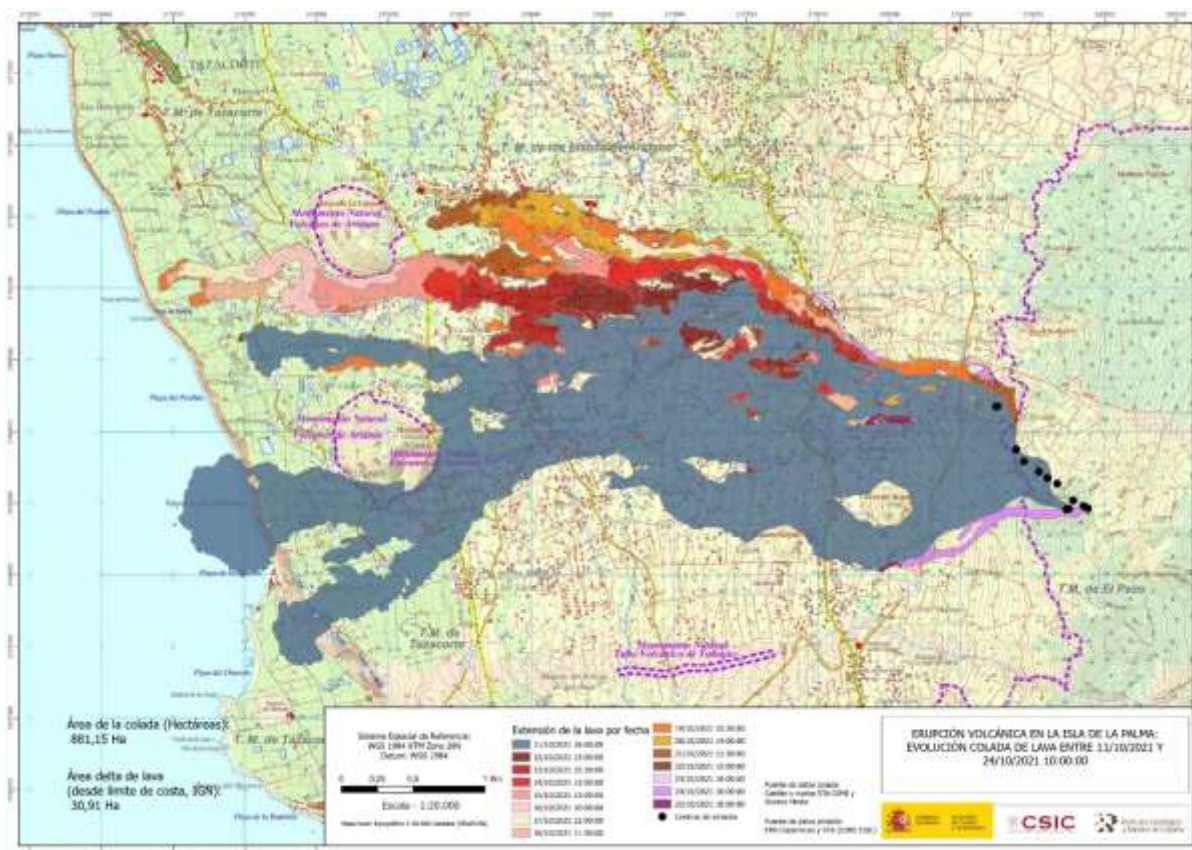
During yesterday (10/24), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values and in line with the eruptive process, reaching values of 53,600 tons per day (underestimated value). Likewise, the diffuse emission of carbon dioxide (CO₂) associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases) has been estimated at 803 tons per day as of 10/24. The monitoring of the diffuse flow of carbon dioxide (CO₂) in the geochemical station of Los Llanos (LP10) reflects a higher magmatic-hydrothermal fraction than that observed in the geochemical station of Fuencaliente (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, regarding sulfur dioxide (SO₂), the situation has been improving throughout yesterday, with low values in most of the island's stations, except in the stations located in Los Llanos and Puntagorda, where higher SO₂ concentrations were recorded compared to the rest of the

stations during much of the day, with a maximum of $278 \mu\text{g} / \text{m}^3$ at 11:00 in Puntagorda, not exceeding the hourly limit value (established at $350 \mu\text{g} / \text{m}^3$). The daily average at said station was $123 \mu\text{g} / \text{m}^3$, which is not an excess of the daily reference value (established at $125 \mu\text{g} / \text{m}^3$), but it is very close. The values measured in these two stations have been decreasing during the early hours and in the morning of today, while in the rest of the stations they continue to be low.

With regard to particles smaller than 10 microns (PM10), values below the daily threshold (established at $50 \mu\text{g} / \text{m}^3$) have been recorded in most stations on the island, except in Los Llanos, where peaks were recorded above of said threshold during the day of yesterday that were reduced throughout the afternoon and night. Yesterday there were no exceedances of the daily threshold in any station. Throughout the early morning and tomorrow today the values remain low in all stations.

The level of lava emission on the west flank increases after a new reconfiguration of the volcanic cone



The main lava flow runs over the previous runoffs and within the exclusion zone

PEVOLCA recommends reducing physical activities outdoors and wearing a FFP2 mask in Puntagorda and Los Llanos de Aridane, after punctually exceeding the air quality thresholds

Seismicity remains high and can cause new landslides, so the population must heed the advice of the authorities to reduce risks

During the last hours, the reconfiguration process of the main cone has continued, with a high level of lava emission that runs over the existing streams, increasing in height and filling in the islands between the streams. The area affected by the volcanic eruption today is estimated at 879 hectares, 27 more than the last figure. These were some of the issues addressed today in the Steering Committee of the Special Plan for Civil Protection and

Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, based on the report of the Scientific Committee, which was led by in La Palma by the counselor of Public Administrations, Justice and Security, Julio Pérez.

Yesterday, around 8:00 p.m., there was an increase in the level of the lava lake that caused the partial collapse of the upper part of the cone, dragging large blocks. The main flow of the lava flows runs along the west flank, descending on the previous flows, following trajectories towards the west, within the current exclusion zone.

The PEVOLCA Technical Director, Miguel Ángel Morcuende, explained that the runoffs move on the surface and through lava tubes and that the increase in hectares responds to the lava spill to the south and to the voids that have been filled in the intermediate areas.

Stream 7 heading towards the sea continues to stand still at about 120-130 meters. La 8, which is located in La Laguna, has taken a southwesterly course, which seems to indicate that it may end up joining cast 7, although a new load of material as a consequence of the cone breakage may divert it north of the mountain of La Laguna, an area that currently remains evacuated. The southernmost colada, la 10, is located approximately 150 meters from the photovoltaic park, 250 meters from the houses in Corazoncillo and approximately 600 meters from the Las Manchas cemetery.

According to the data provided by the Cadastre, the buildings destroyed or damaged by the eruptive process are estimated at 1,291 buildings, of which 1,038 are for residential use, 135 for agriculture, 64 for industrial use, 30 for leisure and hospitality and 11 for public use, among others.

The spokeswoman for the Scientific Committee and director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, pointed out that seismicity continues to be registered in the same area and maintains a high magnitude, but less frequently than in previous days. In this sense, the felt earthquakes can increase and reach intensity VI and cause new landslides, so the population must follow the recommendations of the authorities and know how to act to avoid risks.

In the last hours, the deformation of the ground at the station closest to the cone shows an increase of up to 10 centimeters, which is not observed in the rest of the network, and which may be motivated by an increase in the

accumulation of magmatic material under that cone. station. However, Blanco pointed out that it is necessary to reinforce the observation to corroborate that this data has not been altered by other disturbances in the area since this pattern, in previous cases, has been accompanied by the intensification of other observable phenomena, such as the increased lava flow and the opening and closing of new centers.

As regards air quality, the hourly threshold has been exceeded on a specific basis, at the Puntagorda and Los Llanos de Aridane stations. At these points and during the hours in which the population is informed, it is recommended that vulnerable people remain indoors as much as possible and if they have to go out that they wear FFP2 masks and, for the rest of the population, not do outdoor activities.

The expected position of the plume and SO₂ for the next 36-48 hours will be towards the SW and W from the eruptive focus, and the meteorological scenario is favorable for the operation of the Canarian airports.

The number of people housed in hotel centers is currently 452. Of these, 387 are staying at the Fuencaliente hotel and 65 are in a Los Llanos de Aridane hotel center. All are being cared for by the Spanish Red Cross, in coordination with municipal social services. In addition, there are 38 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity. Yesterday around 8 pm there was an increase in the level of the lava lake, which caused the partial collapse of the upper part of the cone, dragging large blocks.

The main flow of the lava flows runs along the west flank, descending on the previous flows, following trajectories towards the west, within the current exclusion zone.

The cone emission centers are still active, with intermittent pyroclastic expulsion and one with lava emission. The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

Scattering cloud (S-SW) reaches 2000 m, no column maintained

The wind is expected to continue from the N to E component from the surface to the middle levels of the troposphere (5500 m). The expected position of the plume and SO₂ for the next few hours (36-48 h) will be towards the SW and W from the eruptive focus. The meteorological scenario is favorable for the operation of the Canarian airports. The arrival of fine ash to El Hierro is not ruled out. The inversion of subsidence associated with the trade wind will be established around 1500 m. This, together with weak winds on the west slope, could cause a scenario that is particularly unfavorable for air quality. The low probability of weak rainfall continues, mainly affecting the northern and eastern slopes.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km, which in the last hours continue to have a high magnitude, although with less frequency. High values of the amplitude

of the tremor signal are maintained, with intensification pulses. The maximum magnitude observed was 4.2 mbLg of an event at a depth of 36 km, with intensity IV EMS. The seismicity registered at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that more felt earthquakes are possible, being able to reach intensities VI (EMS) and originate small landslides in sloping areas. Relevant information on this topic is included in the Recommendations section of the report.

The deformation in the station closest to the cone shows an increase in the last hours of up to 10 cm, which is not seen in the rest of the network. This pattern has already occurred on two previous occasions, being followed by an intensification of the phenomena observable in the eruptive centers. In the stations furthest from the eruptive center, a slight regional deflation of deep origin persists.

During yesterday (10/25), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values and in line with the eruptive process, reaching values of 40,800 tons per day (value probably underestimated). In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), a trend of this geochemical parameter had been observed from 12/10 to 10/22 and since then an upward trend has been recorded, with a diffuse emission of carbon dioxide (CO₂) of 1,121 tons per day being recorded as of 10/25. Monitoring the diffuse flux of carbon dioxide (CO₂), in the geochemical station of Los Llanos (LP10) it reflects a greater magmatic-hydrothermal fraction than that observed in the geochemical station of Fuencaliente (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, regarding sulfur dioxide (SO₂), yesterday the values remained low in all the stations of the network, far from the hourly limit value (established at 350 µg / m³). During this morning there is an increase in the values registered in the stations on the west side of the island, mainly in Los Llanos and Puntagorda. In this last station the hourly threshold has been exceeded at 11:00. Its evolution will have to be monitored in the next few hours.

With regard to particles smaller than 10 microns (PM10), we continue to record values below the daily threshold (established at $50 \mu\text{g} / \text{m}^3$) in most stations on the island, except in Los Llanos, where values above said threshold between 10:00 and 18:00, which was reduced throughout the afternoon and night. Yesterday there were no exceedances of the daily threshold in any station. During the early hours of the morning and the morning of today, the values have remained low in all the stations, except in Los Llanos where the values have been increasing during the early hours of the morning reaching values above $90 \mu\text{g} / \text{m}^3$.

October 27th

Visitor Alert

The increase in visitors who see the eruption forces the reinforcement of road controls



The Steering Committee of the PEVOLCA Plan of the Government of the Canary Islands addresses the concern about the high presence of vehicles and the traffic of people on the margins of the roads between the Padrón roundabout and the Maderas la Rueda roundabout

The high influx of visitors to the area near the La Palma volcano, which is expected to increase next weekend on the occasion of the November 1 public holiday, has been the object of special interest in the Steering Committee of the Special Civil Protection Plan and Canary Islands Volcanic Risk Emergency Assistance (PEVOLCA) of the Canary Islands Government, which on Wednesday addressed the situation of the roads on the LP-2 and LP-3 roads, from where people contemplate the eruption. The Steering Committee agreed that the Civil Guard should reinforce the control of vehicles and the night traffic of pedestrians on the margins of the roads without reflective vests, which entails the risk of being run over by people.

The risk of being run over occurs, in particular, in the six-kilometer section between kilometer 21,800 of the LP-3 highway (area known as the Padrón roundabout, near Tajuya) and kilometer 47,100 of the LP-highway. 2 (area known as the Maderas la Rueda roundabout). In this area, the PEVOLCA Steering Committee of the Government of the Canary Islands requests that the population and visitors do not travel along the side of the road or park their vehicles.

At the end of September, the Santa Cruz de Tenerife Provincial Traffic Headquarters adopted special traffic regulation measures in order to guarantee the maximum safety and fluidity of traffic in this environment. For this it has the coordination of the Cabildo de La Palma and the Traffic Group of the Civil Guard.

These measures also seek to guarantee access only to the owners of the area, its workers, residents, emergency vehicles and authorized vehicles (press, vehicles with the device for people with reduced mobility or taxis, among others). Likewise, the order states that all vehicles, except those mentioned above, will be prevented from parking outside the areas designated and marked for this purpose within the affected section, to avoid exceeding the capacity of the available parking lots and collapsing, with the consequent damage to the work being carried out by the emergency vehicles operating in the area.

The Steering Committee recalls that those people who have to circulate on the shoulders of the tracks at night, must do so wearing reflective vests. In addition, they will also have to carry the documentation that proves their residence or place of work, as well as the authorizations to carry out work in the areas. This seeks to avoid unnecessary incidents or annoyances in the

event that it is required to be displayed by the authorities that are providing support in the affected area.

Finally, the Civil Guard indicates that it has strengthened the breathalyzer controls on the Aridane Valley roads.

PEVOLCA UPDATE

The lava flow is maintained in the main streams to the west, which fill gaps and grow in thickness and height.



The deformation of the terrain registered yesterday at the Jedey station, close to the main cone, has almost completely reversed

PEVOLCA insists on self-protection measures against the increase in seismicity, at medium and deep levels

Traffic control in the vicinity of the exclusion zone will be intensified to guarantee the safety of drivers and pedestrians

The Steering Committee of the Special Plan for Civil Protection and Emergency Care for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, meeting this morning analyzed the latest indicators provided by the Scientific Committee, which still do not show a trend towards the end of the process eruptive, short or medium term. The person in charge of the Plan, the Minister of Public Administrations, Justice and Security, Julio Pérez, chaired this meeting from La Palma, where the state of basic services

and the need to reinforce the recommendations to the population in the event of earthquakes were also addressed. air quality and road safety.

The PEVOLCA Technical Director, Miguel Ángel Morcuende, explained that yesterday the reconfiguration of the morphology of the volcanic cone continued with the partial collapse of the upper part of the main cone, causing the lava flows to run preferentially to the west over the previous flows, with filling of islands and troughs, and with an increase in thickness and height. This scenario is "favorable", taking into account that it does not cause new damage and runs through existing castings.

The latest data on the area affected by the volcanic eruption is estimated at 884.9 hectares, almost 6 hectares more than was available yesterday.

Regarding seismicity, the spokesperson for the Scientific Committee and director of the National Geological Institute (ING) in the Canary Islands, María José Blanco, pointed out that in the last few hours the number of events with a magnitude greater than 3.5 mbLg, both at medium and deep depths, has increased. , reaching the magnitude of 4.9 mbLg and the intensity IV-V. In this regard, it is insisted once again that the population must put into practice the self-protection measures offered by the authorities to know how to act in the event of earthquakes and reduce risks.

The 10-centimeter deformation reported yesterday, recorded at the station near Jedey, has practically completely reversed, recovering the levels of previous days. Meanwhile, in the stations furthest from the eruptive center, a slight regional deflation of deep origin persists. At present there are no new relevant deformations.

The meteorological scenario is favorable for the operation of the Canarian airports, with a trade wind regime in low areas and a north-northeast component in height, with an investment similar to that of yesterday (at 1,500 meters), with a low probability of rainfall in the northeast . The ash and SO₂ plume is expected to be disposed of within 36 to 48 hours to the southwest and west from the eruptive focus. The arrival of fine ash to El Hierro is not ruled out.

With regard to air quality, there are no notable data from the PM₁₀ particle measurement stations and it remains low. The levels of sulfur dioxide (SO₂) have exceeded the hourly threshold at specific moments in the stations on the west slope, specifically in Puntagorda, in El Charco (Fuencaliente) and in

Los Llanos de Aridane. This exceeding of thresholds is specific and is being studied by the Scientific Committee.

In addition, PEVOLCA is working on the development of a warning protocol to simplify communication to the population about the appropriate recommendations, such as reducing physical activity abroad or the use of a FFP2 mask, in the event of certain exceedances of air quality thresholds. It is a kind of traffic light that, depending on the color, would determine small self-protection measures, without the need to issue confinement orders.

The number of people housed in hotel centers is currently 454. Of these, 389 are staying at the Fuencaliente hotel and 65 are in a Los Llanos de Aridane hotel center. All are being cared for by the Spanish Red Cross, in coordination with municipal social services. In addition, there are 38 dependent people cared for in insular health centers.

As for the data provided by the cadastre on the affected buildings, they are kept in some 1,291 buildings, of which 1,038 are for residential use.

PEVOLCA also agreed to strengthen the security system in the vicinity of the exclusion zone due to the increase in visitors, intensifying the control of the roads, both for drivers and pedestrians.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava

flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity. Yesterday at noon there was a partial collapse of the upper part of the main cone, modifying its morphology causing the lava flows to run preferentially to the west over the previous flows.

Currently, several emission centers are still active with intermittent activity (both pyroclastic and lava), varying as the configuration of the eruptive zone changes: collapse of the cones and subsequent reconfiguration, cessation of activity of some of the centers, increase in explosiveness,.... The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The measured height of the eruptive column is 3400 m.

The next few hours will continue to blow the N component wind in the lower and middle troposphere (from surface to 5500 m). It is expected that the ash and SO₂ plume will be available in the next hours (36-48 h) towards the SW and W from the eruptive focus. The meteorological scenario is favorable for the operation of the Canarian airports. The arrival of fine ash to El Hierro is not ruled out. Today and tomorrow there is a low probability of weak rainfall affecting the north and east slopes.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km. In the last hours the number of events with a magnitude greater than 3.5 mbLg has increased both at medium and deep depths, reaching the magnitude of 4.9 mbLg and the intensity IV-V. High values of the amplitude of the tremor signal are maintained, with intensification pulses. The seismicity registered at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate

that it is possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and cause small landslides in sloping areas.

The deformation of 10 cm reported yesterday, registered in the station near Jedey, has almost completely reversed, recovering the levels of previous days. At present there are no new relevant deformations. In the stations furthest from the eruptive center, a slight regional deflation of deep origin persists.

During yesterday (10/26), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values and in line with the eruptive process, reaching values of 37350 tons per day (value probably underestimated). In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emanations of volcanic gases), a trend of this geochemical parameter had been observed from 12/10 to 10/22 and since then an upward trend has been recorded, with a diffuse emission of carbon dioxide (CO₂) of 1,320 tons per day being recorded on 10/26. Monitoring the diffuse flux of carbon dioxide (CO₂), in the geochemical station of Los Llanos de Aridane (LP10) it reflects a greater magmatic-hydrothermal fraction than that observed in the geochemical station of Fuencaliente (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, regarding sulfur dioxide (SO₂), yesterday there was an increase in the values recorded in the stations on the west side of the island, mainly in Los Llanos de Aridane and Puntagorda, exceeding the hourly limit value (established at 350 µg / m³) in Los Llanos de Aridane on one occasion at 5:00 p.m. and twice in Puntagorda, at 11:00 a.m. and 6:00 p.m., with a concentration of 482 µg / m³ in the second exceedance, very close to the alert threshold value (established at 500 µg / m³). Yesterday the daily limit value was not exceeded in any station (established at 125 µg / m³). During this morning there is a significant increase in SO₂ concentrations at the Los Llanos de Aridane, Fuencaliente and Puntagorda stations, more intensely in the last two. At the Fuencaliente station the alert threshold has been exceeded, with an hourly average of 702 µg / m³ at 09:00, but the values have subsequently been reduced, while at the Puntagorda station the alert threshold has been exceeded on three consecutive occasions, between 09:00 and 11:00, the values appear to be declining at this time but remain

high. The evolution of this event will have to be monitored in the next few hours. values appear to be declining at this time but remain high. The evolution of this event will have to be monitored in the next few hours. values appear to be declining at this time but remain high. The evolution of this event will have to be monitored in the next few hours.

With regard to particles smaller than 10 microns (PM₁₀), we continue to register values below the daily threshold (established at 50 µg / m³) in most stations on the island, except in Los Llanos de Aridane, where values were registered yesterday. above said threshold between 10:00 and 13:00, which were decreasing throughout the morning. Yesterday there were no exceedances of the daily threshold in any station. During the early hours of the morning and in the morning of today, the values have remained low in all the stations, except in Los Llanos de Aridane where the values have been increasing during the first hours of the morning, standing at this time above the daily threshold .

October 28th

Today there have been no exceedances of limit values for air quality



The emission centers are still active and three streams receive the highest contribution of lava

One of them is advancing on land not affected so far and is 20 meters from the Camino de Aniceto

The surface of the lava occupies about 905 hectares, with a maximum width of 2,900 meters between flows

The PEVOLCA Management values the work of the Security group and the involvement of the UME

The Scientific Committee reported this morning that, as regards air quality, during today there have been no exceedances of the hourly SO₂ limit values, and indicated that several emission centers with intermittent activity are still active, both pyroclasts and lava, which feed the existing streams, with a special contribution to three of them that are being specially monitored.

These and other conclusions of the Scientific Committee were analyzed in the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, chaired today by the General Director of Safety and Emergencies, Gustavo Armas, with the absence of the director responsible for the Plan, Julio Pérez, for his attendance at the meeting of the Governing Council of the Canary Islands. Pérez will also not be able to participate tomorrow in the daily meeting due to his participation in Madrid in the Justice Sector Conference.

In said daily meeting of the Steering Committee, the service performed by the Security group, made up of the Civil Guard, the National Police, the General Corps of the Canarian Police and the Local Police, was analyzed and valued. The involvement of the Military Emergency Unit (UME) was also recognized, which, in addition to participating in the monitoring of the flows and the evaluation of gases, carries out ash cleaning work in the exclusion zones. In these last 10 days, it has removed the ash from more than 300 homes on a regular basis to prevent the roofs from sinking, with the participation of the Infantry Regiment recently and before the Artillery Regiment.

Regarding the flows, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, explained that the lava flow flows mainly to the west over previous flows within the exclusion zone, with occasional overflows, and mainly feeding three flows. In the original one (number 1) an important lava contribution continues to be observed, with an increase in the submarine front of the lava delta. Laundering number 3 has advanced on terrain that until now had not been affected, it is 20 meters from the Camino de Aniceto although at low speed. This area has already been evacuated and the lava is causing new damage to buildings and could affect the road that is serving as access to Puerto Naos at this time.

Colada number 7 continues its way to the sea and is located 86 meters from the coast of Tzacorte, near the beach of El Perdido. This flow continues to be monitored with special attention to be able to issue warnings to the population, since the contact of the lava with the sea can generate explosions and the emanation of gases.

Despite the fact that these flows are the ones that receive the greatest contribution, the PEVOLCA Directorate maintains preventive evacuations of the population, since the eruptive process is still active and the flows may undergo changes.

The area affected by the volcanic eruption is estimated at 905.46 hectares, 20 more than the last data, and the maximum width between the flows of 2,900 meters is maintained.

Regarding seismicity, the spokesperson for the Scientific Committee and director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, pointed out that the increase in the number of events with a magnitude greater than 3.5 mbLg continues at both medium and deep depths, reaching the magnitude of 4.8 mbLg and the intensity IV, although the possibility of producing more felt earthquakes remains, being able to reach intensities VI (EMS). No significant surface seismicity is recorded.

The deformations have been normalized, after having reversed the one recorded at the Jedey station, closest to the cone, without new relevant deformations having been recorded. In the stations furthest from the eruptive center, a slight regional deflation of deep origin persists.

The emission of sulfur dioxide (SO₂) associated with the volcanic plume continues to register high values in line with the eruptive process, reaching yesterday values of 16,350 tons per day, although Blanco indicated that a downward trend has been observed during the last 4 days.

The weather forecast points to a weakening of the trade wind, which may facilitate the entry of Saharan air, and a lowering of the base of thermal inversion that will make it difficult for gases to disperse and a probable increase in suspended particles. However, this scenario is favorable for the operation of the airports.

Regarding air quality, today there have been no exceedances of the hourly SO₂ limit values, although yesterday the threshold was exceeded at the Puntagorda station. With regard to particles smaller than 10 microns (PM₁₀), the values are still below the daily threshold in most stations on the island, except in Los Llanos de Aridane. This specific event may be related to road traffic and ash removal work carried out in the area.

In this sense, Morcuende recalled that PEVOLCA will implement a traffic light system to warn the population and simplify communication in the event of certain exceedances of air quality thresholds, as a complement to the notices that are coming. broadcasting to the population from the different administrations. Among them, it stands out, reducing physical activity outside or the use of a FFP2 mask for vulnerable people.

The number of people housed in hotel centers is currently 458. Of these, 388 are staying at the Fuencaliente hotel and 70 are in a Los Llanos de Aridane hotel center. All are being cared for by the Spanish Red Cross, in coordination with municipal social services. In addition, there are 44 dependent people cared for in insular health centers.

Regarding the data provided by the cadastre on the affected buildings, it is maintained in some 1,293 buildings, of which 1,039 are for residential use, 136 agricultural, 64 industrial, 29 for leisure and hospitality, 11 for public use and 14 for others. applications.

The Steering Committee again reviewed the situation of the damaged electrical installations. According to data from Endesa, there are 2,377 affected customers and 65 supports destroyed in the areas affected by the eruption. The eruptive process has also destroyed 86 kilometers of low and medium voltage electricity supply distribution networks in these same areas. However, all inhabited buildings and active commercial establishments have electricity.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity. Lava flows preferentially run west over previous flows within the exclusion zone, overflowing occasionally. Activity continues to be observed in lava flows 1 (underwater front of the lava delta), 3 with front advancing with new input on previously unaffected ground and 7 expanding its width, being 84 m from the coast.

Currently, several emission centers are still active with intermittent activity (both pyroclastic and lava), varying as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The height measured today of the eruptive column is 2600 m.

The next few hours will continue to blow the N component wind in the lower and middle troposphere (from surface to 5500 m). It is expected that the ash and SO₂ plume will be available in the next hours (36-48 h) towards the SW and W from the eruptive focus. The meteorological scenario is favorable for the operation of the Canarian airports. The arrival of fine ash to El Hierro is not ruled out. Today and tomorrow there is a low probability of weak rainfall affecting the north and east slopes.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km. The increase in the number of events with a magnitude greater than 3.5 mbLg continues both at medium and deep depths, reaching the magnitude of 4.8 mbLg and intensity IV. High values of the amplitude of the tremor signal are maintained, with intensification pulses. The seismicity registered at intermediate and deep depths is part of

the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and cause small landslides in sloping areas.

The vertical deformation of 10 cm recorded at the station near Jedey has reversed. At present there are no new relevant deformations. In the stations furthest from the eruptive center, a slight regional deflation of deep origin persists.

During yesterday (10/27), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values and in line with the eruptive process, reaching values of 16,350 tons per day (value probably underestimated). Even so, a downward trend is observed in the emission of sulfur dioxide (SO₂) during the last 4 days. In the case of diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emanations of volcanic gases), a trend of this geochemical parameter was observed from 10/12 to 10/22 but since 10/22 an upward trend has been registered, reaching a diffuse emission of carbon dioxide (CO₂) of 1,380 tons per day as of 10/27. The monitoring of the diffuse flow of carbon dioxide (CO₂) in the geochemical station of Los Llanos de Aridane (LP10) reflects a higher magmatic-hydrothermal fraction than that observed in the geochemical station of Fuencaliente (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, regarding sulfur dioxide (SO₂), yesterday there was an episode of pollution in the stations on the west side of the island, exceeding the hourly limit value (established at 350 µg / m³) in Puntagorda (between 8 am and 11 am) and Fuencaliente (9 am). The values recorded at the Puntagorda station meant that the population alert threshold (established at 500 µg / m³) was exceeded on three consecutive occasions, between 09:00 and 11:00. As a consequence of the peaks recorded, yesterday the daily limit value (established at 125 µg / m³) in this station was exceeded, with a daily average of 197 µg / m³. Today, there have been no exceedances of the hourly limit values at the air quality stations.

With regard to particles smaller than 10 microns (PM₁₀), we continue to register values below the daily threshold (established at 50 µg / m³) in most

stations on the island, except in Los Llanos de Aridane, where values were registered yesterday. above this threshold between 9:00 a.m. and 6:00 p.m., which decreased during the late evening. This time pattern has been repeating itself in recent days. Yesterday there were no exceedances of the daily threshold in any of the stations. During the early hours and the morning of today, the values have remained low in all of them, except in Los Llanos de Aridane where the values have been increasing during the early hours of the morning, currently standing at levels slightly above the daily threshold .

October 29th

The PEVOLCA Plan calls for citizen collaboration in the face of the increase in visitors this weekend



Launches a free shuttle service to access the volcano area and establishes alternative routes to the LP-3 for private vehicles

The lava flow exceeds the front of streams 1 and 3, advancing 900 meters in the last 24 hours

Landing number 3 has been partly joined to 9, while an appendix moves towards Las Majadas and is 20 meters from the Aniceto road

The Directorate of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands calls on the population to collaborate with the safety and emergency teams and guarantee road safety due to the increase of visitors to La Palma by the Puente de Todos Los Santos. In this sense, it recommends the use of the free shuttle bus service that the Canary Islands Government Plan and the Island Council have made available to users. This service will depart every 20 minutes from the old Buenavista airport, in Breña Baja, to the Plaza de Tajuya in the municipality of El Paso.

As for the schedule of this bus service, it will be held every 20 minutes. Today, Friday the transfers are made from Breña Baja from 4:00 p.m. to 10:40 p.m., with a last return trip from Tajuya at 24 hours. The rest of the days, Saturday, Sunday and Monday, the first departure of the service will take place at 10:00 hours and the last at 22:40, with a last transfer back at 24:00.

People who want to access the municipalities of El Paso, Los Llanos de Aridane and Tazacorte by private vehicle must use alternative routes to the LP-3 and move along the slopes of El Paso and Hermosilla, since the LP-3 must be free for the circulation of emergency services, heavy vehicles, resident and authorized persons, as well as public transport.

In addition, the maximum collaboration of all the people who pass through the area is requested to avoid accidents and, especially, the use of reflective vests for pedestrians.

Regarding the evolution of the volcano, the eruption maintains the same behavior pattern as in the last three days, with high rates of lava emission and without reconfigurations of the cone in the last 24 hours. From the lava source focus on the northwest flank of the main cone, a stream emerges that moves southwest over previous streams, forking into two arms, one of which advances to the west and the other to the southwest. The latter

passes the front of flows 1 and 3, moving over previously unaffected terrain in a southwesterly direction, advancing 900 meters in the last 24 hours.

These and other conclusions of the Scientific Committee were analyzed in the PEVOLCA Steering Committee of the Government of the Canary Islands, chaired today by the General Director of Security and Emergencies, Gustavo Armas, with the absence of the director responsible for the Plan, Julio Pérez, for his attendance at the Sectorial Justice Conference held this Friday in Madrid.

Regarding the flows, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that during the night the wash number 3 has joined the number 9 by the vector of greater intensity and has an appendix that moves towards Las Majadas, above the Camino Aniceto, which is the one that can threaten the road that connects with Puerto Naos, a town that is currently not threatened by lava. In anticipation that the lava could affect this road, work is being done to expand the road that is currently used to go up from Puerto Naos to Charco (Fuencaliente).

The area affected by the volcanic eruption is estimated at 915.73 hectares, 10.27 more than the data provided yesterday, and the maximum width between the flows of 2,900 meters is maintained, although within this extension there are areas that have not been damaged by lava.

During yesterday, the emission of sulfur dioxide (SO₂) associated with the volcanic plume has continued to register high values in line with the eruptive process, reaching values of 150 <.00 tons per day. Even so, a downward trend is observed in the emission of sulfur dioxide (SO₂) during the last five days.

Regarding seismicity, the spokesperson for the Scientific Committee and director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, indicated that it continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 kilometers, and that earthquakes located at depths greater than 20 kilometers have also been recorded. According to Blanco, although the number of events at depths greater than 20 kilometers has decreased in the last two days, this has no medium-term significance.

There are no new relevant deformations and a slight regional deflation of deep origin persists in the stations furthest from the eruptive center.

The meteorological conditions of the next few days point to a favorable situation from the point of view of the operation of the airports, although the thermal inversion can harm air quality by preventing the dispersion of pollutants and suspended particles.

Regarding air quality, yesterday there was an improvement in the average levels of sulfur dioxide (SO₂) concentration throughout the island, without the emissions of this gas, which is associated with the eruptive process, causing exceeding the hourly (350 µg / m³) or daily (125 µg / m³) limit values at any of the stations in the air quality network.

As was anticipated in previous days, when a certain threshold or daily is exceeded, the Canary Islands Health Service will issue a warning and communicate through 1-1-2, based on a traffic light on the air quality index. According to that blue classification it will be good; green, reasonably good; yellow, regular; unfavorable orange; red very unfavorable, and purple, extremely unfavorable.

The number of people housed in hotel centers is currently 454. Of these, 384 are staying at the Fuencaliente hotel and 70 are in a Los Llanos de Aridane hotel center. All are being cared for by the Spanish Red Cross, in coordination with social services. In addition, there are 44 dependent people cared for in insular health centers.

Regarding road infrastructures, it is estimated that 60 kilometers of roads are affected. Of these, approximately 8.5 kilometers correspond to island roads, 9.3 kilometers to streets, 1.9 kilometers to crossings and 40 kilometers are from other municipal roads.

Regarding crops, the total affected hectares is estimated to reach 266, of which 145.7 correspond to banana plantations, 58.36 to vineyards and 23.38 to avocados. There is no update of data from the Cadastre, nor from the Copernicus satellite.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary

Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2. The eruption maintains the same pattern of behavior as in the last three days.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

From the lava-emitting focus on the NW flank of the main cone, a stream emerges that moves southwest on previous streams, forking into two arms, one of which advances to the west and the other to the southwest. This last lava flow exceeds the front of streams 1 and 3, moving over previously unaffected terrain in a southwesterly direction, advancing 900 m in the last 24 h.

Currently, several emission centers are still active with intermittent activity (both pyroclastic and lava), varying as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The height measured today of the eruptive column is 3300 m.

The wind in the lower-middle troposphere (below 3,500 m) is expected to rotate from N component to E component. The expected position of the ash plume and SO₂ will be W and SW from the eruptive focus. This

provision supposes a favorable scenario for the operation of the Canarian airports. The thermal inversion will be located today at an altitude around 1200 m and it is expected that it will decrease in altitude (to be around 800 m tomorrow) and be more pronounced (3°C). The above, together with the prevailing breeze regime on the O slope, suppose unfavorable meteorological conditions from the point of air quality for the next few days.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km. The magnitude of 4.2 mbLg and the intensity of IV were reached. High values of the amplitude of the tremor signal are maintained, with intensification pulses. The seismicity registered at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and cause small landslides in sloping areas. Relevant information on this topic is included in the Recommendations section of the report.

There are no new relevant deformations. In the stations furthest from the eruptive center, a slight regional deflation of deep origin persists.

During yesterday (10/28), the emission of sulfur dioxide (SO_2) associated with the volcanic plume (visible emanations of volcanic gases) continues to register high values and in line with the eruptive process, reaching values of 15,000 tons per day (value probably underestimated). Even so, a downward trend is observed in the emission of sulfur dioxide (SO_2) during the last 5 days. In the case of diffuse emission of carbon dioxide (CO_2), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), a downward trend of this geochemical parameter is observed from 10/12 to 10/22, but since 10/22 an upward trend has been observed, registering a diffuse emission of carbon dioxide (CO_2) of 1,372 tons per day as of 10/28. The monitoring of the diffuse flow of carbon dioxide (CO_2) in the geochemical station of Los Llanos (LP10) reflects a higher magmatic-hydrothermal fraction than that observed in the geochemical station of Fuencaliente (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, yesterday there was an improvement in the average levels of sulfur dioxide (SO₂) concentration throughout the island, without the emissions of this gas, which is associated with the eruptive process, causing exceeding the hourly (350 µg / m³) or daily (125 µg / m³) limit values at any of the air quality network stations. The maximum hourly air quality was taken at the Los Llanos de Aridane station at 6:00 p.m. with a data close to 300 µg / m³ that fell rapidly during the late evening. In Puntagorda, after the early morning highs on the 28th, also lower than the hourly average, the records remained low throughout the day, except for a peak of 170 µg / m³, at 6 pm. During this day there have been no exceedances of the hourly limits. The most significant values are recorded during the morning at the Los Llanos de Aridane station, with an hourly maximum of 161 µg / m³ at 7 am, and a downward trend in the latest data.

With regard to particles smaller than 10 microns (PM₁₀), we continue to record values below the daily threshold (established at 50 µg / m³) in all stations on the island, except in Los Llanos de Aridane, where hourly averages were again recorded yesterday. Above said threshold between 9 and 18 hours, with a maximum of 196 µg / m³ at 18 hours, which decreased during the evening. The records of this station reflect the incidence of ash falls from the volcano, highly influenced by the daily wind dynamics. Yesterday, the daily average of Los Llanos de Aridane exceeded the daily threshold, with a figure of 52 µg / m³.

October 30th

Given the increase in visitors, road safety is reinforced and the shuttles to the volcano viewpoint continue



Colada 3 has advanced 1,500 meters in the last 24 hours, parallel to 9, reaching the Las Hoyas area

The affected area is estimated at 963 hectares and the maximum width between flows reaches 3,000 meters

This morning an earthquake of magnitude of 5.0 mbLg with intensity IV-V was registered, the largest of the series and earthquakes of intensity VI are not ruled out

The Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, chaired by the Minister of Public Administrations, Justice and Security, Julio Pérez, has insisted today on the reinforcement of the measures preventive measures launched yesterday due to the increase in visitors to La Palma during the Todos Los Santos bridge, with

the aim of guaranteeing the safety of people and not obstructing the work of the emergency services.

In this sense, it is recommended that all people who want to access the area to see the volcano make use of the free shuttle bus service, which the Canary Islands Government Plan and the Island Council have made available to users. This service will depart every 20 minutes from the old Buenavista airport, in Breña Baja, to the Plaza de Tajuya in the municipality of El Paso. The service hours, both today, Saturday, Sunday and Monday, are established with departures from the old airport from 10:00 a.m. to 10:40 p.m., with a last return from Tajuya at 24:00 p.m. .

People who want to access the municipalities of El Paso, Los Llanos de Aridane and Tazacorte by private vehicle must use alternative routes to the LP-3 and move along the slopes of El Paso and Hermosilla, since the LP-3 must be free for the circulation of emergency services, heavy vehicles, resident and authorized persons, as well as for public transport. In addition, all drivers are requested to exercise caution when driving and that pedestrians wear reflective vests to avoid accidents and run over.

The Steering Committee also highlighted the support work carried out by the emergency services, both professionals and volunteers, so that residents can access the exclusion zones and collect belongings or clean up ashes. Among them, yesterday 169 vehicles passed through the Tazacorte checkpoint to visit the cemetery.

Regarding the flows, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that the wash 3 has spilled on the wash 9 to which it has been joined by following troughs, until reaching the vicinity of the coast. This wash is the one that is causing the greatest damage and affecting buildings, banana trees and greenhouses in its path.

At noon this Saturday it was about 400 meters from the sea and is being monitored, although it is not ruled out that it does not reach the water since there is a flat area in which it can spread. However, if it were to reach the sea, it would not be necessary to take confinement measures since it is an area that has already been evacuated and the San Borondón nucleus is located at 3,800 meters, enough distance not to be affected.

On wash 4, she has been standing near Perdido beach for several days and does not seem to have much food. However, PEVOLCA continues to

monitor it because in this case the contact of the lava with the sea would force the taking of measures to confine the coastal nuclei of Tazacorte.

For her part, the spokesperson for the Scientific Committee and director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, explained at a press conference that the lava emitting focus on the northwest flank of the main cone produces a stream that moves towards the southwest over previous casts, forking into two arms, one of which advances to the west and the other to the southwest. This last lava flow exceeds the front of streams 1 and 3, moving over previously unaffected terrain in a southwesterly direction, advancing 1,500 meters in the last 24 hours, reaching the low island in the Las Hoyas area.

The area affected by the volcanic eruption is estimated at 963.73 hectares, 48 hectares more than the last data, while the maximum width between the flows has increased by 100 meters to 3,000, mainly due to the advance of the wash 3. Within this stretch between streams there are areas that have not been damaged by lava.

According to the latest data provided by the Copernicus satellite regarding the number of constructions / buildings destroyed or damaged, it is estimated that the eruptive process has affected approximately a total of 2,681 buildings, of which 2,532 may be completely destroyed and 149 damaged. or at risk. These data will be filtered with the Cadastre in the next few days.

Regarding the eruptive process, Blanco pointed out that yesterday at noon and for several hours there was a continuous process of audible explosions of great intensity and emitting a considerable volume of ash covering the entire Valley. This episode could be caused by intense degassing.

During yesterday, the emission of sulfur dioxide (SO₂) associated with the plume remained high, but slightly decreased.

Regarding seismicity, the Scientific Committee spokesperson indicated that this morning the magnitude of 5.0 mbLg was reached with intensity IV-V, the maximum in the series so far and that the current level of seismicity continues to indicate that it is possible that more will be produced. earthquakes felt, being able to reach intensities VI (EMS) In this sense, PEVOLCA reiterates its warnings to the population so that they know how to act if an earthquake surprises them, both indoors and outdoors. So far

there is no knowledge of any damage that has occurred as a result of these earthquakes, such as broken glass or falling objects. However, it is insisted that the precautions already recommended be maintained.

Regarding the deformation, the stations closest to the eruptive center show a stable pattern. At stations furthest from the eruptive center, a slight regional deflation continues.

The meteorological conditions are favorable for the operation of the airport, with winds from the southeast and east, but the decrease in thermal inversion to 900 meters will make it difficult for pollutants to be dispersed. Regarding air quality, the hourly or daily thresholds for sulfur dioxide or PM10 particles have not been exceeded in any of the stations. The specific peaks in Los Llanos de Aridane seem to be associated with road traffic and cleaning work.

In any case, the Steering Committee continues to insist that the population should wear a FFP2 mask and protective glasses in the areas near the volcano, as a precautionary measure, and take special care with vulnerable people.

The number of people housed in hotel centers today remains at 454, of which 384 are staying at the Fuencaliente hotel and 70 in Los Llanos de Aridane. In addition, there are 44 dependent people cared for in insular health centers.

Finally, the Steering Committee verified that no new incidents have been registered in the water supply, energy or telephone services.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET),

Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2. The eruption maintains the same pattern of behavior as in the last three days.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

From the lava-emitting focus on the NW flank of the main cone, a stream emerges that moves southwest on previous streams, forking into two arms, one of which advances to the west and the other to the southwest. This last lava flow passes the front of streams 1 and 3, moving over previously unaffected terrain in a southwesterly direction, advancing 1500 m in the last 24 hours and reaching the lower island in the Las Hoyas area.

Currently, several emission centers are still active with intermittent activity (both pyroclastic and lava), varying as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

Yesterday at noon and for several hours there was a continuous of audible explosions of great intensity and emitting a considerable volume of ash covering the entire valley. This episode could be caused by intense degassing.

The measured height of the eruptive column today is 4000 m.

A weak E-NE synoptic flow is anticipated, intensifying in the afternoon, with weak breezes to leeward. At higher levels, the wind will roll SE. In the next few days the NE flow will continue. Expected dispersion of the ash cloud

towards the SW-W, which favors the operation of the Canarian airports. Thermal inversion between 2 and 4°C at 1200 m., Descending to 900 m. throughout the day. Dry and stable atmosphere also above inversion. Little cloudy or clear, with clouds of evolution in the afternoon and without probability of precipitation.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km. This morning the magnitude of 5.0 mbLg was reached with intensity IV-V. High values of the amplitude of the tremor signal are maintained, with intensification pulses. The seismicity registered at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and cause small landslides in sloping areas. Relevant information on this topic is included in the Recommendations section of the report.

Regarding the deformation, the stations closest to the eruptive center show a stable pattern. At stations furthest from the eruptive center, a slight regional deflation continues.

During yesterday (10/29), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) could not be estimated as a consequence of various instrumental problems of the remote optical sensors to carry out this type of measures. In the case of diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), a downward trend of this geochemical parameter is observed from 10/12 to 10/22, but since 10/22 an upward trend has been observed, registering a diffuse emission of carbon dioxide (CO₂) of 1,414 tons per day as of 10/29. Monitoring the diffuse flux of carbon dioxide (CO₂), at the Los Llanos geochemical station (LP10) it continues to reflect a higher magmatic-hydrothermal fraction than that observed at the Fuencaliente geochemical station (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, yesterday the average sulfur dioxide (SO₂) concentration levels were significantly lower than the reference hourly limit

values ($350 \mu\text{g} / \text{m}^3$) in all the island's stations. The concentrations of this gas, which is associated with the eruptive process, did not exceed the daily limit values ($125 \mu\text{g} / \text{m}^3$) in any of the stations of the air quality network. The Los Llanos de Aridane station had a maximum hourly record $161 \mu\text{g} / \text{m}^3$ at 7 hours. During this day there have been no exceedances of the hourly limits, with maximums below $200 \mu\text{g} / \text{m}^3$ first thing in the morning in Tazacorte, Los Llanos de Aridane and El Paso, currently in remission.

Regarding particles smaller than 10 microns (PM10), we continue to register values below the daily threshold (established at $50 \mu\text{g} / \text{m}^3$) in all stations on the island, except in Los Llanos de Aridane. The trend observed during the last days in this station, with unfavorable values approximately between 9 and 18 hours, intensified yesterday with an hourly maximum of $395 \mu\text{g} / \text{m}^3$ at 12 hours that decreased during the evening. The records from this station continue to reflect the incidence of ash falls from the volcano, highly influenced by the daily wind dynamics. As a consequence of this situation, the daily PM10 threshold was exceeded at this station with a value of $60 \mu\text{g} / \text{m}^3$. During the early morning and morning of today the values have remained low,

October 31st

The number and magnitude of earthquakes on La Palma has decreased in the last 24 hours



PM10 particles register values below the daily threshold less in the Los Llanos de Aridane station, where it is recommended to reduce outdoor activity

PEVOLCA maintains the shuttle bus service between 10 am and midnight in order to guarantee people's safety and avoid victims of traffic accidents.

At specific times, traffic in the direction of Los Llanos de Aridane and Tazacorte will be diverted along the slopes of El Paso and Hermosilla

In the last 24 hours, a decrease in the number and magnitude of earthquakes has been recorded on La Palma and an increase in the rate of lava emission from the emitter focus located on the northwest flank of the main cone of the volcanic eruption has been observed. . This flow runs above the original stream and also through the stream that runs through zone 3, overflowing this morning some of the pre-existing volcanic tubes and channels. This was one of the conclusions addressed today in the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, based on the report of the Scientific Committee, which was directed by the counselor of Public Administrations, Justice and Security, Julio Pérez, responsible for the plan.

At a press conference, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that there has been a decrease in the number and magnitude of earthquakes in the last 24 hours, a parameter that is not accompanied by a decrease in the emission of lava. This very fluid contribution has continued to feed the laundry that runs through zones 3 and 9 and to a lesser extent, the original laundry.

María José Blanco, spokesperson for the Scientific Committee and director of the National Geographic Institute (IGN) in the Canary Islands, highlighted about the seismicity that a decrease in number and magnitude has been observed in the last 24 hours and also no felt seismic activity has been registered, concluding that the maximum magnitude has been 3.5 mbLg. The deformation of the ground continues to show a stable pattern.

Regarding air quality, Morcuende indicated that particles below 10 microns (PM10) continue to register values below the daily threshold in all stations, except in Los Llanos de Aridane, where the threshold has been occasionally

exceeded as a result of the ash fall associated with the eruptive process and the winds. In this sense, the PEVOLCA Directorate recommends that while the prevailing south wind persists, people in Los Llanos de Aridane reduce outdoor activities, apart from recommending that the population go outside to use FFP2 masks and goggles. of protection.

Regarding the castings, the Technical Director highlighted that casting area 3, which was opened yesterday by joining casting area 9, has run to the south occupying a flat surface and in principle is not heading towards the sea.

According to Morcuende, the amount of magma that comes out of the emitting center is abundant and fluid. This lava contribution runs through trampled channels and pre-existing casting areas, which is why it grows in height and thickness. In the case of wash 1, there are sections that reach a height of more than 30 meters. The rest of the pouring areas are still being monitored but have not registered movements in the last hours.

María José Blanco indicated that in the last 48 hours the most notable eruptive phenomenon has been the emission of a considerable volume of ash that has covered the entire west and northwest sector of the island, sometimes accompanied by audible explosions of great intensity. This episode could be caused by an intense degassing process, he explained.

Blanco pointed out that there were several volcanic rays and shock waves associated with the most energetic explosions and in the last hours an increase in the rate of lava emission from the emitter focus of the northwest flank of the main cone has been observed.

Likewise, the spokeswoman for the scientific committee commented that the height measured today at 9:30 am of the eruptive column and scattering cloud is 4,500 meters.

As for the operation of the La Palma airport, it could be affected in the next few hours by the ash disposal foreseen to the northwest and north.

The area affected so far by the volcanic eruption is estimated to be around 963 hectares and the width between flows remains at about 3,000 meters, although with areas that have not been damaged by lava.

According to the latest data provided by the Copernicus satellite, in terms of the number of constructions / buildings destroyed or damaged, it is

estimated that the eruptive process has affected approximately a total of 2,708 buildings, of which 2,562 may be completely destroyed and 146 damaged or at risk. These data will be filtered with the Cadastre in the next few days.

Regarding crops, the total of affected hectares is estimated to reach 279.88, 13.27 more than in the last update. Of this total, 156.7 correspond to banana plantations, 58.76 to vineyards and 23.82 to avocados.

The number of people housed in hotel centers is 463, nine more than the previous day. Of these, 393 are staying at the Fuencaliente hotel and 70 in Los Llanos de Aridane. In addition, there are 43 dependent people treated in insular health centers, one less than yesterday, and there is no one in the Fort.

The Steering Committee also verified that there have been no new incidents in the water, energy or telephone supply services and that the work in the desalination plants installed to ensure irrigation is currently focused on adjusting the pressures to have the flows suitable in the irrigation network.

Safety, the objective of PEVOLCA

Regarding the initiative promoted by the direction of the Canarian Government Plan and the Cabildo de La Palma to launch a free shuttle bus service for those who want to see the volcano, Morcuende insisted that it responds to a security issue. "PEVOLCA has wanted to guarantee the safety of the people who visit La Palma, that of the residents and that of the personnel who work in the emergency and avoid victims of traffic accidents," he added.

This service had to be reinforced during yesterday afternoon due to the increase in users, which shows that the measure has served to avoid the agglomeration of vehicles parked on the shoulders of the LP-3, from where people observe the volcano. The shuttles leave every 20 minutes from the old Buenavista airport, in Breña Baja, to the Plaza de Tajuya in the municipality of El Paso. The service schedule, both this Sunday and tomorrow, Monday, All Saints' Day, is established with departures from the old airport from 10:00 a.m. to 10:40 p.m., with a last return from Tajuya at 24 : 00 hours.

Along with this measure, since last Friday we have proceeded to divert, at times when there is a greater influx of vehicles —generally in the late afternoon— light traffic on the LP-3 downhill — in the direction of Los Llanos de Aridane, Tazacorte and Tijarafe—, on the slopes of El Paso and Hermosilla, since on the LP-3 the passage of heavy vehicles, emergency vehicles and public transport must be prioritized.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

In the last 48 hours, the most notable eruptive phenomenon has been the emission of a considerable volume of ash covering the entire W-NW sector of the island, accompanied by audible explosions of great intensity. This episode could be caused by intense degassing. There were also several volcanic rays and shock waves associated with the more energetic

explosions (waves generated by explosions that emit a flow of gas at speeds that exceed the sound barrier).

In the last hours, an increase in the rate of lava emission has been observed from the lava emitting focus on the NW flank of the main cone. The pouring continues in the same directions as the last report, overflowing this morning some of the pre-existing volcanic tubes and channels. The lava flows whose fronts are

They have denominated 1, 3 (which has reached that of 9), they have had practically no progress in the last 24 hours.

Currently, several emission centers are still active with intermittent activity (both pyroclastic and lava), varying as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The height measured today at 9:30 am of the eruptive column and scattering cloud is 4500 m.

Throughout the day, on the surface, the synoptic flow will be NE with a breeze regime in the W zone of the island, turning E - SE at low and medium levels. Ash disposal scheduled for today, towards NW - N, which could affect the airport's operations. In the next few days behavior similar to that predicted today: synoptic flow of the NE on the surface turning to E - SE at low and medium levels. Thermal inversion: 2-4°C with a base at 600 m and a top at 1200 m. Similar expected behavior of the investment for the next few days. Relative humidity of 70-80% up to the inversion and 10-30% above it (dry and stable atmosphere).

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km. Seismicity has decreased in number and magnitude in the last 24 hours, where there has also been no felt seismic activity. The maximum magnitude has been 3.5 mbLg. High values of the amplitude of the tremor signal are maintained, with intensification pulses. The seismicity registered at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that it is

possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and cause small landslides in sloping areas.

Regarding deformation, the stations closest to the eruptive center show a stable pattern. At stations furthest from the eruptive center, a slight regional deflation continues.

During yesterday (10/30), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to show a downward trend during the last 6 days, registering a value of 7,700 tons per day estimated by the use of remote optical sensors type miniDOAS in maritime mobile position (values typically underestimated compared to satellite data). In the case of diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), a downward trend of this geochemical parameter is observed from 10/12 to 10/22, but since 10/22, an upward trend has been observed, with a diffuse emission of carbon dioxide (CO₂) of 1,450 tons per day recorded as of 10/30. The monitoring of the diffuse flow of carbon dioxide (CO₂) in the geochemical station of Los Llanos (LP10) continues to reflect a higher magmatic-hydrothermal fraction than that observed in the geochemical station of Fuencaliente (LP08). All these geochemical observations are consistent with the current eruptive process.

Regarding air quality, yesterday the average levels of sulfur dioxide (SO₂) concentration were significantly lower than the references of the hourly limit values (350 µg / m³) in all the stations of the island, with a maximum hourly record close to 200 µg / m³ at 7 am at the Los Llanos de Aridane, Tazacorte and El Paso stations. The mean values were maintained until approximately 13 hours. From that time on, the concentrations of this gas, which is associated with the eruptive process, decreased and the daily limit value (125 µg / m³) was not exceeded in any of the stations of the air quality network. In the last hours of last night and the first hours of the morning of today the registered values increased in the stations of El Paso, Puntagorda and Los Llanos de Aridane,

With regard to particles smaller than 10 microns (PM₁₀), we continued to record values below the daily threshold (established at 50 µg / m³) in all stations on the island, except in Los Llanos de Aridane, where the values were increasing. During the day yesterday reaching a maximum hourly of

499 $\mu\text{g} / \text{m}^3$ at 12 o'clock at night, these values decreased rapidly throughout the night but a significant increase is observed during the morning of today with a value at 10 o'clock. 368 $\mu\text{g} / \text{m}^3$. The records from this station continue to reflect the incidence of ash falls from the volcano, highly influenced by the daily eruptive and wind dynamics. As a consequence of this situation, the daily PM10 threshold was exceeded yesterday at this station with a value of 141 $\mu\text{g} / \text{m}^3$.

November 1st

Minister Grande-Marlaska attends the Steering Committee: SO₂ decreases but lava and ash emissions increase



The Minister of the Interior thanked the coordinated work of the different administrations and highlighted the inclusion of science in the National Civil Protection System

During the day yesterday, the emission of ash increased notably in the west and northwest of the island.

More than 1,200 people used the shuttle bus service on Sunday to approach the Plaza de Tajuya

The Minister of the Interior of the Government of Spain, Fernando Grande-Marlaska, attended this Monday from the Advanced Command Post to the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, activated 49 days ago due to the increase in seismic activity on La Palma, which gave rise to the eruption in Cumbre Vieja on September 19. Grande-Marlaska was accompanied by the Minister of Public Administrations, Justice and Security of the Canary Islands, Julio Pérez, responsible for the plan, as well as the Government delegate in the Canary Islands, Anselmo Pestana, the president of the Cabildo de La Palma, Mariano Hernández, and others people responsible for administrations and organizations involved in the emergency.

The Steering Committee of this Monday analyzed, based on the report of the Scientific Committee, the notable increase in the production of ash from the volcano during yesterday as well as the increase, in the last three days, of the contribution of lava from the centers of emission, although a part of it also runs through lava tubes.

The Interior Minister first recognized the coordinated work of the different administrations since the beginning of the eruption. In this sense, he thanked the National Civil Protection System, made up of state, regional, island and local administrations, from the first link, which includes the Local Police officers, the General Corps of the Canary Police, the National Police and the Civil Guard; to the UME, the BRIF, the Army or the volunteer teams.

In addition, the minister reiterated the commitment of the Government of Spain with La Palma and its inhabitants and with all the administrations and municipalities affected. The head of the Interior advanced that important measures have already been adopted such as the Royal Decree Law of October 5, 20/2021 where aid exceeding 210 million euros are implemented. However, he pointed out, as the President of the Government of Spain said, that this emergency will not end until the last person can regain an adequate degree of normality in their day-to-day life. In addition, Marlaska highlighted in this emergency how science has also been incorporated into the National Civil Protection System, helping in prevention and response tasks.

At a press conference, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that the high production of ash by the volcano throughout the day, fundamentally affecting the entire west and northwest of the island, with special intensity in Los Llanos de Aridane, yesterday forced to make a series of specific recommendations for this town, different from those provided to El Paso, Tazacorte, Tijarafe and Puntagorda, which have also been affected by the fall of ash.

Regarding the evolution of the flows, the 3 is the one that has registered the greatest movement, producing, throughout the night, a spill through the Cogote mountain area, which has constituted the pouring area 11. This situation has made that the lava is about 200 meters from the road used in the downward direction to go to Puerto Naos, which can cause its possible cut. If that situation were to occur, only the only way up that is currently being used would be available in both directions, which would make it difficult for the vehicles and personnel working in the desalination plants and the emergency services and the irrigation tasks in agricultural areas.

For this reason, it would also be necessary to relocate the electricity supplying equipment that had been planned to be installed in Puerto Naos and locate them in a more accessible place.

The national director of Volcanic Surveillance of the National Geographic Institute (IGN) and spokesperson for the Scientific Committee, Carmen López, pointed out that in the last few hours a high rate of lava emission from the lava emitting focus on the northwest flank of the main cone has continued. In zone 11 there has been a lava flow that moves to the west, after flanking the Cogote mountain to the north, approaching the LP-211 highway, without affecting the Las Manchas cemetery.

Regarding the emission of sulfur dioxide, López commented that yesterday the air quality remained good and reasonably good for much of the day. However, overnight the situation worsened at Fuencaliente and Puntagorda stations. However, throughout this morning good and reasonably good levels of air quality have recovered, but levels will continue to be monitored in the coming hours.

Meanwhile, with regard to particles smaller than 10 microns (PM10), the spokesperson for the Scientific Committee explained that good and reasonably good levels are maintained at the island's stations with the

exception of Los Llanos de Aridane, where values were recorded. very high for much of yesterday and today morning, reaching extremely unfavorable air quality levels, which are still maintained. Given this, it is recommended that citizens in Los Llanos de Aridane reduce outdoor activities and that, if they go outside, they do so using FFP2 masks.

Regarding the meteorological conditions, López pointed out that at low and medium levels, a variable loose wind with a probability of a loose west turn will prevail during the early morning of the 2nd day. That same day, the tendency will be to acquire an easterly direction, reaching the rest of the western islands in a small concentration. These conditions could affect the operation of the La Palma airport and perhaps also that of La Gomera.

Regarding seismicity, the Scientific Committee spokesperson pointed out that the maximum magnitude was 5.0 mbLg related to an earthquake registered yesterday at 5:52 p.m., at a depth of 38 kilometers, felt with maximum intensity IV (EMS).

The area affected so far by the volcanic eruption is estimated at around 967.85 hectares, 4.2 more than yesterday, and the width between flows is about 3,100 meters, although with areas that have not been damaged by lava.

In addition, according to the latest data provided by the Copernicus satellite, regarding the number of constructions / buildings destroyed or damaged, the technical director of the Plan commented that it is estimated that the eruptive process has affected approximately a total of 2,716 buildings, of which 2,574 may be completely destroyed and 142 damaged or at risk. These data will be filtered with the Cadastre in the next few days.

Regarding crops, Morcuende indicated that it is estimated that the total of affected hectares reaches 281.99, which is 2.11 more compared to the last update. Of this sum, 158.79 correspond to banana plantations, 58.76 to vineyards and 23.82 to avocados.

The number of people housed in hotel centers stands at 465, two more than the previous day. Of these, 395 are staying at the hotel in Fuencaliente and 70 in Los Llanos de Aridane. In addition, there are 43 dependent people treated in insular health centers, one less than yesterday, and there is no one in the Fort.

Regarding the initiative promoted since last Friday by the direction of the Canary Islands Government Plan and the Cabildo de La Palma on the launch of a free bus shuttle service for those who want to see the volcano, yesterday no notable incidents were recorded and it was used by between 1,200 and 1,500 people.

This service will continue today departing every 20 minutes from the old Buenavista airport, in Breña Baja, to the Plaza de Tajuya in the municipality of El Paso. The service hours began at 10 this morning with departures from the old airport and will continue until 10:40 p.m., with a last return from Tajuya at 24:00.

Along with this measure, since last Friday we have proceeded to divert, at times when there is a greater influx of vehicles —generally in the late afternoon— light traffic on the LP-3 downhill — in the direction of Los Llanos de Aridane, Tazacorte and Tijarafe—, along the slopes of El Paso and Hermosilla, since the passage of heavy vehicles, emergency vehicles and public transport must be prioritized on the LP-3.

Rubén Fernández will replace Morcuende for a few days

On the other hand, the person in charge of PEVOLCA, Julio Pérez, has authorized that the Technical Director of the Plan be replaced in the coming days, as on previous occasions, by Rubén Fernández, insular director of Security of the Cabildo de Tenerife.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

In the last 3 days, the most notable eruptive phenomenon has been the emission of a considerable volume of ash covering the entire W-NW sector of the island, accompanied by few audible explosions. This episode can be caused by intense degassing.

In the last hours, a high rate of lava emission continues from the lava emitting focus on the NW flank of the main cone. The pouring continues in the same directions as the last report, overflowing this morning some of the pre-existing volcanic tubes and channels. In zone 11 there has been a lava flow that moves to the west, after flanking the Cogote mountain to the north, approaching the LP-211 highway.

Currently, several emission centers are still active with intermittent activity (both pyroclastic and lava), varying as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The height measured today at 08:45 of the ash scattering cloud is 3000 m.

Synoptic NE wind with a breeze regime on the W slope and parallel flows to the coast of a variable nature (leeward vortices). At low and medium levels, variable loose wind with probability of a slight turn to O during the early morning of day 2. Disposal of ash towards NW, but with a clockwise turn towards NE (little dispersion during day 1). Throughout day 2, a tendency to acquire an E direction, reaching the rest of the western islands (small concentration). It could affect the operation of La Palma airport (perhaps also La Gomera). Upcoming days: Loose O-component wind. Probability of

weak precipitations to the N. Thermal inversion: 1-4°C; 900 - 1000 m descending to 600 - 800 m throughout the day. Superficial wet layer until inversion. Above it, a dry and stable atmosphere.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km. The maximum magnitude was 5.0 mbLg of an event yesterday at 17:52 at a depth of 38 km, felt with maximum intensity IV (EMS). Intermediate values of the amplitude of the tremor signal are maintained, with intensification pulses. The seismicity registered at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and cause small landslides in sloping areas. Relevant information on this topic is included,

Regarding deformation, the stations closest to the eruptive center show a stable pattern. At stations furthest from the eruptive center, a slight regional deflation continues.

During yesterday (10/31), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) continues to show a downward trend during the last 7 days, registering yesterday a value of 4,990 tons per day estimated through the use of remote optical sensors type miniDOAS in maritime mobile position (values normally underestimated compared to satellite data). In the case of diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), a downward trend of this geochemical parameter is observed from 10/12 to 10/22, But since 10/22 an upward trend has been observed, with a diffuse emission of carbon dioxide (CO₂) of 1500 tons per day being recorded as of 10/31. The magmatic-hydrothermal fraction of carbon dioxide (CO₂) in the soil atmosphere is low in Los Llanos de Aridane (LP10) and negligible in Fuencaliente (LP08). All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality due to sulfur dioxide (SO₂) remained good and reasonably good for much of the day, however during the night the situation worsened at Fuencaliente and Puntagorda stations, reaching

quality levels extremely unfavorable air conditions. During this event of high concentrations of this gas, which is associated with the eruptive process, the alert threshold (established at $500 \mu\text{g} / \text{m}^3$) was exceeded for two consecutive hours at the Fuencaliente station, between 9:00 pm and 11:00 pm, with a maximum value of $791 \mu\text{g} / \text{m}^3$ and for five consecutive hours in Puntagorda, between 12 pm on the 31st and 5 am today, with a maximum value of $858 \mu\text{g} / \text{m}^3$. The number of exceedances of the hourly limit value ($350 \mu\text{g} / \text{m}^3$) was 3 in Fuencaliente and 8 in Puntagorda.

With regard to air quality due to particles smaller than 10 microns (PM10), good and reasonably good levels are maintained at the island's stations with the exception of Los Llanos de Aridane, where very high values were recorded for a long time. part of yesterday and today morning, reaching extremely unfavorable air quality levels, which are still maintained. Yesterday the daily threshold (established at $50 \mu\text{g} / \text{m}^3$) was exceeded at the Los Llanos de Aridane station with an average of $198 \mu\text{g} / \text{m}^3$. The records from this station continue to reflect the incidence of ash falls from the volcano, highly influenced by the daily eruptive and wind dynamics.

November 2nd

Sulfur dioxide decreases in Puntagorda and the ash recommendations are maintained in the Aridane Valley



Due to the concentration of PM10 particles in the three municipalities of the Valley, it is advisable to avoid outdoor activities and use FFP2 masks

It is agreed to maintain the suspension of the classroom activity in Los Llanos de Aridane, El Paso, Tazacorte, Fuencaliente and Puntagorda

Lava continues to feed existing streams, without significant advances in any of them

So far, the lava has not reached the access road to Puerto Naos

The shuttle service was used by 5,000 people during the four days it was active

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands analyzed today the evolution of the washes and the state of air quality, among other

parameters provided in the Committee's report Scientific, in order to take the necessary civil protection measures for the population, when the 50 days of activation of the Plan are exceeded, on September 13.

As reflected in the Scientific Committee report, in the last four days the most notable eruptive phenomenon has been the emission of a considerable volume of ash that covers the entire west and northwest of the island and is accompanied by short episodes with audible explosions. This episode can be caused by intense degassing.

Due to the high level of ash, the Steering Committee agreed to maintain the suspension of the classroom activity in the educational centers of El Paso, Los Llanos de Aridane, Tazacorte, Puntagorda and Tijarafe, since the presence of a marked inversion of temperature and light winds with a predominance of breezes on the west slope, they constitute unfavorable conditions for air quality. In this sense, with regard to particles smaller than 10 microns (PM10), in the three municipalities of the Aridane Valley it is advisable to restrict exposure to the open air and if you have to go outside, use a FFP2 mask. For this, the distribution of self-protection material, such as masks and glasses, will continue.

Regarding sulfur dioxide levels, SO₂ peaks were recorded in Puntagorda during the night yesterday with exceeding thresholds, but they fell during the morning and at the moment the levels are good, both in that station and in the rest of the island.

At a press conference, the substitute Technical Director of PEVOLCA, Rubén Fernández, —who replaces Miguel Ángel Morcuende until Friday—, reported that the lava continues to feed the old streams, without significant progress. In this sense, he referred to those that run through the south, specifically the one that affects the pouring area number 11, which has been slowed and barely walks at 1 meter an hour and has skirted the Cogote Mountain. At noon on Tuesday the lava was 150 meters from the LP-211, although its impact is not expected in the next few hours.

Pool number 9 is the one that registers the greatest contribution of lava, together with the original one, increasing in height and volume, but it hardly occupies a new surface beyond a few lobes due to spillage. The 8 continues without movement and the 3 presents a slight widening and is 33 meters from the Camino Marta.

In this regard, the national director of Volcanic Surveillance of the National Geographic Institute (IGN) and spokesperson for the Scientific Committee, Carmen López, pointed out that in the last hours a high rate of lava emission continues from the lava emitting focus on the northwest flank of the cone. principal. The pouring continues in the same directions as the last report, overflowing this morning some of the pre-existing volcanic tubes and channels.

The area affected so far by the volcanic eruption is estimated at around 976.97 hectares (9.12 more than the latest data available) and the width between flows remains at about 3,100 meters, although with areas that have not been seen damaged by lava.

During the Steering Committee, a monitoring of basic services was also carried out, confirming that there are no incidents in telephony and that the entire population that is outside the exclusion zone maintains electricity supply. Likewise, it was reported on the progress of the desalination plants that are being carried out to ensure irrigation water, as well as the alternatives in which work is being done to guarantee the access road to Puerto Naos, in the event that the lava affects the LP-211 highway, as large tonnage and large vehicles are circulating on it that work in the desalination plants.

Faced with this situation, traffic access has been restricted and the evolution of the laundry is monitored, since the situation can change in a very few hours and an attempt is made to prevent those vehicles from being compromised inside that area.

The proposal to transfer irrigators from the Puerto Naos area by sea from the Port of Tazacorte was also analyzed. In this sense, the Navy will be in the next few days analyzing whether it is feasible to create this route to offer the service and hopes to have the study carried out throughout this week.

On the other hand, the Steering Committee thanked visitors for the responsible use of the shuttle bus system, which during the bridge was used by some 5,000 people, and the collaboration of all drivers in the recommendations of the Plan, which has helped the transit of emergency services and road safety by avoiding accidents.

With regard to meteorological conditions, the forecast is unfavorable for the operation of the La Palma airport, as well as for the airspace between La Palma, La Gomera and the west of Tenerife, with a predominance of the west component in height and with scattering cloud to the east. Tomorrow there is a probability of light rains in the northeast of La Palma that may be locally moderate during Thursday.

Regarding seismicity, the spokesperson for the Scientific Committee reported that intermediate values of the amplitude of the tremor signal are maintained with intensification pulses. The maximum magnitude of the last hours has been 4.6 mbLg of an event registered yesterday at 20:24 at a depth of 36 kilometers, with maximum intensity IV (EMS) and also felt in La Gomera and Tenerife.

The plume increases in SO₂ emission, but experts consider that there is a sustained downward trend, so we must wait for the next few days to assess this parameter.

Regarding deformation, the stations closest to the eruptive center show a stable pattern. At stations furthest from the eruptive center, a slight regional deflation continues.

Finally, the number of people housed in hotel centers is 462, nine more than the previous day. Of these, 395 are staying at the Fuencaliente hotel and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people treated in insular health centers, one less than yesterday.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

In the last 4 days, the most notable eruptive phenomenon has been the emission of a considerable volume of ash covering the entire W-NW sector of the island, accompanied by short episodes with audible explosions. This episode can be caused by intense degassing.

In the last hours, a high rate of lava emission continues from the lava emitting focus on the NW flank of the main cone. The pouring continues in the same directions as the last report, overflowing this morning some of the pre-existing volcanic tubes and channels. In zone 11 there has been a slight advance of the lava flow that moves towards the west, approaching the LP-211 highway.

Currently, several emission centers are still active with intermittent activity (both pyroclastic and lava), varying as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The height measured today at 07:45 of the ash scattering cloud is 3700 m.

At low levels (below 1500 m) the NE wind prevails, between 10 to 20 km / h and with a breeze regime on the W slope. At higher levels (between 1500 to 5500m) the flow is from the W. ash and SO₂ disposal is mainly towards the E - SE and this represents an unfavorable scenario (for the next 36 hours approx.) for the operation of the La Palma airport, as well as for the airspace between La Palma, La Gomera and the O of Tenerife. The thermal

inversion will go up in altitude (from 700 to 1200 m) and will strengthen. The presence of a marked thermal inversion and light winds with a predominance of breezes on the west slope constitute unfavorable conditions from the point of view of air quality.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km. The maximum magnitude was 4.6 mbLg of an event yesterday at 20:24 at a depth of 36 km, felt with maximum intensity IV (EMS). Intermediate values of the amplitude of the tremor signal are maintained, with intensification pulses. The seismicity registered at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and cause small landslides in sloping areas. Relevant information on this topic is included,

Regarding deformation, the stations closest to the eruptive center show a stable pattern. At stations furthest from the eruptive center, a slight regional deflation continues.

During yesterday (1/10), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) was recorded at a value of 22,000 tons per day estimated through the use of remote optical sensors type miniDOAS in maritime mobile position (normally underestimated value compared to satellite data). In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), a downward trend of this geochemical parameter is observed from 10/12 to 10/22, but since 10/22 an upward trend has been observed, registering a diffuse emission of carbon dioxide (CO₂) of 1,520 tons per day as of 1/10. The monitoring of carbon dioxide (CO₂) in the soil atmosphere continues to reflect a relatively small magmatic-hydrothermal fraction at the Los Llanos geochemical station (LP10), while at the Fuencaliente geochemical station (LP08) this fraction is practically nil. All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, was at very unfavorable and extremely

unfavorable levels at the Puntagorda station between 00 - 05 h, with a maximum value of $858 \mu\text{g} / \text{m}^3$, causing the population to exceed the alert threshold (established at $500 \mu\text{g} / \text{m}^3$) during this period. These values were significantly reduced after 8 hours, remaining for the rest of the day at values considered good or reasonably good. In the rest of the stations the air quality levels were good or reasonably good throughout the day yesterday. Throughout this morning, the hourly limit value ($350 \mu\text{g} / \text{m}^3$) has been exceeded at the Puntagorda station. The latest hourly record reflects a regular air quality situation at this station, with values over $200 \mu\text{g} / \text{m}^3$. In the rest of the stations we have good and reasonably good levels of air quality.

With regard to particles smaller than 10 microns (PM10), good and reasonably good levels are maintained in the air quality stations on the east side of the island. The Los Llanos de Aridane station continues to register values above the daily reference (established at $50 \mu\text{g} / \text{m}^3$) with an unfavorable quality index, which is still maintained. Yesterday the daily threshold was exceeded in this station with an average of $118 \mu\text{g} / \text{m}^3$. Today's records continue to be high, reflecting the incidence of ash falls from the volcano, highly influenced by the eruptive dynamics and daily winds.

November 3rd

The zone 11 laundry is located 100 meters from the LP-211 and is working on an alternative road to Puerto Naos



The recommendations to the population of the Aridane Valley are maintained in the face of the high concentration of ash

They should avoid exposure to the open air and, if they are outdoors, wear FFP2 masks

The material and human resources for ash collection are reinforced

The tremor level and the values of SO₂ and CO₂ in the plume decrease, but experts warn that the values are still very high

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands today analyzed the report of the Scientific Committee, in order to take the necessary civil protection measures for the population. The meeting was chaired by the General Director of Security and Emergencies, Gustavo Armas, due to the attendance of the Minister

of Public Administration, Justice and Security, Julio Pérez, responsible for the Plan, to the Budget and Finance Committee in the Parliament of the Canary Islands.

Regarding air quality values, the Steering Committee agreed to maintain the recommendations issued yesterday for Los Llanos de Aridane, Tazacorte and El Paso, where the index is extremely unfavorable due to the high levels of PM10 suspended particles. In this sense, in these municipalities it is recommended to risk groups and sensitive populations (people with previous respiratory or heart diseases, such as asthma, chronic bronchitis and emphysema; children, pregnant women and the elderly) or those who carry out intense physical activity, avoid prolonged stay in the open air and follow the established medical treatment plan, as well as go to an emergency service if the health condition worsens.

Among the general recommendations for the population is to reduce all outdoor activity, use a FFP2 mask, use adequate protection for work that must be carried out outdoors and be attentive to the instructions received from the civil protection authorities.

Likewise, in these three municipalities, Puntagorda and Tijarafe, the suspension of face-to-face school activity in educational centers is extended until tomorrow.

During yesterday, new peaks of sulfur dioxide (SO₂) were registered in Puntagorda, with exceedances of the concentration threshold, which have also been specific today in Fuencaliente and Los Llanos de Aridane, although they have been decreasing.

Regarding the cleaning and ash collection work, Rubén Fernández, Technical Director of PEVOLCA in temporary replacement of Miguel Ángel Morcuende, explained at a press conference that the Steering Committee has strengthened the media and zoned the work. Thus, the southern area will be in charge of the UME and the Army, while the north will fall on the different fire services and other emergency services, all of them supporting the cleaning and sanitation of buildings at risk and making themselves available to municipalities to complement the work carried out by other municipal teams. In addition, new sweeping trucks with special vacuum cleaners will be incorporated shortly and the management of the spaces in which the collected ash will accumulate is being studied.

Regarding the state of the flows, in the last hours those that are further south, numbers 3 and 9, have been practically stopped, although they continue to receive a contribution of lava. The wash located in zone 11 is the one that has advanced the most, about 50 meters, and, at noon this Wednesday, it was walking at three meters per hour and was located 100 meters from the LP-211, a road that is still open, but with restricted use.

Taking into account the proximity of the lava and as an alternative to this road that is the one that currently allows access to Puerto Naos, the Cabildo has already begun the study of a possible alternative route to the current one up Las Majadas by which The heavy vehicles that cover the works of the desalination plants can circulate and maintain access for agricultural activity.

For her part, the spokesperson for the scientific committee and national director of Volcanic Surveillance of the National Geographic Institute (IGN), Carmen López, pointed out that the levels of activity visible in the cone are highly variable, with occasional pulses of high lava emission rate. . The flow continues to the west, occasionally overflowing some of the pre-existing volcanic tubes and channels.

Yesterday at noon the volcanic tremor showed a notable decrease, reaching low levels. Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 kilometers. The maximum magnitude was 5.0 mbLg of an event today at 07:27 at a depth of 35 kilometers, felt with maximum intensity IV-V (EMS).

For the spokesperson of the Scientific Committee, indicators such as the decrease in tremor or the decrease in SO₂ and CO₂ values associated with the plume are encouraging, but she insists that they are still very high levels and this trend would have to continue for a while and be accompanied by other parameters, such as the decrease in the magnitudes or frequencies of earthquakes.

Regarding the meteorology, the evolution of the winds and the disposition of the ash and SO₂ towards the southeast, which is expected to turn towards the south, has made it possible to improve the meteorological scenario of the La Palma airport, which has returned to be operational from 3:00 p.m.

Affected surface

The area affected so far by the volcanic eruption is estimated to be around 981 hectares, 4.05 hectares more than the data previously available, mainly due to fillings from the pouring in zone 11. The maximum width between pourings remains at about 3,100 meters , although with areas that have not been damaged by lava.

According to the latest data provided by the Cadastre, the current situation is 1,443 buildings destroyed, of which 1,166 are for residential use, 147 for agriculture, 69 for industrial use, 33 for leisure and hospitality, 13 for public use and 15 for other use. Meanwhile, the Copernicus satellite calculates that the eruptive process has affected approximately a total of 2,716 buildings, of which 2,574 may be completely destroyed and 142 damaged or at risk. This data will have to be filtered once the emergency is over.

Regarding crops, the total of affected hectares is estimated to reach 283.25 hectares, 16 more than in the last update. Of this total, 158.79 are from banana trees, 59.48 correspond to vines and 24.02 to avocados, among others.

The number of people housed in hotel centers is 455, seven less than the previous day. Of these, 388 are staying at the Fuencaliente hotel and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Regarding basic services, the Steering Committee also reviewed the state of the electricity supply, which continues to offer service to all users outside the exclusion zone. In this sense, Endesa is working on the installation of some generation groups that would serve as reinforcement in the event of a breakdown. The Steering Committee today addressed a first debate on its possible locations.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic

Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The morphology of the cone changes repeatedly due to the successive processes of growth and reconfiguration. The eruptive process can show episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

In the last hours, it is noteworthy that the levels of activity visible in the cone are highly variable throughout the day, with occasional pulses of high lava emission rate. The flow continues to the west, occasionally overflowing some of the pre-existing volcanic tubes and channels.

Currently, several emission centers are still active with intermittent activity (both pyroclastic and lava), varying as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, as well as other surface observables (visible gas emissions) within the exclusion zone, is not ruled out.

The height measured today at 07:48 of the ash scattering cloud is 2700 m.

At low levels (below 1500 m) the NE wind prevails, between 10 to 20 km / h and with a breeze regime on the W slope. At higher levels (between 1500 to 5500 m) the flow is from the NW. The disposal of ash and SO₂ is mainly towards the SE and it is expected that it will turn towards the S, and therefore the meteorological scenario will improve, starting this afternoon, with a view to the aeronautical operations of La Palma airport. Today the thermal inversion is located between 1200-1500 m and shows a

temperature difference between base and top of about 2 ° C. It is expected that from tomorrow the thermal inversion will rise in altitude and weaken. Today weak rains are not ruled out in the NE of La Palma, while tomorrow the rainfall may be locally moderate in the N and E of La Palma.

Seismicity continues to be located, mainly, close to the seismicity of the first days, at depths between 10 and 15 km. There are also earthquakes located at depths greater than 20 km. The maximum magnitude was 5.0 mbLg of an event today at 07:27 at a depth of 35 km, felt with maximum intensity IV-V (EMS). Yesterday at noon the volcanic tremor showed a notable decrease, reaching low levels. The seismicity registered at intermediate and deep depths is part of the same current eruptive process. No significant surface seismicity is recorded. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and cause small landslides in sloping areas. Relevant information on this topic is included,

Regarding deformation, the stations closest to the eruptive center show a stable pattern. At stations furthest from the eruptive center, a slight regional deflation continues.

During yesterday (2/10), the emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) was recorded at a value of 9600 tons per day estimated through the use of remote optical sensors type miniDOAS in land mobile position (value normally underestimated compared to satellite data). The temporal evolution of the emission estimates of sulfur dioxide (SO₂) from satellite data reflects a downward trend since last September 25. The chemical composition of the ash leachate reflects, at least to some extent, the chemical composition of the gases from the volcanic plume to the extent that volatile ratios (S / Cl, Cl / F ...) are often used to identify changes in the eruptive style. The chemical composition of the ash leachate from this eruptive process reflects a relative enrichment of the fluoride content with respect to the sulfate and chloride content. The temporal evolution of this composition; in particular, the sulfate / chloride and chloride / fluoride ratios reflect changes in the chemical composition of the volcanic plume and consequently changes in the eruptive process.

In the case of diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), a downward trend of this geochemical parameter is observed from 10/12 to 10/22, but since 10/22 an upward trend has been observed, with a diffuse emission of carbon dioxide (CO₂) of 1,750 tons per day recorded as of 10/2. The monitoring of carbon dioxide (CO₂) in the soil atmosphere continues to reflect a relatively small magmatic-hydrothermal fraction at the Los Llanos geochemical station (LP10), while at the Fuencaliente geochemical station (LP08) this fraction is practically nil. All these geochemical observations are consistent with the current eruptive process.

Yesterday, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, was at unfavorable levels only at the Puntagorda station between 7 and 9 o'clock, with three values above the mean limit value of this pollutant (established at 350 µg / m³). In this same station, between 20 and 22 hours regular values of air quality are registered, without exceeding the hourly limits. The accumulated values exceeded the daily limit value in this station (established at 125 µg / m³). In the rest of the points, the air quality levels were good or reasonably good throughout the day yesterday. During today, and until the time of preparation of the report, There have been two exceedances of the alert threshold value (established at 500 µg / m³) in the Fuencaliente station (between 7 and 8 hours), and another in Los Llanos de Aridane (at 9 hours), which have been reduced in the last hour periods. In the rest of the stations we have good and reasonably good levels of air quality, although there is a general upward trend in the values recorded.

Regarding particles smaller than 10 microns (PM₁₀), extremely unfavorable levels are maintained at the Los Llanos de Aridane station with a daily average yesterday of 183 µg / m³ (daily threshold established at 50 µg / m³). The records of this station have decreased during the early hours of today, to rebound from the early hours of the morning, with a 24-hour moving average maintained at extremely unfavorable levels that reflect the incidence of ash falls from the volcano, influenced by the eruptive dynamics and daily winds. In the rest of the stations the air quality levels for PM₁₀ are good or reasonably good.

November 4th

Air quality improves in the Aridane Valley, but the recommendations to the population are maintained



Education decides to resume face-to-face classes on Monday to condition the educational centers, so online teaching will continue this Friday

The streams receive a variable contribution of lava, without significant growth

Daily checks on water quality still show no incidents in analytics

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, headed by the Minister of Public Administrations, Justice and Security, Julio Pérez, based on the data provided by the report of the Scientific Committee, has agreed to maintain the recommendations to the population for air quality in the Aridane Valley, despite the fact that in the last 24 hours the concentration levels of PM10 particles have improved and that the forecasts point to their being followed reducing.

Regarding the teaching activity, although it had been decided to resume the face-to-face activity in the five municipalities where it was suspended (Los Llanos de Aridane, El Paso, Tazacorte, Puntagorda and Tijarafe), with a restriction on the use of open spaces by the students, the Ministry of Education, Universities, Culture and Sports has decided to postpone this return until Monday so that the schools affected by the accumulation of ash are conditioned and this Friday the classes will be taught online.

Among the recommendations for the municipalities of El Paso, Los Llanos de Aridane and Tazacorte, it is established that risk groups and sensitive population should avoid prolonged stay outdoors and follow the established medical treatment plan, as well as go to a service emergency if your health worsens.

Among the general recommendations for the population is to reduce all activity outdoors, use a FFP2 mask and adequate protection for work that must be carried out outdoors. In this sense, the Red Cross has distributed 65,533 FFP2 masks and 6,852 protective glasses to the island's population, since the beginning of the volcanic eruption, and will continue to do so.

According to information from the Canarian Health Service, at the moment there are no hospital admissions for respiratory problems related to suspended particles, only occasional consultations and most of them for reasons unrelated to the eruptive process.

As for basic services, he realized the daily water quality controls carried out by the Insular Water Council, without incidents in the analytics. Regarding the collection of ash, collection and transfer, the operation was reviewed to reinforce the teams if necessary and redistribute the troops to protect the homes and scuppers in the Aridane Valley in case of rain. The service of accompaniment for irrigators and collection of belongings continues to be provided with time restrictions and the distribution of masks.

Regarding security, and to regulate the influx of visitors to the eruption area, next Saturday, between 5:00 p.m. and 10:00 p.m., a single direction of downhill traffic will be established between El Paso and Los Llanos de Aridane by the Cuesta de Hermosilla, and up the LP-2 and LP-3 from Los Llanos de Aridane to Tajuya. This time restriction may be extended if deemed necessary due to the influx of traffic in the area.

In addition, in collaboration with the Security Forces and Bodies, traffic control measures will be reinforced in the surroundings of the Tajuya and El Time viewpoints, where the population is asked to take extreme precautions in relation to the circulation of traffic and of pedestrians to avoid accidents, in addition to wearing reflective vests.

Regarding the works carried out on the highway that could serve as an alternative to access Puerto Naos if the LP-211 is affected by lava, the works are going at a good pace and it is expected that the widening of the highway will be completed in the coming days. way to allow the passage of large tonnage vehicles.

Rubén Fernández, PEVOLCA Technical Director in temporary replacement of Miguel Ángel Morcuende, explained that there is a variable contribution of lava to the system, which continues on old flows from the center and south with hardly any overflow. The lava flows over flows 9 and 3, without significant growth, and there is hardly any spillage between those located in zones 9 and 11.

The area affected so far by the volcanic eruption is estimated at around 983 hectares, 2.42 hectares more than the latest data available. The maximum width between flows remains at about 3,100 meters, although with areas that have not been damaged by lava.

For her part, the spokesperson for the Scientific Committee and national director of Volcanic Surveillance of the National Geographic Institute (IGN), Carmen López, explained that the levels of activity visible in the cone are highly variable, with occasional pulses of high lava emission rate. . The flow continues to the west, occasionally overflowing some of the pre-existing volcanic tubes and channels.

Seismicity continues to be high in the intermediate zone, although it decreases a little in the deep zone and continues to be located in the same areas as in recent weeks, at depths between 10 and 15 kilometers and also at depths greater than 20 kilometers. The maximum magnitude has been 3.6 mbLg of an event today at 02:11 at a depth of 9 km, felt with maximum intensity II-III (EMS).

Regarding the deformation, the stations closest to the eruptive center do not show significant changes, while in the stations furthest from the eruptive center a slight regional deflation continues.

On the other hand, an increase in the trade wind is expected, with moderate winds, with the ash orientation towards the southeast and south during the next few days, which will favor air operations in La Palma and in the rest of the airports of the Archipelago. In addition, the thermal inversion will be at 2,000 meters, which will allow the dispersion of particles and the improvement of air quality.

According to the latest data provided by the Copernicus satellite, regarding the number of constructions / buildings destroyed or damaged, yesterday's figure has been readjusted to 2,712 buildings, of which 2,570 totally destroyed and 142 damaged or at risk.

Meanwhile, the number of people housed in hotel centers is 460, five more than yesterday. Of these, 393 are staying at the hotel in Fuencaliente and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism (that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows), now with a predominance of the effusive phase. In volcanology, the magnitude of volcanic eruptions is measured on the scale of the Volcanic Explosivity Index (VEI) with values between 0 and 8; in the case of this eruption, the VEI estimated so far is 2.

The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

In the last hours, it is noteworthy that the levels of activity visible in the cone are highly variable throughout the day, with occasional pulses of high lava emission rate. The flow continues to the west, occasionally overflowing some of the pre-existing volcanic tubes and channels.

Currently, several emission centers are still active with intermittent activity (both pyroclastic and lava), varying as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone is not ruled out.

The height measured today at 08:49 of the eruptive column is 3,200 m.

During the next few days the N component wind will predominate from the surface up to 5000 m. Due to the expected wind distribution, the ash plume and SO₂ are expected to flow SE-S from the eruptive focus. The foregoing supposes a favorable scenario for the aeronautical operations of La Palma airport, as well as of the Canarian airspace. Thermal inversion, which is practically non-existent today, is expected to be around 2000 m and the NE wind to intensify. Therefore, the weather conditions are favorable from an air quality point of view. During the second half of today, rainfall may be locally moderate on the northern and eastern slopes of La Palma.

Seismicity continues to be located in the same areas as in recent weeks, at depths between 10 and 15 km and also at depths greater than 20 km. The maximum magnitude has been 3.6 mbLg of an event today at 02:11 at a depth of 9 km, felt with maximum intensity II-III (EMS). The level of the volcanic tremor in the last 24 hours has experienced a slight increase, reaching medium levels. The current level of seismicity continues to indicate that more felt earthquakes are possible, being able to reach VI intensities (EMS) and cause small landslides in sloping areas.

Regarding deformation, the stations closest to the eruptive center do not show significant changes. At stations furthest from the eruptive center, a slight regional deflation continues.

The emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) reached 29,400 tons per day yesterday (3/10). This geochemical parameter has been estimated through

the use of remote optical sensors type miniDOAS in land mobile position (value normally underestimated compared to satellite data) with instrumentation mounted on a moving vehicle. Despite the record of this pulse of sulfur dioxide (SO₂) emission, the temporal evolution of the emission estimates of sulfur dioxide (SO₂) from the satellite data reflects a downward trend since last September 25. In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), A downward trend of this geochemical parameter is observed from 10/12 to 10/22, but since 10/22 an upward trend has been observed, registering a diffuse emission of carbon dioxide (CO₂) of 1850 tons per day to date. of 3/10. The monitoring of carbon dioxide (CO₂) in the soil atmosphere continues to reflect a relatively small magmatic-hydrothermal fraction at the Los Llanos geochemical station (LP10), while at the Fuencaliente geochemical station (LP08) this fraction is practically nil. All these geochemical observations are consistent with the current eruptive process. but since 10/22 an upward trend has been observed, registering a diffuse emission of carbon dioxide (CO₂) of 1850 tons per day as of 10/3. The monitoring of carbon dioxide (CO₂) in the soil atmosphere continues to reflect a relatively small magmatic-hydrothermal fraction at the Los Llanos geochemical station (LP10), while at the Fuencaliente geochemical station (LP08) this fraction is practically nil. All these geochemical observations are consistent with the current eruptive process. but since 10/22 an upward trend has been observed, registering a diffuse emission of carbon dioxide (CO₂) of 1850 tons per day as of 10/3. The monitoring of carbon dioxide (CO₂) in the soil atmosphere continues to reflect a relatively small magmatic-hydrothermal fraction at the Los Llanos geochemical station (LP10), while at the Fuencaliente geochemical station (LP08) this fraction is practically nil. All these geochemical observations are consistent with the current eruptive process. The monitoring of carbon dioxide (CO₂) in the soil atmosphere continues to reflect a relatively small magmatic-hydrothermal fraction at the Los Llanos geochemical station (LP10), while at the Fuencaliente geochemical station (LP08) this fraction is practically nil. All these geochemical observations are consistent with the current eruptive process. The monitoring of carbon dioxide (CO₂) in the soil atmosphere continues to reflect a relatively small magmatic-hydrothermal fraction at the

Los Llanos geochemical station (LP10), while at the Fuencaliente geochemical station (LP08) this fraction is practically nil. All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, was at very unfavorable levels in the Fuencaliente stations between 7 and 8 a.m., with two exceedances of the threshold value. alert (established at 500 µg / m³) and Los Llanos de Aridane at 9 am, with an exceeding of said threshold. After these episodes, the recorded values were substantially reduced to good air quality levels, which were maintained for the rest of the day. The accumulated values at the Fuencaliente station exceeded the daily limit value (established at 125 µg / m³). In the rest of the points, the air quality levels were good or reasonably good throughout the day yesterday. During today, and until the time of preparation of the report,

With regard to particles smaller than 10 microns (PM₁₀), yesterday extremely unfavorable levels were maintained at the Los Llanos de Aridane station with a daily average of 147 µg / m³ (daily threshold established at 50 µg / m³). The records of this station were in decline during the night of yesterday rebounding during the morning of today, the 24-hour moving average is at very unfavorable and extremely unfavorable levels that reflect the incidence of ash falls from the volcano, influenced by the dynamics eruptive and winds daily. In the rest of the stations the air quality levels for PM₁₀ are good or reasonably good.

November 5th

Sánchez puts La Palma as an example of unity of all administrations and highlights solidarity with the island



Weather conditions are favorable for air quality and airport operations

The values of sulfur dioxide SO₂ are good throughout the island and improve the levels of PM₁₀ particles, although the recommendations are maintained

This weekend a single direction of movement will be established down the Hermosilla highway, from the municipality of El Paso to Los Llanos de Aridane and up the LP-2 and LP-3

Individuals should only access rooftops that are passable to remove ashes and always with the appropriate self-protection measures

The President of the Government of Spain, Pedro Sánchez, attended today in La Palma the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands,

headed by the Minister of Public Administrations, Justice and Security, Julio Pérez. This is the sixth visit of President Sánchez to the island and in all of them he has participated in PEVOLCA meetings to learn about the evolution of the eruptive process, being accompanied by the President of the Canary Islands, Ángel Victor Torres, the President of the Cabildo, Mariano Hernández Zapata and the government delegate, Anselmo Pestana, among other authorities.

During the meeting, President Sánchez wanted to convey once again the solidarity of the whole of Spain with La Palma, while highlighting the extraordinary work of public servants, intervening teams, leaders and scientific personnel, who show every day their professionalism and dedication, making La Palma an example of unity. Likewise, he announced that this week aid for the agricultural and fishing sectors will be transferred for an amount of 18.8 million euros and the approval in the Council of Ministers next Tuesday of the tax exemption of all public aid that is allocated from directly to those affected on the island, with regard to the destruction of homes or any type of buildings.

For his part, Ángel Victor Torres advanced the alternative rooms that the Government is carrying out, and announced that next Monday the delivery of the first 18 homes is expected. In addition, he highlighted the reinforcement of the Citizen Attention Office with almost 30 people, which has allowed the formalization of 300 files. He also reported that the first 30 prefabricated homes have arrived on La Palma, of the 200 that are initially planned by the Government of the Canary Islands. The president of the Canary Islands explained that the decree is being agreed with the municipalities and the Cabildo to enable spaces because "the will is to be able to rebuild where it is possible to maintain roots."

Regarding the conclusions of the Steering Committee, Rubén Fernández, Technical Director of PEVOLCA in temporary replacement of Miguel Ángel Morcuende, explained that the air quality data have improved compared to yesterday and that the forecast is for this trend to continue. SO₂ levels are good throughout the island and PM₁₀ levels have decreased, although preventive measures and recommendations to the population are maintained since levels of suspended particles remain high. Regarding this value, he indicated that the situation has gone from extremely unfavorable to unfavorable.

Regarding the return to face-to-face classes in the Aridane Valley, the Ministry of Education, Universities, Culture and Sports pointed out that it will be Sunday when it decides whether the students will return to class on Monday or continue with classes online.

Regarding basic services, the Steering Committee reported that the ash cleaning operation and the cleaning of roofs and roofs have been reinforced, intensifying in the southern area. In addition, the cleaning of large spaces and building environments using heavy machinery is coordinated with UME, Firefighters and the Infrastructure Service of the Cabildo, and sweeping trucks with aspiration for urban areas are incorporated. Regarding the collection of ashes by individuals, it is insisted that they should only access rooftops that are passable, in order to avoid accidents, and that protective measures such as FFP2 masks and glasses must be used.

On the other hand, it was recalled that during the weekend there will be a greater control of traffic in the area of the Mirador de Tajuya and on Saturday a single direction of vehicle movement will be established, with the descent of light vehicles from El Paso to Los Llanos de Aridane by the Cuesta de Hermosilla and up the LP-2 and LP-3. Large tonnage vehicles will circulate, in both directions, on the LP-2 and LP-3. Visitors should take extreme measures of self-protection in road traffic and in the passage of pedestrians, especially in the surroundings of the Mirador de Tajuya, so it is recommended that pedestrians wear reflective vests at all times.

Daily water quality controls are still being carried out by the Insular Water Council, supervising telecommunications and electricity supply, without any incidents that have generated interruption of services in non-evacuated areas have been detected so far.

Today the accompaniment of residents to the southern zone has been suspended due to weather conditions and the state of the road due to the ash, although access to irrigators is maintained. Tomorrow the situation will be reassessed.

Eruptive process

The lavas continue to occupy the central sector of the affected surface, passing towards the northwest, occasionally overflowing some of the pre-existing volcanic tubes and channels, without affecting new lands. The

contributions of lava that are taking place on the flows are generating small, irrelevant affections on the affected surface. The front of the pouring in zone 11 remains 100 meters away from the LP-211. The road continues to be open, but with traffic restrictions and in anticipation that this road may eventually be cut by lava, work continues in the conditioning works of a second access road to Puerto Naos that allows the entry of large tonnage vehicles. These works could be completed in about 10 days.

In this sense, the spokesperson for the Scientific Committee and national director of Volcanic Surveillance of the National Geographic Institute (IGN), Carmen López, explained at a press conference that the volcano continues to emit material that feeds the lava tubes and circulates through previous flows, with capacity to settle new material, which fill small cavities and areas of subsidence. Therefore, a process of assimilation of the new contributions is taking place, without modifying the fronts of the castings.

Carmen López also pointed out that the level of the volcanic tremor in the last 24 hours has experienced a new decrease, within its oscillatory behavior, and that seismicity continues to be located in the same areas as in recent weeks, at depths between 10 and 15 kilometers and also at depths greater than 20 kilometers. The maximum magnitude was 4.5 mbLg of an event yesterday at 23:05 at a depth of 35 kilometers, felt with maximum intensity IV (EMS).

Regarding deformation, the stations closest to the eruptive center do not show significant changes. At stations furthest from the eruptive center, a slight regional deflation continues.

Regarding the meteorological conditions, the Scientific Committee indicated that the scenario for the next few days is favorable for aeronautical operations and also from the point of view of air quality, since the wind regime is expected to provide the ash plume and SO₂ towards the south-southwest from the eruptive focus and an intensification of the trade wind. Rainfall has been weak on the northeast and east slopes, without notable incidents,

Surfaces

Today no new data were provided on the affected area, which was estimated yesterday at 983 hectares, or on crops, where the figure of approximately 283 affected hectares is maintained.

According to the latest data provided by the Copernicus satellite, regarding the number of constructions / buildings destroyed or damaged, the figure has been readjusted to 2,714 buildings, of which 2,581 totally destroyed and 133 damaged or at risk. The cadastre is kept with data from yesterday, in 1,443 affected editions.

Regarding road infrastructures, it is estimated that 63.8 kilometers of roads are affected. Of these, more than 9 kilometers correspond to island roads and about 54 kilometers to streets, crossings and other municipal roads.

The number of people housed in hotel centers today is 466, six more than the previous day. Of these, 399 are staying at the hotel in Fuencaliente and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

In recent days, it is noteworthy that the levels of activity visible in the cone are highly variable, with pulses of higher emission rate from lava flows. The lavas continue to occupy the central sector of the affected surface, passing

towards the northwest, occasionally overflowing some of the pre-existing volcanic tubes and channels, without affecting a new surface.

Currently, several emission centers are still active with intermittent activity (both pyroclasts and lava), varying as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the ash scattering cloud measured today at 08:45 is 3,500 m.

The prevailing wind in the lower and middle troposphere (from surface to 5000 m) will continue to be component N. It is expected that the ash plume and SO₂ will be disposed towards the S-SW from the eruptive focus, a favorable scenario for aeronautical operations. From an air quality point of view, the weather conditions are favorable. Rainfall is expected to continue today, preferably in the same areas and generally of a weak nature (could be occasionally moderate). For tomorrow, Saturday, probability of occasional light rains in the North and East of La Palma and from Sunday the probability will decrease.

Seismicity continues to be located in the same areas as in recent weeks, at depths between 10 and 15 km and also at depths greater than 20 km. The maximum magnitude was 4.5 mbLg of an event yesterday at 23:05 at a depth of 35 km, felt with maximum intensity IV (EMS). The level of the volcanic tremor in the last 24 hours has experienced a new decrease, within its oscillatory behavior. The current level of seismicity continues to indicate that more felt earthquakes are possible, being able to reach VI intensities (EMS) and cause small landslides in sloping areas.

Regarding deformation, the stations closest to the eruptive center do not show significant changes. At stations furthest from the eruptive center, a slight regional deflation continues.

The emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) reached 31,300 tons per day yesterday (4/10), estimated by means of miniDOAS in land mobile position (value normally underestimated compared to satellite data). Despite the record of a sulfur dioxide (SO₂) emission pulse during the last days, the temporal evolution of the sulfur dioxide (SO₂) emission estimates from satellite data reflects a downward trend since last 25 / 9. The chemical composition of the ash leachate up to the first half of October shows

different sulfate / chloride ratios depending on the ash deposition point, with a relative enrichment of the fluoride content with respect to the sulfate and chloride content (mean values 253 mg / kg, 778 mg / kg, 330 mg / kg of ash, respectively). The temporal evolution of this composition, in particular, the sulfate / chloride and chloride / fluoride ratios indicate changes in the chemical composition of the volcanic plume and consequently changes in the eruptive process.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the volcanic ridge of Cumbre Vieja, a downward trend of this geochemical parameter is observed from 10/12 to 10/22, from that date an upward trend has been observed. . At the Los Llanos de Aridane station (LP10) a higher magmatic-hydrothermal fraction is recorded in carbon dioxide (CO₂) in the soil atmosphere than at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

Yesterday, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, was at good and reasonably good levels in all the stations of the island. At this time, good air quality levels are maintained in all of the island's measurement points.

Regarding particles smaller than 10 microns (PM₁₀), yesterday the very unfavorable levels were maintained at the Los Llanos de Aridane station with a daily average of 104 µg / m³ (daily threshold established at 50 µg / m³). The records of this station showed high values between 00 and 18 hours yesterday and later they were decreasing, although at the moment they are rising again with high values. The 24-hour moving average is at very unfavorable levels, reflecting the daily incidence of the eruptive dynamics and winds. In the rest of the stations the air quality levels for PM₁₀ are good or reasonably good.

November 6th

Little change in the evolution of the flows that cover almost 1,000 hectares within a perimeter of about 56 km



Favorable conditions for aeronautical operations continue

The PEVOLCA maintains the recommendations and preventive measures in Los Llanos de Aridane due to the oscillation of the levels of particle suspension

Ash collection by individuals should only be carried out on passable roofs, in order to avoid accidents and falls from height

Today the single direction of circulation is maintained down the hills of Hermosilla, from the municipality of El Paso to Los Llanos de Aridane, and up the LP-2 and LP-3

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, headed by the Minister of Public Administrations, Justice and Security, Julio Pérez,

based on the data provided by the report of the Scientific Committee, has agreed today to maintain the recommendations and preventive measures regarding air quality that, although it has remained at good and reasonably good levels in all the stations of the island, the daily fluctuations of PM10 in the station have continued. from Los Llanos de Aridane with an unfavorable to very unfavorable quality index, which is why the use of FFP2 masks and protective goggles outdoors was insisted upon. There have been few changes in the evolution of the castings that already cover almost 1.

Regarding the conclusions of the Steering Committee, Miguel Ángel Morcuende, PEVOLCA Technical Director, reported that although a decrease in seismicity has been relevant at both intermediate and deep levels, the probability of feeling earthquakes throughout the day continues, exceeding intensity V.

The emission of sulfur dioxide continues to be high despite registering some episodes of continuous decline.

In the last hours there has been a great contribution of lavas on the original wash, with some overflow in the wash 3 that has caused a small enlargement. Minimal progress has also been recorded in the upper part of casting 11, which means that the situation has remained practically the same as yesterday.

The spokeswoman for the Scientific Committee and national director of Volcanic Surveillance of the National Geographic Institute (IGN), Carmen López, explained at a press conference that since yesterday sulfur deposits have been visible on the north face of the main cone due to the combination of gases that emits the volcano -hydrogen sulfide and sulfur dioxide- that, under favorable cooling conditions, produce sulfur and water and, when passing from their gaseous to solid state, generate these yellow deposits that have been perceptible today and on occasions above, both in the cone and where there are fumaroles or emission of volcanic gases.

Likewise, he indicated in relation to the evolution of the eruptive process that the height of the ash dispersion cloud measured today at 08:45 is 2,500 meters, he pointed out that the volcanic tremor continues at a low level and, in terms of deformation, He said that an episode of local vertical deformation of about 9 centimeters has been recorded at the station near Jedey, which has already begun its reversal. On the other hand, the

differentiated patterns are maintained in the stations near and far from the eruptive center where a slight deflation continues.

Regarding the meteorological conditions, the Steering Committee indicated that the conditions for air navigation and airport operations are favorable thanks to an intensification of the trade wind and the base of the thermal inversion is above 1,500 meters. For her part, the spokeswoman for the Scientific Committee added that as of tomorrow there is the possibility of an increase in the contribution of PM10 particles due to the arrival of Saharan dust.

Basic services

Regarding basic services, the Steering Committee reported that collaborative work will be carried out with the City Councils for the cleaning of rainwater scuppers in the municipalities of Los Llanos de Aridane, El Paso and Tazacorte.

In addition, the operation of ash cleaning and the cleaning of roofs and roofs in the southern zone continues to be reinforced, in a coordinated manner between the UME, Firefighters and the Infrastructure Service of the Cabildo. Likewise, it was insisted that the collection of ashes by individuals should only be carried out on passable roofs, in order to avoid accidents and falls from height. In addition, protective measures such as FFP2 masks and goggles should be used.

On the other hand, progress continues in the conditioning works of the access road to Puerto Naos and emergency maintenance tasks are carried out on the LP-2, LP-212, LP-215 and LP-213 highways, as well as in areas urban.

Regarding traffic, it was recalled that today Saturday a single direction of circulation will be established, making the descent of light vehicles from El Paso to Los Llanos de Aridane through the Cuesta de Hermosilla and the ascent by LP-2 and LP-3. Large tonnage vehicles will circulate, in both directions, on the LP-2 and LP-3.

Visitors must exercise extreme self-protection measures in road traffic and in the passage of pedestrians, especially around the Mirador de Tajuya, so it is recommended that pedestrians wear reflective vests at all times.

Daily water quality controls continue to be carried out by the Insular Water Council, which continues to be good and, for the moment, no incidents have been detected.

Regarding the electricity supply, yesterday there was an incidence in energy in the area that goes from El Charco to Puerto Naos and that was solved at the last minute.

Surfaces

The affected area remains at approximately 983.44 hectares and the maximum width between the flows at around 3,100 meters at the lower elevations. The perimeter of the area affected by the eruption is estimated at 56.23 kilometers.

According to the data provided by the Cadastre, to date 1,446 buildings have been affected, of which 1,171 are for residential use, 147 for agricultural use, 66 for industrial use, 33 for leisure and hospitality, 13 for public use and 15 of other activities.

Regarding road infrastructures, the same estimate of previous days is maintained in 63.84 kilometers of affected roads, mostly streets and highways, as well as the area of crops that amounts to about 283.6 hectares, most of it of banana trees with 158.83 hectares.

The number of people housed in hotel centers today is 465, one less than the previous day. Of these, 398 are staying at the Fuencaliente hotel and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET),

Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

Sulfur deposits were visible yesterday on the north face of the main cone. This phenomenon had already occurred, on previous occasions, in other places in the eruptive zone. The lavas continue to occupy the central sector of the affected surface, passing towards the northwest, occasionally overflowing some of the pre-existing volcanic tubes and channels, without affecting a new surface.

Currently, several emission centers are still active with intermittent activity (both pyroclasts and lava), varying as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the ash scattering cloud measured today at 08:45 is 2500 m.

The wind continues from the NE to component E from the surface up to 5000 m. The ash and SO₂ cloud is expected to move SW from the eruptive focus. The foregoing means that the scenario continues to be favorable for aeronautical operations. Today probability of occasional and weak rainfall on slopes N and E of La Palma. Weak rainfall in the same areas is not ruled out tomorrow. As of Sunday-Monday the PM₁₀ could have a contribution due to the Saharan dust.

Seismicity has decreased compared to previous days, and continues to be located in the same areas, at depths between 10 and 15 km and also at depths greater than 20 km. The maximum magnitude was 4.0 mbLg of an event yesterday at 01:10 at a depth of 11 km, felt with maximum intensity III-IV (EMS). The level of the volcanic tremor continues at a low level. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and cause small landslides in sloping areas.

Regarding the deformation, the differentiated patterns are maintained in the stations near and far from the eruptive center. In the latter, a slight regional deflation continues. At the station near Jedey, an episode of local vertical deformation of about 9 cm is recorded, which has already begun its reversal.

The emission of sulfur dioxide (SO₂) associated with the volcanic plume (visible emanations of volcanic gases) reached 26,000 tons per day yesterday (5/10), estimated by miniDOAS in maritime mobile position (value normally underestimated compared to satellite data). Despite the record of a sulfur dioxide (SO₂) emission pulse during the last days, the temporal evolution of the sulfur dioxide (SO₂) emission estimates from satellite data reflects a downward trend since last 25 / 9.

In the case of diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases), a downward trend of this geochemical parameter is observed from 10/12 to 10/22, but since 10/22 an upward trend has been observed, registering a diffuse emission of carbon dioxide (CO₂) of 1900 tons per day as of 10/5. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction is recorded in the carbon dioxide (CO₂) of the soil atmosphere, while at the Fuencaliente station (LP08) this is practically nil. All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, continued at good and reasonably good levels in all the stations of the island. At this time, good or reasonably good air quality levels are maintained in all measurement points, except at the Puntagorda station, where a value is recorded at 12:00 that exceeds the hourly limit.

With regard to particles smaller than 10 microns (PM₁₀), yesterday the very unfavorable levels were maintained at the Los Llanos de Aridane station with a daily average of 213 µg / m³ (daily threshold established at 50 µg / m³), the second highest in the entire series. The records of this station showed very high values between 08:00 and 21:00 yesterday, decreasing in the early morning of today, although at this time the ascending pattern of the mornings similar to previous days is repeated, with high values. The 24-

hour moving average at this station is at very unfavorable levels, reflecting the daily incidence of the eruptive dynamics and winds, and a decrease in this level is not expected today. In the rest of the stations the air quality levels for PM10 are good or reasonably good.

November 7th

The increase in lava emission does not advance the pouring fronts or affect the new surface



The deformation registered in Jedey has subsided and that located in the rest of the stations is in a situation of deflation

Weather conditions in the next 48 hours will be favorable for air navigation and airport operations

The new contributions of lava registered yesterday afternoon, arising from the increase in the emission rate from the south of the effusive focus, are directed towards the west and flow through the volcanic tubes and channels and over the previous flows, occupying the sector central of the same on the existing lava and without affecting the new surface. The increase

in emissions has not increased the perimeter either, estimated at some 56 kilometers, and has not made the casting fronts advance.

These were some of the issues analyzed in the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, led by the Minister of Public Administrations, Justice and Security, Julio Pérez, with the data provided by the report of the Scientific Committee. This meeting also addressed the decrease in seismicity compared to previous days, the remission of the deformation of the terrain registered in Jedey and the variations in air quality parameters, among other issues.

Regarding the conclusions of the Steering Committee, Miguel Ángel Morcuende, Technical Director of PEVOLCA, reported the possible increase in particles smaller than 10 microns (PM10) due to a contribution of air from the east, based on the thermal inversion, which will worsen the air quality in some towns such as Los Llanos de Aridane. Currently, in this town these conditions are extremely unfavorable and for this reason, Morcuende once again reminded the population that the use of the FFP2 mask is of vital importance, at least if they go out on the street, and that those who present Eye problems should wear protective glasses while this episode of increased particles lasts.

According to the spokesperson for the Scientific Committee and national director of Volcanic Surveillance of the National Geographic Institute (IGN), Carmen López, the emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process, registered yesterday, continues to be high, but its temporal evolution reflects a downward trend since last September 25.

Also the spokesperson for the Scientific Committee pointed out that yesterday the air quality due to the polluting sulfur dioxide (SO₂) associated with the eruptive process was at levels between reasonably good and regular most of the day in the Los Llanos stations of Aridane and Puntagorda. In this last station, at 12:00 hours the hourly limit value of this pollutant was exceeded (established at 350 µg / m³) and the accumulated average levels exceeded the daily limit (established at 125 µg / m³). This

morning air quality levels were good or reasonably good at all measurement points.

López also indicated that yesterday around 6:00 p.m. the lava emission rate increased, highlighting the advance of a flow towards the southwest, which runs north of the Cogote Mountain. In this sense, he added that the eruptive phenomenon is accompanied from the beginning by many changes in intensity and even eruptive styles. In these episodes there may be an apparent lack of intensity for a period, reflected in tremor and less voluminous washes, and then may intensify again, something that represents the natural behavior of these eruptions.

On the other hand, the PEVOLCA technical director explained that currently seismicity is low, said that the one located at depth remains at low values and stated that the one registered at intermediate levels is in decline.

In this sense, López highlighted that the maximum recorded magnitude was 4.5 mbLg in an event that occurred yesterday at 8:40 p.m. at a depth of 36 kilometers and felt with maximum intensity IV (EMS). In addition, also yesterday, around 6:00 p.m. and for a further 7 hours, there was an intensification of the tremor level, coinciding with the increase in eruptive activity.

Regarding the meteorological conditions, the PEVOLCA technical director said that the next 48 hours will be favorable for air navigation and airport operations. Likewise, Morcuende pointed out that the entry of air from the east will place the plume towards the southwest and west of the island and in principle, he said, suspended particles will not increase in this way in the towns located north of La Palma.

Basic services

Regarding the ashes, the roof and roof cleaning and sanitation operation continues to intervene. Likewise, the Steering Committee insists that the collection of ashes by individuals must be carried out only on passable roofs, in order to avoid accidents and falls from a height, and use protective measures such as FFP2 masks and protective glasses. For cleaning other types of non-passable surfaces, you should always notify the authorities.

On the other hand, ash cleaning work continues to be carried out on highways LP-2, LP-212, LP-215 and LP-213 and is intensifying in urban areas and in the evacuation of rainwater.

In addition, tomorrow, Monday, ash will begin to be transported to a collection place in the vicinity of San Nicolás and to the south.

Regarding the electricity supply and telecommunications, there have been no incidents.

Surfaces

Today, no changes have been reported in terms of data referring to the surface, road infrastructures or buildings and crop areas affected by the volcanic eruption.

In this sense, the surface remains at approximately 983.44 hectares and the maximum width between the flows at around 3,100 meters at the lowest elevations. The perimeter of the area affected by the eruption is estimated at 56.23 kilometers.

Regarding the constructions / buildings affected, there is no new data provided by the Cadastre with respect to yesterday, so the estimates of some 1,446 affected buildings are maintained, of which 1,171 are for residential use, 147 for use agricultural, 66 for industrial use, 33 for leisure and hospitality, 13 for public use and 15 for other activities.

Road infrastructures maintain the same estimate as in previous days with 63.84 kilometers of roads affected, mostly streets and highways. Likewise, with regard to the area under cultivation, there is no variation either, since it remains at about 283.6 hectares, most of it being banana trees, with 158.83 hectares, followed by vineyards, which account for 59.65 hectares. , and avocado trees, which total around 24.06 hectares.

Regarding the number of people housed, there is a small variation, since the number of people housed in hotel centers today is 467, two more than yesterday. Of these, 400 are staying at the hotel in Fuencaliente and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increase and decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

Yesterday around 6 pm the lava emission rate increased. The lava flows, which arise from the south of the effusive focus, are directed towards the West, on the previous flows. The lavas that continue to occupy the central sector of the affected surface occasionally overflow some of the pre-existing volcanic tubes and channels, without affecting a new surface. In particular, we highlight the advance of a flow towards the southwest, which runs north of the Cogote Mountain.

Currently, several emission centers are still active with intermittent activity (both pyroclasts and lava), varying as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the ash scattering cloud measured today at 08:45 is 2,700 m, heading SW.

On the surface, a strong NE wind will blow, with gusts that can reach 60–70 km / h, mainly in areas of peaks and midlands. At higher levels (up to 5000 m) the E component wind will predominate. The ash plume and SO₂ are disposed towards the W-SW and are expected to continue in the current position. The expected cloud arrangement represents a favorable scenario

for aeronautical operations. Today weak and occasional rainfall is not ruled out in the north and east of La Palma. As of Monday the PM10 could have a contribution due to the Saharan dust.

Seismicity has decreased compared to previous days, and continues to be located in the same areas, at depths between 10 and 15 km and also at depths greater than 20 km. The maximum magnitude was 4.5 mbLg of an event yesterday at 20:40 at a depth of 36 km, felt with maximum intensity IV (EMS). Yesterday around 6 pm and for 7 hours, there was an intensification of the level of tremor, coinciding with the increase in eruptive activity. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach VI intensities (EMS) and cause small landslides in sloping areas.

As for the deformation in the station near Jedey, it has reversed the vertical deformation recorded in the previous days. The rest of the stations show a trend towards regional deflation.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered during yesterday (10/6) continues to be high (> 10,000 tons per day), but its temporal evolution reflects a downward trend since last 9/25. In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), it reflects an upward trend since 10/22, registering during the day of yesterday (10/6) a value higher than 1200 tons per day. Outside the exclusion zone, these diffuse emissions of carbon dioxide (CO₂) do not represent any danger to people. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction is recorded in the carbon dioxide (CO₂) of the soil atmosphere, while at the Fuencaliente station (LP08) this is practically nil. All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, was reasonably good to fair levels, most of the day at the Los Llanos de Aridane and Puntagorda stations. In this last station, at 12:00 h, the hourly limit value of this pollutant was exceeded (established at 350 µg / m³) and the accumulated average levels exceeded

the daily limit (established at $125 \mu\text{g} / \text{m}^3$). Good or reasonably good air quality levels are currently maintained at all measurement points.

With regard to particles smaller than 10 microns (PM10), yesterday extremely unfavorable levels were maintained at the Los Llanos de Aridane station. The mean daily value recorded, $219 \mu\text{g} / \text{m}^3$ (daily threshold set at $50 \mu\text{g} / \text{m}^3$), is the second highest since the eruption began, surpassing the record of the previous day. Once again, the averages for this station showed very high values between 10 and 19 hours yesterday, decreasing yesterday night and early today. At this time, the ascending pattern of the mornings is repeated, although with less intensity than in previous days. The 24-hour moving average at this station is at extremely unfavorable levels, reflecting the daily incidence of eruptive dynamics and winds.

November 8th

The Minister of Transport reiterates the support in the emergency and the reconstruction for the connectivity of La Palma



Air quality continues to be extremely unfavorable due to PM10 suspended particles in five municipalities, where the use of FFP2 masks and avoiding outdoor activities is recommended

Puntagorda exceeded the alert threshold for sulfur dioxide (SO₂) between 09:00 and 15:00

Seismicity and tremor remain at low levels compared to previous weeks

Lava flows continue to flow through the central sector and head west over previous flows, without invading a new surface.

The Minister of Transport, Mobility and Urban Agenda, Raquel Sánchez Jiménez, attended today in La Palma the meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), together with the counselor responsible for the Plan of the Government of the Canary Islands, Julio Pérez and, the Minister of Public Works, Transport and Housing, Sebastián Franquis, among other authorities. Sánchez stressed that the entities and agencies of the Ministry have been overturned from the beginning in this emergency, as is the case of the National Geographic Institute (IGN), Salvamento Marítimo or AENA, among others, all dependent on his ministry, without undermining the work of the rest of the intervening services, and added that they will continue working on the emergency as they have been doing until now,

The PEVOLCA Steering Committee meeting was also attended, among other authorities, by the president of the Cabildo de La Palma, Mariano Hernández Zapata and the Government delegate in the Canary Islands, Anselmo Pestana. Said Committee agreed to maintain the Civil Protection recommendations on air quality in various municipalities of La Palma, in addition to updating the situation of basic services and analyzing the latest parameters of the eruption that maintain a downward trend, although the eruptive dynamics continues intense and have yet to consolidate, according to experts.

Regarding the conclusions of the PEVOLCA Steering Committee, Francisco Prieto, as representative of the Technical Committee, which circumstantially replaced Miguel Ángel Morcuende today, explained that the air quality is extremely unfavorable in Los Llanos de Aridane, El Paso, Tazacorte, Tijarafe and Puntagorda when exceeding the PM10 particle values. This situation has caused the suspension of classes today. It also reported that the sulfur dioxide threshold was exceeded in Puntagorda, being very unfavorable between 09:00 and 15:00.

In this sense, and to minimize risks, the population is recommended to reduce outdoor activity and use FFP2 masks, while risk groups are advised to follow their medical treatment and stay indoors to avoid exposure to the air. free.

Lava flows remain stable, continue to flow through the central sector and head west over previous flows, without invading new surface. In this sense, colada 1, which ends in the fajana, is the one that is receiving a greater supply of lava and to a lesser extent, 5. The ones that worry the most are the 8, which has its front in La Laguna, and the 11, due to its proximity to the road that gives access to Puerto Naos, but both are stopped and without movement.

According to the Scientific Committee, there are downward trends in certain parameters associated with seismicity, tremor or the emission of gases from the plume, but experts insist that this trend has to be consolidated over time to be permanent.

In this regard, the spokesperson for the Scientific Committee and national director of Volcanic Surveillance of the National Geographic Institute (IGN), Carmen López, explained that seismicity remains low compared to previous weeks and continues to be located in the same areas at both depths. The maximum magnitude was 4.6 mbLg and was recorded yesterday at 17:07 hours and at a depth of 37 kilometers, felt with maximum intensity IV (EMS). The tremor in the last 24 hours remains at low levels.

Regarding deformation, the station closest to the center continues to show deformations that reflect the dynamics of the eruptive process, although the rest of the stations show a trend towards regional deflation.

The emission of sulfur dioxide (SO₂) associated with the volcanic plume continues to be high, although its temporal evolution reflects a downward trend since last September 23. The temporal evolution of the chemical composition of the volcanic plume also reflects a downward trend, indicating that the magmatic input has a more superficial origin.

Regarding the meteorological conditions, no significant changes are expected and they will be favorable for aeronautical operations.

Surface

The affected area is estimated at 984 hectares, 1.41 more than the last data, and the maximum width between external flows remains at 3,100 meters.

According to the latest data from the Land Registry, 1,452 buildings have been damaged or destroyed, of which 1,177 are for residential use, 147 for agriculture, 67 for industrial use, 33 for leisure, 13 for public use and 15 for other uses.

The number of people housed in hotel centers today remains unchanged, at 467. Of the total, 400 are staying at the hotel in Fuencaliente and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

Lava flows pass through the central sector and head west over previous flows, without invading a new surface.

Currently, several emission centers are still active with intermittent activity (both pyroclasts and lava), varying as the configuration of the eruptive zone

changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the ash scattering cloud measured today at 08:45 is 2500 m, heading SW.

On the surface, the strong NE wind will continue to blow with gusts that can reach 60 - 70 km / h mainly in areas of peaks and midlands (as of tonight it will weaken slightly). At higher levels (up to 5000 m) the E component wind will predominate. The ash plume and SO₂ are disposed towards the W-SW and are expected to continue in the current position. The expected cloud arrangement represents a favorable scenario for aeronautical operations. No significant changes in weather conditions are expected over the next few days.

Seismicity remains low compared to previous weeks and continues to be located in the same areas, at depths between 10 and 15 km and also at depths greater than 20 km. The maximum magnitude was 4.6 mbLg of an event yesterday at 17:07 at a depth of 37 km, felt with maximum intensity IV (EMS). The tremor in the last 24 hours remains at low levels. The current level of seismicity continues to indicate that more felt earthquakes are possible, being able to reach VI intensities (EMS) and cause small landslides in sloping areas.

Regarding deformation, the station closest to the center continues to show deformations that reflect the dynamics of the eruptive process. The rest of the stations show a trend towards regional deflation.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered during yesterday (10/7) continues to be high, registering a range of values between 16,600 and 23,100 tons per day through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, its temporal evolution reflects a downward trend since last 9/23 when maximums exceeding 50,000 tons per day were registered through satellite analysis. The temporal evolution of the chemical composition of the volcanic plume also reflects a downward trend in the C / S ratio, indicating that the magmatic contribution has a more superficial origin.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), it reflects an upward trend since 10/22, registering yesterday (7/10) a value greater than 1200 tons per day. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction is recorded in the carbon dioxide (CO₂) of the soil atmosphere, while at the Fuencaliente station (LP08) this is practically nil. All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, was between reasonably good and regular levels at the Puntagorda station, with average levels exceeding the daily limit (established in 125 µg / m³). In the rest of the stations, air quality levels were good or reasonably good yesterday, without exceeding the hourly thresholds. During this morning, SO₂ levels increased in Los Llanos de Aridane and Puntagorda, with the hourly alert threshold (established at 500 µg / m³) being exceeded in the latter station between 6:00 and 10:00 : 00 hours, and the values currently continue above this threshold.

Regarding particles smaller than 10 microns (PM₁₀), yesterday at the Los Llanos de Aridane station the highest daily mean value recorded since the beginning of the eruption was obtained, 382 µg / m³ (daily threshold established at 50 µg / m³), maintaining extremely unfavorable levels. Between 12:00 and 16:00 hours were recorded hourly measurements higher than 1,000 µg / m³, coinciding with a higher wind speed, which intensifies the phenomenon of resuspension of previously deposited particles. During the night and early morning, with the decrease in wind speed, the values decreased significantly. In these moments the ascending pattern of the mornings is repeated. The 24-hour moving average at this station is at extremely unfavorable levels, reflecting the daily incidence of the eruptive dynamics and winds. In the rest of the stations, the air quality levels for PM₁₀ particles are good or reasonably good.

November 9th

The front of wash 2 reaches the cliff of Los Guirres beach and is located a few meters from the sea



The first families occupying the homes acquired by the Government of the Canary Islands are some of those staying at the Fuencaliente hotel

The lava contribution is filling in the interior 'islands' between the original and 9 streams, which have joined in some points

The decrease in the levels of seismicity, tremor, deformation and SO₂ emissions of the plume continues, without the experts being able to confirm a consolidation of the trend yet

Air quality improves, but remains unfavorable in the Aridane Valley and it is recommended to reduce outdoor activities and use FFP2 masks to clean the ashes

Work on the emergency work for a new access road to Puerto Naos will begin immediately, with an expected execution period of one month

The new contributions of lava this morning exceeded the front of wash number 2, which is already on the cliff of Playa de Los Guirres and is located a few meters from the sea. The

PEVOLCA Directorate rules out taking new confinement measures, since there are no population centers near the area. Regarding civil protection measures for air quality, the Steering Committee reported that the level of PM10 suspended particles has improved in Los Llanos de Aridane, El Paso, Tazacorte, Puntagorda and Tijarafe, for which the episode from extremely unfavorable, which turns into an unfavorable situation.

The president of the Canary Islands, Ángel Víctor Torres, attended today the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, which is headed by the Minister of Public Administrations, Justice and Security, Julio Perez. At this meeting the latest data from the Scientific Committee report was also analyzed, where a decrease in the levels of seismicity, tremor, deformations and SO2 emission associated with the plume was revealed, without these parameters being yet consolidated since for them they would have to be maintained and reached even lower levels, in the opinion of the experts.

Regarding the conclusions of the Steering Committee, Francisco Prieto, representative of the Technical Committee who also circumstantially replaced the PEVOLCA Technical Director, Miguel Ángel Morcuende, explained that the greatest contribution of lava occurs on the original wash and the number 2, filled in 'islands' interiors that are between them and number 9, even joining in some points. The rest of the washes are stable, without movement.

The affected area is estimated to have increased by 3.42 hectares to reach 988.27 hectares, and the maximum width between external flows remains at 3,100 meters.

Regarding air quality due to PM10 suspended particles, the Steering Committee reported that today there has been an improvement in the values, going from an extremely unfavorable to an unfavorable situation in Los Llanos de Aridane, El Paso, Tazacorte, Puntagorda and Tijarafe. In this sense, it is recommended to reduce prolonged and vigorous activities outdoors and use FFP2 masks to handle the ash. The unfavorable situation due to sulfur dioxide emissions declared yesterday in Puntagorda has also ended. In this regard, it is recalled that all the information is available on the Environment website of the Government of the Canary Islands.

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

For her part, the spokesperson for the Scientific Committee and director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, explained that seismicity remains low compared to previous weeks and continues to be located in the same areas in both depth groups. The tremor in the last 24 hours remains at low levels and the deformations continue to show a general tendency to deflation in most of the stations in the vertical component.

The emission of sulfur dioxide (SO₂) associated with the volcanic plume continues to be high, registering a range of values between 9,000 and 13,000 tons per day, but its temporal evolution reflects a downward trend since last September 23, when highs were recorded above 50,000 tons per day. In the case of the diffuse emission of carbon dioxide (CO₂), associated with the volcanic ridge of Cumbre Vieja (non-visible emanations of volcanic gases) it reflects an upward trend, but according to the scientific committee, they do not represent a danger to people.

Regarding the meteorological conditions, the ash and SO₂ plume is expected to continue for the next few hours with a disposition towards the O-SO, which represents a favorable scenario for aeronautical operations. No significant changes in weather conditions are expected for the next two days.

With regard to basic services, the Steering Committee monitored the work of the desalination plants, in addition to reporting on the start of urgent works that will enable a new connection road between Puerto Naos and Las Manchas de Abajo with the LP-213. As explained by Amilcar Cabrera, coordinator of the PEVOLCA essential services rehabilitation group, these works will run parallel to the widening works of the current road.

The number of people housed in hotel centers today remains unchanged, at 471. Of the total, 404 are staying at the hotel in Fuencaliente and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

On the other hand, the first families occupying the homes acquired by the Government of the Canary Islands to attend the housing emergency on the

island of La Palma, due to the volcano eruption, are some of those staying at the Fuencaliente hotel.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

In zone 2, the lava flow has exceeded the pre-existing front and has reached the coast at Playa de Los Guirres.

Currently, several emission centers with variable activity (both pyroclastic and lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the ash scattering cloud measured today at 08:45 is 2,700 m, heading SW.

The wind continues from NE to component E from the surface up to 4000 m. Wind gusts can reach 50-55 km / h today, mainly in the central ridge, Los Llanos and El Paso. The ash and SO₂ plume is expected to continue for the next few hours with a disposition to the W - SO. The above supposes a favorable scenario for aeronautical operations. No significant changes in weather conditions are expected for the next two days.

Seismicity remains low compared to previous weeks and continues to be located in the same areas, at depths between 10 and 15 km and also at depths greater than 20 km. The maximum magnitude was 3.8 mbLg of an event today at 06:55 at a depth of 38 km, felt with maximum intensity III (EMS). The tremor in the last 24 hours remains at low levels. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V (EMS) and causing small landslides in sloping areas.

Regarding deformation, the station closest to the center continues to show deformations that reflect the dynamics of the eruptive process. The rest of the stations show a trend towards regional deflation.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered during yesterday (10/8) continues to be high, registering a range of values between 9000 and 13,000 tons per day through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, its temporal evolution reflects a downward trend since last 9/23, when maximums exceeding 50,000 tons per day were registered through satellite analysis. In the case of diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emanations of volcanic gases) reflects an upward trend since 10/22 that does not appear to take hold since yesterday (10/8) with a record between 1700 and the 1900 tons per day. These diffuse fumes do not represent a danger to people. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station

(LP08). All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality due to sulfur dioxide (SO₂), with two exceedances of the daily threshold at the Puntagorda and Los Llanos de Aridane stations. At the Puntagorda station, there were four consecutive exceedances of the alert threshold (established at 500 µg / m³) between 6 and 10 o'clock and a total of nine exceedances of the hourly limit value (established at 350 µg / m³). In the rest of the stations the air quality levels were good or reasonably good. In general, the SO₂ values recorded during the night were reduced to good air quality levels. During the morning of today the levels of SO₂ have increased slightly in Los Llanos de Aridane and Puntagorda, standing in this season at regular air quality levels at the moment,

With regard to particles smaller than 10 microns (PM₁₀), yesterday at the Los Llanos de Aridane station the same trend was observed as in previous days, with an increase in the values recorded throughout the day, but with maximum values of less intensity than in previous days, this caused the moving average to drop to unfavorable air quality levels. During the night and early morning, with the decrease in wind speed, the values decreased significantly. In these moments the ascending pattern of the mornings is repeated. The 24-hour moving average at this station remains at unfavorable levels, reflecting the daily incidence of the eruptive dynamics and winds. In the rest of the stations, the air quality levels for PM₁₀ particles are good or reasonably good.

Therefore, in the area of Tijarafe, Los Llanos de Aridane, El Paso, Tazacorte and Puntagorda, the population should consider reducing energetic and / or prolonged activities outdoors, and doing them indoors or when the quality of the air, consulting the website of the Government of the Canary Islands for Air Quality

(<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>).

November 10th

Air quality improves and face-to-face classes are resumed in the western municipalities of La Palma



The lava delta increases with the arrival to the sea of the wash number 2

The area affected by lava is already around a thousand hectares

Deep seismicity has experienced an increase in recent hours, both in number and magnitude

The improvement in quality has allowed the resumption of face-to-face teaching activity today in the five municipalities in the west of La Palma, where yesterday the daily threshold for PM10 suspended particles was not exceeded at any station on the island. Regarding the emission of sulfur dioxide (SO₂), the values remain low in general, at good or reasonably good levels, with some specific moment of regular air quality in Puntagorda. As a precautionary measure, it is still recommended to reduce vigorous or prolonged outdoor activity in the municipalities of Tijarafe, Los Llanos de Aridane, El Paso, Tazacorte and Puntagorda.

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands was chaired today by the General Director of Emergencies and Security, Gustavo Armas, in the absence of the Plan's counselor, Julio Pérez , who had to appear today in the Parliament of the Canary Islands.

Regarding the evolution of the flows, it was reported that lava flow number 2 reached the sea at Los Guirres Beach this morning, at 00:44 hours, starting a new lava delta, which is superimposed by the north to the previous one. In this regard, it was added that casting 2 has filled the interior surface between casts 1 and 9 and continues to receive lava input, while the other casts remain stable and their fronts have not experienced movements for days.

Due to the advance of pour 2, the affected area has increased by more than 10 hectares and it is estimated that it is already around one thousand hectares (998.34), maintaining the maximum width between flows at 3,100 meters, since the increase is recorded in 'islands interiors' ..

Regarding the conclusions of the Steering Committee, Francisco Prieto, representative of the Technical Committee who also temporarily replaced PEVOLCA's Technical Director, Miguel Ángel Morcuende, explained that he already has the two sites to house the complementary electricity generation plants on both sides of the laundry, one in Los Llanos de Aridane and another in Las Manchas and the first teams will arrive in the next few days. These stations will make it possible to alleviate voltage drops and give greater stability to the system, guaranteeing supply and power.

The activity carried out by the emergency teams in the removal of ashes was also reported, with special recognition of the work carried out by the Military Emergency Unit (UME) in cleaning scuppers in the most affected municipalities, work that will be reinforced in the next days by specific machinery and by hiring of personnel on the part of the Government of the Canary Islands.

For her part, the spokesperson for the Scientific Committee and director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, explained that seismicity at depths greater than 20 kilometers shows an increase in the last hours, both in number and magnitude. In this

regard, he recalled that the Committee's reports reflect for weeks the probability of occurrence of felt earthquakes that can reach intensity V and even VI and that, within the stability of the eruptive process, the system has the capacity to readjust to generate earthquakes of these magnitudes. Regarding seismicity at intermediate depths, it remains low compared to the previous weeks.

The report also includes that the tremor in the last 24 hours remains at low levels and that the general trend of long-term deflation continues in all seasons in the vertical component.

Regarding the meteorological conditions, the scientific committee indicated that the ash cloud will move to the west, maintaining the favorable scenario for aeronautical operations.

There are a total of 467 people housed in hotel centers, four less than yesterday. Of the total, 400 are staying at the Fuencaliente hotel and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

According to the latest data provided by the Copernicus satellite, the number of buildings destroyed amounts to 2,724, of which 2,605 are totally destroyed and 119 partially damaged.

Regarding crops, the total affected hectares is estimated to reach 290.45, which is 6.8 more than in the last update. Of these, 164.38 are banana trees, 59.84 are vines and 24.75 are avocados.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

This morning, at 12:44 a.m., the lava flow from zone 2 reached the sea at Los Guirres Beach, beginning a new lava delta, which overlaps the previous one to the north.

Currently, several emission centers with variable activity (both pyroclastic and lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the ash scattering cloud measured today at 08:45 is 1800 m, heading W.

Predominance of the N component to E component wind in the lower and middle troposphere (from surface to 5000 m). Today the gusts can reach 40-50 km / h. The ash cloud and SO₂ are expected to continue disposed towards the W. Therefore, the favorable scenario for aeronautical operations continues. Probability of weak rainfall for Friday and Saturday, which will mainly affect the N and E slopes of La Palma, as well as inland areas of the west slope. Next week a low pressure system could affect the archipelago (there is still high uncertainty).

Seismicity at intermediate depths remains low compared to previous weeks. It continues to be located in the same areas, at depths between 10 and 15 km. The seismicity at depths greater than 20 km shows an increase in the last hours. The maximum magnitude was 4.6 mbLg of an event today at 11:10 at a depth of 22 km, felt with maximum intensity IV (EMS). The tremor in the last 24 hours remains at low levels. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V (EMS) and causing small landslides in sloping areas.

Regarding deformation, the station closest to the center continues to show deformations that reflect the dynamics of the eruptive process. The rest of the stations show a trend towards regional deflation.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered yesterday (9/10) continues to be high, registering a pulse of dioxide emission of sulfur (SO₂) with a range of values between 31000 and 43000 tons per day through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23 when maximums of more than 50,000 tons of sulfur dioxide (SO₂) emissions were recorded per day. In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), It does not reflect significant variations during the last days, registering a range between 1800 and 2000 tons per day yesterday (9/10). These diffuse fumes do not represent a danger to people. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality due to sulfur dioxide (SO₂), good or reasonably good levels were registered in all the stations of the island except in Puntagorda, where air quality levels were maintained at regular levels, producing a exceeding the daily threshold (established at 125 µg / m³) at this station. During the morning of today the values are staying low in all the stations, at good or reasonably good levels, with some specific moment of regular air quality in Puntagorda.

Regarding particles smaller than 10 microns (PM10), yesterday there was a significant reduction in the values recorded at the Los Llanos de Aridane station, until they reached regular air quality levels, the dynamics is maintained that we have been seeing in previous days, with an increase in values in the early hours of the morning and a subsequent reduction, but with lower levels of intensity. In the rest of the stations, air quality levels remained at good or reasonably good levels. Yesterday there were no exceedances of the daily limit value (established at $50 \mu\text{g} / \text{m}^3$) in any station. During the morning of today a slight increase in the observed values is observed but of low intensity with good or reasonably good values in the set of stations,

Therefore, and as a precautionary measure, in the area of Tijarafe, Los Llanos de Aridane, El Paso, Tazacorte and Puntagorda, the vulnerable population should consider reducing energetic and / or prolonged activities outdoors, and carrying them out indoors. or when air quality improves, consulting the website of the Government of the Canary Islands for Air Quality.

(<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>)

November 11th

The Navy joins PEVOLCA and begins the transfer of farmers to areas that are isolated by lava



The improvement in air quality continues, with specific peaks in Los Llanos de Aridane

Deep seismicity is increasing, registering the highest number of events located more than 20 kilometers from the beginning of the eruption

About 65 kilometers of road infrastructure are affected, of which 9.5 km are island roads and more than 55 km are municipal

Today the Spanish Navy has begun to transfer farmers by sea, from Tazacorte to Puerto Naos Beach, to facilitate irrigators' access to crop areas that have been isolated by land due to lava flows. This action is carried out by speedboats of the Castilla Ship, under the coordination of the Grupo Naval de Playa.

For this reason, the Admiral Commander Naval of the Canary Islands, José Lago Ochoa, and the Commander of the Ship Castilla, Eduardo Guitian, have joined the Steering Committee of the Special Plan for Civil Protection and Emergency Attention for Volcanic Risk of the Canary Islands (PEVOLCA) of

the Government of the Canary Islands, which was led today by the General Director of Security and Emergencies, Gustavo Armas, due to the attendance of the Director of the Plan and counselor for Public Administrations, Justice and Security, Julio Pérez, to the Government Council of the Canary Islands.

This meeting also gave an account of the actions related to the collection of ashes and cleaning of scuppers by the emergency teams, as well as the provisional location of a deposit for the collection of ashes at the San Nicolás crossing, between the LP- 2 and LP-211, which will allow the control and protection of the ash against adverse meteorological phenomena, for its subsequent reuse.

In addition, the locations of the electricity generation stations in Los Llanos de Aridane and Las Manchas, of 9 and 4 MW respectively, were reported, which will guarantee the stability and power of the system, in addition to the maintenance work of the road network and of the start-up of the desalination plants.

Regarding air quality, it remains good or reasonably good in all seasons, except for specific peaks in Los Llanos de Aridane at noon, where it has reached a regular or unfavorable level. As for SO₂, yesterday, regular levels were maintained in Puntagorda, but without exceeding the daily threshold.

Risk groups and the sensitive population should continue to use preventive measures in Los Llanos de Aridane, El Paso, Tazacorte, Tijarafe and Puntagorda and reduce vigorous or prolonged activities abroad. The general population can carry out their outdoor activities in a normal way, but keeping an eye on the appearance of symptoms such as cough, sore throat, shortness of breath, excessive fatigue or palpitations.

The meteorological conditions, with winds that will disperse the ash cloud towards the W and SW, will continue to be favorable for aeronautical operations.

Regarding the evolution of the runoffs, Francisco Prieto, representative of the Technical Committee who also temporarily replaced the PEVOLCA Technical Director, Miguel Ángel Morcuende, explained that the lava emission has continued to flow through the same channel as in previous days, with hardly any bifurcations. , feeding the flows number 1 and 2,

which are practically united. The rest of the castings do not experience variation.

For her part, the spokesperson for the Scientific Committee and director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, explained that the second lava delta has continued to expand, mainly in a direction perpendicular to the coastline, overlapping with the first. In addition, he added that there is an overflow of the lava lake located in the upper part of the cone.

The latest data on the estimated affected area already exceed one thousand hectares, with 1,005.80 hectares, increasing by seven the figure estimated yesterday.

The Scientific Committee report found an increase in seismicity at depths greater than 20 kilometers, both in number and magnitude.

In this sense, María José Blanco explained that the number of locations at these depths in the last 24 hours has been the highest since the beginning of the eruption. In contrast, seismicity at intermediate depths remains low compared to previous weeks. The maximum magnitude recorded was 5.0 mbLg at a depth of 36 km, felt with maximum intensity IV-V (EMS).

Likewise, the tremor remains at low levels and the deformation shows a stable general trend with signs of deflation in depth, more or less defined depending on the location.

Regarding the number of sheltered, 468 people remain in hotel centers, one more than yesterday. Of the total, 401 are staying at the Fuencaliente hotel and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

The latest data from the Cadastre indicate that there are some 1,456 buildings destroyed or damaged, of which 1,179 are for residential use, 149 agricultural, 67 industrial, 33 leisure and hostelry, 13 public use and 15 other uses.

Regarding crops, the total of affected hectares is estimated to reach 290.45. Of these, more than 164 are banana trees, 59.84 vines and 24.75 avocados.

About 65 kilometers of road infrastructure are affected, of which 9.5 kilometers are island roads and more than 55 kilometers of municipal roads, between streets and roads.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The expansion of the second (d2) lava delta continues, mainly in a direction perpendicular to the coastline, overlapping with the first (d1).

Currently, several emission centers with variable activity (both pyroclastic and lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the eruptive column measured today at 08:45 is 2500 m.

The predominance of E component winds continues from the surface up to 5000 m. Today the gusts can reach 45-50 km / h. The ash cloud and SO₂ are expected to continue disposed towards the O-SO. Therefore, the favorable scenario for aeronautical operations continues. Probability of weak rainfall for Friday and Saturday, which will mainly affect the N and E slopes of La Palma, as well as inland areas of the west slope. The numerical

prediction models show that at the beginning of next week a low pressure system could affect the archipelago (there is still high uncertainty regarding the intensity, location of the system and therefore possible areas / islands of affection).

Seismicity at depths greater than 20 km has increased both in number and magnitude. The number of locations at these depths in the last 24 hours has been the highest since the beginning of the eruption. Seismicity at intermediate depths remains low compared to previous weeks. It continues to be located in the same areas, at depths between 10 and 15 km. The maximum magnitude was 5.0 mbLg of an event today at 03:37 at a depth of 36 km, felt with maximum intensity IV-V (EMS). The tremor in the last 24 hours remains at low levels. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (EMS) and causing small landslides in sloping areas.

Regarding deformation, the station closest to the center continues to show deformations that reflect the dynamics of the eruptive process. The rest of the stations show a trend towards regional deflation.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), recorded yesterday (10/10) continues to be high, registering a range of values between 13,000 and 15,000 tons per day through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23 when maximums of more than 50,000 tons of sulfur dioxide (SO₂) emissions were recorded per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (11/10) they reflected a range of values between 1800 and 1900 tons per day. These diffuse fumes do not represent a danger to people. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality due to sulfur dioxide (SO₂) registered good or reasonably good levels in all the stations except in Puntagorda, where they remained at regular levels of air quality, producing an exceedance of the daily threshold (set at 125 µg / m³) at this station. During the morning of today the values are maintaining at good or reasonably good levels in all the stations with the exception of Puntagorda, with regular air quality.

With respect to particles smaller than 10 microns (PM₁₀), yesterday values similar to those registered in previous days at the Los Llanos de Aridane station were maintained, with maximums between 11:00 and 14:00. and an air quality index ranging from fair to unfavorable. The dynamics of previous days is repeated, with an increase in values from the early hours of the morning and a subsequent reduction in the evening, with maximum levels associated with periods of greater wind intensity. In the rest of the stations, air quality levels remained at good or reasonably good levels. Yesterday the daily limit value (established at 50 µg / m³) was not exceeded in any station.

Therefore, and as a precautionary measure, in the area of Los Llanos de Aridane, El Paso, Tazacorte, Tijarafe and Puntagorda, for risk groups and sensitive populations, consider reducing vigorous and / or prolonged activities outdoors. For the general population, they can carry out their outdoor activities in a normal way. However, watch for symptoms such as coughing, sore throat, shortness of breath, excessive fatigue, or palpitations. Consult the website of the Government of the Canary Islands for Air Quality.

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

November 12th

PEVOLCA calls for caution and reminds the restriction of access to the exclusion zone



The Plan Steering Committee reiterates the need to respect the controls established throughout the perimeter and not lower our guard

The exit of the lava to the sea prevents the pouring fronts from increasing their height or encountering dikes that could overflow

The air quality yesterday exceeded the daily threshold in PM10 in Los Llanos de Aridane, while in the rest of the stations the levels are good or reasonably good

The number of events falls to deep seismicity after the rebound in recent days

The Steering Committee of the Special Plan for Civil Protection and Emergency Care for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, led by the counselor responsible for the Plan, Julio Pérez, today made an appeal to the population to be careful, recalling that the eruptive process remains active, and in a level 2 emergency situation, which is why the restrictions on access to the exclusion zone remain in force. In this sense, and despite the stability of the process, it insists that it is necessary to continue with strict compliance with the security measures and not lower our guard to avoid accidents. Within the perimeter, only duly authorized intervening teams and scientists can access,

This issue was addressed at the meeting of the Plan Steering Committee, led by the Minister of Public Administrations, Justice and Security, Julio Pérez, in which the state of basic services was also analyzed, including the locations of the two electricity generation plants in the Hermosilla and Las Manchas area, as well as the completion of the conditioning works on the highway that runs from El Charco to Puerto Naos, with a widening that will allow access to trucks and platforms.

Regarding the number of shelters, a total of 471 people remain in hotel centers, three more than yesterday. Of that number, 404 are staying at the Fuencaliente hotel and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Regarding the development of the flows, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, indicated that yesterday there was a small overflow in the volcanic cone with an abundant spill of lava that ended after a few hours, without creating new flows.

The lava feed runs mainly through the fronts of streams 1 and 9, and with a lesser contribution by stream 2. This has joined stream 1 in the formation of the lava delta, which has grown and maintains this structure through the lava that flows into the beach of Los Guirres. The exit of the lava to the sea prevents the fronts of the streams from increasing in height or from encountering dikes that could imply an overflow and further damage. The rest of the casts remain stable.

In this sense, the spokesperson for the Scientific Committee and director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, explained that the expansion of the second lava delta continues,

mainly in a direction perpendicular to the coastline, overlapping with the first.

The Scientific Committee explained that high turbidity episodes have been detected in the water column at distances of up to 1 kilometer from the lava front caused by the invasion of lava material into the ocean by lava deltas. These episodes of high turbidity could again cause the appearance of dead fish on the surface due to the massive ingestion of ash, but not to a significant variation in the physicochemical parameters of the ocean.

With the latest advances, the area affected by lava has increased by 3.63 hectares and is estimated to reach approximately 1,009.43 hectares.

Regarding air quality, yesterday there were no exceedances of the daily threshold in any of the stations for sulfur dioxide (SO₂) values and only the El Paso station registered an hourly value above the alert threshold, which remitted in the next hour. During the morning of today, values between reasonably good and regular were registered in Puntagorda and Los Llanos de Aridane, and good or reasonably good in the rest of the stations.

With regard to particles smaller than 10 microns (PM₁₀), yesterday there was an excess of the daily limit value in the Llanos de Aridane, with an unfavorable index and, although the hourly values during last night and early morning of today they have remained low, it has experienced a new ascent at noon. In the rest of the seasons, the air quality remains at good or reasonably good levels.

For this reason, risk groups and sensitive populations should continue to use preventive measures in Los Llanos de Aridane, El Paso, Tazacorte, Tijarafe and Puntagorda and reduce vigorous or prolonged activities outdoors, with the use of a FFP2 mask. The population, in general, can carry out their activities outdoors in a normal way, but watching for the appearance of symptoms such as cough, sore throat, shortness of breath, excessive fatigue or palpitations.

Regarding the meteorological conditions, during the next 36-48 hours the favorable scenario for aeronautical operations will continue. There is a probability of weak precipitation for today and tomorrow, which will affect mainly the N and E slopes of La Palma, as well as inland areas of the west slope. Next week there is a high probability of the formation of low

pressures in the west of the Canary Islands, but there is still high uncertainty regarding the affected area.

Regarding seismicity, the Scientific Committee report states that the level of seismicity continues to be maintained at depths greater than 20 kilometers, but in a decreasing number with respect to the last 28 hours. In this regard, María José Blanco stated that in the last 48 hours it has gone from 40 to seven events at this depth. Seismicity at intermediate depths remains low and no surface seismicity is recorded.

Even so, for the Scientific Committee, the current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach V-VI intensities and cause small landslides in sloping areas.

The tremor in the last 24 hours remains at low levels and the deformation maintains a general stability, slowing down vertical deflation and with variable regional values on the horizontal.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The expansion of the second (d2) lava delta continues, mainly in a direction perpendicular to the coastline, overlapping with the first (d1). At 2:00 p.m. there was a short-lived overflow of the lava lake in sector O of the main cone.

High turbidity episodes have been detected in the water column at distances of up to 1 km from the lava front caused by the invasion of lava material into the ocean in the d1 and d2 lava deltas. These episodes of high turbidity could again cause the appearance of dead fish on the surface. These deaths of pelagic organisms (living in the water column) could be due to the massive ingestion of hyaloclastites / ash that saturate their gill systems and not to a significant variation in the physicochemical parameters of the ocean.

Currently, several emission centers with variable activity (both pyroclastic and lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the eruptive column measured today at 08:45 is 2900 m.

Prevalence of wind from component E to component N from surface up to 5000 m. The predicted wind configuration will dispose the ash cloud towards the S-SW of the eruptive focus and arrival of fine ash to El Hierro is not ruled out. During the next 36-48 hours the favorable scenario for aeronautical operations will continue. Probability of weak precipitation, for today and tomorrow, which will mainly affect the N and E slopes of La Palma, as well as inland areas of the west slope. Numerical prediction models indicate that, with a high probability, a low pressure system will form south of the Azores from the end of Sunday to Monday. At the moment, the models indicate that the system would be situated to the west of the Canary Islands as of Tuesday.

The level of seismicity continues to be maintained at depths greater than 20 km. Seismicity at intermediate depths remains low compared to previous weeks. It continues to be located in the same areas, at depths between 10 and 15 km. The maximum magnitude was 4.3 mbLg of an event today at 08:28 at a depth of 38 km, felt with maximum intensity III-IV (on the EMS intensity scale). The tremor in the last 24 hours remains at low levels. The current level of seismicity continues to indicate that it is possible that more

felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformation, the station closest to the center continues to show deformations that reflect the dynamics of the eruptive process. The rest of the stations show a trend towards regional deflation.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered yesterday (10/11) continues to be high, registering a range of values between 7000 and 21,000 tons per day through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23 when maximums of more than 50,000 tons of sulfur dioxide (SO₂) emissions were recorded per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (10/11) they reflected a range of values between 1800 and 1950 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

Yesterday the air quality due to sulfur dioxide (SO₂) registered good or reasonably good levels in all seasons. Only at the El Paso station was an hourly value registered above the alert threshold (established at 500 µg / m³) at 1:00 p.m., and it remitted in the following hour. There were no exceedances of the daily threshold (established at 125 µg / m³) in any of the stations. During the morning of today, values between reasonably good and regular are registered in Puntagorda and Los Llanos de Aridane, and good or reasonably good in the rest of the stations.

With respect to particles smaller than 10 microns (PM₁₀), yesterday values similar to those registered in previous days at the Los Llanos de Aridane station were maintained, although the maximums measured between 2:00

p.m. and 6:00 p.m. : 00 hours result in a new exceedance of the daily limit value (established at $50 \mu\text{g} / \text{m}^3$) in this season and in an unfavorable air quality index. Subsequently, the hourly values recorded last night and early today have remained low. In the rest of the stations, air quality levels remained at good or reasonably good levels. During the morning of today the unfavorable level is maintained in Los Llanos de Aridane and good or reasonably good levels in the rest of the stations.

Therefore, and as a precautionary measure, in the area of Los Llanos de Aridane, El Paso, Tazacorte, Tijarafe and Puntagorda, for risk groups and sensitive populations, consider reducing all outdoor activities, and doing them indoors or postpone them until air quality is good or reasonably good. For the general population, consider reducing prolonged and vigorous outdoor activities, especially if you have a cough, shortness of breath, or any other symptoms, and doing them indoors, or you can postpone them until air quality is good or reasonably good:
<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.d>
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November 13th

PEVOLCA reiterates the importance of complying with security measures when access to exclusion zones is allowed



The entry must be made under an exhaustive control of the municipalities and the security operation of the Plan

Neighbors can only clean the roofs that are passable for the removal of ashes and they should always use the appropriate protection measures

The President of the Canary Islands, Ángel Víctor Torres, who today chaired the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, reiterated the importance of complying with the security measures established by the direction of the Plan and appealed to individual responsibility to avoid accidents, when citizens are allowed access to exclusion zones to carry out different tasks. Torres also stressed that, although many of the observable elements reflect decreased energy and lava input, it is not yet possible to predict a completion of the volcanic eruption.

The PEVOLCA Steering Committee led by the Minister of Public Administrations, Justice and Security, Julio Pérez, insisted on the obligation to comply with the rules established for cleaning homes: citizens should only access the exclusion zones within the protocol established under the exhaustive control of the town councils and the security operation of the Plan; clean exclusively the ashes of those roofs that are passable; always use adequate self-protection measures and do not act alone.

For his part, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, confirmed the death of a 72-year-old man in the exclusion zone, in the neighborhood of El Corazoncillo, in the municipality of El Paso, although he specified that they are still unknown. the causes of death since the incident is currently under investigation by the Judicial Authority and the Civil Guard. It was a person who had agreed to carry out the cleaning in a team of neighbors authorized to carry out the cleaning work, under the direction of the City Council and under the conditions and according to the protocols that PEVOLCA has established for these actions.

The PEVOLCA Steering Committee had warned of the precipitation of several people from covers carrying out ash cleaning tasks, for which it has continuously reiterated in its meetings and in its communications the importance of complying with security measures until the end of the emergency.

Evolution of castings

Regarding the development of the flows, Morcuende, indicated that the lava continues to flow over the existing flows in two different channels separated a few meters from each other and without overflows or spills to the outside.

At the moment there are three lava flows that flow mainly through streams 1 and to a lesser extent through streams 9 and 2, which feed the lava delta that flows into the Playa de Los Guirres causing its growth and thickening. The rest of the casts remain stable.

With the latest advances, the area affected by the volcanic eruption now reaches 1,018.67 hectares, 9.26 more than yesterday, which correspond mainly to the lava delta, and the maximum width between flows of 3,100 meters is maintained.

Regarding the number of shelters, a total of 476 people remain in hotel centers, 5 more than yesterday. Of that number, 409 are staying at the Fuencaliente hotel and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

On the other hand, the spokesperson for the Scientific Committee and director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, indicated at a press conference that the intermediate seismicity continues at low values, between 10 and 15 kilometers, consolidating the decrease in the last days and the deep one - more than 20 kilometers- remains constant. Likewise, he highlighted that there has also been a general decrease in earthquakes felt in recent days, with some important such as the one registered this morning that reached a magnitude of 5 and felt with a maximum intensity of IV-V.

Regarding deformation, the station closest to the center continues to show deformations that reflect the dynamics of the eruptive process, while the rest of the stations show a trend towards regional deflation.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume recorded yesterday, continues to be high with a range of values between 14,000 and 20,000 tons per day. On the other hand, the analysis of satellite images reflects a downward trend since last September 23, when maximum emissions of sulfur dioxide (SO₂) were registered higher than 50,000 tons per day.

Yesterday the air quality due to sulfur dioxide (SO₂) registered good levels in all stations, except in Los Llanos de Aridane, where they remained reasonably good for much of the day, and in Puntagorda, where levels were reasonably good and fair except on one occasion when it went unfavorable. During the morning of today values between good and reasonably good have been registered in Puntagorda, and good in the rest of the stations.

Regarding particles smaller than 10 microns (PM₁₀), María José Blanco indicated that yesterday the same pattern was maintained as in previous days at the Los Llanos de Aridane station, with maximum values between 9 a.m. and 12 a.m. hours but of low intensity, which were reduced during the rest of the day to low values, so that the air quality index went from unfavorable to reasonably good. In the rest of the stations, air quality levels

remained at good or reasonably good levels. During the morning of today a reasonably good level is maintained in Los Llanos de Aridane and good or reasonably good levels in the rest of the stations.

Regarding the meteorological conditions, Miguel Ángel Morcuende indicated that the wind forecast remains similar to that of yesterday, so the plume will move towards the west and southwest, generating a favorable scenario for air navigation. The thermal inversion is very high, at 2,000 meters, which favors the dispersion of pollutants.

Regarding the damaged infrastructures, there are no changes in the data provided by the Cadastre, while Copernicus establishes the total of the affected buildings at 2,731, of which 2,616 are destroyed and 115 damaged or at risk.

The affected crop area now amounts to 295.68 hectares, of which more than half, 169.5 hectares, correspond to banana trees, 59.9 hectares to vineyards and 24.8 hectares to avocado trees.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The contribution of lava continues in the area of the lava deltas causing their growth.

In the environment closest to the lava front, significant thermal, pH and O₂ anomalies are detected.

Currently, several emission centers with variable activity (both pyroclastic and lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the eruptive column measured today at 08:45 is 3,100 m, with dispersion in a SW direction.

Predominance of N component wind from surface up to 5000 m. The predicted wind configuration will dispose the ash cloud and SO₂ towards the S-SO of the focus. During the next 36-48 hours the favorable scenario for aeronautical operations will continue. Today there is a probability of weak precipitation, which will mainly affect the N and E slopes of La Palma, as well as inland areas of the west slope. A low pressure system is expected to form near the Azores during Sunday. At the moment, the models indicate that the system would move towards the S, locating to the S of the Azores and to the W, away from its center of action, from the Canary Islands as of Tuesday. As of today, the probability that the low pressure system will directly affect the Canary Islands is low.

The level of seismicity continues to be maintained at depths greater than 20 km. Seismicity at intermediate depths remains low compared to previous weeks. It continues to be located in the same areas, at depths between 10 and 15 km. The maximum magnitude was 5.0 mbLg of an event today at 06:56 at a depth of 38 km, felt with maximum intensity IV-V (on the EMS intensity scale). The tremor in the last 24 hours remains at low levels. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformation, the station closest to the center continues to show deformations that reflect the dynamics of the eruptive process. The rest of the stations show a trend towards regional deflation.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered yesterday (10/12) continues to be high, registering a range of values between 14,000 and 20,000 tons per day through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23 when maximums of more than 50,000 tons of sulfur dioxide (SO₂) emissions were recorded per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (10/12) they reflected a range of values between 1600 and 1850 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

Yesterday, the air quality due to sulfur dioxide (SO₂) registered good levels in all stations, except in Los Llanos de Aridane, where they remained reasonably good for much of the day, and in Puntagorda, where the levels were reasonably good and regular except on one occasion in which it became unfavorable, producing an exceedance of the hourly limit value (established at 350 µg / m³) at 2:00 p.m., remitting later. In these two stations the daily threshold (established at 125 µg / m³) was exceeded. During the morning of today values between good and reasonably good are registered in Puntagorda, and good in the rest of the stations.

With regard to particles smaller than 10 microns (PM₁₀), yesterday the same pattern was maintained as in previous days at the Los Llanos de Aridane station, with maximum values between 09:00 and 12:00 but of low intensity, which were reduced during the rest of the day to low values, so that the air quality index went from unfavorable to reasonably good. In the rest of the stations, air quality levels remained at good or reasonably good levels. During the morning of today the level in Los Llanos de Aridane

remains reasonably good and good or reasonably good levels in the rest of the stations.

Check the updated air quality data on the website of the Government of the Canary Islands

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

November 14th

The lava continues to reach the sea without overflowing the perimeter already affected



Seismicity at intermediate depths remains low compared to the last few weeks

During yesterday the emission of sulfur dioxide (SO₂) associated with the volcanic plume was lower than in previous days, although it continues to be high

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, headed by the Minister of Public Administrations, Justice and Security, Julio Pérez, based on the data provided by the report of the Scientific Committee, confirmed today that the contribution of lava flows through the existing flows in a single channel that forks at times, especially in the lower area, and reaches the sea at three points. The meeting also addressed the latest data related to air quality in non-evacuated areas, referring to the emission of SO₂ associated with the volcanic plume; diffuse emission of carbon dioxide; and PM₁₀ particles.

The Technical Director of PEVOLCA, Miguel Ángel Morcuende, explained at a press conference that currently wash 9, located at lower elevations in the southernmost area, is the one with the greatest contribution of lava, while areas 1 and 2 They also have a contribution, but in less quantity compared to yesterday. The rest of the washes, remain stopped.

The area affected by the volcanic eruption reaches 1,019.79 hectares, 1.12 hectares more than in the last update, growth corresponding to the lava delta. The maximum width between casts remains at 3,100 meters.

Regarding the number of shelters, there are 481 people who remain in hotel centers, five more than yesterday. Of this number, 414 are staying at the hotel in Fuencaliente and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

According to the data provided by the Cadastre, 1,460 buildings have been affected today, of which 1,181 are for residential use, 150 for agricultural use, 67 for industrial use, 34 for leisure and hospitality, 13 for public use and 15 of other uses.

On the other hand, the spokeswoman for the Scientific Committee and director of the National Geographic Institute (IGN) in the Canary Islands, María José Blanco, indicated that the level of seismicity continues to be maintained at depths greater than 20 kilometers. Intermediate seismicity remains low and continues to be located in the same areas. In this sense, today the maximum magnitude was 4.7 mbLg in an event recorded at 05:24 hours at a depth of 37 kilometers and felt with maximum intensity IV (on the EMS intensity scale).

Regarding the deformation of the terrain, Blanco pointed out that the station closest to the center continues to show deformations that reflect

the dynamics of the eruptive process, while the rest of the stations show a trend towards regional deflation.

Regarding the emission of sulfur dioxide (SO₂) associated with the volcanic plume, the spokesperson for the Scientific Committee explained that yesterday it was lower than in previous days although it continues to be high, registering a range of values between 2,000 and 4,000 tons per day. With regard to particles smaller than 10 microns (PM₁₀), he highlighted that yesterday the values continued to be low in all the stations on the island, with good and reasonably good levels, except for one episode of high intensity in Los Llanos de Aridane, between 12:00 and 14:00, related to cleaning activities that caused the resuspension of ashes and that resulted in an exceedance of the daily limit value (established at 50 µg / m³). This event raised the 24-hour moving average at this station to the very unfavorable level,

At the moment the values recorded in Los Llanos de Aridane are low, so air quality levels should improve if there are no significant changes in conditions. In the rest of the stations the levels remain between good and reasonably good.

In this regard, the PEVOLCA technical director pointed out that today Sunday the passage for the collection of belongings or other tasks was not allowed to the coast of the Aridane Valley through Fuencaliente, in the area already evacuated or excluded, because the quality of the air it was very unfavorable in that place.

Regarding the meteorological conditions, Blanco commented that the expected wind configuration will have the ash cloud and SO₂ towards the O-SO of the focus, which will allow the airport to operate.

The Steering Committee also reviewed the situation in the telephone, water and electricity supplies, which in the last hours have not registered incidents.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General

Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The contribution of lava continues in the area of the lava deltas causing its growth, although at a slower speed, mainly in the southern part of d2.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the eruptive column measured today at 08:45 is 3,100 m, with dispersion in a SW direction.

E-component wind predominance from surface up to 5000 m. The predicted wind configuration will dispose the ash cloud and SO₂ towards the O-SO of the focus. During the next 36-48 hours the favorable scenario for aeronautical operations will continue. The low pressure system that is forming in the subtropical Atlantic, near the Azores, is expected to be located S of the Azores and W of the Canary Islands as of Tuesday. As of today, the low pressure system is not expected to directly affect the Canary Islands.

The level of seismicity continues to be maintained at depths greater than 20 km. Seismicity at intermediate depths remains low compared to previous weeks and continues to be located in the same areas. The maximum magnitude was 4.7 mbLg of an event today at 05:24 at a depth of 37 km, felt with maximum intensity IV (on the EMS intensity scale). The tremor in

the last 24 hours remains at low levels. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformation, the station closest to the center continues to show deformations that reflect the dynamics of the eruptive process. The rest of the stations show a trend towards regional deflation.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered yesterday (10/13) was lower than in previous days although it continues to be high, registering a range of values between 2000 and 4000 tons per day through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23 when maximums of more than 50,000 tons of sulfur dioxide (SO₂) emissions were recorded per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (10/13) they reflected a range of values between 1800 and 2000 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

Yesterday the air quality due to sulfur dioxide (SO₂) was at good or reasonably good levels in all stations, with no exceedances of hourly or daily limits being recorded. During the early hours of yesterday and the morning of today there has been a slight increase in values in Puntagorda and Los Llanos de Aridane, going from good to reasonably good levels and reaching regular levels at certain times. In the rest of the stations, the values are kept at a good air quality level.

Regarding particles smaller than 10 microns (PM10), yesterday we continued registering low values in all the stations on the island, with good and reasonably good levels, except for a high intensity episode in Los Llanos de Aridane between 12:00 and 14:00 hours, related to cleaning activities that caused the resuspension of ashes, resulting in an exceedance of the daily limit value (established at $50 \mu\text{g} / \text{m}^3$). This event raised the 24-hour moving average at this station to the very unfavorable level, which has remained until today. At the moment the values recorded in Los Llanos de Aridane are low, so air quality levels should improve during the morning if there are no significant changes in conditions.

Check the updated air quality data on the website of the Government of the Canary Islands

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

November 15th

The lava continues to flow over the existing lava flows



Works on the road to Puerto Naos progress

According to data from the Geological and Mining Institute (IGME), the lava delta measures 40.9 hectares from the coastline

The ash emission rate increases and the meteorological conditions are unfavorable for the air quality in the western part of the island

In the deformation of the terrain, a notable decrease in deflation has been observed since the beginning of November

The lava continues to flow over the existing flows and, within them, through lava tubes, expanding the deltas with the arrival to the sea of the wash that was on the beach of Charcón, in the stretch of the San Juan volcano in 1949 According to data from the Geological and Mining Institute (IGME), the lava deltas have practically merged and now measure 40.90 hectares from the coastline. These and other data were analyzed today at the daily meeting of the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, led by the Minister of Public Administrations, Justice and Security, Julio Pérez, based on the report of the Scientific Committee.

The Steering Committee highlighted the progress in the works of the new Camino Verdugo - Real Todoque, to improve access to Puerto Naos by road, with 50% of its execution. In addition, regarding essential services, there are no notable news or new effects on telephony, electricity or water.

The contracting of machinery for cleaning ash in public areas was also reported.

The PEVOLCA Technical Director, Miguel Ángel Morcuende, explained at a press conference that the lava flows through lava tubes with the main contribution through the central area, between flows 4 and 7, which has not yet caused progress because it rides on the previous flows and fills gaps, while stream 9 has reached the sea, increasing the lava deltas, along with streams 1 and 2.

The area affected by the volcanic eruption is 1,019.79 hectares, with a maximum width between flows of 3,100 meters.

As for air quality, yesterday the ash emission rate increased, which today mainly affects the north and west areas, due to weather conditions. It is expected that the thermal inversion will be strengthened, which will be around 1600-1700 meters and a weak wind regime, which will favor aeronautical operations.

Although yesterday the levels of sulfur dioxide (SO₂) were reasonably good and regular in Puntagorda and PM₁₀ particles at good levels in all the stations of the island, except in Los Llanos de Aridane, the values have been increasing at night and unfavorable levels are currently registered. It is expected that very high concentration levels will be maintained in both parameters (PM₁₀ and SO₂) in the West zone throughout the day, given the predominance of winds from the east and southeast.

For this reason, it is recommended that the population of Los Llanos de Aridane, El Paso, Tazacorte, Tijarafe and Puntagorda reduce vigorous and / or prolonged activities outside as much as possible, and carry them out indoors or when the situation improves, In addition to remembering that updated information can be obtained on the website of the Government of the Canary Islands on Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

During the night today, high values of gases have been detected within the evacuated area in the south of Cogote Mountain and the area bounded between LP-211, LP-212 and LP-1.

In this regard, the PEVOLCA technical director pointed out that these levels of gases in the southern area of the laundry have today prevented the entry of personnel for the removal of belongings and ash cleaning in Las Manchas, within the evacuated area. Yes, access has been allowed in El Remo and Puerto Naos.

Regarding the number of sheltered, a total of 479 people remain in hotel centers, two less than yesterday. Of this number, 412 are staying at the hotel in Fuencaliente and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

On the other hand, the spokesperson of the Scientific Committee, María José Blanco, pointed out that the parameters of the deformation of the

terrain since the beginning of November show a notable decrease in regional deflation.

Regarding the emission of sulfur dioxide (SO₂) associated with the volcanic plume, it has recovered the values of days ago after a sharp decrease yesterday, although the general trend is downward.

Regarding seismicity, the slightly downward trend continues in intermediate seismicity, while in deep seismicity there are no appreciable changes, neither in number nor in magnitude.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with explosive phases that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

Yesterday an increase in the ash emission rate began, and today, due to the meteorological conditions, it mainly affects the areas in the north and west directions. sea on the beach of Charcón.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the eruptive column measured today at 08:45 is 3,100 m.

The predominance of E component wind continues from the surface up to 5000 m. The predicted wind configuration disposes the ash cloud and SO₂ towards the W of the focus. The favorable scenario for aeronautical operations is expected to remain (at least for the next 36-48 hours). It is expected that the thermal inversion will be strengthened, which will be around 1600-1700 m. This, coupled with a weak wind regime, can cause unfavorable weather conditions from the air quality point of view. Probability of weak rains for tomorrow and Wednesday, which will affect mainly the N and E slopes.

The level of seismicity continues to be maintained at depths greater than 20 km. Seismicity at intermediate depths remains low compared to previous weeks and continues to be located in the same areas. The maximum magnitude was 4.4 mbLg of an event today at 03:53 at a depth of 38 km, felt with maximum intensity III (on the EMS intensity scale). The tremor in the last 24 hours remains at low levels. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformation, the station closest to the center continues to show deformations that reflect the dynamics of the eruptive process. Since the beginning of November, a notable decrease in regional deflation has been observed.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered yesterday (10/14) continues to be high, registering a range of values between 12,000 and 15,000 tons per day through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23 when maximums of more than 50,000 tons of sulfur dioxide (SO₂) emissions were recorded per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (10/14) they

reflected a range of values between 1900 and 2100 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

Yesterday the air quality due to sulfur dioxide (SO₂) was at good or reasonably good levels in all seasons, except in Puntagorda and Los Llanos de Aridane where it was between reasonably good and fair, reducing to good during the afternoon. At the Puntagorda station, the daily limit value (established at 125 µg / m³) was exceeded. During the early morning from yesterday to today, the registered values have been increasing in Los Llanos de Aridane to unfavorable levels, with an hourly limit value (established at 350 µg / m³) exceeding at 03:00 hours, reducing to good levels and reasonably good afterwards. In Puntagorda the values have been increasing during the night, going from good levels to unfavorable levels with two exceedances of the hourly limit values between 08:00:00 and 10:00, the values are still high at this time. In the rest of the stations, the values are kept at a good air quality level.

With regard to particles smaller than 10 microns (PM₁₀), yesterday good levels of air quality were recorded in all stations on the island. During the night of yesterday and the morning of today the values have been increasing in the Los Llanos de Aridane station, registering very high concentration values at the moment, placing us at unfavorable levels, it will be necessary to continue monitoring its evolution during the next few hours. In the rest of the stations, the levels remain between good and reasonably good.

Therefore, in the area of Los Llanos de Aridane, El Paso, Tazacorte, Tijarafe and Puntagorda, the population should consider reducing vigorous and / or prolonged activities outdoors, and doing them indoors or when air quality improves. , consulting the website of the Government of the Canary Islands for Air Quality.

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

November 16th

The energy of the system continues to show a downward trend and the eruptive process continues stable



The Bureau of Parliament assists the PEVOLCA Steering Committee and recognizes the work of public managers, experts and emergency teams

The worsening of the air quality forces the suspension of the classroom activity in five municipalities

It insists on maintaining self-protection measures in cleaning ash, reducing outdoor activities and using FFP2 masks

The eruptive process continues stable and the energy of the system continues to show a downward trend, although the observable parameters do not yet allow to foresee its end in the short term. Yesterday there was also an increase in the ash emission rate which, together with the meteorological conditions, has caused a worsening in air quality, with the thresholds for sulfur dioxide and PM10 particles being exceeded in the western area, forcing to the

suspension of face-to-face classes in the municipalities of Los Llanos de Aridane, El Paso, Tazacorte, Puntagorda and Tijarafe.

These and other conclusions were analyzed today at the meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, led by the Minister of Public Administrations, Justice and Security, Julio Pérez , and that today was attended by the President of the Parliament of the Canary Islands, Gustavo Matos, and the members of the Board of Parliament, composed of Esther González, Rosa Dávila, Jorge González, Luz Reverón, as well as the Secretary General Salvador Iglesias. Matos showed his appreciation for the work of all the public managers, scientists and services involved in the emergency, in addition to the support for the residents and mayors of the affected municipalities. In this sense,

Regarding air quality, the Technical Director of PEVOLCA, Miguel Ángel Morcuende pointed out at a press conference that yesterday unfavorable levels of sulfur dioxide (SO₂) were reached in Puntagorda and Los Llanos de Aridane, with hourly and daily exceedances during the night and early morning, improving during the morning. In the rest of the stations, the values are good, except in Tazacorte where it is regular.

As for PM₁₀ suspended particles, yesterday a significant increase was detected at the Los Llanos de Aridane station, reaching extremely unfavorable levels with exceeding the daily threshold. This situation has continued today following the usual patterns, with a worsening during the central hours of the day, due to road traffic and cleaning work, which increases the resuspension of the ashes. In other stations, the levels have been good or reasonably good.

In this sense, the population residing in Los Llanos de Aridane, El Paso, Tazacorte, Tijarafe and Puntagorda should wear FFP2 masks and reduce energetic and / or prolonged activities outdoors, and perform them indoors or when air quality improves, consulting the website of the Government of the Canary Islands for Air Quality.

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Likewise, it is recalled that access to the areas of exclusion for irrigators or cleaning equipment must be channeled through the municipalities to organize the accompaniment with the Security group and always depending on the conditions of air quality. Regarding the removal of ashes on roofs and non-passable roofs, neighbors have to request the help of emergency services to avoid accidents and in those areas where they can access, always be accompanied and with the appropriate protection measures.

Regarding the observable parameters, the spokesperson for the Scientific Committee, María José Blanco, explained that seismicity continues at low values at intermediate levels and the values remain in the deep, compared to the previous weeks. He added that the tremor has remained at low levels in the last 24 hours and that the deformation has seen a notable decrease in regional deflation since the beginning of November, as well as a decrease in the emission of SO₂ from the volcanic plume.

The dispersion of the ashes has affected air navigation on the island, with the cancellation of some flights at La Palma airport during the morning.

Regarding the evolution of the runoffs, the affected area has increased by more than 14 hectares to exceed 1,034 hectares, mainly due to the filling of runner 2 and the widening to the south of the front of runner number 9, which is the one that receives the most amount. The contribution by lava tubes to the deltas continues, with less effect on the marine environment than in previous days.

The maximum width between flows, calculated at the lower level, which is closest to the sea, is 3,200 meters, 100 meters more than in the last estimate. The lava delta has an extension of 41.99 hectares from the shore.

María José Blanco explained that several emission centers with variable activity, both pyroclasts and gases and lava, are still active, as the configuration of the eruptive zone changes. In this sense, the appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The latest data from the Cadastre indicate that there are 1,462 damaged infrastructures, of which 1,181 are for residential use, 152 agricultural, 67 industrial, 34 leisure and hostelry, 13 public use and 15 other uses.

Regarding crops, the total of affected hectares is estimated to reach 305.59 hectares. Of these, more than 179.36 are banana trees, 59.9 are vines and 24.82 are avocados.

Regarding the number of shelters, 480 people remain in hotel centers, one more than yesterday. Of the total, 413 are staying at the Fuencaliente hotel and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity. The energy of the system continues to show a downward trend in recent days.

Yesterday the high rate of ash emission continued and due to the meteorological conditions, it mainly affected the areas in the N and NW direction. Starting last night, strombolian activity increased. The contribution of lava continues in the area of the lava deltas, causing less damage to the marine environment than in previous days.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive

zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the eruptive column measured today at 08:45 is 3000 m with a scattering cloud to the E.

Wind from NE (18-20 km / h) on the surface with a breeze regime to the W of La Palma (<15 km / h), NE 20 km / h between 1000-1500 m and E 10-20 km / h between 1500- 5000m. Disposition of the SO₂ plume and ash towards the W / SW of the eruptive focus. Affection at La Palma airport throughout today. Investment reinforcement (2° C) that will be around 1700-1900 m. Probability of weak rainfall throughout today and tomorrow.

The level of seismicity continues to be maintained at depths greater than 20 km. Seismicity at intermediate depths remains low compared to previous weeks and continues to be located in the same areas. The maximum magnitude was 3.8 mbLg from an event today at 01:01 at a depth of 38 km. The tremor in the last 24 hours remains at low levels. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformation, since the beginning of November a notable decrease in regional deflation has been observed.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered during yesterday (11/15) continues to be high, registering a range of values between 3000 and 3,500 tons per day through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23 when maximums of more than 50,000 tons of sulfur dioxide (SO₂) emissions were recorded per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (11/15) they reflected a range of values between 2000 and 2500 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air

and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

Yesterday the air quality due to sulfur dioxide (SO₂) was at unfavorable levels at the Los Llanos de Aridane stations, with two exceedances of the hourly limit value (established at 350 µg / m³) at 03:00 hours and 11:00 hours, and in Puntagorda with two time exceedances between 08:00 and 10:00 hours. The values were reduced to good levels of air quality throughout the afternoon, however in these two stations the daily limit value (established at 125 µg / m³) was exceeded. In the rest of the stations on the island, the values remained between good and reasonably good. Between yesterday night and the early morning of today there has been a significant increase in the values registered in Los Llanos de Aridane and Puntagorda, reaching very unfavorable levels. The alert threshold (established at 500 µg / m³) has been exceeded on three occasions in Puntagorda (between 00:00 and 02:00 hours and at 05:00 hours) and on one occasion in Los Llanos de Aridane (at 06:00 hours) and has meant that the hourly limit value was exceeded seven times in Puntagorda and four times in Los Llanos de Aridane. These levels have been improving throughout the morning, reaching regular air quality levels at the moment. In the rest of the stations, the levels have been between good and reasonably good, except in Tazacorte, which currently has a regular air quality level. 00 hours) and has meant that the hourly limit value was exceeded seven times in Puntagorda and four times in Los Llanos de Aridane. These levels have been improving throughout the morning, reaching regular air quality levels at the moment. In the rest of the stations, the levels have been between good and reasonably good, except in Tazacorte, which currently has a regular air quality level. 00 hours) and has meant that the hourly limit value was exceeded seven times in Puntagorda and four times in Los Llanos de Aridane. These levels have been improving throughout the morning, reaching regular air quality levels at the moment. In the rest of the stations, the levels have been between good and reasonably good, except in Tazacorte, which currently has a regular air quality level.

With regard to particles smaller than 10 microns (PM10), during the night of the 14th and the morning of yesterday a significant increase in concentrations was recorded in Los Llanos de Aridane, with a maximum of $542 \mu\text{g} / \text{m}^3$ at 2:00 p.m. hours, from that moment on the values began to decrease, but extremely unfavorable air quality levels were reached, which meant that the daily threshold (established at $50 \mu\text{g} / \text{m}^3$) was exceeded. The 24-hour moving average in this station is at extremely unfavorable levels at the moment, and high values are starting to register in the last hours following the usual pattern. In the rest of the stations, the air quality levels for PM10 particles are good or reasonably good.

Therefore, in the area of Los Llanos de Aridane, El Paso, Tazacorte, Tijarafe and Puntagorda, the population should consider reducing vigorous and / or prolonged activities outdoors, and doing them indoors or when air quality improves. , consulting the website of the Government of the Canary Islands for Air Quality. <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

November 17th

PEVOLCA insists on air quality recommendations and self-protection measures for ash cleaning



The values are unfavorable on the west slope, where it is advisable to use FFP2 masks and avoid outdoor activities

The air quality index is updated on the website of the Government of the Canary Islands
<https://www3.gobiernodecanarias.org/medioambiente/calidaddeaire/ica.do>

Ash removal work should only be carried out on passable roofs and with adequate self-protection measures

In the last hours there has been a rebound in intermediate seismicity in number and magnitude

The action plans for the removal of ash and the reinforcement of information on self-protection measures in the face of the unfavorable situation of air quality, due to the

emission of sulfur dioxide (SO₂) and PM₁₀ suspended particles, were some of the topics discussed today by the Steering Committee of the Canary Islands Government's Special Plan for Civil Protection and Emergency Care for Volcanic Risk (PEVOLCA), headed by the Minister of Public Administrations, Justice and Security, Julio Pérez. While the adverse situation lasts, the population must follow the civil protection recommendations and consult the updated information on air quality indices through the website of the Government of the Canary Islands <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

In this sense, the population residing in Los Llanos de Aridane, El Paso, Tazacorte, Tijarafe and Puntagorda should wear FFP2 masks and reduce energetic and / or prolonged activities outdoors, and perform them indoors or when air quality improves. .

With regard to the collection of ashes, this afternoon a meeting is held at the Forward Command Post to address the cleaning of these spaces, especially in the southern area, which have a greater accumulation of ash and pyroclasts.

Regarding the removal of ashes on roofs and non-passable roofs, residents have to go to their town hall to request the intervention of municipal teams or emergency services to avoid accidents, in addition to always being accompanied and with the measures of adequate protection.

Likewise, it is recalled that access to the areas of exclusion for irrigators or cleaning teams must be channeled through the municipalities to organize the accompaniment with the Security group and that it will be allowed depending on the conditions of the air quality.

Regarding air quality, Rubén Fernández, Technical Director of PEVOLCA in temporary replacement of Miguel Ángel Morcuende, pointed out that high levels of toxic gases were recorded during the night, both in Las Manchas and in Puerto Naos, which forced the eviction of personnel which works in this exclusion zone, mainly linked to the desalination plants and these restrictions in the southern zone are maintained today and the situation will be reassessed tomorrow.

The Scientific Committee report states that yesterday the air quality due to sulfur dioxide (SO₂) reached very unfavorable levels at the Los Llanos de Aridane and Puntagorda stations during the night and in the early morning, with the alert threshold being exceeded. in Puntagorda and in Los Llanos de Aridane. In these two stations the daily limit value was exceeded. During

this morning there is an increase in the values registered in the stations of Los Llanos de Aridane, Tazacorte and Puntagorda, reaching unfavorable levels in Puntagorda and Los Llanos de Aridane and regular in Tazacorte.

With regard to particles smaller than 10 microns (PM10), yesterday and following the same behavior of previous days, there was an increase in the concentrations registered in Los Llanos de Aridane in the early hours of the morning, which were decreasing throughout the noon and afternoon to low levels. As a consequence of this reduction, the 24-hour moving average went from extremely unfavorable to unfavorable, but the high values recorded meant that the daily threshold was exceeded. Today, the values are beginning to increase in Los Llanos de Aridane and the 24-hour moving average remains unfavorable.

The air quality levels for both SO₂ and PM10 particles in the rest of the stations are good or reasonably good.

The Steering Committee also addressed the increase in intermediate seismicity registered in the last hours, which is being analyzed by the Scientific Committee to see how it is reflected in other parameters. Experts point out that this seismic rebound may be due to a readjustment or feedback of the system, so the situation must continue to be monitored in the coming days.

Regarding the observable parameters, the spokesperson for the Scientific Committee, María José Blanco, explained that seismicity at intermediate depths has experienced a notable rebound since yesterday afternoon and continues to be located in the same areas. The level of seismicity continues to be maintained at depths greater than 20 kilometers. The maximum magnitude was 4.7 mbLg of an event today at 07:17 hours at a depth of 35 kilometers, felt with intensity III-IV (on the EMS intensity scale).

Likewise, the tremor has increased in amplitude in the last 24 hours, reaching a medium level, and in terms of deformation, a notable decrease in regional deflation has been observed since the beginning of November.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered yesterday (11/16) was relatively lower than that of the previous two days, although it is still high. The analysis of satellite images reflects a downward trend since the end of September.

Regarding weather conditions, from Thursday to Friday the scenario will probably be unfavorable for aeronautical operations, mainly for La Palma airport. Next week, the approach of an Atlantic storm to the archipelago will produce an increase in atmospheric instability, with a possible entry of low pressure front.

Regarding the evolution of the flows, the contribution of lava continues in the central zone, between Montaña Laguna and Montaña Todoque, and to a lesser extent by lava tubes to the deltas. The largest contribution in surface area occurs in casting number 5.

The affected area increases by almost 3 hectares and is estimated to exceed 1,037 hectares, with a maximum width between flows of 3,200 meters. The lava delta is estimated to have an extension of more than 42 hectares from the shore.

María José Blanco explained that several emission centers with variable activity (both pyroclasts and gases, as well as lava) are currently active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The latest data from the Cadastre indicate that there are some 1,467 damaged buildings, of which 1,184 are for residential use, 154 agricultural, 67 industrial, 34 leisure and hostelry, 13 public use and 15 other uses.

According to the Copernicus satellite, there are a total of 2,734 buildings affected, of which 2,623 are completely destroyed and 111 partially damaged.

Regarding the number of shelters, there are 484 people in hotel centers, four more than yesterday. Of the total, 417 are staying at the Fuencaliente hotel and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary

Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

Although lower, the high rate of ash emission continues and due to meteorological conditions, today it is mainly directed towards the S and SW. The contribution of lava continues in the central zone, between Montaña Laguna and Montaña Todoque, and to a lesser extent in the lava deltas.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

Today no eruptive column has formed, and the height of the scattering cloud is 1500-1700 m in a W-SW direction.

The N component wind blows between surface levels and 3000 m and above this stratum (between 3000 to 5000 m) component O. The wind is expected to roll to component O at low levels as of late Thursday. This turn of the wind will cause the cloud of ash and SO₂ to be disposed towards the E, and therefore, from the early hours of Thursday to Friday the scenario will probably be unfavorable for aeronautical operations, mainly for La Palma airport. Probability of weak precipitation in general, affecting mainly the N and E slopes. Next week, the approach of an Atlantic storm to the archipelago will produce an increase in atmospheric instability in the area of interest.

Seismicity at intermediate depths has increased notably since 17:00 on 11/16 and continues to be located in the same areas. The level of seismicity continues to be maintained at depths greater than 20 km. The maximum magnitude was 4.7 mbLg of an event today at 07:17 at a depth of 35 km, felt with intensity III-IV (on the EMS intensity scale). The tremor in the last 24 hours has increased in amplitude, reaching a medium level. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformation, since the beginning of November a notable decrease in regional deflation has been observed.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered yesterday (11/16) was relatively lower than that of the previous 2 days, although it continues to be high, registering a range of values between 2000 and 3000 tons per day through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23, when maximums of more than 50,000 tons of sulfur dioxide (SO₂) were recorded per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (11/16) they reflected a range of values between 2,200 and 2,500 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

Yesterday the air quality due to sulfur dioxide (SO₂) reached very unfavorable levels in the Los Llanos de Aridane and Puntagorda stations during the night of the 15th and the early morning of the 16th, producing three exceedances of the alert threshold (established at 500 µg / m³) in

Puntagorda and one in Los Llanos de Aridane, the values decreased throughout the day. In these two stations the daily limit value (established at $125 \mu\text{g} / \text{m}^3$) was exceeded. In the rest of the stations on the island, the values remained between good and reasonably good. Very high values were recorded yesterday in the measurement equipment located at the Roque de Los Muchachos Astrophysical Observatory. During this morning there is an increase in the values registered in the Los Llanos de Aridane stations, Tzacorte and Puntagorda, reaching unfavorable levels in Puntagorda and Los Llanos de Aridane and regular in Tzacorte. In the rest of the stations the levels remain at good levels.

With regard to particles smaller than 10 microns (PM10), yesterday and following the same behavior that we have seen in previous days, there was an increase in the concentrations recorded in Los Llanos de Aridane in the early hours of the morning, that were reduced throughout the noon and afternoon to low levels. As a consequence of this reduction, the 24-hour moving average went from extremely unfavorable to unfavorable, but the high values recorded meant that the daily threshold (established at $50 \mu\text{g} / \text{m}^3$) was exceeded. Today, the values are beginning to increase in Los Llanos de Aridane and the 24-hour moving average remains unfavorable. In the rest of the stations, the air quality levels for PM10 particles are good or reasonably good.

Therefore, in the area of Los Llanos de Aridane, El Paso, Tzacorte, Tijarafe and Puntagorda, the population should consider reducing vigorous and / or prolonged activities outdoors, and doing them indoors or when air quality improves. , consulting the website of the Government of the Canary Islands for Air Quality.

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

November 18th

Lava affects new surfaces between the mountains of Todoque and La Laguna



Unfavorable levels of air quality are maintained on the west slope, requiring the use of FFP2 masks

The level of intermediate seismicity continues to be high, although it shows a downward trend in recent hours

The evolution of the ash cloud, depending on the winds, can affect air traffic mainly on La Palma

The increase in the area affected by the Cumbre Vieja volcano between the mountains of Todoque and La Laguna, as well as the action plans for the removal of ash in the most affected areas and the reinforcement of protection measures against the unfavorable values of air quality, were some of the topics discussed today by the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, which was directed by the General Director of Security and Emergencies of the Government from the Canary Islands, Gustavo Armas, replacing the Minister of Public Administrations, Justice and Security, Julio Pérez, who was attending the Governing Council.

After a period of not very intense visible activity with ash emission, the volcano yesterday began to emit larger pyroclasts from the emission centers in the upper part of the cone that still continues today.

The greatest contribution of lava continues to occur in the central area of the lava flows, which has caused an increase of approximately 12 hectares in the total affected area, which was 1,040 hectares yesterday. This increase is concentrated in parallel to casting 4, which is currently about 300 meters from the sea, as explained by Francisco Prieto, on behalf of the PEVOLCA Steering Committee. Likewise, Prieto indicated that they are also receiving small contributions of lava from flows 1, 2 and 9 that are not making them advance.

Regarding air quality levels, these continue to be unfavorable in the western part of the island, which prevented, yesterday, it from entering Las Manchas and Puerto Naos through the southern area due to the levels of gases that were registered within the evacuated area. In the Puerto Naos area, measurements have been normal, which has allowed access to the area for personnel working in desalination plants and for farmers.

While the adverse situation lasts, the population must follow the civil protection recommendations and consult the updated information on air quality indices through the website of the Government of the Canary Islands

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

In this sense, the population residing in Los Llanos de Aridane, El Paso, Tazacorte, Tijarafe and Puntagorda should wear FFP2 masks and reduce energetic and / or prolonged activities outdoors, and perform them indoors or when air quality improves. .

As for the meteorological conditions, rains that may be locally strong in the north and east of the island are expected in the next few hours, which will decrease in intensity tomorrow. Nor is it ruled out that these precipitations affect the Aridane Valley.

The evolution of the north component winds that will roll towards the west in the afternoon, will cause the ash cloud to move towards the east from early morning, which can affect the operation of the La Palma airport and even Tenerife. North and La Gomera.

Ash removal

Ash collection work continues, especially in the southern area, where there has been a greater accumulation of ash and pyroclasts, which are carried out mainly by the UME and firefighters as they are in the exclusion zone.

Regarding the removal of ashes from roofs and non-passable roofs, the PEVOLCA Steering Committee recalled that residents have to go to their town hall to request the intervention of municipal teams or emergency services to avoid accidents, in addition to going always accompanied and with adequate protection measures.

Seismicity

In addition, the Steering Committee also addressed the increase in intermediate seismicity registered in the last hours, which is still high, although it shows a downward trend in the last 24 hours. However, it should be noted that yesterday was the day with the highest seismicity felt in the last two weeks.

Likewise, there has been a notable drop in the signal of the volcanic tremor that breaks the upward trend of the last two days and, in terms of deformation, the decrease in regional deflation continues.

For her part, the spokesperson for the Scientific Committee, Carmen López, reported that the air quality due to sulfur dioxide (SO₂) reached extremely unfavorable levels in Los Llanos de Aridane and unfavorable in Puntagorda and Tazacorte. High values were recorded for practically the entire day which fell to good levels in the late afternoon and evening. However, the daily limit value (set at 125 µg / m³) was eventually exceeded in these three stations. In the rest of the stations, the air quality levels have been good. During the morning of today there has been a slight increase in the values in the Puntagorda station, reaching regular levels but they remain good in the rest of the stations.

With regard to particles smaller than 10 microns (PM₁₀), yesterday and following the same behavior that we have seen in previous days, an increase in concentrations was recorded in Los Llanos de Aridane in the early hours of the morning, reflecting the incidence of the eruptive dynamics and winds, which were decreasing throughout the day. In the rest of the stations on the island, the values remained between good and reasonably good. Today, the

24-hour moving average remains at an unfavorable level in Los Llanos de Aridane, with values currently increasing. In the rest of the stations, the air quality levels for PM10 particles are good or reasonably good.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases) registered yesterday has once again reflected a new increase in the values that will be studied within the general trend of emissions .

Regarding the number of shelters, there are 483 people in hotel centers, one less than yesterday. Of the total, 416 are staying at the Fuencaliente hotel and 67 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

After a period of not very intense visible activity with ash emission, at 18 o'clock an emission of larger pyroclasts begins from the emission centers of the upper part of the cone (typically Strombolian activity) that is still

continuing. Although smaller, the contribution of lava continues in the central zone, between Montaña Laguna and Montaña Todoque, advancing in zone 4 towards the sea, occupying previously unaffected land. To the south of Montaña Todoque, the contribution continues in zone 1, reducing the contributions to the deltas.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the eruptive column measured this morning was 3,500, with dispersion in a SW direction.

At low levels of the troposphere (from surface to 1500 m) light wind prevails with breezes. During the early morning from Thursday to Friday the wind is expected to turn to component O at levels between 1500 and 5000 m. The ash cloud and SO₂ are expected to turn to the E from next morning, and therefore may affect aeronautical operations, mainly at La Palma airport. Yellow warning in force (during the period between 18:00 to 00:00 hours) for the island of La Palma (see details at www.aemet.es) due to precipitations that could probably be of a strong nature.

Seismicity at intermediate depths remains high, although it shows a downward trend in the last 24 hours and continues to be located in the same areas. The level of seismicity continues to be maintained at depths greater than 20 km. The maximum magnitude was 4.8 mbLg of an event yesterday at 12:33 at a depth of 35 km, felt with intensity IV (on the EMS intensity scale). The tremor, after the high level reached, descends until it reaches a low level currently. It was the day with the highest seismicity felt in the last 2 weeks. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformation, since the beginning of November a notable decrease in regional deflation has been observed.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered yesterday (11/17) continues to be high and has been

relatively higher than that observed during the last days, registering a range of values between 16000 and 32000 tons per day, through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23, when maximum emissions of sulfur dioxide (SO₂) were recorded higher than 50,000 tons per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (11/17) they reflected a range of values between 2300 and 2500 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08) .

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, reached extremely unfavorable levels in Los Llanos de Aridane and unfavorable in Puntagorda and Tazacorte. High values were recorded practically all day, with three non-consecutive exceedances of the alert threshold (established at 500 µg / m³) and ten exceedances of the hourly limit value (established at 350 µg / m³) in Los Llanos de Aridane, seven exceedances of the limit value in Puntagorda and two in Tazacorte. The values were reduced to good levels in the late afternoon and evening, however the daily limit value (established at 125 µg / m³) was eventually exceeded in these three stations. In the rest of the stations the air quality levels have been good.

With regard to particles smaller than 10 microns (PM₁₀), yesterday and following the same behavior that we have seen in previous days, there was an increase in the concentrations registered in Los Llanos de Aridane in the early hours of the morning, reflecting the incidence of the eruptive dynamics and winds, which were reducing throughout the day. These high concentration peaks again led to the exceeding of the daily threshold (set at 50 µg / m³). In the rest of the stations on the island, the values remained between good and reasonably good. Today, the 24-hour moving average

remains at an unfavorable level in Los Llanos de Aridane, with values currently increasing. In the rest of the stations, the air quality levels for PM10 particles are good or reasonably good.

Therefore, in the area of Los Llanos de Aridane, El Paso, Tazacorte, Tijarafe and Puntagorda, the population should consider reducing vigorous and / or prolonged activities outdoors, and doing them indoors or when air quality improves. , consulting the website of the Government of the Canary Islands for **Air Quality:**
<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

November 19th

Minister Teresa Ribera highlights the degree of competence and quality of the services involved in La Palma

Today it has been possible to access all the areas by improving the levels of toxic gases, but it is recalled that the permanent indications of the Plan must be followed

During the night an earthquake of magnitude 5.1 was registered that was widely felt by the population

The tremor remains low and the seismicity in the intermediate zones has decreased

The third vice-president of the Government of Spain and Minister for the Ecological Transition and the Demographic Challenge, Teresa Ribera, who attended today the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands , highlighted "the degree of professionalism above what is required" that all the services involved in the resolution of the emergency produced by the volcanic eruption of La Palma have shown.

In this sense, Ribera highlighted "the great work" carried out in these two months of volcanic eruption both by the intervening services and by all the

administrations that have been coordinated from the beginning, responding to the most urgent needs of the palm trees.

The president of the Canary Islands, Ángel Víctor Torres, chaired the Steering Committee today, headed by the Minister of Public Administrations, Justice and Security, Julio Pérez, in which the evolution of the eruptive process that yesterday continued with a strombolian activity with pulses was also analyzed. of ash emission, which caused an increase in the lava emission rate, very fluid and with a higher flow.

The affected area increases by more than 7 hectares compared to the previous data available and it is estimated that it exceeds 1,048 hectares. This growth has occurred on the sides of stream 4, north of Todoque Mountain, and in the lava delta, which already covers an area of 42.87 hectares from the shore.

The main contribution of lava in the last hours is mainly reflected in the area that runs between flows 4 and 7 where, if this behavior is maintained, there may be an increase in the area and buildings affected by covering this new lava contribution of unoccupied land hitherto, located between the castings whose outer ends, however, have not been widened.

In addition, two other fronts continue to be active: a first that goes from Montaña Rajada to the north of Montaña Cogote, and a second that continues to feed the lava deltas.

Several emission centers are also active with variable activity, both for pyroclasts and gases, as well as for lava, and the appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

Air quality

Regarding air quality, the Technical Director of the PEVOLCA plan, Rubén Fernández, who is replacing Miguel Ángel Morcuende for a few days, indicated that today there has been a positive evolution in the values of toxic gases, which has allowed This morning, the population and workers have been allowed access to all evacuated areas with the corresponding control.

However, the population is reminded that they must follow the civil protection recommendations issued by the PEVOLCA Steering Committee

and, given the variation in air quality indices, it is convenient to consult the updated information through the website of the Government of Canary Islands

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

As for the meteorological conditions, a decrease in rainfall is expected in the next few hours, which will be practically non-existent tomorrow. However, special monitoring is being made of the approach of a frontal structure associated with an Atlantic storm that may increase the probability of rain at the beginning of next week.

The predominance of westerly winds make the ash cloud and SO₂ head east for the next 48 hours, which represents an unfavorable scenario for aeronautical operations, mainly at La Palma Airport.

Seismicity

On the other hand, the spokesperson for the Scientific Committee, Carmen López, reported that the tremor remains at a low level and the seismicity at intermediate depths has decreased in the last hours and continues to be located in the same areas. The maximum magnitude has been 5.1 mbLg of an event produced today at 01:08 at a depth of 36 km that was widely felt by the population.

The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding the quality of the air due to sulfur dioxide (SO₂), Carmen López pointed out that yesterday it remained at good or reasonably good values in all the stations of the island. During the early hours of yesterday to today, the values remained at good levels in all the stations, except in Tazacorte where there was a single exceeding of the alert threshold and the very unfavorable level of air quality was reached, but later the levels recovered. reasonably good. During the morning of today good or reasonably good values are being maintained in all the stations of the island.

Regarding particles smaller than 10 microns (PM₁₀), yesterday a slight increase in concentrations was recorded in Los Llanos de Aridane in the early hours of the morning, reflecting the incidence of eruptive dynamics

and winds, but of less intensity than in past days. Because of this, air quality levels went from unfavorable to reasonably good during the day. In the rest of the stations on the island, the values remained between good and reasonably good. Today, the 24-hour moving average remains reasonably good in Los Llanos de Aridane, and good or reasonably good in the rest of the stations.

The emission of sulfur dioxide (SO₂) associated with the volcanic plume of the current eruptive process has once again been high, with a slight decrease compared to the previous day but without reaching the values of two days ago. The general trend continues to be downward.

The latest data from the Copernicus satellite indicate that there are a total of 2,731 buildings affected, of which 2,616 are completely destroyed and 115 partially damaged. No new data provided by the Cadastre is registered.

Regarding crops, the total of affected hectares is estimated to reach 314.07 hectares, 8.48 more than the latest data provided. Of these, more than 187 are banana trees, 59.9 vines and 24.89 avocados.

Regarding the number of shelters, there are 490 people in hotel centers, seven more than yesterday. Of the total, 419 are staying at the Fuencaliente hotel and 71 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

Strombolian activity continued yesterday, with ash emission pulses. At 20 o'clock there was an increase in the contribution of magmatic material to the effusive focus, which led to an overflow of the lava lake. From that moment on, the lava emission rate increased, very fluid, and its flow increased. Right now there are three active fronts. One goes from Montaña Rajada to the north of Montaña Cogote (in zone 11), another continues feeding the lava deltas and the third to the NW, which is the most active, runs between zones 4 and 7.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the eruptive column measured this morning (08:45) was 3,500 m, with dispersion in an E-SE direction.

On the surface the breeze regime will continue. Predominance of component O winds from 1000 to 5000 m. The cloud of ash and SO₂ is disposed towards the E from the eruptive focus. It is expected to continue like this for the next 48 hours, assuming an unfavorable scenario for aeronautical operations, mainly for La Palma airport. Today weak and occasional precipitations that could be locally moderate in slopes N and E, as well as in interior areas. The approach of a frontal structure associated with an Atlantic storm will increase the probability of rain for the beginning of the week.

Seismicity at intermediate depths has decreased in recent hours and continues to be located in the same areas. The level of seismicity continues to be maintained at depths greater than 20 km. The maximum magnitude was 5.1 mbLg of an event today at 01:08 at a depth of 36 km, felt with intensity IV (on the EMS intensity scale). Tremor remains low. The current level of seismicity continues to indicate that it is possible that more felt

earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformation, since the beginning of November a notable decrease in regional deflation has been observed. The onset of a very local deformation episode is recorded at the GNSS station north of Jedey (LP03), which has so far reached a value of 4 cm.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered during yesterday (11/18) continues to be high and similar to that estimated for the day above, registering a range of values between 17000 and 26000 tons per day, through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23, when maximums of more than 50,000 tons of sulfur dioxide (SO₂) were recorded per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (11/18) they reflected a range of values between 2400 and 2600 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at good or reasonably good values in all the stations of the island. During the early hours of yesterday to today, the values remained at good levels in all stations, except in Tazacorte where there was a single exceeding of the alert threshold (established at 500 µg / m³) at 01:00 and the level was reached. very unfavorable air quality, but reasonably good levels subsequently recovered. During the morning of today good or reasonably good values are being maintained in all the stations of the island.

With regard to particles smaller than 10 microns (PM10), yesterday there was a slight increase in the concentrations recorded in Los Llanos de Aridane in the early hours of the morning, reflecting the incidence of the eruptive dynamics and winds, but of less intensity than in previous days, due to this, the air quality levels went from unfavorable to reasonably good during the day. In the rest of the stations on the island, the values remained between good and reasonably good. There was no exceedance of the daily threshold (set at $50 \mu\text{g} / \text{m}^3$) in any station. Today, the 24-hour moving average remains reasonably good in Los Llanos de Aridane, and good or reasonably good in the rest of the stations.

November 20th

The contribution of lava mainly feeds the wash 4 and occupies new agricultural land



Since yesterday, air quality levels have remained stable in the Aridane Valley area, with good or reasonably good values.

The winds, from the south and west, have affected air navigation, causing the cancellation of operations during the morning

The low growth of runoffs, just about 3 hectares, and the good air quality in the last 24 hours are some of the data analyzed today at the daily meeting of the Steering Committee of the Special Plan for Civil Protection and Emergency Attention for Volcanic Risk de Canarias (PEVOLCA) of the Government of Canaria. Since yesterday, the area affected by the runoff has barely grown by about 3 hectares, reaching 1,050.95 hectares and the lava delta remains at about 43 hectares. As reported by Rubén Fernández, by the PEVOLCA Technical Directorate, this small contribution flows mainly through laundry 4, in addition to pre-existing washes, and occupies new areas of agricultural cultivation.

Regarding air quality, Fernández pointed out that the values related to sulfur dioxide (SO₂) and particles of less than 10 microns (PM₁₀) in the Aridane Valley area have remained good or reasonably good since yesterday, and continue monitoring daily. This indicator, together with the evolution of the wastes and the state of the accesses, can allow the entry of neighbors and emergency personnel to the evacuated or exclusion areas with the control and monitoring that are established.

PEVOLCA management also reminded that access to evacuated areas must be done in an organized manner and complying with self-protection measures, that is, the use of FFP2 masks throughout the affected area and protective glasses, especially , when cleaning houses and rooftops are carried out to avoid contact of the ashes with the eyes.

Regarding the meteorological conditions, Rubén Fernández pointed out that the winds from the south and west represent an unfavorable scenario for air navigation, which has caused the cancellation of operations during the morning.

In addition, there is the probability of locally moderate rainfall in the north and east of the island and from the PEVOLCA we are awaiting the entry from tomorrow of a front that can bring strong winds on the peaks and moderate rains or punctually strong in the generality of the Island.

With regard to damaged infrastructures, there are no new data from the Cadastre, so there are 1,467 buildings, nor from Copernicus, which accounted for some 2,731 editions in its last record. There is also no new data on affected crops, but due to the condition in wash 4, it is likely that the 314 hectares of yesterday have increased.

The number of sheltered stands at 489 people in hotel centers, one less than yesterday. Of the total, 418 are staying at the Fuencaliente hotel and

71 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Seismicity

On the other hand, the spokesperson for the Scientific Committee, Carmen López, reported that in today's scientific report a paragraph has been included that refers to the magnitude or quantification of the eruption established by the VEI (it can vary on a scale ranging from 0 to 8 degrees) which is calculated, fundamentally, from the volume of pyroclastic material emitted. In this sense, he added that since the 10 million m³ of pyroclasts emitted in this eruption have been exceeded, the VEI therefore goes from 2 to 3. Furthermore, he stressed that this value of 3 does not imply that the eruptive mechanism (fissure effusive-strombolian with phreatomagmatic pulses) nor the explosiveness of the eruption, which remains with the same characteristics of the entire eruptive process.

In this regard, he indicated that strombolian activity continued yesterday, with ash emission pulses, and three lava flow fronts that have remained active since yesterday, but with less activity.

Intermediate seismicity continues to be located in the same areas and is maintained at depths greater than 20 km. The maximum magnitude today has been 4.6 mbLg of an event that occurred at 10:19 at a depth of 37 km, felt with intensity IV (on the EMS intensity scale) and the tremor remains at a low level.

In the deformation of the terrain, a notable decrease in regional deflation has been observed since the beginning of November. In addition, the beginning of the reversal of the 6 cm vertical deformation recorded yesterday at the GNSS station north of Jedey (LP03) is recorded.

The emission of sulfur dioxide (SO₂) associated with the volcanic plume, yesterday continued to be high, but relatively lower than the two previous days, registering a range of values between 10,000 and 17,000 tons per day.

On the other hand, the analysis of satellite images reflects a downward trend since last September 23.

Regarding air quality due to sulfur dioxide (SO₂), Carmen López pointed out that yesterday it remained at good or reasonably good values in all the

island's stations except for Tazacorte, where the very unfavorable level was reached with an improvement alert threshold at specific times. During this morning the good values are being maintained in all the stations of the island.

Particles smaller than 10 microns (PM10) have maintained reasonably good or good air quality levels since yesterday at all stations on the island.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

The magnitude of the eruption can be established using the VEI (it can vary on a scale ranging from 0 to 8 degrees), which is calculated, fundamentally, from the volume of pyroclastic material emitted. Given that the 10 million m³ of pyroclasts emitted in this eruption have been exceeded, the VEI therefore goes from 2 to 3. This value of 3 does not imply that the eruptive mechanism (effusive-strombolian fissure with phreatomagmatic pulses) has changed. nor the explosiveness of the eruption, which remains with the same characteristics of the entire eruptive process.

Strombolian activity continued yesterday, with ash emission pulses. Yesterday's three lava flow fronts continue to be active, but with less activity. The one that runs between zones 4 and 7 occupies new terrain, advancing 130 m until today morning.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the eruptive column measured this morning (08:45) was 3,200 m, with dispersion in the E direction.

Predominance of S and W component winds from the surface up to 5000 m. The ash and SO₂ cloud is disposed E - NE from the eruptive focus. It is expected to continue like this for the next 24-48 hours, assuming an unfavorable scenario for aeronautical operations, mainly for La Palma airport. The approximation of a frontal structure associated with an Atlantic storm will suppose that, as of Sunday afternoon and evening, a probability of weak to moderate rainfall, which could be occasionally strong on Monday.

Seismicity at intermediate depths continues to be located in the same areas. The level of seismicity continues to be maintained at depths greater than 20 km. The maximum magnitude today was 4.6 mbLg of an event today at 10:19 at a depth of 37 km, felt with intensity IV (on the EMS intensity scale). Tremor remains low. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformation, since the beginning of November a notable decrease in regional deflation has been observed. The beginning of the reversal of the 6 cm vertical deformation recorded yesterday at the GNSS station north of Jedey (LP03) is recorded.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered during yesterday (11/19) continues to be high but relatively lower than the two previous days, registering a range of values between 10,000 and 17,000 tons per day, through the use of remote optical

sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23, when maximums of more than 50,000 tons of sulfur dioxide (SO₂) were recorded per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (11/19) they reflected a range of values between 2400 and 2700 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at good or reasonably good values in all the island's stations except for Tazacorte, where the level was very high. unfavorable with an alert threshold being exceeded (set at 500 µg / m³) at 01:00 hours, which recovered reasonably good levels for the rest of the day. During the early hours of today there has been a general rise in the values in all the island's stations, with two new exceedances of the hourly limit value (established at 350 µg / m³) in Tazacorte between 02:00 and 04:00 hours later recovering low values. During this morning the good values are being maintained in all the stations of the island.

With regard to particles smaller than 10 microns (PM₁₀), reasonably good or good air quality levels have been recorded since yesterday at all stations on the island. There was no exceedance of the daily threshold (set at 50 µg / m³) in any station. This favorable situation continues today in all seasons.

November 21st

The contribution of lava makes flows 4 and 7 unite and increases the total area affected by eight hectares



Air quality levels are permanently monitored to detect if there is a danger to the health of citizens

The disposition of the ash towards the east and northeast due to the evolution of the winds will affect air navigation today and tomorrow

The continuous supply of lava from the main cone of the volcanic eruption, especially through stream 4, has caused it to join stream 7 in the lower part and increase the total area affected by this volcano by eight hectares, which is estimated which already reaches 1,058.95 hectares. This fact, as well as the continuous analysis of air quality to take civil protection measures, are some of the data analyzed today at the daily meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands. (PEVOLCA) of the Government of the Canary Islands, led today by the General Director of Security and Emergencies of the Government of the Canary Islands, Gustavo Armas.

The volcanic eruption continues to show strombolian activity, with pyroclastic and / or ash emission pulses. The greatest contribution of lava, explained the technical director of PEVOLCA, Miguel Ángel Morcuende, is

occurring on stream 4 although lava contributions are also being recorded, through the underground volcanic tubes, in streams 1, 2 and 9, which they are probably generating an increase in the area of the lava deltas that has not yet been measured.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

On the other hand, Morcuende insisted on the need to comply with the access restrictions to evacuated areas established by the PEVOLCA Steering Committee according to the levels of gases that are detected in those areas and that are permanently monitored. In this sense, he stressed that the main objective of PEVOLCA is to ensure the safety of people, hence the entry to these areas is limited if concentrations are detected that may be harmful to citizens.

These indicators, together with the evolution of the wastes and the state of the accesses, are those that can allow the entry of neighbors and emergency personnel to the evacuated or exclusion areas, provided they are safe.

Along these lines, the PEVOLCA leadership also recalled that access to evacuated areas must be done in an organized manner and complying with self-protection measures, that is, the use of FFP2 masks throughout the affected area and protective glasses, especially, when cleaning houses and rooftops are carried out to avoid contact of the ashes with the eyes.

Regarding the meteorological conditions, Morcuende pointed out that the forecast of the winds from the south and southwest marks a high probability that the disposal of the ash will be oriented to the east and northeast, which represents an unfavorable scenario for air navigation on the day of today and tomorrow.

In addition, there is the probability of locally moderate rainfall in the afternoon today and tomorrow, a situation that could worsen next week due to the entry of a front that can bring moderate or occasionally heavy rains in the generality of the Island.

Regarding damaged infrastructures, there are no new data from the Cadastre, which is why they are kept in some 1,467 buildings, nor by Copernicus, which calculates some 2,731 editions in its latest record.

The number of sheltered already stands at 503 people in hotel centers, 14 more than yesterday. Of the total, 432 are staying at the Fuencaliente hotel and 71 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

The tremor level also remains low with some occasional fluctuation and the seismicity does not register significant variations. In the deformation of the terrain, a notable decrease in regional deflation has been observed since the beginning of November. In addition, the reversal of the 6 cm vertical deformation recorded yesterday at the GNSS station north of Jeday (LP03) continues.

During yesterday, the emission of sulfur dioxide (SO₂) associated with the volcanic plume continued to be high and very similar to that of the previous day, registering a range of values between 7000 and 18000 tons per day. On the other hand, the analysis of satellite images reflects a downward trend since last September 23.

Regarding the quality of the air due to sulfur dioxide (SO₂), the spokesperson for the Scientific Committee, Carmen López, pointed out that yesterday it continued registering values above the background levels (between 200 and 1,300 tons per day) and reflecting a range of values between 2,200 and 2,600 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments.

With regard to particles smaller than 10 microns (PM₁₀), reasonably good or good air quality levels have been maintained at all stations on the island. This favorable situation continues today in all seasons.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General

Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

The magnitude of the eruption can be established using the VEI (it can vary on a scale ranging from 0 to 8 degrees), which is calculated, fundamentally, from the volume of pyroclastic material emitted. Given that the 10 million m³ of pyroclasts emitted in this eruption have been exceeded, the VEI therefore goes from 2 to 3. This value of 3 does not imply that the eruptive mechanism (effusive-strombolian fissure with phreatomagmatic pulses) has changed. nor the explosiveness of the eruption, which remains with the same characteristics of the entire eruptive process.

Strombolian activity persists, with pyroclastic and / or ash emission pulses. The laundry between zones 4 and 7 continues, occupying 8 hectares more than yesterday. Today there have been several overflows of lava flow from the lava lake (main cone).

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the ash cloud measured today (09:45) was 2000 m.

Predominance of S and W component winds from the surface up to 5000 m. The ash and SO₂ cloud is disposed E - NE from the eruptive focus. It is expected to continue like this for the next 24-48 hours, assuming an

unfavorable scenario for aeronautical operations, mainly for La Palma airport. The approach of a frontal structure associated with an Atlantic storm will suppose, as of Sunday afternoon-evening, the probability of weak to moderate rainfall, which could be occasionally strong on Monday and be accompanied by storms.

Seismicity at intermediate depths continues to be located in the same areas. The level of seismicity continues to be maintained at depths greater than 20 km. The maximum magnitude was 4.2 mbLg of an event yesterday at 19:20 at a depth of 35 km, felt with intensity III (on the EMS intensity scale). Tremor remains low. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformation, since the beginning of November a notable decrease in regional deflation has been observed. The vertical deformation recorded yesterday at the GNSS station north of Jedey (LP03) of 6 cm, has reversed.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered yesterday (11/20) continues to be high and very similar to the previous day, registering a range of values between 7000 and 18000 tons per day, through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23, when maximums of more than 50,000 tons of sulfur dioxide (SO₂) were recorded per day.

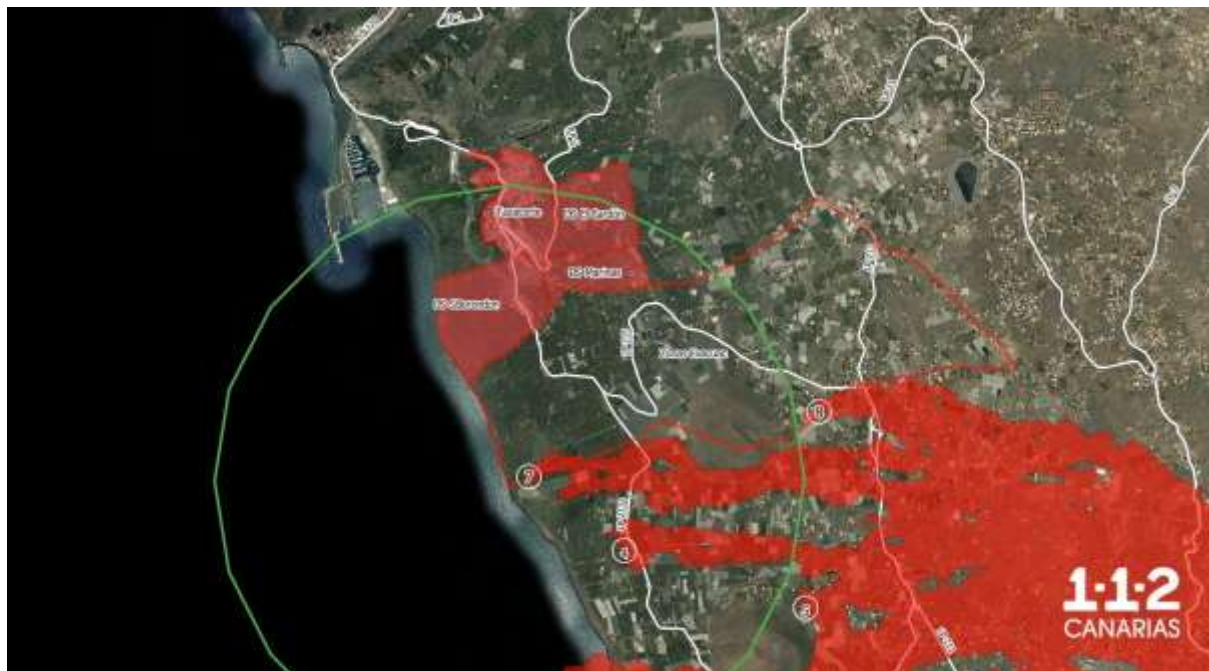
Yesterday, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, worsened during the early hours of the morning, with a generalized increase in the values in all the island's stations and two exceedances of the hourly limit value (established at 350 µg / m³) in Tazacorte between 02:00 and 04:00 hours. During the rest of the day yesterday, starting at 6:00 am, the low values recovered and good levels of air quality were maintained in all the stations of the island. During the early hours of today this phenomenon of generalized rise in SO₂ values has been repeated in all the stations of the island, in this case of greater intensity, with the alert threshold being exceeded (established at 500 µg / m³)

between 0 : 00:00 and 3:00 hours at the Los Llanos de Aridane and El Paso stations, reaching extremely unfavorable levels in those hours, which subsequently have been decreasing until they recover the low values. During this morning, good values are being maintained in the stations on the west side of the island, and between reasonably good and regular in the stations located to the east.

Regarding particles smaller than 10 microns (PM10), the situation that began last Friday with reasonably good or good air quality levels in all stations on the island was maintained during yesterday, without exceeding the daily threshold (set at $50 \mu\text{g} / \text{m}^3$) at no station. This favorable situation continues today in all seasons.

November 22nd

The arrival of the colada 7 to the sea forces the preventive confinement of the population of the neighborhoods of Tazacorte



The measure affects about 3,000 people and is taken in anticipation of gas emissions

The air quality recommendations, in force in the Aridane Valley, extend to Santa Cruz de La Palma, Breña Alta and Breña Baja

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands learned of the scope of the confinement of the population of nuclei of Tazacorte not evacuated before the arrival at sea of the front of the wash number 7, which is forming a new lava delta, as well as the duration of said confinement, which will be determined based on the evolution of circumstances, as on previous occasions. This measure affects some 3,000 people from San Borondón, Tazacorte casco and the disseminated area of El Cardón, up to the Camino Los Palomares in the north, and is taken in anticipation of possible emanations of gases that are harmful to people's health due to the contact of the lava with the sea. The other flows remain stable, with contribution by lava tubes at 1,

At the meeting of the PEVOLCA Steering Committee, led by the Minister of Public Administration, Justice and Security, Julio Pérez, the air quality data for PM10 particles and sulfur dioxide SO₂ and the recommendations for the population have also been analyzed. Based on the report of the Scientific Committee and taking into account the wind regime and the disposition of the volcanic plume, the current councils for the Aridane Valley have been extended to Santa Cruz de La Palma, Breña Alta and Breña Baja, with special attention to the sensitive population. For these risk groups, it is advisable to avoid outdoor activities and stay indoors, while for the general population it is advisable to use FFP2 masks and reduce intense outdoor activity.

Air quality can be consulted on the website of the Government of the Canary Islands:
<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

PEVOLCA Technical Director, Miguel Ángel Morcuende, recalled that the land and maritime exclusion zones that are established to maintain the physical integrity of people must be respected. In this regard, he recalled that access to evacuated areas, both for the collection of belongings, cleaning tasks, and irrigators, can be authorized based on the measurement of gases, which are permanently monitored to guarantee safety conditions.

Regarding essential services, the ash collection plan, the progress of the road infrastructure works towards Tazacorte and the maintenance of the telephone and electricity network were addressed, where no news has been registered.

Regarding the meteorological conditions, the disposal of ashes to the East and Northeast persists, affecting aeronautical operations and the eastern part of La Palma, and a low probability of rainfall during the day.

For her part, the spokesperson for the Scientific Committee, Carmen López, reported that strombolian activity persists with pyroclastic and ash emission pulses.

Regarding seismicity, he explained that the intermediate continues to be located in the same areas and that the level of seismicity continues to be maintained at depths greater than 20 kilometers. The maximum magnitude was 4.8 mbLg of an event recorded today, at a depth of 36 kilometers, felt with intensity IV (on the EMS intensity scale).

The tremor remains at a low level, and in terms of deformation, according to experts, there are no significant signs. Likewise, the decrease in sulfur dioxide emissions associated with the volcanic plume continues.

Data

The affected area increases by about 7 hectares and exceeds 1,060 hectares, with a maximum width between flows of 3,300 meters. The lava delta has an area of approximately 43 hectares from the shore.

According to the latest data from the Cadastre, it is estimated that there are 1,481 damaged buildings, of which 1,193 are for residential use, 159 agricultural, 67 industrial, 34 leisure and hostelry, 13 public use and 15 other uses.

According to the Copernicus satellite, there are some 2,746 buildings affected, of which 2,651 are completely destroyed and 95 partially damaged.

There is no variation in the number of shelters, which remains at 503 people in hotel centers. Of the total, 432 are staying at the Fuencaliente hotel and 71 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since

yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

The magnitude of the eruption can be established using the VEI (it can vary on a scale ranging from 0 to 8 degrees), which is calculated, fundamentally, from the volume of pyroclastic material emitted. Given that the 10 million m³ of pyroclasts emitted in this eruption have been exceeded, the VEI therefore goes from 2 to 3. This value of 3 does not imply that the eruptive mechanism (effusive-strombolian fissure with phreatomagmatic pulses) has changed. nor the explosiveness of the eruption, which remains with the same characteristics of the entire eruptive process.

Strombolian activity persists, with pyroclastic and / or ash emission pulses. The laundry between zones 4 and 7 continues, occupying 7 hectares more than yesterday.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the ash cloud measured today (08:45) has been 3000 m.

On the surface the breeze regime will continue. Predominance of O component winds from 1500 to 5000 m. The ash and SO₂ cloud is disposed E - NE from the eruptive focus. It is expected to continue like this for the

next 24-48 hours, assuming an unfavorable scenario for aeronautical operations, mainly for La Palma airport. Throughout the day, the instability will subside and rainfall in general of a weak nature can still be registered and mainly in inland areas and east of La Palma. Instability around the archipelago is expected to increase considerably by the end of this week (from Thursday-Friday) due to the entrance from the west of an Atlantic front and trough.

Seismicity at intermediate depths continues to be located in the same areas. The level of seismicity continues to be maintained at depths greater than 20 km. The maximum magnitude was 4.8 mbLg of an event recorded today, at 08:09 at a depth of 36 km, felt with intensity IV (on the EMS intensity scale). Tremor remains low. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformation, there are no significant signs.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), recorded yesterday (11/21) continues to be high but relatively lower than the previous days, registering a range of values between 900 and 1,300 tons per day, through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23, when maximums of more than 50,000 tons of sulfur dioxide (SO₂) were recorded per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (11/21) they reflected a range of values between 2000 and 2300 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuentcaliente station (LP08).

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, worsened during the early hours of the morning, with a general increase in the values in all the island's stations and exceeding the threshold alert (set at 500 µg / m³) between 0:00 and 3:00 hours at the Los Llanos de Aridane and El Paso stations, reaching extremely unfavorable levels in those hours, which subsequently decreased until the values were recovered. low and maintain good levels of air quality in all stations of the island. During the early morning and morning of today good values are being maintained in the stations on the west side of the island, and higher records, with levels between good and reasonably good, in the stations located to the east.

With regard to particles smaller than 10 microns (PM₁₀), good levels were maintained during the day at the Los Llanos de Aridane station, although, in the stations to the east of the island there is an increase in levels, reflecting the incidence of the volcano plume towards this part of the island. As a consequence of this situation, the daily threshold (established at 50 µg / m³) is exceeded at the El Pilar and La Grama stations. This situation of unfavorable air quality levels continues today at the El Pilar and La Grama stations.

As a precautionary measure, in the area of Santa Cruz de La Palma and Breña Alta, for risk groups and sensitive populations, consider reducing all outdoor activities, and doing them indoors or postponing them until the air quality is good or reasonably good. For the general population, consider reducing prolonged and vigorous outdoor activities, especially if you have a cough, shortness of breath, or any other symptoms, and doing them indoors, or you can postpone them until air quality is good or reasonably good.

In the Los Llanos de Aridane and El Paso areas, for risk groups and sensitive populations, consider reducing vigorous and / or prolonged activities abroad. For the general population, their outdoor activities can be carried out in a normal way. However, watch for symptoms such as coughing, sore throat, shortness of breath, excessive fatigue, or palpitations.

November 23rd

The confinement of the nuclei of Tazacorte ends as there is no risk today after contacting the lava with the sea yesterday



The recommendations for air quality and the use of FFP2 masks are maintained in the Aridane Valley, Santa Cruz de La Palma, Breña Alta and Breña Baja

The weather conditions for the next few days are unfavorable for aeronautical operations on La Palma

The PEVOLCA Directorate has finalized this noon the confinement order for the coastal nuclei of Tazacorte decreed yesterday as a result of the arrival of wash 7 at La Viña beach, once it has been confirmed that today there is no longer any risk to the population due to the emanation of gases when the lava comes into contact with the sea. This measure affected San Borondón, Tazacorte Casco and the Cardón spread to Camino Los Palomares in the north, although the population closest to the new lava delta is still recommended to wear a FFP2 mask abroad.

Likewise, the Maritime Captaincy has lifted the prohibition of maritime activity that it temporarily established yesterday in the port of Tazacorte, by which the exclusion zone was extended to the south of the tip of the dock for non-scientific vessels or of emergencies.

The meeting of the Steering Committee of the Special Plan for Civil Protection and Emergency Care for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands was coordinated today by the Director General of Security and Emergencies (DGSE), Gustavo Armas, due to the appearance of the Minister of Public Administrations, Justice and Security, Julio Pérez before the Parliament of the Canary Islands.

The Technical Director of PEVOLCA, Miguel Ángel Morcuende, reported that most of the energy flows above the northern area, on stream number 7 until it reaches the coast and is discharged into the sea, forming the new lava delta, from which its extent is still unknown. So far, the total area affected by the volcanic eruption on the island of La Palma is estimated to already exceed 1,073 hectares, almost 13 more than yesterday, with a maximum width between external flows of about 3,300 meters. The southernmost lava delta continues to be contributed by the lava tubes, growing by half a hectare and exceeding 43. In addition, there is an indeterminate, but small, contribution in streams 1, 2 and 4.

Regarding the cultivated area, the affected area is estimated to be 326 hectares, 12.53 more than the last data. Of these, 198.26 are banana trees; 59.93 vines and 25.99 avocados.

Currently, several emission centers are still active with variable activity, both of pyroclasts and gases, as well as lava, as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The PEVOLCA Steering Committee also reported the high levels of gases detected in the upper area of Las Manchas, within the exclusion zone, being at normal values in the Puerto Naos area. In this sense, it is insisted that the southern area is being continuously monitored to ensure that security conditions are in place, and it is recalled that it can only be accessed for the collection of belongings, cleaning or irrigation at the established time and under the control of the Security group.

Regarding air quality, during the night the sulfur dioxide (SO₂) threshold was exceeded at the Los Llanos de Aridane station, reaching extremely unfavorable values for a few hours, which subsequently decreased. As of early morning, no new exceedances have been registered and the Air Quality Indices (ICA) are good in all stations except in Los Llanos and Tazacorte, which are regular.

With regard to particles smaller than 10 microns (PM₁₀), yesterday the daily limit value was not exceeded in any station. During this morning, a slight increase in concentrations is being observed in La Grama and Los Llanos de Aridane, but they still remain at regular and reasonably good levels, respectively.

In this regard, the scientific committee recalls that risk groups from the Aridane Valley, Santa Cruz de La Palma, Breña Alta and Breña Baja, should avoid activities outside and stay indoors, while for the general population it is advised reduce strenuous outdoor activity and the use of FFP2 masks.

Air quality can be consulted on the website of the Government of the Canary Islands:
<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

There are 505 people in centers housed in hotel centers, two more than yesterday. Of the total, 433 are staying at the Fuencaliente hotel and 72 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

For her part, the spokesperson for the Scientific Committee, Carmen López, reported that the level of seismicity has increased at depths greater than 20 kilometers, with a maximum magnitude of 4.8 mbLg reached in an event at 01:03 hours, at a depth of 39 kilometers, felt with intensity IV (on the EMS intensity scale). The seismicity at intermediate depths continues to be located in the same areas and the tremor remains at a low level.

Regarding the deformation, since the beginning of November there has been a notable decrease in regional deflation and the emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process in progress, continues to be high but relatively lower than the previous days. , maintaining a downward trend.

The ash and SO₂ cloud continues to be disposed towards the E - NE from the eruptive focus, which represents an unfavorable scenario for aeronautical operations, mainly for La Palma airport. In addition, the weather forecasts indicate a high probability of precipitation from Thursday until Saturday on the eastern slope.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

Yesterday at 12:03 a new wash arrived at sea (in zone 7) at La Viña Beach. The flows in zones 4 and 7 continue to be active, occupying 9 hectares more yesterday morning.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the eruptive column measured today (08:45) was 3700 m, with a scattering cloud to the E.

On the surface the breeze regime will continue. Predominance of O component winds from 2000 to 5000 m. At the 850 hPa (1500 m) level the wind will turn to component E during the afternoon-night today. It is expected that the cloud of ash and SO₂ will continue to be disposed towards the E - NE from the eruptive focus, probably assuming an unfavorable scenario for aeronautical operations, mainly for La Palma airport, if the effusive activity of the volcano continues similarly. As of Thursday, first the entrance of a frontal structure and later an Atlantic trough, will probably produce precipitations that may be of a strong character with accumulated in 12 hours that may exceed 60 mm. Yellow level notices have been issued (they can be consulted at www.aemet.es).

Seismicity at intermediate depths continues to be located in the same areas. The level of seismicity has increased at depths greater than 20 km. The maximum magnitude was 4.8 mbLg of an event today at 01:03 at a depth of 39 km, felt with intensity IV (on the EMS intensity scale). Tremor remains low. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformation, since the beginning of November a notable decrease in regional deflation has been observed.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered during yesterday (11/22) continues to be high but relatively lower than the previous days, registering a range of values between 4500 and 6000 tons per day, through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23, when maximums of more than 50,000 tons of sulfur dioxide (SO₂) were recorded per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (11/22) reflected a range of values between

2,500 and 2,900 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at good or reasonably good levels in all seasons, the values worsened in the early hours of the night from yesterday to today at the Los Llanos de Aridane station, exceeding the alert threshold (established at 500 µg / m³) at 10:00 p.m. and reaching extremely unfavorable levels, which subsequently fell to regain low values. During the early hours of the morning today, a slight increase in values is being registered at the El Paso, Tazacorte and Los Llanos de Aridane stations, reaching regular and reasonably good levels. In the rest of the stations, the values remain good.

Regarding particles smaller than 10 microns (PM₁₀), yesterday the levels improved from unfavorable to reasonably good and regular in the stations on the east of the island, and good levels were maintained in the Los Llanos de Aridane station. . During this morning, a slight increase in concentrations is being observed in La Grama and Los Llanos de Aridane, but they still remain at regular and reasonably good levels respectively. In the rest of the stations the levels are reasonably good.

November 24th

PEVOLCA warns of the dangers of rains in runoff areas due to the accumulation of ash



Weather conditions will be unfavorable for air quality on the eastern slope of the island

Streams 4 and 7 continue to feed the northern lava delta, which has an area of approximately 5 hectares

The affected crop area increases to about 335 hectares, while another 90 hectares, mainly banana trees, have been isolated by lava, without the possibility of access

The recommendations in light of the warning of locally heavy rains on La Palma for the next few days and the Civil Protection measures to be maintained in the gas emission exclusion zones and for the general population, given the concentration of PM10 suspended particles, were some of the issues addressed at today's meeting of the Directorate of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, headed by the Minister of Public Administrations, Justice and Security , Julio Pérez.

Given the high probability of heavy rains, the AEMET has issued a yellow warning for tomorrow Thursday in the East, which will affect the entire island on Friday. In this sense, the Scientific Committee explained that the

accumulation of ash can allow the formation of hyper-concentrated flows in areas of strong runoff. In the event that they occur, they are alerted to the danger of traveling in riverbed areas or at the foot of steep slopes and that the population must follow the recommendations provided by Civil Protection.

In this regard, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, insisted that during the rainy season, the population should avoid exposure abroad in trough areas, especially on Friday, and not stand on unstable slopes where landslides or landslides may occur. .

With regard to the exclusion zones, the latest gas measurements carried out by the Military Emergency Unit (UME) have not detected toxic agents in the north, but have detected in the south, specifically in La Bombilla and in the upper area of Las Manchas, so access has not been allowed. In Puerto Naos, values increased overnight, but have been dissipating. For more information to residents about access limitations and their organization, this afternoon a meeting will be held at the Forward Command Post.

Regarding air quality, yesterday there were no exceedances of hourly or daily limit values, registering good or reasonably good indices in all stations, except in El Paso and Los Llanos, which were regular. These values were exceeded this morning in El Paso and Los Llanos de Aridane, reaching unfavorable values.

Regarding PM10 particles, the highest values were recorded yesterday on the eastern slope, in La Grama and San Antonio, with the daily threshold exceeded in La Grama, which today remains unfavorable. In Los Llanos de Aridane, the values have had specific increases, which are decreasing.

The disposition of the plume towards the East and Northeast will be unfavorable for aeronautical operations and the ashes will affect the municipalities of Santa Cruz de La Palma, Breña Alta and Breña Baja.

In this regard, risk groups and sensitive populations are recommended to reduce all outdoor activities, and perform them indoors or postpone them until the air quality is good or reasonably good. For the general population, it is advisable to use FFP2 masks outdoors, reduce prolonged and vigorous activities outdoors, especially if you have a cough, shortness of breath or any other symptoms, and perform them indoors, or you can postpone them until the air quality is good or reasonably good.

The updated information can be consulted on the website of the Government of the Canary Islands for Air Quality at this link:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Regarding the advance of the castings, no widening has been recorded in the outer perimeters, but between existing casts. The energy of the system moves mainly through the stream fronts located further north, mainly 4 and 7, which have filled gaps and are forming the northern lava delta, which reaches an area of 5 hectares from the coastline. and reaches a maximum distance to the cliff of 350 meters. Washes 1, 2 and 9 also receive small contributions of lava.

For her part, the spokesperson for the Scientific Committee, Carmen López, stressed that there have been several overflows in the lava channels, increasing the number of active channels, without occupying new territories. Strombolian activity persists, with pyroclastic and / or ash emission pulses.

The affected area is estimated to have increased by more than 15 hectares and exceeds 1,088 hectares, with a maximum width between flows of 3,300 meters. The southern lava delta has an area of approximately 43 hectares from the shore, while the area occupied by the new lava delta, due to the arrival of the lava flow 7, is estimated at about 5 hectares.

According to new data provided by the Copernicus satellite, there are approximately 2,709 buildings affected, of which 2,676 are destroyed and 122 partially damaged.

Regarding the cultivated area, they are estimated at 335 hectares, almost 9 more than the last data. Of these, approximately 206 are banana trees; 60 vines and more than 26 avocados. To these figures it will be necessary to add about 90 hectares of banana trees that have been isolated by lava, without the possibility of access.

Regarding the observable parameters of the eruptive process, the Scientific Committee indicates that the tremor continues at a low and stable level, with little intermediate seismicity, while intense activity persists in deep seismicity, but with a slight decrease. The deformations present a general stability in the vertical deformations. Regarding the emission of sulfur

dioxide SO₂ associated with the volcanic plume, the values have increased slightly, but the general downward trend continues.

The number of sheltered stays in 505 people in hotel centers. Of the total, 436 are staying at the Fuencaliente hotel and 69 in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Regarding essential services, there have been no news in telephony and electricity, nor incidents in road works.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

Strombolian activity persists, with pyroclastic and / or ash emission pulses. The laundry between zones 4 and 7 continues, occupying 7 hectares more than yesterday. The new lava delta located to the north, occupies an area of 5 hectares and reaches a maximum distance to the cliff of 350 m. There have been several overflows in the lava canals and the number of active canals has increased, which do not occupy new territories.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

The height of the eruptive column today (08:45) has been 4300 m.

On the surface, the breeze regime will continue today. Predominance of O component winds from 2000 to 5000 m. At the level of 850 hPa (1500 m) the wind is of component E that will turn to the west during the second half of the day tomorrow. The ash cloud and SO₂ are expected to continue to be disposed towards the E - NE from the eruptive focus, probably assuming an unfavorable scenario for aeronautical operations, mainly for La Palma airport. Tomorrow, Thursday and Friday, the probability of rainfall that may be strong (15 mm / h) and persistent, with accumulated in 12 hours that may exceed 60 mm. Yellow level notices have been issued (they can be consulted at www.aemet.es).

Seismicity at intermediate depths continues at low levels and continues to be located in the same areas. At depths greater than 20 km, seismicity remains at an intense level with a slight decrease. The maximum magnitude was 3.8 mbLg from an event recorded today, at 04:44 at a depth of 35 km. Tremor remains low. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding the deformation, there are no significant signs associated with the current eruptive process.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered yesterday (11/23) continues to be high, registering a range of values between 1,300 and 18,000 tons per day, through the use of remote optical sensors type miniDOAS in maritime mobile position. On the other hand, the analysis of satellite images reflects a downward trend since last 9/23, when maximums of more than 50,000 tons of sulfur dioxide (SO₂) were recorded per day.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emissions of

volcanic gases), it continues to register values above the background levels (between 200 and 1300 tons per day) and during yesterday (11/23) they reflected a range of values between 2400 and 2900 tons per day. These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is lower at the Fuencaliente station (LP08).

Yesterday, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at good levels in all stations except in Los Llanos de Aridane and El Paso where it was at regular levels during the tomorrow and improve to good levels later. In the early morning from yesterday to today there has been an increase in the values registered in Los Llanos de Aridane, El Paso and Tazacorte, producing an exceedance of the hourly limit value (established at 350 µg / m³) in El Paso at 02:00 hours and two exceedances in Los Llanos de Aridane, between 01:00 and 03:00, reaching unfavorable levels, but they were reduced to reasonably good levels. In the rest of the stations, the values remain good.

With regard to particles smaller than 10 microns (PM₁₀), yesterday high values were registered in the middle of the morning at the La Grama and San Antonio stations, on the east side of the island, which were reduced throughout by day, but which finally meant that the daily threshold (established at 50 µg / m³) was exceeded in La Grama, placing it at an unfavorable level of air quality. In the rest of the stations, it remained at good or reasonably good levels. During this morning there has been a slight increase in the values registered in Los Llanos de Aridane, which are in decline at the moment. At La Grama station, the 24-hour moving average remains unfavorable. In the rest of the stations the levels are reasonably good.

In the Breña Alta area, for risk groups and sensitive populations, consider reducing all outdoor activities and doing them indoors or postponing them until the air quality is good or reasonably good. For the general population, consider reducing prolonged and vigorous outdoor activities, especially if you have a cough, shortness of breath, or any other symptoms, and doing

them indoors, or you can postpone them until air quality is good or reasonably good.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Given the probability of heavy rains, the accumulation of ash may allow the formation of hyper-concentrated flows in areas of strong runoff. In the event that they occur, it is recommended not to travel in riverbed areas or at the foot of steep slopes and to follow the recommendations provided by Civil Protection.

November 25th

The increase in the emission of lava today generated another wash in the south with new effects on buildings and crops



The declaration of Alert for rains in La Palma includes special recommendations for the population due to the accumulation of ash

Weather conditions continue to be unfavorable for airport operations

The civil protection recommendations for the Rain Alert for tomorrow Friday, associated with the situation of volcanic eruption and the accumulation of ash, as well as the damage caused by a new stream that runs through the south, parallel to stream 10, have These have been some of the issues addressed today in the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA). This meeting was coordinated by the Director General of Security and Emergencies of the Government of the Canary Islands, Gustavo Armas, due to the attendance of Julio Pérez, director of the Plan, to the Government Council, which he kept permanently informed of the situation.

Regarding the evolution of the flows, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, highlighted that today a new, initially very fluid flow has been formed that advanced at high speed through the southernmost area, parallel to 10, which is being monitored especially and permanently. This wash runs through areas not previously trodden and has exceeded the photovoltaic plant and the Las Manchas cemetery, threatening urbanized areas, although all of them in exclusion and evacuated areas and, therefore, not inhabited or with the presence of people, except the members of the emergency department. Subsequently, this new casting has been slowing down as it became more viscous, due to the material it drags, circulating at about 25 meters / hour. The other energy inputs are found on flows 7 and 5,

As reported by the spokesperson of the Scientific Committee, Carmen López, an increase in the emission rate has been observed, with an increase in the ramification of lava channels and overflows that affect the same area as yesterday, between 4 and 7, and surrounding the NE zone of the Todoque Mountain (zone 5). Around 9 o'clock, an episode of sudden increase in the emission of lava has been observed at the main effusive emission point, and around 11 o'clock, from some of the easternmost emission points, a lava flow has been produced that it runs SW, occupying new territory.

As for the rains, the Government of the Canary Islands has declared the situation of Alert and the population is recommended to exercise extreme caution to avoid traffic accidents, due to the slipping of the road

surface. The volcanic situation can allow the formation of mud flows in areas of strong runoff when the materials emitted during the eruption mix with the water and form flows that move downhill. The rains can remobilize the materials deposited in the areas affected by the eruption and slide the mud flows through the natural slope of the land.

In this sense, it is advisable to avoid traveling by road and, if necessary, drive with caution and not cross areas that could be flooded. It is necessary to use communication routes established by the authorities and not to circulate in the areas near the volcano where there are accumulations of material (ash deposits and pyroclasts). Neither should the vehicle be parked in the channel of ravines, or walk through ravines, valleys, natural and artificial channels, or at the foot of steep slopes. In case of being surprised by a runoff or mud flow, it is necessary to shelter in a high place.

The Steering Committee also analyzed the gas values detected in the Las Manchas and La Bombilla area, which are still high and limit access to the area for security reasons. In this sense, yesterday a meeting was held at the Advanced Command Post (PMA) with representatives of the residents of Las Manchas and the PEVOLCA Technical Directorate, together with the Military Emergency Unit, Civil Guard and National Police, in which they were present the mayors of Los Llanos de Aridane and El Paso. In this meeting, the access control for ash cleaning and the gas measurements that are carried out continuously in this exclusion zone were explained.

Regarding air quality, the values recorded for sulfur dioxide SO₂ have been good or reasonably good in all the stations except in El Paso and Los Llanos de Aridane, which reached the level of unfavorable. Regarding PM₁₀ particles, yesterday the daily limit value was exceeded in Los Llanos de Aridane and the index became regular in La Grama and Los Llanos.

As a precautionary measure, risk groups and sensitive populations in the area of Los Llanos de Aridane, Tazacorte, El Paso, Tijarafe and Puntagorda are recommended to reduce vigorous and / or prolonged activities outdoors and wear a FFP2 mask. The general population can carry out their outdoor activities normally, but it is important to watch for symptoms such as coughing, sore throat, shortness of breath, excessive fatigue or palpitations.

In relation to aeronautical operations, it is expected that the cloud of ash and SO₂ will continue to be disposed towards the E - NE from the eruptive

focus, assuming an unfavorable scenario. As of Saturday, a change in the wind direction is expected that could mean an improvement for the activity of the La Palma airport.

Regarding seismicity, the energy released by seismic events has decreased in recent days, maintaining a low and stable intermediate seismicity and a decrease in deep seismicity. There is also stability in the deformations, while the emission of SO₂ associated with the volcanic plume continues to be high, within the general downward trend.

Data

The estimated affected area increases by more than 11 hectares and exceeds 1,100 hectares, with a maximum width between flows of 3,350 meters. The southern lava delta has an area of approximately 43.46 hectares from the shore, while the northern lava delta is estimated at just over 5 hectares.

In the latest data from the Cadastre there are 1,484 destroyed buildings, of which 1,195 are for residential use, 160 for agricultural use, 67 industrial, 34 hostelry, 123 for public use and 15 for other uses.

As for the area of crops covered by lava, it is estimated at 340.59 hectares, 5 more than yesterday. Of these, 211.19 are banana trees; 60 vines and more than 26 avocados. To these figures we must add the area isolated by the pouring that is being calculated, and the area covered by ashes, approximately 412 hectares of banana trees, 128 of vines and 84 of avocados.

The number of people staying in hotel centers increases by 8 people to 513. Of the total, 441 are staying at the Princess hotel in Fuencaliente and 72 at the Valle de Aridane hotel in Los Llanos de Aridane. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic

Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

Strombolian activity persists, with pyroclastic and / or ash emission pulses. There is an increase in the emission rate, with an increase in the ramification of lava channels and overflows that affect the same area of yesterday between 4 and 7, and surrounding the NE zone of the Todoque Mountain (zone 5). Around 9 o'clock, an episode of sudden increase in the emission of lava was observed at the main effusive emission point. At around 11 a.m., from some of the easternmost emission points, a lava flow has been emitted that runs to the SW, occupying new territory.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

On the surface wind of component E with breeze regime on slope O. Predominance of winds of component O from 1500 to 5000 m. The ash cloud and SO₂ are expected to continue to be disposed towards the E - NE from the eruptive focus, assuming an unfavorable scenario for aeronautical operations, mainly for La Palma airport. As of Saturday, the wind is forecast to be E component from surface to mid-level troposphere. The expected change in wind direction will be a favorable scenario for the operation of La Palma airport. As expected, persistent and locally heavy rainfall is being recorded on the E slope of La Palma. For tomorrow, Friday, heavy to very strong rains will continue, which could be accompanied by storms.

Seismicity at intermediate depths continues at low levels and continues to be located in the same areas. At depths greater than 20 km, seismicity has decreased. The maximum magnitude has been 3.9 mbLg of an event registered today, at 07:53, direction IV (EMS), at a depth of 11 km. Tremor remains low. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding the deformation, there are no significant signs associated with the current eruptive process.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS during yesterday (11/24) continues to be HIGH (Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1,000 and 29,999 tons per day; MEDIUM between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day). On the other hand, the analysis of satellite images reflects a downward trend since last 9/23, when an extremely HIGH emission of sulfur dioxide (SO₂) was recorded.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), it continues to register values above the average of the background levels and during yesterday (11/24) the emission was 5 times the average of the background levels (5xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is lower at the Fuencaliente station (LP08).

In the early morning hours of the 23rd to the 24th, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, reached unfavorable levels at the El Paso and Los Llanos de Aridane

stations, exceeding the hourly limit value (set at $350 \mu\text{g} / \text{m}^3$) in El Paso and two in Los Llanos de Aridane, the values were subsequently reduced and remained between good and reasonably good all day yesterday, as in the rest of the stations, however due to At the early morning high values, the daily limit value (established at $125 \mu\text{g} / \text{m}^3$) in Los Llanos de Aridane was exceeded. During this morning there has been an increase in the early hours in the values registered, reaching a reasonably good level in El Paso and Puntagorda, and regular in Los Llanos de Aridane.

With regard to particles smaller than 10 microns (PM10), yesterday high values were recorded in Los Llanos de Aridane in the middle of the morning and early at night, which meant that the daily threshold was exceeded (established at $50 \mu\text{g} / \text{m}^3$). On the east side of the island, levels have improved, with all stations at levels between good and reasonably good. During this morning, the 24-hour moving averages remain at good or reasonably good levels in all the stations, except in Los Llanos de Aridane, which is at a regular level.

Therefore, and as a precautionary measure, in the area of Los Llanos de Aridane, Tazacorte, El Paso, Tijarafe and Puntagorda, for risk groups and sensitive populations, consider reducing energetic and / or prolonged activities abroad. For the general population, their outdoor activities can be carried out in a normal way. However, watch for symptoms such as coughing, sore throat, shortness of breath, excessive fatigue, or palpitations. Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Given the probability of heavy rains, the accumulation of ash may allow the formation of hyper-concentrated flows in areas of strong runoff. In the event that they occur, it is recommended not to travel in riverbed areas or at the foot of steep slopes and to follow the recommendations provided by Civil Protection.

November 26th

Rain alert

The Government of the Canary Islands ends the Rains Alert situation remaining on pre-alert

The Government of the Canary Islands, through the General Directorate of Security and Emergencies, ends at 8:00 p.m. today, Friday, November 26, the situation of Alert for Rains in the east of La Palma, La Gomera, El Hierro and north and metropolitan area of Tenerife, remaining in a Pre-alert situation throughout the Autonomous Community.

This decision is made taking into account the information provided by the State Meteorological Agency and other available sources, and in application of the Specific Emergency Plan of the Canary Islands for Risks of Adverse Meteorological Phenomena (PEFMA).

Observations:

The PRE-ALERT situation is maintained throughout the Archipelago due to the forecast that rainfall will continue with intensities that can exceed 15 mm in one hour and accumulations in 12 hours that can reach 60 mm in the western islands and 40 mm in the oriental. The risk persists that, on the island of La Palma, the rains could mobilize the ash accumulated in the areas affected by the eruption and cause mud flows through the natural slope of the land.

In the Prealerta situation, it is estimated that there is no meteorological risk for the general population, although there is for a specific activity or location of high vulnerability. The notice to councils, town councils and other institutions is maintained so that their emergency troops continue to be prevented, in the event of a possible change in the meteorological phenomenon, until the General Directorate of Security and Emergencies terminates the situation declared based on the PEFMA.

PEVOLCA update

Minister Escrivá reiterates on La Palma the support and commitment of the Government of Spain to the Island

Seismicity decreases and air quality improves, although effusive activity increased yesterday

The fissure that opened yesterday, with several points of lava emission, did not present visible activity this morning

Good values are registered, both in suspended particles and in gas emissions, in all the stations of the island

The meteorological situation for the next few days is favorable for aeronautical operations

The increase in effusive activity registered yesterday, with the opening of a fissure with several lava emission points, as well as the improvement in air quality, which today registers good levels both in sulfur dioxide SO₂ and in PM₁₀ particles in all the stations, were some of the aspects analyzed by the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA), led by the Minister of Public Administration, Justice and Security, Julio Pérez. Today's meeting was attended by the Minister of Inclusion, Social Security and Migration of the Government of Spain, José Luis Escrivá, who was accompanied by the Minister of Economy, Knowledge and Employment of the Government of the Canary Islands, Elena Máñez.

Minister Escrivá expressed the solidarity of the Government of Spain with the island and reiterated the maximum support of his department to solve the situations of vulnerability of the population from different areas.

As reported by the spokesperson of the Scientific Committee, María José Blanco, the reopening of an eruptive focus has been confirmed in the extreme eastern part of the area, with the emission of a wash in a southwesterly direction, which reached zone 11. In this sense, she explained that yesterday afternoon, and within the ongoing eruptive process, a fissure with several lava emission points opened, less than 1 kilometer south of the main cone. At the moment, this fissure has no visible activity and the activity in the area is being constantly monitored from the ground and through the use of drones.

Regarding the evolution of the flows, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that the magma spill from an emitting center located to the southwest of the cone has caused the lava to have flowed through the flow number 10 and then it has been directed until wash 11. In this way, the lava has ended up trampling the Las Manchas cemetery, an important part of the photovoltaic area and affecting homes.

On the other hand, the contribution of lava from previous streams continues, forking into two areas: by streams 4, 5 and 7, between Montaña Laguna and Montaña Todoque, something that can be confirmed by the fact that the delta located in the north is receiving food, although scarce; and another for laundry 9, which is being monitored for overflows.

Regarding the damage to infrastructure, according to the latest data from the Cadastre there are some 1,506 buildings destroyed, of which 1,212 are for residential use, 161 for agricultural use, 67 for industrial use, 36 for hostels, 13 for public use and 16 for other uses. Regarding the information provided by the Copernicus satellite, it is estimated that there are 2,786 buildings / constructions affected, 2,695 in their entirety and 91 partially.

Regarding air quality, today good or reasonably good values are being registered in all the stations of the Island, both in PM10 particles and in sulfur dioxide (SO₂). Furthermore, gas measurements in exclusion zones have improved considerably.

For more information, it is recommended to consult the website of the Government of the Canary Islands: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Regarding seismicity, the spokesperson for the Scientific Committee reported that intermediate seismicity is still at low levels, while deep seismicity has decreased even more.

Regarding the meteorology, it is expected that the turn of the wind will dispose of the ash cloud and SO₂ towards the west from the next morning and this will suppose a favorable scenario for the operation of the La Palma airport.

During this day the Rain Alert is maintained on the island, with heavy to very strong rainfall accompanied by storms, although the episode of intense rainfall for the island of La Palma is expected to subside during the next morning.

Intense rains, together with the accumulation of ash, can generate the formation of hyper-concentrated flows in areas of strong runoff. In this sense, it is recommended not to travel in areas of troughs, channels or at

the foot of steep slopes where there may be unstable slopes and follow the recommendations provided by Civil Protection.

The Steering Committee also became aware of the study being carried out in the drainage network and the hydrological basin in La Laguna to improve rain evacuation in case of rainfall, since as a consequence of the eruptive process a new structure has been formed that prevents that the water follow previous channels. The College of Civil Engineers, the IGN, the IGME and the Cabildo de La Palma are participating in this work.

With regard to road infrastructure, work on the conditioning of the access road to Puerto Naos continues in the earthmoving phase, although today they have been suspended due to the adverse meteorological phenomenon. Likewise, ash cleaning and maintenance work continues to be carried out on the main roads, while at the same time it has been intensified in urban areas.

Of the 513 housed in hotel centers, there are 412 at the Princess hotel in Fuencaliente, 70 at the Valle de Aridane hotel and 31 at the Los Cancajos hotel, in Breña Baja. In addition, 43 dependent people continue to be cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that simultaneously

produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The reopening of an eruptive focus is confirmed at the eastern end of the eruptive zone, with the emission of a stream in a SW direction, which reached zone 11. Yesterday afternoon, and within the ongoing eruptive process, a fissure opened with several lava emission points, less than 1 km S of the main cone. At this time, this fissure has no visible activity. Activity in the area continues to be monitored from the ground and through the use of drones.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

At low levels, the NE wind predominates. At levels between 1500 to 4000 m the wind from the W will turn to component E during the night. At this time, ash continues to accumulate at La Palma airport. It is expected that the turn of the wind will dispose the ash cloud and SO₂ towards the west as of the next morning and this will suppose a favorable scenario for the operation of the La Palma airport. For today, there are maximum orange warnings in force, due to heavy to very strong rainfall accompanied by storms. The episode of intense rainfall for the island of La Palma is expected to subside during the next morning (current warnings, as well as future updates can be consulted at www.aemet.es).

Seismicity at intermediate depths continues at low levels and continues to be located in the same areas. At depths greater than 20 km, seismicity has decreased further. The maximum magnitude was 4.8 mbLg of an event recorded yesterday, at 22:40, IV-V direction (EMS), at a depth of 37 km. Tremor remains low. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding the deformation, there is a possible local deformation in the surroundings of the main cone, with a magnitude pending confirmation. Current weather conditions disturb the data from GNSS

stations. There is no evidence of deformation at stations far from the eruptive center.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), during yesterday (11/25) could not be estimated by using remote optical sensors type miniDOAS as a consequence of the rain, although it most likely continues to be HIGH (Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1,000 and 29,999 tons per day; MEDIUM between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day). On the other hand, the analysis of satellite images reflects a downward trend since last 9/23, when an extremely HIGH emission of sulfur dioxide (SO₂) was recorded.

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), it continues to register values above the average of the background levels and during yesterday (11/25) the emission was 5 times the average of the background levels (5xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is lower at the Fuencaliente station (LP08).

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at good levels except for an increase that occurred early in the morning that reached a reasonably good level in El Paso and Puntagorda, and regular in Los Llanos de Aridane, but subsequently remitted, returning to good levels in all seasons. At the moment the levels remain good in all seasons.

With regard to particles smaller than 10 microns (PM₁₀), yesterday there was a decrease in the values recorded in the set of stations, reaching reasonably good levels in the El Pilar and La Grama stations and good in the rest. Good and reasonably good levels are maintained today in all seasons.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

In the face of intense rains, the accumulation of ash can allow the formation of hyper-concentrated flows in areas of strong runoff. It is recommended not to travel in riverbed areas or at the foot of steep slopes and to follow the recommendations provided by Civil Protection.

November 27th

La Palma airport receives commercial flights again after a week



The lava feeds the central streams and the progress of stream 7 next to the mountain of La Laguna is monitored

Intermediate and deep seismicity continues at low values

Air quality for both suspended particles and gas emissions is good and reasonably good at all stations on the island

La Palma airport has once again received commercial flights on the afternoon of this Saturday, after having carried it since the 20th without doing so. This has been due to the fact that, in the last hours, the east component wind has disposed the cloud of the Cumbre Vieja volcano towards the west-southwest of the island and after the ash cleaning work carried out at the facilities.

On the other hand, the food that is receiving the most central streams since yesterday due to the appearance of the eruptive focus on the eastern flank of the cone, as well as the widening of stream 7 at the height of the La Laguna mountain and the improvement of air quality levels, which today register good and reasonably good levels, both in sulfur dioxide SO₂ and in PM₁₀ particles, in all stations, were some of the aspects analyzed by the Steering Committee of the Special Protection Plan Civil and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA), directed by the Minister of Public Administrations, Justice and Security, Julio Pérez.

As reported by the spokesperson for the Scientific Committee, María José Blanco, in relation to the evolution of the eruptive process, there has been the opening of two small eruptive fissures with an east-west orientation to the south of the main cone, already inactive and, yesterday , there was a small overflow in the Las Norias area, southwest of pool 3, which is currently moving very slowly.

Regarding the evolution of the flows, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that the flows that continue to receive the contribution of lava are 7, 4-5 and 1-9. Colada 10, further south, has joined line 11, it is not looking further south and is stopped at the moment. He also reported that there continues to be contributions from lava tubes in various casting fronts and PEVOLCA continues to monitor casting 7 at the height of Laguna Mountain, which is gradually widening, which could cause the closure of this area as a point observation and take-off of drones.

The total estimated area, including the lava deltas, is 1,151 hectares. Regarding the crops covered by lava, it is estimated that 341.51 hectares have been affected. Of these, 212.07 are banana trees; 60.02 vines and more than 26.42 avocados.

On the other hand, once the adverse meteorological phenomenon due to rains declared by the General Directorate of Security and Emergencies

yesterday has ended, at the moment there are no Adverse Meteorological Phenomena (FMA) warnings in force, although for the next 48- 72 hours there will be a probability of weak to locally moderate rainfall on the North and East slopes of La Palma.

The PEVOLCA Plan recalls that in the event of intense rains, the accumulation of ash can allow the formation of hyper-concentrated flows in areas of strong runoff and it is recommended not to travel in riverbed areas or at the foot of steep slopes and follow the recommendations provided by Civil Protection.

At levels ranging from surface to 5,000 meters, the east component wind will predominate and the current disposition of the ash cloud and SO₂ is towards the west-southwest, it is expected to continue for at least the next 48-72 hours, which represents a favorable scenario. for the operation of the island's airport. In the next few hours, atmospheric stability will increase, associated with the reestablishment of the Azores anticyclone.

The air quality both yesterday and today due to sulfur dioxide (SO₂) has remained at good levels in all the stations of the island. With regard to particles smaller than 10 microns (PM₁₀), yesterday the decrease in the values registered in the set of stations was maintained, reaching a reasonably good level in the La Grama station and good in the rest. Good and reasonably good levels are maintained today in all seasons. However, in the evacuated and exclusion zones in the south of the emergency, due to the weather and the prevalence of the trade winds, there have been gas problems, so residents and irrigators have not been allowed access to this area.

For more information, it is recommended to consult the website of the Government of the Canary Islands: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Regarding seismicity, María José Blanco indicated that at intermediate depths it continues at low levels and continues to be located in the same areas and at depths greater than 20 kilometers it also remains at low levels. The maximum magnitude has been 3.5 mbLg of an event registered today, at 09:06 hours, at a depth of 13 kilometers, and there is no evidence

that earthquakes have been felt for the first time since September 11. Also, tremor remains low.

Regarding the deformation, a slight local deformation episode is once again recorded in the Jedey environment (LP03) and there is no evidence of deformation at stations far from the eruptive center, although current meteorological conditions disturb the data from the GNSS stations.

On the other hand, the conditioning works of the access road to Puerto Naos had to be suspended yesterday due to the meteorological phenomenon and today they have not been able to resume due to the concentration of gases in the area for the safety of the workers who are working in that area. In addition, ash cleaning and drainage works have been intensified in urban areas and on the LP-2, LP-212, LP-213 and LP-215 highways.

Although there have been no incidents in telecommunications in the last hours, yesterday there was an electrical power cut in the transformation centers of the La Jirona and Hoyo Verdugo area that today has already been resolved since the southern wash was stopped .

Finally, the number of sheltered people rises to 526, 13 more than yesterday, all of them staying in hotels. 425 of them are in Fuencaliente, 70 in Los Llanos de Aridane and 31 in Breña Baja. In addition, 43 dependent people continue to be cared for in insular health centers.

PEVOLCA recalls that the obligation to respect the land and maritime exclusion zones is maintained to maintain the physical integrity of people, and reported in this regard that the security forces in charge of access control have so far initiated 60 procedures sanctioners.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and

Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The affection of lava on already affected areas continues. It is worth noting a small overflow to the SW of zone 3 (Las Norias), currently moving very slowly. The opening of two small eruptive fissures with EW orientation to the south of the main cone, already inactive, is confirmed. The total area occupied by runoffs is 1151 Ha (on land and lava deltas).

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, is not ruled out.

At levels ranging from surface to 5000 m, the E component wind will predominate. The current arrangement of the ash cloud and SO₂ is towards the W-SO and is expected to continue like this for at least the next 48-72 hours. The above supposes a favorable scenario for the operation of the La Palma airport. In the next few hours, atmospheric stability will increase, associated with the reestablishment of the Azores anticyclone. The increase in stability, together with the intensity of the NE wind, can have a negative effect from the point of view of air quality. At this time there are no Adverse Meteorological Phenomena (FMA) warnings in force. For the next 48-72 hours, probability of weak to locally moderate rainfall on the N and E slopes of La Palma.

Seismicity at intermediate depths continues at low levels and continues to be located in the same areas. At depths greater than 20 km, it remains at low levels. The maximum magnitude has been 3.5 mbLg of an event recorded today, at 09:06, at a depth of 13 km. Tremor remains low. The current level of seismicity continues to indicate that it is possible that more

felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding the deformation, a slight local deformation episode is once again registered in the Jedey environment (LP03). Current weather conditions disturb the data from GNSS stations. There is no evidence of deformation at stations far from the eruptive center.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), during yesterday (11/26) could not be estimated by using remote optical sensors type miniDOAS as a consequence of the rain, although it most likely continues to be HIGH (*). On the other hand, the analysis of satellite images reflects a downward trend since last 9/23, when an extremely HIGH emission of sulfur dioxide (SO₂) was recorded (*).

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the volcanic ridge of Cumbre Vieja (non-visible emanations of volcanic gases), during yesterday (11/26) it could not be estimated as a consequence of the rain, although it most likely continues to be of the order of 5 times the average of the background levels (5xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is lower at the Fuencaliente station (LP08).

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at good levels in all seasons. At the moment the levels remain good in all the stations of the island.

With regard to particles smaller than 10 microns (PM₁₀), yesterday the decrease in the values registered in the set of stations was maintained, reaching a reasonably good level in the La Grama station and good in the rest. Good and reasonably good levels are maintained today in all seasons.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.d>

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In the face of intense rains, the accumulation of ash can allow the formation of hyper-concentrated flows in areas of strong runoff. It is recommended not to travel in riverbed areas or at the foot of steep slopes and to follow the recommendations provided by Civil Protection.

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

<https://www3.gobiernodecanarias.org/noticias/el-aeropuerto-de-la-palma-vuelve-a-recibir-vuelos-comerciales-despues-de-una-semana/>

November 28th

The new emission centers and the new castings are the object of special observation of the PEVOLCA Plan

At this time, it has already crossed the Tacande highway, the LP-212, and is occupying an area so far not affected by the volcano

The DGSE has issued a warning about very unfavorable air quality due to SO₂ that affects the municipalities of Tazacorte, The Llanos de Aridane and El Paso

The volcanic eruption of La Palma, which began on September 19, has been active this Sunday for 70 days. During the last morning the opening of new emission centers in the northeast sector of the volcanic cone was registered, with emission of runoffs in a northwest direction whose fronts advance on land that had not been affected so far in the Tacande area. These new lava sources have been one of the topics addressed this afternoon in the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA), led by the Minister of Public Administrations, Justice and Security, Julio Pérez .

As reported at a press conference by the spokesperson for the Scientific Committee, María José Blanco, the opening of these new centers has produced a landslide on the northeast flank of the cone. The activity of

these new centers at a lower level is effusive while, at higher altitudes, their activity is strombolian (more explosive) and phreatomagmatic.

Regarding the evolution of the flows, on behalf of the PEVOLCA Technical Directorate, Francisco Prieto, technical support to the Plan, pointed out that the lava that flows after the opening of the new emission center to the northeast of the cone does so in a fluid way when north of the original castings and attached to them. This wash has already crossed the road to Tacande, the LP-212, and from the PEVOLCA its evolution is monitored to find out if it continues to invade lands that were not affected until now, is mounted on the original flows or stops.

As for the measurement of gases, today the downward trend of the last few days has been broken and there has been an increase in the measurements of sulfur dioxide (SO₂). This change in trend has forced the General Directorate of Security and Emergencies of the Government of the Canary Islands to issue notices of exceeding the alert threshold that affects the municipalities of Tazacorte, Los Llanos de Aridane and El Paso, as well as specific recommendations for the population .

In this regard, risk groups and the sensitive population must remain indoors and follow the instructions of the authorities. For the general population, it is recommended that they avoid doing intense or prolonged physical activities outdoors while remaining alert and using FFP2 masks that adequately cover the nose and mouth.

Regarding the wind disposition, the ash cloud and SO₂ are expected to continue towards the west-southwest for at least the next 48-72 hours, which represents a favorable scenario for the operation of the La Palma airport.

The weather forecast for the next 48-72 hours is very similar to that of today, with the probability of weak to locally moderate rainfall on the north and east slopes of La Palma.

Regarding seismicity, María José Blanco indicated that that registered at intermediate depths has increased in the last 24 hours and continues to be located in the same areas, while that located at depths greater than 20 kilometers remains at low levels. The maximum magnitude was 3.6 mbLg of an event recorded yesterday, at 1:53 p.m., at a depth of 36 kilometers.

For its part, the level of tremor has been increasing since 02:00 today, reaching a medium level with periods of intensification. Meanwhile, the deformation observed in the Jeday environment has reverted and in the rest of the network some signs of meteorological origin are observed.

Regarding the emission of sulfur dioxide (SO₂) associated with the volcanic plume, Blanco pointed out that yesterday it was very high, between 30,000 and 49,999 tons per day. Despite this very high punctual record, the set of data recorded since last September 23, the date on which an extremely high SO₂ emission of more than 50,000 tons per day was recorded, continues to maintain a downward trend in the emission of dioxide. sulfur.

With regard to particles smaller than 10 microns (PM₁₀), good and reasonably good levels are maintained today at all stations on the island.

Finally, the number of sheltered people rises to 528, two more than yesterday, all of them staying in hotels. Of the total, 427 are in Fuencaliente; 70 in Los Llanos de Aridane; and 31 in Breña Baja. In addition, 43 dependent people continue to be cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and

decreased strombolian activity, as well as pulses with phreatomagmatic activity.

The affection of lava on already affected areas continues. The opening of several emission centers in the NE sector of the cone is confirmed, with emission of runoff in a NW direction, whose fronts advance on land without affectation in the Tacande area. The opening of these new centers has produced a slip on the NE flank of the cone. The new centers at a lower level have effusive activity and at a higher strombolian and phreatomagmatic height.

Currently, several emission centers with variable activity (both pyroclasts and gases, as well as lava) are still active as the configuration of the eruptive zone changes. The appearance of new emission centers around the main cone, within the exclusion zone, mainly in the NW direction, is not ruled out.

The column height measured today was 1600 m, with a scattering cloud in a SW direction.

The predominance of NE continues in the low-middle tropospheric levels (from surface to 5000 m). The ash and SO₂ cloud is expected to continue to the O-SO and is expected to continue for at least the next 48-72 hours. The above supposes a favorable scenario for the operation of the La Palma airport. The presence of a thermal inversion, together with the intensity of the NE wind, may imply an unfavorable scenario from the air quality point of view. For the next 48-72 hours, the meteorological situation is very similar and there is a probability of weak to locally moderate rainfall on the N and E slopes of La Palma.

Seismicity at intermediate depths has increased in the last 24 hours and continues to be located in the same areas. At depths greater than 20 km, it remains at low levels. The maximum magnitude has been 3.6 mbLg of an event recorded yesterday, at 13:53, at a depth of 36 km. The tremor level has been increasing since 2 am today, reaching a medium level with periods of intensification. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding the deformation, the deformation observed in the Jedey environment has reversed. In the rest of the network some signs of meteorological origin are observed.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), recorded through the use of remote optical sensors type miniDOAS in a maritime mobile position yesterday (27 / 11) was very HIGH. Despite this very HIGH punctual record, the data set recorded since last 9/23 continues to maintain a downward trend in the emission of sulfur dioxide (SO₂) since last 9/23, when an emission of carbon dioxide was recorded. extremely HIGH sulfur (SO₂).

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), it continues to register values above the average of the background levels and during yesterday (11/27) the emission was 5 times the average of the background levels (5xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is lower at the Fuencaliente station (LP08).

Yesterday, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, began to worsen in the middle of the morning, reaching regular levels in Tazacorte and unfavorable levels in Los Llanos de Aridane, with an hourly limit value being exceeded. (set at 350 µg / m³) at 3:00 p.m. The values subsequently decreased, but rose again during the night, producing another exceedance of the hourly limit value at 9:00 p.m. This increase caused the daily limit value (established at 125 µg / m³) in Los Llanos de Aridane to be exceeded yesterday. In the rest of the stations the levels remained good. In the early morning of yesterday to today the levels registered a significant increase, reaching extremely unfavorable levels in Los Llanos de Aridane and Tazacorte, and unfavorable in El Paso. So far (11:00 am) there have been six non-consecutive exceedances of the alert threshold (established at 500 µg / m³) and five exceedances of the limit value in Los Llanos de Aridane, one exceedance of

the alert threshold and seven exceedances of the hourly threshold in Tazacorte and an exceedance of the limit value in El Paso. In the rest of the stations they maintain a good level of air quality.

Regarding particles smaller than 10 microns (PM10), yesterday the levels observed in all the stations were maintained, standing at good or reasonably good levels throughout the day. Good and reasonably good levels are maintained today in all seasons.

Therefore, and as a precautionary measure, in the area of Los Llanos de Aridane, Tazacorte, El Paso, for risk groups and sensitive populations, reduce all outdoor activities, and consider doing them indoors or postponing them for when the quality of the air is good or reasonably good. For the general population, consider cutting back on outdoor activities and doing them indoors or postponing them until the air quality is good or reasonably good. Wear masks FFP2 or higher covering properly nose and mouth.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

<https://www3.gobiernodecanarias.org/noticias/los-nuevos-centros-de-emision-y-las-nuevas-coladas-son-objeto-de-observacion-especial-del-plan-pevolca/>

November 29th

Neighbours meeting

PEVOLCA Plan technicians explain gas measurements and ash cleaning plan on La Palma

Neighbors affected by the volcanic eruption have been able to ask the emergency management first-hand questions about its management

The Camilo León Sports Center in Los Llanos de Aridane hosted on Monday a talk by technicians of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) of the Government of the Canary Islands, dependent on the Ministry of Public Administrations, Justice and Security , in which it was explained to the public how gas measurements are carried out in the exclusion and evacuation zones, the ash cleaning plan in the areas affected by the La Palma eruption, as well as other doubts in the management of the emergency transferred by affected neighbors.

The PEVOLCA technical director, Miguel Ángel Morcuende, was accompanied by representatives of the emergency operative groups (Civil Guard, Military Emergency Unit, General Corps of the Canarian Police, National Police and CECOPIN La Palma); the director of the Advanced Command Post, Marta Moreno; the Minister of Emergencies of the Cabildo de La Palma, Nieves Rosa Arroyo; the mayor of El Paso, Sergio Rodríguez; the mayor of Los Llanos de Aridane, Noelia García; the head of the Office of Attention to Those Affected by the La Palma Volcano, Sergio Matos; as well as representatives of the Scientific Committee, who answered the doubts of the attendees in a talk that was broadcast live on the social networks of the Cabildo de La Palma.

Morcuende explained to the attendees the difference between the exclusion zones, which is the one located 2.5 kilometers in a radius around the volcanic cone, and the areas evacuated for Civil Protection reasons. Likewise, Commander Burgos, from the Military Emergency Unit (UME), clarified that the gas measurement tasks, which are carried out 24 hours a day, allow analyzing the presence of toxic agents in the different areas affected by the eruption. . Among these toxic agents are CO₂, carbon monoxide or sulfur dioxide.

The data from these daily detections are passed every day to the Advanced Command Post for it to interpret the results with the help of the Scientific Committee, which finally decides whether or not these areas can be accessed. Burgos also stressed that for a month there have been bags of gases almost permanently that are making tasks and access difficult in evacuated areas, both for emergency teams and scientists, as well as neighbors.

Likewise, from the UME, it was explained in detail how to clean the ashes of the houses, which are done by dividing the areas always by virtue of air quality measurements. Meanwhile, the director of the Advanced Command Post clarified that air quality warnings to the population are issued whenever a maximum permitted threshold is exceeded for prolonged periods of time in the Aridane Valley towns.

Finally, although the access rules remain the same, the aim is to modernize and simplify the access control system to the security perimeter of the exclusion zones, which to date was being carried out manually. For this, an access QR code has been established, which is created after registering on the web permit.lapalma.es/Solicitud , to facilitate the control of people.

<https://www3.gobiernodecanarias.org/noticias/tecnicos-del-plan-pevolca-explican-las-mediciones-de-gases-y-el-plan-de-limpieza-de-cenizas-en-la-palma/>
PEVOLCA update

The PEVOLCA Plan continues to monitor the new northwest wash that has slowed down its progress towards La Laguna



The air quality values have improved compared to yesterday and the SO₂ indices today are regular in Los Llanos de Aridane and Puntagorda

This afternoon a new meeting is held with residents of Los Llanos de Aridane to explain the new access plan to the evacuated areas

Seismicity at intermediate depths has increased in the last 24 hours

The meteorological situation is favorable for the operation of La Palma airport

The monitoring of the lava flow that moves through the northwest after the appearance of new eruptive foci and that approaches La Laguna, as well as the improvement in air quality

levels after exceeding the thresholds registered yesterday, were some of the the issues addressed today in the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA).

The spokeswoman for the Scientific Committee, María José Blanco, explained that the activity in the effusive focus located on the northwest flank of the main cone has decreased significantly, although it continues to feed lava tubes from the lava field. The rest of the main emission centers have significantly decreased their activity, which is currently mainly focused on the new eruptive sources that have opened yesterday. From the new more southeastern fissure that has an approximate east-west orientation, a lava flow has been emitted that forks in the upper zone. One of the branches circulates slowly over the old wash and another has overflowed in the north and could affect La Laguna.

Regarding the evolution of the flows, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that the main lava flow continues to advance through the northwest and moves close to the front of the wash 8, treading new territory of agricultural and forest land. This laundry is watched and monitored because it is located 1.5 kilometers from La Laguna. The novelty compared to yesterday is that today his speed has decreased and he is expected to ride on the 8 or stop, taking into account that he has gained in viscosity, due to the amount of solid material that he has swallowed, and that the contribution of lava, although everything will depend on the changes in the emitting cone. The contribution by lava tubes to the two deltas is also maintained, but without being able to determine their progress.

In the restricted area, the data observed in the measurement of gases harmful to health yesterday prevented access from the south for irrigators and workers, a measure that is maintained today since the values continue to be high due to the orientation of the volcanic plume.

To provide as much information as possible to the residents, this afternoon a new meeting will be held at the Camilo León Sports Center in Los Llanos de Aridane where the new PEVOLCA access plan to the evacuated areas and the ash cleaning operation will be explained.

As for air quality, the situation has improved today, after registering yesterday the daily maximum in sulfur dioxide (SO₂) of the entire series,

which forced to issue a warning to the population. Today the Air Quality Index (ICA) is good in all stations, except in Los Llanos de Aridane and Puntagorda, which is regular. With regard to particles smaller than 10 microns (PM10), good and reasonably good levels are maintained today at all stations on the island.

The PEVOLCA Plan continues to recommend that the population consult all the updated information on the website of the Government of the Canary Islands on Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Among the Civil Protection recommendations, PEVOLCA reminds that visitors who approach the areas near the volcano must exercise extreme caution and always wear reflective vests. In addition, you should not lower your guard against the coronavirus and maintain the protection measures established by the health authorities.

The disposition of the wind will carry the ash cloud and SO₂ towards the west-southwest, which will suppose a favorable scenario for the operation of the airport at least during the next 48-72 hours.

In relation to seismicity, the tremor values coinciding with the magmatic activity have decreased in the last hours, recovering their low value. In this regard, the spokesperson for the Scientific Committee pointed out that seismicity at intermediate depths has increased in the last 24 hours and continues to be located in the same areas. At depths greater than 20 kilometers, it remains at low levels. The maximum magnitude was 5.0 mbLg of an event registered today, at 08:35, IV-V direction (EMS), at a depth of 35 kilometers.

Regarding the emission of sulfur dioxide (SO₂) associated with the volcanic plume, it remains high, although there is a downward trend. Regarding the deformation, there is a general stability in the vertical deformations and some local movement is observed in the vicinity of the eruptive center that is possibly influenced by the variables of meteorological origin.

The area affected by the lava is estimated at 1,115.82 hectares, a figure that is pending revision, with a maximum width of 3,500 meters. There is no update on the measurement of the southern lava delta, which is estimated at 43.46 hectares, and the northern lava delta at 5.5 hectares.

Finally, the number of people housed remains at 528, slightly modifying its distribution in hotel centers, with 422 in Fuencaliente, 70 in Los Llanos de Aridane and 36 in Breña Baja. In addition, 43 dependent people continue to be cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

The activity in the effusive focus located on the NW flank of the main cone has notably decreased, although it continues to feed lava tubes from the lava field. The rest of the main emission centers have significantly decreased their activity, which is currently mainly focused on the new eruptive sources that have opened yesterday. A lava flow has been emitted from the new more southeastern fissure that has an approximate east-west orientation, bifurcating in the upper zone. One of the branches circulates slowly over old wash and another has overflowed in the north and could affect La Laguna.

The column height measured today was 1400 m, with a scattering cloud in the S-SW direction.

The anticyclonic situation continues with the predominance of the trade wind. At low levels, the NE wind is gusting with values that can reach 60-70 km / h in peaks, El Paso and the Llanos de Aridane. At levels from the surface to 5000 m, the wind is from the NE. The ash cloud and SO₂ are expected to continue to the W-SW (at least the next 48-72 h). The above supposes a favorable scenario for the operation of the La Palma airport. Until next Wednesday, the meteorological situation is very similar and there is a probability of weak to locally moderate rainfall on the N and E slopes of La Palma.

Seismicity at intermediate depths has increased in the last 24 hours and continues to be located in the same areas. At depths greater than 20 km, it remains at low levels. The maximum magnitude was 5.0 mbLg of an event recorded today, at 08:35, IV-V direction (EMS), at a depth of 35 km. The tremor level is at low values after an episode of intensification recorded yesterday. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding the deformation, some local movement is observed in the vicinity of the eruptive center, and some signs of meteorological origin.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in aerial mobile position yesterday (28 / 11) was HIGH (*). The set of data recorded continues to maintain a downward trend in the emission of sulfur dioxide (SO₂) since last 9/23, when an extremely HIGH emission of sulfur dioxide (SO₂) was recorded (*).

In the case of the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), it continues to register values above the average of the background levels and during yesterday (11/28) the emission was 5 times the average of the background levels (5xB). These diffuse fumes do not represent a danger to

people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the

Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is lower at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, reached very unfavorable maximum levels in Los Llanos de Aridane and Tazacorte, and unfavorable in El Paso. The hourly limit value (established at 350 µg / m³) was exceeded in 17 hours out of 24 hours a day at the Los Llanos de Aridane station, 10 hours in Tazacorte, and 2 in El Paso. Among these hourly values, 11 of them in Los Llanos de Aridane and one in Tazacorte exceeded the alert threshold (established at 500 µg / m³). Especially significant was the episode of pollution that occurred between 10:00 am and 4:00 pm in Los Llanos de Aridane, with six consecutive values above the alert threshold, which meant the issuance of the corresponding warning to the population. As a consequence of these accumulated values, yesterday there were exceedances of the daily average reference value (established at 125 µg / m³), both in Los Llanos de Aridane and in El Paso and Tazacorte. The average daily value recorded in Los Llanos de Aridane (420 µg / m³) is the highest of the entire series. In these three stations, the values were reduced in the evening yesterday, to good or reasonably good levels. Good or reasonably good air quality levels were maintained yesterday at the rest of the stations. up to good or reasonably good levels. Good or reasonably good air quality levels were maintained yesterday at the rest of the stations. up to good or reasonably good levels. Good or reasonably good air quality levels were maintained yesterday at the rest of the stations.

Throughout the night and early morning of today, the values recorded at the Los Llanos de Aridane, Tazacorte and Puntagorda stations maintain an upward trend, reaching levels between reasonably good and regular, with no exceedances of the value being recorded so far. hour limit.

Regarding particles smaller than 10 microns (PM₁₀), yesterday the levels observed in all the stations were maintained, standing at good or reasonably good levels throughout the day. Good and reasonably good levels are maintained today in all seasons.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

<https://www3.gobiernodecanarias.org/noticias/el-plan-pevolca-continua-la-vigilancia-de-la-nueva-colada-del-noroeste-que-ha-ralentizado-su-avance-hacia-la-lagun/>

November 30th

Yesterday there were times when all broadcast centers were inactive, according to scientists



The north flow continues to be active with slight overflows and heads west close to previous flows

Today's values for sulfur dioxide and PM10 particles remain at good or reasonably good levels in all seasons.

The PEVOLCA Plan yesterday held an informative talk with the neighbors to explain the measurement of gases and the ash cleaning plan in the exclusion and evacuation areas

According to the latest data from the Cadastre, it is estimated that there are 1,548 buildings destroyed

The lava flow that is being emplaced to the north continues to be active with slight overflows in the Tajuya area and heads west along with the previous lava, and the one located to the west of Montaña de Todoque continues to occupy lands not previously affected. The current situation of the wastes, as well as the inactivity at some moments of yesterday of all the emission centers were some of the issues analyzed by the Steering Committee of the Special Plan for Civil Protection and Emergency Attention for Volcanic Risk of the Canary Islands (PEVOLCA), which was coordinated by the General Director of Security and Emergencies, Gustavo Armas.

The eruptive process continues to show episodes of increase and decrease in strombolian activity, combining explosive phases with pyroclastic deposits with effusive phases, with the emission of lava flows, according to the daily report of the Scientific Committee. Based on this report, its spokesperson, María José Blanco, explained that all the broadcasting centers became inactive at some times yesterday and that since then they have had very intermittent activity. There have been several landslides in the interior of the crater that has formed in relation to the new eruptive fissure and the lavas are mainly occupying surface on previous flows.

Regarding the evolution of the runoffs, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that the affected area is estimated at 1,134 hectares, with a maximum width of 3,350 meters. With the rupture of the cone and the opening of new mouths in the north of the main cone, the new flow moves west-northwest direction attached to the previous one or riding on the existing one. It has bifurcated and there is a part that runs through the center and feeds flows 5, 4 and 7 through lava tubes, between the mountains of La Laguna and Todoque, and another that goes over the

flow 8. The latter presents an overflow near Tajuya and in the direction of La Laguna, which is being monitored especially by the PEVOLCA Plan, although it runs slowly and during the night it has traveled a mere 100 meters,

According to the latest data from the Land Registry, some 1,548 buildings have been destroyed, increasing by 64, of which 1,242 are for residential use, 169 for agricultural use, 69 for industrial use, 37 for leisure and hospitality, 15 for public use and 16 for other uses.

On the other hand, the Copernicus satellite, figures in approximately 2,860 buildings affected, of which 2,748 destroyed in their entirety and 112 partially.

Regarding the area of crops covered by lava, it is estimated at 348.86 hectares, 8.27 more than the previous data. Of these, 217 are banana trees; 61.2 vines and more than 26 avocados. To these figures must be added the area isolated by the runoffs that is being calculated, and that which is covered by ash, which is calculated at approximately 412 hectares of banana trees, 128 of vines and 84 of avocados.

The Steering Committee today insisted on the Civil Protection recommendations for visitors who approach the areas near the volcano, so that they exercise extreme caution and always wear reflective vests. In addition, visitors and residents are urged not to lower their guard against the coronavirus and maintain the protection measures established by the health authorities, such as the use of masks, hand washing and interpersonal distance.

In the restricted area, the data observed in the measurement of gases harmful to health yesterday prevented access from the south for irrigators and workers, due to the orientation of the volcanic plume. Access to the Jedey area has been cautiously allowed today as the situation improves.

In this sense, yesterday a PEVOLCA meeting was held at the Camilo León Sports Center in Los Llanos de Aridane to explain to the public how gas measurements are carried out in the exclusion and evacuation zones, the ash cleaning plan in the areas affected by the eruption of La Palma, as well as other doubts in the management of the emergency transferred by the affected neighbors.

This meeting was attended by the technical director of PEVOLCA, Miguel Ángel Morcuende, accompanied by representatives of the emergency operative groups (Civil Guard, Military Emergency Unit, General Corps of the Canary Police, National Police and CECOPIN La Palma); the director of the Advanced Command Post, Marta Moreno; the Minister of Emergencies of the Cabildo de La Palma, Nieves Rosa Arroyo; the mayor of El Paso, Sergio Rodríguez; the mayor of Los Llanos de Aridane, Noelia García; the head of the Office of Attention to Those Affected by the La Palma Volcano, Sergio Matos; as well as representatives of the Scientific Committee, who answered the doubts of the attendees in a talk that was broadcast live on the social networks of the Cabildo de La Palma.

The number of people staying in hotel centers has increased by 9 to 537. Of the total, 426 are staying at the Princess hotel in Fuencaliente and 71 at the Valle de Aridane hotel in Los Llanos de Aridane and 40 at the H10 Taburiente Playa hotel in Los Cancajos, Breña Baja. In addition, there are 43 dependent people cared for in insular health centers.

Regarding air quality, yesterday the daily limit value for sulfur dioxide SO₂ was exceeded in Los Llanos de Aridane, while in Puntagorda and Tazacorte regular values were registered. During this morning the values remain at reasonably good levels in Los Llanos de Aridane and Tazacorte and good in the rest of the stations.

Regarding particles smaller than 10 microns (PM₁₀), yesterday the levels observed in all the stations were maintained, standing at good or reasonably good levels throughout the day, a situation that remains today for the moment.

The PEVOLCA Plan continues to recommend that the population consult all the updated information on the website of the Government of the Canary Islands on Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

In relation to seismicity, the tremor values remain low with some intensification pulse and the increase in the intermediate seismic activity detected in recent days and the low values of the deep one continues.

The winds will disperse the ash and gases in a southwest direction, tending to a south and southeast direction as of this afternoon, which will be a

favorable situation for aeronautical operations. There is the possibility of occasional rains in the midlands of the west slope and the arrival of Saharan dust is not ruled out, which would worsen the situation of suspended particles.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

All the broadcasting centers became inactive at some times yesterday around 11:00 in the morning. Since then they have had a very intermittent activity. There have been several landslides inside the crater that has formed in relation to the new eruptive fissure.

The lavas are mainly occupying surface area on previous casts. The lava flow continues to be active, which is being located in the north and which slightly overflows in the Tajuya area, heading towards the west attached to the previous lavas. The lava located west of Montaña de Todoque continues to occupy previously unaffected lands.

The column height measured today was 2,600 m, with a scattering cloud in the S-SW direction.

At low levels, the NE wind predominates with gusts that can reach 50-60 km / h in peaks, El Paso and the Llanos de Aridane, decreasing throughout the afternoon. At levels ranging from surface to 5000 m, the wind is from N to NE. The ash cloud and SO₂ are expected to continue towards the S-SW (at least for the next 48-72 h). This represents a favorable scenario for the operation of La Palma airport. Today, weak rains affecting slopes N and E of La Palma, which may be more persistent in the NE midlands. Tomorrow Wednesday, a line of instability that is approaching the archipelago, may leave showers on La Palma, mainly in the N, E and central areas of the island. It is not ruled out that rainfall may be accompanied by isolated storms.

Seismicity at intermediate depths continues to increase in the last 24 hours and is located in the same areas. At depths greater than 20 km, it remains at the same levels. The maximum magnitude has been 4.2 mbLg of an event recorded today, at 10:54, sense IV (EMS), at a depth of 13 km, which has been the largest at intermediate depth since the beginning of the eruption. The tremor level is at low values. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding the deformation, some local movement is observed in the vicinity of the eruptive center, and some signs of meteorological origin.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in aerial mobile position yesterday (29 / 11) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of diffuse carbon dioxide (CO₂) emissions, associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), it continues to register stable values since last 11/15. These values are above the average value of the background levels (B) and during yesterday (11/29) this diffuse emission was 5 times the average of the background levels (5xB). These diffuse fumes do not represent a danger to

people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10), a slight magmatic-hydrothermal fraction continues to be recorded in carbon dioxide (CO₂) in the soil atmosphere, while this is less in the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

Yesterday, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, worsened throughout the morning, reaching unfavorable maximum levels in Los Llanos de Aridane, exceeding the hourly limit value (established at 350 µg / m³) at 3:00 p.m., in Puntagorda and Tazacorte the regular level was reached, while in the rest of the stations the levels remained good. Levels improved during the afternoon and evening, reaching good and reasonably good levels, however, the daily limit value (established at 125 µg / m³) was exceeded in Los Llanos de Aridane and Tazacorte. During this morning, the values remain at reasonably good levels in Los Llanos de Aridane and Tazacorte and good in the rest.

Regarding particles smaller than 10 microns (PM₁₀), yesterday the levels observed in all the stations were maintained, standing at good or reasonably good levels throughout the day. During this morning, an increase in the values registered in Los Llanos de Aridane is observed at the moment, the 24-hour moving average remains, for the moment, at good and reasonably good levels in all stations.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

<https://www3.gobiernodecanarias.org/noticias/ayer-hubo-momentos-en-que-todos-los-centros-de-emision-estuvieron-inactivos-segun-los-cientificos/>

December 1st

The activity in the emission sources of the main cone has been scarce and intermittent, predominantly the fumaroles



Eruptive activity continues on the northeast flank, where the accumulation of pyroclasts has formed a new cone

Seismicity at intermediate and deep depths has continued to increase in the last 24 hours

Air quality is maintained today in all seasons at good or reasonably good levels, in sulfur dioxide and in PM10 particles.

The eruptive process concentrates the greatest energy load in the northern zone, with more fluid contributions on the stream 8, and in the central zone, feeding the lava deltas. On the northeast flank, a new cone has been formed by the accumulation of pyroclasts, whose activity emits lava flows without occupying new territory, while in the emission sources of

the main cone the activity has been scarce and intermittent, predominantly fumaroles. The monitoring of the advance of the runoffs and the increase in seismicity were some of the issues analyzed by the Steering Committee of the Special Plan for Civil Protection and Emergency Care for Volcanic Risk of the Canary Islands (PEVOLCA), which was coordinated by the general director of Security and Emergencies, Gustavo Armas.

Today the Steering Committee has once again insisted on the Civil Protection recommendations for visitors who approach the areas near the volcano, so that they exercise extreme caution and always wear reflective vests, so that they can be visible by drivers and avoid traffic accidents. In addition, visitors and residents are urged not to lower their guard against the coronavirus and maintain the protection measures established by the health authorities, such as the use of masks, hand washing and interpersonal distance.

The spokesperson for the Scientific Committee, María José Blanco, explained that the eruptive activity continues to be concentrated mainly on the northeast flank, where the accumulation of pyroclasts has led to the formation of a cone of pyroclasts with strombolian and effusive activity that emits lava flows that do not occupy new territory. The small landslides that occur inside the crater of this cone provide blocks that are transported by the springs.

Regarding the evolution of the runoffs, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that lava energy circulates through the north and central areas, feeding the lava deltas. The northernmost colada has been called colada 12 because it has been detached from la 8, although later it is rejoined and rides on the previous ones. The contribution or thrust of the emitting center on casting 8, which is currently located about 800 meters from La Laguna, is monitored.

The affected area does not register variations and is estimated at 1,134 hectares, with a maximum width of 3,350 meters. There are no updated data from the Cadastre, which estimates 1,548 buildings destroyed, or the Copernicus satellite, which estimates 2,860 buildings affected.

Seismicity has continued to increase at both depths, being more relevant at the intermediate, which continues to be located in the same areas. The maximum magnitude was 4.8 mbLg of an event recorded yesterday, at

13:04, direction IV (EMS), at a depth of 37 kilometers. The tremor level is in average values, with abrupt changes in level.

Regarding the deformation, it presents stability without a defined trend in the stations closest to the eruptive center and a slight tendency to deflation in the furthest ones, while regarding the emission of gases from the plume, the downward trend has been maintained since the 23rd. of September.

The east wind will intensify throughout the day and will dispose the plume and the ash cloud towards the south-southwest, which represents a favorable scenario for aeronautical operations. Rainfall will be occasional and light in nature and the possibility of entry of African dust remains from Saturday.

Regarding air quality, the levels of sulfur dioxide (SO₂) during this morning remain at reasonably good levels in Los Llanos de Aridane and Tazacorte and good in the rest. Yesterday the situation was unfavorable in the Los Llanos de Aridane station and regular in Tazacorte and Puntagorda, but without exceeding the daily limit.

With regard to particles smaller than 10 microns (PM₁₀), both yesterday and today it remains at good or reasonably good levels in all seasons.

The PEVOLCA Plan continues to recommend that the population consult all the updated information on the website of the Government of the Canary Islands on Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

In the restricted area, the data observed in the measurement of gases harmful to health yesterday prevented access through the southern area for ash cleaning work, but the values have been decreasing and today the entry of neighbors has been authorized.

There are a total of 533 people housed in hotels, four less than yesterday, of which 422 are staying in Fuencaliente and 71 in Los Llanos de Aridane and 40 in Breña Baja. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

Eruptive activity continues to be concentrated mainly on the NE flank, where the accumulation of pyroclasts has given rise to the formation of a cone of pyroclasts with strombolian and effusive activity that emits lava flows that do not occupy new territory. The small landslides that occur inside the crater of this cone, provide blocks that are transported by the flows. In the emission sources of the main cone, the activity has been scarce and intermittent, predominantly fumarolic activity.

The column height measured today was 3,500 m and the vapor development cloud reached 5,200 m.

E-NE synoptic wind, intensifying throughout the day. Disposition of the SO₂ plume and ash cloud towards the S-SO: favorable scenario for aeronautical operations. Zone O of the island: breeze regime. Wind in height: up to 2000 m similar to the wind on the surface; up to 5000 m, progressive change of direction from NW to E. Probability of light rains (today and next days). Probability (low) of moderate showers and isolated storms to the N. Slight instability. Disappearance of investment. Development of cloudiness up to 3000 m. Next days:

moderate-strong trade wind with turn to E from Saturday (possibility of intrusion of Saharan dust).

Seismicity at intermediate depths continues to increase in the last 24 hours and is located in the same areas. The number of earthquakes at depths greater than 20 km has also increased. The maximum magnitude was 4.8 mbLg of an event recorded yesterday, at 13:04, direction IV (EMS), at a depth of 37 km. The tremor level is in average values with abrupt changes in level. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding the deformation, stability without a defined tendency in the stations closest to the eruptive center, and a slight tendency to deflation in the more distant ones.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a maritime mobile position yesterday (30 / 11) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of diffuse carbon dioxide (CO₂) emissions, associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), it continues to register stable values since last 11/15. These values are above the average value of the background levels (B) and during yesterday (11/30) this diffuse emission was 5 times the average of the background levels (5xB). These diffuse fumes do not represent a danger to

people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is lower at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

Yesterday, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, worsened throughout the morning, reaching unfavorable maximum levels in Los Llanos de Aridane, exceeding the hourly

limit value (established at $350 \mu\text{g} / \text{m}^3$) at 3:00 p.m., in Puntagorda and Tazacorte the regular level was reached, while in the rest of the stations the levels remained good. Levels improved during the afternoon and evening, reaching good and reasonably good levels, however, the daily limit value (established at $125 \mu\text{g} / \text{m}^3$) was exceeded in Los Llanos de Aridane and Tazacorte. During this morning, the values remain at reasonably good levels in Los Llanos de Aridane and Tazacorte and good in the rest.

Regarding particles smaller than 10 microns (PM10), yesterday the levels observed in all the stations were maintained, standing at good or reasonably good levels throughout the day. During this morning, an increase in the values registered in Los Llanos de Aridane is observed at the moment, the 24-hour moving average remains, for the moment, at good and reasonably good levels in all stations.

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<https://www3.gobiernodecanarias.org/noticias/la-actividad-en-los-focos-emisores-del-cono-principal-ha-sido-escasa-e-intermitente-predominando-las-fumarolas/>

December 2nd

The main lava flow runs through the central area on an already affected surface and reduces its contribution to the wash 8

<https://www3.gobiernodecanarias.org/noticias/el-flujo-principal-lavico-discurre-por-zona-central-sobre-superficie-ya-afectada-y-reduce-su-aporte-a-la-colada-8/>



Seismicity at intermediate depths has been very intense during the last 24 hours

All the stations register good or reasonably good values in the quality of the air, both in sulfur dioxide and in PM10 particles.

During the December bridge, the traffic will be regulated in the afternoon to facilitate the access of visitors to the observation areas of the volcano.

Seismicity at intermediate depths has been very intense in the last 24 hours, being located in the same areas and the eruptive activity continues to be concentrated mainly on the northeast flank where, as reported yesterday, another pyroclastic cone has formed, while in the foci Emitters from the main cone, activity continues to be scarce and intermittent, predominantly ash and fumarolic emission activity. The main lava flow runs through the

central area of the previous casts, on an already affected surface and the contribution to casting number 8 has been reduced.

These and other data from the Scientific Committee were addressed today by the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), which was coordinated by the General Director of Safety and Emergencies, Gustavo Armas, when they are 80 days after the declaration of emergency and 74 days after the eruption.

During the December bridge, taking into account the influx of visitors, the access traffic to the Aridane Valley will be regulated again by the LP-3, in the afternoon from 5:00 p.m. to 11:00 p.m., diverting vehicles light on the slopes of El Paso and Hermosilla and maintaining the LP-3 for heavy vehicles and emergency services. The ascent from Los Llanos de Aridane and Tazacorte will be done by the usual route.

In this sense, the Steering Committee has once again insisted today on the need to reinforce the protection measures established by the health authorities against COVID-19, such as the use of masks, hand washing and interpersonal distance. He also recalled the Civil Protection recommendations for visitors who approach the areas near the volcano, especially in the Tajuya and El Time areas, so that they exercise extreme caution and always wear reflective vests and flashlights, so that they can be visible by drivers and avoid traffic accidents.

Regarding the evolution of the eruptive process, the spokesman for the Scientific Committee, Stavros Meletlidis, who temporarily replaced María José Blanco and Carmen López today, explained that lava flows are spilling in the Fronton area, some moving north affecting new areas and others move to the West on the previous flows. The small landslides that occur inside the crater of the secondary cone provide blocks, which are transported by the sprues.

In this regard, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, pointed out that the greatest energy flows through the central area, on ground already trodden without causing new damage, but with widening and overflowing at the top towards the Cabeza de Vaca track and the Tacande road, which then returns to ride in parallel over pre-existing streams in a westerly direction. The contribution of lava to wash 8 has

decreased, but its progress continues to be monitored and any overflow is monitored. The lava deltas also continue to feed, mainly the northern deltas by stream 7.

The affected area is estimated at 1,136 hectares, with a maximum width of 3,350 meters. The lava deltas measure approximately 48 hectares, being about 5 hectares in the northernmost delta.

Regarding the Cadastre data, the destroyed buildings are estimated to be 1,562, 14 more than the previous data, of which 1,250 are for residential use, 163 for agricultural use, 71 industrial, 37 hospitality leisure, 15 public use and 16 other uses.

After a slight decrease for a few hours, the seismicity at intermediate depths increased again and has been very intense in the last 24 hours, being located in the same areas. The number of earthquakes at depths greater than 20 kilometers has decreased in recent hours. The maximum magnitude was 4.2 mbLg of an event registered today, at 05:14, direction IV (EMS), at a depth of 13 kilometers. The tremor level is in average values with level changes.

Regarding deformation, there is general stability without a defined trend in the closest stations and with slight local deflation in the most distant ones, while the emission of sulfur dioxide associated with the volcanic plume, although high, continues to reflect decreasing values.

The meteorological conditions will be favorable for aeronautical operations. Rainfall will be occasional and light in nature and the possibility of entry of African dust remains from Saturday.

Regarding air quality, regarding the levels of sulfur dioxide (SO₂) and of particles smaller than 10 microns (PM₁₀), good or reasonably good levels are maintained in all seasons, without exceeding thresholds.

The PEVOLCA Plan continues to recommend that the population consult all the updated information on the website of the Government of the Canary Islands on Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

In the restricted area, the data observed in the measurement of harmful gases allowed the entry into the southern part yesterday. Gas monitoring

has not detected high values during the night, but it did during the morning, for which the access to Puerto Naos of neighbors had to be temporarily paralyzed for a few hours to remove belongings and remove ashes. The Technical Directorate warns that those who enter the exclusion zone must open doors and windows and ventilate the homes to eliminate the concentration of carbon monoxide.

The number of people staying in hotels has increased by 9 people, reaching 542. Of the total, 416 are staying in Fuencaliente, 71 in Los Llanos de Aridane and 55 in Breña Baja. In addition, 43 dependent people remain cared for in insular health centers.

For today, the NE synoptic wind will predominate with intervals of strong intensity. On the west coast, the breeze regime will predominate, intensifying in central hours and the synoptic flow prevailing in areas of that slope. In midlands and peaks, E will blow moderate / strong, also intensifying in central hours with gusts of 60-70 km / h. The arrangement of the SO₂ and ash plume will be towards the SO-O, which represents a favorable scenario for aeronautical operations.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increased and

decreased strombolian activity, as well as pulses with phreatomagmatic activity.

Eruptive activity continues to be concentrated mainly on the NE flank, where the accumulation of pyroclasts has led to the formation of a pyroclastic cone with strombolian and effusive activity that emits lava flows. The small landslides that occur inside the crater of this cone, provide blocks that are transported by the flows. In the emission sources of the main cone, the activity has been scarce and intermittent, predominantly the activity of ash and fumarolic emission. Lava flows spill into the Fronton area, some moving north affecting new areas, and others moving west on previous flows.

The column height measured today was 1900 m, with a scattering cloud in the S-SW direction.

For today, the NE synoptic wind will predominate with intervals of strong intensity. On the west coast, the breeze regime will predominate, intensifying in central hours and the synoptic flow prevailing in areas of that slope. In midlands and peaks, E will blow moderate / strong, also intensifying in central hours with gusts of 60-70 km / h. The arrangement of the SO₂ and ash plume will be towards the SO-O, which represents a favorable scenario for aeronautical operations. The wind in height, up to 2300 m, will be from the moderate NE, intensifying in central hours. Up to 5000m, it will be moderate / strong NE-E, tapering off at the end of the day. There is a probability of weak rains with the possibility of persisting in the midlands. Slight instability and an inversion of 2-3°C is expected around 2000 m, which will favor the development of cloudiness up to 2000 m. approximately. In the coming days, a moderate-strong trade wind regime will be imposed with an E turn from Saturday (possibility of intrusion of Saharan dust).

Seismicity at intermediate depths has been very intense in the last 24 hours, being located in the same areas. After declining for a few hours, it has increased again. The number of earthquakes at depths greater than 20 km has decreased in recent hours. The maximum magnitude was 4.2 mbLg of an event registered today, at 05:14, direction IV (EMS), at a depth of 13 km. The tremor level is in average values with level changes. The current level of seismicity continues to indicate that it is possible that more felt

earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding the deformation, stability without a defined tendency in the stations closest to the eruptive center, and a slight tendency to deflation in the more distant ones.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), recorded through the use of remote optical sensors type miniDOAS in a maritime mobile position yesterday (1 / 12) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of diffuse carbon dioxide (CO₂) emissions, associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), it continues to register stable values since last 11/15. These values are above the average value of the background levels (B) and yesterday (1/12) this diffuse emission was 5 times the average of the background levels (5xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10), a slight magmatic-hydrothermal fraction continues to be recorded in carbon dioxide (CO₂) in the soil atmosphere, while this is practically nil in the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at good levels in all the island's stations. Today we continue to record good levels in all stations.

Regarding particles smaller than 10 microns (PM₁₀), yesterday the levels observed in all the stations were maintained, standing at good or reasonably good levels throughout the day. During the morning of today, as in previous days, a slight increase in the values registered in Los Llanos de Aridane begins to be observed, however the 24-hour moving average remains between good and reasonably good levels in all seasons.

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December 3rd

One of the emitting sources emits lava that runs over the already occupied area of wash 10 in the direction of Las Manchas

<https://www3.gobiernodecanarias.org/noticias/uno-de-los-focos-emisores-emite-lava-que-discurre-sobre-zona-ya-ocupada-de-la-colada-10-en-direccion-a-las-manchas/>



Seismicity decreases at both depths after registering high activity in recent days

The runoffs occupy approximately 1,144 hectares and the roads affected by the eruption are estimated to be 70 kilometers

The PEVOLCA Steering Committee insists that the danger persists in the exclusion area and in evacuated areas and that the security standards established to safeguard physical integrity must be respected at all times.

The strombolin activity in the emitting points of the main cone was concentrated this Friday morning in the focus located more to the southeast, from where a stream has started that runs on the 10, by surface already occupied, and in a southwesterly direction towards Las Stains. This is the main novelty about the state of the wastes that has been analyzed today in the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), which was led by the Minister of Public Administrations, Justice and Seguridad, Julio Pérez, director of the Plan, and where the decrease in seismicity at both depth levels and a new episode of inflation in the vertical deformation registered at the Jedey station were also reported.

75 days after the eruption, all the groups of the PEVOLCA Plan continue to work at full capacity: Intervention; Logistics; Rehabilitation and Essential Services, Safety and Health, in addition to the Scientific Committee that prepares a daily report, which allows decision-making in the meetings of the Steering Committee.

In this sense, the Steering Committee has insisted on remembering that the danger persists in the exclusion area and in the evacuated areas, and the security standards established by the authorities to safeguard physical integrity must be respected at all times and at all times. , only being able to access these areas with the necessary permissions. In this sense, the data observed yesterday in the measurement of gases harmful to health in the restricted area forced the closure of the accesses through the southern area, a situation that improved in the morning but was later complicated by the new lavage contribution to Las Stains.

Regarding the evolution of the streams, the spokesperson for the Scientific Committee, Carmen López, explained that the eruptive activity continues to be concentrated mainly on the northeast flank, where the accumulation of pyroclasts has led to the formation of a cone of pyroclasts with strombolian and effusive activity. that emits lava flows. The landslides that occur inside the crater of this cone provide blocks that are transported by the flows. In the emission sources of the main cone, activity this morning was concentrated in strombolian activity in one of the sources located more to

the southeast, from where a stream that runs in a southwesterly direction, towards Las Manchas, has started. In the northern part, lava flows spill into the Fronton area, some moving north, affecting new areas,

In this regard, Francisco Prieto, for the PEVOLCA Technical Directorate, pointed out that the greatest contribution of lava continues to flow through the central area, mainly on flow 7, cooling in the lower areas, but there are also advances in flows in the upper area both due to the north as well as the south. To the north, the lava flows more slowly and reaches the Tacande road, although without separating much from the main one, and to the south, it advances on lavage 10, affecting for the moment already occupied terrain. Both movements are being constantly monitored.

The affected area is estimated at 1,144 hectares, with a maximum width of 3,350 meters, and the extension of the lava deltas is estimated at 48 hectares. The data provided by the Copernicus satellite indicates that there are approximately 2,891 constructions / buildings destroyed, of which 2,790 are totally affected and 101 partially.

There are also more than 70 kilometers of roads and other roads affected by lava, of which 10 are island roads and the rest are streets, crossings and other roads.

The intermediate and deep seismicity have decreased, after having registered a great activity in recent days, especially in the intermediate one. The maximum magnitude was 4.2 mbLg of an event registered today, at 05:14, direction IV (EMS), at a depth of 13 kilometers. The tremor level is in average values, with punctual pulses.

Regarding deformation, a new inflation episode is recorded in the vicinity of Jedey (LP03 station), about 6 cm vertically, and stability in the rest of the network, with some stations showing slight deflation. According to the spokeswoman for the Scientific Committee, the deformation is related to the feeding of the eruptive process and this station is very sensitive due to its location.

The weather forecast does not rule out intervals of higher intensity rains during the first half of the day and the intrusion of Saharan dust from Saturday. The wind regime foreseen for the next 24 hours is favorable for aeronautical operations.

Regarding air quality, the levels of sulfur dioxide (SO₂) both yesterday and today have remained at good levels in all the stations of the island. Today, good levels continue to be recorded in all stations.

Regarding particles smaller than 10 microns (PM₁₀), yesterday the daily limit value was exceeded in Los Llanos de Aridane and today they remain as regular in La Grama-Breña Alta, unfavorable in Los Llanos de Aridane, and good or reasonably good in all other seasons.

The PEVOLCA Plan continues to recommend to the general population the use of a FFP2 mask and to the sensitive or especially vulnerable population, to reduce outdoor activities. All the updated information can be consulted on the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

About housed in hotels, there are 548 people, six more than yesterday. Of the total, 417 are staying in Fuencaliente and 71 in Los Llanos de Aridane and 60 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increased and

decreased strombolian activity, as well as pulses with phreatomagmatic activity.

Eruptive activity continues to be concentrated mainly on the NE flank, where the accumulation of pyroclasts has led to the formation of a pyroclastic cone with strombolian and effusive activity that emits lava flows. The landslides that occur inside the crater of this cone, provide blocks that are transported by the flows. In the emission sources of the main cone, activity this morning was concentrated in strombolian activity in one of the sources located further to the SE, from where a stream has started that runs in a SW direction, towards Las Manchas. Lava flows spill into the Fronton area, some moving to the N affecting new areas, and others moving to the W on previous flows.

The column height measured today was 1900 m, with a scattering cloud in the S-SW direction.

At low levels, the predominance of the NE wind continues with gusts that can reach 60-70 km / h in peaks, El Paso and the Llanos de Aridane. Wind from surface to mean tropospheric levels (up to 5500 m) will be from NE to component

E. The expected wind direction causes the ash plume and SO₂ to continue oriented SW from the eruptive focus. The foregoing supposes a favorable scenario for aeronautical operations. Today, probability of weak rains affecting slopes N and E of La Palma. Starting tomorrow, the Saharan air mass is expected to move from the E to the W over the archipelago and produce an intrusion of Saharan dust (mainly affecting the eastern islands and without being discarded in La Palma). The entry of Saharan dust would produce an increase in the PM₁₀ registered in the air quality stations.

Seismicity at intermediate depths has decreased in the last 24 hours, being located in the same areas. The number of earthquakes at depths greater than 20 km has decreased even more in recent hours. The maximum magnitude has been 4.2 mbLg of an event registered yesterday, at 21:11, direction V (EMS), at a depth of 11 km. The tremor level is in average values with high variability. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding the deformation, a new inflation episode is registered in the vicinity of Jedey (LP03 station), of about 6 cm vertically. Stability in the rest of the network with some stations showing slight deflation.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), recorded through the use of remote optical sensors type miniDOAS in a maritime mobile position during the yesterday (12/2) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of diffuse carbon dioxide (CO₂) emissions, associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), it continues to register stable values since last 11/15. These values are above the average value of the background levels (B) and during yesterday (12/2) this diffuse emission was 5 times the average of the background levels (5xB). These diffuse emanations do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydro-thermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil in the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

Yesterday the air quality values due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, increased during the afternoon, reaching levels between reasonably good and regular in the stations of Tzacorte and Los Llanos de Aridane, with an unfavorable value and exceeding the hourly value (established at 350 µg / m³) at 6:00 p.m. in this last station. During the night and early morning of today, levels oscillating between reasonably good and regular are registered in Los Llanos de Aridane, Tzacorte and Puntagorda; and good levels in El Paso and Fuencaliente.

With regard to particles smaller than 10 microns (PM₁₀), yesterday the levels observed in all the stations were maintained, standing at good or reasonably good levels throughout the day, except for an intense peak of

418 $\mu\text{g} / \text{m}^3$ at the Los Llanos de Aridane station, at 2:00 p.m., which led to the exceeding of the daily limit value (established at 50 $\mu\text{g} / \text{m}^3$). During this morning, as in previous days, a slight increase in the values registered in Los Llanos de Aridane begins to be observed. The 24-hour moving average remains today at an unfavorable level in Los Llanos de Aridane, and between good and regular levels in the rest of the stations.

As a precautionary measure, in the Valle de Aridane, Tijarafe and Punta-gorda area, for risk groups and sensitive populations, consider reducing all outdoor activities and doing them indoors or postponing them until the air quality be good or reasonably good. For the general population, consider reducing prolonged and vigorous outdoor activities, especially if you have a cough, shortness of breath, or any other symptoms, and doing them indoors, or you can postpone them until air quality is good or reasonably good.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

December 4th

A wash in the south of Cogote Mountain is reactivated, occupying a new surface



Eruptive activity on the northeast flank has stopped and the flow that runs towards Las Manchas shows little progress

Seismicity has continued to decrease and reverts the deformation episode in Jedey, with stability in the rest of the stations.

The incidence of haze impairs air quality levels due to PM10 particles, being unfavorable at La Grama station (Breña Alta)

The reactivation this morning of the wash from the south by Montaña Cogote towards the La Majada Road focused today's meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), where the little activity in the rest of the emission centers, with a halt in the eruptive activity on the northeast flank and little advance of the stream in the direction of Las Manchas. At the meeting, chaired by the Minister of Public Administrations, Justice and

Security, Julio Pérez, director of the Plan, he also noticed the decrease in seismicity and the reversal of deformation in Jedey, with stability in the rest of the seasons.

Regarding the evolution of the streams, the Technical Director, Miguel Ángel Morcuende, pointed out as the main novelty of the last hours the reactivation of the southern stream that runs towards Camino La Majada in a southwesterly direction, filling gaps between streams 3 and 11 and occupying new surface in an area already evacuated. The initial speed of this casting has been slowing down as it loses fluidity and gains viscosity due to the material that it has been engulfing during its trajectory.

The feeding of the flows 7, 8 and 10 continues to be produced by lava tubes, but in a lesser way than in previous days and without modifying the surface of the deltas.

In this regard, the spokesperson for the Scientific Committee, Carmen López, explained that the eruptive activity on the northeast flank, where the accumulation of pyroclasts gave rise to the formation of a cone with strombolian and effusive activity that emitted lava flows, has stopped. Strombolian activity has been concentrated in one of the foci located more to the southeast in the emission sources of the main cone, from where yesterday there was a wash that runs in a southwesterly direction, towards Las Manchas, currently with little progress. The lava flows that were spilled in the past days in the Fronton area are practically inactive. Yesterday there was evidence of the existence of a fissure with central subsidence in a north-south direction, about 100 meters away and to the south of the main building.

The affected area is estimated at 1,146 hectares, with a maximum width of 3,350 meters, and the extension of the lava deltas is maintained at 48 hectares, although all these data will have to be updated after the reactivation of the wash in the south.

As for the cultivated land covered by lava, it is estimated at 350.39 hectares. Of these, approximately 217.37 are banana trees; 61.2 vines and more than 26.72 avocados. To these figures we must add the surface isolated by the castings that is being calculated, and that which is covered by ashes.

Seismicity at intermediate depths has continued to decrease in the last 24 hours, being located in the same areas. The number of earthquakes at

depths greater than 20 kilometers remains low and the tremor level is low, with less variability.

On the other hand, the deformation has partially reversed the inflation episode in the vicinity of Jedey (LP03 station) and stability is shown in the rest of the network, with some slight deflation.

Despite having lowered these parameters, the levels of sulfur dioxide in the plume continue to be high, which indicates the presence of magma available to feed the eruption. According to the spokesperson for the Scientific Committee, in order to be able to speak of a sustained stability that allows making a forecast of the end of the process, all the observables have to be low and also persistent over time and that situation has not yet occurred.

Regarding air quality, yesterday the sulfur dioxide (SO₂) values remained at reasonably good and regular levels at the Los Llanos de Aridane, Tazacorte and Puntagorda stations and, although there were no exceedances of the hourly limit, the background values they exceeded the average daily value in Los Llanos de Aridane and Puntagorda. During the night and early morning of today, levels between reasonably good and regular continue to be registered in Los Llanos de Aridane, Tazacorte and Puntagorda, decreasing during the morning, while in El Paso and Fuencaliente good levels are registered throughout the day.

With regard to particles smaller than 10 microns (PM₁₀), yesterday there were no exceedances of the daily limit value, although today there is an upward trend in the records of all stations, reflecting the incidence of the haze phenomenon, mainly in the stations of the east of the island. In this sense, the 24-hour moving average reached an unfavorable level this morning in La Grama (Breña Alta), and reasonably good levels in the rest of the stations.

As a precautionary measure, the PEVOLCA Plan continues to recommend to the general population the use of a FFP2 mask and to the sensitive or especially vulnerable population of Breña Alta, reduce all outdoor activities until the situation improves. All the updated information can be consulted on the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

The levels of gases detected during the night and at dawn in the evacuated areas have today prevented access from the south to residents and irrigators, neither by land nor by sea, reaching levels that are dangerous to health.

The wind regime foreseen for the next 48 hours will disperse the ash plume in a westerly direction and the scenario will continue to be favorable for aeronautical operations.

About housed in hotels, there are 553 people, five more than yesterday. Of the total, 407 are staying in Fuencaliente and 71 in Los Llanos de Aridane and 75 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

The PEVOLCA Management reminded visitors during the bridge that it is necessary to exercise extreme caution on the road and, if they travel through areas near the tracks, always wear a reflective vest to avoid accidents. Likewise, he also stressed the importance of complying with self-protection regulations to avoid COVID-19 infections.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and

decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

The eruptive activity of the NE flank, where the accumulation of pyroclasts gave rise to the formation of a cone with strombolian and effusive activity that emitted lava flows, has stopped. In the emission sources of the main cone, Strombolian activity has been concentrated in one of the sources located further to the SE, from where yesterday there was a wash that runs in a SW direction, towards Las Manchas, currently with little progress. The lava flows that were spilled in the past days in the Fronton area are practically inactive. Yesterday there was evidence of the existence of a fissure with central sinking in a NS direction, about 100 m away and to the S of the main building. No gases or superficial thermal anomalies were detected along the fissure.

The column height measured today was 1500 m, with a scattering cloud in the S-SW direction.

The prevalence of the NE wind continues with gusts that can reach 50-65 km / h mainly in the central ridge, El Paso and ends of the island of La Palma. At the upper levels up to 5500 m, component E will predominate. It is expected that the orientation of the ash plume and SO₂ will continue to be towards the W-SW from the eruptive focus. The expected disposition of the ash cloud represents a favorable scenario for aeronautical operations (these conditions are expected to continue for at least 48-72 hours). There is an intrusion of Saharan dust by the S of the archipelago. The entry of desert dust can produce an increase of PM₁₀ between about 20-50 µg / m³ in the stations of the air quality network.

Seismicity at intermediate depths has continued to decrease in the last 24 hours, being located in the same areas. The number of earthquakes at depths greater than 20 km remains low. The maximum magnitude has been 3.4 mbLg of an event recorded today, at 01:23, at a depth of 26 km. The tremor level is at low values with less variability. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

As for the deformation, it has partially reversed the inflation episode in the vicinity of Jedey (station LP03). Stability in the rest of the network with some stations showing slight deflation.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), recorded through the use of remote optical sensors type miniDOAS in a maritime mobile position during the yesterday (3/12) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of diffuse carbon dioxide (CO₂) emissions, associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), it continues to register stable values since last 11/15. These values are above the average value of the background levels (B) and yesterday (3/12) this diffuse emission was 4.7 times the average of the background levels (4.7xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydro-thermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During much of yesterday, the air quality values due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at reasonably good to fair levels at the Los Llanos de Aridane, Tazacorte and Puntagorda stations. Thus, although there are no exceedances of the hourly limit value (established at 350 µg / m³), these background values cause the average daily value (established at 125 µg / m³) to be exceeded in Los Llanos de Aridane and Puntagorda. During the night and early morning of today levels between reasonably good and regular continue to be registered in Los Llanos de Aridane, Tazacorte and Puntagorda; descending during the morning. In El Paso and Fuencaliente good levels are registered throughout the day.

With regard to particles smaller than 10 microns (PM10), yesterday there was an upward trend in the levels observed in the set of stations in the east of the island, with values between good and fair in all stations from noon. During the day yesterday there are no exceedances of the daily limit value (established at 50 µg / m³). During this morning, the upward trend in the records of all the stations is consolidated, reflecting the incidence of the haze phenomenon, mainly in the stations to the east of the island. Thus, the 24-hour moving average reached an unfavorable level this morning in La Grama, and reasonably good levels in the rest of the stations.

As a precautionary measure, in the Breña Alta area, for risk groups and sensitive populations, consider reducing all outdoor activities, and doing them indoors or postponing them until the air quality is good or reasonably good. For the general population, consider reducing prolonged and vigorous outdoor activities, especially if you have a cough, shortness of breath, or any other symptoms, and doing them indoors, or you can postpone them until air quality is good or reasonably good.

Consult the website of the Government of the Canary Islands for Air Quality:

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<https://www3.gobiernodecanarias.org/noticias/se-reactiva-una-colada-por-el-sur-de-montana-cogote-que-ocupa-nueva-superficie/>

December 5th

The lava that flows from the new emission centers affects new housing surfaces in an already evacuated area



Gas levels have not allowed access to jobs in the southern zone, although the situation continues to be evaluated to enable the opening of other zones

The PEVOLCA Plan reminds visitors to exercise caution on the road and use reflective devices

The Plan Steering Committee appreciates the work carried out by the volunteers deployed in La Palma due to the emergency on this December 5, International Volunteer Day

The emission of lava that continues to flow through new fissures different from the original one was the focus of today's meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), led by the Minister of Public Administrations, Justice and Security, Julio Pérez, director of the Plan. The meeting also analyzed other observable parameters of the eruptive process on La Palma that maintain a downward trend, although the situation of instability continues due to surface feeding and gas levels.

In this sense, yesterday the gas levels did not allow access through the southern area and, last night, the recorded values have only advised allowing access to Jedey, so the situation continues to be monitored to evaluate the opening of the rest of the zones.

Regarding the evolution of the flows, the Technical Director, Miguel Ángel Morcuende, pointed out that the one that emerged yesterday from the north of the Cogote Mountain, which deviated slightly from the previous flows, runs through an area already evacuated, which does not imply taking measures additional Civil Protection vis-à-vis the population, although it has affected areas with a wide distribution of dwellings by moving towards the southwest of the lava emission points.

This wash has entered the boundary of the municipalities of Tazacorte and Los Llanos de Aridane, has joined the wash 9 and brings energy back to the lava delta, leaving an intermediate space where it has affected the homes that were in its course towards the delta and north of the new road that is being traced by the Department of Public Works, Transport and Housing of the Government of the Canary Islands.

The new emission points that have appeared in recent days at lower levels than the previous ones continue to provide lava not only in the southern area, but also in the central area of the streams, which are entering from and towards lava tubes, which they are reflected in runs 4 and 7.

In this regard, the spokesperson for the Scientific Committee, Carmen López, explained that the effusive focus located to the west of the main cone has been reactivated and the lava flows through volcanic tubes, which has several jameos, from which two streams flow westward. on previous casts. Regarding the emission centers associated with east-west fissures to the west of Cogote Mountain, he added that they have given rise to several very fluid and degassed flows, moving at high speed to the west, on previously unaffected terrain, and that They are currently near the cliff, in the Las Hoyas area.

The affected area is estimated at 1,155 hectares, 9 more than the data provided yesterday, with a maximum width of 3,350 meters, and the total extension of the lava deltas remains at 48.03 hectares.

Regarding infrastructure damage, the information provided by the Copernicus satellite puts approximately 2,897 buildings affected, of which

2,771 were completely destroyed and 126 partially affected or at risk. These data are not definitive and must be filtered with those of the Cadastre, which has not been updated today.

The decrease in the number of intermediate earthquakes continues and the deep seismicity remains at low values, as well as the tremor that continues at medium-low values, with greater stability.

On the other hand, in terms of deformation, the inflation episode in the vicinity of Jedey has completely reversed and general stability is maintained, with deflations and local variations.

During the night and early morning yesterday, air quality values due to sulfur dioxide (SO₂) remained at reasonably good to fair levels in Los Llanos de Aridane, Tazacorte and Puntagorda. During this morning there has been an increase in the levels registered in Puntagorda, with regular air quality at the moment. Good levels are recorded throughout the day in the rest of the stations.

With regard to particles smaller than 10 microns (PM₁₀), during yesterday's session the upward trend in the records of all stations was consolidated, reflecting the incidence of haze, so that the air quality index stood at unfavorable levels in all the island's stations since yesterday afternoon, a situation that persists today, and will foreseeably continue throughout the day. As a consequence of this situation, during the day yesterday the daily limit value was exceeded in all the island's stations.

As a precautionary measure, the PEVOLCA Plan continues to recommend to the general population the use of a FFP2 mask and to the sensitive or especially vulnerable population of Breña Alta, reduce all outdoor activities until the situation improves. All the updated information can be consulted on the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Regarding the meteorological situation, the northeast wind continues to blow, with gusts that can reach 55-70 kilometers per hour, mainly in the central ridge, El Paso and ends of the island of La Palma, and it is expected that the orientation of the ash plume and SO₂ continue to be towards the west-southwest from the eruptive focus, so the expected disposition of the

ash cloud represents a favorable scenario for aeronautical operations. In this sense, these conditions and the anticyclonic situation with east component flow are expected to continue, as well as the predominance of high atmospheric stability until next Tuesday or Wednesday.

About housed in hotels, there are 554 people, one more than yesterday. Of the total, 408 are staying in Fuencaliente, 71 in Los Llanos de Aridane and 75 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

The PEVOLCA Management reminded visitors during the upcoming holidays that it is necessary to exercise extreme caution on the road and, if they travel in an area near the tracks, always wear a reflective vest or visibility devices to avoid accidents.

Likewise, in commemoration of the International Volunteer Day being celebrated today, he also wanted to thank the work carried out by the different bodies of volunteers who are deployed in La Palma due to the emergency.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and

decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

In the emission sources of the main cone, strombolian activity has been concentrated in several of them. The effusive focus located W of the main cone has been reactivated. The lava flows through a volcanic tube, which has several jameos, from which 2 streams start that move west on previous streams. Yesterday at noon, several emission centers associated with EW fissures to the west of Montaña del Cogote were opened, from which several very fluid and degassed streams have started, moving at high speed towards the W, on previously unaffected terrain, currently reaching near the cliff in the Las Hoyas area.

The height of the degassing cloud measured today was 1400 m; the orthometric height of the cone 1124 m.

The NE wind continues to blow, with gusts that can reach 55-70 km / h, mainly in the central ridge, El Paso and ends of the island of La Palma. At the upper levels up to 5500 m, component E will predominate. It is expected that the orientation of the ash plume and SO₂ will continue to be towards the W-SW from the eruptive focus. The expected disposition of the ash cloud supposes a favorable scenario for aeronautical operations (these conditions are expected to continue for at least 48-72 hours). The anticyclonic situation is expected to continue with flow of component E and a predominance of high atmospheric stability until next Tuesday-Wednesday.

Seismicity at intermediate depths continues to be low in the last 24 hours, being located in the same areas. The number of earthquakes at depths greater than 20 km remains low. The maximum magnitude has been 3.4 mbLg of an event recorded yesterday, at 2:48 p.m., at a depth of 13 km. The level of tremor is between medium and low values with less variability. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

As for the deformation, it has totally reversed the inflation episode in the vicinity of Jedey (station LP03). Stability in the rest of the network with some stations showing slight deflation.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), recorded through the use of remote optical sensors type miniDOAS in a maritime mobile position during the yesterday (12/4) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of diffuse carbon dioxide (CO₂) emissions, associated with the 220 km² of the Cumbre Vieja volcanic ridge (non-visible emissions of volcanic gases), it continues to register stable values since last 11/15. These values are above the average value of the background levels (B) and during yesterday (12/4) this diffuse emission was 5.3 times the average of the background levels (5.3xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydro-thermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During the night and early morning yesterday, the air quality values due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at reasonably good to fair levels in Los Llanos de Aridane, Tazacorte and Puntagorda. These values decrease during the morning, good levels remain during the rest of the day in all seasons. There were no exceedances of the hourly limit value (established at 350 µg / m³) or daily (established at 125 µg / m³). During this morning there has been an increase in the levels registered in Puntagorda, with regular air quality at the moment. Good levels are recorded throughout the day in the rest of the stations.

With regard to particles smaller than 10 microns (PM₁₀), yesterday the upward trend in the records of all stations was consolidated, reflecting the incidence of the haze phenomenon with levels, so that the air quality index stood at unfavorable levels in all the island's stations since yesterday afternoon, a situation that persists today, and is expected to continue throughout the day. As a consequence of this situation, during the day

yesterday the daily limit value (established at 50 µg / m³) was exceeded in all the particle stations of the island.

As a precautionary measure, in all the island's populations, for risk groups and sensitive populations, consider reducing all outdoor activities, and doing them indoors or postponing them until the air quality is good or reasonably good. For the general population, consider reducing prolonged and vigorous outdoor activities, especially if you have a cough, shortness of breath, or any other symptoms, and doing them indoors, or you can postpone them until the air quality is good or reasonably good. good.

Consult the website of the Government of the Canary Islands for Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddel aire/ica.do>

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

<https://www3.gobiernodecanarias.org/noticias/la-lava-que-discurre-desde-los-nuevos-centros-de-emision-afecta-a-nueva-superficie-de-viviendas-en-zona-ya-evacuada/>

December 6th

The lava flow that arose to the west of Montaña Cogote spills onto the low island in the Las Hoyas area.



The cracks and fractures that appeared in the upper part of the secondary cone do not seem to compromise the stability of the building as they affect only the upper part of the last emission center.

This Monday the air quality levels with respect to SO₂ have been between good and reasonably good and those of PM₁₀, between good and fair

Today irrigators and owners have been able to access both from the south and from the north

The wash that arose the day before yesterday west of Cogote Mountain has reached the cliff in the Las Hoyas area and has spilled over the lower island. This advance of the flows and the

general analysis of the volcanic eruption of La Palma centered this Monday the meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), led by the Minister of Public Administrations , Justice and Security, Julio Pérez, director of the Plan.

Regarding the evolution of the runoffs, the Technical Director, Miguel Ángel Morcuende, commented that the lava flow is concentrated, apart from in the runoff that runs further south, in the central area, feeding runner 4, and also the lava delta formed due to the union of flows 1 and 2. On the contrary, at the moment, the north zone continues without registering movements.

The spokesperson for the Scientific Committee, Carmen López, explained at a press conference that from the effusive focus located to the west of the main cone, the lava flows through a volcanic tube, which has several jameos, from which two streams depart that move west over previous casts. The eruptive process shows episodes of increase and decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

Likewise, López pointed out that yesterday the existence of cracks and fractures was found in the upper part of the secondary cone that was formed in the northeast sector of the main building, which emitted the northeast flows. These cracks could evolve and produce landslides and collapses towards the interior of said crater, directed towards the northeast, with a rather local effect. However, the Scientific Committee has concluded that these cracks do not seem to compromise the stability of the building at the moment, affecting only the upper part of the last emission center, which currently has some sporadic pulses of strombolian activity and ash emission.

Because drone flights have not been able to operate in recent hours due to gusts of wind, there has been no update on the affected surface. Thus, the latest data available is about 1,155 hectares, with a maximum width of 3,350 meters, and the total extension of the lava deltas is maintained at 48.03 hectares. There is also no news in the data regarding damage to infrastructures.

The Scientific Committee also reported that, during a new bathymetry between lava deltas 1 and 4, shallows with depths of up to 4.5 meters not previously detected have been observed, 330 meters away from the coast and 320 meters north of the lava delta 1.

Regarding seismicity at intermediate depths, this, in the last 24 hours, remains low and the number of earthquakes at depths greater than 20 kilometers continues at very low values. In the last day, the maximum magnitude was 3.9 mbLg from an event recorded yesterday at 11:57 p.m., with intensity III-IV (EMS) and at a depth of 14 kilometers. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas. Meanwhile, the level of tremor is between medium and low values with less variability. On the other hand, in terms of deformation, there is no trend in the stations close to the eruptive center, while in the rest of the network there is stability,

Improve air quality

During yesterday, the air quality values due to sulfur dioxide (SO₂) remained at reasonably good and regular levels in Los Llanos de Aridane, Tazacorte and Puntagorda, decreasing throughout the afternoon and night without produce exceedances of the hourly limit value (established at 350 µg / m³). There was an exceedance of the daily limit value (established at 125 µg / m³) at the Puntagorda station. During this morning, air quality levels have been maintained between good and reasonably good in all the stations of the island.

With regard to particles smaller than 10 microns (PM₁₀), yesterday there was a general decrease in the registered values, due to a lower incidence of the haze phenomenon, so that the air quality index recovered levels between reasonably good and regular throughout throughout the afternoon and evening in all stations except La Grama, which continued at an unfavorable level and exceeded the daily limit value (established at 50 µg / m³). The downward trend continues throughout the early morning of today and during the morning air quality levels stabilized between good and fair in all stations on the island. All the updated information can be consulted on the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

On the other hand, Morcuende pointed out in the press conference that, although yesterday, in the restricted area, the levels of gases did not allow

access through the southern area, during the night, except in Puerto Naos and La Bombilla, they have not been registered initially dangerous values, so that this Monday they have been able to enter irrigators and owners from both the south and the north.

Regarding the meteorological situation, the northeast wind continues with gusts that could reach 55-70 kilometers per hour, mainly in the central ridge, El Paso and ends of the island of La Palma, although it will diminish today . In the upper levels, up to 5,500 meters, the eastern component to the southern component will predominate. It is anticipated that, in the event of ash emission, the orientation of the plume would be towards the west-northwest from the eruptive focus, so the expected arrangement of the ash cloud would represent a favorable scenario for aeronautical operations.

A humid air mass of subtropical-tropical origin is being produced from the south-southwest, which causes an increase in medium and high cloudiness and the probability of weak precipitation. In addition, a Saharan advection is expected from the African continent towards the Canary Islands during tomorrow, Tuesday, so the haze could increase the levels of PM10 on the island of La Palma.

About housed in hotels, there are 556 people, two more than yesterday. Of the total, 410 are staying in Fuencaliente, 71 in Los Llanos de Aridane and 75 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

The PEVOLCA Management reiterates the importance that people who come to see the volcano exercise extreme caution on the road and, if they travel through areas near the roads, they should always wear a reflective vest or visibility devices to avoid accidents. On the other hand, it urges compliance with sanitary measures to prevent COVID infections.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the

Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that simultaneously produce lava flows. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

From the effusive focus located to the W of the main cone, the lava flows through a volcanic tube, which has several jameos, from which 2 streams depart that move to the W over previous streams. The wash that arose to the W of Montaña del Cogote has reached the cliff in the Las Hoyas area and has spilled over the lower island.

Yesterday the existence of cracks and fractures was found in the upper part of the secondary cone that was formed in the northeastern sector of the main building that emitted the NE flows. These cracks could evolve and produce landslides and collapses towards the interior of said crater, directed towards the NE, with a rather local effect. They do not appear to compromise the stability of the building at the moment by affecting only the upper part of the last emission center, which currently has some sporadic pulses of strombolian activity and ash emission.

During a new bathymetry between lava deltas 1 and 4, shallows with depths of up to 4.5 m not previously detected have been observed, 330 m from the coast and 320 m N of lava delta 1.

The height of the ash cloud measured today has been 2500 m to the W; the orthometric height of the cone 1124 m.

The NE wind continues with gusts that can reach 55-70 km / h mainly in the central ridge, El Paso and ends of the island of La Palma, and that will diminish today. In the upper levels up to 5500 m, the component E to component S will predominate. It is expected that, in the event of ash emission, the orientation of the plume would be W-NW from the eruptive

focus. The expected disposition of the ash cloud represents a favorable scenario for aeronautical operations. A humid air mass of subtropical-tropical origin is taking place from the S-SW, which causes an increase in medium and high cloud cover and the probability of weak precipitation. In addition, a Saharan advection is expected from the African continent towards the Canary Islands during tomorrow, Tuesday.

Seismicity at intermediate depths continues to be low in the last 24 hours, being located in the same areas. The number of earthquakes at depths greater than 20 km remains very low. The maximum magnitude was 3.9 mbLg of an event recorded yesterday, at 23:57, direction III-IV (EMS), at a depth of 14 km. The level of tremor is between medium and low values with less variability. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformations, no trend in the stations near the eruptive center and stability in the rest of the network, except in a remote station, where slight deflation continues.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), recorded through the use of remote optical sensors type miniDOAS in a maritime mobile position yesterday (5 / 12) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to register a stable trend in its values since last 11/15 and reflecting an emission higher than the average value of the background levels (B). During yesterday (12/05) this diffuse emission was 6.1 times the average of the background levels (6.1xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10), a slight magmatic-hydrothermal fraction continues to be recorded in

carbon dioxide (CO₂) in the soil atmosphere, while this is practically nil in the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During yesterday the air quality values due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at reasonably good to fair levels in Los Llanos de Aridane, Tazacorte and Puntagorda, descending along afternoon and evening without exceeding the hourly limit value (established at 350 µg / m³). Yes, there is an excess of the daily limit value (established at 125 µg / m³) at the Puntagorda station. During this morning air quality levels are maintained between good and reasonably good in all the stations of the island.

With regard to particles smaller than 10 microns (PM₁₀), yesterday there was a general decrease in the registered values, due to a lower incidence of the haze phenomenon, so that the air quality index recovered levels between reasonably good and regular throughout the afternoon and evening in all stations except La Grama, which continued at an unfavorable level and exceeded the daily limit value (established at 50 µg / m³). The downward trend continues throughout the

At dawn today, and during the morning the air quality levels stabilize between good and regular in all the stations of the island.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

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<https://www3.gobiernodecanarias.org/noticias/la-colada-surgida-al-oeste-de-montana-cogote-se-derrama-sobre-la-isla-baja-en-la-zona-de-las-hoyas/>

December 7th

The improvement of gas values in the southern zone allows controlled access in Puerto Naos and Las Manchas



The surface has increased by 27 hectares and the lava that advances from Montaña Cogote has affected about 60 homes in the last 36 hours

Air quality levels for PM10 particles are unfavorable in the Aridane Valley and Breña Alta, and good and regular in sulfur dioxide in all seasons.

The main contribution of lava flows through the central area and deviates southwards, passing the Las Hoyas viewpoint.

The main supply of lava flows through lava tubes that flow through the central area, but diverting the bulk of the energy towards the southwest, in such a way that it seeks the path of stream 11 and connects to stream 9, feeding what is the primeval lava delta and filling gaps to the south. The evolution of the runoffs and the damage caused to the new surface

focused on Tuesday the meeting of the Steering Committee of the Special Plan for Civil Protection and Emergency Attention for Volcanic Risk of the Canary Islands (PEVOLCA), which was coordinated by the General Director of Safety and Emergencies , Gustavo Armas.

In this sense, the Technical Director, Miguel Ángel Morcuende, reported that the lava that advances towards the southwest of Montaña Cogote has destroyed some 60 homes in the last 36 hours, according to data from the Cadastre, in the area of the wash that has exceeded the Mirador de las Hoyas. The affected area has increased by 27 hectares compared to the last figure and is estimated at 1,182 hectares, with a maximum width of 3,350 meters, and more than 48 hectares of lava deltas.

Likewise, Morcuende pointed out that this Tuesday the gas levels in the restricted area have improved during the morning and gradual access has been allowed in Puerto Naos and Las Manchas to owners and irrigators, although the entrance to La Bombilla has remained closed.

Meanwhile, the damage to infrastructures since the beginning of the eruptive process, according to the information provided by the Copernicus satellite, amounts to approximately 3,039 buildings affected, of which 2,881 would be totally destroyed and 158 partially affected or at risk.

Regarding the evolution of the flows, the spokesperson for the Scientific Committee, Carmen López, explained at a press conference that from the effusive focus located to the west of the main cone, the lava flows through a volcanic tube, which has several jameos from which a lava flow starts. it moves west over previous streams, the front of which has overflowed to the southwest over previously unaffected areas, until it reached the north side of the stream that emerged west of the Cogote Mountain. This last stream, fed by a volcanic tube, falls down the cliff in the Las Hoyas area and spills onto the lower island.

Likewise, López pointed out that several emission centers are also active in the central and southeastern part of the main cone, with sporadic pulses of strombolian activity and ash emission. The cracks and fractures observed in previous days, in the upper part of the secondary cone, have not shown any relevant changes or modifications in the last hours.

In this sense, the spokesperson for the Scientific Committee added that a survey of the area is being carried out and it has been observed that there are a series of small cracks or fissures that border the previous flows and

from which these ephemeral flows have arisen. It is very fluid and degassed lava, with a high temperature, which is why it progresses very quickly.

Regarding seismicity, the intermediate remains low in the last 24 hours, while the number of earthquakes at depths greater than 20 kilometers remains very low. The maximum magnitude was 3.5 mbLg of an event recorded yesterday, at 08:23, direction III (EMS), at a depth of 14 kilometers. The tremor level is at low values with little variability.

Regarding deformations, there is still no clear trend in those near the eruptive center and stability in the rest of the network, except in a remote station with slight deflation.

During this day there have been no new exceedances of the air quality values due to sulfur dioxide (SO₂), and air quality levels remain between good and regular in all the stations of the island. Yesterday there were four new exceedances of the hourly limit value at the Puntagorda station, one of them above the alert threshold level and with air quality levels oscillating between regular and very unfavorable throughout the second half of the day. As a consequence, the daily limit value was exceeded at the Puntagorda station. In the rest of the stations, there were no exceedances of the reference limit values, and the air quality levels ranged between good and fair.

With regard to particles smaller than 10 microns (PM₁₀), during this morning the air quality levels for PM₁₀ particles have been unfavorable at the Los Llanos de Aridane and La Grama stations, and between reasonably good and fair in the rest of the stations. Starting at noon yesterday, there was a slight general increase in the registered values, mainly at the Los Llanos de Aridane and La Grama stations. In this last season the daily limit value was exceeded for the third consecutive day and its air quality index recovered unfavorable levels.

As a precautionary measure, it is recommended that the sensitive population and resistant groups residing in the area of Breña Alta, Valle de Aridane, Tijarafe and Puntagorda, reduce all outdoor activities and postpone them until the air quality is good or reasonably good. For the general population, the use of the FFP2 mask is remembered and it is advisable to reduce prolonged and vigorous activities outdoors, especially if you have a cough, shortness of breath or any other symptoms, and perform them

indoors, or you can postpone them until the air quality is good or reasonably good.

All the updated information can be consulted on the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Regarding the meteorological situation, the expected disposition of the ash cloud supposes a favorable scenario for aeronautical operations, although it is not ruled out that the plume may remain in the vicinity of the La Palma airport and it is affected during the afternoon- tonight. In addition, the entry of the Saharan air mass, during the afternoon today, could increase the levels of PM10 on the island of Palma due to the contribution of desert dust.

About housed in hotels, there are 557 people, one more than yesterday. Of the total, 411 are staying in Fuencaliente, 71 in Los Llanos de Aridane and 75 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and

decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

From the effusive focus located to the W of the main cone, the lava flows through a volcanic tube, which has several jameos, from which a stream that moves to the W over previous streams, whose front has overflowed to the SW over previously unaffected areas. , until reaching the north side of the stream that emerged to the W of the Cogote Mountain. This last stream, fed by a volcanic tube, currently falls down the cliff in the Las Hoyas area, and spills onto the lower island.

Several emission centers are also active in the central and southeastern part of the main cone, with sporadic pulses of strombolian activity and ash emission.

The cracks and fractures observed in previous days, in the upper part of the secondary cone, have not shown any relevant changes or modifications in the last hours.

The height of the ash cloud measured today has been 3000 m and is disposed towards the NE; the orthometric height of the main cone is 1123 m.

Winds from E to S component are expected from low levels up to 5500 m. The orientation of the ash plume (in case of ash emission) and SO₂ would be towards the ON from the eruptive focus. The expected disposition of the ash cloud supposes a favorable scenario for aeronautical operations, although it is not ruled out that the plume could remain in the vicinity of the La Palma airport and that it could be affected during the afternoon-evening of today (low probability) . Today medium and high cloud cover will prevail with the probability of weak precipitation. In addition, the entry of the Saharan air mass, during the afternoon of today, could increase the levels of PM₁₀ on the island of Palma due to the contribution of desert dust.

Seismicity at intermediate depths continues to be low in the last 24 hours, being located in the same areas. The number of earthquakes at depths greater than 20 km remains very low. The maximum magnitude was 3.5 mbLg of an event recorded yesterday, at 08:23, direction III (EMS), at a depth of 14 km. The tremor level is at low values with little variability. The current level of seismicity continues to indicate that it is possible that more

felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformations, no trend in the stations near the eruptive center and stability in the rest of the network, except in a remote station, where slight deflation continues.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), recorded through the use of remote optical sensors type miniDOAS in a maritime mobile position yesterday (6 / 12) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of non-visible volcanic gas emanations, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/6) this diffuse emission was 6.2 times the average of the background levels (6.2xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

During yesterday the air quality averages of sulfur dioxide (SO₂), a pollutant associated with the eruptive process, recorded four new exceedances of the hourly limit value at the Puntagorda station (established at 350 µg / m³), one of them above the alert threshold level (established at 500 µg / m³), and with air quality levels ranging from regular to very unfavorable throughout the second half of the day. As a consequence, there is also an excess of the daily limit value (established at 125 µg / m³) at the Puntagorda station. In the rest of the stations, there were no exceedances of the reference limit values, and the air quality levels ranged between good and fair. During this day there have been no new exceedances,

With regard to particles smaller than 10 microns (PM₁₀), as of yesterday noon there has been a slight general increase in the values recorded, mainly

at the Los Llanos de Aridane and La Grama stations. In this last season, the daily limit value (established at $50 \mu\text{g} / \text{m}^3$) was exceeded for the third consecutive day and its air quality index recovered unfavorable levels. During this morning, the levels of air quality due to PM10 particles are unfavorable in the Los Llanos de Aridane and La Grama stations, and between reasonably good and regular in the rest of the stations.

As a precautionary measure, in the area of Breña Alta, Valle de Aridane, Tijarafe and Puntagorda, for risk groups and sensitive populations, consider reducing all outdoor activities, and doing them indoors or postponing them until the air quality is good or reasonably good. For the general population, consider reducing prolonged and vigorous outdoor activities, especially if you have a cough, shortness of breath, or any other symptoms, and doing them indoors, or you can postpone them until air quality is good or reasonably good.

Consult the website of the Government of the Canary Islands for Air Quality:

[https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do\(*\)](https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do(*))

Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day.

December 8th

The lava flows through the central sector and the flow to the west of Montaña Cogote is practically inactive



Minister Félix Bolaños attended the PEVOLCA Steering Committee on La Palma today, where he described the work and cooperation of all administrations as exemplary

Intermediate seismicity remains low in the last 24 hours, while the number of earthquakes at depths greater than 20 kilometers continues at very low values

During this morning there has been a general increase in SO₂ concentrations at the stations on the west side of the island

The lava continues through the central sector of the streams, mainly through volcanic tubes, heading west but charging energy to stream number 9, while the one that emerged west of Cogote Mountain is practically inactive. The cracks and fractures observed in previous days in the upper part of the secondary cone have not shown any relevant changes or modifications in the last hours.

The situation of the runoffs, as well as the low seismicity and the levels of air quality are some of the issues that were analyzed today based on the report of the Scientific Committee at the meeting of the Steering Committee of the Special Plan for Civil Protection and Emergency Attention for Volcanic Risk of the Canary Islands (PEVOLCA), held in La Palma and directed by the Minister of Public Administrations, Justice and Security, Julio Pérez, and in which the Minister of the Presidency, Félix Bolaños, and the President of the Canary Islands were present , Ángel Víctor Torres.

Bolaños reiterated the absolute commitment of the Government of Spain to La Palma and its inhabitants, praised the work and collaboration of the different administrations, which he described as 'humbly exemplary' and assured that all administrations work with agility and speed so that the aid arrives in Record time. He stressed that the government's commitment will only end when total reconstruction is completed.

During the meeting, the PEVOLCA Steering Committee agreed to correct the delimitation of the evacuated area in Las Martelas, in the municipality of Los Llanos de Aridane, to facilitate access controls. In addition, they insisted on the need for visitors and inhabitants of the island to remember that the danger persists in the exclusion area and in evacuated areas, and it was stressed that the established safety regulations must be respected in any case and at all times. by the authorities to safeguard physical integrity, only being able to access these areas with the necessary permits.

The spokesperson for the Scientific Committee, Carmen López, explained that from the effusive focus located in the west of the main cone, the lava continues to flow through a volcanic tube, which has several jameos, from which two streams depart that move west over previous streams. . The most active, which converged on the stream that emerged to the west of Montaña Cogote (currently practically inactive), continues on the latter until reaching the cliff, falling on the low island in the area of Las Hoyas.

López explained that several emission centers are also active in the central and southeastern part of the main cone, with sporadic pulses of strombolian activity and ash emission. The cracks and fractures observed in previous days in the upper part of the secondary cone have not shown any relevant changes or modifications in the last hours.

The Technical Director of PEVOLCA, Miguel Ángel Morcuende, explained that the lava flows mainly through the central part of the streams, heading west and charging energy to stream number 9, mainly through lava tubes, which is gaining ground towards the south and the west.

The area affected by lava is estimated at 1,184 hectares, two more than in the last estimate, while the lava deltas remain at about 48 hectares as well as the maximum distance between exterior flows, which is still about 3,350 meters.

As for the damaged or destroyed buildings, according to data provided by the Cadastre, they are estimated at 1,628 buildings, 66 more than the latest data. Of these, some 1,304 are for residential use, 179 for agriculture, 74 for industrial use, 40 for leisure and hospitality, 15 for public use and 16 for other uses.

Regarding crops, the area affected by lava is calculated at 359.82 hectares, 9.43 more than in the last record. Of the total, 224.81 hectares are of banana trees, 62.34 of vineyards and 27.33 hectares of avocado trees. In addition, there are about 412 hectares of crops covered by the ashes and another 90 hectares approximately isolated by the lava and which cannot be accessed.

Regarding seismicity, the intermediate remains low in the last 24 hours, while the number of earthquakes at depths greater than 20 kilometers remains very low. The maximum magnitude was 4.0 mbLg of an event recorded yesterday, at 1:29 p.m., direction IV (EMS), at a depth of 14 kilometers. Meanwhile, the tremor level is at low values with little variability. The current level of seismicity continues to indicate that more felt earthquakes are possible, and intensities V-VI can be reached.

Regarding the deformations, this continues without tendency in the stations near the eruptive center and stability in the rest of the network.

During yesterday, the air quality measurements of sulfur dioxide (SO₂), a pollutant associated with the eruptive process, recorded the exceedances of the hourly limit value (established at 350 µg / m³) at the El Paso station at 1:00 p.m. and from the alert threshold (established at 500 µg / m³) at 2:00 pm in Los Llanos de Aridane, later the levels dropped to good and reasonably good levels. As a consequence, there is also an excess of the daily limit value (established at 125 µg / m³) at the Puntagorda and Los

Llanos de Aridane stations. In the rest of the stations, there were no exceedances of the reference limit values, and the air quality levels ranged between good and fair.

During this morning there has been a general increase in SO₂ concentrations at the stations on the west side of the island. Up to 11.00 a.m., four exceedances of the hourly limit value have been registered in Los Llanos de Aridane, of which two are above the alert threshold, reaching the extremely unfavorable level, one exceeding the alert threshold in Tazacorte and one exceeding the value limit in Puntagorda. In the rest of the stations they remain at good or reasonably good levels.

With regard to particles smaller than 10 microns (PM₁₀), yesterday there was a decrease in the concentrations registered in all the stations except in Los Llanos de Aridane, where the levels increased during midday reaching unfavorable levels and producing the exceeding the daily limit value (set at 50 µg / m³). At La Grama, unfavorable levels remained throughout the day, subsequently dropping to reasonably good levels. During this morning, the air quality levels for PM₁₀ particles are unfavorable in the Los Llanos de Aridane station and reasonably good in the rest.

As a precautionary measure, it is recommended that the sensitive population and resistant groups residing in the area of Breña Alta, Valle de Aridane, Tijarafe and Puntagorda, reduce all outdoor activities and postpone them until the air quality is good or reasonably good. For the general population, the use of the FFP2 mask is remembered and it is advisable to reduce prolonged and vigorous activities outdoors, especially if you have a cough, shortness of breath or any other symptoms, and perform them indoors, or you can postpone them until the air quality is good or reasonably good.

All the updated information can be consulted on the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Regarding the meteorological situation, during the next hours the wind from north to east is expected to predominate from low levels to 4,000 meters. The predicted wind configuration will predominantly orient the ash plume and SO₂ south and west from the eruptive focus. The expected

arrangement of the ash cloud supposes a favorable scenario for aeronautical operations, with the exception of the first half of today, when the wind in the lower-middle levels of the troposphere (around 3,000 meters) is variable and could there will be a dispersion of ashes towards the east slope, not ruling out that the La Palma airport may be affected.

For today and tomorrow, weak rainfall, mainly on the northern and eastern slopes of La Palma, which may be locally moderate and persistent for tomorrow. Starting tomorrow, the northeast wind will intensify with gusts that can reach 70 kilometers per hour, which is why yellow level warnings have been issued for maximum gust and for coastal phenomena.

About housed in hotels, there are 555 people, two less than yesterday. Of the total, 411 are staying in Fuencaliente, 69 in Los Llanos de Aridane and 75 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

From the effusive focus located in the W of the main cone, the lava continues to flow through a volcanic tube, which has several jameos, from which two streams depart that move to the W over previous streams. The most active, which converged on the stream that arose to the W of the Cogote Mountain (currently practically inactive), continues on the latter until reaching the cliff, falling on the low island in the Las Hoyas area. Emission centers in the central and southeastern part of the main cone, with sporadic pulses of strombolian activity and ash emission.

The cracks and fractures observed in previous days, in the upper part of the secondary cone, have not shown any relevant changes or modifications in the last hours.

The height of the eruptive column measured today has been 3700 m and is disposed towards the S-SE.

During the next few hours the wind from the N to E component is expected to predominate from low levels to 4000 m. The predicted wind configuration will predominantly orient the ash plume and SO₂ S and W from the eruptive focus. The expected arrangement of the ash cloud supposes a favorable scenario for aeronautical operations, with the exception of the first half of today, when the wind in the lower-middle levels of the troposphere (around 3000 m) is variable and could there will be a dispersion of ash towards slope E, not ruling out that La Palma airport may be affected. For today and tomorrow, N situation with weak rainfall, mainly on the N and E slopes of La Palma, which may be locally moderate and persistent for tomorrow. Starting tomorrow, the NE wind will intensify with gusts that can reach 70 km / h. Yellow level warnings have been issued for maximum gust and coastal phenomena (you can check the warnings and future updates at www.aemet.es).

Seismicity at intermediate depths continues to be low in the last 24 hours, being located in the same areas. The number of earthquakes at depths greater than 20 km remains very low. The maximum magnitude was 4.0 mbLg of an event recorded yesterday, at 13:29, direction IV (EMS), at a depth of 14 km. The tremor level is at low values with little variability. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformations, no trend in the stations near the eruptive center and stability in the rest of the network.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a land mobile position yesterday (7 / 12) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/7) this diffuse emission was 5.5 times the average of the background levels (5.5xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

During yesterday, the air quality measurements of sulfur dioxide (SO₂), a pollutant associated with the eruptive process, recorded the exceedances of the hourly limit value (established at 350 µg / m³) at the El Paso station at 1:00 p.m. 00 hours and the alert threshold (established at 500 µg / m³) at 14:00 in Los Llanos de Aridane, later the levels dropped to good and reasonably good levels. As a consequence, there is also an excess of the daily limit value (established at 125 µg / m³) at the Puntagorda and Los Llanos de Aridane stations. In the rest of the stations, there were no exceedances of the reference limit values, and the air quality levels ranged between good and fair.

During this morning there is a general increase in SO₂ concentrations at the stations on the west side of the island. Until 11:00 hours, four exceedances of the hourly limit have been registered in Los Llanos de Aridane, of which two are above the alert threshold, reaching the extremely unfavorable level, one exceeding the alert threshold in Tzacorte and one exceeding of the

limit value in Puntagorda. In the rest of the stations they remain at good or reasonably good levels.

With regard to particles smaller than 10 microns (PM10), yesterday there was a decrease in the concentrations registered in all the stations except in Los Llanos de Aridane, where the levels increased during midday reaching unfavorable levels and producing the exceeding the daily limit value (set at 50 µg / m³). In La Grama unfavorable levels were maintained throughout the day, subsequently dropping to reasonably good levels. During this morning, the air quality levels for PM10 particles are unfavorable in the Los Llanos de Aridane station and reasonably good in the rest.

Therefore, and as a precautionary measure, in the area of Los Llanos de Aridane, Tazacorte, El Paso, Tijarafe, Puntagorda, for risk groups and sensitive populations, consider reducing all outdoor activities, and doing them indoors or postpone them until air quality is good or reasonably good. For the general population, consider reducing prolonged and vigorous outdoor activities, especially if you have a cough, shortness of breath, or any other symptoms, and doing them indoors, or you can postpone them until air quality is good or reasonably good.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

December 9th

The absence of gases and the stagnation of the wash now allow the return of residents of Las Martelas



The rest of the evacuated areas continue to be constantly monitored, waiting for the air quality to improve and their neighbors to return as well.

Progress is being made in the procedures for the construction of a jetty in Puerto Naos, as well as for the reconstruction of several affected road sections

The residents of the area between Nicolás Brito País street and the Las Martelas de Abajo area, in the municipality of Los Llanos de Aridane, have been able to return to their homes this morning after the PEVOLCA Directorate ended, before the stagnation of the lava flow that runs further northwest and the absence of gases, the evacuation order that affected the population of this area. These residents must, at all times, follow the recommendations issued by the Plan's management regarding the ventilation of their homes and protection measures against the removal and cleaning of ashes.

The rest of the evacuated areas continue to be constantly monitored, waiting for the air quality to improve and their residents to also be able to return. This is the fundamental reason why restrictions are still maintained in the rest of the areas, in addition to the risk that some laundry could intercept these areas.

In this sense and based on the report of the Scientific Committee, the values recorded last night and this morning discouraged the entry of people into restricted areas.

In addition to these issues, at the meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), coordinated this morning by the General Director of Security and Emergencies of the Government of the Canary Islands, Gustavo Armas, gave an account of the progress in the procedures for the construction of a jetty that allows the maritime connection between Puerto Naos and Tazacorte, as well as the execution of whatever emergency works and procedures are necessary for the reconstruction of several sections of affected roads.

Likewise, those responsible for the security groups involved in this emergency pointed out at today's meeting that the security operation for the upcoming Christmas holidays is guaranteed.

Regarding the evolution of the streams, the Technical Director of the PEVOLCA Plan, Miguel Ángel Morcuende, reported that there is still a central feeding to practically the area closest to the stream 9, and from there it runs to the southwest. Most of the energy moves in the direction of the sea, mainly supported by lava tubes, and through the front area of the casting 9 where a small widening has occurred.

The route of the casting in the last hours has meant that the affected area remains at 1,184 hectares from yesterday and that the maximum distance between the exterior castings continues to be about 3,350 meters.

The number of people housed in hotels remains at 555, of which 411 are staying in Fuencaliente, 69 in Los Llanos de Aridane and 75 in Breña Baja. In addition, there are 43 dependent people cared for in insular health centers.

The spokesperson for the Scientific Committee, María José Blanco, explained that several emission centers are active in the central and southeastern part of the main cone, with sporadic pulses of strombolian activity and ash emission. The cracks and fractures in the upper part of the secondary cone have been modifying the morphology of this cone, producing small landslides towards its interior and adjacent craters.

Seismicity at intermediate depths remains low and continues to be recorded in the same areas. The number of earthquakes at depths greater than 20 kilometers remains low. The maximum magnitude was 3.6 mbLg of an event recorded yesterday, at 12:09 am and at a depth of 37 kilometers. The tremor level is at low values with little variability.

The emission of sulfur dioxide (SO₂) associated with the volcanic plume of the current eruptive process yesterday was high and the time series continues to reflect a downward trend since last September 23, at which time an extremely high emission was recorded.

The diffuse emission of carbon dioxide (CO₂) continues to reflect an emission higher than the average value of the background levels (B) and yesterday this diffuse emission was 5.6 times the average of the background levels (5.6xB). These diffuse fumes do not represent a danger to people.

Since last night and during the morning, an increase in the concentrations registered at the Puntagorda, Los Llanos de Aridane and Tazacorte stations has once again been observed, reaching regular levels of air quality. In the rest of the stations the levels remain good.

With regard to particles smaller than 10 microns (PM₁₀), yesterday a decrease in concentrations continued to be recorded in all stations except in Los Llanos de Aridane where, following the same dynamics as in previous days, levels increased during noon, but of low intensity, so the levels remained reasonably good in Los Llanos de Aridane and good in the rest of the stations. These values are maintained today.

In this regard, and as a precautionary measure, the PEVOLCA Directorate recommends that in the area of Los Llanos de Aridane, Tazacorte, El Paso, Tijarafe, Puntagorda, risk groups and the sensitive population reduce

energetic and / or prolonged activities in the outside. The general population can carry out their outdoor activities in a normal way, although you should watch for symptoms such as coughing, sore throat, shortness of breath, excessive fatigue or palpitations.

All the updated information can be consulted on the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

From the effusive focus located in the W of the main cone, the lava continues to flow through a volcanic tube, which has several jameos, from which two streams depart that move to the W over previous streams. The most active, which converged on the stream that arose to the W of the

Cogote Mountain (currently inactive), continues on the latter, falling on the low island in the Las Hoyas area.

Several emission centers are also active in the southeastern zone of the main cone, with sporadic pulses of strombolian activity and ash emission.

The cracks and fractures in the upper part of the secondary cone have been modifying the morphology of this cone, producing small landslides towards its interior and adjacent craters.

The height of the scattering cloud measured today has been 1700 m and is disposed towards the SW.

Prevalence of the NE wind from low to medium levels of the troposphere (from surface to about 4000 m). The ash and SO₂ plume is expected to orient SW from the eruptive focus. The expected disposition of the ash cloud represents a favorable scenario for aeronautical operations. For today and tomorrow, N situation with weak rainfall mainly on N and E slopes of La Palma which, during today's session, may be locally moderate and persistent. Wind from the NE with very strong gusts that can locally reach and exceed 70 km / h. Yellow level warnings have been issued for maximum gust and coastal phenomena (you can check the warnings and future updates at www.aemet.es). Late tomorrow Friday,

Seismicity at intermediate depths continues to be low in the last 24 hours, being located in the same areas. The number of earthquakes at depths greater than 20 km remains low. The maximum magnitude has been 3.6 mbLg of an event recorded yesterday, at 12:09, at a depth of 37 km. The tremor level is at low values with little variability. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformations, no trend in the stations near the eruptive center and stability in the rest of the network.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS

in a maritime mobile position yesterday (8 / 12) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of non-visible volcanic gas emanations, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/8) this diffuse emission was 5.6 times the average of the background levels (5.6xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

During yesterday the air quality measurements due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, registered a significant increase in the early hours of the morning with four exceedances of the hourly limit value (established at 350 µg / m³) in Los Llanos de Aridane, of which two were above the alert threshold (established at 500 µg / m³), reaching the extremely unfavorable level, exceeding the alert threshold in Tazacorte and exceeding the limit value in Puntagorda. Subsequently, the values decreased to good or reasonably good air quality levels, however, the daily limit value (established at 125 µg / m³) was eventually exceeded in Puntagorda and Los Llanos de Aridane.

During the night of yesterday and the morning of today, an increase in the concentrations registered at the Puntagorda, Los Llanos de Aridane and Tazacorte stations has once again been observed, reaching regular levels of air quality. In the rest of the stations the levels remain good.

With regard to particles smaller than 10 microns (PM₁₀), yesterday a decrease in concentrations continued to be recorded in all stations except in Los Llanos de Aridane where, following the same dynamics as in previous days, levels increased during the afternoon, but of low intensity, so the

levels remained reasonably good in Los Llanos de Aridane and good in the rest of the stations, levels that are maintained today.

December 10th

The number of earthquakes on La Palma falls to nine in the last 24 hours



The lava flows over previous flows, so the area affected by the eruption remains at 1,184 hectares yesterday

The high concentration of gases, at specific moments, continues to condition the entry of personnel working in the emergency to the exclusion and evacuated zones

The president of the Canary Islands, Ángel Víctor Torres, chaired the meeting of the PEVOLCA Steering Committee on La Palma again

The decrease in seismicity, with nine earthquakes in the last 24 hours, and the slight increase in the area affected by the lava -which runs on previous flows- have been the main novelties provided this morning at the meeting of the Steering Committee

of the Special Plan of Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) directed by the Minister of Public Administration , Justice and Security, Julio Pérez, and which was chaired, from La Palma, by the President of the Canary Islands, Ángel Víctor Torres.

Regarding seismicity, the spokesperson of the Scientific Committee, María José Blanco, explained that the one registered at intermediate depths and more than 20 kilometers is still low, although there is the possibility of more intense earthquakes that are felt by the population. In this regard, he pointed out that the maximum magnitude in the last hours has been 3.6 mbLg in an event registered today, at 11:08 a.m., at a depth of 10 kilometers and intensity III-IV (EMS scale). The tremor level is at low values with little variability.

Regarding the flows, the Technical Director of the PEVOLCA Plan, Miguel Ángel Morcuende, indicated that the lava continues to feed mainly the lower island and runs on previous flows, especially on the 9, since the 11 has little power. In addition, in the last few hours there have been no widening so the affected area remains at the same hectares as yesterday, about 1,184, the lava deltas in about 48 hectares and the maximum distance between the outer streams is still about 3,350 meters .

So far, the kilometers of roads affected by the eruption amount to about 72.75 kilometers, according to the latest record. In addition to the affections on the LP-2, LP-211, LP-212, LP-213 and LP-2132, it is estimated that more than 10 kilometers correspond to streets, slightly more than 2 kilometers to crossings and more than 49 kilometers to other roads.

Regarding air quality, Morcuende indicated that today the dynamics of previous days have been repeated when registering, at specific moments, high concentrations of gases, especially SO₂ and CO₂, in restricted access areas (exclusion or evacuated) to the south. This requires continuous monitoring of these spaces by the teams of the General Directorate of Security and Emergencies of the Government of the Canary Islands and the Military Emergency Unit, in order to guarantee the safety of the personnel working in the emergency at all times. and of the neighbors who are occasionally allowed access for cleaning and collection of belongings, but always conditioned to the presence of gases in those areas.

Based on the report of the Scientific Committee, María José Blanco pointed out that the air quality measurements due to the polluting sulfur dioxide (SO₂) associated with the eruptive process were maintained yesterday at levels between regular and unfavorable in the Los Llanos de Aridane stations, Tazacorte and Puntagorda. Good air quality levels were maintained in the rest of the stations.

The emission of sulfur dioxide (SO₂) associated with the plume yesterday was HIGH and the time series of the SO₂ emission continues to reflect a downward trend since September 23, when an extremely HIGH emission was recorded.

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂) continues to reflect an emission higher than the average value of the background levels (B) and yesterday it was 5.5 times the average of the background levels (5.5xB). These diffuse fumes do not represent a danger to people.

With regard to particles smaller than 10 microns (PM₁₀), the same trend has been maintained during the morning as in previous days with an increase in concentrations in all stations, but of low intensity, reaching very good levels in the station. from San Antonio and reasonably good elsewhere.

All the updated information can be consulted on the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

As regards the people housed, 547 continue in hotels, eight less than yesterday, of which 398 are staying in Fuencaliente, 69 in Los Llanos de Aridane and 80 in Breña Baja. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their

conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

From the effusive focus located in the W of the main cone, the lava continues to flow through a volcanic tube, which has several jameos, from which two streams depart that move to the W over previous streams. The most active, which converged on the stream that emerged to the W of the Cogote Mountain (currently inactive), continues on the latter, falling on the low island in the Las Hoyas area.

The other emission centers of the main cone are very little active, with very sporadic pulses of strombolian activity and ash emission and very intense gases.

The cracks and fractures in the upper part of the secondary cone have been modifying the morphology of this cone, producing small landslides towards its interior and adjacent craters.

The height of the volcanic plume has been 1200 m and is disposed towards the S-SW.

Prevalence of the NE wind to component E from low levels to about 4000 m. The volcanic plume is expected to orient SW from the eruptive

focus. The expected disposition of the ash cloud represents a favorable scenario for aeronautical operations. Today, probability of weak precipitations in slopes N and E of La Palma. Wind from the NE with very strong gusts that can locally reach and exceed 70 km / h. Yellow level warnings have been issued due to maximum gust and coastal phenomena (you can consult the warnings and future updates at www.aemet.es) that will end at the end of the day today. Late today, probability of haze that may increase PM10 values due to the contribution of desert dust.

Seismicity at intermediate depths continues to be low in the last 24 hours, being located in the same areas. The number of earthquakes at depths greater than 20 km remains low. The maximum magnitude was 3.6 mbLg of an event recorded today, at 11:08, at a depth of 10 km, intensity III-IV (EMS scale). The tremor level is at low values with little variability. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformations, no trend in the stations near the eruptive center and stability in the rest of the network.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a maritime mobile position yesterday (9 / 12) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of non-visible volcanic gas emanations, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/9) this diffuse emission was 5.5 times the average of the background levels (5.5xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in

the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

During yesterday the air quality measurements due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at levels between regular and unfavorable in the Los Llanos de Aridane, Tazacorte and Puntagorda stations, reaching the level very unfavorable in Los Llanos de Aridane at 6:00 p.m. Throughout the day there were six exceedances of the hourly limit value (established at 350 µg / m³) in Los Llanos de Aridane, one of which exceeded the alert threshold (established at 500 µg / m³), three exceedances in Puntagorda and one in Tazacorte. The values began to decrease in the early hours of the night until they reached good levels of air quality, however, As a consequence of the high concentrations recorded during the day, the daily limit value (established at 125 µg / m³) was exceeded in these three stations. Good air quality levels were maintained in the rest of the stations. During this morning, the registered values remain at good levels in all stations.

With regard to particles smaller than 10 microns (PM₁₀), yesterday there was a slight generalized increase in the concentrations registered in all the stations throughout the morning, being of greater intensity in the Los Llanos station in Aridane, shrinking during the afternoon and night of yesterday. The 24-hour moving average remained reasonably good in Los Llanos de Aridane and good in the rest of the stations. During this morning, following the dynamics of previous days, there is an increase in concentrations in all stations, but of low intensity, currently standing at good levels in the San Antonio station and reasonably good in the rest. .

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and

99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

December 11th

The danger due to the emanation of gases from the La Palma volcano persists despite the fact that the emission of lava is reduced



The lava flows over previous flows, specifically over the central and southern areas, without affecting the new surface.

The cracks and fractures in the upper part of the secondary cone have gradually modified its morphology due to small landslides towards its interior and adjacent craters

During the morning of this Saturday the data of the gas measurements have made it possible for irrigators and residents to access both from the north and from the south

The danger due to the emanation of gases from the La Palma volcano, which this Saturday celebrates 82 days of eruption since its beginning on September 19, focused today's meeting of the Steering Committee of the Special Plan for Civil Protection and Emergency Attention for Volcanic Risk de Canarias (PEVOLCA), directed by the Minister of Public Administrations, Justice and Security, Julio Pérez, director of the Plan.

At the press conference, the Technical Director, Miguel Ángel Morcuende, commented that at the moment the lava flows over previous flows, specifically over the central and southern areas, heading towards the area where flows 9 and 11 have joined, heading to the sea.

In this regard, the spokesperson for the Scientific Committee, María José Blanco, explained that the lava is flowing from the effusive focus located in the west of the main cone through a volcanic tube, which has several jameos, from which two streams flow towards the west over previous casts. The most active, which converged on the laundry that

It arose to the west of the Cogote Mountain —which is currently inactive—, it continues on the latter, precipitating, in two branches, on the low island in the Las Hoyas area.

Because the lava continues to flow towards the sea without affecting new surfaces, it continues to be estimated at 1,184 hectares, with a maximum width of 3,350 meters, and the total extension of the lava deltas is maintained at 48.03 hectares, of which 5.05 hectares correspond to the northernmost delta.

Regarding the damage to infrastructure, the information provided by the Copernicus satellite puts approximately 3,046 buildings affected, of which 2,896 would be totally destroyed and 150 partially affected or at risk. The Cadastre data, with which those of the satellite are filtered, have not been updated in the last hours.

María José Blanco also commented that the other emission centers of the main cone, at the moment, are very little active, with pulses of strombolian activity and ash emission (in the southeastern part) and very intense gases.

On the cracks and fractures in the upper part of the secondary cone (concentric and radial with respect to the cone), these have been modifying the morphology of this cone, producing small detachments towards its interior and adjacent craters.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process continues to reflect a downward trend since last September 23.

This Saturday the results of the gas measurements have made possible the access of irrigators and residents from both the north and the south. However, this situation is changing and with constant monitoring by the members of the Military Emergency Unit. The Technical Director recalled that, before entering the houses, the construction must be ventilated by opening doors and windows.

Low seismicity continues

The spokesperson for the Scientific Committee stressed that seismicity at intermediate depths, in the last 24 hours, remains low, while the number of earthquakes at depths greater than 20 kilometers remains at very low values. The maximum magnitude was 3.7 mbLg of an event recorded yesterday, at 21.57 hours, at a depth of 13 kilometers, intensity II-III (EMS scale). Regarding the level of tremor, Blanco pointed out that it is at low values with little variability.

On the other hand, in terms of deformation, this is without trend in the stations near the eruptive center and stability in the rest of the network.

During the night and early morning of yesterday, the air quality values due to the polluting sulfur dioxide (SO₂) associated with the eruptive process, remained at good or reasonably good levels in all the stations of the network, not producing any exceedance of the hourly or daily limit values. During the night from yesterday to today there has been a significant increase in concentrations at the Tzacorte station, reaching very unfavorable levels of air quality, with four exceedances of the hourly limit values (established at 350 µg / m³) between 03.00 and 0600 hours, of which three were above the alert threshold (established at 500 µg / m³) but not consecutively. Subsequently, the values have fallen to reasonably good

and fair levels. During this period, the values recorded in Puntagorda and Los Llanos have also increased, but with less intensity, reaching regular levels. In the rest of the stations, the air quality levels associated with SO₂ remain good.

With regard to particles smaller than 10 microns (PM₁₀), yesterday there was a generalized increase in the concentrations of all the stations throughout the day, coinciding with the entry of a Saharan air mass. As a consequence of this, the 24-hour moving average has been moving from good to reasonably good levels in all seasons. During this morning, all the stations are at reasonably good levels except Las Balsas and La Grama which are at regular levels. The presence of haze between Sunday and Monday is expected to increase PM₁₀ values due to the contribution of dust from the desert.

Therefore, and as a precautionary measure, in the areas of Puntagorda, Puntallana, San Andrés y Sauces, Barlovento and Breña Alta, for risk groups and sensitive populations, consider reducing energetic and / or prolonged activities abroad. For the general population, their outdoor activities can be carried out in a normal way. However, watch for symptoms such as coughing, sore throat, shortness of breath, excessive fatigue, or palpitations.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

The meteorological forecast foresees a predominance of the wind from the northeast to the eastern component, which means that the volcanic plume would continue oriented towards the south-southwest from the eruptive focus, which represents a favorable scenario for aeronautical operations.

Finally, on staying in hotels, there are 548 people, one more than yesterday. Of the total, 397 are staying in Fuencaliente, 69 in Los Llanos de Aridane and the remaining 82 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increase and decrease in strombolian activity, as well as pulses with phreatomagmatic activity.

From the effusive focus located in the W of the main cone, the lava continues to flow through a volcanic tube, which has several jameos, from which two streams depart that move to the W over previous streams. The most active, which converged on the stream that arose to the W of the Cogote Mountain (currently inactive), continues on the latter, falling, according to two branches, on the low island in the Las Hoyas area.

The other emission centers of the main cone are very little active, with pulses of strombolian activity and ash emission (in the southeastern part) and very intense gases.

The cracks and fractures in the upper part of the secondary cone (concentric and radial with respect to the cone) have been modifying the morphology of this cone, generating the sudden movement of some blocks limited by these cracks and producing small landslides towards its interior and adjacent craters. .

The height of the volcanic plume has been 2000 m and is disposed towards the W.

Prevalence of the NE wind to component E from low levels to about 5000 m. The volcanic plume is expected to continue to face S-SW from the eruptive focus. The expected disposition of the plume represents a favorable scenario for aeronautical operations. The presence of haze between Sunday and Monday is expected to increase PM10 values due to the contribution of desert dust. The atmospheric stability situation will continue for the next few days, until the end of Tuesday - Wednesday when the lowering of a cold air pocket in altura will produce a significant increase in instability in the archipelago's surroundings.

Seismicity at intermediate depths continues to be low in the last 24 hours, being located in the same areas. The number of earthquakes at depths greater than 20 km remains very low. The maximum magnitude was 3.7 mbLg of an event recorded yesterday, at 21:57, at a depth of 13 km, intensity II-III (EMS scale). The tremor level is at low values with little variability. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, being able to reach intensities V-VI (on the EMS intensity scale) and causing small landslides in sloping areas.

Regarding deformations, no trend in the stations near the eruptive center and stability in the rest of the network.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a maritime mobile position yesterday (10 / 12) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of non-visible volcanic gas emanations, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/10) this diffuse

emission was 6.8 times the average of the background levels (6.8xB). These diffuse fumes do not represent a danger to people, unless accumulations of CO₂ form in poorly ventilated depressions, displacing oxygen from the air and generating anoxic environments. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the carbon dioxide (CO₂) of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

During yesterday, air quality measurements due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at good or reasonably good levels in all network stations, with no exceedance of the limit values. schedules or daily. During the night from yesterday to today there has been a significant increase in concentrations at the Tazacorte station, reaching very unfavorable levels of air quality, with four exceedances of the hourly limit values (established at 350 µg / m³) between 3 00:00 and 06:00 hours, of which three were above the alert threshold (established at 500 µg / m³) but not consecutively, subsequently the values have fallen to reasonably good and regular levels. During this period, the values recorded in Puntagorda and Los Llanos have also increased, but with less intensity, reaching regular levels. In the rest of the stations, the air quality levels associated with SO₂ remain good.

With regard to particles smaller than 10 microns (PM₁₀), yesterday there was a generalized increase in the concentrations of all the stations throughout the day, coinciding with the entry of a Saharan air mass. As a consequence of this, the 24-hour moving average has been moving from good to reasonably good levels in all seasons. During this morning, all the stations are at reasonably good levels except Las Balsas and La Grama which are at regular levels.

Therefore, and as a precautionary measure, in the areas of Puntagorda, Puntallana, San Andrés y Sauces, Barlovento and Breña Alta, for risk groups and sensitive populations, consider reducing energetic and / or prolonged activities abroad. For the general population, their outdoor activities can be carried out in a normal way. However, watch for symptoms such as coughing, sore throat, shortness of breath, excessive fatigue, or palpitations.

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December 12th

This Sunday there was a circumstantial intensification of the tremor signal



The high values of gases make it impossible to access the southern area of the flows to guarantee safety

There has been a small overflow to the north of the pre-existing flow, which runs over the previous ones.

The expected disposition of the ash cloud supposes a favorable scenario for aeronautical operations

The high values of gases continue to hinder the access of neighbors and personnel of the emergency device to the evacuated area of the south of the coladas due to the danger they represent for the physical integrity of the people. The presence of gases, which are permanently monitored by the UME, as well as the circumstantial intensification of the volcanic tremor signal, registered around 1:00 p.m. this Sunday, centered the meeting of the Steering Committee of the Special Plan for Civil Protection and Attention of Emergencies by Volcanic Risk of the Canary Islands (PEVOLCA), that today was coordinated by the general director of Security and Emergencies of the Government of the Canary Islands, Gustavo Armas.

Regarding the presence of gases, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, explained that in the northern zone certain pulses or growth of SO₂ have been observed in Los Llanos de Aridane, Tazacorte or Puntagorda, pulses, he specified, of light duration, and the stations are giving fair to good results going through intermediate phases.

However, he stressed that in the southern area -which is evacuated- there are many problems related to sulfur dioxide, carbon monoxide and diffuse carbon dioxide emanation, a dynamic that has been repeated and makes it impossible for most of the days that you can access different neighborhoods, especially Las Manchas, Las Norias or La Bombilla.

In this regard, the spokesperson for the Scientific Committee, María José Blanco, explained that in the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels, and yesterday this diffuse emission was 6.9 times the average of the background levels.

Blanco said that in some specific areas of Cumbre Vieja these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flow are recorded in areas not very well ventilated and / or at altitudes below one meter of the soil as a consequence of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. Specifically, in

the La Bombilla area, relatively high values of diffuse flux of CO₂ have recently been recorded and the presence of dead birds has been observed.

Regarding the quality of the air due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, during the night from yesterday to today there has been an increase in the values in the stations of Los Llanos de Aridane, Puntagorda and Tazacorte, reaching very unfavorable levels in Los Llanos de Aridane with four exceedances of the hourly limit value, one of them above the alert threshold at 3 in the morning; two exceedances of the hourly limit in Tazacorte and one in Puntagorda. In the early hours of the morning, the values have fallen to reasonably good and regular levels at these stations, however, around 12:00 hours they were on the rise. Good levels are maintained in the rest of the stations.

María José Blanco also commented that at the closing of the scientific report, around 1:00 p.m., strong intensification pulses were recorded in the volcanic tremor signal, accompanied by the emission of ash, continuous sound and ejection of volcanic bombs in the east slope of the cone, as well as a small overflow to the north of the pre-existing runoff, which runs over previous runs. Although later both the tremor and the ash emission ceased, permanent monitoring continues.

Morcuende indicated that before the tremor and overflow to the north of the preexisting streams intensified, the energy from the cone flowed through stream 9, with a slight widening to the south and west in front of it.

In this regard, Blanco added that the lava continues to flow mainly from the effusive focus located to the west of the main cone through a volcanic tube, which has several jameos, from which two streams depart that move west over previous streams. The most active, which converged on the stream that arose to the west of the Cogote Mountain - which is currently inactive - continues on the latter, falling, in two branches, on the lower island in the Las Hoyas area. From this more active stream some lobes emerge that move southward, invading previously unaffected areas in the Las Norias area.

Regarding air quality with respect to particles smaller than 10 microns (PM₁₀), yesterday the concentrations recorded in all stations, associated with the entry of a Saharan air mass, were maintained, these values were in

descent during the afternoon of yesterday and the morning of today. As a consequence of this, the 24-hour moving average has been moving from regular levels in Las Balsas and La Grama to reasonably good levels and in the rest of the stations it remains at reasonably good and good levels.

As a precautionary measure, in the Puntagorda area, for risk groups and sensitive populations, consider reducing vigorous and / or prolonged activities outdoors. For the general population, their outdoor activities can be carried out in a normal way. However, watch for symptoms such as coughing, sore throat, shortness of breath, excessive fatigue, or palpitations.

Citizens are recommended to consult the website of the Government of the Canary Islands on Air Quality:
<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Seismicity and deformations

Regarding seismicity, Blanco pointed out that the number of intermediate earthquakes remains low, and those registered at depths greater than 20 kilometers remain at very low values. Regarding deformations, it continues without a trend in the stations near the eruptive center and with stability in the rest of the network.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process, continues to reflect a downward trend since last September 23.

With regard to the meteorological situation, the wind continues from the northeast to the eastern component from low levels to about 5000 meters, so it is expected that the volcanic plume will continue oriented towards the south and southeast from the eruptive focus. The expected disposition of the ash cloud supposes a favorable scenario for aeronautical operations and this situation is likely to continue until next Tuesday when a turn in the wind to the west component is expected. During Monday, presence of haze that can increase PM₁₀ values due to the contribution of desert dust

As for buildings damaged or destroyed, according to data provided by the Cadastre, it is estimated at 1,642 buildings, 14 more than the latest available

data. Of these, some 1,314 are for residential use, 189 for agriculture, 74 for industrial use, 43 for leisure and hospitality, 15 for public use and 16 for other uses.

About housed in hotels, there are 547 people. Of the total, 396 are staying in Fuencaliente, 69 in Los Llanos de Aridane and the remaining 82 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increased and decreased strombolian activity, as well as pulses with phreatomagmatic activity.

From the effusive focus located in the W of the main cone, the lava continues to flow through a volcanic tube, which has several jameos, from which two streams depart that move to the W over previous streams. The most active, which converged on the stream that emerged to the W of the Cogote Mountain (currently inactive), continues on the latter, falling, according to two branches, on the low island in the Las Hoyas area. From

this more active flow some lobes arise that move towards the South invading previously unaffected areas in the Las Norias area.

The other emission centers of the main cone are very little active, with pulses of strombolian activity and ash emission (in the southeastern part) and very intense gases.

The cracks and fractures in the upper part of the secondary cone (concentric and radial with respect to the cone) have been modifying the morphology of this cone, generating the sudden movement of some blocks limited by these cracks and producing landslides towards its interior and adjacent craters.

The height of the volcanic plume has been 1400 m and is disposed towards the W-SW.

The wind continues from the NE to component E from low levels to about 5000 m. The volcanic plume is expected to continue to face S-SW from the eruptive focus. The expected disposition of the ash cloud supposes a favorable scenario for aeronautical operations and this situation is likely to continue until next Tuesday when a turn in the wind to component O is expected. During Monday, the presence of haze that may increase the PM10 values due to the contribution of desert dust. The situation of atmospheric stability will continue for the next few days until the end of Tuesday - Wednesday when the lowering of a cold air pocket in atura will produce a significant increase in instability in the archipelago's surroundings. By the end of Tuesday rainfall may be locally moderate, mainly in the N and E of La Palma. There is high uncertainty regarding the location of the cold core for Wednesday, and at the moment the numerical prediction models indicate that the most active area would affect the NE of Tenerife.

Seismicity at intermediate depths continues to be low in the last 24 hours, being located in the same areas. The number of earthquakes at depths greater than 20 km remains very low. The maximum magnitude has been 3.2 mbLg of an event recorded at 05:21 today, at a depth of 36 km. The tremor level is at low values with little variability. The current level of

seismicity continues to indicate that it is possible that more felt earthquakes may occur, with intensities higher than those of the last few days.

Regarding deformations, no trend in the stations near the eruptive center and stability in the rest of the network.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), recorded through the use of remote optical sensors type miniDOAS in a maritime mobile position yesterday (11 / 12) was HIGH. The time series of sulfur dioxide (SO₂) emissions continues to reflect a downward trend since last 9/23, when an extremely HIGH sulfur dioxide (SO₂) emission was recorded.

In the case of non-visible volcanic gas emanations, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/11) this diffuse emission was 6.9 times the average of the background levels (6.9 x B). This diffuse emission is estimated after evaluating and integrating hundreds of diffuse CO₂ flow measurements that are carried out at observation points distributed throughout the volcanic building of Cumbre Vieja. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flux are registered in areas that are not very well ventilated and / or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. Specifically in the La Bombilla area, relatively high values of diffuse CO₂ flux have recently been recorded and the presence of dead birds has been observed. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, ranged between good levels and a very unfavorable level in Tazacorte during the early hours of the 10th to the 11th. with four exceedances of the hourly limit value (established at 350 µg

/ m³) between 3:00 and 06:00 hours, three of them above the alert threshold (established at 500 µg / m³), later the values were in decline and remained at good to fair levels. During yesterday the values in Puntagorda were also on the rise, reaching unfavorable levels, with three exceedances of the hourly limit values between 3:00 p.m. and 5:00 p.m. In Los Llanos de Aridane the levels ranged between fair and good until early at night, moment in which the values began to rise reaching unfavorable levels at 9:00 p.m. Due to all of the above, the daily limit value (established at 125 µg / m³) was exceeded yesterday at the Tazacorte, Los Llanos de Aridane and Puntagorda stations. In the rest of the stations, the air quality levels associated with SO₂ remained between good and reasonably good.

During the night from yesterday to today, an increase in SO₂ values was once again recorded at the Los Llanos de Aridane, Puntagorda and Tazacorte stations, reaching very unfavorable levels in Los Llanos de Aridane with four exceedances of the hourly limit value, one of them above the alert threshold at 3 in the morning, two exceedances of the hourly limit in Tazacorte and one in Puntagorda. In the early hours of the morning the values have fallen to reasonably good and regular levels in these stations, however, at the moment they are on the rise. Good levels are maintained in the rest of the stations.

With regard to particles smaller than 10 microns (PM₁₀), yesterday the concentrations registered in all the stations were maintained, associated with the entry of a Saharan air mass, these values were decreasing during the afternoon of yesterday and this morning. As a consequence of this, the 24-hour moving average has been moving from regular levels in Las Balsas and La Grama to reasonably good levels and in the rest of the stations it remains at reasonably good and good levels.

Therefore, and as a precautionary measure, in the Puntagorda area, for risk groups and sensitive populations, consider reducing vigorous and / or prolonged activities outdoors. For the general population, their outdoor activities can be carried out in a normal way. However, watch for symptoms such as coughing, sore throat, shortness of breath, excessive fatigue, or palpitations.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

At the time of writing this report, strong intensification pulses are registered in the volcanic tremor signal, which is accompanied by ash emission, continuous sound and ejection of volcanic bombs on the eastern slope of the cone, as well as a small overflow towards the north of the pre-existing cast, which runs over previous casts.

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day.

December 13th

Sulfur dioxide levels forced this morning to confine the municipalities of the Aridane Valley



The improvement in the values allowed the Civil Protection order to end at 1:00 p.m., although permanent surveillance is maintained

The most active streams circulate through the central area with considerable flow, with an overflow in Las Norias that invades unoccupied land

Seismicity at intermediate depths remains low and deep seismicity continues at very low values

The weather forecast is unfavorable for aeronautical operations

The high levels of air quality in sulfur dioxide forced this morning to confine the population of the municipalities of Los Llanos de Aridane, El Paso and Tazacorte. This Civil Protection measure, which came into force at 8:45 a.m. and ended at 1:00 p.m. when the values at these stations improved, focused today's meeting of the Steering Committee of the Special Plan for Civil Protection and Emergency Attention for the Canary Islands Volcanic Risk (PEVOLCA), which was directed by the Minister of Public Administrations, Justice and Security, Julio Pérez, director of the Plan.

85 days after the eruption on La Palma, the Steering Committee also monitored the progress of the most active streams that circulate through the central area with considerable flow, with an overflow of lava in the area of Las Norias, between streams, which invades previously unoccupied land.

With regard to air quality, the Technical Director of PEVOLCA, Miguel Ángel Morcuende, explained that sulfur dioxide (SO₂) reached extremely unfavorable values in the three municipalities of the Aridane Valley in the first hours of today, which forced the issuance of a confinement order so that the population stayed inside the houses and avoided displacement. This measure also included students who were already in educational centers, transferring the activity to the interior of them to guarantee their safety at all times, as established in the School Action Plan against emissions from volcanic activity.

In this regard, the spokesperson for the Scientific Committee, María José Blanco, pointed out the increase in SO₂ during this morning at the Los Llanos de Aridane, El Paso and Tazacorte stations, reaching extremely unfavorable levels, and said that the highest levels have been recorded. values, with an hourly average of 2,593 µg / m³ at 9:00 am in El Paso. As of 11:00 hours, the alert threshold had been exceeded five times in El Paso and Los Llanos de Aridane and four times in Tazacorte.

With regard to particles smaller than 10 microns (PM₁₀), in the course of the morning there was a slight increase in the concentrations of PM₁₀ particles in Los Llanos de Aridane and El Pilar, moving the moving average to reasonably good levels. In the rest of the stations, the levels remain good.

Citizens are recommended to consult the website of the Government of the Canary Islands on Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Regarding the flows, the spokesperson for the Scientific Committee indicated that several eruptive pulses were produced yesterday, with strombolian activity, generating an eruptive column that reached 6,000 meters with the emission of pyroclasts (in size from ash to bombs that reached at distances of up to 500 meters from the emitting center, and the closest ones sometimes exceeding several meters in diameter). Among other novelties, he added that there have been new collapses in the main building that have enlarged the upper crater and that of the secondary cone located on the eastern flank and that the main lava delta continues to feed, at its southern end, in the area of Las Hoyas.

In this sense, the PEVOLCA Technical Director added that although most of the food flows through the central areas and feeds the laundry 9 that pours on the beach of El Charcón, in the last 24 hours there have been spills in the Norias, filling 'islands' between runs 9 and 11.

The affected area is estimated at approximately 1,193 hectares, with a maximum stream width of 3,350 meters. The lava deltas maintain an area of 48.02 hectares.

Observable parameters

Regarding seismicity, Blanco pointed out that it remains low in the last 24 hours at intermediate depths and that the number of earthquakes at depths greater than 20 kilometers remains at very low values. The maximum magnitude has been 3.0 mbLg of an event recorded at 06:22 today, at a depth of 37 kilometers.

In the last 24 hours the tremor has had a very unstable behavior with strong intensification pulses, descending from 1:10 p.m. to a minimum around 1:25 p.m., gradually beginning its ascent, recovering at 4:00 p.m. yesterday the level previous.

Regarding deformations, no trend in the stations near the eruptive center and stability in the rest of the network.

Regarding the meteorological situation, it is expected that the forecast of the winds orients the volcanic plume slightly towards the S-SE today and turns towards the E starting at dawn. The above would suppose an unfavorable scenario for aeronautical operations as of the next morning (as long as the emission of ash by the volcano continues). As of this afternoon, the presence of haze is expected that may increase PM10 values due to the contribution of desert dust. For the end of tomorrow and for Wednesday the precipitations will be able to be locally moderate mainly in the N and E. The level of snow will be around 2,200 meters.

About housed in hotels, there is no variation compared to yesterday. 547 people remain, of which 396 are staying in Fuencaliente, 69 in Los Llanos de Aridane and 82 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The fissure eruption continues to show a strombolian mechanism, that is, a mechanism of a mixed nature, with phases of variable explosiveness that produce pyroclastic deposits and effusive phases that produce lava flows, simultaneously. The eruptive process shows episodes of increased and

decreased strombolian activity, as well as pulses with phreatomagmatic activity.

During yesterday, several eruptive pulses were produced, the most intense at 12:00 and 17:30 approximately, with strombolian activity, generating an eruptive column that reached 6000 m with emission of pyroclasts (in size from ash to bombs that they reached distances of up to 500 m from the emitting center, and sometimes the nearest ones exceeding several meters in diameter). Between 1:00 p.m. and 5:00 p.m., there was a cessation of visible activity, after which it restarted again, with less intensity. New collapses have occurred in the main building that have enlarged the upper crater and that of the secondary cone located on the eastern flank. The most active streams circulate through the central area with considerable flow, producing an overflow in the Las Norias area that invades land not previously occupied by lavas.

The height of the volcanic plume has been 4200 m and is disposed towards the SE.

Predominance of wind from component E to component N with height. It is expected that during the next morning the wind will turn to component O in general for all the low and medium-low levels of the troposphere (from 500 to 5000 m). The volcanic plume is expected to orient slightly S-SE today and would turn E from early morning. The foregoing would suppose an unfavorable scenario for aeronautical operations as of the next morning (as long as the emission of ash from the volcano continues). As of this afternoon, presence of haze that may increase PM10 values due to the contribution of desert dust. For the end of tomorrow and for Wednesday the precipitations will be able to be locally moderate mainly in the N and E.

Seismicity at intermediate depths continues to be low in the last 24 hours, being located in the same areas. The number of earthquakes at depths greater than 20 km remains very low. The maximum magnitude has been 3.0 mbLg of an event recorded at 06:22 today, at a depth of 37 km. The current level of seismicity continues to indicate that it is possible that more felt earthquakes may occur, with intensities higher than those of the last few days.

In the last 24 hours the tremor has had a very unstable behavior with strong intensification pulses, descending from 1:10 p.m. to a minimum around 1:25 p.m., gradually beginning its ascent, recovering at 4:00 p.m. the previous level.

Regarding deformations, no trend in the stations near the eruptive center and stability in the rest of the network.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a maritime mobile position yesterday (12 / 12) was HIGH. The SO₂ emission time series continues to reflect a downward trend since last 9/23, when extremely HIGH SO₂ emission was recorded.

In the case of non-visible volcanic gas emanations, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/12) this diffuse emission was 6.9 times the average of the background levels (6.9xB). This diffuse emission is estimated after evaluating and integrating hundreds of diffuse CO₂ flow measurements that are carried out at observation points distributed throughout the volcanic building of Cumbre Vieja. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flux are registered in areas that are not very well ventilated and / or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at

the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, ranged between good levels and very unfavorable levels in Los Llanos de Aridane. During the early morning hours of the 11th to the 12th in this station there were four exceedances of the hourly limit value (established at 350 µg / m³) between 1:00 and 04:00 hours, one of them above the alert threshold (established at 500 µg / m³), later the values were decreasing and remained at levels between good and fair. In that period, the values in Tazacorte were also on the rise, with two exceedances of the hourly limit value, and in Puntagorda, with one exceedance of said limit value. Due to all of the above, the daily limit value (established at 125 µg / m³) was exceeded yesterday at the Los Llanos de Aridane and Puntagorda stations. In the rest of the stations, the air quality levels associated with SO₂ remained between good and reasonably good.

During the morning of today an increase in the values of SO₂ of great intensity is being registered. This increase began at 07:00 hours at the Los Llanos de Aridane, El Paso and Tazacorte stations, reaching extremely unfavorable levels in all of them. The highest values have been recorded to date, with an hourly average of 2,593 µg / m³ at 9:00 a.m. in El Paso. So far (11:00 am) the alert threshold has been exceeded five times in El Paso and Los Llanos de Aridane and four times in Tazacorte. In Puntagorda, the values began to rise at 08:00, reaching a very unfavorable level at 10:00 with two exceedances of the alert threshold. On this occasion the event has had an influence on the eastern slope of the island, the hourly limit value being exceeded at the El Pilar station (in Santa Cruz de La Palma) at 10:00 am. In the rest of the stations the levels remain good.

With regard to particles smaller than 10 microns (PM₁₀), yesterday the concentrations registered in all the stations were slightly reduced compared to the previous days. As a consequence of this, the 24 hour moving average has been moving from reasonably good levels to good levels. During this morning there is an increase, not very significant for the moment, in the concentrations of PM₁₀ particles in Los Llanos de Aridane and El Pilar, moving the moving average to reasonably good levels. In the rest of the stations the levels remain good.

Follow the instructions of the Public Health and Civil Protection authorities. Check the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.d>
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(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

PEVOLCA disseminates the Access Protocol to restricted areas for the knowledge of users



The document compiles all the regulations for this purpose that have been applied since the beginning of the emergency

The Directorate of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) disseminates the Protocol of access to the area affected by the eruption of the La Palma volcano to facilitate its knowledge and use by users, in the same way This was done with the App that incorporates a QR code for controlled entry to restricted areas.

The document has compiled all the rules that have been applied since the beginning of the emergency to regulate control and access to evacuated and exclusion areas.

You can consult this Protocol by downloading this document:

[Access protocol to the area affected by the volcanic eruption \(PDF\)](#)

December 14th

Scientific Committee: "The decrease in observables seems to indicate signs of exhaustion of the eruptive process"



It adds that the activity "has decreased until it practically disappeared, although a new rebound cannot be ruled out" of the same, for which the maximum prudence of the population is requested

The tremor has ceased until it reaches background noise levels, which makes it possible to locate more intermediate but low-intensity earthquakes.

Good or reasonably good SO₂ levels are maintained in the morning at all air quality stations

Today the Scientific Committee informed the Steering Committee of the Special Plan for Civil Protection and Emergency Care for Volcanic Risk in the Canary Islands (PEVOLCA) that the decrease in observables, both direct on the surface, and those from surveillance networks, "seem indicate signs of exhaustion of the eruptive process, although a new upsurge in strombolian activity and emission of runoff cannot be ruled out ". The process has attenuated, presenting an almost non-existent tremor, without ground deformations and with low seismicity at intermediate and deep levels, but the sulfur dioxide values associated with the volcanic plume continue to be high.

In this sense, at the meeting of the Steering Committee, which was coordinated by the General Director of Security and Emergencies of the Government of the Canary Islands, Gustavo Armas, an appeal was made to the maximum prudence of the population because the emergency will not end when the volcano leaves to emit lava and all the Civil Protection measures must be maintained to continue guaranteeing the physical integrity of people.

In this regard, it was emphasized that vigilance is maintained on the presence of toxic gases in the exclusion zones and can only be accessed by following the access protocol to restricted areas of the PEVOLCA Plan, which compiles all the rules for this purpose that They have been applied since the beginning of the emergency, remembering that once the entry is authorized, it is necessary to ventilate the homes and garages well.

The Technical Director of PEVOLCA, Miguel Ángel Morcuende, explained that according to the scientists the eruptive activity has decreased until it practically disappears, remaining in this state during the morning, in which only a weaker fumarolic activity is visible than in previous days. This situation occurs after yesterday's episode, where there was a significant explosive phase with ash ejection accompanied by the fall of bombs, especially towards the north flank.

The SO₂ emission associated with the volcanic plume recorded yesterday was high, although the time series for the emission of sulfur dioxide continues to reflect a downward trend since last September 23, when an extremely high emission was recorded.

The flow of lavas also continues from the western base of the main cone, starting from volcanic tube leaks, although with a much decreased flow compared to yesterday. In the lava delta of the Las Hoyas area, the wash runs over previous lavas without new contributions to the sea.

In this regard, Miguel Ángel Morcuende pointed out that the contributions of lava are very weakened and flow mainly through the southwest of stream 9, with small spills in Montaña Cogote and Las Norias, where the thermal cameras show greater residual heat.

The affected area is estimated at approximately 1,195 hectares, with a maximum stream width of 3,350 meters. The lava deltas maintain an area of 48.02 hectares. No new data is provided from the Land Registry, which at the moment estimates 1,628 buildings destroyed, while the Copernicus satellite calculates approximately 3,063 buildings / buildings affected.

Regarding air quality, SO₂ levels during the morning today remain good in all stations, after the episode recorded yesterday where the situation was extremely unfavorable in the Aridane Valley and forced the confinement of three municipalities for a few hours. .

Regarding particles smaller than 10 microns (PM₁₀), the levels have increased in Los Llanos de Aridane, with unfavorable levels of air quality around 2:00 p.m., while in the rest of the stations they remain between reasonably good or good. Even so, and as a precautionary measure, in the area of Los Llanos de Aridane, Tazacorte and El Paso, for risk groups and sensitive populations it is recommended to reduce vigorous and / or prolonged activities outdoors and to use a FFP2 mask. The general population can carry out their outdoor activities in a normal way and update the information on the website of the Government of the Canary Islands:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.d>
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Regarding seismicity, the Scientific Committee pointed out that the tremor began to decrease yesterday afternoon, reaching background noise levels at night. Due to the cessation of the tremor, more seismicity is located in the intermediate zone in the magnitude range 1.1 to 3.2 mbLg -although around 10:15 am today there was an earthquake of 3.5 mbLg at 10 kilometers- but

Despite this increase in earthquake detection, seismicity at intermediate depths remains low and the number of earthquakes at depths greater than 20 kilometers remains very low.

Regarding deformations, there is stability, without a trend in the stations near the eruptive center and stability in the rest of the network that lasts for several days.

Regarding the meteorological situation, the dispersion foreseen for today and tomorrow of the volcanic plume towards the east-southeast and the wind regime constitute an unfavorable scenario for aeronautical operations. There is a probability of weak to moderate rainfall during the second half of the day and throughout the next few days, mainly affecting the north.

The number of housed in hotels amounts to 551 people, five more than yesterday. Of the total, 395 are staying in Fuencaliente, 69 in Los Llanos de Aridane and 87 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The decrease in both direct surface observables and those from surveillance networks seem to indicate signs of exhaustion of the eruptive

process, although a new upturn in strombolian activity and emission of streams cannot be ruled out.

Yesterday between 5:45 PM and 7:00 PM there was a major explosive phase with ash ejection accompanied by bomb drops, especially towards the north flank. After this episode, the eruptive activity has decreased to practically disappear, remaining in this state until today morning, in which only a weaker fumarolic activity is visible than in previous days. The flow of lavas also continues from the western base of the main cone, starting from volcanic tube leaks, although with a much decreased flow compared to yesterday. In the lava delta of the Las Hoyas area, the wash runs over previous lavas without new contributions to the sea.

The height of the volcanic ash scattering cloud has been 2200 m to the W-SW.

Synoptic flow of N with speeds of 10 km / h, intensifying up to 15-20 km / h. In the El Paso area, NOT with gusts of 30 km / h at the end of the day. On the west coast, breeze regime, prevailing the synoptic wind at the end. The wind progressively intensifies with height. Up to 1500 m it will be similar to the surface, but turning NW when ascending. Up to 3000 m, it will be NOT lazy intensifying at the end of the day. Between 3000 and 5000 m it will be more intense, between 30 and 50 km / h and turning O between 50 and 100 km / h. Slight thermal inversion at 1100 m with a dry and stable layer up to 4000 m. The dispersion forecast for today and tomorrow of the volcanic plume will be towards the E-SE with little displacement in low strata due to the light wind, but important in upper strata as a consequence of the intensification of the wind with height: unfavorable scenario for aeronautical operations. Probability of weak to moderate rainfall during the second half of the day and throughout the next few days, mainly affecting the north.

After an episode of great intensification of the tremor signal coinciding with the emission of pyroclasts and the formation of an important ash column, the tremor began to decrease from 20:00 yesterday (12/13) reaching noise levels of fund starting at 22:00, continuing until the closing time of this report. Due to the cessation of the tremor, more seismicity is located in the intermediate zone in the magnitude range 1.1 to 3.2 mbLg. Despite this

increase in the detection of earthquakes, seismicity at intermediate depths remains low in the last 24 h, being located in the same areas. The number of earthquakes at depths greater than 20 km remains very low. The current level of seismicity continues to indicate that more felt earthquakes are possible, being able to reach intensities higher than those of the last days. Regarding deformations, no trend in the stations near the eruptive center and stability in the rest of the network.

The emission of sulfur dioxide (SO₂), associated with the volcanic plume of the current eruptive process underway (visible emanations of volcanic gases), recorded through the use of remote optical sensors type miniDOAS in a maritime mobile position yesterday (13 / 12) was HIGH. The SO₂ emission time series continues to reflect a downward trend since last 9/23, when extremely HIGH SO₂ emission was recorded.

In the case of non-visible volcanic gas emanations, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/13) this diffuse emission was 7.9 times the average of the background levels (7.9xB). This diffuse emission is estimated after evaluating and integrating hundreds of diffuse CO₂ flow measurements that are carried out at observation points distributed throughout the volcanic building of Cumbre Vieja. In the La Bombilla area, these diffuse CO₂ emanations can represent a danger for people in areas that are not very well ventilated and / or at altitudes below one meter from the ground, as a consequence of the possible accumulation of CO₂ and decrease in oxygen (O₂) in the air, as long as high values of diffuse flux of CO₂ are registered. It cannot be ruled out that the same situation occurs in other areas of the Cumbre Vieja volcano. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. while this is practically nil in the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. while this is practically nil in the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During yesterday, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, exceeded extremely unfavorable levels in El Paso, Los Llanos de Aridane and Tazacorte, producing a very intense increase in the concentrations recorded. between 07:00 and 13:00. During this event the highest values were recorded so far in the area, with a maximum hourly average of 2,593 µg / m³ at 9:00 am in El Paso. The hourly limit value (established at 350 µg / m³) was exceeded on six occasions in Los Llanos de Aridane, five of them exceeding the alert threshold (established at 500 µg / m³), on six occasions in El Paso, two in Puntagorda and four in Tazacorte, all of them above the alert threshold. There was also an exceedance of the hourly limit value at 10: 00 at El Pilar station. After this event, the values fell until they were at good or reasonably good levels in all the stations, except in Puntagorda, which was between fair and good levels. As a consequence of all this, yesterday the daily limit value (established at 125 µg / m³) was exceeded in Los Llanos de Aridane, Tazacorte, Puntagorda and El Paso, with a daily average in this last station of 438 µg / m³, the largest daily log to date. In the rest of the stations the levels remained good. During this morning the good levels are maintained in all the stations. As a consequence of all this, yesterday the daily limit value (established at 125 µg / m³) was exceeded in Los Llanos de Aridane, Tazacorte, Puntagorda and El Paso, with a daily average in this last station of 438 µg / m³, the largest daily log to date. In the rest of the stations the levels remained good. During this morning the good levels are maintained in all the stations. As a consequence of all this, yesterday the daily limit value (established at 125 µg / m³) was exceeded in Los Llanos de Aridane, Tazacorte, Puntagorda and El Paso, with a daily average in this last station of 438 µg / m³, the largest daily log to date. In the rest of the stations the levels remained good. During this morning the good levels are maintained in all the stations.

With regard to particles smaller than 10 microns (PM₁₀), yesterday a slight generalized increase in the concentrations registered in all the stations was observed, with a peak of greater intensity in the early morning and late at night. at the Los Llanos de Aridane station. The 24-hour moving average moved from good to reasonably good levels in Los llanos de Aridane and El Pilar, in the rest it remained at good levels. During this morning there is an increase in concentrations in Los Llanos de Aridane, which at the moment is

at regular levels of air quality, in the rest of the stations they remain between reasonably good and good

Therefore, and as a precautionary measure, in the area of Los Llanos de Aridane, Tazacorte and El Paso, for risk groups and sensitive populations, consider reducing energetic and / or prolonged activities abroad. For the general population, their outdoor activities can be carried out in a normal way. However, watch for symptoms such as coughing, sore throat, shortness of breath, excessive fatigue, or palpitations. Check the website of the Government of the Canary Islands for Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

The Government of the Canary Islands already commits more than 110 million euros in aid for those affected by the La Palma volcano



The counselor Sebastián Franquis informs the Parliament of the actions that have already been implemented by the Executive to help the affected population, such as the purchase of more than one hundred homes, the payment of compensation to the primary sector or the payment of aid to freelancers or workers in ERTE

"It is time to rebuild, to move forward to recover La Palma," said Franquis, "we are aware that the challenges we face are real, serious and complicated. But we are confident in the future. We could never have prevented the eruption of the volcano, but we will know how to rebuild La Palma "

The Minister of Public Works, Transport and Housing of the Government of the Canary Islands, Sebastián Franquis, has appeared today in the Parliament of the Canary Islands to report on the actions that the Government of the Canary Islands is carrying out globally to meet the needs of the population affected by the La Palma volcano eruption, citizen assistance actions for which the regional Executive has already committed more than 110 million euros, in addition to another 240 million that the Government of Spain will contribute before the end of the year. Sebastián Franquis also opted to continue joining with the Government from all political forces to promote the reconstruction of La Palma once the volcanic emergency ends.

"Therefore, it is time to think, listen to each other, look at each other and move forward all together. It is time to rebuild, to move forward to recover La Palma ", Franquis said," what I ask of this House today is that they believe, that they truly believe. Not in the capacity of this Government, but in the recovery capacity of the palm tree society. We are aware that the challenges we face are real. They are serious and complicated. But we are confident in the future. Although trust does not mean that we do not have difficulties along the way. We could never have prevented the eruption of the volcano, but we will know how to rebuild La Palma ".

During his speech, the regional councilor made a brief review of the damages that to date the eruption of the volcano has caused to both private and public property, with nearly 1,200 hectares affected, more than 1,300 homes damaged or destroyed, 360 hectares of crops lost , in addition to livestock farms, warehouses, warehouses, health centers and schools.

"The evaluation of the damage caused by the eruption of the La Palma volcano to public and private assets, in addition to the intervention costs of the Autonomous Administration, and of the Cabildo and the palm city councils, stands at 842 million euros so far ", Assured Sebastián Franquis," but this volcano has also destroyed the work, memory, effort and illusion of thousands of palm trees and palm trees that have seen their life project disappear ".

The Canarian counselor explained that the Government has implemented numerous measures in order to meet five major objectives: prevention; safety; face the housing emergency, so that the most vulnerable families do not suffer from situations of distress; support measures for repairing the damage caused; and the protection of the productive fabric and employment.

In this sense, Franquis listed several of the measures that have already been put in place, such as the purchase of one hundred homes to temporarily house those who have lost their home, flats that will soon be joined by the acquisition of prefabricated homes, the payment of aid of 10,000 euros to families for the purchase of equipment, the investment of more than seven million euros in the purchase of three emergency desalination plants or the payment of 13 million euros in compensation to those affected in the primary sector.

"Ladies and gentlemen, helping workers, the self-employed, small and medium-sized companies, in short our productive fabric, has been another of our priorities," said Franquis, "for this reason, a line of aid was established for workers through ERTES, where 356 requests have already been resolved, benefiting 1,774 workers and the bases have been published in the Official Gazette of the Canary Islands (BOC) for the affected small and medium-sized companies to aspire to compensatory benefits for a total of 10 million euros. At the moment, more than 500 self-employed workers receive the benefit for cessation of activity and in addition, an Extraordinary Plan for Employment and Training La Palma is going to be launched for an amount of 63 million euros ".

Sebastián Franquis called for unity and cooperation among all political forces to work for the reconstruction of the island of La Palma once the volcanic emergency passes.

“The volcano has transformed the lives, societies and economies of the palm trees. The decisions we make today will determine the success of the recovery. It is time to chart a path to a more inclusive, sustainable and resilient future. And what should that path to that future mean? Hope and Opportunity. That is what The Reconstruction Plan of La Palma must consist of: In Hope and Opportunity ”, concluded Franquis.

December 15th

The Scientific Committee indicates that the parameters must be maintained for 10 days to terminate the eruption



The PEVOLCA Directorate reminds that the risk still exists and that Civil Protection measures, exclusion zones and evacuations are being fully maintained.

Today there is no record of lava flow from the western base of the main cone from spouts of volcanic tubes.

The SO₂ emission associated with the plume registers extremely low values

The level of air quality is unfavorable in PM₁₀ particles in Los Llanos de Aridane and good in the rest of the stations

The Scientific Committee today informed the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) that the absence of observables, both direct on the surface and those from surveillance systems, corroborates the signs of exhaustion of the eruptive process, but that in order to say that the eruptive process has ended, the recorded and observable data must be maintained at current levels for 10 days.

In this sense, the PEVOLCA Steering Committee, led by the Minister of Public Administrations, Justice and Security, Julio Pérez, has insisted on the need to transfer the population that although it seems that the end of the eruptive process is approaching, the risk, and for the moment the Civil Protection measures, which are maintained in their entirety, cannot be lifted. In this regard, the restrictions and control of access to the exclusion zone, the evacuations of the population and the specific recommendations of air quality to the population remain in force when the thresholds are exceeded.

PEVOLCA Technical Director, Miguel Ángel Morcuende, recalled that people who access the exclusion zones for ash cleaning must take precautions in the presence of toxic gases, especially the areas south of the emergency, such as Las Manchas. , Jedey, Las Norias or Puerto Naos, because the lava tongues continue to degas. In addition to ventilating the homes well before entering, residents should not access warehouses, garages or basements without being accompanied by security personnel with measuring devices and follow the access protocol to restricted areas of the PEVOLCA Plan at all times, which compiles all the rules for this purpose that have been applied since the beginning of the emergency.

Regarding the eruptive activity, the spokesperson for the Scientific Committee, María José Blanco, explained that there is no evidence of lava flow from the western base of the main cone, from volcanic tube spouts and that the lava flow has stopped. above in the lava delta in the Las Hoyas area. In addition, fumarolic activity is punctual and sporadic, concentrating in the area of the eruptive centers.

Despite this scenario of stability, the thermal images taken by the drones indicate that temperatures above 400 degrees Celsius persist in the wastes and that it will take time for them to lose that heat.

According to the IGME, the affected area is readjusted to approximately 1,198 hectares, although the figure increases to 1,221 depending on the consideration of the cone. The maximum width of streams is estimated at 3,350 meters and the lava deltas maintain an area of approximately 48.02 hectares.

Regarding the data observed in the last 24 hours, the Scientific Committee points out that the SO₂ emission associated with the plume registers extremely low values and that the tremor level remains at background noise levels, which is the lowest possible, as is intermediate and deep seismicity. There is also no trend in the deformations of the stations near the eruptive center and the stability continues in the rest of the network.

With regard to air quality, the 24-hour moving average in Los Llanos de Aridane reached very unfavorable levels yesterday and at the time of issuing the scientific report -about 12:45 hours- it was at an unfavorable level. The rest of the stations remain at levels between reasonably good and good.

In this sense, and as a precautionary measure, in the area of Los Llanos de Aridane, Tazacorte, El Paso, Tijarafe and Puntagorda, it is recommended that risk groups and sensitive populations reduce all outdoor activities, and carry them out in the indoors or postpone them until air quality is good or reasonably good. For the general population, use an FFP2 mask and reduce prolonged and vigorous activities outdoors, especially if you have a cough, shortness of breath or any other symptoms, and perform them indoors, or you can postpone them until the air quality is good or reasonably good.

Regarding the levels of sulfur dioxide SO₂, the quality of the air was improving until reaching good levels in all the stations, situation that have been maintained today.

The population can access the information on the website of the Government of the Canary Islands: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

The number of housed in hotels amounts to 555 people, four more than yesterday. Of the total, 399 are staying in Fuencaliente, 69 in Los Llanos de Aridane and 87 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

Finally, according to the forecast of the wind regime, in the event that the volcano emits ash, the plume would be arranged towards the southeast-east, which would represent an unfavorable scenario for aeronautical operations.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The absence of both direct surface observables and those from the surveillance systems corroborates the signs of exhaustion of the eruptive process, although a new upswing in strombolian activity and emission of

lava cannot be ruled out. In order to say that the eruptive process that began on September 19 is complete, the recorded and observable data must be maintained at current levels for 10 days.

There is no record of lava flow from the western base of the main cone, from volcanic tube spouts. In the lava delta of the Las Hoyas area, the flow that flowed over previous lavas has stopped. The fumarolic activity is punctual and sporadic, concentrating in the area of the eruptive centers.

Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

Predominance of wind from component N to component O from low levels up to 5000 m. In the event of ash emission from the volcano, the plume would be arranged towards the SE-E and this would represent an unfavorable scenario for aeronautical operations. As of the end of Thursday, presence of haze that can increase PM10 values due to the contribution of desert dust. Today, probability of weak to locally moderate rainfall, remitting the situation of atmospheric instability until next weekend with the possible entry of an Atlantic front.

The tremor is at the level of the background noise. Seismicity remains very low at all depths. Due to the cessation of the tremor, more seismicity is located in the intermediate zone in the magnitude range 1.1 to 3.2 mbLg. With the current level of seismicity, felt earthquakes cannot be ruled out.

Regarding deformations, no trend in the stations near the eruptive center and stability in the rest of the network.

The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a land mobile position, was EXTREMELY LOW from the 2:00 p.m. yesterday (12/14). Since last 9/23, when an EXTREMELY HIGH SO₂ emission was recorded, a downward trend in SO₂ emission has been observed.

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the

Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/14) this diffuse emission was 9 times the average of the background levels ($9 \times B$). This diffuse emission is estimated after evaluating and integrating hundreds of diffuse CO₂ flow measurements that are carried out at observation points distributed throughout the volcanic building of Cumbre Vieja. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flow are registered in areas that are not very well ventilated and / or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, was improving from regular levels in Puntagorda and reasonably good in Los Llanos de Aridane, Tazacorte and El Paso, to good levels in all seasons, reaching minimum values in the early afternoon. These minimum values were maintained during the night from yesterday to today, producing a slight rise during the early hours and early hours of the morning today, but maintaining good levels of air quality in all seasons. Yesterday there were no exceedances of the hourly or daily limit values at any station.

With regard to particles smaller than 10 microns (PM₁₀), yesterday there was a slight decrease in the concentrations registered in all the stations except in Los Llanos de Aridane, where there was a significant increase in

concentrations for a large part of the day, reaching its maximum value at 3:00 p.m., these values decreased during the afternoon and were at low values during the night, observing a new increase at this time. The 24-hour moving average in Los Llanos de Aridane reached very unfavorable levels yesterday and is currently at an unfavorable level. The rest of the stations remain at levels between reasonably good and good. Yesterday the daily limit value (established at 50 $\mu\text{g} / \text{m}^3$) in Los Llanos de Aridane was exceeded.

Therefore, and as a precautionary measure, in the area of Los Llanos de Aridane, Tazacorte, El Paso, Tijarafe and Puntagorda, for risk groups and sensitive populations, consider reducing all outdoor activities, and doing them indoors or postpone them until air quality is good or reasonably good. For the general population, consider reducing prolonged and vigorous outdoor activities, especially if you have a cough, shortness of breath, or any other symptoms, and doing them indoors, or you can postpone them until air quality is good or reasonably good.

Check the website of the Government of the Canary Islands for Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

December 16th

The visible emission of volcanic gases is sporadic and is concentrated in the eruptive centers and the jameos



The level of PM10 particles in Los Llanos de Aridane continues to be unfavorable and the population should avoid the exterior and use FFP2 masks

The risk persists in evacuated areas due to the presence of toxic gases, and people who access must always be accompanied by personnel with air measurement equipment and ventilate the homes

The eruptive process continues to show signs of exhaustion and the visible emission of volcanic gases is punctual and sporadic, concentrating in the eruptive centers and in the jameos of the volcanic tubes. According to the Scientific Committee, if this

absence of observable parameters is maintained, the process, which began on September 19, could be terminated within the term provided by the Scientific Committee.

These conclusions were analyzed today in the Steering Committee of the Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA), which was coordinated by the General Director of Security and Emergencies of the Government of the Canary Islands, Gustavo Armas, and where also The recommendations to the population were recalled due to the high concentration of PM10 particles in Los Llanos de Aridane and the need to reinforce protection measures when accessing evacuated areas for ash cleaning, due to the presence of toxic gases.

Regarding the data observed in the last 24 hours, the spokesperson of the Scientific Committee, María José Blanco, explained that there are no variations with respect to the level of tremor, seismicity and the emission of gases associated with the volcanic plume, which is at low levels, while the deformation is stable.

Regarding air quality, yesterday the levels of sulfur dioxide (SO₂) were good in all seasons, without exceeding the hourly or daily limit values, and today the same situation remains. However, a significant increase in the concentrations of particles smaller than 10 microns (PM10) was observed in the Los Llanos de Aridane station, as a consequence of the intensification of the resuspension of particles in the hours with the highest wind intensity. The 24-hour moving average in Los Llanos de Aridane reached extremely unfavorable levels and the situation has not improved so far.

In this sense and as a precautionary measure, in the Los Llanos de Aridane area it is recommended that risk groups and sensitive populations avoid prolonged stay outdoors and go to an emergency service if their health condition worsens. The general population is advised to reduce all outdoor activity, use FFP2 or higher masks, adequately covering the nose and mouth, and use adequate protection for work that must be performed outdoors.

You can check the state of air quality on the website of the Government of the Canary Islands: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

In addition, the weather forecast indicates a predominance of breezes and the presence of haze that may increase PM10 values due to the contribution of desert dust. The atmospheric stability situation will continue until the second half of Saturday, when the arrival of an Atlantic frontal structure is expected.

PEVOLCA Technical Director, Miguel Ángel Morcuende, recalled that in addition to taking protective measures for suspended particles (PM10) in Los Llanos de Aridane, the risk also persists in evacuated areas due to the presence of toxic gases. In this regard, he insisted that people who agree to clean the ashes must always be accompanied by personnel who have air measurement equipment and ventilate the homes for at least 15 minutes to allow the stored gases to escape.

Conditions

In the latest data from the Cadastre there are some 1,676 destroyed buildings, of which 1,345 are for residential use, 180 for agricultural use, 75 for industrial use, 44 for hotels, 16 for public use and 16 for other uses.

For its part, the Copernicus satellite estimates approximately 3,126 buildings affected, of which 2,988 totally destroyed and 138 partially.

As for the area of crops covered by lava, it is estimated at about 369.95 hectares. Of these, more than half, 228.58 hectares are banana trees; 68 vines and 27.43 avocados. To these figures we must add the area isolated by the runoffs, which has been estimated at some 72.7 hectares of banana trees and 2.26 hectares of vineyards.

Regarding the damage to road infrastructure, the affected roads are estimated to be over 73 kilometers, of which almost 11 are insular and the rest are streets, crossings and other roads.

The number of sheltered in hotels ascends to 554 people, one less than yesterday. Of the total, 388 are staying in Fuencaliente, 73 in Los Llanos de Aridane and 93 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The absence of both direct surface observables and those from the surveillance systems corroborates the signs of exhaustion of the eruptive process, although a new upswing in strombolian activity and emission of lava cannot be ruled out. In order to say that the eruptive process that began on September 19 is complete, the recorded and observable data must be maintained at current levels for 9 days.

The visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes.

Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

Breezes predominate with cloudy skies and a low probability of light rains in the N, E and inland areas during the morning. As of the end of today, presence of haze that can increase PM10 values due to the contribution of

desert dust. Predominance of the atmospheric stability situation until the second half of Saturday, when the arrival of an Atlantic frontal structure is expected.

The tremor is at the level of the background noise. Seismicity remains very low at all depths. Due to the cessation of the tremor, more seismicity is located in the intermediate zone in the magnitude range 1.1 to 3.4 mbLg. With the current level of seismicity, felt earthquakes cannot be ruled out.

Regarding deformations, no trend in the stations near the eruptive center and stability in the rest of the network.

The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases), recorded through the use of remote optical sensors type miniDOAS in a land mobile position, was LOW yesterday (12/15) and is not related to a magma ascent, but to a process of solidification of the superficial magma still existing in the conduits of the eruptive center. Since last 9/23, when an EXTREMELY HIGH SO₂ emission was recorded, a downward trend in SO₂ emission has been observed.

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/15) this diffuse emission was 9.3 times the average of the background levels (9.3 x B). This diffuse emission is estimated after evaluating and integrating hundreds of diffuse CO₂ flow measurements that are made in observation points distributed throughout the volcanic building of Cumbre Vieja. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flow are registered in areas that are not very well ventilated and / or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical

observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During yesterday, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, remained at good levels in all air quality stations throughout the day, with no exceedances of hourly or daily limit values at any station. These minimum values were maintained during the night from yesterday to today, with a slight rise during the first hours of the morning today at the Los Llanos de Aridane station, but maintaining good levels of air quality in all stations.

With regard to particles smaller than 10 microns (PM₁₀), yesterday a significant increase in the concentrations recorded at the Los Llanos de Aridane station was observed between 12:00 and 18:00, with maximum hourly values in the surroundings of 1000 µg / m³ as a consequence of the intensification of the resuspension of particles in the hours with the highest wind intensity. These values fell during the night and early morning today, currently observing an increase in the values. The 24-hour moving average in Los Llanos de Aridane reached extremely unfavorable levels yesterday and it is foreseeable that this value will remain until noon today. The rest of the stations maintain good levels of air quality.

As a precautionary measure, in the Los Llanos de Aridane area, for risk groups and sensitive populations, avoid prolonged stay outdoors and go to an emergency service if your health condition worsens. For the general population, reduce all outdoor activities and consider doing indoor activities or postponing them until when the air quality is good or reasonably good. Use adequate protection for work that must be done outdoors. Wear masks FFP2 or higher covering properly nose and mouth.

Check the website of the Government of the Canary Islands for Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

New measures approved to grant subsidies for the Extraordinary Employment Plan for the La Palma volcano



The agreement facilitates monetary contributions to other administrations and public entities and also the signing of agreements by the Canarian Employment Service, to face the labor consequences of the eruption

The Governing Council agreed this Thursday, at the initiative of the Ministry of Economy, Knowledge and Employment, to approve a series of measures related to direct subsidies that will be awarded within the framework of the Extraordinary

Employment and Training Plan (PEEF) of La Palma, the one conceived to face the current consequences of the volcanic eruption in Cumbre Vieja and endowed with 63 million euros by the State.

At the request of the Canarian Employment Service (SCE), a body attached to that Ministry, the Governing Council agreed to legal changes that facilitate the granting of direct grants and monetary contributions, as well as the signing of SCE agreements with other public institutions, in the framework of this Employment Plan and under the Royal Decree Law 20/2021, of urgent support measures for the repair of the damage caused by the volcanic eruption and for the economic and social reconstruction of La Palma. The Extraordinary Employment and Training Plan and its actions are scheduled to be announced on the island of La Palma next Monday, December 20, 2021.

The Council's agreement also refers to the approval of the PEEF for an amount of 63 million euros at the end of last September by the Council of Ministers and the signing of an agreement between the State Public Employment Service (SEPE) and the Autonomous Community of the Canary Islands at the end of November of this year.

This public action in support of employment in La Palma includes the granting of direct subsidies to the affected municipalities, a financial allocation to the public company Management and Territorial and Environmental Planning (Gesplan) and the signing of a collaboration agreement with the Cabildo de La Palma, among other programmed actions.

1,391 aid files for the volcano have already been signed and procedures are streamlined to complete another 2,000



Of the 3,555 requests raised, 2,130 show damage to housing (62%), 1,367 to household goods (40.31%), 1,143 to the primary sector (33%) and 271 to industrial establishments or services (8%)

The Deputy Minister of the Presidency of the Government of the Canary Islands, Antonio Olivera, detailed this afternoon, in the press conference after the Government Council, the data of the single registry for families affected by the La Palma volcano. According to its figures, expressed during the Executive meeting, the acceleration of the procedures started since the beginning of this month is confirmed, 3,555 applications for aid have already been registered, 3,391 have been analyzed (which represents 95% of the total) and, of these, 1,391 (41%) have been signed.

Olivera considers that these are very relevant amounts that demonstrate the streamlining of procedures since more personnel and computer systems have been incorporated into the Casa Massieu office, in Los Llanos de Aridane.

Of the applications submitted, a total of 2,130 show damage to housing (62%), 1,367 to household goods (40.31%), 1,143 to the primary sector (33%) and 271 to industrial establishments or services (8%). These are percentages that do not add up to 100, according to Olivera, because some damages affect the same family affected.

The Government of the Canary Islands also highlights the announcement this morning by President Pedro Sánchez that the Council of Ministers this Friday (December 17) will adopt additional measures in support of La Palma. Among others, Olivera highlights that the compensation for the loss of a home goes from 30,000 to 60,000 euros. In other words, the figure included in the initial emergency decree, which set the aid at 15,000 euros, is multiplied by four, now going to those 60,000.

In addition, Olivera believes that the 17.5 million more for companies and for a plan of reactivation and tourism promotion is very relevant, as well as the 12 that will be added to the 21.4 for the agricultural sector. In his opinion, "the commitment of the Government of Spain to La Palma is once again contrasted, identifying new areas and measures to provide support," as he stressed.

December 17th

The volcanic activity is still stopped but it cannot be concluded yet and the red traffic light remains



The legal emergency situation persists and all Civil Protection measures continue with the same intensity

The Insurance Consortium has so far distributed 73.5 million euros to 460 people

Tomorrow the UME will support the Civil Guard in accompanying people who access the southern zone (Las Manchas)

Air quality is good in all seasons, except in Los Llanos de Aridane, which is unfavorable due to PM10 particles.

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) recalled today that, although the absence of observables from the volcanic surveillance system continues and that the situation seems favorable for the completion of the eruptive process, the legal emergency situation and the red traffic light are maintained and therefore all the Civil Protection measures established from the beginning of the eruptive process are in force with the same intensity.

Regarding the current situation of the eruption, the Scientific Committee indicates in its daily report that, although the absence of observables corroborates the signs of exhaustion of the eruptive process, a new rebound in strombolian activity and emission of runoff cannot be ruled out, and manifests that in order to say that the process that began on September 19 is complete, the recorded and observable data must be maintained at current levels for 8 days.

The technical director of PEVOLCA, Miguel Ángel Morcuende, insisted that the priority is the safety of the people and that the process is stable, stopped, but still registering high temperatures in the washes as observed in the thermal cameras of the drones they monitor the emergency zone. In addition, the presence of toxic gases persists, especially in the southern area, and this forces us to increase caution in the access of residents to evacuated areas. To do this, tomorrow Saturday the UME joins the Civil Guard device in the accompaniment work to advise and measure gas levels. In any case, it is always necessary to ventilate the houses well and avoid entering basements and garages since gases are heavier than air and accumulate in the basement.

At today's meeting, the top representatives of the Insurance Compensation Consortium were present to report on the status of the assessment and payment of damages to the Plan Steering Committee, as the managing body of the emergency that drives the start of reconstruction . In this regard, they indicated that 2,813 requests for compensation have been received and 73.5 million euros have already been paid, including homes, vehicles, shops and industries, received by 460 people, with an average of around 160,000 euros.

In a press conference after the Steering Committee, Julio Pérez described the performance of the Insurance Compensation Consortium as exemplary, and noted that the complex mechanism of reconstruction is getting under way with increasing speed. In this sense, he advocated maintaining the same collective leadership in reconstruction that all administrations have shown during the emergency.

Tremor, seismicity and deformations

Regarding the data observed in the last 24 hours, the spokesperson of the Scientific Committee, María José Blanco, explained that the tremor is at the level of the background noise and that the seismicity continues at levels similar to yesterday, in all the depths. Regarding deformations, it continues without trend in all the stations of the network.

The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja recorded yesterday was medium, but it is not related to the rise of magma, but rather to a process of solidification of the superficial magma existing in the conduits of the eruptive center. .

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, could not be estimated for technical reasons. In this regard, the scientists explain that these diffuse CO₂ emanations can represent a danger to people in some areas of the Cumbre Vieja volcano, as long as high values of diffuse CO₂ flow are recorded in areas that are not very well ventilated and / or at altitudes due to below one meter from the ground as a consequence of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air.

Regarding air quality, today the levels of air quality in particles smaller than 10 microns (PM₁₀) have improved in Los Llanos de Aridane, going from extremely unfavorable to unfavorable in this season. In the rest of the stations, they remain at good levels. In sulfur dioxide (SO₂), levels have been good in all seasons, without exceeding the hourly or daily limit values, and the same situation remains today.

In this sense, and as a precautionary measure, in the Los Llanos de Aridane area it is recommended that risk groups and sensitive populations avoid

prolonged stay outdoors and go to an emergency service if their health condition worsens. The general population is advised to reduce all outdoor activities, use FFP2 or higher masks, adequately covering the nose and mouth, and use adequate protection for work that must be performed outdoors.

You can check the status of air quality on the website of the Government of the Canary
Islands: [https://www3.gobiernodecanarias.org/medioambiente/calidaddel
aire/ica.do](https://www3.gobiernodecanarias.org/medioambiente/calidaddel aire/ica.do)

The number of housed in hotels amounts to 557 people, three more than yesterday. Of the total, 391 are staying in Fuencaliente, 73 in Los Llanos de Aridane and 93 in Breña Baja, managed by the Red Cross and municipal services. In addition, there are 43 dependent people cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

The absence of observables both directly on the surface and from the surveillance systems corroborates the signs of exhaustion of the eruptive process, although a new upturn in strombolian activity and emission of runoff cannot be ruled out. In order to say that the eruptive process that began on September 19 is complete, the recorded and observable data must be maintained at current levels for 8 days.

The visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes.

Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

Today there is a predominance of breezes with cloudy intervals and with a low probability of light rains in the N, E during the second half of the day. The presence of haze continues, which can increase PM10 values due to the contribution of desert dust. At the end of tomorrow Saturday and until the first half of Sunday, the arrival of an Atlantic frontal structure will produce persistent rainfall and a gusty SW wind.

The tremor is at the level of the background noise. Seismicity remains at levels similar to yesterday at all depths. With the current level of seismicity, felt earthquakes cannot be ruled out.

Regarding deformations, no trend in all network stations.

The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a land mobile position, was MEDIUM yesterday (12/16) and is NOT related to magma rise, but rather to a solidification process of the superficial magma existing in the conduits of the eruptive center. Since last 9/23, when an EXTREMELY HIGH SO₂ emission was recorded, a downward trend in SO₂ emission has been observed.

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, could not be estimated yesterday (12/16) for technical reasons. These diffuse CO₂ emanations can represent a danger for people in some areas of the Cumbre Vieja volcano, as long as high values of diffuse CO₂ flux are recorded in areas not very well ventilated and / or at altitudes below one meter from the ground such as consequence of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal

fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

During yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, continued at good levels in all air quality stations throughout the day, without exceeding the hourly limit values. nor newspapers in any station. These minimum values are maintained during the early hours and early hours of the morning today with good levels of air quality in all stations.

Regarding particles smaller than 10 microns (PM₁₀), yesterday, at the Los Llanos de Aridane station, the maximum concentrations recorded were lower than those of the previous day as a consequence of a lower resuspension of particles in the hours central of the day. In this way, as of yesterday afternoon, air quality levels have improved, going from extremely unfavorable to unfavorable in this season. These values fell during the night and early morning today, maintaining a 24-hour moving average in Los Llanos de Aridane at an unfavorable level. The rest of the stations maintain good levels of air quality. Yesterday the daily limit value (established at 50 µg / m³) in Los Llanos de Aridane was exceeded.

As a precautionary measure, in the Los Llanos de Aridane area, for risk groups and sensitive populations, consider reducing all outdoor activities, and doing them indoors or postponing them until the air quality is good or reasonably good. For the general population, consider reducing prolonged and vigorous outdoor activities, especially if you have a cough, shortness of breath, or any other symptoms, and doing them indoors, or you can postpone them until air quality is good or reasonably good.

Check the website of the Government of the Canary Islands for Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Extremely HIGH > 50,000 tons per day; Very HIGH between 30,000 and 49,999 tons per day; HIGH between 1000 and 29999 tons per day; AVERAGE between 100 and 999 tons per day; LOW between 50 and 99 tons per day; Very LOW between 5 and 49 tons per day and Extremely LOW <5 tons per day

December 18th

PEVOLCA is extremely careful due to the presence of gases and the high temperatures of the washings.



Lava remnants can be seen circulating through the southernmost area, which belongs to wash number eleven, but has not caused new affections

Airport activity has not been affected in recent days as the presence of ash emission has not been detected

The temperatures of the streams continue to be high, so the population is reminded not to go near areas near these

The remaining gases in the vicinity of the areas covered by the lava, the temperature of the runoffs, and the output of material to the surface in the southern area without new affections, focused the meeting this Saturday of the Steering Committee of the Special Protection Plan Civil and Emergency Assistance for Volcanic Risk of the

Canary Islands (PEVOLCA), which was coordinated by the Minister of Public Administrations, Justice and Security, Julio Pérez, director of the Plan.

During the press conference, Rubén Fernández, PEVOLCA technical director in temporary replacement of Miguel Ángel Morcuende, explained that, from the point of view of people's safety, they are very aware of gas concentrations. The data has been changing and it is one of the fundamental concerns that exists right now within this process. He also stressed the importance of using the FFP2 mask, in a manner recommended to the entire population, and especially to people who access evacuated areas. In addition, he stated that neighbors who access their homes, as well as irrigators and other people who enter evacuated areas, must strictly comply with those actions for which they have been authorized, and that they should not approach the laundry areas or circulate through any of them. In this sense,

For her part, the spokesperson for the Scientific Committee, María José Blanco, stressed that, despite the absence of observables, both direct on the surface, and those from surveillance systems, show signs of depletion, it is necessary to maintain the prudence since a new upturn in strombolian activity and emission of runoff cannot be ruled out. These observables must remain at current levels for 7 days to be able to end the eruptive process that began on September 19.

As for the flows, yesterday a small remaining lava flow could be seen that comes from a still active volcanic tube, in the southern area and which belongs to flow number 11, although it runs over previous flows and has not affected to new areas. Also, thermal cameras show that temperatures are still high.

Regarding seismicity, Blanco said that it remains at levels similar to the previous days at all depths. However, with the current level of seismicity, it is not ruled out that felt earthquakes may occur. The tremor continues at the level of background noise.

The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja has been low yesterday and is not related to the rise of magma, but to a process of solidification of the superficial

magma existing in the ducts of the eruptive center. The air quality has presented good levels in all the stations throughout the day, without, for the fourth consecutive day, exceeding the hourly or daily limit values in any station. At dawn today, good air quality levels were maintained in all stations, although throughout the morning there were regular values at the Tazacorte station, and between reasonably good and regular at the San Antonio station.

Regarding the diffuse emission of carbon dioxide (CO₂), it continues to reflect an emission higher than the average value of the background levels, and throughout yesterday this emission was 8.9 times the average of the background levels. These diffuse fumes can represent a danger to people as long as high values of diffuse CO₂ flux are recorded in non-ventilated areas and / or at altitudes below one meter above the ground.

Particles smaller than 10 microns (PM₁₀), which reached maximum concentrations yesterday, decreased compared to previous days in Los Llanos de Aridane, as a result of a lower suspension of particles. In this sense, starting at noon, air quality levels continue to improve, going from unfavorable to reasonably good in this season, levels that have been maintained throughout the early morning and early morning. In the rest of the stations, the daily limit values were not exceeded (established at 50 µg / m³).

You can check the status of air quality on the website of the Government of the Canary
Islands: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

As for the meteorological conditions, the most relevant thing is that the arrival of an Atlantic front is expected during the afternoon of today. This front will leave persistent and locally moderate rainfall until early Sunday morning. It is expected that with the passage of the front the southwest wind will be gusty with values that locally can reach 60-70 km / h.

For its part, La Palma airport maintains its operations on a regular basis due to the absence of ash emissions.

On those housed in hotels, it decreased by one person, standing at 556, one less than yesterday. Of the total, 390 are staying in Fuencaliente, 73 in Los Llanos de Aridane and 93 in Breña Baja, managed by the Red Cross and municipal services. In addition, 43 dependent people continue to be cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

"The absence of observables both directly on the surface (except for some small active pouring), as well as from the surveillance systems corroborates the signs of exhaustion of the eruptive process, although a new upswing in strombolian activity and emission of runoff cannot be ruled out. In order to say that the eruptive process that began on September 19 is complete, the recorded and observable data must be maintained at current levels for 7 days.

The visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes.

On the streams that fall on the cliff in the Las Hoyas area, yesterday a small remnant lava flow appeared that comes from a still active volcanic tube.

Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

The most relevant of the meteorological conditions for the next 24 hours, is the arrival of an Atlantic front during the afternoon of today. This front will leave persistent and locally moderate rainfall until early Sunday morning. It is expected that with the passage of the front the wind from the SW will be gusting with values that locally can reach or exceed 60 - 70 km / h.

The tremor is at the level of the background noise. Seismicity remains at levels similar to yesterday at all depths. With the current level of seismicity, felt earthquakes cannot be ruled out.

Regarding deformations, no trend in all network stations.

As a consequence of the weakness and intermittency of the volcanic gas plume, the SO₂ emission ranges will be expressed in units of kilograms per second (kg / s) from this report (*). The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a land mobile position, was LOW yesterday (12/17) and is NOT related to magma rise, but rather to a solidification process of the superficial magma existing in the conduits of the eruptive center. Since last 9/23, when a VERY HIGH SO₂ emission was recorded, a downward trend in SO₂ emission has been observed.

In the case of non-visible volcanic gas emanations, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/17) this diffuse emission was 8.9 times the average of the background levels (8.9 x B). This diffuse emission is estimated after evaluating and integrating hundreds of diffuse CO₂ flow measurements that are carried out at observation points distributed throughout the volcanic building of Cumbre Vieja. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flux are registered in areas that are not very well ventilated and / or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at

the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, continued at good levels in all air quality stations throughout the day, without, for the fourth consecutive day, occurring exceedances of the hourly or daily limit values at any station. At dawn today, good levels of air quality are maintained in all stations, although throughout the morning there are regular values at the Tazacorte station, and between reasonably good and regular at the San Antonio station.

With regard to particles smaller than 10 microns (PM₁₀), yesterday, the maximum concentrations registered decreased compared to previous days in Los Llanos de Aridane, as a consequence of a lower resuspension of particles. Thus, as of noon yesterday, air quality levels continue to improve, going from unfavorable to reasonably good in this season.

These values are maintained in the early morning and tomorrow today. The rest of the stations maintain good levels of air quality. Yesterday the daily limit value (established at 50 µg / m³) was not exceeded in any of the stations.

Check the website of the Government of the Canary Islands for Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Scale of SO₂ emission ranges expressed as kg / s: VERY HIGH > 500 kg / s; HIGH between 50 and 499 kg / s; MEDIUM between 5 and 49 kg / s; LOW between 0.5 and 4.9 kg / s; VERY LOW <0.5 kg / s.

December 19th

The presence of gases prevents access to Puerto Naos, La Bombilla and El Remo this Sunday



This Sunday it has been 97 days since the activation of the PEVOLCA plan and three months since the start of the volcanic eruption

The high concentrations of gases are maintained, so caution is requested from neighbors and irrigators who access evacuated areas

The volcanic eruption of La Palma, which today marks three months since its beginning, continues to show signs of weakening of the eruptive process, although it is still necessary that these data be maintained for another six days. However, the legal emergency situation persists, and this Sunday the presence of gases was found in the area of La Bombilla, Puerto Naos and El Remo, which has prevented access to residents and irrigators, as well as the existence of remnants wash them in the laundry. These have been some of the issues discussed at the meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to

Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), chaired by the General Director of Security and Emergencies of the Government of the Canary Islands, Gustavo Armas.

Carmen López, spokesperson for the Scientific Committee, stated that in the last hours the presence of residual lavas has been verified, that is, without contribution from any emitting center and that they are retained in the storage system of the volcanic tubes. In this sense, the emission of volcanic gases continues to be concentrated in the area of the eruptive centers and in the jameos of these volcanic tubes, with visible incandescence in the area of Las Hoyas, which is linked to the cooling process of the lava.

Rubén Fernández, technical director of PEVOLCA in temporary replacement of Miguel Ángel Morcuende, said that today the prohibition of access to Puerto Naos, La Bombilla and El Remo due to high concentrations of gases has been maintained. Likewise, he wanted to remind people who enter their homes to always do so in an accompanied manner and not to access any laundry area, since high temperatures are maintained in these areas and the terrain is highly unstable. Today, the Scientific Committee confirmed the daily opening of jameos and the maintenance of lava flows in tubes, the incandescence of these magmas remaining due to the high temperatures.

Fernández mentioned that these access recommendations are transferred to both neighbors and irrigators and other people who enter restricted areas and who are going to access implement rooms and / or underground areas, so you have to be especially careful and do it in an accompanied way.

Seismicity, which is below 3.2 mbLg, remains very low at all depths. Despite these data, it is not ruled out that felt earthquakes may occur. The deformations continue without trend and the tremor level continues at the background noise level.

As in the previous four days, the emission of sulfur dioxide (SO₂) remained low during yesterday and air quality levels remained good in all seasons, without exceeding the hourly or daily limit values in no season. During the early hours and in the morning today, the good levels of air quality continue in all the stations.

During Saturday the concentrations of particles less than 10 microns (PM10) remained low in Los Llanos de Aridane, so air quality levels continue to improve until reaching good values in this station. These values have been maintained in the early morning and tomorrow today. Good or reasonably good levels of air quality continue at the rest of the stations. Yesterday the daily limit value (established at 50 µg / m³) was not exceeded in any of the stations.

However, the population is recommended to consult the website of the Government of the Canary Islands on Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Regarding the meteorological situation, the prevalence of the west component remains. Today, high-type cloudiness will predominate and tomorrow cloudy intervals with probable weak rains during the second half of the day, mainly on the southwest slope. The operation of the airport is subject to purely meteorological conditions due to the absence of volcanic ash in the troposphere. Tuesday's day will be marked by the new arrival of an Atlantic front. This will produce persistent rainfall that is likely to be locally strong in character and accompanied by storms.

Those housed in hotels remain at 556. Of the total, 390 are staying in Fuencaliente, 73 in Los Llanos de Aridane and 93 in Breña Baja, managed by the Red Cross and municipal services. In addition, 43 dependent people continue to be cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET),

Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The observables, both direct on the surface and from the surveillance systems, corroborate the signs of exhaustion of the eruptive process, although a new upturn in strombolian activity and emission of streams cannot be ruled out. In order to say that the eruptive process that began on September 19 is complete, the recorded and observable data must be maintained at current levels for 6 days.

The visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes. In some jameos and also in the Las Hoyas area, incandescence is still visible, linked to the presence of cooling lava.

Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

The O component wind continues to predominate. Today, high cloud cover will prevail and tomorrow cloudy intervals with probable light rains during the second half of the day, mainly on the SW slope. The operation of the airport is subject to purely meteorological conditions, due to the absence of volcanic ash in the troposphere. Tuesday's day will be marked by the new arrival of an Atlantic front. This frontal structure will produce persistent rainfall that is likely to be locally strong in character and accompanied by storms. Notices have been issued by FMA (the notices and their future updates can be consulted at www.aemet.es).

The tremor is at the level of the background noise. The seismicity, which is of low magnitude (less than 3.2 mbLg), is at very low levels at all depths. Despite the current level of seismicity, the occurrence of felt earthquakes is not ruled out.

Regarding deformations, no trend in all network stations.

As a consequence of the weakness and intermittency of the volcanic gas plume, the SO₂ emission ranges will be expressed in units of kilograms per

second (kg / s) from this report (*). The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases), recorded through the use of remote optical sensors type miniDOAS in a land mobile position, remained LOW during the day yesterday (12/18) as in the previous 4 days. This level of emission is NOT related to magma rise, but rather to a process of solidification of the superficial magma existing in the conduits of the eruptive center. Since last 9/23, when a VERY HIGH SO₂ emission was recorded, a downward trend in SO₂ emission has been observed.

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/18) this diffuse emission was 8.9 times the average of the background levels (8.9 x B). This diffuse emission is estimated after evaluating and integrating hundreds of diffuse CO₂ flow measurements that are carried out at observation points distributed throughout the volcanic building of Cumbre Vieja. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flux are registered in areas that are not very well ventilated and / or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, continued at good levels in all air quality stations. For the fifth consecutive day there are no exceedances of the hourly or daily limit values at any station. In the early morning and tomorrow of today good levels of air quality are maintained in all stations.

With regard to particles smaller than 10 microns (PM10), yesterday, the low concentrations registered since Friday in Los Llanos de Aridane are maintained, so that air quality levels continue to improve until reaching good values in this station. These values are maintained in the early morning and tomorrow today. Good or reasonably good levels of air quality are maintained at the rest of the stations. Yesterday the daily limit value (established at 50 $\mu\text{g} / \text{m}^3$) was not exceeded in any of the stations.

Check the website of the Government of the Canary Islands for Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Scale of SO₂ emission ranges expressed as kg / s: VERY HIGH > 500 kg / s; HIGH between 50 and 499 kg / s; MEDIUM between 5 and 49 kg / s; LOW between 0.5 and 4.9 kg / s; VERY LOW <0.5 kg / s.

December 20th

The deformation recorded yesterday in Jeday is reversing and does not represent a change in the depletion scenario



This Monday, access has been allowed to farmers in the southern coastal area except for the farms located in La Bombilla

Air quality remains at good or reasonably good levels in all seasons, both in particulate matter and sulfur dioxide

The presence of gases in evacuated areas and the daily measurement and surveillance work carried out by the Security Group, as well as the ash removal plan from homes, access roads and public services, focused a large part of the meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk in the Canary Islands (PEVOLCA), led by the Minister of Public Administrations, Justice and Security, Julio Pérez. At the meeting, in which the Colonel Chief of the General Staff of the Military Emergency Unit (UME), Pedro Aneiros, was present,

In this sense, Carmen López, spokesperson for the Scientific Committee, stated that there is currently an episode of local deformation at the Jedey station, which yesterday reached a maximum of 8 centimeters, but which seems to have begun its reversal, without observing variations in the rest. of the data and observables. He added that the deformation episode has been recorded in a single station, has lasted a few hours and that they do not represent a change in the interpretation of the exhaustion scenario of the eruptive process, because it must be interpreted within the observation parameters. In this regard, he pointed out that, even when the eruption is over, there may be episodes of seismicity and residual deformations, as already happened in El Hierro, since they are very intense processes that need a time to readjust.

Seismicity, which is below 3.2 mbLg, remains very low at all depths. Despite these data, it is not ruled out that felt earthquakes may occur. The deformations continue without trend and the tremor level continues at the background noise level.

The visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes. In some jameos, incandescence is still visible, linked to the presence of lava in the cooling process.

Rubén Fernández, technical director of PEVOLCA in temporary replacement of Miguel Ángel Morcuende, explained that work continues on monitoring gas concentrations, especially in La Bombilla, Puerto Naos and El Remo, which is the area of greatest concern to the Directorate of the Plan because very harmful and even lethal values for people have been detected. The UME, Civil Guard and National Police are intervening in the measurements, carrying out daily access control to guarantee the entry of residents and irrigators, in safe conditions. This Monday, and in accordance with the access protocol put into operation on December 14, access to farmers has been allowed in the southern coastal area of La Colada, with the exception of the farms located in La Bombilla,

Those housed in hotels remain at 551, five people less than yesterday. Of the total, 387 are staying in Fuencaliente, 71 in Los Llanos de Aridane and 93 in Breña Baja, managed by the Red Cross and municipal services. In addition, 43 dependent people continue to be cared for in insular health centers.

Both yesterday and today, the emission of sulfur dioxide (SO₂) reaches good levels in all seasons, without exceeding the hourly or daily limits. Regarding the concentrations of particles smaller than 10 microns (PM₁₀), yesterday afternoon a punctual increase was registered in El Pilar, which may be due to the resuspension of the ash by the wind, but even so the values have been good or reasonably good in all seasons.

However, the population is recommended to consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

In the absence of ash in the troposphere, the airport's operation in the next few hours will be subject only to purely meteorological conditions. Starting tonight, the arrival of an Atlantic front is expected. This frontal structure will produce persistent precipitation likely to be locally strong and accompanied by storms.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The observables, both direct on the surface and from the surveillance systems, corroborate the signs of exhaustion of the eruptive process, although a new upturn in strombolian activity and emission of streams cannot be ruled out. There is currently an episode of local deformation in a station, which seems to have begun its reversion and requires its monitoring, without observing variations in the rest of the data and observables. In order to say that the eruptive process that began on September 19 is complete, the recorded and observable data must be maintained at current levels for 5 days.

The visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes.

In some jameos, incandescence is still visible, linked to the presence of lava in the cooling process.

Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

Today, cloudy intervals with probable weak and occasional rains, mainly on the SW slope. The operation of the airport is subject to purely meteorological conditions, due to the absence of volcanic ash in the troposphere. Starting tonight, the arrival of an Atlantic front is expected. This frontal structure will produce persistent precipitation likely

to be locally strong and accompanied by storms. In addition, wind gusts from the SW can reach 80 km / h. Notices have been issued by FMA (the notices and their future updates can be consulted at www.aemet.es). The next few days, after the passage of the front, stable atmospheric situation.

The tremor is at the level of the background noise. The seismicity, which is of low magnitude (less than 2.5 mbLg), is at very low levels at all depths. Despite the current level of seismicity, the occurrence of felt earthquakes is not ruled out.

Regarding deformations, no trend in all network stations, except for a local deformation in the Jedey station (LP03) that began yesterday morning and that after reaching the maximum of 8 cm (around 10 p.m.), today it has started its reversal.

As a consequence of the weakness and intermittency of the volcanic gas plume, the SO₂ emission ranges will be expressed in units of kilograms per second (kg / s) from this report (*). The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a land mobile position, was VERY LOW yesterday (12/19). The LOW and VERY LOW emission rates are not related to magma rise, but rather to a process of solidification of the superficial magma existing in the conduits of the eruptive center. Since last 9/23, when a VERY HIGH SO₂ emission was recorded, a downward trend in SO₂ emission has been observed.

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/19) this diffuse emission was 8.5 times the average of the background levels (8.5 x B). This diffuse emission is estimated after evaluating and integrating hundreds of diffuse CO₂ flow measurements that are made in observation points distributed throughout the volcanic building of Cumbre Vieja. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flow are registered in areas that are not very well ventilated and / or at heights

below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, continued at good levels in all air quality stations, without registering hourly or daily limit values exceeded at any station. . At dawn and tomorrow today, good levels of air quality are maintained in all stations, except at the San Antonio station, where regular levels have been reached during the early hours of yesterday to today.

With regard to particles smaller than 10 microns (PM₁₀), yesterday, there was a slight general increase in concentrations from all stations, with a small peak of greater intensity at the El Pilar station at 4:00 p.m. 00 hours, but they remain at good or reasonably good levels in all of them. Yesterday the daily limit value (established at 50 µg / m³) was not exceeded in any of the stations

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>
(*) Scale of SO₂ emission ranges expressed as kg / s: VERY HIGH > 500 kg / s; HIGH between 50 and 499 kg / s; AVERAGE between 5 and 49 kg / s; LOW between 0.5 and 4.9 kg / s; VERY LOW <0.5 kg / s.

December 21st

The presence of gases in the south continues to limit access to the evacuated area



Today only irrigators have been allowed to enter open spaces in Puerto Naos and El Remo, but not La Bombilla due to the high concentration

The quality of the air in PM10 particles and sulfur dioxide SO₂ continues to register good values in all seasons

When the eruptive process is finished, the Security Council of the Government of the Canary Islands will continue directing the emergency operation

The measurements carried out by members of the Security group have once again registered a high concentration of harmful gases in the southern coastal area of La Colada, which is why access to La Bombilla has not been allowed, while the entrance to Puerto Naos and El Remo has been conditioned to irrigators, with the warning not to enter interior areas, such as tool rooms. The recorded values are harmful to health

and especially harmful in closed spaces. The Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) maintains access restrictions while the danger persists. These and other parameters were analyzed today at the meeting of the Steering Committee, which was coordinated by the General Director of Security and Emergencies of the Government of the Canary Islands, Gustavo Armas,

In this sense, Rubén Fernández, PEVOLCA technical director in temporary replacement of Miguel Ángel Morcuende, explained at a press conference that the completion of the eruptive process will not mean a short-term change in the emergency situation, which will remain at level 2 in hands of the Government of the Canary Islands through the Ministry of Public Administrations, Justice and Security, directed by Julio Pérez, until there is no risk to the population and the necessary conditions are met so that residents can return to their homes in safety conditions .

Carmen López, spokesperson for the Scientific Committee, reiterated that the observables, both direct on the surface and from the surveillance systems, corroborate the signs of exhaustion of the eruptive process and recalls that, to be able to say that the eruptive process is over, the situation is It should be kept at the same levels for four more days.

Currently there is an episode of local deformation that requires its monitoring, without observing variations in the rest of the data and observable. The visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes. Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

The tremor is at the level of the background noise and the seismicity, which is of low magnitude (less than 2.3 mbLg), continues at very low levels at all depths, although the occurrence of felt earthquakes is not ruled out. Regarding deformations, this still does not show a trend in all the stations of the network, except for a local deformation in the Jedey station that began on the 19th and which, after reaching the maximum of 8 centimeters on the 20th, has partially reversed.

During yesterday, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, continued at good levels in all stations, except in the San Antonio station, which reached, on a timely basis, the level regulate air quality at dawn from the 19th to the 20th. There have been no exceedances of the hourly or daily limit values in any station. In the early morning and tomorrow of today good levels of air quality were maintained in all stations.

Regarding particles smaller than 10 microns (PM₁₀), yesterday good and reasonably good levels were maintained in all stations, with the daily limit value not exceeded in any of them. During the morning of today a slight decrease in the concentrations registered in the set of stations is observed and the levels remain between good and reasonably good.

However, the population is recommended to consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

Those housed in hotels remain at 547, nine people less than yesterday. Of the total, 384 are staying in Fuencaliente, 70 in Los Llanos de Aridane and 93 in Breña Baja, managed by the Red Cross and municipal services. In addition, 43 dependent people continue to be cared for in insular health centers.

As yesterday, thanks to the absence of ashes in the troposphere, the operation of the airport in the next few hours will be subject only to purely meteorological conditions. The passage of an active Atlantic front is leaving persistent rainfall accompanied by storms in the surroundings of La Palma and gusts of winds from the southwest may reach 80 kilometers per hour. The atmospheric instability situation is expected to subside during the early hours of the afternoon today.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since

yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The observables, both direct on the surface and from the surveillance systems, corroborate the signs of exhaustion of the eruptive process, although a new spike in volcanic activity cannot be ruled out.

Currently there is an episode of local deformation that requires its monitoring, without observing variations in the rest of the data and observables. In order to say that the eruptive process that began on September 19 is complete, the recorded and observable data must be maintained at current levels for 4 days.

The visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes.

Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

The passage of an active Atlantic front is leaving persistent rainfall accompanied by storms in the surroundings of La Palma. In addition, wind gusts from the SW can reach 80 km / h. There are notices by FMA that will end during the afternoon of today (the notices and their future updates can be consulted at www.aemet.es). The atmospheric instability situation is expected to subside during the early hours of the afternoon today. The next few days, after the passage of the front, the atmospheric situation will be stable. The operation of the airport is subject to purely meteorological conditions, due to the absence of volcanic ash in the troposphere.

The tremor is at the level of the background noise. Seismicity, which is of low magnitude (less than 2.3 mbLg), is at very low levels at all depths. Despite the current level of seismicity, the occurrence of felt earthquakes is not ruled out.

Regarding deformations, no trend in all network stations, except for a local deformation in the Jedey station (LP03) that began on the 19th and that after reaching the maximum of 8 cm (12/20 around 10 p.m.), has partially reversed.

As a consequence of the weakness and intermittency of the volcanic gas plume, the SO₂ emission ranges will be expressed in units of kilograms per second (kg / s) from this report (*). The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a land mobile position, was LOW yesterday (12/20). The LOW and VERY LOW emission rates are not related to magma rise, but rather to a process of solidification of the superficial magma existing in the conduits of the eruptive center.

In the case of non-visible volcanic gas emanations, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/19) this diffuse emission was 8.5 times the average of the background levels (8.5 x B). This diffuse emission is estimated after evaluating and integrating hundreds of diffuse CO₂ flow measurements that are made in observation points distributed throughout the volcanic building of Cumbre Vieja. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flux are registered in areas that are not very well ventilated and / or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be

recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During yesterday, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, continued at good levels in all stations, except in the San Antonio station, which reached, on a timely basis, the level regulate air quality at dawn from the 19th to the 20th. There have been no exceedances of the hourly or daily limit values in any station. In the early morning and tomorrow of today good levels of air quality are maintained in all stations.

Regarding particles smaller than 10 microns (PM₁₀), yesterday, good and reasonably good levels were maintained in all stations, not exceeding the daily limit value (established at 50 µg / m³) in any of them. . During the morning of today a slight decrease in the concentrations registered in the set of stations is observed and the levels remain between good and reasonably good.

Check the website of the Government of the Canary Islands for Air Quality:
<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Scale of SO₂ emission ranges expressed as kg / s: VERY HIGH > 500 kg / s; HIGH between 50 and 499 kg / s; AVERAGE between 5 and 49 kg / s; LOW between 0.5 and 4.9 kg / s; VERY LOW <0.5 kg / s.

December 22nd

The PEVOLCA turns one hundred days activated, while the countdown continues to end the eruptive process



Air quality is good in all stations on the island in PM10 and sulfur dioxide, but gases continue in the south of the evacuated area

The Steering Committee of the Special Plan for Civil Protection and Emergency Care for Volcanic Risk of the Canary Islands (PEVOLCA) has advanced today in planning the reconstruction phase of basic services to be able to start work as soon as possible, once the Scientists end the eruptive process, which if it continues with the same signs of exhaustion would be in three days, on December 25, and as long as the necessary security conditions are met.

In the meeting of the Steering Committee, coordinated by the General Director of Security and Emergencies of the Government of the Canary Islands, Gustavo Armas, the thermal images taken by the drones in the monitoring of the lava flows and the lava deltas were analyzed, when 100 days of the activation of the PEVOLCA Plan.

For the Technical Directorate, Francisco Prieto recalled at the press conference that the emergency situation will continue after the completion

of the eruption, due to the high temperature of the lava, the presence of gases and the need to rehabilitate the services.

In this regard, he explained that the thermal images continue to show hot areas, especially inside the castings where there has been a greater thickness, which has exceeded 40-50 meters in height at some points. There is less thickness at the edges and that will allow the first lava movement tests to be carried out next week, but he insisted that this test must be done very carefully, monitoring the exit of gases and the temperature.

As for gases, the trend of the last days in the evacuated areas continues. Thus, in the north zone no positive readings have been detected during the night, while in the south zone it is still recommended to avoid closed or interior spaces and underground facilities. In this sense, in Puerto Naos today only irrigators and packers have been able to access for outdoor work, while entry into La Bombilla has not been authorized because the readings are still dangerous to health.

On the evolution of the eruptive process, the spokesperson for the Scientific Committee, Carmen López, explained that the visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes. Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

The observables, both direct on the surface and from surveillance systems, continue to show signs of exhaustion of the eruptive process, although experts do not rule out a new upsurge in volcanic activity. The local deformation episode that began on the 19th, which is being monitored, persists, but there are no variations in the rest of the observables.

The seismicity, with a magnitude less than 3.0 mbLg, continues at very low levels at all depths and the tremor is at the level of the background noise. Even so, the occurrence of felt earthquakes is not ruled out.

Regarding air quality with respect to particles smaller than 10 microns (PM10), yesterday the levels were reduced to good in all stations, not

exceeding the daily limit value in any of them. During the morning of today they remain good in all the stations of the network.

Regarding sulfur dioxide (SO₂), a pollutant associated with the eruptive process, yesterday there were no exceedances of the hourly or daily limit values in any station. During this morning, good levels are maintained in all stations.

However, the population is recommended to consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

The atmospheric situation is expected to be stable in the area around the eruption, both today and tomorrow. Starting in the early hours of the 24th, the arrival of a weakened Atlantic front, with the possibility of weak to locally moderate rainfall. In this regard, the operation of the airport in the next few hours will be subject only to purely meteorological conditions since the absence of ashes in the troposphere persists.

Those housed in hotels remain at 549, two more than yesterday. Of the total, 386 are staying in Fuencaliente, 70 in Los Llanos de Aridane and 93 in Breña Baja, managed by the Red Cross and municipal services. In addition, 43 dependent people continue to be cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The observables, both direct on the surface and from the surveillance systems, corroborate the signs of exhaustion of the eruptive process, although a new spike in volcanic activity cannot be ruled out. The local deformation episode that began on 12/19 persists, which requires its monitoring, without observing variations in the rest of the data and observables. In order to say that the eruptive process that began on September 19 is complete, the recorded and observable data must be maintained at current levels for 3 days.

The visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes.

Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

The next few hours will continue to blow the wind with a weak component O and with a predominance of breezes. The atmospheric situation is expected to be stable in the area around the eruption, both today and tomorrow. Starting in the early hours of the 24th, the arrival of a weakened Atlantic front will probably produce weak to locally moderate rainfall. FMA yellow level warnings have been issued for coastal phenomena for the first hours of the 24th, affecting the N coast of La Palma (the warnings and their future updates can be consulted at www.aemet.es). The operation of the airport is subject to purely meteorological conditions, due to the absence of volcanic ash in the troposphere.

The tremor is at the level of the background noise. Seismicity, which is of low magnitude (less than 3.0 mbLg), is at very low levels at all depths. Despite the current level of seismicity, the occurrence of felt earthquakes is not ruled out.

Regarding deformations, no trend in all the stations of the network, except for a local deformation in the Jedey station (LP03) that began on the 19th and that after reaching the maximum of 8 cm (12/20 around 10 p.m.), has partially reversed.

As a consequence of the weakness and intermittency of the volcanic gas plume, the SO₂ emission ranges will be expressed in units of kilograms per second (kg / s) from this report (*). The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a land mobile position, was LOW yesterday (12/21). The LOW and VERY LOW emission rates are not related to magma rise, but rather to a solidification process of the superficial magma existing in the conduits of the eruptive center.

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, could not be estimated yesterday (12/21) for various technical reasons. Despite this, the diffuse CO₂ emission does not have to present significant variations with respect to that estimated for the previous day (12/20), when it was 8.5 times the average of the background levels (8.5 x B). These diffuse CO₂ emanations can represent a danger for people in some areas of the Cumbre Vieja volcano, as long as high values of diffuse CO₂ flux are recorded in areas not very well ventilated and / or at altitudes below one meter from the ground such as consequence of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. At the Los Llanos de Aridane station (LP10) a slight hydrothermal magmatic fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process

During yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, continued at good levels in all seasons. No exceedances of the hourly or daily limit values have been recorded in any station. In the early morning and tomorrow of today good levels of air quality are maintained in all stations.

Regarding particles smaller than 10 microns (PM₁₀), yesterday, levels were reduced to good levels in all stations, not exceeding the daily limit value (established at 50 µg / m³) in any of them. During the morning of today the good levels are maintained in all the stations of the network.

Check the website of the Government of the Canary Islands for Air Quality:
<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Scale of SO₂ emission ranges expressed as kg / s: VERY HIGH > 500 kg / s; HIGH between 50 and 499 kg / s; AVERAGE between 5 and 49 kg / s; LOW between 0.5 and 4.9 kg / s; VERY LOW <0.5 kg / s.

December 23rd

Scientists recall that the end of the eruption does not mean that the dangers associated with the volcano disappear



The drones continue to carry out flights with thermal cameras to know the evolution of the temperature of the wastes

Air quality continues to be good in all seasons, although high levels of gases remain in the evacuated area of La Bombilla

At the meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands

(PEVOLCA), coordinated by the General Director of Security and Emergencies of the Government of the Canary Islands, Gustavo Armas, the scientists recalled that the end of the An eruption does not have to imply the end of some dangers associated with the volcanic phenomenon, nor does it imply that of the magmatic reactivation in Cumbre Vieja.

The drones of the different scientific and emergency services that participate in PEVOLCA have continued today to carry out reconnaissance flights with thermal cameras over the area affected by the eruption to collect new data on the temperature of the springs and the jameos, as well as images of the degassing of the deltas, in order to expand the information on the evolution of the process. The visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes. Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

Regarding the evolution of the eruptive process, the spokesperson for the Scientific Committee, Carmen López, explained that the observables continue to show signs of depletion, both directly on the surface and from the surveillance systems, but that, in order to be able to say that the eruptive process is finished, they should be kept for the next 2 days. In this regard, he commented that the episode of local deformation that began on December 19 persists, which requires its monitoring, without observing variations in the rest of the data and observables.

With regard to access to evacuated areas, today access has been allowed from the north and in the upper part of the southern area. The southern area by land to the coast of the Aridane Valley is allowed for irrigators and packaging, except in La Bombilla, but access to closed spaces is prohibited due to the accumulation of gases.

The Technical Director of PEVOLCA of the Government of the Canary Islands, Miguel Ángel Morcuende, pointed out that people who enter these areas must be very careful, always be accompanied and ventilate the homes well, avoiding places below ground level.

Regarding air quality, regarding sulfur dioxide (SO₂), yesterday the good levels continued in all the stations and the hourly or daily limit values have not been exceeded in any station. This trend continues today.

Regarding particles smaller than 10 microns (PM₁₀), the levels have been maintained with a slight increase from noon, the daily limit not being exceeded in any of the stations. Today they are still good or reasonably good at all stations on the network.

However, the population is recommended to consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

The tremor is at the level of the background noise and the seismicity, which is of low magnitude, is at very low levels at all depths, although the occurrence of felt earthquakes is not ruled out.

Regarding deformations, no trend in all stations of the network, except for a local deformation in the Jedey station (LP03), which has partially reversed.

The operation of the airport is subject to purely meteorological conditions, due to the absence of volcanic ash in the troposphere. The trend for the next few days is stable and dry weather around the eruption.

Those housed in hotels remain at 557. Of the total, 394 are staying in Fuencaliente, 70 in Los Llanos de Aridane and 93 in Breña Baja, managed by the Red Cross and municipal services. In addition, 43 dependent people continue to be cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary

Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The observables, both direct on the surface and from surveillance systems, corroborate the signs of exhaustion of the eruptive process. The end of the eruption does not have to imply the end of some dangers associated with the volcanic phenomenon, nor the end of the magmatic reactivation in Cumbre Vieja.

The local deformation episode that began on 12/19 persists, which requires its monitoring, without observing variations in the rest of the data and observables. In order to say that the eruptive process that began on September 19 is complete, the recorded and observable data must maintain the signs of depletion of the system for the next 2 days.

The visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes.

Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

Wind from component O that will turn to component N during the next morning, light with a predominance of breezes. Today daytime cloudiness is expected. As of the next morning, the arrival of a weakened Atlantic front will probably produce weak to locally moderate rainfall on the N slope of La Palma. The operation of the airport is subject to purely meteorological conditions, due to the absence of volcanic ash in the troposphere. The trend for the next few days is stable and dry weather around the eruption.

The tremor is at the level of the background noise. Seismicity, which is of low magnitude, is at very low levels at all depths. Despite the current level of seismicity, the occurrence of felt earthquakes is not ruled out.

Regarding deformations, without a trend in all stations of the network, except for a local deformation in the Jedey station (LP03) that began on the 19th, it continues after having partially reversed.

As a consequence of the weakness and intermittency of the volcanic gas plume, the SO₂ emission ranges will be expressed in units of kilograms per second (kg / s) from this report (*). The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a land mobile position, was LOW yesterday (12/22). The LOW and VERY LOW emission rates are not related to magma rise, but rather to a process of solidification of the superficial magma existing in the conduits of the eruptive center.

In the case of non-visible volcanic gas emanations, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/22) this diffuse emission was 8.5 times the average of the background levels (8.5 x B). This diffuse emission is estimated after evaluating and integrating hundreds of diffuse CO₂ flow measurements that are made in observation points distributed throughout the volcanic building of Cumbre Vieja. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flux are registered in areas that are not very well ventilated and / or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at

the Fuencaliente station (LP08). All these geochemical observations are consistent with the current eruptive process.

During yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, continued at good levels in all seasons. No exceedances of the hourly or daily limit values have been recorded in any station. In the early morning and tomorrow of today good levels of air quality are maintained in all stations.

With regard to particles smaller than 10 microns (PM₁₀), yesterday, air quality levels have been maintained in all stations, with a slight increase in them from noon, not exceeding the limit value daily (set at 50 µg / m³) in none of them. During the morning of today the levels are maintained, between good and reasonably good in all the stations of the network

Check the website of the Government of the Canary Islands for Air Quality:
<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Scale of SO₂ emission ranges expressed as kg / s: VERY HIGH > 500 kg / s; HIGH between 50 and 499 kg / s; AVERAGE between 5 and 49 kg / s; LOW between 0.5 and 4.9 kg / s; VERY LOW <0.5 kg / s.

December 24th

The streams reach outside temperatures of up to 180 degrees, although the volcano continues to show depletion



The deformation episode that began on December 19 at the Jedey station (LP03) has reversed

On December 24, 25 and 31 and on January 1 there will be no accompaniments

The weakness of the tremor, the temperature of the coladas and jameos, and the general stability of all the parameters, have been some of the issues that have been discussed at today's meeting of the Steering Committee of the Special Plan for Civil Protection and Emergency Attention for Volcanic Risk of the Canary Islands (PEVOLCA), coordinated by the Minister of Public Administrations, Justice and Security, Julio Pérez.

The technical director of PEVOLCA, Miguel Ángel Morcuende, recalled that during today and tomorrow, on the occasion of Christmas Day, there will be no accompaniments. This will be repeated on December 31 and January 1,

2022. Likewise, he insisted that, when the evacuated areas can be accessed, it must always be done in a accompanied manner, the homes must be permanently ventilated and wait, minimum 15 minutes to enter it, focusing on not entering underground areas such as semi-buried warehouses or garages. In addition, he explained that there are still areas of very hot casting at shallow depths that oscillate around 180 degrees in temperature.

María José Blanco, spokesperson for the Scientific Committee, pointed out that the observables, both direct on the surface and from surveillance systems, continue to show signs of exhaustion of the eruptive process. If this trend continues for the next 24 hours, the PEVOLCA Plan would end the eruptive process. However, the end of the eruption does not imply the end of some dangers associated with the volcanic phenomenon, nor the end of the magmatic reactivation in Cumbre Vieja.

Seismicity continues at very low levels at all depths and tremor continues at the background noise level. Despite this, earthquakes that can be felt are not ruled out.

Regarding deformation, the deformation episode that began on December 19 at the Jedey station (LP03) has reversed, while no variations are observed in the rest of the data and observables. Regarding the visible emission of volcanic gases, it is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes. In addition, small collapses in the crater walls of the main and secondary cone and existing fissures continue to occur.

During yesterday the air quality due to sulfur dioxide (SO₂) was at good levels in all seasons. For the tenth consecutive day, no hourly or daily limit values were exceeded at any station. In the early morning and tomorrow of today good levels of air quality are maintained in all stations.

The diffuse emission of carbon dioxide (CO₂) continues to reflect an emission higher than the average value of the background levels and, in fact, yesterday this diffuse emission was 7.3 times the average of the background levels. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flux are registered in areas that are not very well ventilated and

/ or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen in the air. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

Regarding the concentration of particles smaller than 10 microns (PM₁₀), yesterday the air quality levels have been maintained in all the stations. In addition, for the seventh consecutive day there are no exceedances of the daily limit value (established at 50 µg / m³) in any station. During the morning of today the levels are maintained, between good and reasonably good in all the stations of the network.

However, the population is recommended to consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.d>
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Regarding the meteorological conditions, there will be a predominance of cloudy skies with weak to locally moderate rainfall on the north slope of the island. The wind will be light with a predominance of breezes. The next days atmospheric stability and dry weather will prevail. FMA yellow level warnings have been issued for coastal phenomena for the remainder of the 24th, affecting La Palma.

The operation of the airport in the next few hours will be subject only to purely meteorological conditions due to the absence of volcanic ash in the troposphere.

Those housed in hotels stand at 560, three people more than yesterday. Of the total, 385 are staying in Fuencaliente, 105 in Breña Baja and 70 in Los Llanos de Aridane, managed by the Red Cross and municipal services. In addition, 43 dependent people continue to be cared for in insular health centers.

Daily opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The observables, both direct on the surface and from surveillance systems, continue to corroborate the signs of exhaustion of the eruptive process. The end of the eruption does not have to imply the end of some dangers associated with the volcanic phenomenon, nor the end of the magmatic reactivation in Cumbre Vieja.

In order to say that the eruptive process that began on September 19 is complete, the recorded and observable data must maintain the signs of depletion of the system for 1 more day.

The visible emission of volcanic gases is punctual and sporadic, concentrating in the area of the eruptive centers and in the jameos of the volcanic tubes.

Continuous small collapses occur in the walls of the main and secondary cone craters in favor of existing faults and fissures.

Predominance of cloudy skies with weak to locally moderate rainfall on the N slope. The wind will be light with a predominance of breezes. The next days atmospheric stability and dry weather will prevail. Yellow level FMA notices have been issued for coastal phenomena for the remainder of the 24th affecting La Palma (the notices and their future updates can be consulted at www.aemet.es). The operation of the airport is subject to purely meteorological conditions, due to the absence of volcanic ash in the

troposphere. The trend for the next few days is stable and dry weather around the eruption.

The tremor is at the level of the background noise. Seismicity, which is of low magnitude, is at very low levels at all depths. Despite the current level of seismicity, the occurrence of felt earthquakes is not ruled out.

Regarding deformations, no trend in all stations of the network, after totally reversing the deformation in the Jedey station (LP03).

As a consequence of the weakness and intermittency of the volcanic gas plume, the SO₂ emission ranges will be expressed in units of kilograms per second (kg / s) from this report (*).

The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a land mobile position, was LOW yesterday (12/23). The LOW and VERY LOW emission rates are not related to magma rise, but rather to a solidification process of the superficial magma existing in the conduits of the eruptive center. In the case of non-visible volcanic gas emanations, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B) and during yesterday (12/23) this diffuse emission was 7.3 times the average of the background levels (7.3 x B). This diffuse emission is estimated after evaluating and integrating hundreds of diffuse CO₂ flow measurements that are made in observation points distributed throughout the volcanic building of Cumbre Vieja. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flux are registered in areas that are not very well ventilated and / or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. At the Los Llanos de Aridane station (LP10) a slight magmatic-hydrothermal fraction continues to be recorded in the CO₂ of the soil atmosphere, while this is practically nil at the Fuencaliente station (LP08).

During yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, continued at good levels in all seasons. For the tenth consecutive day, no hourly or daily limit values were exceeded at any station. In the early morning and tomorrow of today good levels of air quality are maintained in all stations.

With regard to particles smaller than 10 microns (PM₁₀), yesterday, air quality levels have been maintained in all stations. For the seventh consecutive day there were no exceedances of the daily limit value (established at 50 µg / m³) in any station. During the morning of today the levels are maintained, between good and reasonably good in all the stations of the network.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.d>
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(*) Scale of SO₂ emission ranges expressed as kg / s: VERY HIGH > 500 kg / s; HIGH between 50 and 499 kg / s; AVERAGE between 5 and 49 kg / s; LOW between 0.5 and 4.9 kg / s; VERY LOW <0.5 kg / s

December 25th

The La Palma eruption is declared over after 85 days and 8 hours and 1,219 hectares of lava



The Scientific Committee of the PEVOLCA Plan concludes that the eruption that began on September 19 in the Cumbre Vieja area ended on December 13 at 10:21 p.m.

The counselor responsible for the emergency, Julio Pérez, estimates that the first relocations could begin in the first half of January.

More than 2,800 drone flights have been coordinated from the Forward Command Post deployed on the island

The Special Plan for Civil Protection and Emergency Assistance for Volcanic Risk of the Canary Islands (PEVOLCA) declared today, after the opinion of the Scientific Committee, that the volcanic eruption of La Palma began on September 19 at 3.11 p.m. in the Cumbre Vieja area , ended on December 13 at 10:21 p.m., which has

meant that, after 85 days and eight hours, it has been the volcano that has lasted the longest active since there is historical data on the eruptions on the island.

"The eruption is over," highlighted the director responsible for the PEVOLCA Plan, Julio Pérez, in an appearance before the media held this Saturday, December 25. Pérez insisted that, after the ten days that the Scientific Committee decreed as necessary to terminate the eruptive process, it has been verified that the tremor has disappeared, the seismicity is of low magnitude, there is no lava and there is no ash. "It started in summer and ended almost in winter, it has been a volcanic autumn, literally," Pérez recalled.

"I have searched for the exact word that could define our state of mind. It is not joy, I cannot say that we are happy, and it is not satisfaction either. Today we feel relief. We can also add the word emotion, although we must also add the word hope. This unbearable litany of destruction has ended and now it's time to rebuild, improve, remake and replace ", said the Minister of Public Administration, Justice and Security of the Government of the Canary Islands.

Pérez clarified, however, that the emergency has not ended and that PEVOLCA remains on a red light since the risks associated with gases and heat from the laundry still persist. "Surveillance and monitoring will continue throughout the area, but we will start from Monday to study the rehousing plan, which will have to be a safe and orderly rehousing, gradual and gradual, in the least affected areas first, and those most affected later. ", Insisted Pérez, who advanced that the purpose of those responsible for the emergency is to begin with the first relocations during the first half of January, a period in which it is also intended to begin with the first tests to act on the lava, which will allow restore some of the essential services affected by the eruption.

Today's Scientific Committee's opinion also highlighted once again that the end of the eruption does not have to imply the end of some dangers associated with the volcanic phenomenon, nor necessarily the end of the magmatic reactivation in Cumbre Vieja.

The PEVOLCA Scientific Committee concluded that the eruption of the volcano that originated in Cabeza de Vaca has been strombolian fissure with phreatomagmatic pulses and with a magnitude 3 in the VEI index.

The composition of the lava and pyroclasts has been initially tephrite and since the end of September, baseite, while that of the lava has been mostly from badlands and minority cordate.

The maximum height of the cone has been 1,131 meters above sea level at the highest point and about 200 meters high at the most distant point from the pre-eruptive topography (based on 1,080 meters above sea level). .

In total, six craters have been created and the average length of the base of the building has been 700 meters. The dimension of the largest crater has been 172 meters in the major axis and 106 meters in the minor.

The estimated volume of the volcanic building has been 34 million cubic meters and the estimated volume of the total emitted material has been greater than 200 million cubic meters. Meanwhile, the maximum range of the ballistic projectiles has been 1.5 kilometers.

The casting surface is 1,219 hectares and the average estimated thickness is 12 meters, with a maximum of 70 meters. The maximum temperature measured in lava has been 1,140 degrees Celsius.

The subaerial area of the lava deltas is 48 hectares (43.46 hectares for the southern delta and 5.05 hectares for the northernmost delta). The estimated underwater surface of the lava deltas is over 21 hectares.

During the eruption, the height of the maximum eruptive column was 8,500 meters above sea level, on December 13, and the characteristic columns were 3,500 meters above sea level. The VONA warnings for aviation were 29 and the maximum route of subaerial lava flows was greater than 6.5 kilometers, while the submarine route was greater than 1.1 kilometers.

The number of localized earthquakes was 9,090, with a cumulative released seismic energy of 6.3×10^{13} J (175 million Mwh). The maximum seismic magnitude was recorded on November 19 at 1:04:47 with a 5.1 mbLg

earthquake at a depth of 36 kilometers. The maximum seismic intensity was IV-V (EMS).

On October 24, the maximum vertical deformation was recorded, with 33 centimeters in the GNSS station LP03. Finally, the opinion of the Scientific Committee estimates the amount of SO₂ emitted into the atmosphere by the volcano at approximately 2 Tg (2×10^{12} g).

Science and civil protection hand in hand

The scientific staff accredited in the emergency has been a total of 528 people, 55 from IGN, 31 from IGME, 63 from CSIC, 24 from IEO, 143 from INVOLCAN, 146 from ULL, 31 from ULPGC and 35 from AEMET .

During the Steering Committee, the General Director of Civil Protection and Emergencies, Leonardo Marcos, wanted to thank science for the work done, given that its constant monitoring of the volcanic eruption has been essential to make the right decisions in the field of civil protection.

Likewise, the president of the Cabildo de La Palma, Mariano Hernández, the Government delegate, Anselmo Pestana, the mayor of Los Llanos de Aridane, Noelia García, and the mayor of El Paso, Sergio Rodríguez, also congratulated themselves for the end of the volcanic eruption and, in general terms, highlighted inter-administrative coordination in the first phase of the emergency.

559 people currently housed

The latest updated data on people staying in hotels stands at 559 people, one person less than yesterday. Of the total, 384 are staying in Fuencaliente, 105 in Breña Baja and 70 in Los Llanos de Aridane, managed by the Red Cross and municipal services. In addition, 43 dependent people continue to be cared for in insular health centers.

During the eruption, 7,000 people were evacuated by decrees of the Cabildo de La Palma and orders from the Government of the Canary Islands. These took place on September 19, 20, 21, 22 and 24, and on October 12, 13, 14 and 20. Six confinements were also ordered on September 26, October 1 and 11 (twice), November 22 and December 13.

Counselor Julio Pérez also reviewed statistical data since the PEVOLCA Plan was activated on September 13, 103 days ago. In this time, 101 steering committees and 104 scientific committees have been held.

The troops deployed during the volcanic eruption have been a thousand between the Civil Guard, the General Corps of the Canary Police, the Military Emergency Unit, the National Police, local police, Forest Fire Intervention and Reinforcement Teams, the Forest Fire Brigade, Cabildo staff from La Palma, emergency personnel from the Government of the Canary Islands, the Red Cross and fire fighting services from different islands of the Archipelago. Meanwhile, the volunteers who have worked in the emergency number around 200.

Since the beginning of the eruption, 122 reports of complaints have been made by the security forces, of which 102 correspond to the Civil Guard, 10 to the General Corps of the Canarian Police and the other 10 to the National Police.

Likewise, the drone flight coordination center has ordered more than 2,800 flights of scientists, emergencies, security forces and the media in this time.

According to the Cadastre, the data on houses and buildings affected have been placed at 1,676, of which 1,345 are for residential use, 180 for agricultural use, 75 for industrial buildings, 44 for leisure and hospitality buildings, 16 for buildings for use. public and the remaining 16 for other uses. Meanwhile, the Copernicus satellite figures in 2,888 the destroyed buildings and in 138 the damaged buildings. The final data will be obtained once these numbers can be filtered and compared with the damage in the place.

The hectares of crops affected have been 370, being the majority of them banana, with 228.69. Vineyards, with 68.05 hectares, and avocados, with 27.43 hectares, have been the other most damaged plantations. To these data we must add 90 hectares of isolated crops. In addition, 412 hectares of banana trees have been covered by ashes, while 128 hectares of vineyards and 84 avocados.

On the affected roads, the damaged kilometers were 73.8, of which 2.3 correspond to the LP-2, 1.27 to the LP-211, 1.6 to the LP-212, 2.5 to the LP

-2132. 10.8 kilometers of streets, 2.1 kilometers of crossing and 49.9 kilometers of other roads have also been damaged by lava.

Finally, AENA figures in nine and a half days the time that the La Palma airport was in operational closure, although it was the airlines who decided whether or not to fly. In this sense, more than 500 operations were canceled.

Historical eruptions on La Palma

The eruption of the volcano that this Saturday has ended has been, with 85 days and 8 hours, the longest since data is available on the island, in addition to being the one that has affected the most hectares with 1,219.

The second longest eruption was that of the Tajuya volcano in 1585, which lasted 84 days and the lava covered 480 hectares. It was the eruption of the Martín volcano, in 1646, the second that affected the most surface with 760 hectares. This eruption lasted 82 days. In 1677 the San Antonio volcano lasted 66 days and its lava covered 650 hectares.

The fifth longest eruption was that of the El Charco volcano, in 1712, with 56 days and 490 hectares affected. In 1949, the San Juan volcano lasted 47 days and affected 450 hectares, while the eruption prior to the current one, that of Teneguía, was the shortest, lasting 24 days and with 213 hectares affected.

Opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET),

Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“The observables, both direct on the surface and from the surveillance systems, corroborate the exhaustion of the eruptive process that began on 09/19/2021 at 14:11 UTC, ending on 12/13/2021 at 22: 21 UTC.

The end of the eruption does not have to imply the end of some dangers associated with the volcanic phenomenon, nor necessarily the end of the magmatic reactivation in Cumbre Vieja.

There is no presence of volcanic tremor in the seismic signals. Seismicity, which is of low magnitude, is at very low levels at all depths. Despite the current level of seismicity, the occurrence of felt earthquakes is not ruled out.

Regarding deformations, no trend in all network stations.

As a consequence of the weakness and intermittency of the volcanic gas plume, the SO₂ emission ranges will be expressed in units of kilograms per second (kg / s) as of this report (*). The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a land mobile position, was LOW yesterday (12/24). The LOW and VERY LOW emission rates are not related to magma rise, but rather to a solidification process of the magma existing in the conduits of the eruptive center.

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, could not be estimated yesterday (12/24) for various technical reasons. Despite this, diffuse CO₂ emission does not have to present significant variations with respect to that estimated for the previous day (12/23), when it was 7.3 times the average of the background levels (7.3 x B). These diffuse CO₂ emanations can represent a danger for people in some areas of the Cumbre Vieja volcano, as long as high values of diffuse CO₂ flux are recorded in areas not very well ventilated and / or at

altitudes below one meter from the ground such as consequence of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air.

Regarding the meteorological conditions, predominance of cloudy intervals and loose O-component winds with breezes. The weather conditions for the next few days are expected to be influenced by the presence of a high pressure center that will be located between North Africa and the Peninsula. This anticyclone will bring stability and dry weather to the islands. The operation of the airport is subject to purely meteorological conditions, due to the absence of volcanic ash in the troposphere.

During yesterday the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, continued at good levels in all seasons. For the eleventh consecutive day there have been no exceedances of the hourly or daily limit values at any station. Since dawn today there has been an increase in the values recorded at the Los Llanos de Aridane, El Paso and Tazacorte stations, with regular levels of air quality at these stations. In the rest of the stations the air quality levels are good.

With regard to particles smaller than 10 microns (PM₁₀), yesterday, good levels of air quality have been maintained in all seasons. For the eighth consecutive day, there were no exceedances of the daily limit value (established at 50 µg / m³) in any station. During the morning of today the levels are maintained, between good and reasonably good in all the stations of the network.

Consult the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Scale of SO₂ emission ranges expressed as kg / s: VERY HIGH > 500 kg / s; HIGH between 50 and 499 kg / s; AVERAGE between 5 and 49 kg / s; LOW between 0.5 and 4.9 kg / s; VERY LOW <0.5 kg / s.

RESUME

- Start of eruption: 09/19/2021 14:11 UTC
- Eruptive typology: strombolian fissure with phreatomagmatic pulses
- Eruption end: 12/13/2021 22:21 UTC
- Magnitude of the eruption: VEI 3
- Duration of the eruption: 85 days and 8 hours
- Composition of lava and pyroclasts: initially tephrite and from the end of September baseite
- Typology of lava flows: mostly a'ā (badlands) and minority pāhoehoe (cordate)
- Maximum height of the cone: 1131 masl at the highest point (last measurement 1121 m) and about 200 m high at the most distant point from the pre-eruptive topography (based on 1080 m above sea level)
- Number of craters: 6
- Main eruptive alignment: length 557 m, heading N130°E
- Average length of the base of the volcanic building: 700 m
- Dimensions of the major crater: major axis 172 m, minor axis 106 m
- Estimated volume of the volcanic building: 34 Mm³
- Estimated volume of total emitted material: greater than 200 Mm³
- Maximum range of ballistic projectiles (blocks / bombs): 1.5 km
- Estimated area of lava flows: over 1200 ha
- Estimated thickness of the castings: 70 m (maximum) and 12 m (medium)
- Maximum measured lava temperature: 1140 °C
- Subarea area of lava deltas: 48 ha

- Estimated underwater area of the lava deltas: greater than 21 ha
- Height of the eruptive column: maximum 8500 masl (12/13/2021) and characteristic 3500 masl
- VONAS issued during the eruption: 29 (notices for aviation regulation)
- Maximum route of lava flows: greater than 6.5 km (subaerial) and greater than 1.1 km (underwater)
- Localized earthquakes: 9090
- Cumulative released seismic energy: 6.3 10¹³ J (175 million MWh)
- Maximum seismic magnitude: 5.1 mbLg (11/19/2021 01:08:47 UTC at 36 km depth)
- Maximum seismic intensity: IV-V (EMS)
- Maximum vertical deformation: 33 cm (10/24/2021 at GNSS LP03 station)
- Amount of SO₂ emitted: approximately 2 Tg (2 × 10¹² g)

December 27th

President Sánchez attends the first PEVOLCA Steering Committee on La Palma after the end of the eruption

The Scientific Committee warns that volcanic dangers persist in the post-eruptive phase and that the population must respect the exclusion zones

The red traffic light and the emergency situation are maintained, under the direction of the Government of the Canary Islands, with all the Civil Protection measures

Sánchez visited the Advanced Command Post and thanked the effort and dedication of the group of participants of the Civil Protection system, while reiterating the Government's commitment to the Island

This afternoon PEVOLCA will carry out a test in the wash located in La Laguna to see if work can be carried out on the access road between Las Marinas and Los Llanos de Aridane

The President of the Government of Spain, Pedro Sánchez, attended today on La Palma the first meeting held by the Steering Committee of PEVOLCA for the reconstruction of the Island, once scientists have certified the end of the most destructive eruption that has ever had Canary Islands, although he recalled that the emergency has not ended and that you have to be patient and follow the Civil Protection recommendations to preserve the health and life of the island's citizens.

On this eighth visit to La Palma, Sánchez thanked the undeniable contribution of science in this emergency, the work of all those involved to avoid victims and the coordination of the administrations and the Civil Protection system, and showed once again the support and the commitment of the Government, which, he said, will not forget the palm trees and palm trees in the reconstruction and relaunch of the island.

In this sense, the Scientific Committee today insisted on the need to transfer the population that we are in a post-eruptive phase in which certain volcanic dangers persist and that does not necessarily entail the end of the magmatic reactivation in Cumbre Vieja. In this regard, the Minister of Public Administrations, Justice and Security and director of the Plan, Julio Pérez, recalled that PEVOLCA maintains the red traffic light and the legal emergency situation, under the direction of the Government of the Canary Islands, and that all the measures remain in force of Civil Protection.

After the Steering Committee, Sánchez went to the Advanced Command Post, located in the municipality of El Paso, where he visited the different bodies that are part of the Civil Protection device, whom he thanked for their work carried out since the emergency was declared. During the visit, Sánchez was accompanied by the President of the Canary Islands, Ángel Víctor Torres; the director responsible for PEVOLCA, Julio Pérez; the

Government delegate in La Palma, Anselmo Pestana; and the president of the Cabildo de La Palma, Mariano Hernández.

In a subsequent press conference, President Sánchez stressed that the end of the eruption does not mean the end of the emergency and requested the maximum understanding, patience and collaboration from the palm trees because, he remarked, there is still danger and health must be guaranteed. of all citizens.

The exemplary behavior of the palm population, with its integrity, patience, solidarity and commitment is one of the lessons that Sánchez claimed to have learned throughout the more than 85 days of the eruption. Another of the lessons that, in his opinion, he has drawn from this emergency, he stressed, is the contribution of Canarian and Spanish public science, whose essential role he claimed, as well as the strong and oiled Spanish Civil Protection system, whose members he thanked your effort and dedication. He also highlighted the unity and collaboration shown by all the administrations during the eruption and affirmed that all of them will continue working side by side for the recovery and relaunch of the island of La Palma.

The president emphasized that the Government of Spain will not forget the palm trees and palm trees even though the volcano has stopped casting lava, and assured that the Executive will also be in the reconstruction, whose task will have to be faced, he said, with effort but also with patience and understanding.

Basic services

The different groups of PEVOLCA have continued today planning the repair work of basic and essential services, cleaning of the access roads and the plan of rehousing the neighbors in safety conditions, of which the population will be informed. This afternoon PEVOLCA will carry out a test in the wash located in La Laguna to find out if works can be carried out on the road for the access between Las Marinas and Los Llanos de Aridane.

The Steering Committee warns that it is necessary to be aware that there are volcanic risks associated with the high temperatures of the flows and the concentration of gases, which forces us to act with caution and with all

the guarantees to avoid personal injury, both from the neighbors and of the interveners, during the reconstruction.

Regarding the observable data, the scientists report that there is no presence of volcanic tremor in the seismic signals and the seismicity, of low magnitude, is at very low levels at all depths. There are also no trends in deformations.

Air quality levels are good at all stations in the network, both for PM10 particles and sulfur dioxide.

Opinion of the Scientific Committee

Prior to the meeting of the PEVOLCA Steering Committee, the Scientific Committee of the Plan met, in which its members presented their conclusions on the evolution of the eruptive phenomenon since yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“Since December 13 we have been in the post-eruptive phase. In this post-eruptive phase some volcanic dangers persist, and it does not necessarily entail the end of the magmatic reactivation in Cumbre Vieja.

There is no presence of volcanic tremor in the seismic signals. Seismicity, which is of low magnitude, is at very low levels at all depths. Despite the current level of seismicity, the occurrence of felt earthquakes is not ruled out.

Regarding deformations, no trend in all network stations.

The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases) was LOW (*) yesterday (12/26). The LOW and VERY LOW emission rates are not related to magma rise, but rather to a process of solidification of the superficial magma existing in the conduits of the eruptive center.

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B). During yesterday (12/26) this diffuse emission was 5.6 times the average of the background levels (5.6 x B) and reflects a decrease with respect to the estimates registered during the last 10 days. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flux are registered in areas that are not very well ventilated and / or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air.

Regarding the meteorological conditions, prevalence of breezes throughout the day on the O side of the island. Cloudy, tending to cloudy intervals with a low probability of light and occasional rains. Stable situation for the next few days. Normal airport operation.

During December 25 and 26, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, has remained at good levels in all seasons, except for one episode that occurred on the morning of the 25th, which reached the regular level at the El Paso, Los Llanos de Aridane and Tazacorte stations, but which quickly subsided and did not reach the limit values. Therefore, no new exceedances of the hourly or daily limit values have been registered in any station since December 13. During this day, the good levels are maintained in all the stations of the island.

With respect to particles smaller than 10 microns (PM₁₀), air quality levels have been maintained in all stations, with no exceedances of the daily limit value (established at 50 µg / m³) in any of them. During the morning of today the good levels are maintained in all the stations of the network.

Check the website of the Government of the Canary Islands for Air Quality:
https:

[//www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do](https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do)

(*) Scale of SO₂ emission ranges expressed as kg / s: VERY HIGH > 500 kg / s; HIGH between 50 and 499 kg / s; AVERAGE between 5 and 49 kg / s; LOW between 0.5 and 4.9 kg / s; VERY LOW <0.5 kg / s.

Satisfactory initial results in the first test to remove lava agreed by the Steering Committee



The performance of this test or trial was agreed by the Steering Committee, approved by the Technical Director and the counselor, and this morning it was ratified, at the meeting chaired by Pedro Sánchez

A total of about four meters of casting was removed and only the presence of water vapor was found

The initial test carried out this Monday for the removal of the lava at the La Laguna crossing, in the municipality of Los Llanos de Aridane, has yielded satisfactory initial

results, which will allow this Tuesday to continue with the tasks of action in the reconstruction of the damage caused by the La Palma volcano, whose eruption was declared completed on December 13.

The performance of this test or trial was agreed by the Steering Committee of the Special Plan for Civil Protection and Emergency Care for Volcanic Risk of the Canary Islands (PEVOLCA) and was approved by the Technical Director, Miguel Ángel Morcuende, and the Minister of Public Administrations, Justice and Security of the Government of the Canary Islands and person in charge of the Plan, Julio Pérez, and it was ratified this Monday morning at the meeting chaired by the president of the national Executive, Pedro Sánchez.

The work began on Monday afternoon under the supervision of the PEVOLCA Technical Director together with technical staff from the Cabildo de La Palma and the advice of members of the Scientific Committee and the Military Emergency Unit (UME).

This first action on lava began first with a manual tasting that gave negative results in terms of the presence of gases and a casting temperature of around 24 degrees Celsius.

Subsequently, it was deepened with machinery in three successive tastings in which gases and temperatures were measured again, with satisfactory results since the maximum temperature reached was 120 degrees and the only presence of gases was that of water vapor.

In this first test, a total of about four meters of laundry were removed. However, it is not possible to extend the results of this test to other sites on the lava-affected surface since, at other points, circumstances and temperatures would not allow it.

For this Tuesday it is planned to continue with this experimental action and there will be the presence of a technician and a municipal architect from the Los Llanos de Aridane City Council who will certify the situation of the buildings affected by the wash that is without progress at the junction from the last October.

If the attempt to displace the lava at this junction is successful, a very important part of the communications in this area of Los Llanos de Aridane will be able to be recovered.

December 29th

Pérez: "The volcanic emergency has demonstrated the importance of good planning in Civil Protection"



The Minister of Public Administrations, Justice and Security stated this way during the Civil Protection and Emergency Attention Commission in the Canary Islands, the body that presides

"The recent volcanic emergency on La Palma has demonstrated the importance of good planning in terms of Civil Protection," said Julio Pérez, Minister of Public Administrations, Justice and Security of the Canarian Executive, during the session of the Civil Protection Commission and Emergency Assistance in the Canary Islands, held before the meeting of the Canary Islands Government Council.

In today's session of the Commission, chaired by the counselor, the Island Emergency Plans of Lanzarote and La Gomera were approved. Likewise, the Municipal Emergency Plans (PEMU) of El Paso, on the island of La Palma; and La Victoria de Acentejo, El Sauzal and Buenavista del Norte, in Tenerife.

The Canary Islands Civil Protection and Emergency Attention Commission is the collegiate body of a consultative and deliberative nature, of participation, coordination and integration of Public Administrations in the matter of Civil Protection, and has the superior power to approve emergency plans in the scope of the Autonomous Community.

This commission is made up of representatives of the Administration of the Autonomous Community of the Canary Islands, the General Administration of the State in the Canary Islands, the island councils and the Canary Islands municipalities.

December 30th

Some evacuations could begin to rise on Monday in several areas of the affected municipalities



During the next three days the gas measurement work will continue and the works to guarantee the good condition of the houses

The Steering Committee today agreed to reopen some trails and routes that are outside the exclusion zones and evacuated

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) agreed today, after listening to the Scientific Committee, to start lifting the evacuations next Monday in various areas of the affected municipalities, located in the north of the flows and somewhere in the south, after detailed studies carried out and provided that the current conditions for the integrity of people are maintained. Thus, next Monday, January 3, 2022, the evacuation order could be lifted in the area that goes from the Tacande area to Espigón street; Marina Alta and Marina Baja; part of Las Martelas and the El Charco area.

During the next three days, the gas measurement work will continue and the works to guarantee the good condition of the houses, and if conditions are good on Sunday, January 2, the Steering Committee will terminate the evacuation order in those areas, which will become as in the pre-eruptive phase. For this reason, said relocation could be reversed, according to the spokesperson of the Scientific Committee, María José Blanco, who indicated that it will be conditioned to the evolution of the situation. In this regard, the neighbors are asked to be attentive to the indications of the authorities and personnel of the emergency device.

The PEVOLCA technical director, Miguel Ángel Morcuende, reiterated that the danger due to the existence of gases remains and insisted that, when the evacuated areas can be accessed, people must always be accompanied and ventilate the homes, while It emphasized that it is not necessary to enter underground areas such as semi-buried warehouses or garages.

The meeting also addressed the dangers that still exist after the eruption, indicated by the scientific staff. Thus, there remain different dangers associated with volcanic activity - gases, eruptive centers and flows, spikes in seismicity or accumulation of pyroclasts - that require monitoring. Likewise, the radius of affection of these dangers is very

dynamic and will depend on the evolution of each one of them in the post-eruptive phase, for which they will be periodically reviewed according to the exposed population.

During the Steering Committee, the lava removal work was also analyzed at the La Laguna crossing, in the municipality of Los Llanos de Aridane, where the results have been favorable so far. The conditions in this area are very suitable, since it is not a wash as such, but an overflow, so the results cannot be extrapolated to other areas affected by lava.

In the current post-eruptive phase, the committee meetings are held two or three times a week, a frequency that will be extended whenever the evolution of the situation so requires.

Regarding the number of people housed in hotels, there are currently 562, of which 372 are staying in Fuencaliente, 120 in Breña Baja and 70 in Los Llanos de Aridane, managed by the Red Cross and municipal services.

The meeting also agreed to reopen some trails on the Island, access to which had been closed after the eruption, as there is no current risk to people, and which are outside the forbidden, exclusion and evacuated zone. The trails or open routes are the following:

- PR LP13. Los Llanos de Aridane-La Caldera de Taburiente (Los Llanos de Aridane).
- PR LP13.1 La Cumbrecita Viewpoint-Camping Area (El Paso).
- PR LP13.3 National Park Visitor Center- PicoBejenado-National Park Visitors Center (El Paso).
- PR LP16.1 Crossing on the path PR LP16-LaSalemera (Villa de Mazo).
- SL FU 112 Los Quemados-El Puertito (Fuencaliente).
- SL VM 122 La Ratona Road-La Faya Road (Villa de Mazo).
- SL VM 123. SL VM 126-PR LP 16 (Villa de Mazo).
- SL VM 124 Camino de La Faya- PR LP16 (Villa de Mazo).

- SL VM 126 Cruz del Monte-Camino de La Faya (Villa de Mazo)

In addition, during the next two days, on the occasion of the New Year's Eve and New Year's Eve celebrations, there will be no accompaniments. This situation will be repeated on Sunday, January 2.

Opinion of the Scientific Committee

In the Scientific Committee of the Plan that was held on Wednesday, December 29, its members presented the conclusions on the evolution of the situation after the end of the eruption. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“Since December 13 we have been in the post-eruptive phase. In this post-eruptive phase, some volcanic dangers persist, and it does not necessarily lead to the end of the magmatic reactivation in Cumbre Vieja.

There is no presence of volcanic tremor in the seismic signals. Seismicity, which is of low magnitude, is at very low levels at all depths. Despite the current level of seismicity, the occurrence of felt earthquakes is not ruled out.

Regarding deformations, no trend in all network stations.

The emission of sulfur dioxide (SO₂) into the atmosphere by the current eruptive process in Cumbre Vieja (visible emanations of volcanic gases), registered through the use of remote optical sensors type miniDOAS in a land mobile position, was LOW yesterday (12/28). The LOW and VERY LOW emission rates are not related to magma rise, but rather to a solidification process of the superficial magma existing in the conduits of the eruptive center.

In the case of the non-visible emanations of volcanic gases, the diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of the background levels (B). During yesterday (12/28) this diffuse emission was 6.2 times the average of the background levels (6.2 x B) and reflects a stability with respect to the estimates registered during the last 2 days. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flow are registered in areas that are not very well ventilated and / or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air.

Loose synoptic flow from E that will rotate to S from noon on. In the area of interest, the breeze regime will alternate with flows parallel to the coast. The anticyclonic blockade and conditions of atmospheric stability continue. Intrusion of Saharan dust that could affect La Palma from the 30th. Airport under normal operating conditions.

During December 27 and 28, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, has remained at good levels in all stations, so no further exceedances of the values have been recorded. Limit hours or daily in any station from December 13. During this day, the good levels are maintained in all the stations of the island.

With regard to particles smaller than 10 microns (PM₁₀), on December 27 and 28, good levels of air quality were maintained in all stations, with no exceedances of the daily limit value (established at 50 µg / m³) in none. During this morning the good levels are maintained in all the stations of the network, except in Los Llanos de Aridane, which is at reasonably good levels.

Check the website of the Government of the Canary Islands for Air Quality:
<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Scale of SO₂ emission ranges expressed as kg / s: VERY HIGH > 500 kg / s; HIGH between 50 and 499 kg / s; AVERAGE between 5 and 49 kg / s; LOW between 0.5 and 4.9 kg / s; VERY LOW <0.5 kg / s.

January 2nd

Organized for tomorrow the operation to return to their homes of about 1,000 evacuees



Starting at 9:00 a.m. on Monday, January 3, people from authorized areas will be able to return to their homes

In the north, the nuclei affected are partially Tacande and Tajuya (Hat roundabout), Las Martelas, La Condesa, Marina Alta, Marina Baja and Las Cabezas (soccer field and cemetery area)

In the South zone, the return of the population of the nucleus of El Charco will be allowed

Access to the rest of the areas evacuated by the emergency cannot yet be authorized until they meet the necessary security conditions, so in them the indications given by the Plan Directorate must be respected.

Representatives of all administrations and emergency teams attended the meeting of the Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA), chaired and directed by the counselor. responsible for the Plan, Julio Pérez. During it, both the

document on the end of the evacuation of some areas and population centers of El Paso, Tzacorte, Los Llanos de Aridane and Fuencaliente was prepared, as well as the operations necessary for the relocation of the population of said areas, which will take carried out tomorrow, Monday, from 9:00 a.m., considering that these already meet safe conditions for the return of about 1,000 evacuees.

The population centers affected by this measure, on the north side, are partially Tacande and Tajuya (Hat roundabout), Las Martelas, La Condesa, Marina Alta, Marina Baja and Las Cabezadas (soccer field and cemetery area); and in the south, the nucleus of El Charco.

The technical director of PEVOLCA, Miguel Ángel Morcuende, detailed the areas to which his neighbors will be able to return from tomorrow. Specifically, he explained that on the north side the end of the evacuation is authorized from kilometer point (PK) 3 of the LP-212 Carretera de San Nicolás in a straight line to PK 44.1 of the LP-2 Carretera General de Tamanca . From this point in a straight line to the fork in the Los Llanos-Fuencaliente highway, from there to the fork in Camino Morro de Cabrito. Continue on this road to the west along Camino de Cruz Chica 500 meters. From there in a northwesterly direction until joining the LP-213 junction with Camino Los Barretos, continue west to the Camino de Martelas de Abajo, all to the north of the nucleus of La Laguna. Continue south to the Montaña de La Laguna,

Regarding the southern area, he explained, the evacuation of the El Charco nucleus is ending, from the north of PK 37.5 of the LP-2 General Jedey Highway, the LP-210 road being closed to the public.

Dependent persons whose domiciles are in the areas where the evacuation will rise tomorrow should contact municipal services to return to their homes.

The Scientific Committee will present in the coming days a new proposal for delimiting the perimeter for the possible relocation of population from other areas or population centers, both from the north and south of the wash, which will be determined based on the proximity of the wash. temperature and height of these or gases, among other issues. Likewise, in areas south of

the colada, relocation will also depend on the recovery of basic services, such as water.

The Steering Committee emphasizes that as long as the necessary security conditions are not in place, the return of people to the rest of the areas evacuated by the emergency cannot be authorized, so that in them the indications given by the Directorate of the Plan must be respected. remember that the legal emergency situation continues at level 2 and red light.

Morcuende cited a series of observations and recommendations that relocated people should follow, and stressed that it must be very clear that you should not access underground spaces, such as garages, storage rooms or basements, among others, without a measurement having been made. of previous gases. If it is necessary to access them, it is necessary, he indicated, to carry out gas measurements, which can be requested from CECOPIN through the numbers 628.18.20.70; 689.18.88.16; 922.46.83.96 from 8:00 a.m. to 7:00 p.m.).

It is also important that people go to the houses always accompanied and that any source of ignition is avoided (smoking, turning on the light, etc.) until the building is ventilated, for which it is necessary to open doors and windows and wait 15 minutes before to access the interior. In the event that you notice dizziness, shortness of breath, nausea or lack of strength, you have to quickly leave the building and call the emergency number 1-1-2.

Another of the indications indicated by Morcuende is that people must ensure that there are no bulges, deformations or cracks in walls or ceilings, in which case the council must be informed so that it can carry out the corresponding inspection.

Likewise, it is important that neighbors always have an operational telephone number, that they stay informed through official sources and that they follow their instructions. Morcuende stressed that it is very important that the limits established by the authorities are not exceeded.

Regarding ash removal work, it is advisable to protect your skin (shirts, diving suit, gloves, non-slip footwear, head protection), the respiratory tract

(mask FFP2 or higher) and the eyes (splash goggles). Also, light watering is recommended to avoid raising dust.

Regarding the cleaning of roofs, it is indicated that it is only done on flat roofs and roofs, and for risk roofs, it is advisable to entrust this work to specialized services.

Another of the observations made to the public is to avoid going under unstable and ash-laden elements (gutters, awnings, panel overhangs, sheet metal or wood, etc).

In addition, the technical director of PEVOLCA remarked that the limitations of Covid-19 remain in full on La Palma, an island that is currently at Level 2.

Morcuende recalled that after the completion of the eruption, a post-eruptive phase has passed, in which the meetings of the Scientific and Director Committees are held two or three times a week, a frequency that will be extended as the situation evolves as well. requires it. However, the members of both committees are in permanent contact to monitor the circumstances of the emergency at all times.

Today's meeting of the Steering Committee also analyzed the work to remove the lava at the La Laguna crossing, in the municipality of Los Llanos de Aridane, where the area is currently being searched and is being dealt with. to open a hole to access the road that goes down to Las Marinas. This new phase of the work is being more expensive because the machinery is with a harder material than the slag that was above the spill of the casting.

January 4th

PEVOLCA is studying to advance relocations of new population centers to next Friday



A study by scientists from the IGME-CSIC and the Cabildo de La Palma on the state of the runoffs makes it possible to adjust the perimeters of the exclusion area

The return started this Monday is taking place without incident and gradually

The Scientific Committee estimates the volume of volcanic materials emitted to form the volcanic building at 28 million m³ and for the subaerial lava field at about 187 million m³.

The Steering Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk of the Canary Islands (PEVOLCA) studies to advance relocations of new population nuclei to next Friday, after the first results of

the analysis of the state of the flows carried out by the scientists of the Geological Institute and Minero (IGMA-CSIC) and the Cabildo de La Palma that will allow progress in a better definition of the exclusion zone.

The meeting this Tuesday was chaired and directed by the director responsible for the Plan, Julio Pérez, and during it the data obtained in the monitoring of the runoffs in the northern zone that have been carried out since December 31 was presented to know the stability, gas emission and temperature of the lava and thus be able to adjust the perimeters of the evacuated areas. With the information provided, the Technical Directorate and the Advanced Command Post will establish in each case the safety distances from the edges of the streams and will mark the accesses according to the risk with informative posters. In the coming days, the same study will be carried out on the south side of the eruption, where the greatest problems persist due to the emission of gases, mainly in La Bombilla, El Remo and Puerto Naos.

In addition, the representatives of all the administrations and emergency teams present in the Steering Committee highlighted the collaboration and prudence shown by the population in returning to their homes in the first phase of relocation, which began yesterday Monday for certain nuclei populations of El Paso, Tazacorte, Los Llanos and Fuencaliente and which are, to the north, partially Tacande and Tajuya (Hat roundabout), Las Martelas, La Condesa, Marina Alta, Marina Baja and Las Cabezadas (soccer field area and graveyard); and in the south, the nucleus of El Charco.

The return is being carried out without incident and gradually, following at all times the instructions of the authorities not to go down to basements, ventilate the homes well and always be accompanied.

In this sense, it was recalled that during January 5 and 6, on the occasion of Three Kings Day, the accompaniments to irrigators, farmers and neighbors will be suspended.

Regarding the number of housed in hotels, the figure is reduced by 16 people compared to the latest available data, with a total of 548 people staying. Of these, 356 are staying in Fuencaliente, 122 in Breña Baja and 70 in Los Llanos de Aridane. The Red Cross estimates that several dozen

people will return home in the near future. Likewise, of the dependent people, who were evicted before the eruption, 43 continue in social health centers on the island and will return to their homes once their relatives do so and their homes have adequate housing conditions for these people.

The meeting also analyzed the latest report from the Scientific Committee, which recalls that in this post-eruptive phase some volcanic dangers persist and does not necessarily entail the end of the magmatic reactivation in Cumbre Vieja, although the absence of tremor, seismicity, remains. it remains of low magnitude at all depths and that there is no trend in deformations.

Air quality levels have been good since December 28, both in sulfur dioxide and PM10 particles in all stations, with a single exceeding of the daily limit value on December 31 in Los Llanos de Aridane.

The Scientific Committee also stated that the estimated volumes of volcanic materials emitted to form the volcanic building is 28 million m³ and for the subaerial lava field it is about 187 million m³. To these volumes we must add those of the falling pyroclastic material and the volume of the underwater lavas.

Opinion of the Scientific Committee

In the Scientific Committee of the Plan that was held on Wednesday, December 29, its members presented the conclusions on the evolution of the situation after the end of the eruption. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“Since December 13 we have been in the post-eruptive phase. In this post-eruptive phase some volcanic dangers persist, and it does not necessarily entail the end of the magmatic reactivation in Cumbre Vieja.

The estimated volumes of volcanic materials emitted to form the volcanic building is 28 million m³ and for the subaerial lava field it is about 187 million m³. To these volumes we must add those of the falling pyroclastic material and the volume of the underwater lavas.

There is no presence of volcanic tremor in the seismic signals. Seismicity, which is of low magnitude, is at very low levels at all depths. Despite the current level of seismicity, the occurrence of felt earthquakes is not ruled out.

Regarding deformations, no trend in all network stations.

The emission of sulfur dioxide (SO₂) has been LOW for the last 7 days. This emission is NOT related to magma rise, but rather to a process of solidification of the superficial magma still existing in the conduits of the eruptive center.

The diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, reflects a downward trend during the last 7 days, although they continue to be higher than the range of values considered normal for the Cumbre Vieja building. In some specific areas of Cumbre Vieja, these diffuse CO₂ emanations can represent a danger to people as long as high values of diffuse CO₂ flux are registered in areas that are not very well ventilated and / or at heights below one meter from the ground as a consequence. of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. Specifically in the La Bombilla area, the diffuse CO₂ emanations clearly have a volcanic origin, reaching relatively high concentrations of CO₂ in the air.

Synoptic flow of the NE is weak, being from the E in the El Paso area and with a regime of breezes on the west coast of the island. The wind will intensify throughout today and during the next few days. Stable time during the day with disappearance of the thermal inversion at low levels. The intrusion of Saharan dust continues until the end of the day, beginning tomorrow. Probability of weak rainfall from the afternoon of day 5, and may

be moderate from day 7. Normal operation of the airport, subject only to weather conditions.

Since December 28, air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, has remained mainly at good levels in all seasons, so no further exceedances of the limit values have been recorded. schedules or newspapers in any station since December 13. During this day, the good levels are maintained in all the stations of the island.

With regard to particles smaller than 10 microns (PM₁₀), since December 28, the levels have been maintained mostly between good and reasonably good in all stations, with an excess of the daily limit value (established at 50 µg / m³) at the Los Llanos de Aridane station on December 31. During the morning of today the levels between good and reasonably good are maintained in all the stations of the network.

Check the website of the Government of the Canary Islands for Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) Scale of SO₂ emission ranges expressed as kg / s: VERY HIGH > 500 kg / s; HIGH between 50 and 499 kg / s; AVERAGE between 5 and 49 kg / s; LOW between 0.5 and 4.9 kg / s; VERY LOW <0.5 kg / s.

January 6th

PEVOLCA reduces the exclusion zone and allows more evacuated population to return to their homes this Friday



After analyzing the risk areas in detail, the relocation of several areas located on both the north and south sides of the casting is authorized.

The limited security areas must be respected and those buildings that the municipal technicians consider do not meet habitability conditions may not be occupied.

The Directorate of the Special Plan for Civil Protection and Attention to Emergencies due to volcanic risk of the Autonomous Community of the Canary Islands (PEVOLCA), at the proposal of the technical director of the Plan and after consulting the Scientific Committee for Evaluation and Monitoring, has agreed, following the established channels In their meeting last Tuesday, reduce this Friday the exclusion zone that still remains in certain areas affected by the volcanic eruption, which began on September 19, 2021 in Cumbre Vieja (La Palma), and which remain evacuated, by consider that they meet safe conditions for the return of their inhabitants.

Thanks to this agreement, from this Friday, at 7:00 a.m., residents on the north side of the wash are allowed to return to their homes, whose homes are located in the areas between the coastline and La Montaña. Lagoon; the area from the east of the aforementioned mountain to the La Laguna crossing, including the La Aldea road; the houses located on the Baile Bueno road; the houses on the Cruz Chica road; the Los Campitos road; the homes on the Tamanca general highway (LP-2) and the homes on the San Nicolás highway (LP-212).

In addition, some points on the south side are also incorporated and the return of inhabitants of the houses located on the general road of Jedey (LP-2) and up to number 6 of the aforementioned road is authorized, where the new control point will be located . The buildings located on the Cuesta Blanca road, Piteras road and La Dichosa road are included in the relocation, as detailed in the attached cartography.

PEVOLCA warns, once again, that the safety zones marked around the front of the washes and established after the appropriate risk analysis must be respected, and that those buildings that, according to the municipal technical offices, cannot be occupied , do not meet habitability conditions.

Likewise, the recommendations not to access underground spaces (garages, storage rooms, basements, etc.) without prior gas measurement are maintained, which can be requested through Cecopin (628 182 070; 689 188 816; 922 468 396 , from 8:00 a.m. to 7:00 p.m.), nor alone. In addition, you must first make sure that there are no bulges, deformations or cracks in the walls or ceilings. If so, you have to inform the city council.

It is also advisable to turn off any source of ignition (smoking, turn on the light, etc.) until the building is ventilated, and open doors and windows to ventilate, waiting 15 minutes before entering the interior.

If you notice dizziness, shortness of breath, nausea or lack of strength, you should quickly leave the building and call the emergency number 112, so it is always necessary to have a working telephone.

Before returning to the evacuated areas, it is necessary to obtain information through official sources and follow their instructions, being

aware that in no case should the limits established by the authorities be exceeded.

On the other hand, for ash cleaning jobs, you have to protect your skin (shirt, diver, gloves, non-slip footwear, head protection), respiratory tract (FFP2 mask or higher) and eyes (anti-splash goggles), and water slightly to avoid raising dust. In the case of having to clean roofs and roofs, do it only in those that have flat roofs. In risk covers, order it to specialized services. Also avoid going under unstable and ash-laden elements (gutters, awnings, panel overhangs, sheet metal or wood, etc.).

PEVOLCA reminds that dependents may go to municipal social services.

- Cartography is attached.

January 7th

The restoration of basic services and the road network is the focus of the Steering Committee of the PEVOLCA Plan



Another 90 people staying in the hotels will be able to return to their homes after rehousing was authorized this Friday in several areas north and south of the laundry

Until noon this Friday no earthquake had been recorded in the earthquake surveillance network of the National Geographic Institute

The Scientific Committee recommends not approaching the lava flows due to the serious risk of being exposed to the gases emitted, landslides and high temperatures.

The restoration of basic services such as water and the road network in the areas affected by the eruption of La Palma were the focus of this Friday's meeting of the Steering Committee of the Special Plan for Civil Protection and Emergency Response to Volcanic Risk in the Canary Islands (PEVOLCA).), directed by the Minister of Public Administrations, Justice and Security of the Government of the Canary Islands and responsible for the plan, Julio Pérez.

In this sense, it was highlighted that throughout this month the restitution of the drinking water network in the southern area of the laundry is planned. From the Cabildo de La Palma it was indicated that in the coming weeks they expect to finish both the work of transferring water from the north to the south, through the fire-fighting network in the El Pilar area, as well as the connection of this network with the warehouses located in Fátima and Las Norias. While these works are finished and for the cases that are necessary, the transfer of water is studied, to be used in cleaning, through tanks, to the affected houses.

On the other hand, the Steering Committee stated that the works on the access road to Puerto Naos are close to completion, after this work has been affected by the presence of gases in the area, and that the pier that will be built in the Punta del Negro area is pending bathymetry studies to establish the depths and real state of the seabed in order to specify the actions to be carried out.

This Friday the return to the homes of residents of population centers both north and south of the laundry was allowed. Likewise, the collection of

belongings has been enabled in the JTI so that people can return to inhabit their properties with their belongings.

At this time, there are 539 people housed in hotels, nine fewer than the latest available data. Of these, 344 are in Fuencaliente, 125 in Breña Baja and 70 in Los Llanos de Aridane. The Red Cross, the body in charge of caring for these evacuees, estimates that 90 people could leave the hotels to return to their homes after the authorized relocation from this Friday.

The Steering Committee also analyzed the possibility that in the near future the return to the homes of residents in other towns located to the south of the colada would be allowed.

No record of earthquakes throughout the day

This Friday has been the first day that, since the volcanic crisis began in La Palma, no earthquake has been recorded on the display of the National Geographic Institute. The last earthquake corresponds to 10:20 p.m. on January 6, with a magnitude of 1.6 mbLg and 10 kilometers deep.

On this matter, the opinion of the Scientific Committee held prior to today's meeting reflects that the seismicity at this time is of low magnitude and is at very low levels at all depths, although despite this, the occurrence cannot yet be ruled out. of felt earthquakes. Nor is the presence of volcanic tremor confirmed in the seismic signals.

In addition, given the reduction of the exclusion zone, the Scientific Committee insists on the recommendation not to approach the lava flows due to the serious risk of being exposed to the gases emitted, landslides and high temperatures that, at some points of the lava flows, They reach up to 300 degrees.

Since January 4, the date of the last report, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, has remained at good levels in all seasons. With regard to particles smaller than 10 microns (PM₁₀), since January 4 air quality levels have been maintained

between good and reasonably good in all seasons, without new exceedances of the daily limit value (established at 50 $\mu\text{g}/\text{m}^3$).

Regarding the weather forecast, the trend for the next few days is stable weather and a flow from east to southeast that will induce the intrusion of Saharan dust starting at the end of tomorrow, Saturday. The operation of the airport is subject to purely meteorological conditions, due to the absence of volcanic ash in the troposphere.

Opinion of the Scientific Committee

Prior to the Steering Committee, the meeting of the Plan's Scientific Committee took place. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), the Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Since December 13 we are in the post-eruptive phase. In this post-eruptive phase some volcanic hazards persist, and it does not necessarily entail the end of the magmatic reactivation at Cumbre Vieja.

There is no presence of volcanic tremor in the seismic signals. The seismicity, which is of low magnitude, is at very low levels at all depths. Despite the current low level of seismicity, the occurrence of felt earthquakes cannot yet be ruled out.

Regarding deformations, without trend in all the stations of the network.

Sulfur dioxide (SO_2) emission has been LOW for the last 7 days. This emission is NOT related to magma ascent, but to a process of solidification of the surface magma still existing in the conduits of the eruptive center.

The diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, reflects a downward trend during the last 7 days, although they continue to be higher than the range of values considered normal for the Cumbre Vieja building. In some specific areas of Cumbre Vieja these diffuse CO₂ emissions can represent a danger to people as long as high values of diffuse CO₂ flow are recorded in areas that are not very well ventilated and/or at heights below one meter from the ground as a consequence of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. Specifically, in the La Bombilla area, diffuse CO₂ emissions clearly have a volcanic origin, reaching relatively high concentrations of CO₂ in the air.

Moderate to strong NE wind with gusts that can reach 75 km/h in the El Paso area, summits and in the NW and SE extremes of La Palma. Today probable light rains in the N and E. Yellow level FMA warnings have been issued due to coastal phenomena and maximum gust (warnings and future updates can be consulted at www.aemet.es). The trend for the next few days is stable weather and flow from the E to SE that will induce the intrusion of Saharan dust from the end of tomorrow, Saturday. The operation of the airport is subject to purely meteorological conditions, due to the absence of volcanic ash in the troposphere.

Since January 4, the date of the last report, the quality of the air due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, has remained at good levels in all seasons, so there have been no new exceedances of the hourly or daily limit values at any station since December 13. During today, good levels are maintained in all stations on the island.

With regard to particles smaller than 10 microns (PM₁₀), since January 4 air quality levels have been maintained between good and reasonably good in all seasons, without new exceedances of the daily limit value (established at 50 µg /m³). During the morning of today, the levels are maintained between good and reasonably good in all the stations of the network.

Check the website of the Government of the Canary Islands for Air Quality: <https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) SO₂ emission range scale expressed as kg/s: VERY HIGH > 500 kg/s; HIGH between 50 and 499 kg/s; AVERAGE between 5 and 49 kg/s; LOW between 0.5 and 4.9 kg/s; VERY LOW < 0.5 kg/s.

January 12th

The PEVOLCA Steering Committee will study next week the possibility of new relocations in La Palma



Work is intensifying to clean up ash with heavy machinery in the upper part of the southern lava flow, where there are no longer any risks associated with the volcanic process

Puerto Naos and La Bombilla continue to show very high levels of gas accumulation and for the time being the accesses will remain closed.

The high temperatures and the height of the flows will delay the action on the affected communication routes

The gas measurement levels in the areas affected by the eruption of La Palma, as well as the cleaning of ashes, the state of basic services and the analysis of the possibility of carrying out works on the affected road network were the focus of the meeting on Wednesday of the Steering Committee of the Special Plan for Civil Protection and Emergencies Attention due to Volcanic Risk of the Canary Islands (PEVOLCA), directed by the Minister of Public Administrations, Justice and Security of the Government of the Canary Islands and responsible for the plan, Julio Pérez, where it was agreed to study the next week new rehousing proposals.

In order to proceed with the lifting of the evacuations of the areas located in the upper part of the southern lava flow, mainly Las Manchas and Las Norias, and guarantee access for the residents, the work of cleaning the ashes with heavy machinery has been intensified, both in the road network and in homes, while the reestablishment of the drinking water network continues. As soon as the necessary security conditions are met, the relocation of this population area where there are no longer risks will be authorized.

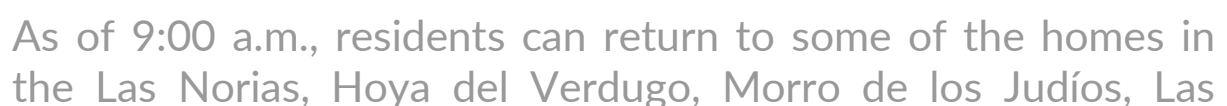
On the other hand, the Steering Committee reported that both Puerto Naos and La Bombilla continue to register very high levels of CO₂, associated with the magmatic process of the eruption, with an accumulation that is harmful to health. In this sense, gas measurements will continue to be monitored daily and for the time being the opening of this area cannot be contemplated, which also prevents access to El Remo and Charco Verde.

To date, residents of the population centers authorized to date have been allowed to return to their homes, both north and south of the laundry, and the collection of belongings stored in the old JTI factory has been enabled so that people can recover their belongings. No relevant incidents have been recorded in these liberated areas and the residents are gradually returning.

Of the people housed in hotels, there are 140 who could return to their homes in the next few days, since they are in authorized areas. When this happens, approximately 380 people would remain, in some cases, pending the lifting of restrictions in other areas, and in others, due to the loss of their homes in the eruption.

These issues will be discussed at a meeting to be held next Monday in La Palma and in which the General Director of Roads of the Ministry of Transport, Mobility and Urban Agenda, and the Minister of Public Works, Transport and Housing of the Government of the Canary Islands will participate. . This meeting will also be attended by the president of the Cabildo de La Palma, the mayors of the affected municipalities and representatives of the Scientific Committee.

The PEVOLCA authorizes this Tuesday new returns to their homes of population evacuated to the south of Colada



Manchas, disseminated Las Manchas, Cuatro Caminos, San Nicolás and south of Camino José communities. Pons la Jurona

According to ISTAC data, there are more than 800 people registered in these nuclei

The population must respect the delimited security areas and only occupy buildings that meet habitability conditions.

Access to El Remo, Puerto Naos and La Bombilla continues to be prohibited as long as safety conditions are not met due to the presence of gases

The Directorate of the Special Plan for Civil Protection and Attention to Emergencies due to volcanic risk of the Autonomous Community of the Canary Islands (PEVOLCA), at the proposal of the technical director of the Plan and after consulting the Scientific Committee for Evaluation and Monitoring, has agreed to authorize, as of tomorrow, Tuesday, the end of the evacuation to the south of the laundry from some areas affected by the volcanic eruption that began in La Palma on September 19, 2021.

As of this Tuesday at 09:00 a.m., residents of the south side of the laundry in the municipalities of El Paso, Los Llanos de Aridane and Tazacorte are allowed to return to their homes, in some of the homes located in the towns of Las Norias, Hoya del Verdugo, Morro de los Judíos, Las Manchas, disseminated from Las Manchas, Cuatro Caminos, San Nicolás and south of the José Pons la Jurona road.

Specifically, they are the buildings located in the areas from kilometer point 8,650 of the LP-213, where the new access control will be located, heading northwest, to Las Norias, including Hoya del Verdugo and Morro de Los Judíos. Continue east following the perimeter of the lava flow, keeping a safety distance of two meters, to the LP-211, where it descends to the Camino José Pons la Jurona. Follow this street in an easterly direction until kilometer point 0.550 of the LP-212, point from which it connects in a southeasterly direction with the San Juan wash.

According to data from the Canary Institute of Statistics (ISTAC), there are more than 800 people registered in these centers.

Likewise, due to the presence of gases, access to the rest of the areas evacuated due to the emergency cannot yet be authorized, El Remo, Puerto Naos, La Bombilla, the northern area of the Camino José Pons La Jurona and continuing to the east until PK 0.550 of the LP-212 until it connects in a south-easterly direction with the San Juan wash, for which reason the indications given by the Plan Directorate must be respected.

PEVOLCA warns, once again, that the security zones marked around the front of the lava flows and established after the appropriate risk analysis must be respected, and that those buildings that, according to the municipal technical offices, cannot be occupied. , do not meet habitability conditions.

Likewise, recommendations are maintained not to access underground spaces (garages, storage rooms, basements, etc.) without prior gas measurement, which can be requested through Cecopin (628 182 070; 689 188 816; 922 468 396 , from 8:00 a.m. to 7:00 p.m.), nor alone. Previously, in addition, it is necessary to make sure that there are no bulges, deformations or cracks in walls or ceilings. If so, you have to inform the town hall.

It is also advisable to turn off any source of ignition (smoking, turning on the light, etc.) until the building is ventilated, and open doors and windows to ventilate, waiting 15 minutes before entering the interior.

If you notice dizziness, shortness of breath, nausea or lack of strength, you should leave the building quickly and call the 1-1-2 emergency number, so it is necessary to always have a working telephone.

Before returning to the evacuated areas, it is necessary to obtain information from official sources and follow their instructions, being aware that in no case should the limits established by the authorities be exceeded.

On the other hand, for ash clean-up work, protect your skin (shirt, overalls, gloves, non-slip shoes, head protection), your respiratory tract (FFP2 mask or higher) and your eyes (anti-splash goggles), and water lightly to avoid kicking up dust. In the case of having to clean roofs and terraces, do it only

in those that have flat roofs. In risk covers, entrust it to specialized services. Also avoid passing under unstable and ash-laden elements (gutters, awnings, panel, sheet metal or wood overhangs, etc.).

PEVOLCA recalls that dependent persons may contact the municipal social services and that at this time on the island of La Palma the limitations corresponding to Level II remain in the fight to prevent COVID-19.

January 19th

The reduction of the maritime exclusion area due to the La Palma eruption will allow the reactivation of fishing in the area



The Maritime Captaincy defines the new exclusion zone half a nautical mile from the coast between La Bombilla and San Borondón

The evacuation of Puerto Naos, La Bombilla and El Remo is maintained due to the emission of toxic gases

In the coming days, the gas measurement equipment will be reinforced in the evacuated areas

The last authorized population returns this week have not registered incidents

The reduction of the maritime exclusion zone to half a nautical mile, the reinforcement of the gas measurement equipment in the areas that continue to be evacuated and the restoration of basic supplies were the focus of this Wednesday's meeting of the Steering Committee of the Special Civil Protection Plan and Emergency Attention for Volcanic Risk of the Canary Islands (PEVOLCA), directed by the Minister of Public Administrations, Justice and Security of the Government of the Canary Islands and responsible for the plan, Julio Pérez.

The Maritime Captaincy of Santa Cruz de Tenerife, of the General Directorate of the Merchant Marine of the Ministry of Transport, Mobility and Urban Agenda, reduced, after consulting the Scientific Committee, the maritime exclusion zone, which was located at two nautical miles from the coast between La Bombilla and San Borondón, currently passing half a nautical mile. In addition, this exclusion area could be adjusted again once a new bathymetry is carried out by the Spanish Institute of Oceanography. With this reduction, fishing activity in the area can be reactivated since the new delimitation only affects demersal fishing.

At this time, the cleaning of the houses and the accompaniment of the relocated areas continue in collaboration with firefighters, Forest Fire Intervention and Reinforcement Teams (EIRIF) of the Government of the Canary Islands, Forest Fire Reinforcement Brigades (BRIF) of the Government of Spain, the Red Cross Mountain Team and the Environment staff of the Cabildo de La Palma.

Although relocations have been authorized this week, in the short term it is not planned to allow the return of the population in the areas still affected by the presence of high levels of gases. Therefore, the evacuation of Puerto Naos, La Bombilla and El Remo is maintained, as well as in the limit of the area of the Camino José Pons - La Jurona attached to the south wash.

Likewise, the Steering Committee reported that basic electricity and water services are being gradually restored in the relocated areas, where more than 100 homes have been supplied with water from buckets to proceed with cleaning them in collaboration with firefighters and CECOPIN staff.

Meanwhile, for those areas in which the presence of gases that prevent people from returning to their homes has been verified, the PEVOLCA Steering Committee plans to reinforce the equipment of measurement systems at various levels. On the one hand, four fixed measurement stations will be established, two in La Bombilla and two in Puerto Naos, which will continuously transmit gas level measurements to the Advanced Command Post. To these will be added a fifth that will be installed by the National Geographic Institute. On the other hand, smaller stations will be installed in Las Manchas to be able to monitor if any new emanation occurs.

From the Scientific Committee, the current situation in La Bombilla was given as an example at the meeting, where there are high levels of diffuse CO₂ whose presence is affected by the conditions of the winds and the sea tides, which disables the stay permanently. In this neighborhood, in addition to Puerto Naos and El Remo, demonstrations of gas measurements have been carried out in recent days by the National Police and the Civil Guard, so that they know the current situation.

On the other hand, regarding the number of people housed in hotels, the figure is reduced by eight people with respect to the latest available data, with a total of 512 people staying. Of these, 324 are staying in Fuencaliente, 121 in Breña Baja and 67 in Los Llanos de Aridane. From the Red Cross, the organization in charge of the management, they point out that of the total around 160 people could return to their homes.

Temperatures up to 500 degrees at the edges of the castings

The last report of the Scientific Committee, which met yesterday, was also analyzed at the meeting, in which it is recalled that some volcanic dangers persist since the post-eruptive phase continues, which does not necessarily entail the end of the magmatic reactivation in Cumbre Old, although the

absence of tremor remains. The seismicity in recent days continues to be of low magnitude at all depths and there is no trend in deformations.

Regarding the levels of air quality due to sulfur dioxide, these have remained at good or reasonably good levels in all seasons; On the other hand, this week extremely poor air quality levels were reached by PM10 particles in all seasons, due to the intrusion of a very high intensity Saharan air mass between January 14 and 17.

The Scientific Committee also explained that at the edges of the lava flows that are being worked on or in the lava fragments that are being extracted, temperature values have been recorded that exceed 500 and 300 degrees centigrade, respectively, although not incandescence is seen.

Demobilization of the UME

During the Steering Committee on Wednesday, José Alberto Gallego, lieutenant colonel of the Emergency Military Unit (UME), spoke after the demobilization of the body he directs on January 18. Gallego thanked the emergency management for having counted on them since the beginning of the eruption, four months ago today, when its activation was requested 26 minutes after it began. In addition, he highlighted the good treatment of all the people involved in the emergency.

“I was surprised by the magnificent organization and the relationship between the organizations, we have learned a lot from each other. The UME is always here to serve you, we exist because they call us, we work all year for it and in the Canary Islands they call us and they count on us”, highlighted the lieutenant colonel.

For his part, the councilor Julio Pérez also expressed his gratitude to this body for its availability, versatility, learning capacity, adaptation to collective work and proximity and empathy with citizens. The UME has carried out tasks as diverse as accompaniment in the evacuation of homes, monitoring the progress of the laundry, coordination of drone flights or gas measurements, among other functions.

Opinion of the Scientific Committee

Prior to the Steering Committee, the meeting of the Plan's Scientific Committee took place yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), the Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

Such conclusions were:

“Since December 13 we have been in the post-eruptive phase. In this post-eruptive phase some volcanic hazards persist, and it does not necessarily entail the end of the magmatic reactivation at Cumbre Vieja.

Temperature values exceeding 500°C and 300°C, respectively, have been recorded at the edges of the lava flows that are being worked on or in the lava fragments that are being extracted. These temperatures do not have to be seen as incandescence.

There is no presence of volcanic tremor in the seismic signals. The seismicity, which is of low magnitude, is at very low levels at all depths. The occurrence of felt earthquakes cannot be ruled out.

Regarding deformations, without trend in all the stations of the network.

Sulfur dioxide (SO₂) emission has been LOW for the last 7 days. This emission is NOT related to magma ascent, but to a process of solidification of the surface magma still existing in the conduits of the eruptive center.

The diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of background levels (B). During the last 7 days, this diffuse emission was 5.4 times the average background levels (5.4

x B) and reflects stability with respect to the estimates recorded during this period. In some specific areas of Cumbre Vieja these diffuse CO₂ emissions can represent a danger to people as long as high values of diffuse CO₂ flow are recorded in areas that are not very well ventilated and/or at heights below one meter from the ground as a consequence of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. In the La Bombilla and Puerto Naos area, anomalously high CO₂ values continue to be recorded.

The predominance of the SE wind continues, which is expected to turn north starting next Friday-Saturday. In addition, the flows from the E will continue to produce the entry of Saharan dust over the Canary archipelago. FMA yellow level warnings have been issued for the island of La Palma (the warnings and their future updates can be consulted at www.aemet.es). For today's day, light rains in the southeast in the early and late hours. From the end of Thursday the arrival of a weakened frontal structure will increase the probability of precipitation in La Palma. The operation of the airport is subject to purely meteorological conditions, due to the absence of volcanic ash in the troposphere.

Since January 13, the date of the last report, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, has remained at good or reasonably good levels in all seasons, so there is no New exceedances of the hourly or daily limit values have been recorded at any station since December 13. During today, good levels are maintained in all stations on the island.

Regarding particles smaller than 10 microns (PM₁₀), a very high intensity Saharan air mass intrusion event occurred between January 14 and 17, reaching extremely unfavorable air quality levels and exceeding the daily limit (established at 50 µg/m³) at all stations on the island. During today's morning, levels remain between very unfavorable and unfavorable in all seasons due to the intrusion of Saharan air.

Consult the website of the Government of the Canary Islands on Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

(*) SO₂ emission range scale expressed as kg/s: VERY HIGH > 500 kg/s; HIGH between 50 and 499 kg/s; AVERAGE between 5 and 49 kg/s; LOW between 0.5 and 4.9 kg/s; VERY LOW < 0.5 kg/s.

January 26th

The Scientific Committee proposes to change the volcanic risk traffic light from red to yellow



In any case, the emergency continues and will be managed by the Cabildo de La Palma

Access to Puerto Naos and La Bombilla remains closed due to high gas emissions and prohibitions on access to the cone environment

A safety zone for maritime navigation is recommended in the surroundings of the lava deltas, since there are changes in depth that have not yet been mapped

The Scientific Committee of the Special Plan for Civil Protection and Attention to Emergencies due to Volcanic Risk (PEVOLCA) of the Government of the Canary Islands proposed, in its last meeting held yesterday, Tuesday, to change the volcanic risk traffic light, which is currently red, to yellow . This color maintains information for the population and surveillance and monitoring measures for volcanic and seismic activity.

For this reason, this Wednesday, the PEVOLCA Steering Committee, chaired by the Minister of Public Administrations, Justice and Security of the Government of the Canary Islands and responsible for the plan, Julio Pérez, agreed to set up a mixed commission to work on the transfer of the management of the management of the emergency from the Autonomous Executive to the Cabildo de La Palma from Monday, making it coincide with the color change of the volcanic risk traffic light from red to yellow. Although the management passes to the Cabildo, the emergency will continue to be active, so the limitations will remain in force and will subsist until it is terminated.

According to the latest opinion of the Scientific Committee, the volcanic activity in the Cumbre Vieja area has been in a post-eruptive phase since last December 13, and it considers that the risks that persist are limited and controlled with a prohibition of access for the population . However, the opinion emphasizes that in this post-eruptive phase some volcanic hazards persist and that anomalous seismic and geochemical activity continues to be recorded, without having reached background levels in observables.

In this sense, it should be noted that high gas emissions (mainly CO₂) continue to be registered, both in Puerto Naos and in La Bombilla, which is why these two neighborhood centers continue to be closed. As for the town of El Remo, access is allowed for people using a QR code but without overnight stays.

Meanwhile, in the area of the volcanic building, high temperatures and ground instabilities have been observed. In addition, in the lava flows that

are being worked on, temperatures have been certified that exceed 300 degrees centigrade at the edges of the flows and up to 500 degrees centigrade in the lava fragments that have been extracted, so these actions require previous studies that guarantee the safety in its execution.

On the other hand, scientists recommend a safety distance in navigation around the lava deltas, since there are changes in depth that have not yet been mapped, which should be at least 250 meters from the fronts of the lava deltas. and 500 meters from the coastline between lava deltas 4 and the south of lava delta 1-2.

Regarding the people housed in hotels, at the moment the figure is reduced by six people compared to the last figure, standing at 506. Of these, 315 are in Fuencaliente, 124 in Breña Baja and 67 in Los Llanos de Aridane. The Red Cross, the organization in charge of the management, indicates that these people are returning to their homes as they adapt the habitability of their homes.

Opinion of the Scientific Committee

Prior to the Steering Committee, the meeting of the Plan's Scientific Committee took place yesterday. This Scientific Committee is coordinated by the General Directorate of Security and Emergencies of the Government of the Canary Islands and is made up of representatives of the National Geographic Institute (IGN), the Higher Council for Scientific Research (CSIC), the Volcanological Institute of the Canary Islands (Involcan), the Geological and Mining Institute of Spain (IGME), State Meteorological Agency (AEMET), Spanish Institute of Oceanography (IEO), University of La Laguna and University of Las Palmas de Gran Canaria.

His conclusions were:

" Since December 13 we are in the post-eruptive phase. In this post-eruptive phase, some volcanic hazards persist, and future reactivations cannot be ruled out. Anomalous seismic and geochemical activity continues to be recorded, without having reached background levels in the observables.

The high gas emissions (mainly CO₂) are maintained, both in Puerto Naos and in La Bombilla, in the area of the volcanic building, as well as the high temperatures and instabilities of the ground in the latter area. Likewise, in the submarine area, around the lava deltas, there are changes in depth that have not yet been mapped, which is why they represent a danger to navigation.

In addition, in the lava flows that are being worked on or in the lava fragments that are being extracted, temperature values that exceed 300°C and 500°C, respectively, continue to be recorded. These temperatures do not have to be seen as incandescence. Actions on lava flows require previous studies to guarantee safety in their execution: the terrain can be heterogeneous, unstable and fragile, given the existence of volcanic tubes under the surface.

There is no presence of volcanic tremor in the seismic signals. The seismicity, which is of low magnitude, is at very low levels at all depths. The occurrence of felt earthquakes cannot be ruled out.

Regarding deformations, without trend in all the stations of the network.

Sulfur dioxide (SO₂) emission has been LOW for the last 7 days. This emission is NOT related to magma ascent, but to a process of solidification of the surface magma still existing in the conduits of the eruptive center.

The diffuse emission of carbon dioxide (CO₂), associated with the 220 km² of the Cumbre Vieja volcanic system, continues to reflect an emission higher than the average value of background levels (B). During the last 7 days, this diffuse emission was 4.7 times the average background levels (4.7 x B) and reflects a downward trend compared to the previous week. In some specific areas of Cumbre Vieja these diffuse CO₂ emissions can represent a danger to people as long as high values of diffuse CO₂ flow are recorded in areas that are not very well ventilated and/or at heights below one meter from the ground as a consequence of the possible accumulation of CO₂ and decrease of oxygen (O₂) in the air. In the area of La Bombilla and Puerto Naos, anomalous CO₂ values continue to be recorded.

The approach of a DANA will increase instability in the environment of the Canary Islands. The instability will increase the probability of precipitation

from today to Saturday. Precipitation can be persistent mainly on the eastern slope of the island and be in the form of snow above 1,900-2,000 m. As of the weekend, the probability of precipitation will decrease due to the predominance of the continental air mass. The operation of the airport is subject to purely meteorological conditions, due to the absence of volcanic ash in the troposphere.

Since January 18, the date of the last report, the air quality due to sulfur dioxide (SO₂), a pollutant associated with the eruptive process, has remained at good or reasonably good levels in all seasons, so there is no New exceedances of the hourly or daily limit values have been recorded at any station since December 13. During today, good levels are maintained in all stations on the island.

Regarding particles smaller than 10 microns (PM₁₀), after the Saharan air mass intrusion event that occurred between January 14 and 20, in which the daily limit value was exceeded (established at 50 µg/ m³) in all the measurement stations on the island, the quality levels have been improving until reaching good and reasonably good levels.

Consult the website of the Government of the Canary Islands on Air Quality:

<https://www3.gobiernodecanarias.org/medioambiente/calidaddelaire/ica.do>

For all of the above, in this post-eruptive stage, it is suggested to set the color of the volcanic semaphore to yellow.

(*) SO₂ emission range scale expressed as kg/s: VERY HIGH > 500 kg/s; HIGH between 50 and 499 kg/s; AVERAGE between 5 and 49 kg/s; LOW between 0.5 and 4.9 kg/s; VERY LOW < 0.5 kg/s.

January 31st

The volcanic risk traffic light changes from red to yellow and the Cabildo de La Palma assumes the management of the emergency



An order signed by the Minister of Public Administrations, Justice and Security, Julio Pérez, addresses the proposal of the Scientific Committee of PEVOLCA

The Minister of Public Administrations, Justice and Security of the Government of the Canary Islands and director of the Special Plan for Civil Protection and Emergency Attention for Volcanic Risk of the Canary Islands (PEVOLCA), Julio Pérez, has signed this Monday the order establishing the pass of the volcanic risk traffic light on the island of La Palma from red to yellow, with which the Insular Emergency Plan of La Palma (PEIN) remains in a level 1 emergency situation, PEVOLCA becomes an alert situation and the Cabildo assumes emergency management.

The new alert and island emergency situation implies the immediate activation of all the bodies provided for in the PEIN of La Palma, in the emergency phase, and those prohibitions or limitations that have been

adopted to date by the PEVOLCA management must be maintained, in for the safety of people and property, anticipating the orderly replacement of the structure of the regional plan by the insular one.

With this order, the proposal of the Scientific Committee made in its last report on Tuesday, January 25, to change the volcanic risk traffic light from red to yellow is met. In said report, carried out a month after the eruptive activity was considered to have ended, it is indicated, however, that the yellow color maintains the information for the population and the surveillance and monitoring measures of the volcanic and seismic activity.

According to the latest opinion of the Scientific Committee, in the current post-eruptive phase some volcanic hazards persist and anomalous seismic and geochemical activity continues to be recorded, without having reached background levels in the observables. It is also indicated that these dangers are limited and controlled with a prohibition of access of the population.

The indicated risks that persist are already taken care of by the services of the island of La Palma itself or based on it, except for specific actions by Tedax-Nrbq and Subsoil personnel and in a coordinated manner with the recovery work.

Since the end of December and during the month of January, the gradual withdrawal of the organizations and entities involved in emergencies that do not have their settlement on the island of La Palma has been taking place to their respective bases: Emergency consortiums, National Police, collaborating entities of Civil Protection and volunteering, the UME itself culminating its work on January 18, 2022.

PEVOLCA, in section 3.3, anticipates a growing information system for the population based on the selection of four colors -the so-called volcanic traffic light-, linked to different situations that range from pre-alert to emergency. What is appropriate is that the deactivation process follows the opposite path, as long as there is no eruptive phase, the risk of some reactivation remains, as highlighted in the report of the Scientific Committee.