

Executive Summary

This Environmental Impact Statement (EIS) Report was prepared to secure the Environmental Compliance Certificate (ECC) of the proposed Britannika Golf Course Project located at Brgy. Linan, Tupi, South Cotabato in compliance with Section 4 of Presidential Decree Number 1586 and its Implementing Rules and Regulations (IRR). Pursuant to EMB MC No. 2014-005, the proposed project is considered as Environmentally Critical Project (ECP). It stated therein that prior to operation of the project covered under Environmental Management Bureau (EMB) Memorandum Circular Number 2014-005, the same should secure an ECC. Hence, the proponent prepared this EIS for approval of EMB Central Office.

The planned Britannika Golf Course Project is an 18-hole golf course located on a 22.3-hectare property covered by five (5) land titles - Transfer Certificate of Titles (TCT) Nos. 145-2016003696, 145-2016003697, and 145-2016003698, Original Certificate of Titles P-25653 and P-16912, and all of which are registered under and owned by Britannika Golf Course, Inc.

ES. 1 Project Fact Sheet

Table ES-1: Basic Project Description

Project Name	Brittanika Golf Course Project
Project Type	Golf Course (18 holes)
Project Location	Barangay Linan, Tupi, South Cotabato
Project Area	22.3 covered by TCT Nos. 145-2016003696, 145-2016003697, and 145-2016003698
Proponent Name	Brittanika Golf Course Inc.
Proponent Address	Brgy. Linan, Tupi, Soiuth Cotabato
Proponent Representative (s)	John Paul Tamayo President CP No. (0999)990- 5045 Email Add:britannikagolfcourse@gmail.com

Table ES-2; Project Components:

• Eighteen (18) holes (Golf range);
• One (1) unit Clube House1;
• One (1) unit Guardhouse
• One (1) unit Coffee shop
• One (1) unit Range lawn 1
• One (1) unit Kid's Playground
• Two (2) units Overhead tank
• Five (5) units Villa 1

• One (1) unit Staff house w/ motorpool 1
• One (1) unit Staff house w/ motorpool2
• Two (2) units Swimming pool 1
• Ten (10) units Villa 2
• Two (2) units Swimming pool 2
• One (1) unit Parking area
• One (1) unit MRF/Hazwaste Storage Fertilizer Storage Building
• One (1) unit Greenhouse
• One (1) unit Driving range2
• One (1) unit Spa/salon/barbershop
• One (1) unit Clubhouse2
• One (1) unit Range lawn 2
• One (1) unit Lagoon 1
• One (1) unit Lagoon 2
• One (1) unit Lagoon 3
• One (1) unit Lagoon 4
• One (1) unit Lagoon 5

ES. 2. Process Documentation

ES 2.1 EIA Team

Table ES-3; Environmental Impact Assessment (EIA) Team is composed of the following specialists:

Team Member	Field of Expertise	Registration No.
Dr. Silverio V. Magallon, Jr	Team Leader and Social Impact Assessment	IP-R12-2021-001
Mr. Neil Jamili	Air Quality and Noise Specialist and Freshwater Specialist	IP-R12-2021-002
Kier Mitchel E. Pitogo, MSc.	Terrestrial Flora and Fauna	

ES 2.2 EIA Study Schedule and Area

The EIA study began with the fieldwork on May 9, 2020. Field activities for terrestrial flora and fauna, land use mapping, ambient air and noise quality sampling, and collection of samples for water quality analysis were done during these dates. A series of interviews and focus group discussions with key project stakeholders from Brgy Linan and the Municipality of Tupi including concerned government offices were done early in November 2019 and repeated on February 9, 2021 to March 15, 2021 due to the Covid-

19 pandemic. Writing of individual reports was done from the second week of May 2021 to July 2021 while integration of the EIS was done from Mid of July 2021 - August 2021. The draft EIS was submitted to the proponent on August 2021.

ES 2.3 EIA Study Schedule

EIA Activity/Stage	Date
EIA Planning, Project and Stakeholder Profiling	May 09, 2020
Preliminary IEC and consultation with the officials of Tupi	November 2020 up to February 15, 2021 (IEC)
Public Scoping	April 23, 2021
Technical Scoping	May 06, 2021
EIS Report Preparation	May 06, 2021 to August 2021
Official acceptance of EIS by EMB	Tentative date: August 30, 2021
1st Review	Tentative date: September 3,
Public Hearing	15days publication at EMB
Final Review	5days after the conduct of PH

ES 2.4 EIA Study Area

The EIA study is limited to the location of the proposed Golf Course and its nearby communities. Baseline data for ambient air quality and noise was done in the north and south of the project site. Collection of samples for water quality analysis was done in the river located north of the project site and in two groundwater stations adjoining areas.

Characterization of the socio-economic environment was done for Brgy Linan, Tupi, South Cotabato. Mostly secondary data were used for this component except for the interviews, focus group discussions and perception survey conducted with key project stakeholders in the barangay and city levels.

ES 2.5 Risk and Uncertainties

It is inevitable to have risks and uncertainties in the conduct of the EIA Study. These include parameter uncertainty such as lack of survey effort, inappropriate survey technique, shifting baselines, system complexity, determining the value/importance/sensitivity, or can be practical and epistemological limitations to how much we can know. There can also be model uncertainties which rely on the type of modelling used, whether conceptual or predictive models. Incorrect inputs and assumptions, modeller biases as well as systemic uncertainty. Risks include cumulative, synergistic, simultaneous and interactive impacts and natural disasters. This could lead to a situation in which: decisions resulting in unwanted environmental consequences are made on the basis of erroneous information; democratic influence on decisions may be impeded by a lack of

information; and information valuable to the discussions may fail to be brought to light. One way of reducing these disadvantages is to improve prediction performance. To mitigate these risks and uncertainties to proceed with the conduct of the study, it is apparent that a good EIA Methodology is established. More emphasis is given to communication of uncertainty and to transparency in EIA predictions, especially in the EIS and decision documents. Although EIA predictions continue to be uncertain, the proponent, the decision-makers and other stakeholders are aware of this, and know which predictions are uncertain, the ways in which they are uncertain, the possible magnitude of the uncertainty, and the consequences the uncertainties may conceal through public participation and following the guiding principles of DAO 2017-15. Good descriptions of input data, methods, theories and assumptions are being considered in every step of the EIA process to ensure a better basis for informed decision-making and for handling the risk of unwanted environmental consequences by combined monitoring and mitigation measures during project implementation.

ES 2.6 EIA Methodology

The following discussion provides a summary of the methods used for the characterization of key environmental parameters in this EIS.

Pursuant to the Department Administrative Order (DAO) No. 30 Series of 2003 of the Revised Procedural Manual of the Philippine EIS System (PEISS) and EMB Memorandum Circular 2014-005 dated July 7, 2014, the proposed project is classified under Category A - Environmentally Critical Projects (ECPs) which requires an EIS Report for an Environmental Compliance Certificate (ECC) application.

The EIA for the proposed project conforms to the Revised Procedural Manual for DENR Administrative Order (DAO) 2003-30 and DAO 2017-15 in the conduct of the following activities, to wit: (i) IEC and Scoping, (ii) collection of primary and secondary data, (iii) identification/prediction/ assessment of environmental impacts, (iv) formulation of EMP, and (v) development of EMoP. The baseline information are mainly primary and secondary data which were obtained from the Local Government Units (LGUs) and other government agencies. The data collected were based from the EIA Scoping and Screening Form which was finalized during the Technical Scoping on May 06, 2021.

ES 2.6.1 Land use and classification – description of land uses within the project site and vicinity was based on existing information such as the Comprehensive Land Use and Zoning Plan and the Geographic Profile of the municipality.

ES 2.6.2 Geology and geomorphology – discussions were based on existing information such as the Geology of the Philippines and other geologic reports on Tupi, South Cotabato

ES 2.6.3 Pedology – description was based on the Physical Profile of Tupi as well as the report on Soil Survey and Classification of South Cotabato published by the Bureau of

Soils and Water Management. Soil samples were also obtained within the plant to serve as baseline data on soil quality.

ES 2.6.4 Terrestrial flora – reconnaissance survey and rapid resource assessment was done to estimate the present condition of plant species within the proposed plant site. Plants with >10cm diameter at breast height of were recorded individually while smaller plants were enumerated by stems. Plant species outside the sampling plots were also recorded.

ES 2.6.5 Terrestrial fauna – one observation point was established based on the nature and general spread of the proposed site. At least 30 minutes was spent to record observed species, group size, gender when possible and wildlife activity/behavior.

ES 2.6.6 Hydrology – description of hydrological characteristics was based on the Physical Profile of South Cotabato as well as on topographic maps and 2021 Google Earth satellite imageries of the project site.

ES 2.6.7 Water quality – water samples were collected from Creek and River. These were submitted to EMB laboratory for analysis of selected water quality parameters. Additional groundwater samples were also collected. Results were then compared to DENR –Water Quality Guidelines waters as well as the Philippine National Standards for Drinking Water (PNSDW).

ES 2.6.8 Meteorology and climate – meteorological and climatological conditions and projected data were obtained from PAGASA particularly on climatological norms and extremes.

ES 2.6.9 Air quality and noise – ambient air quality sampling and noise monitoring was done for 24 hours within the project site while one-hour sampling was conducted in the two stations located north and south of the project site.

ES 2.6.10 People – discussion on socio-economic conditions of the host barangay and the municipality of Tupi were obtained from the Provincial Planning and Development Office, Municipal Planning and Development Office and South Cotabato Profile, respectively. Primary data were collected during key informant interviews, focus group discussions and perception survey conducted at the barangay, municipal and provincial levels.

The study area focuses on the Direct and Indirect Impact Areas of the project delineated based on DENR Administrative Order No. 2017-15 and DAO 2018-18. Direct Impact Areas are: the 22.3-hectare golf course area in terms of physical environment where all project components are proposed to be located and Barangay Linan of which, in terms of social impacts, the primary beneficiary of the social development programs and projects whose demographic and socio-economic conditions would be affected by the project. Indirect Impact Areas are areas located outside the coverage of the project facilities and operations such as adjacent water bodies and surrounding barangays and adjacent barangays or municipalities that will benefit from potential revenues and taxes of the project are considered as indirect impact areas in terms of social impacts.

ES 2.7 Public Participation

ES 2.7.1 Perception Survey

The current socio-economic conditions of project-affected people (PAPs) and its perceptions towards the project. It also presents the impact management plan, and the social development and EIC frameworks for the proposed Britannika Golf Course project.

In the conduct of this study, the team employed the following methodologies:

- ❑ **Desk review** - collection and analysis of secondary data, reports, relevant studies, and other pertinent data from reliable sources;
- ❑ **Information, Education, and Communication Campaign** – an IEC campaign was conducted last January 9, 2021 in the affected barangays of Tupi, South Cotabato. The EIC campaign was done through field visit, community consultations, and distribution of IEC materials;
- ❑ **Reconnaissance Survey** - preliminary perception survey was also implemented to have an initial information about views and opinions of project-affected people (PAPs); and
- ❑ **Socio-economic and Perception Survey.** A scientific investigation was conducted to characterize the socio-economic conditions of the affected households using computer-assisted personal interview (CAPI) technique. A total of 100 respondents were interviewed using *Kobocollect* and *Kobotoolbox* applications. A right-coverage rule was adopted in the selection of respondents to ensure proper distribution and well-representation of affected households. Figure 1 below depicts the spatial distribution of respondents.

The result of the conducted Perception Survey shows that majority of the stakeholders are favorable to the project and one of main concerns of the stakeholders is the hiring of workers. Results also shows that stakeholders would like to ensure that the application of fertilizers should be compliant with the rules and regulations to avoid any adverse impacts to environment.

ES 2.7.2 Public Scoping

Public Scoping was conducted on April 23, 2021 at in the Municipality of Tupi, South Cotabato. It was attended by stakeholders, personnel from Environmental Management Bureau Region 12, Local Government Units (LGUs) of Brgy. Linan and Municipality of Tupi, Non-Government Organizations (NGOs) and Proponent's representatives as identified in DAO 2017-15.

The following are the main issues and concerns raised during public scoping: Table ES-1. Summary of issues raised during public scoping.

EIA Module	Issue/suggestion raised by the stakeholder	Sector/representative who raised the issue/suggestion	Proponent's response	Person who responded
People, Policy	There is a portion in the community wherein houses (roof) were hit by the golf ball. What is the mechanism in place to ensure protection of the residents?	Norberto Tumbiga – Brgy. Secretary	<ul style="list-style-type: none"> • There will be an insurance for that. Those houses, cars that will be hit and damaged by the golf ball will be remunerated. • Hospitalization will be shouldered by Britannika just kliek before. An all expense paid. • Impose a local house rules in Hole #3 that using driver club is not allowed but other clubs is allowed. • Adjust the distance – 30 yards. 	Engr. John Paul S. Tamayo, Britannika Golf Course, Inc.
Land	What is the current classification of the project in terms of land zoning in the LGU?	Online Participant, Carlito Y. Uy, Chamber of Commerce	<ul style="list-style-type: none"> • On process of conversion from agricultural to agri tourism 	Engr. John Paul S. Tamayo, Britannika Golf Course, Inc.
People	How to increase the livelihood of the community		<ul style="list-style-type: none"> • People in the community will be prioritized in terms of employment, however, at 	

			present majority of them are already working in the golf course.	
Project Design	Installation of solar panel		<ul style="list-style-type: none"> • The Solar panel is in placed. And around 60% of the Britannika consumption is from sourced from the solar panel. • Already had – 60 % used solar 	
Policy	MMT of the golf course	Online participant (MENRO)	MMT for the golf course project is not necessary. MMT will depend on the kind of establishment (project). In terms of involvement EMB is not involved.	Rammy Lapiñas – EMB XII
			Proponent driven monitoring can be an option, wherein the team are from the community, BLGU, MLGU and other stakeholder will form part as members.	Dr. Silverion V. Magallon, Jr. – A-cubed Engineering Services
People	Publication of the preliminary perception survey result	Online Participant, Carlito Y. Uy, Chamber of Commerce	Provide the copy of the initial result of the public perception survey to those involved stakeholders.	Rammy Lapiñas – EMB XII
Water (Consumption)	Average gallon of water needed	Mr. Rolly T. Visaya, Representative, MENRO	1000 gallons for the whole operation per day –including	Abigail G. Sadang, Britannika

			external amenities and the club house	Golf Course, Inc.
			It will part of the EIA study. Next time, the volume of water consumption will be presented.	Dr. Silverion V. Magallon, Jr. – A-cubed Engineering Services
Land	Land Zoning	Engr. Efren Lauron– Planning Office	- Agricultural land is compatible with tourism - In the reclassification fo CLUP, it will be classified as parks and recreational.	Engr. Efren Lauron– Planning Office
			ECC is a requirement for the land conversion, before it will be provided with conversion certification	Dr. Silverion V. Magallon, Jr. – A-cubed Engineering Services
Land	Approval of the Land Conversion Floodings in the area with its previous crops planted utilized by the plantation. But now, trees are planted in the area. No erosion was experienced.	Councilor Teresito Zabala– Chairman - Land Use	Since the land owner pulled out their land from the Plantation company, I got interested. My goal is to revive Linan. We planted trees to restore the previous face of the area. Through that flooding were minimized	Engr. John Paul S. Tamayo, Brittannika Golf Course, Inc.

ES 2.8 EIA Summary

Project Siting

- Availability of lot property - The property (existing golf course) owned by the proponent;
- Accessibility and the site is ideal for the development as it is an existing golf course;

- Abundance of skilled and semi-skilled workers in the province;
- Local Government Unit (LGU) are in favor for the development;
- The area is far from the community and free from any informal settlers and house development; and
- Basic services are available.

Technology Selection

The golf course design conforms to the international standards of quality, resource conservation and ecological safety. A prominent feature of the project is its system for water conservation and recycling that minimize water consumption, discharge, and risk of chemical contamination.

- Artificial Lake - To minimize seepage that may lead to contamination of ground water, the lake bottom is sealed through compaction of the base material and installation of non-permeable sheet material (high density polyethylene liner) with a reservoir system that holds a combine capacity of more than 7973/65 cum of water for the five (5) lagoons.
- Irrigation Water - The golf course's irrigation water is sourced from incidental rainfall, **spring that is draining to one of the lagoons, and** treated wastewater coming from the STP of the project.
- The utilization of the treated wastewater as one of the sources for irrigation of the golf course will maximize the utilization of the natural resource. At the same time, in order for the course to withstand the dry season and the torrential rain, they utilize the best quality irrigation system from the United States.
- Computer-controlled Irrigation System - The project is equipped with a weather sensing computer-controlled irrigation system that will dispense water only when the sensors detect areas with dry soil conditions. The use of this equipment is to optimize the use of water for irrigation.
- Paspalum Grass - They are also able to maintain the condition of the Paspalum without rain for more than 100 days.

Table ES-2: Summary of Key <i>Environmental Impacts and Management Plan</i> Construction			
Land Clearing	Vegetation Removal	<p>Provide a temporary fencing to vegetation that will be retained.</p> <p>Use of markers and fences to direct heavy equipment traffic in the construction site and avoid damage to plants.</p> <p>Implement tree planting around and near the facility with fast growing trees like Mahogany, Gmelina in coordination with DENR CENRO and PENRO more or less 100 seedlings to be planted during construction phase</p>	100% Compliance with DENR policy
Civil Works such as Construction of Building Structures	Generation of Spoils	<p>Designate a spoil storage within the project area which surrounded by a bund and the same will be covered to minimize siltation during heavy rains</p> <p>All suitable materials obtained from the excavation works will be used for the construction like backfilling</p> <p>Materials not use will be hauled by third party</p> <p>Topsoil, whenever it is available, should be removed separately from the rest of the overburden and will be used for gardening</p>	100% No spoil materials will be left unattended
	Increase water body turbidity due to siltation caused by sediment run-off	<p>Construction of temporary storm drainage system connected to temporary settling pond;</p> <p>Construction of temporary settling ponds shall be constructed in the area with a dimension of 5 meters by</p>	100% No erosion, run-off, and turbidity within and

		<p>10 meters. During operation of the project, the same shall be dewatered, backfilled and vegetated</p> <p>Construction of road network shall follow topographic contour of the area and shall be equipped with drainage directly to temporary settling pond.</p>	<p>outside the vicinity of the area.</p>
	<p>Generation of construction debris (including solid waste)</p>	<p>Provision of waste bins in conspicuous area;</p> <p>Installed temporary Material Recovery Facility for construction debris (including solid wastes) to be hauled by a contractor</p> <p>When construction is completed, the Contractor must be directed to clean up the construction site by removing all equipment and buildings and carry out site remediation work</p>	<p>100% hauled and collected by the third party</p>
	<p>Generation of Domestic wastewater</p>	<p>Personnel will be provided with on-site portable toilets and washrooms.</p> <p>Collection and disposal will be done by an accredited third party waste treater.</p>	<p>100% collected by accredited third party waste treaters.</p>
	<p>Increase in Total Suspended Particulate (TSP) within and around the project site</p>	<p>Conduct of sprinkling activity at least 2 times a day in the road network and exposed areas to minimize dust, source of water will come from deep well with approved permit;</p> <p>Impose speed limits for all heavy equipment's with a maximum of 20kph</p>	<p>100% Ambient air quality within DENR Standards</p>
	<p>Increase in SOX and NOX concentrations from vehicular emissions and</p>	<p>Use of low sulfur fuel to reduce SOX and NOX emissions;</p>	<p>100% Ambient air quality within</p>

	other air pollution sources	Weekly maintenance of equipment to be in good running condition in a designated motor pool with complete facilities;	DENR Standards
	Potential emissions of air pollutants.	Brand new power generating equipment will be used and regular maintenance of the equipment will be conducted.	100% Emission test results within the DENR Standards.
	Noise Pollution	Use mufflers and exhaust silencers Construction works to be done during daytime only	
	Potential soil contamination due to POL (petroleum, oil, lubricants) and other hazardous wastes	Well maintained heavy equipment and machinery will be used. Provision of fuel and oil storage area with bund wall and will be collected by accredited 3 rd party	100% No contamination.
Operational Phase			
Operation of the Project	Generation of solid wastes from the employees and clients.	Waste Management Plan will be implemented with proper waste segregation bins, regular collection, and disposal by the third-party hauler.	100% hauled and collected by the third party
	Generation of Hazardous wastes	A storage area for hazardous wastes will be provided. Collection and disposal will be done by an accredited third party waste treater.	100% collected by third party waste treaters.
	Pesticide application may indiscriminately eliminate non-target organisms	<ul style="list-style-type: none"> • Only pesticides registration FPA and DA should be used • Anchor pest life cycle with pesticide application 	

		<ul style="list-style-type: none"> • Integrated biological methods with chemical methods in controlling pest 	
	Contamination of surface and groundwater	<ul style="list-style-type: none"> • Proper timing of fertilizer and pesticide application • Use of organic fertilizers and pesticides • Bottom sealing of artificial lake containment set-up • Proper drainage 	
	Water pollution from run-off and domestic wastes	<ul style="list-style-type: none"> • Construction of rainwater cisterns and collection ponds • Regular ambient and effluent water quality monitoring using DENR standards • Domestic wastewater management by connecting it to the wastewater treatment facility (WWTF). WWTF will extract the water and treat it for reuse. These will be stored in the lagoons for watering the turf grass. 	
	Resource use competition for use of river water for make up water	Address resource use competition; secure water permit	
	Air pollution from equipment and vehicles and fugitive dust	<ul style="list-style-type: none"> • Training on power equipment and vehicle use and speed • Proper maintenance, designation of no idling zone • Routine maintenance and good house keeping • use of enclosures, barriers and buffer zones • Implementation of reforestation and Carbon-sink Program • Insulate structures 	

	GHG emission	<ul style="list-style-type: none"> • Implementation of a reforestation and carbon-sink/GHG reduction program 	
	Noise from equipment and vehicles	<ul style="list-style-type: none"> • Enclosures for sources of noise • Provide high fence within the plant's perimeter • Provide a buffer zone on the adjoining boundaries • Planting of trees on the buffer zone and plant's perimeter that will serve as noise barrier • It is advisable that electrically-powered equipment should be preferred, where practicable, to mechanically powered alternatives. If mechanical powered plant will be used, it should be fitted with suitable silencers and mufflers; • Defective equipment/parts with abnormal noise and/or vibration will be either repaired replaced; <p>All employees working on site will be provided with PPE</p>	