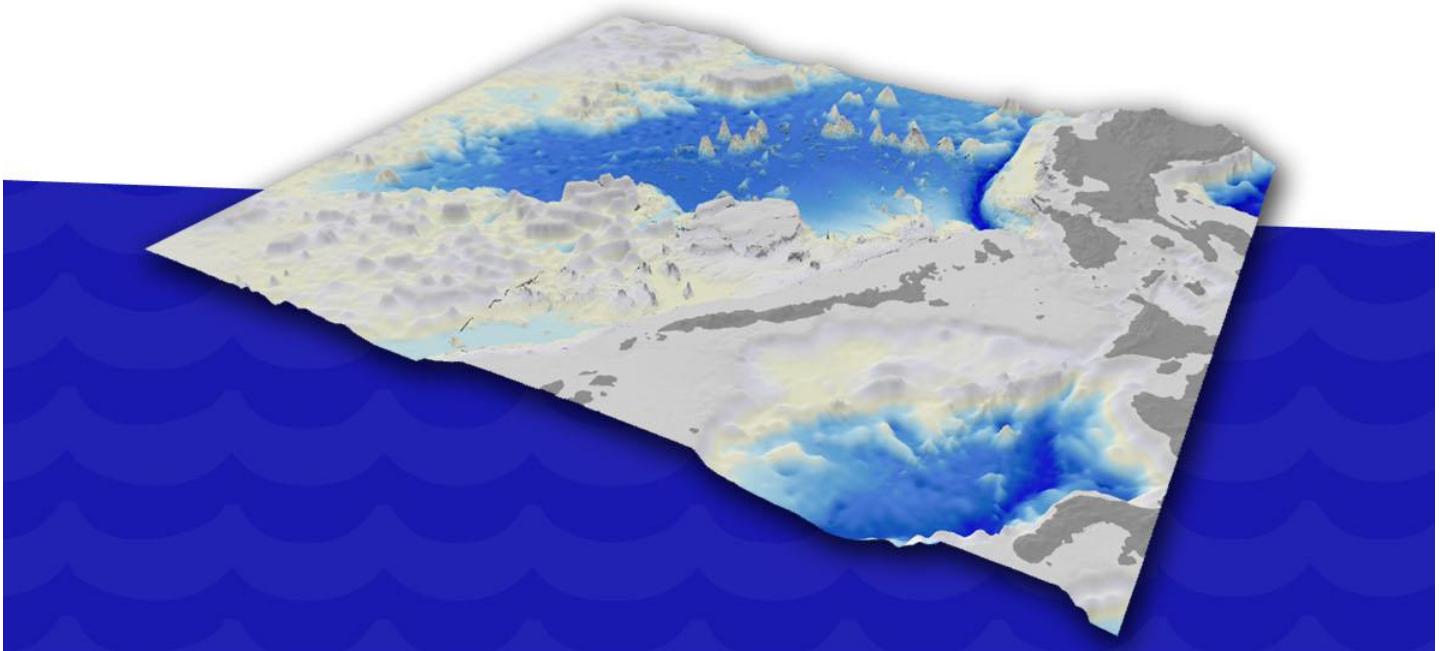




A PARTIAL SUBMISSION OF DATA AND INFORMATION  
ON THE OUTER LIMITS OF THE CONTINENTAL SHELF  
OF THE REPUBLIC OF THE PHILIPPINES IN THE  
WEST PALAWAN REGION PURSUANT  
TO ARTICLE 76 OF THE UNITED  
NATIONS CONVENTION ON  
THE LAW OF THE SEA



PART I - EXECUTIVE SUMMARY

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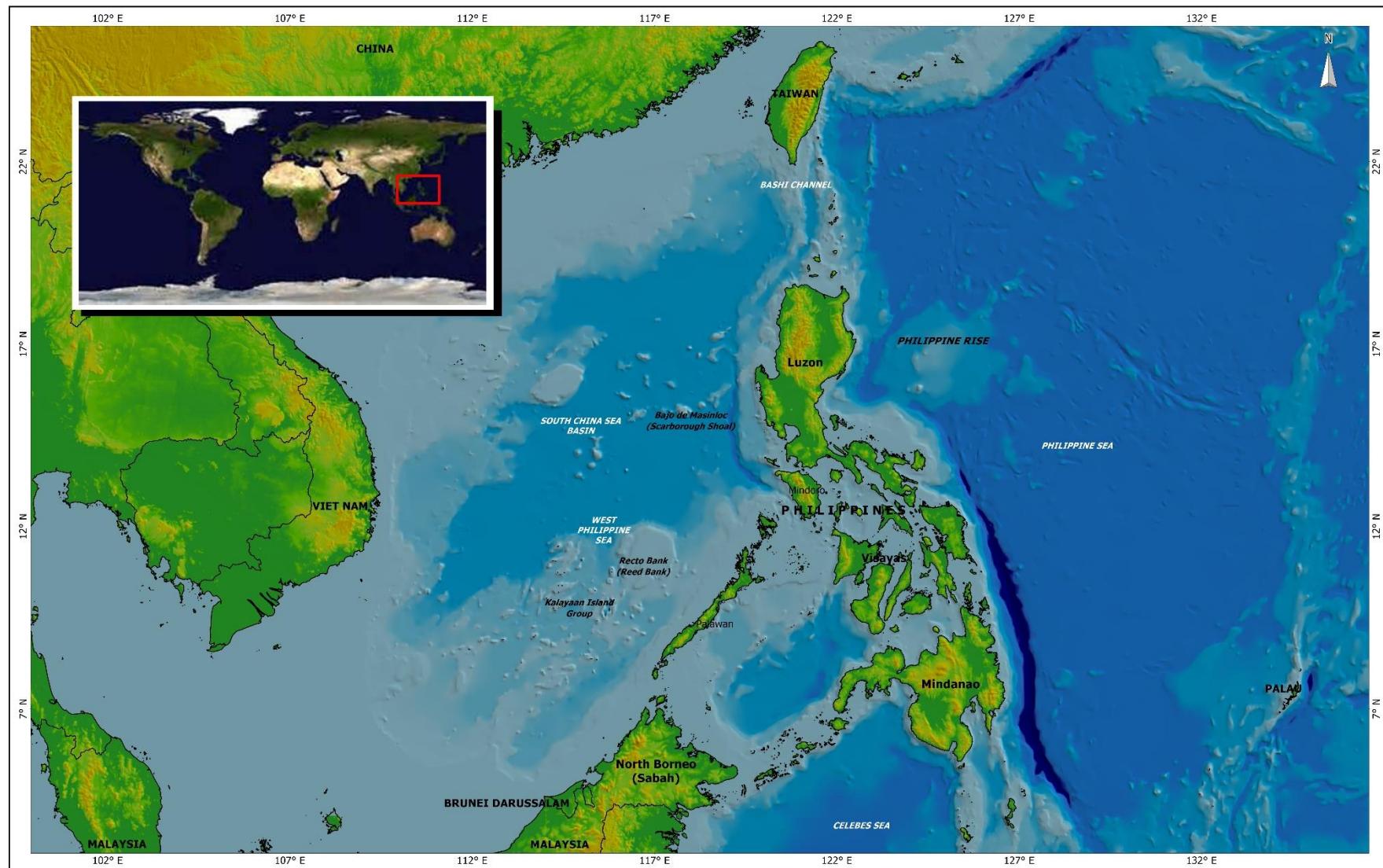
## EXECUTIVE SUMMARY

### 1. INTRODUCTION

The Republic of the Philippines presents to the Commission on the Limits of the Continental Shelf (CLCS), this partial Submission containing information on the outer limits of a portion of its continental shelf extending beyond 200 nautical miles (M) from the baselines from which the breadth of the territorial sea is measured in accordance with the 1982 United Nations Convention on the Law of the Sea (UNCLOS) in the West Palawan Region (WPR). This Submission is made without prejudice to the right of the Philippines to make other Submissions on other areas at a future time.

The Philippines is located in Southeast Asia, surrounded by the Philippine Sea and Pacific Ocean to the East, the West Philippine Sea and South China Sea to the West, the Bashi Channel to the North, and Malaysia and Celebes Sea to the South (Figure 1). This Submission establishes that the natural prolongation of Palawan, one of the main islands of the Philippines, from its coasts to the outer edge of the continental margin, extends beyond 200 M.

The analysis and interpretation of hydrographic, geological, geophysical and tectonic data and information in the WPR results in the identification of the Palawan-Mindoro Microcontinent, a distinct geological and geomorphological unit which includes, among others, the Palawan mainland and Kalayaan Island Group. The Palawan-Mindoro Microcontinent serves as the basis for the determination of the natural prolongation of the Palawan and Mindoro landmasses. Application of the provisions of Article 76 of UNCLOS established that the WPR is a natural prolongation of the land territory of the Philippines that extends beyond 200 M from the baselines from which the breadth of the territorial sea is measured. This demonstrates that the Philippines is entitled to a continental shelf beyond 200 M in the WPR.



**Figure 1** Geographic setting of the Philippines.

## **2. THE PHILIPPINES AS STATE PARTY TO UNCLOS**

The Republic of the Philippines signed the UNCLOS on 10 December 1982 at the close of the Third United Nations Conference on the Law of the Sea in Montego Bay, Jamaica. The Philippine Legislature concurred in the ratification of the Convention on 27 February 1984 and the instrument of ratification was subsequently deposited with the United Nations on 08 May 1984. The Convention entered into force for the Philippines on 16 November 1994.

## **3. TIMELINESS OF THIS SUBMISSION**

Article 4 of Annex II to UNCLOS states that the information on the outer limits of the continental shelf shall be submitted to the CLCS within ten years from the entry into force of the Convention. However, at the Eleventh Meeting of the States Parties to the Convention on 18-21 May 2001, it was agreed that this ten-year period commenced only on 13 May 1999, the date when the Scientific and Technical Guidelines of the CLCS were adopted (See SPLOS/72). This deadline applies to those States Parties for which the Convention entered into force before 13 May 1999, including the Philippines. Additional submissions are not bound by the May 2009 deadline. On 08 April 2009, the Philippines made its first Partial Submission on the outer limits of its continental shelf in the Benham Rise Region, which was favorably acted upon by the CLCS in its Recommendation issued on 12 April 2012. The Benham Rise was named Philippine Rise pursuant to Executive Order No. 25 dated 16 May 2017. This additional Submission is made pursuant to the reservation to file other Submissions, as stated in paragraph 1.3.5 of the first Partial Submission and paragraph 3.4 of its Executive Summary.

## **4. UNCLOS PROVISIONS INVOKED**

The provisions of Article 76, in relation to Articles 46, 47, and 48 of UNCLOS, are invoked in this Submission. Under Article 46, the Philippines qualifies as an archipelagic State. As an archipelagic State, the Philippines may then draw archipelagic baselines in accordance with the rules provided in paragraphs 1 to 5 of Article 47.

The baselines used by the Philippines in this Submission conform with the requirements of UNCLOS. Such baselines may therefore be used as the basis for delineating the maritime and jurisdictional zones, including the continental shelf, in accordance with UNCLOS.

## **5. AREA OF SUBMISSION**

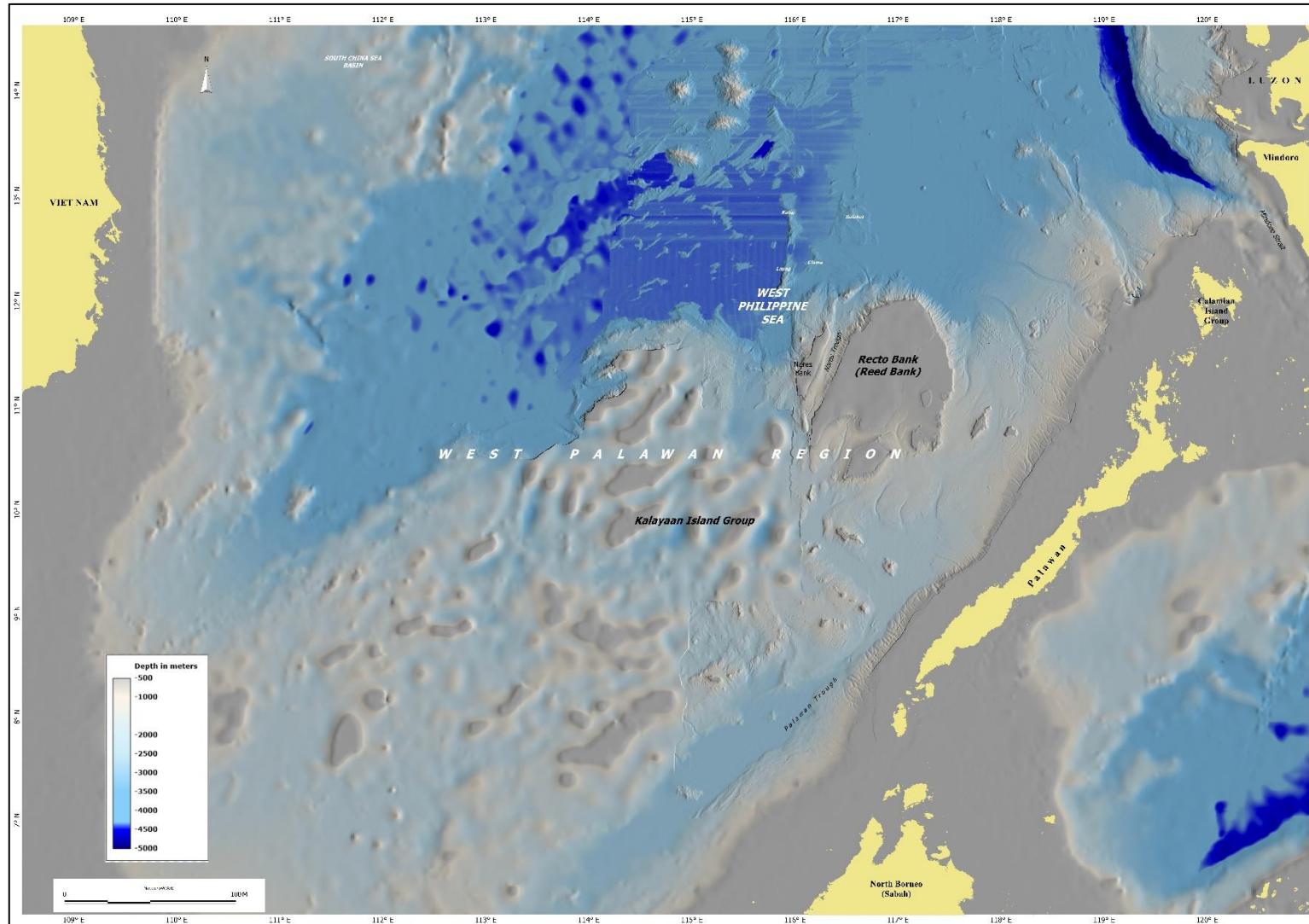
In conformity with Annex I of the Rules of Procedure of the CLCS (CLCS/40, Rev. 1), the Philippines makes this Partial Submission covering the seabed and subsoil of the WPR off the western coast of the Philippine archipelago. It is enclosed by the coordinates 108° 30' E to 121° 00' E longitude and 6° 05' N to 14° 37' N latitude (Figure 2).

## **6. MARITIME BOUNDARY DELIMITATION**

The Philippines makes this partial Submission to build confidence and promote international cooperation in the peaceful and amicable resolution of maritime boundary issues. In accordance with Article 76 (10) of UNCLOS and Rule 46 and Annex I, paragraph 5 (b) of the Rules of Procedure of the CLCS, this Submission does not prejudice matters relating to the delimitation of boundaries between the Philippines and relevant States pursuant to international law, including UNCLOS.

The Philippines notes that the 2009 joint submission of Malaysia and Viet Nam, the 2009 submission of Viet Nam in the northern area and the 2019 submission of Malaysia that were submitted to the CLCS cover areas that may overlap with the area of this Submission. These earlier submissions were based on Article 76 of UNCLOS and are generally consistent with the principles affirmed in the 2016 Award on the Merits in the South China Sea Arbitration. The Philippines manifests its willingness to discuss with the relevant States the delimitation of the maritime boundaries.

The delineation of the continental shelf beyond 200 M is without prejudice to future delimitation with the limits of the territorial sea areas of individual high tide features in the South China Sea.



**Figure 2** The area of submission covering the seabed and subsoil of the WPR.

Therefore, the Philippines requests the Commission to examine its submission concerning the WPR without prejudice to the question of delimitation with opposite or adjacent coastal States.

## **7. MEMBERS OF THE CLCS WHO PROVIDED ADVICE**

Mr. Efren Perez Carandang of the Republic of the Philippines, member of the Commission for the term 2023-2028, and Mr. Galo Carrera-Hurtado of the United Mexican States, former member of the Commission, provided advice in the preparation of this Submission.

## **8. INSTITUTIONS THAT CONTRIBUTED TO THIS SUBMISSION**

This Submission was made possible through the efforts of the following institutions:

- former Commission on Maritime and Ocean Affairs (CMOA)
- Department of Energy (DOE) and the Philippine National Oil Company Exploration Corporation (PNOC-EC)
- Department of Environment and Natural Resources (DENR), through the National Mapping and Resource Information Authority (NAMRIA), and the Mines and Geosciences Bureau (MGB)
- Department of Foreign Affairs (DFA)
- Department of Justice (DOJ)
- Department of Transportation (DOTr), through the Philippine Coast Guard (PCG)
- National Coast Watch Council Secretariat (NCWCS)
- National Security Council (NSC)
- Office of the Solicitor General (OSG)
- University of the Philippines (UP) through the National Institute of Geological Sciences (NIGS), and the Institute for Maritime Affairs and Law of the Sea (IMLOS)

Foreign agencies that provided assistance were the following:

- The Norwegian Agency for Development (NORAD)
- The Institute of Geological and Nuclear Sciences of New Zealand (GNS-Science)
- Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) of Germany
- Japan International Cooperation Agency (JICA)

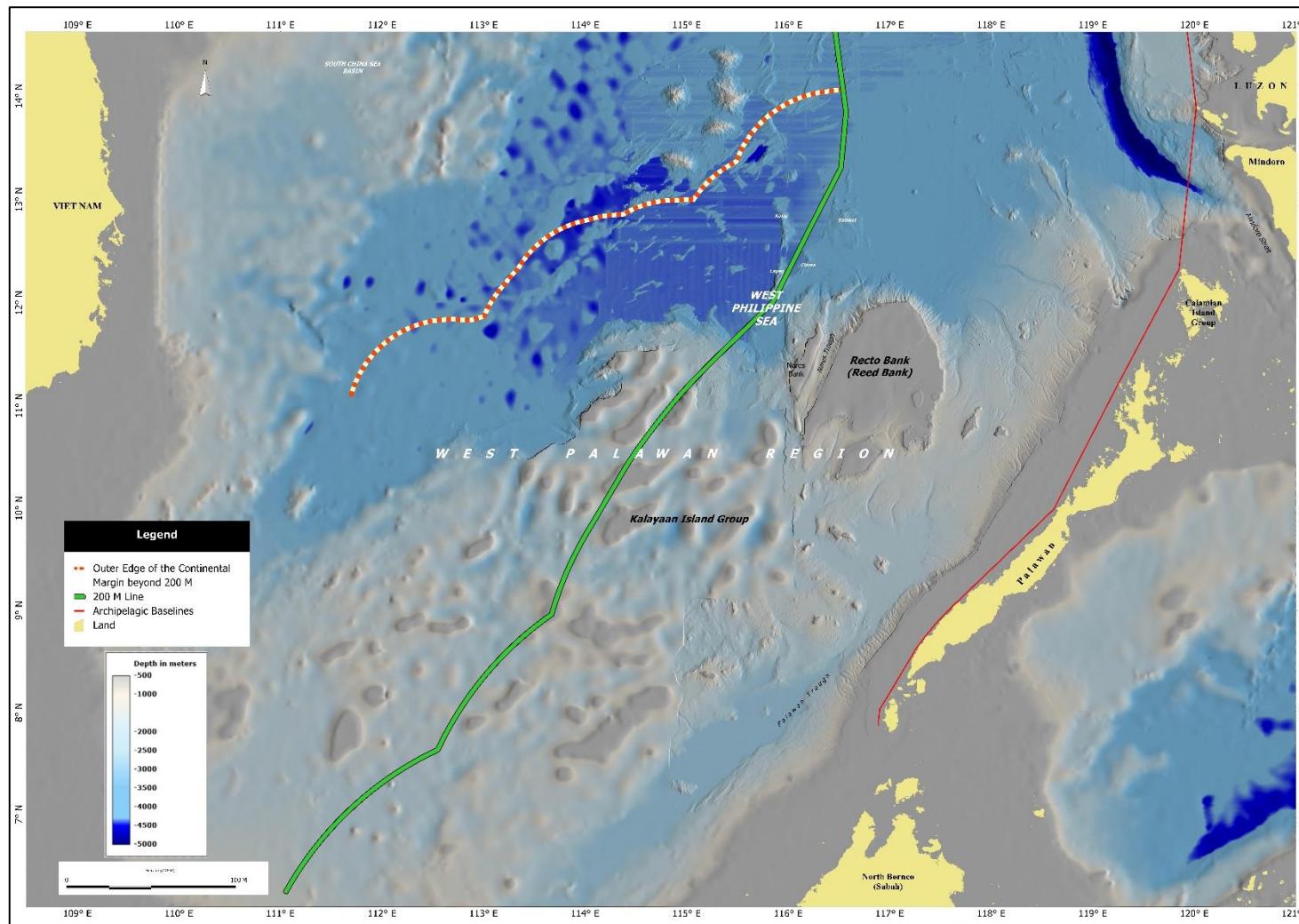
## **9. THE OUTER LIMITS OF THE CONTINENTAL SHELF BEYOND 200 M IN THE WEST PALAWAN REGION**

### **9.1 The Test of Appurtenance**

A series of multi-beam bathymetric surveys were conducted by NAMRIA to determine the morphology of the seabed in the WPR. The hydrographic data collected, composed of bathymetric measurements from multi-beam echo-sounding survey cruises conducted in 1998, 1999, 2000, 2001, 2002, 2003, and 2010 by NAMRIA were supplemented by additional data from bathymetric surveys by other organizations.

In addition to the bathymetric measurements and geomorphological analyses, geological and geophysical data from Philippine and international research institutions were compiled and analyzed. These include seismic, magnetic, gravity, and geological data, as well as the latest published academic literature in geology and geophysics. The information was used to determine the nature and structure of the seabed and subsoil in the WPR and their relationship to the land territory of the Philippines.

Analysis of all the data and information collected clearly demonstrates that the continental margin extends beyond 200 M from the baselines of mainland Palawan and North Borneo, in view of the geomorphological continuity between these landmasses and the outer edge of the continental margin in WPR, as shown on Figure 3.



**Figure 3** The outer edge of the continental margin in the WPR, determined in accordance with the rules of Article 76 (4) of UNCLOS and the Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf. The outer edge of the continental margin shows that WPR comprises a great portion of the Palawan continental margin.

## **9.2 The Foot of the Continental Slope plus 60 M Formula**

The region of the base of slope in the WPR was identified using multi-beam swath bathymetric measurements. Then the foot of the slope (FOS) points were located within the base of slope region using maximum change in gradient of the seabed in accordance with paragraph 4 (b) of Article 76. The outer edge of the continental margin is then determined by drawing arcs not more than 60 M from the FOS point in accordance with Paragraph 4(a)(ii) of Article 76. This is shown by the red and white dashed line in Figure 3.

## **9.3 The 1% Sediment Thickness Formula**

The formula in paragraph 4 (a) (i) of Article 76, referring to the percentage of sediment thickness, was not used to determine the outer edges of the continental margin due to inadequate sediment thickness data in the WPR.

## **9.4 The 350 M Constraint Line**

Geodetic information was collected to calculate the location of the constraint line located 350 M from the baselines from which the breadth of the territorial sea is measured, in accordance with paragraphs 5 and 6 of Article 76.

## **9.5 The 2,500 m Isobath plus 100 M Constraint Line**

Multi-beam bathymetric measurements were used to determine the location of the 2,500 meter isobath in the areas beyond 200 M from the baselines from which the breadth of the territorial sea is measured. Geodetic methods were used to determine the location of the constraint line located 100 M from the location of the 2,500 meter isobath.

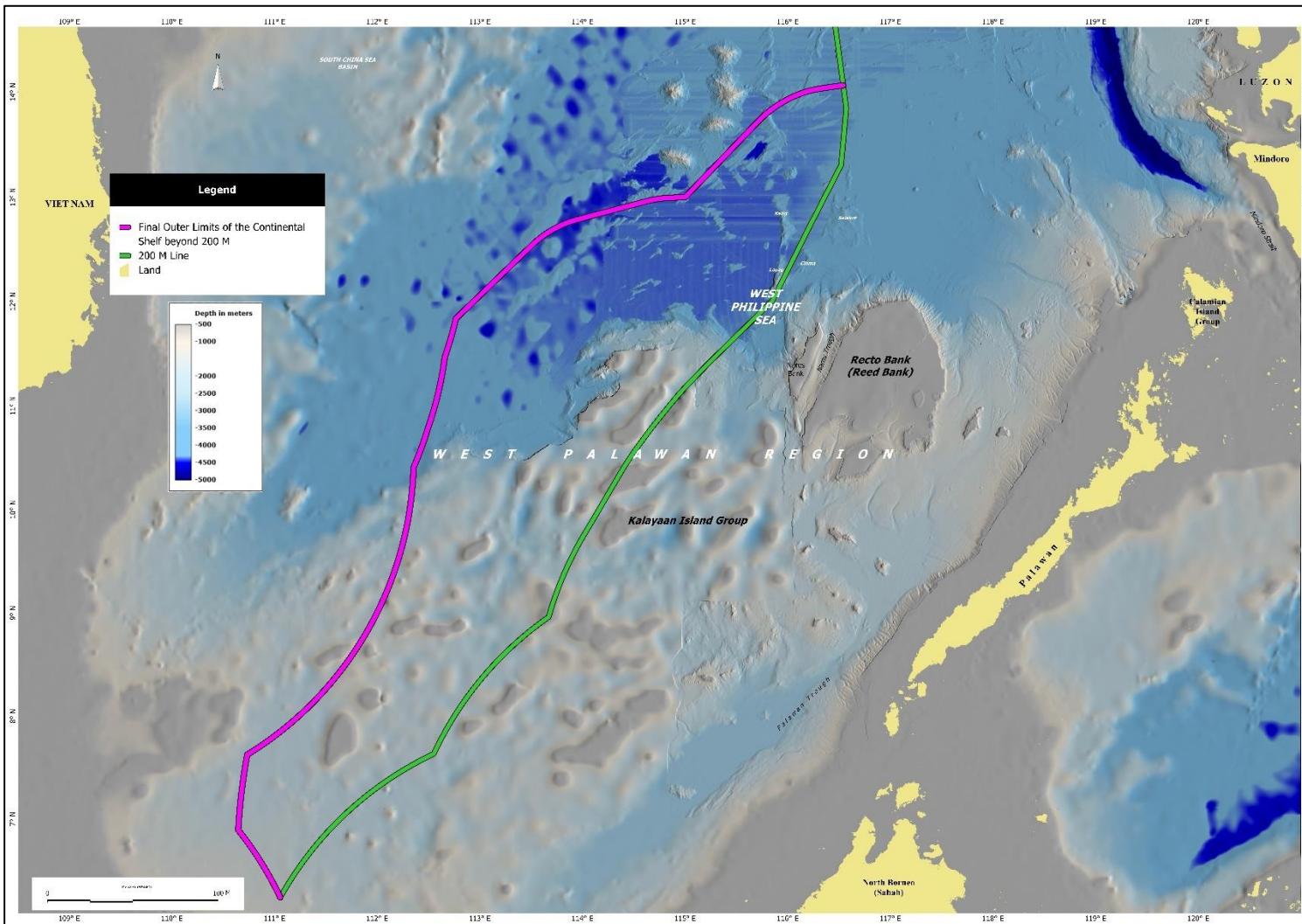
## **9.6 The Continental Shelf Beyond 200 M**

The outer limits of the continental shelf beyond 200 M is delineated using the formula lines and as limited by the constraint lines.

## **9.7 The Continental Shelf Constrained by the Maritime Zone of Relevant Littoral States**

The continental shelf extending beyond 200 M from the baselines from which the breadth of the territorial sea is measured, delineated by the application of the formula in Article 76 (4) (a) (ii) and the 350 M constraint line, is modified in deference to the 200 M lines of relevant littoral States, which are measured from the baselines drawn in accordance with Articles 5, 7 and 47 of UNCLOS. Figure 4 shows the final outer limits of the continental shelf beyond 200 M in the WPR drawn in accordance with Article 76 (7).

Table 1 presents the fixed points comprising the final outer limits of the Philippine continental shelf beyond 200 M in the WPR, along with coordinates of longitude and latitude, in accordance with Article 76 (7).



**Figure 4** Map of the final outer limits of the continental shelf beyond 200 M in the WPR.

**Table 1** Fixed points comprising the outer limits of the continental shelf of the Philippines in the WPR, from 200 M line, proceeding in a counterclockwise direction from north to south.

| Fixed Point ID | Latitude (DMS)     | Longitude (DMS)     | Distance to next point (M) |
|----------------|--------------------|---------------------|----------------------------|
| ECS-WPR-001    | 14° 03' 52.2945" N | 116° 32' 24.3041" E | N/A                        |
| ECS-WPR-002    | 14° 02' 12.6573" N | 116° 20' 19.8829" E | 11.852 N                   |
| ECS-WPR-003    | 14° 02' 04.1168" N | 116° 19' 18.7858" E | 1.00                       |
| ECS-WPR-004    | 14° 01' 54.5896" N | 116° 18' 17.8423" E | 1.00                       |
| ECS-WPR-005    | 14° 01' 44.0598" N | 116° 17' 17.0767" E | 1.00                       |
| ECS-WPR-006    | 14° 01' 32.5432" N | 116° 16' 16.4970" E | 1.00                       |
| ECS-WPR-007    | 14° 01' 20.0397" N | 116° 15' 16.1194" E | 1.00                       |
| ECS-WPR-008    | 14° 01' 06.5493" N | 116° 14' 15.9763" E | 1.00                       |
| ECS-WPR-009    | 14° 00' 52.0798" N | 116° 13' 16.0676" E | 1.00                       |
| ECS-WPR-010    | 14° 00' 36.6311" N | 116° 12' 16.4096" E | 1.00                       |
| ECS-WPR-011    | 14° 00' 20.2112" N | 116° 11' 17.0346" E | 1.00                       |
| ECS-WPR-012    | 14° 00' 02.8200" N | 116° 10' 17.9506" E | 1.00                       |
| ECS-WPR-013    | 13° 59' 44.4731" N | 116° 09' 19.1738" E | 1.00                       |
| ECS-WPR-014    | 13° 59' 25.1627" N | 116° 08' 20.7204" E | 1.00                       |
| ECS-WPR-015    | 13° 59' 04.9044" N | 116° 07' 22.6066" E | 1.00                       |
| ECS-WPR-016    | 13° 58' 43.6982" N | 116° 06' 24.8486" E | 1.00                       |
| ECS-WPR-017    | 13° 58' 21.5440" N | 116° 05' 27.4624" E | 1.00                       |
| ECS-WPR-018    | 13° 57' 58.4654" N | 116° 04' 30.4643" E | 1.00                       |
| ECS-WPR-019    | 13° 57' 34.4544" N | 116° 03' 33.8785" E | 1.00                       |
| ECS-WPR-020    | 13° 57' 09.5189" N | 116° 02' 37.7050" E | 1.00                       |
| ECS-WPR-021    | 13° 56' 43.6745" N | 116° 01' 41.9763" E | 1.00                       |
| ECS-WPR-022    | 13° 56' 16.9212" N | 116° 00' 46.6921" E | 1.00                       |
| ECS-WPR-023    | 13° 55' 49.2669" N | 115° 59' 51.8850" E | 1.00                       |
| ECS-WPR-024    | 13° 55' 20.7271" N | 115° 58' 57.5549" E | 1.00                       |
| ECS-WPR-025    | 13° 54' 51.3017" N | 115° 58' 03.7180" E | 1.00                       |
| ECS-WPR-026    | 13° 54' 20.9987" N | 115° 57' 10.4066" E | 1.00                       |
| ECS-WPR-027    | 13° 53' 49.8258" N | 115° 56' 17.6126" E | 1.00                       |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-028           | 13° 53' 05.0665" N    | 115° 55' 02.4317" E    | 1.43                              |
| ECS-WPR-029           | 13° 52' 33.0377" N    | 115° 54' 10.1874" E    | 1.00                              |
| ECS-WPR-030           | 13° 52' 00.1624" N    | 115° 53' 18.5011" E    | 1.00                              |
| ECS-WPR-031           | 13° 51' 26.4406" N    | 115° 52' 27.3807" E    | 1.00                              |
| ECS-WPR-032           | 13° 50' 51.8958" N    | 115° 51' 36.8585" E    | 1.00                              |
| ECS-WPR-033           | 13° 50' 16.5279" N    | 115° 50' 46.9265" E    | 1.00                              |
| ECS-WPR-034           | 13° 49' 40.3528" N    | 115° 49' 57.6171" E    | 1.00                              |
| ECS-WPR-035           | 13° 49' 03.3701" N    | 115° 49' 08.9302" E    | 1.00                              |
| ECS-WPR-036           | 13° 48' 25.5957" N    | 115° 48' 20.8820" E    | 1.00                              |
| ECS-WPR-037           | 13° 47' 47.0452" N    | 115° 47' 33.4968" E    | 1.00                              |
| ECS-WPR-038           | 13° 47' 07.7265" N    | 115° 46' 46.7745" E    | 1.00                              |
| ECS-WPR-039           | 13° 46' 27.6552" N    | 115° 46' 00.7395" E    | 1.00                              |
| ECS-WPR-040           | 13° 45' 46.8312" N    | 115° 45' 15.3916" E    | 1.00                              |
| ECS-WPR-041           | 13° 45' 05.2702" N    | 115° 44' 30.7471" E    | 1.00                              |
| ECS-WPR-042           | 13° 44' 22.9879" N    | 115° 43' 46.8303" E    | 1.00                              |
| ECS-WPR-043           | 13° 43' 39.9921" N    | 115° 43' 03.6411" E    | 1.00                              |
| ECS-WPR-044           | 13° 42' 56.2986" N    | 115° 42' 21.1957" E    | 1.00                              |
| ECS-WPR-045           | 12° 59' 55.0434" N    | 114° 59' 59.5572" E    | 59.50                             |
| ECS-WPR-046           | 12° 59' 54.5518" N    | 114° 58' 58.6542" E    | 1.00                              |
| ECS-WPR-047           | 12° 59' 53.0455" N    | 114° 57' 57.2175" E    | 1.00                              |
| ECS-WPR-048           | 12° 59' 50.5402" N    | 114° 56' 55.8212" E    | 1.00                              |
| ECS-WPR-049           | 12° 59' 33.0427" N    | 114° 50' 14.4090" E    | 6.54                              |
| ECS-WPR-050           | 12° 59' 29.5225" N    | 114° 49' 13.0613" E    | 1.00                              |
| ECS-WPR-051           | 12° 59' 25.0034" N    | 114° 48' 11.7863" E    | 1.00                              |
| ECS-WPR-052           | 12° 59' 19.4773" N    | 114° 47' 10.5922" E    | 1.00                              |
| ECS-WPR-053           | 12° 59' 12.9443" N    | 114° 46' 09.5031" E    | 1.00                              |
| ECS-WPR-054           | 12° 59' 05.4122" N    | 114° 45' 08.5354" E    | 1.00                              |
| ECS-WPR-055           | 12° 58' 56.8732" N    | 114° 44' 07.7051" E    | 1.00                              |
| ECS-WPR-056           | 12° 58' 47.3509" N    | 114° 43' 07.0283" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-057           | 12° 58' 36.8215" N    | 114° 42' 06.5214" E    | 1.00                              |
| ECS-WPR-058           | 12° 58' 25.3089" N    | 114° 41' 06.2085" E    | 1.00                              |
| ECS-WPR-059           | 12° 58' 12.8049" N    | 114° 40' 06.0978" E    | 1.00                              |
| ECS-WPR-060           | 12° 57' 59.3176" N    | 114° 39' 06.2134" E    | 1.00                              |
| ECS-WPR-061           | 12° 57' 44.8548" N    | 114° 38' 06.5634" E    | 1.00                              |
| ECS-WPR-062           | 12° 47' 19.6840" N    | 113° 57' 42.3734" E    | 40.80                             |
| ECS-WPR-063           | 12° 47' 04.2427" N    | 113° 56' 43.0226" E    | 1.00                              |
| ECS-WPR-064           | 12° 46' 47.8252" N    | 113° 55' 43.9386" E    | 1.00                              |
| ECS-WPR-065           | 12° 46' 30.4392" N    | 113° 54' 45.1538" E    | 1.00                              |
| ECS-WPR-066           | 12° 46' 12.0927" N    | 113° 53' 46.6681" E    | 1.00                              |
| ECS-WPR-067           | 12° 45' 52.7936" N    | 113° 52' 48.5057" E    | 1.00                              |
| ECS-WPR-068           | 12° 45' 32.5339" N    | 113° 51' 50.6830" E    | 1.00                              |
| ECS-WPR-069           | 12° 45' 11.3372" N    | 113° 50' 53.2160" E    | 1.00                              |
| ECS-WPR-070           | 12° 44' 49.1957" N    | 113° 49' 56.1127" E    | 1.00                              |
| ECS-WPR-071           | 12° 44' 26.1171" N    | 113° 48' 59.4057" E    | 1.00                              |
| ECS-WPR-072           | 12° 44' 02.1094" N    | 113° 48' 03.0948" E    | 1.00                              |
| ECS-WPR-073           | 12° 43' 37.1883" N    | 113° 47' 07.2043" E    | 1.00                              |
| ECS-WPR-074           | 12° 43' 11.3458" N    | 113° 46' 11.7423" E    | 1.00                              |
| ECS-WPR-075           | 12° 42' 44.5977" N    | 113° 45' 16.7412" E    | 1.00                              |
| ECS-WPR-076           | 12° 42' 16.9519" N    | 113° 44' 22.1928" E    | 1.00                              |
| ECS-WPR-077           | 12° 41' 48.4162" N    | 113° 43' 28.1295" E    | 1.00                              |
| ECS-WPR-078           | 12° 41' 18.9985" N    | 113° 42' 34.5674" E    | 1.00                              |
| ECS-WPR-079           | 12° 40' 48.6987" N    | 113° 41' 41.5066" E    | 1.00                              |
| ECS-WPR-080           | 12° 40' 17.5406" N    | 113° 40' 48.9794" E    | 1.00                              |
| ECS-WPR-081           | 12° 39' 45.5160" N    | 113° 39' 56.9859" E    | 1.00                              |
| ECS-WPR-082           | 12° 39' 12.6488" N    | 113° 39' 05.5501" E    | 1.00                              |
| ECS-WPR-083           | 12° 38' 38.9388" N    | 113° 38' 14.6803" E    | 1.00                              |
| ECS-WPR-084           | 12° 38' 04.4018" N    | 113° 37' 24.3926" E    | 1.00                              |
| ECS-WPR-085           | 12° 37' 29.0377" N    | 113° 36' 34.7032" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-086           | 12° 36' 52.8703" N    | 113° 35' 45.6202" E    | 1.00                              |
| ECS-WPR-087           | 12° 36' 15.8915" N    | 113° 34' 57.1677" E    | 1.00                              |
| ECS-WPR-088           | 12° 35' 38.1330" N    | 113° 34' 09.3540" E    | 1.00                              |
| ECS-WPR-089           | 12° 34' 59.5868" N    | 113° 33' 22.1871" E    | 1.00                              |
| ECS-WPR-090           | 12° 34' 20.2765" N    | 113° 32' 35.6831" E    | 1.00                              |
| ECS-WPR-091           | 12° 33' 40.2100" N    | 113° 31' 49.8582" E    | 1.00                              |
| ECS-WPR-092           | 12° 32' 59.3952" N    | 113° 31' 04.7287" E    | 1.00                              |
| ECS-WPR-093           | 12° 32' 17.8479" N    | 113° 30' 20.2944" E    | 1.00                              |
| ECS-WPR-094           | 12° 31' 35.5679" N    | 113° 29' 36.5797" E    | 1.00                              |
| ECS-WPR-095           | 11° 50' 15.9832" N    | 112° 45' 58.7879" E    | 59.32                             |
| ECS-WPR-096           | 11° 49' 13.0750" N    | 112° 45' 44.0138" E    | 1.07                              |
| ECS-WPR-097           | 11° 48' 14.4232" N    | 112° 45' 29.9290" E    | 1.00                              |
| ECS-WPR-098           | 11° 47' 15.8401" N    | 112° 45' 15.5535" E    | 1.00                              |
| ECS-WPR-099           | 11° 46' 17.3270" N    | 112° 45' 00.8877" E    | 1.00                              |
| ECS-WPR-100           | 11° 45' 18.8853" N    | 112° 44' 45.9321" E    | 1.00                              |
| ECS-WPR-101           | 11° 44' 20.5164" N    | 112° 44' 30.6870" E    | 1.00                              |
| ECS-WPR-102           | 11° 43' 22.2279" N    | 112° 44' 15.1288" E    | 1.00                              |
| ECS-WPR-103           | 11° 42' 24.0175" N    | 112° 43' 59.2734" E    | 1.00                              |
| ECS-WPR-104           | 11° 41' 25.8842" N    | 112° 43' 43.1298" E    | 1.00                              |
| ECS-WPR-105           | 11° 40' 27.8295" N    | 112° 43' 26.6985" E    | 1.00                              |
| ECS-WPR-106           | 11° 39' 29.8547" N    | 112° 43' 09.9799" E    | 1.00                              |
| ECS-WPR-107           | 11° 38' 31.9612" N    | 112° 42' 52.9745" E    | 1.00                              |
| ECS-WPR-108           | 11° 37' 34.1505" N    | 112° 42' 35.6827" E    | 1.00                              |
| ECS-WPR-109           | 11° 36' 36.4325" N    | 112° 42' 18.0754" E    | 1.00                              |
| ECS-WPR-110           | 11° 35' 38.8011" N    | 112° 42' 00.1799" E    | 1.00                              |
| ECS-WPR-111           | 11° 34' 41.2566" N    | 112° 41' 41.9994" E    | 1.00                              |
| ECS-WPR-112           | 11° 33' 43.8005" N    | 112° 41' 23.5345" E    | 1.00                              |
| ECS-WPR-113           | 11° 32' 46.4342" N    | 112° 41' 04.7857" E    | 1.00                              |
| ECS-WPR-114           | 11° 31' 49.1590" N    | 112° 40' 45.7533" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-115           | 11° 30' 51.9773" N    | 112° 40' 26.4351" E    | 1.00                              |
| ECS-WPR-116           | 11° 29' 54.8991" N    | 112° 40' 06.8053" E    | 1.00                              |
| ECS-WPR-117           | 11° 28' 57.9163" N    | 112° 39' 46.8936" E    | 1.00                              |
| ECS-WPR-118           | 11° 28' 00.4164" N    | 112° 39' 28.5743" E    | 1.00                              |
| ECS-WPR-119           | 11° 27' 00.6593" N    | 112° 39' 20.6029" E    | 1.00                              |
| ECS-WPR-120           | 11° 26' 00.9415" N    | 112° 39' 12.3350" E    | 1.00                              |
| ECS-WPR-121           | 11° 25' 01.2643" N    | 112° 39' 03.7707" E    | 1.00                              |
| ECS-WPR-122           | 11° 24' 01.6323" N    | 112° 38' 54.8881" E    | 1.00                              |
| ECS-WPR-123           | 11° 23' 02.0457" N    | 112° 38' 45.6984" E    | 1.00                              |
| ECS-WPR-124           | 11° 22' 02.5043" N    | 112° 38' 36.2132" E    | 1.00                              |
| ECS-WPR-125           | 11° 21' 03.0094" N    | 112° 38' 26.4327" E    | 1.00                              |
| ECS-WPR-126           | 11° 20' 03.5624" N    | 112° 38' 16.3573" E    | 1.00                              |
| ECS-WPR-127           | 11° 19' 04.1649" N    | 112° 38' 05.9873" E    | 1.00                              |
| ECS-WPR-128           | 11° 18' 04.8182" N    | 112° 37' 55.3228" E    | 1.00                              |
| ECS-WPR-129           | 11° 17' 05.5287" N    | 112° 37' 44.3364" E    | 1.00                              |
| ECS-WPR-130           | 11° 16' 06.2941" N    | 112° 37' 33.0509" E    | 1.00                              |
| ECS-WPR-131           | 11° 15' 07.1147" N    | 112° 37' 21.4720" E    | 1.00                              |
| ECS-WPR-132           | 11° 14' 07.9920" N    | 112° 37' 09.6000" E    | 1.00                              |
| ECS-WPR-133           | 11° 13' 08.9274" N    | 112° 36' 57.4352" E    | 1.00                              |
| ECS-WPR-134           | 11° 12' 09.9223" N    | 112° 36' 44.9781" E    | 1.00                              |
| ECS-WPR-135           | 11° 11' 10.9782" N    | 112° 36' 32.2284" E    | 1.00                              |
| ECS-WPR-136           | 11° 10' 12.1035" N    | 112° 36' 19.1545" E    | 1.00                              |
| ECS-WPR-137           | 11° 09' 13.2926" N    | 112° 36' 05.7892" E    | 1.00                              |
| ECS-WPR-138           | 11° 08' 14.5472" N    | 112° 35' 52.1330" E    | 1.00                              |
| ECS-WPR-139           | 11° 07' 15.8684" N    | 112° 35' 38.1862" E    | 1.00                              |
| ECS-WPR-140           | 11° 06' 17.2578" N    | 112° 35' 23.9493" E    | 1.00                              |
| ECS-WPR-141           | 11° 05' 18.7167" N    | 112° 35' 09.4225" E    | 1.00                              |
| ECS-WPR-142           | 11° 04' 20.2481" N    | 112° 34' 54.6001" E    | 1.00                              |
| ECS-WPR-143           | 11° 03' 21.8585" N    | 112° 34' 39.4622" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-144           | 11° 02' 23.5428" N    | 112° 34' 24.0357" E    | 1.00                              |
| ECS-WPR-145           | 11° 01' 25.3025" N    | 112° 34' 08.3211" E    | 1.00                              |
| ECS-WPR-146           | 11° 00' 27.1388" N    | 112° 33' 52.3188" E    | 1.00                              |
| ECS-WPR-147           | 10° 59' 29.0532" N    | 112° 33' 36.0291" E    | 1.00                              |
| ECS-WPR-148           | 10° 58' 31.0470" N    | 112° 33' 19.4527" E    | 1.00                              |
| ECS-WPR-149           | 10° 57' 33.1251" N    | 112° 33' 02.5778" E    | 1.00                              |
| ECS-WPR-150           | 10° 56' 35.2914" N    | 112° 32' 45.3965" E    | 1.00                              |
| ECS-WPR-151           | 10° 55' 37.5415" N    | 112° 32' 27.9297" E    | 1.00                              |
| ECS-WPR-152           | 10° 54' 39.8768" N    | 112° 32' 10.1779" E    | 1.00                              |
| ECS-WPR-153           | 10° 53' 42.2986" N    | 112° 31' 52.1416" E    | 1.00                              |
| ECS-WPR-154           | 10° 52' 44.8083" N    | 112° 31' 33.8212" E    | 1.00                              |
| ECS-WPR-155           | 10° 51' 47.4073" N    | 112° 31' 15.2173" E    | 1.00                              |
| ECS-WPR-156           | 10° 50' 50.1027" N    | 112° 30' 56.3127" E    | 1.00                              |
| ECS-WPR-157           | 10° 49' 52.8948" N    | 112° 30' 37.1109" E    | 1.00                              |
| ECS-WPR-158           | 10° 48' 55.7806" N    | 112° 30' 17.6272" E    | 1.00                              |
| ECS-WPR-159           | 10° 47' 58.7612" N    | 112° 29' 57.8618" E    | 1.00                              |
| ECS-WPR-160           | 10° 47' 01.8382" N    | 112° 29' 37.8155" E    | 1.00                              |
| ECS-WPR-161           | 10° 46' 04.2302" N    | 112° 29' 19.8827" E    | 1.00                              |
| ECS-WPR-162           | 10° 45' 06.6203" N    | 112° 29' 01.9572" E    | 1.00                              |
| ECS-WPR-163           | 10° 44' 09.0978" N    | 112° 28' 43.7475" E    | 1.00                              |
| ECS-WPR-164           | 10° 43' 11.6641" N    | 112° 28' 25.2542" E    | 1.00                              |
| ECS-WPR-165           | 10° 42' 14.3206" N    | 112° 28' 06.4776" E    | 1.00                              |
| ECS-WPR-166           | 10° 41' 17.0687" N    | 112° 27' 47.4185" E    | 1.00                              |
| ECS-WPR-167           | 10° 40' 19.9137" N    | 112° 27' 28.0648" E    | 1.00                              |
| ECS-WPR-168           | 10° 39' 22.8597" N    | 112° 27' 08.4099" E    | 1.00                              |
| ECS-WPR-169           | 10° 38' 25.9014" N    | 112° 26' 48.4738" E    | 1.00                              |
| ECS-WPR-170           | 10° 37' 29.0404" N    | 112° 26' 28.2571" E    | 1.00                              |
| ECS-WPR-171           | 10° 36' 32.2779" N    | 112° 26' 07.7603" E    | 1.00                              |
| ECS-WPR-172           | 10° 35' 35.6152" N    | 112° 25' 46.9840" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-173           | 10° 34' 39.0538" N    | 112° 25' 25.9287" E    | 1.00                              |
| ECS-WPR-174           | 10° 33' 42.6015" N    | 112° 25' 04.5773" E    | 1.00                              |
| ECS-WPR-175           | 10° 32' 46.2584" N    | 112° 24' 42.9341" E    | 1.00                              |
| ECS-WPR-176           | 10° 31' 50.0207" N    | 112° 24' 21.0136" E    | 1.00                              |
| ECS-WPR-177           | 10° 30' 53.8898" N    | 112° 23' 58.8163" E    | 1.00                              |
| ECS-WPR-178           | 10° 29' 57.8671" N    | 112° 23' 36.3429" E    | 1.00                              |
| ECS-WPR-179           | 10° 29' 01.9537" N    | 112° 23' 13.5939" E    | 1.00                              |
| ECS-WPR-180           | 10° 28' 06.1512" N    | 112° 22' 50.5698" E    | 1.00                              |
| ECS-WPR-181           | 10° 27' 10.4702" N    | 112° 22' 27.2484" E    | 1.00                              |
| ECS-WPR-182           | 10° 26' 14.9060" N    | 112° 22' 03.6451" E    | 1.00                              |
| ECS-WPR-183           | 10° 25' 19.4569" N    | 112° 21' 39.7685" E    | 1.00                              |
| ECS-WPR-184           | 10° 24' 24.1239" N    | 112° 21' 15.6194" E    | 1.00                              |
| ECS-WPR-185           | 10° 23' 23.9723" N    | 112° 21' 11.7033" E    | 1.00                              |
| ECS-WPR-186           | 10° 22' 23.7359" N    | 112° 21' 09.4868" E    | 1.00                              |
| ECS-WPR-187           | 10° 21' 23.5110" N    | 112° 21' 06.9687" E    | 1.00                              |
| ECS-WPR-188           | 10° 20' 23.3000" N    | 112° 21' 04.1310" E    | 1.00                              |
| ECS-WPR-189           | 10° 19' 23.1019" N    | 112° 21' 01.0245" E    | 1.00                              |
| ECS-WPR-190           | 10° 18' 22.9225" N    | 112° 20' 57.5673" E    | 1.00                              |
| ECS-WPR-191           | 10° 17' 22.7595" N    | 112° 20' 53.8288" E    | 1.00                              |
| ECS-WPR-192           | 10° 16' 22.6162" N    | 112° 20' 49.7808" E    | 1.00                              |
| ECS-WPR-193           | 10° 15' 22.4932" N    | 112° 20' 45.4346" E    | 1.00                              |
| ECS-WPR-194           | 10° 14' 22.3924" N    | 112° 20' 40.7869" E    | 1.00                              |
| ECS-WPR-195           | 10° 13' 22.3137" N    | 112° 20' 35.8548" E    | 1.00                              |
| ECS-WPR-196           | 10° 12' 22.2607" N    | 112° 20' 30.6126" E    | 1.00                              |
| ECS-WPR-197           | 10° 11' 22.2354" N    | 112° 20' 25.0568" E    | 1.00                              |
| ECS-WPR-198           | 10° 10' 22.2403" N    | 112° 20' 19.1772" E    | 1.00                              |
| ECS-WPR-199           | 10° 09' 22.2732" N    | 112° 20' 13.0137" E    | 1.00                              |
| ECS-WPR-200           | 10° 08' 22.3369" N    | 112° 20' 06.5510" E    | 1.00                              |
| ECS-WPR-201           | 10° 07' 22.4333" N    | 112° 19' 59.7876" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-202           | 10° 06' 22.5617" N    | 112° 19' 52.7401" E    | 1.00                              |
| ECS-WPR-203           | 10° 05' 22.7269" N    | 112° 19' 45.3816" E    | 1.00                              |
| ECS-WPR-204           | 10° 04' 22.9281" N    | 112° 19' 37.7308" E    | 1.00                              |
| ECS-WPR-205           | 10° 03' 23.1725" N    | 112° 19' 29.7434" E    | 1.00                              |
| ECS-WPR-206           | 10° 02' 23.4533" N    | 112° 19' 21.4840" E    | 1.00                              |
| ECS-WPR-207           | 10° 01' 23.7761" N    | 112° 19' 12.9205" E    | 1.00                              |
| ECS-WPR-208           | 10° 00' 24.1425" N    | 112° 19' 04.0536" E    | 1.00                              |
| ECS-WPR-209           | 09° 59' 24.5529" N    | 112° 18' 54.8907" E    | 1.00                              |
| ECS-WPR-210           | 09° 58' 25.0071" N    | 112° 18' 45.4424" E    | 1.00                              |
| ECS-WPR-211           | 09° 57' 25.5120" N    | 112° 18' 35.6749" E    | 1.00                              |
| ECS-WPR-212           | 09° 56' 26.0679" N    | 112° 18' 25.5957" E    | 1.00                              |
| ECS-WPR-213           | 09° 55' 26.6720" N    | 112° 18' 15.2322" E    | 1.00                              |
| ECS-WPR-214           | 09° 54' 27.3256" N    | 112° 18' 04.5844" E    | 1.00                              |
| ECS-WPR-215           | 09° 53' 28.0337" N    | 112° 17' 53.6324" E    | 1.00                              |
| ECS-WPR-216           | 09° 52' 28.7962" N    | 112° 17' 42.3852" E    | 1.00                              |
| ECS-WPR-217           | 09° 51' 29.6137" N    | 112° 17' 30.8476" E    | 1.00                              |
| ECS-WPR-218           | 09° 50' 30.4915" N    | 112° 17' 18.9995" E    | 1.00                              |
| ECS-WPR-219           | 09° 49' 31.4280" N    | 112° 17' 06.8581" E    | 1.00                              |
| ECS-WPR-220           | 09° 48' 32.4272" N    | 112° 16' 54.4109" E    | 1.00                              |
| ECS-WPR-221           | 09° 47' 33.4863" N    | 112° 16' 41.6790" E    | 1.00                              |
| ECS-WPR-222           | 09° 46' 34.6110" N    | 112° 16' 28.6427" E    | 1.00                              |
| ECS-WPR-223           | 09° 45' 35.7952" N    | 112° 16' 15.3364" E    | 1.00                              |
| ECS-WPR-224           | 09° 44' 37.0509" N    | 112° 16' 01.7131" E    | 1.00                              |
| ECS-WPR-225           | 09° 43' 38.3722" N    | 112° 15' 47.8059" E    | 1.00                              |
| ECS-WPR-226           | 09° 42' 39.7666" N    | 112° 15' 33.5899" E    | 1.00                              |
| ECS-WPR-227           | 09° 41' 41.2296" N    | 112° 15' 19.0896" E    | 1.00                              |
| ECS-WPR-228           | 09° 40' 42.7670" N    | 112° 15' 04.2884" E    | 1.00                              |
| ECS-WPR-229           | 09° 39' 44.3742" N    | 112° 14' 49.2101" E    | 1.00                              |
| ECS-WPR-230           | 09° 38' 46.0522" N    | 112° 14' 33.8566" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-231           | 09° 37' 47.8168" N    | 112° 14' 18.1732" E    | 1.00                              |
| ECS-WPR-232           | 09° 36' 49.6606" N    | 112° 14' 02.1948" E    | 1.00                              |
| ECS-WPR-233           | 09° 35' 51.5782" N    | 112° 13' 45.9469" E    | 1.00                              |
| ECS-WPR-234           | 09° 34' 53.5807" N    | 112° 13' 29.3944" E    | 1.00                              |
| ECS-WPR-235           | 09° 33' 55.6639" N    | 112° 13' 12.5579" E    | 1.00                              |
| ECS-WPR-236           | 09° 32' 57.8235" N    | 112° 12' 55.4578" E    | 1.00                              |
| ECS-WPR-237           | 09° 32' 00.0715" N    | 112° 12' 38.0576" E    | 1.00                              |
| ECS-WPR-238           | 09° 31' 02.4133" N    | 112° 12' 20.3453" E    | 1.00                              |
| ECS-WPR-239           | 09° 30' 04.8446" N    | 112° 12' 02.3405" E    | 1.00                              |
| ECS-WPR-240           | 09° 29' 07.3614" N    | 112° 11' 44.0609" E    | 1.00                              |
| ECS-WPR-241           | 09° 28' 09.9666" N    | 112° 11' 25.5028" E    | 1.00                              |
| ECS-WPR-242           | 09° 27' 12.6681" N    | 112° 11' 06.6459" E    | 1.00                              |
| ECS-WPR-243           | 09° 26' 15.4558" N    | 112° 10' 47.5260" E    | 1.00                              |
| ECS-WPR-244           | 09° 25' 18.3439" N    | 112° 10' 28.1047" E    | 1.00                              |
| ECS-WPR-245           | 09° 24' 21.3295" N    | 112° 10' 08.3958" E    | 1.00                              |
| ECS-WPR-246           | 09° 23' 24.4142" N    | 112° 09' 48.3993" E    | 1.00                              |
| ECS-WPR-247           | 09° 22' 27.5980" N    | 112° 09' 28.1198" E    | 1.00                              |
| ECS-WPR-248           | 09° 21' 30.8828" N    | 112° 09' 07.5564" E    | 1.00                              |
| ECS-WPR-249           | 09° 20' 34.2699" N    | 112° 08' 46.7097" E    | 1.00                              |
| ECS-WPR-250           | 09° 19' 37.7534" N    | 112° 08' 25.6005" E    | 1.00                              |
| ECS-WPR-251           | 09° 18' 41.3408" N    | 112° 08' 04.2125" E    | 1.00                              |
| ECS-WPR-252           | 09° 17' 45.0466" N    | 112° 07' 42.5113" E    | 1.00                              |
| ECS-WPR-253           | 09° 16' 48.8612" N    | 112° 07' 20.5268" E    | 1.00                              |
| ECS-WPR-254           | 09° 15' 52.7819" N    | 112° 06' 58.2705" E    | 1.00                              |
| ECS-WPR-255           | 09° 14' 56.8080" N    | 112° 06' 35.7478" E    | 1.00                              |
| ECS-WPR-256           | 09° 14' 00.9477" N    | 112° 06' 12.9420" E    | 1.00                              |
| ECS-WPR-257           | 09° 13' 05.2024" N    | 112° 05' 49.8538" E    | 1.00                              |
| ECS-WPR-258           | 09° 12' 09.5675" N    | 112° 05' 26.4984" E    | 1.00                              |
| ECS-WPR-259           | 09° 11' 14.0593" N    | 112° 05' 02.8404" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-260           | 09° 10' 18.6679" N    | 112° 04' 38.9075" E    | 1.00                              |
| ECS-WPR-261           | 09° 09' 23.3902" N    | 112° 04' 14.7108" E    | 1.00                              |
| ECS-WPR-262           | 09° 08' 28.2293" N    | 112° 03' 50.2468" E    | 1.00                              |
| ECS-WPR-263           | 9° 07' 33.1878" N     | 112° 03' 25.5128" E    | 1.00                              |
| ECS-WPR-264           | 09° 06' 38.2725" N    | 112° 03' 00.4975" E    | 1.00                              |
| ECS-WPR-265           | 09° 05' 43.4807" N    | 112° 02' 35.2104" E    | 1.00                              |
| ECS-WPR-266           | 09° 04' 48.8232" N    | 112° 02' 09.6316" E    | 1.00                              |
| ECS-WPR-267           | 09° 03' 54.2877" N    | 112° 01' 43.7916" E    | 1.00                              |
| ECS-WPR-268           | 09° 02' 59.8851" N    | 112° 01' 17.6708" E    | 1.00                              |
| ECS-WPR-269           | 09° 02' 05.6098" N    | 112° 00' 51.2842" E    | 1.00                              |
| ECS-WPR-270           | 09° 01' 11.4569" N    | 112° 00' 24.6453" E    | 1.00                              |
| ECS-WPR-271           | 09° 00' 17.4378" N    | 111° 59' 57.7339" E    | 1.00                              |
| ECS-WPR-272           | 08° 59' 23.5561" N    | 111° 59' 30.5464" E    | 1.00                              |
| ECS-WPR-273           | 08° 58' 29.8181" N    | 111° 59' 03.0735" E    | 1.00                              |
| ECS-WPR-274           | 08° 57' 36.1377" N    | 111° 58' 35.4881" E    | 1.00                              |
| ECS-WPR-275           | 08° 56' 42.6061" N    | 111° 58' 07.6129" E    | 1.00                              |
| ECS-WPR-276           | 08° 55' 49.2192" N    | 111° 57' 39.4593" E    | 1.00                              |
| ECS-WPR-277           | 08° 54' 55.9678" N    | 111° 57' 11.0485" E    | 1.00                              |
| ECS-WPR-278           | 08° 54' 02.8552" N    | 111° 56' 42.3771" E    | 1.00                              |
| ECS-WPR-279           | 08° 53' 09.8841" N    | 111° 56' 13.4433" E    | 1.00                              |
| ECS-WPR-280           | 08° 52' 17.0534" N    | 111° 55' 44.2522" E    | 1.00                              |
| ECS-WPR-281           | 08° 51' 24.3670" N    | 111° 55' 14.7997" E    | 1.00                              |
| ECS-WPR-282           | 08° 50' 31.8284" N    | 111° 54' 45.0826" E    | 1.00                              |
| ECS-WPR-283           | 08° 49' 39.4432" N    | 111° 54' 15.0941" E    | 1.00                              |
| ECS-WPR-284           | 08° 48' 47.2046" N    | 111° 53' 44.8494" E    | 1.00                              |
| ECS-WPR-285           | 08° 47' 55.1204" N    | 111° 53' 14.3376" E    | 1.00                              |
| ECS-WPR-286           | 08° 47' 03.1832" N    | 111° 52' 43.5749" E    | 1.00                              |
| ECS-WPR-287           | 08° 46' 11.3935" N    | 111° 52' 12.5632" E    | 1.00                              |
| ECS-WPR-288           | 08° 45' 19.7536" N    | 111° 51' 41.3009" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-289           | 08° 44' 28.2741" N    | 111° 51' 09.7738" E    | 1.00                              |
| ECS-WPR-290           | 08° 43' 36.9658" N    | 111° 50' 37.9670" E    | 1.00                              |
| ECS-WPR-291           | 08° 42' 45.8060" N    | 111° 50' 05.9208" E    | 1.00                              |
| ECS-WPR-292           | 08° 41' 54.8051" N    | 111° 49' 33.6208" E    | 1.00                              |
| ECS-WPR-293           | 08° 41' 03.9620" N    | 111° 49' 01.0715" E    | 1.00                              |
| ECS-WPR-294           | 08° 40' 13.2735" N    | 111° 48' 28.2809" E    | 1.00                              |
| ECS-WPR-295           | 08° 39' 22.7539" N    | 111° 47' 55.2293" E    | 1.00                              |
| ECS-WPR-296           | 08° 38' 32.3975" N    | 111° 47' 21.9282" E    | 1.00                              |
| ECS-WPR-297           | 08° 37' 42.2139" N    | 111° 46' 48.3659" E    | 1.00                              |
| ECS-WPR-298           | 08° 36' 52.2021" N    | 111° 46' 14.5470" E    | 1.00                              |
| ECS-WPR-299           | 08° 36' 02.3473" N    | 111° 45' 40.4959" E    | 1.00                              |
| ECS-WPR-300           | 08° 35' 12.6533" N    | 111° 45' 06.2095" E    | 1.00                              |
| ECS-WPR-301           | 08° 34' 23.1340" N    | 111° 44' 31.6702" E    | 1.00                              |
| ECS-WPR-302           | 08° 33' 33.7787" N    | 111° 43' 56.8958" E    | 1.00                              |
| ECS-WPR-303           | 08° 32' 44.6233" N    | 111° 43' 21.8382" E    | 1.00                              |
| ECS-WPR-304           | 08° 31' 55.6301" N    | 111° 42' 46.5533" E    | 1.00                              |
| ECS-WPR-305           | 08° 31' 06.8081" N    | 111° 42' 11.0308" E    | 1.00                              |
| ECS-WPR-306           | 08° 30' 18.1666" N    | 111° 41' 35.2606" E    | 1.00                              |
| ECS-WPR-307           | 08° 29' 29.6876" N    | 111° 40' 59.2696" E    | 1.00                              |
| ECS-WPR-308           | 08° 28' 41.3961" N    | 111° 40' 23.0266" E    | 1.00                              |
| ECS-WPR-309           | 08° 27' 53.2792" N    | 111° 39' 46.5512" E    | 1.00                              |
| ECS-WPR-310           | 08° 27' 05.3524" N    | 111° 39' 09.8253" E    | 1.00                              |
| ECS-WPR-311           | 08° 26' 17.6180" N    | 111° 38' 32.8487" E    | 1.00                              |
| ECS-WPR-312           | 08° 25' 30.0542" N    | 111° 37' 55.6524" E    | 1.00                              |
| ECS-WPR-313           | 08° 24' 42.6737" N    | 111° 37' 18.2219" E    | 1.00                              |
| ECS-WPR-314           | 08° 23' 55.4800" N    | 111° 36' 40.5555" E    | 1.00                              |
| ECS-WPR-315           | 08° 23' 08.4722" N    | 111° 36' 02.6566" E    | 1.00                              |
| ECS-WPR-316           | 08° 22' 21.6476" N    | 111° 35' 24.5310" E    | 1.00                              |
| ECS-WPR-317           | 08° 21' 35.0188" N    | 111° 34' 46.1653" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-318           | 08° 20' 48.5875" N    | 111° 34' 07.5601" E    | 1.00                              |
| ECS-WPR-319           | 08° 20' 02.3492" N    | 111° 33' 28.7234" E    | 1.00                              |
| ECS-WPR-320           | 08° 19' 16.2950" N    | 111° 32' 49.6679" E    | 1.00                              |
| ECS-WPR-321           | 08° 18' 30.4261" N    | 111° 32' 10.3945" E    | 1.00                              |
| ECS-WPR-322           | 08° 17' 44.7558" N    | 111° 31' 30.8896" E    | 1.00                              |
| ECS-WPR-323           | 08° 16' 59.2733" N    | 111° 30' 51.1683" E    | 1.00                              |
| ECS-WPR-324           | 08° 16' 14.0183" N    | 111° 30' 11.1871" E    | 1.00                              |
| ECS-WPR-325           | 08° 15' 28.9469" N    | 111° 29' 30.9987" E    | 1.00                              |
| ECS-WPR-326           | 08° 14' 44.0730" N    | 111° 28' 50.5894" E    | 1.00                              |
| ECS-WPR-327           | 08° 13' 59.3939" N    | 111° 28' 09.9645" E    | 1.00                              |
| ECS-WPR-328           | 08° 13' 14.9176" N    | 111° 27' 29.1171" E    | 1.00                              |
| ECS-WPR-329           | 08° 12' 30.6378" N    | 111° 26' 48.0566" E    | 1.00                              |
| ECS-WPR-330           | 08° 11' 46.5711" N    | 111° 26' 06.7668" E    | 1.00                              |
| ECS-WPR-331           | 08° 11' 02.7148" N    | 111° 25' 25.2533" E    | 1.00                              |
| ECS-WPR-332           | 08° 10' 19.0611" N    | 111° 24' 43.5264" E    | 1.00                              |
| ECS-WPR-333           | 08° 09' 35.6113" N    | 111° 24' 01.5869" E    | 1.00                              |
| ECS-WPR-334           | 08° 08' 52.3679" N    | 111° 23' 19.4344" E    | 1.00                              |
| ECS-WPR-335           | 08° 08' 09.3310" N    | 111° 22' 37.0708" E    | 1.00                              |
| ECS-WPR-336           | 08° 07' 26.5014" N    | 111° 21' 54.4973" E    | 1.00                              |
| ECS-WPR-337           | 08° 06' 43.8985" N    | 111° 21' 11.6967" E    | 1.00                              |
| ECS-WPR-338           | 08° 06' 01.4983" N    | 111° 20' 28.6951" E    | 1.00                              |
| ECS-WPR-339           | 08° 05' 19.3063" N    | 111° 19' 45.4889" E    | 1.00                              |
| ECS-WPR-340           | 08° 04' 37.3275" N    | 111° 19' 02.0754" E    | 1.00                              |
| ECS-WPR-341           | 08° 03' 55.5628" N    | 111° 18' 18.4557" E    | 1.00                              |
| ECS-WPR-342           | 08° 03' 14.0098" N    | 111° 17' 34.6341" E    | 1.00                              |
| ECS-WPR-343           | 08° 02' 32.6676" N    | 111° 16' 50.6135" E    | 1.00                              |
| ECS-WPR-344           | 08° 01' 51.5650" N    | 111° 16' 06.3689" E    | 1.00                              |
| ECS-WPR-345           | 08° 01' 10.6796" N    | 111° 15' 21.9234" E    | 1.00                              |
| ECS-WPR-346           | 08° 00' 30.0074" N    | 111° 14' 37.2825" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-347           | 07° 59' 49.5516" N    | 111° 13' 52.4455" E    | 1.00                              |
| ECS-WPR-348           | 07° 59' 09.3159" N    | 111° 13' 07.4107" E    | 1.00                              |
| ECS-WPR-349           | 07° 58' 29.3091" N    | 111° 12' 22.1724" E    | 1.00                              |
| ECS-WPR-350           | 07° 57' 49.5274" N    | 111° 11' 36.7361" E    | 1.00                              |
| ECS-WPR-351           | 07° 57' 09.9767" N    | 111° 10' 51.0984" E    | 1.00                              |
| ECS-WPR-352           | 07° 56' 30.6543" N    | 111° 10' 05.2639" E    | 1.00                              |
| ECS-WPR-353           | 07° 55' 51.5493" N    | 111° 09' 19.2438" E    | 1.00                              |
| ECS-WPR-354           | 07° 55' 12.6714" N    | 111° 08' 33.0317" E    | 1.00                              |
| ECS-WPR-355           | 07° 54' 34.0195" N    | 111° 07' 46.6304" E    | 1.00                              |
| ECS-WPR-356           | 07° 53' 55.6024" N    | 111° 07' 00.0347" E    | 1.00                              |
| ECS-WPR-357           | 07° 53' 17.4123" N    | 111° 06' 13.2528" E    | 1.00                              |
| ECS-WPR-358           | 07° 52' 39.4706" N    | 111° 05' 26.2691" E    | 1.00                              |
| ECS-WPR-359           | 07° 52' 01.7550" N    | 111° 04' 39.1039" E    | 1.00                              |
| ECS-WPR-360           | 07° 51' 24.2739" N    | 111° 03' 51.7522" E    | 1.00                              |
| ECS-WPR-361           | 07° 50' 47.0210" N    | 111° 03' 04.2210" E    | 1.00                              |
| ECS-WPR-362           | 07° 50' 10.0029" N    | 111° 02' 16.5067" E    | 1.00                              |
| ECS-WPR-363           | 07° 49' 33.2079" N    | 111° 01' 28.6203" E    | 1.00                              |
| ECS-WPR-364           | 07° 48' 56.6787" N    | 111° 00' 40.5311" E    | 1.00                              |
| ECS-WPR-365           | 07° 48' 20.3874" N    | 110° 59' 52.2621" E    | 1.00                              |
| ECS-WPR-366           | 07° 47' 44.3259" N    | 110° 59' 03.8214" E    | 1.00                              |
| ECS-WPR-367           | 07° 47' 08.5049" N    | 110° 58' 15.2027" E    | 1.00                              |
| ECS-WPR-368           | 07° 46' 32.9148" N    | 110° 57' 26.4150" E    | 1.00                              |
| ECS-WPR-369           | 07° 45' 57.5654" N    | 110° 56' 37.4528" E    | 1.00                              |
| ECS-WPR-370           | 07° 45' 22.4569" N    | 110° 55' 48.3179" E    | 1.00                              |
| ECS-WPR-371           | 07° 44' 47.6170" N    | 110° 54' 58.9922" E    | 1.00                              |
| ECS-WPR-372           | 07° 44' 13.0134" N    | 110° 54' 09.5007" E    | 1.00                              |
| ECS-WPR-373           | 07° 43' 38.6558" N    | 110° 53' 19.8384" E    | 1.00                              |
| ECS-WPR-374           | 07° 43' 04.5346" N    | 110° 52' 30.0136" E    | 1.00                              |
| ECS-WPR-375           | 07° 42' 30.6604" N    | 110° 51' 40.0208" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-376           | 07° 41' 57.0307" N    | 110° 50' 49.8635" E    | 1.00                              |
| ECS-WPR-377           | 07° 41' 23.6424" N    | 110° 49' 59.5455" E    | 1.00                              |
| ECS-WPR-378           | 07° 40' 50.5310" N    | 110° 49' 09.0451" E    | 1.00                              |
| ECS-WPR-379           | 07° 40' 17.6698" N    | 110° 48' 18.3817" E    | 1.00                              |
| ECS-WPR-380           | 07° 39' 45.0474" N    | 110° 47' 27.5645" E    | 1.00                              |
| ECS-WPR-381           | 07° 39' 12.6737" N    | 110° 46' 36.5889" E    | 1.00                              |
| ECS-WPR-382           | 07° 38' 40.5485" N    | 110° 45' 45.4566" E    | 1.00                              |
| ECS-WPR-383           | 07° 38' 08.6777" N    | 110° 44' 54.1657" E    | 1.00                              |
| ECS-WPR-384           | 07° 37' 36.0911" N    | 110° 44' 01.1210" E    | 1.00                              |
| ECS-WPR-385           | 07° 35' 14.9092" N    | 110° 43' 35.5196" E    | 2.38                              |
| ECS-WPR-386           | 07° 33' 44.3759" N    | 110° 43' 19.6576" E    | 1.52                              |
| ECS-WPR-387           | 07° 32' 13.7745" N    | 110° 43' 04.1914" E    | 1.52                              |
| ECS-WPR-388           | 07° 30' 43.1067" N    | 110° 42' 49.1212" E    | 1.52                              |
| ECS-WPR-389           | 07° 29' 12.3742" N    | 110° 42' 34.4472" E    | 1.52                              |
| ECS-WPR-390           | 07° 27' 41.5788" N    | 110° 42' 20.1696" E    | 1.52                              |
| ECS-WPR-391           | 07° 26' 10.7222" N    | 110° 42' 06.2886" E    | 1.52                              |
| ECS-WPR-392           | 07° 24' 39.8061" N    | 110° 41' 52.8044" E    | 1.52                              |
| ECS-WPR-393           | 07° 23' 08.8322" N    | 110° 41' 39.7172" E    | 1.52                              |
| ECS-WPR-394           | 07° 21' 37.8022" N    | 110° 41' 27.0272" E    | 1.52                              |
| ECS-WPR-395           | 07° 20' 06.7179" N    | 110° 41' 14.7344" E    | 1.52                              |
| ECS-WPR-396           | 07° 18' 35.5810" N    | 110° 41' 02.8392" E    | 1.52                              |
| ECS-WPR-397           | 07° 17' 04.3932" N    | 110° 40' 51.3416" E    | 1.52                              |
| ECS-WPR-398           | 07° 15' 33.1563" N    | 110° 40' 40.2418" E    | 1.52                              |
| ECS-WPR-399           | 07° 14' 01.8719" N    | 110° 40' 29.5399" E    | 1.52                              |
| ECS-WPR-400           | 07° 12' 30.5419" N    | 110° 40' 19.2360" E    | 1.52                              |
| ECS-WPR-401           | 07° 10' 59.1678" N    | 110° 40' 09.3303" E    | 1.52                              |
| ECS-WPR-402           | 07° 09' 27.7516" N    | 110° 39' 59.8230" E    | 1.52                              |
| ECS-WPR-403           | 07° 07' 56.2948" N    | 110° 39' 50.7140" E    | 1.52                              |
| ECS-WPR-404           | 07° 06' 24.7993" N    | 110° 39' 42.0035" E    | 1.52                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-405           | 07° 04' 53.2667" N    | 110° 39' 33.6917" E    | 1.52                              |
| ECS-WPR-406           | 07° 03' 21.6988" N    | 110° 39' 25.7785" E    | 1.52                              |
| ECS-WPR-407           | 07° 01' 50.0973" N    | 110° 39' 18.2641" E    | 1.52                              |
| ECS-WPR-408           | 07° 00' 18.4640" N    | 110° 39' 11.1486" E    | 1.52                              |
| ECS-WPR-409           | 06° 58' 46.8005" N    | 110° 39' 04.4320" E    | 1.52                              |
| ECS-WPR-410           | 06° 57' 15.1087" N    | 110° 38' 58.1143" E    | 1.52                              |
| ECS-WPR-411           | 06° 55' 43.3902" N    | 110° 38' 52.1957" E    | 1.52                              |
| ECS-WPR-412           | 06° 53' 36.2621" N    | 110° 38' 44.7017" E    | 2.11                              |
| ECS-WPR-413           | 06° 52' 19.6522" N    | 110° 39' 45.5126" E    | 1.62                              |
| ECS-WPR-414           | 06° 51' 32.1811" N    | 110° 40' 22.6462" E    | 1.00                              |
| ECS-WPR-415           | 06° 50' 44.5309" N    | 110° 40' 59.5454" E    | 1.00                              |
| ECS-WPR-416           | 06° 49' 56.7016" N    | 110° 41' 36.2021" E    | 1.00                              |
| ECS-WPR-417           | 06° 49' 08.6770" N    | 110° 42' 12.6162" E    | 1.00                              |
| ECS-WPR-418           | 06° 48' 20.4813" N    | 110° 42' 48.7878" E    | 1.00                              |
| ECS-WPR-419           | 06° 47' 32.0984" N    | 110° 43' 24.7168" E    | 1.00                              |
| ECS-WPR-420           | 06° 46' 43.5363" N    | 110° 44' 00.4033" E    | 1.00                              |
| ECS-WPR-421           | 06° 45' 54.8031" N    | 110° 44' 35.8391" E    | 1.00                              |
| ECS-WPR-422           | 06° 45' 05.8827" N    | 110° 45' 11.0324" E    | 1.00                              |
| ECS-WPR-423           | 06° 44' 16.7992" N    | 110° 45' 45.9831" E    | 1.00                              |
| ECS-WPR-424           | 06° 43' 27.5284" N    | 110° 46' 20.6833" E    | 1.00                              |
| ECS-WPR-425           | 06° 42' 38.0945" N    | 110° 46' 55.1408" E    | 1.00                              |
| ECS-WPR-426           | 06° 41' 48.4815" N    | 110° 47' 29.3397" E    | 1.00                              |
| ECS-WPR-427           | 06° 40' 58.6972" N    | 110° 48' 03.2960" E    | 1.00                              |
| ECS-WPR-428           | 06° 40' 08.7498" N    | 110° 48' 36.9936" E    | 1.00                              |
| ECS-WPR-429           | 06° 39' 18.6313" N    | 110° 49' 10.4487" E    | 1.00                              |
| ECS-WPR-430           | 06° 38' 28.3416" N    | 110° 49' 43.6450" E    | 1.00                              |
| ECS-WPR-431           | 06° 37' 37.8887" N    | 110° 50' 16.5907" E    | 1.00                              |
| ECS-WPR-432           | 06° 36' 47.2726" N    | 110° 50' 49.2777" E    | 1.00                              |
| ECS-WPR-433           | 06° 35' 56.4935" N    | 110° 51' 21.7141" E    | 1.00                              |

| <b>Fixed Point ID</b> | <b>Latitude (DMS)</b> | <b>Longitude (DMS)</b> | <b>Distance to next point (M)</b> |
|-----------------------|-----------------------|------------------------|-----------------------------------|
| ECS-WPR-434           | 06° 35' 05.5592" N    | 110° 51' 53.8918" E    | 1.00                              |
| ECS-WPR-435           | 06° 34' 14.4537" N    | 110° 52' 25.8188" E    | 1.00                              |
| ECS-WPR-436           | 06° 33' 23.1931" N    | 110° 52' 57.4871" E    | 1.00                              |
| ECS-WPR-437           | 06° 32' 31.7774" N    | 110° 53' 28.8967" E    | 1.00                              |
| ECS-WPR-438           | 06° 31' 40.1984" N    | 110° 54' 00.0395" E    | 1.00                              |
| ECS-WPR-439           | 06° 30' 48.4644" N    | 110° 54' 30.9317" E    | 1.00                              |
| ECS-WPR-440           | 06° 29' 56.5833" N    | 110° 55' 01.5651" E    | 1.00                              |
| ECS-WPR-441           | 06° 29' 04.5470" N    | 110° 55' 31.9318" E    | 1.00                              |
| ECS-WPR-442           | 06° 28' 12.3556" N    | 110° 56' 02.0397" E    | 1.00                              |
| ECS-WPR-443           | 06° 27' 20.0171" N    | 110° 56' 31.8808" E    | 1.00                              |
| ECS-WPR-444           | 06° 26' 27.5234" N    | 110° 57' 01.4632" E    | 1.00                              |
| ECS-WPR-445           | 06° 25' 34.8907" N    | 110° 57' 30.7789" E    | 1.00                              |
| ECS-WPR-446           | 06° 24' 42.1108" N    | 110° 57' 59.8277" E    | 1.00                              |
| ECS-WPR-447           | 06° 23' 49.1839" N    | 110° 58' 28.6178" E    | 1.00                              |
| ECS-WPR-448           | 06° 22' 56.1098" N    | 110° 58' 57.1411" E    | 1.00                              |
| ECS-WPR-449           | 06° 22' 02.8967" N    | 110° 59' 25.3895" E    | 1.00                              |
| ECS-WPR-450           | 06° 21' 09.5445" N    | 110° 59' 53.3792" E    | 1.00                              |
| ECS-WPR-451           | 06° 20' 16.0452" N    | 111° 00' 21.0941" E    | 1.00                              |
| ECS-WPR-452           | 06° 19' 22.4149" N    | 111° 00' 48.5502" E    | 1.00                              |
| ECS-WPR-453           | 06° 18' 28.6454" N    | 111° 01' 15.7233" E    | 1.00                              |
| ECS-WPR-454           | 06° 17' 34.7450" N    | 111° 01' 42.6377" E    | 1.00                              |
| ECS-WPR-455           | 06° 16' 14.7045" N    | 111° 02' 21.9705" E    | 1.48                              |
| ECS-WPR-456           | 06° 14' 15.2602" N    | 111° 03' 19.3162" E    | 2.20                              |