Republic of the Philippines
DEPARTMENT OF SCIENCE AND TECHNOLOGY
Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)
Weather Division

TROPICAL CYCLONE PRELIMINARY REPORT

Super Typhoon LEON
KONG-REY (2421)

23 October to
01 November 2024

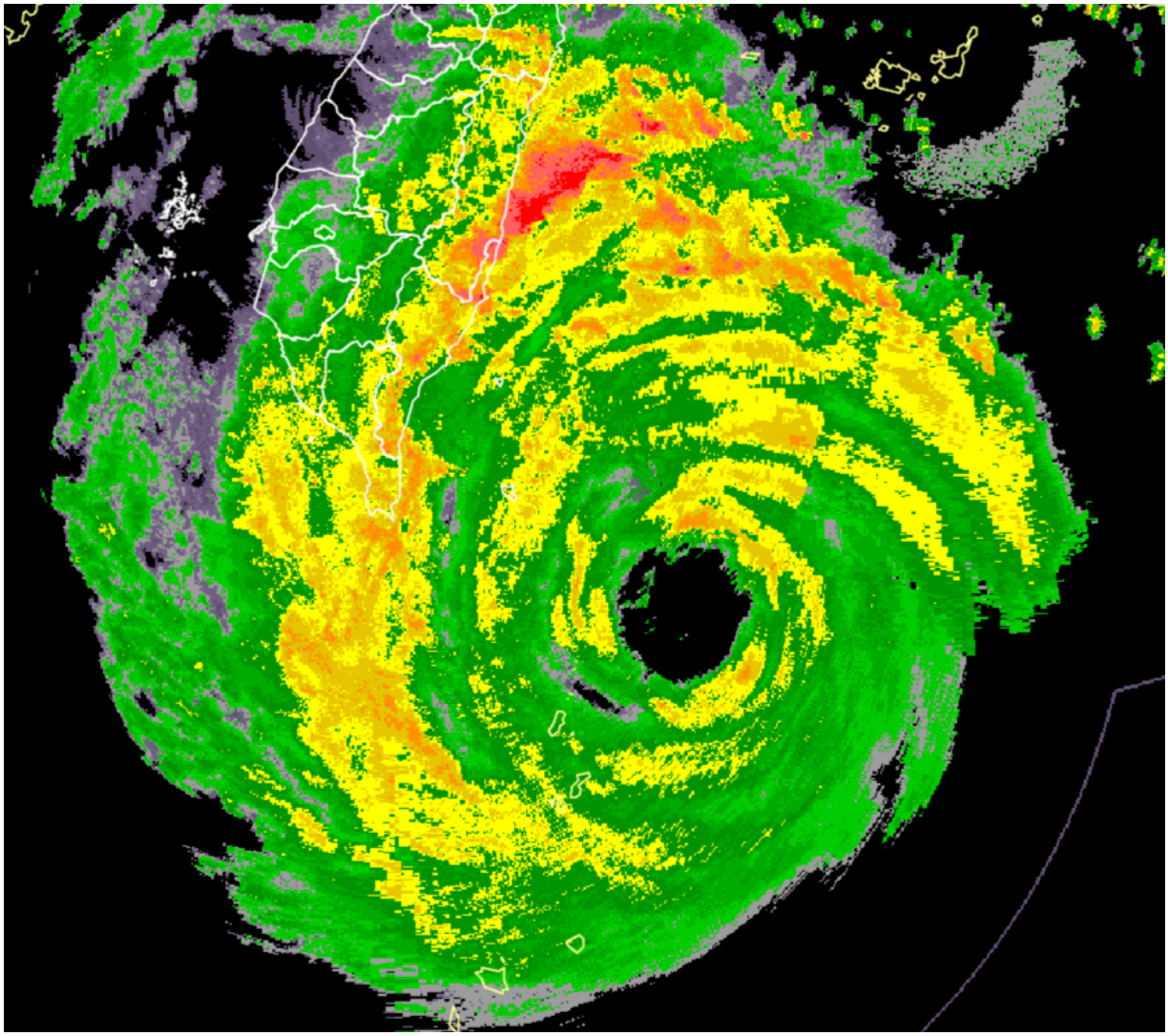

Fig. 1. Weather radar imagery of Super Typhoon LEON at 2100 UTC on 30 October 2024 when it was during its period of closest approach to Batanes. Image courtesy of the Central Weather Administration of Taiwan.

P. C. Del Mundo and R. P. Gile
Marine Meteorological Services Section, Weather Division, DOST-PAGASA

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Weather and Flood Forecasting Center
Senator Miriam P. Defensor-Santiago Avenue
Brgy. Central, Quezon City 1100, Philippines

Tel. No.: (+632) 8284-0800 ext. 4800
Website: https://bagong.pagasa.dost.gov.ph

Summary of Meteorological History

Based on PAGASA preliminary best track[1] position and intensities

First tracked as a low pressure area	0600 UTC, 22 October 2024 Over the Western North Pacific waters near Chuuk, Federated States of Micronesia
Developed into a tropical cyclone	1800 UTC, 23 October 2024 Over the Western North Pacific waters near Chuuk, Federated States of Micronesia 2,550 km East of Eastern Visayas (11.3ºN, 149.1ºE)
Weakened into a remnant low or transitioned into a post-tropical low	1200 UTC, 01 November 2024 Over the East China Sea off the coast of Zhejiang, China 1,080 km North of Extreme Northern Luzon (30.4ºN, 123.2ºE)
Peak intensity (lifetime[2])	100 kt (185 km/h), 925 hPa, Super Typhoon 0000 UTC, 30 October 2024
Period of occurrence (lifetime)	8 days and 18 hours
Entered the PAR region (as tropical cyclone)	1600 UTC, 26 October 2024
Exited the PAR region (as tropical cyclone)	1900 UTC, 31 October 2024
Peak intensity (within the PAR)	100 kt (185 km/h), 925 hPa, Super Typhoon 0000 UTC, 30 October 2024
Period of occurrence (within the PAR)	5 days and 3 hours
Observed landfalls in the Philippines	None

[1] With preliminary best track as reference, the information provided in this report may be different from those reported during the warning period of the subject tropical cyclone.
[2] Lifetime is the period from the development into a tropical depression to its weakening into a remnant low or its transitioning into a post-tropical low.

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Extremes of Surface Weather Observations during Tropical Cyclone Days[3]

Based on reports from PAGASA manned surface weather stations

Table 1. Highest storm duration (26 to 31 October 2024) rainfall over land.

Location of weather station	Rainfall (mm)
San Jose, Occidental Mindoro	101.5
La Carlota City, Negros Occidental	96.5
Baybay City, Leyte	54.8
Itbayat, Batanes	53.9
Cotabato City	53.0

Table 2. Highest 24-hour rainfall over land.

Location of weather station	Rainfall (mm)	Date
San Jose, Occidental Mindoro	97.3	26 October 2024
Baybay City, Leyte	54.8	26 October 2024
Cotabato City	53.0	26 October 2024
Calapan City, Oriental Mindoro	52.2	26 October 2024
La Carlota City, Negros Occidental	48.7	29 October 2024

Table 3. Lowest mean sea level pressure over land.

Location of weather station	Minimum MSLP (hPa)	Date (MM/DD) and Time (UTC)
Basco, Batanes	972.1	10/30 1700
Calayan, Cagayan	994.3	10/30 0600
Aparri, Cagayan	996.7	10/30 1900
Bayombong, Nueva Vizcaya	997.2	10/30 0700
		10/30 0800
Casiguran, Aurora	998.4	10/30 0600

Table 4. Highest peak gust over land.

Location of weather station	Peak gust speed (m/s)	Peak gust direction	Date (MM/DD) and Time (UTC)
Itbayat, Batanes	41	WNW (290°)	10/30 1807
Calayan, Cagayan	38	WNW (300°)	10/30 1421
Aparri, Cagayan	22	WNW (300°)	10/30 0203
Baler, Aurora	21	WNW (290°)	10/30 0654
		-	10/30 0800
Laoag City, Ilocos Norte	15	NW (320°)	10/30 1100
Dagupan City, Pangasinan	15	-	10/29 1200 *rep.*

Note:

- For peak gust data retrieved using standard, intermediate, or hourly synoptic observation reports (i.e., QNT), "*rep.*" indicates the time when the observation was reported in the message, but not necessarily its time of occurrence.
- The aerovane and barometer of the manned weather stations in Basco, Batanes and Itbayat, Batanes, respectively, were non-operational at the time of passage of LEON.
- Over land extremes for MSLP and peak gust only covered areas with hoisted Wind Signals to ensure that the extremes are more likely associated with the tropical cyclone itself. There may be lower MSLP and higher peak gust outside these coverage areas.

[3] Also called "storm duration", it refers to the meteorological days of occurrence of the tropical cyclone within the PAR region.

Summary of Tropical Cyclone Product Issuances

Issued by the Weather Division, DOST-PAGASA

Tropical Cyclone Products:

- Tropical Cyclone Advisories:
  - First issuance: 5:00 PM, 25 October 2024
  - Last issuance: 11:00 PM, 26 October 2024
  - Total issued: 4
- Tropical Cyclone Bulletins:
  - First issuance: 11:00 PM, 26 October 2024
  - Last issuance: 5:00 AM, 01 November 2024
  - Total issued: 26
- Tropical Cyclone Warnings for Shipping:
  - First issuance: 11:00 PM, 26 October 2024
  - Last issuance: 5:00 AM, 01 November 2024
  - Total issued: 22
- WC SIGMET
  - First issuance: 4:50 AM, 28 October 2024
  - Last issuance: 3:28 AM, 31 October 2024
  - Total issued: 13

Tropical Cyclone Wind Signals:

- Highest level of wind signal hoisted: Wind Signal No. 5
- Number of provinces where wind signals had been hoisted: 27
- Timeline of hoisting/lifting of wind signals:
  - 11:00 PM, 27 October 2024: Initial hoisting of Wind Signal No. 1
  - 11:00 AM, 29 October 2024: Initial hoisting of Wind Signal No. 2
  - 5:00 AM, 30 October 2024: Initial hoisting of Wind Signal No. 3
  - 2:00 PM, 30 October 2024: Initial hoisting of Wind Signal No. 4
  - 5:00 AM, 30 October 2024: Initial hoisting of Wind Signal No. 5
  - 8:00 AM, 31 October 2024: Lifting of all hoisted Wind Signal No. 5
  - 11:00 AM, 31 October 2024: Lifting of all hoisted Wind Signal No. 4
  - 5:00 PM, 31 October 2024: Lifting of all hoisted Wind Signal No. 3
  - 11:00 PM, 31 October 2024: Lifting of all hoisted Wind Signals

Other Pertinent Information

- The National Disaster Risk Reduction and Management Council (NDRRMC) reported that a total of 9,652,607 individuals were affected by the successive occurrences of KRISTINE and LEON (which resulted in compounding and prolonged impacts), although inclement weather conditions initially caused by KRISTINE accounted for most of the impacts. Nevertheless, the passage of both tropical cyclones resulted in 159 dead, 132 injured, and 22 missing individuals, while cost of damage to agriculture, infrastructure, housing, and other assets amounted to PHP 18.400 billion.
- The international name “KONG-REY” (meaning: pretty girl in Khmer Legend; name of a mountain) was contributed by the Cambodia.

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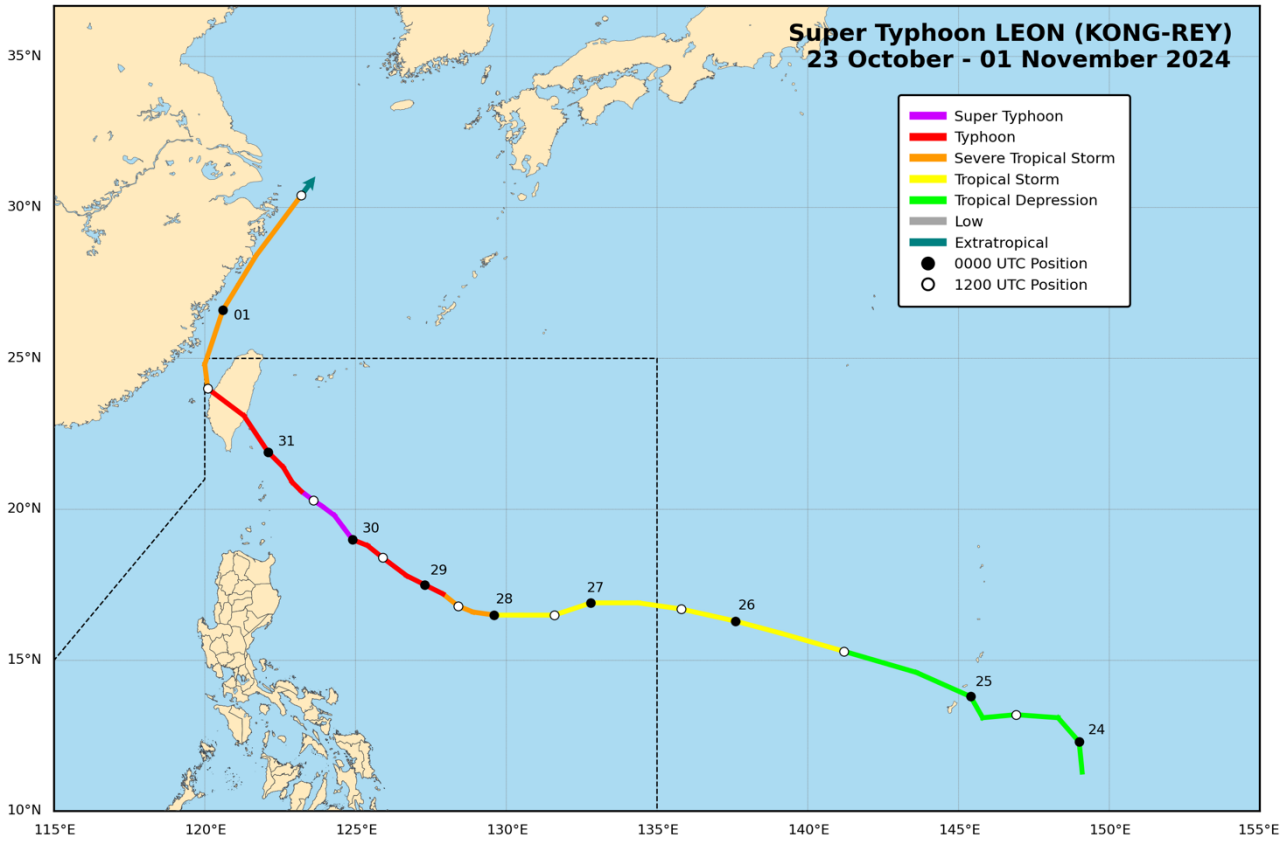

Fig. 2. Preliminary best track positions and intensities (as categories) of Super Typhoon LEON. Line color indicates the category of tropical cyclone. Shaded circles with date labels indicated 00 UTC positions while open circles indicate 12 UTC positions.

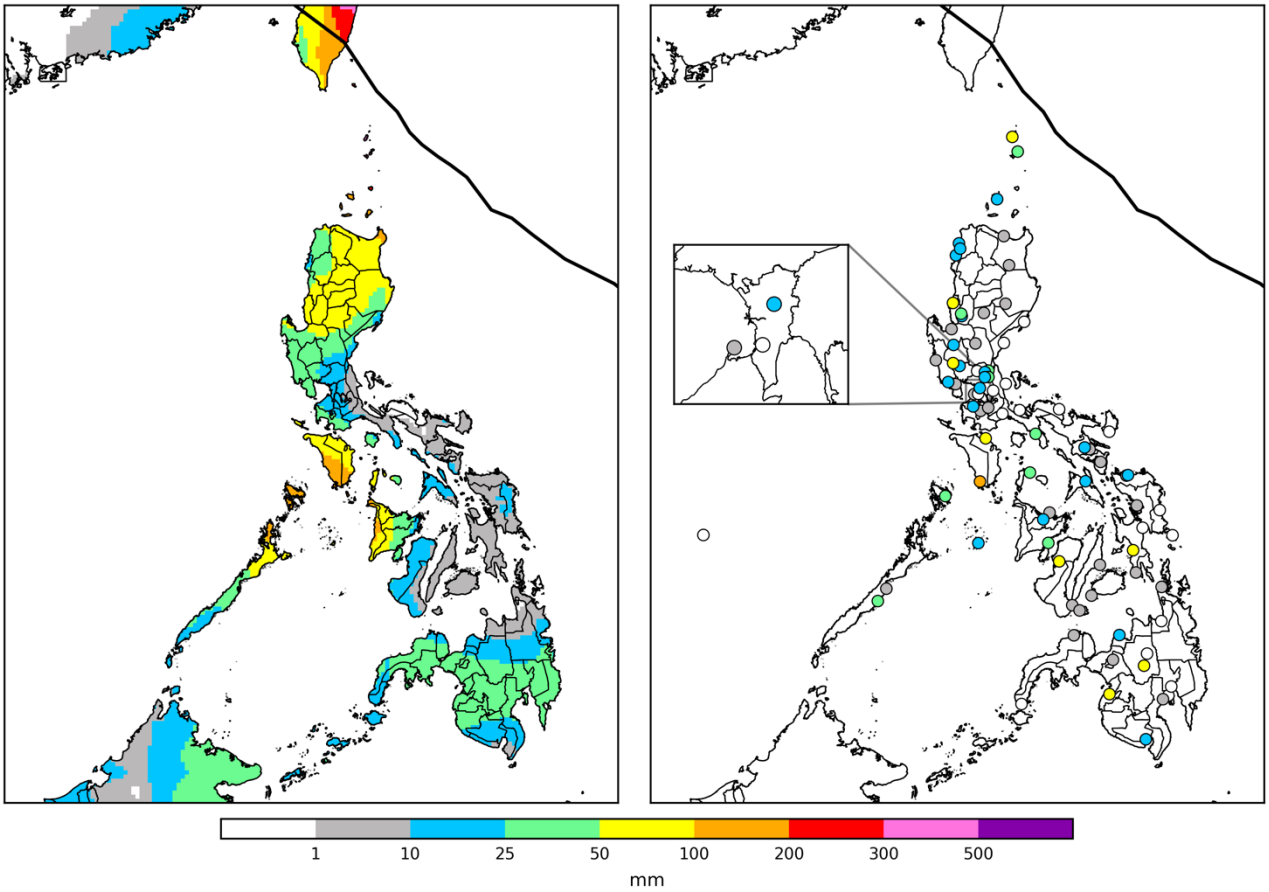

Fig. 3. Nationwide satellite-derived estimates and corresponding gauge observations from PAGASA manned surface weather stations of accumulated rainfall for the period of 26 to 31 October 2024. The preliminary best track is shown as thick black line.

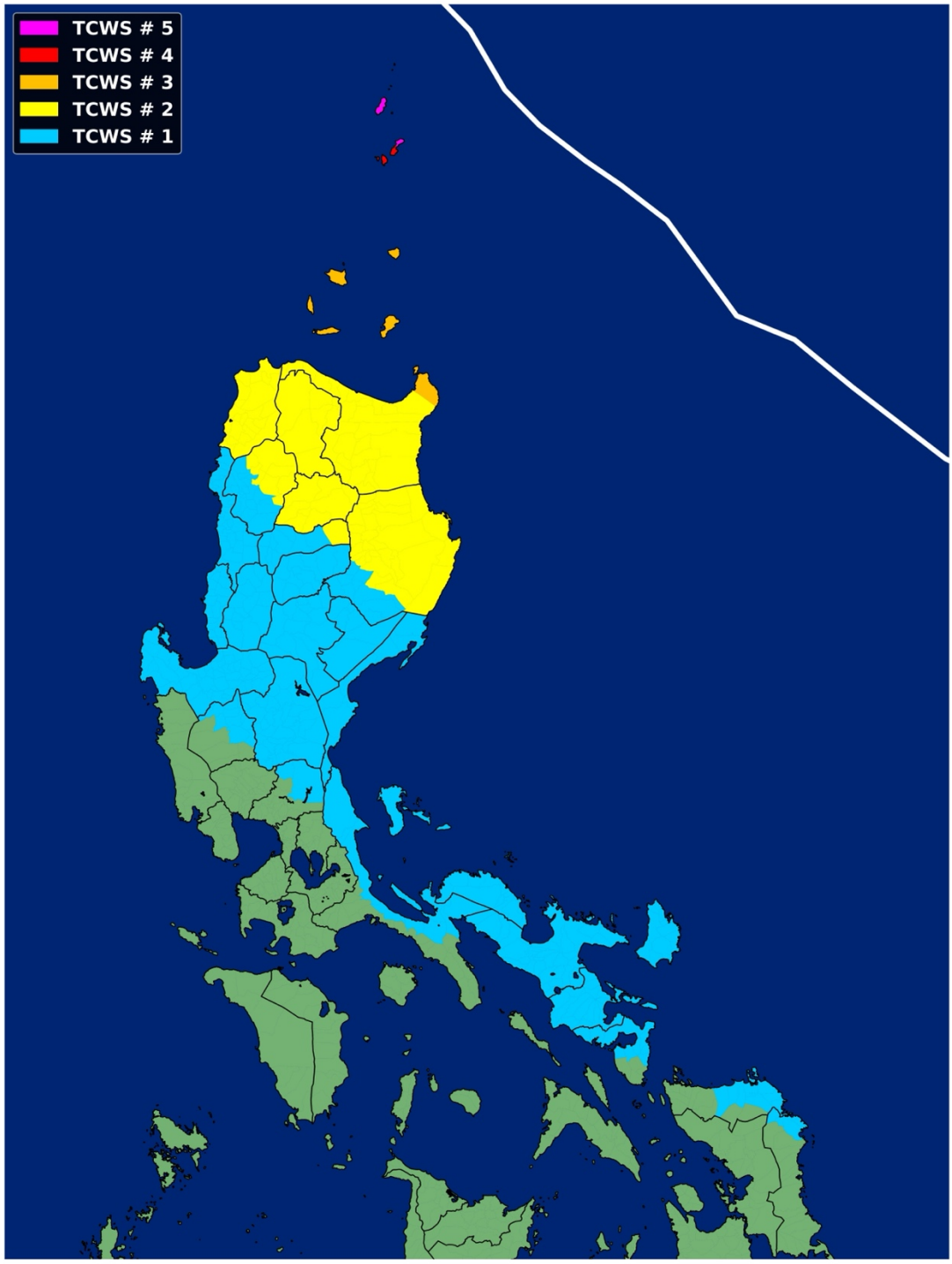

Fig. 4. Highest level and maximum extent of hoisted wind signals during the occurrence of Super Typhoon LEON. The preliminary best track is shown as thick white line.

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This technical report is published on behalf of the DOST-PAGASA by the:

Marine Meteorological Services Section
Weather Division, DOST-PAGASA

While we ensure the factual correctness and accuracy of the entries in this preliminary tropical cyclone report, readers are advised to report any text or figure in this report which may require correction to the Marine Meteorological Services Section by email at **typhoon.ops@pagasa.dost.gov.ph** with the subject *"Prelim Report [Name of TC], [Year]: For Correction"*.

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