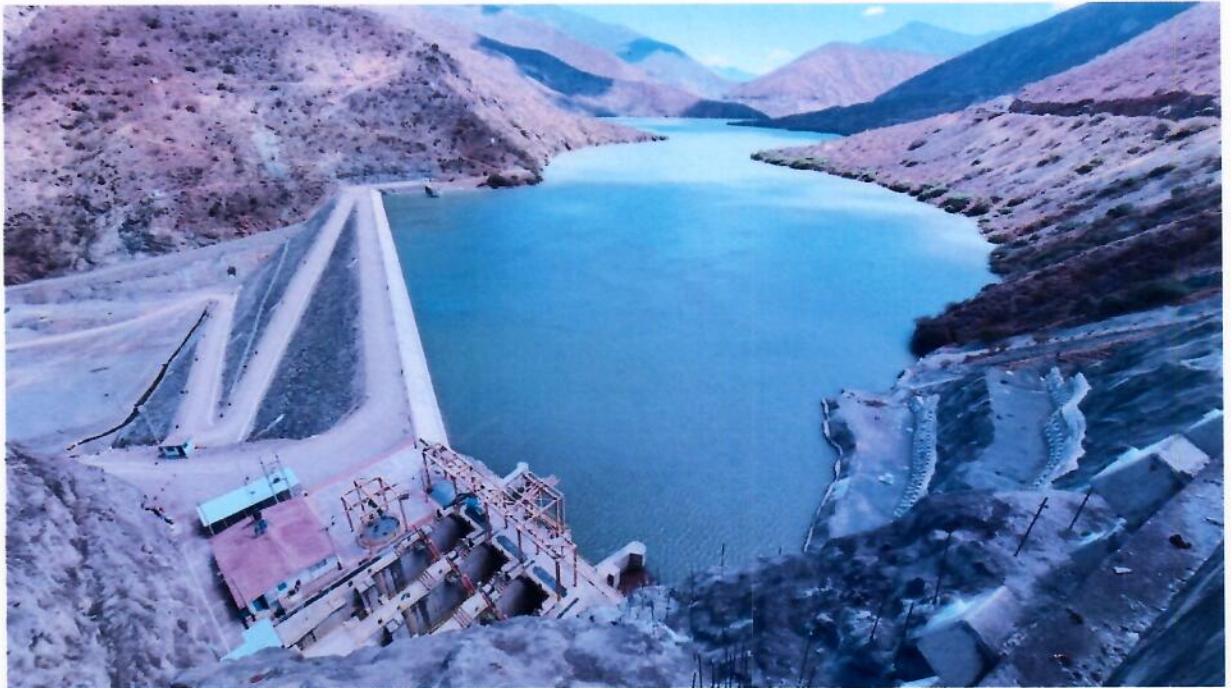




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"CONTRACTING OF SPECIALIZED CONSULTING SERVICES FOR THE EVALUATION AND COMPREHENSIVE DIAGNOSIS OF THE CURRENT SITUATION OF THE WATER TRANSFER COMPONENT".



March - 2025



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TERMS OF REFERENCE FOR THE "CONTRACTING OF SPECIALIZED CONSULTING SERVICES FOR THE EVALUATION AND COMPREHENSIVE DIAGNOSIS OF THE CURRENT SITUATION OF THE WATER TRANSFER COMPONENT".

I. TERMS OF REFERENCE .

1. User area.

The user area is the GENERAL MANAGEMENT (GG) of the PEOT.

2. Name of the contract.

"CONTRACTING OF SPECIALIZED CONSULTING SERVICES FOR THE EVALUATION AND COMPREHENSIVE DIAGNOSIS OF THE CURRENT SITUATION OF THE WATER TRANSFER COMPONENT".

3. Public Purpose.

The diagnosis and evaluation of the current conditions of the different diversion components and the integral analysis of the basin according to the area of influence of the project will guide the best decisions for the state, with the purpose of giving sustainability to the project, for the benefit of the agricultural users. These results will be sent by the PEOT to the different agencies for decision making in order to ensure the continuity of the project.

4. Background

The transfer infrastructure includes:

Limón Dam and reservoir

The Limón dam was built between March 2006 and July 2009. It is of the CFRD (Concrete Face Rockfill Dam) type, its body is made of loose materials (granular), with a concrete face on the upstream slope:

- Injection curtain in bedrock throughout the hydraulic section of the river, below the inclined plinths (abutments) and the embedment of the vertical plastic concrete diaphragm.
- A vertical plastic concrete diaphragm of 0.80 m thick and a maximum height of 38 m, below the foundation, which transversely closes the river bed along the entire thickness of the alluvial material up to the bedrock where it is embedded 50 cm high in the bedrock, below this diaphragm the injection curtain of the previous point was built, as well as below the inclined plinths (abutments).
- A screen or slab on the wet slope (upstream), of plastic concrete 0.55 m - 0.42 m thick and maximum height in its vertical projection of 43 m, above the horizontal plinth with 1/1.5 inclination.

Infrastructure Site Area

- The special and complex geological and geotechnical conditions in the area where the Limón Dam and related works are located make it necessary to take special care with the infrastructure.

North south slope

Assessment to verify the condition of the north south slope of the Aliviadero.

In March 2007, the North South Slope of Aliviadero collapsed 100 m. high when the dam was under construction. This event destroyed the road that connects the northeastern area of the



Marañón with the Lambayeque region, and since the dam had not yet been completed, the population was moving through the area on the left bank of the Limón dam.

If the dam had been built, and with a reservoir up to elevation 1120, it could have collapsed during the occurrence of this event.

The Slope was treated at the time, with significant financing by the Concessionaire, without any investment by the Peruvian State, due to the timely and efficient actions of the PEOT Supervisor. The design philosophy was changed (from passive to active support).

Limon Dam over-elevation

Limon Dam is built up to 1123 m.a.s.l. (43 m high) and, according to the final study of the Olmos project, it needs to be raised to 1165 m.a.s.l. in order to reach its maximum storage and regulation capacity of 191 Hm³.

The raising of the Limón dam consists of raising the current elevation of the crest from 1123 meters above sea level to 1165 meters above sea level, which means that the dam will reach a new height of 85 meters and a regulation volume of 157 MMC. In addition to raising the dam, a new definitive intake will be built on the Los Burros stream at a point near its confluence with the Huancabamba river, placing its intake threshold at 1105 meters above sea level. In addition, the new overflow spillway will be built, adapting it to the new operating elevation of the dam, but always maintaining its maximum discharge capacity at 1740 m³/s.

The new water resources of the Tabaconas and Manchara rivers are estimated at an average annual flow of 16.94 m³/s, equivalent to an average volume of 534 MMC/year.

With the implementation of the second phase of the first stage, an area of 67,500 ha under irrigation in the Olmos pampas could be served with sufficient security.

Existing information:

Definitive Study of the Olmos Hydroenergetic and Irrigation Project - Hydroenergetic Part, 1982.

This report contains the Definitive Study of the First Stage of the Olmos Complex, which was prepared in the 1980s under the technical advice of the Soviet companies Technopromexport and Selkhozpromexport. This study was developed in two parts:

- **Part One:** Technical and Economic Feasibility Study.
- **Part Two:** Definitive Study.

The study works were divided into two main components:

- **Hydroenergetic Part (Headworks):** This part was prepared by "Technopromexport" and included the hydroenergetic component of the project.
- **Irrigation part:** The execution of this part was entrusted to "Selkhozpromexport".

The Hydroproject Institute of the USSR Ministry of Energy, commissioned by "Technopromexport", was responsible for carrying out both the Feasibility Study and the Definitive Study of the hydroelectric part.

The basic investigations for the project started in 1975 under the supervision of the Executive Directorate of the Olmos Special Project (DEPOL), with technical advice from Soviet specialists. During this period, the main scheme of the works was designed, which was adjusted with respect to the previous project of "Italconsult".

In September 1977, an Amending and Extending Supplement to the Contract was signed, which expanded the set of works to be carried out. By the end of 1977, the first phase of investigations was concluded, and the resulting materials were delivered to the Instituto Hidroproyecto for the



preparation of the Feasibility Study. The second phase of investigations continued to complete the Definitive Study.

The Technical-Economic Feasibility Study (first part of the Definitive Study) was completed in June 1978 and delivered to the Peruvian side after a rigorous examination by the Ministry of Energy of the USSR and the "State Committee for Construction" of the Council of Ministers of the USSR. Subsequently, in October 1979, the study was examined by a Special Commission of the Ministry of Energy and Mines and the Ministry of Agriculture of Peru and was officially approved on October 12, 1979.

The Definitive Study, executed by the Moscow Hydroproject Institute, complied with the terms of Contract No. 3345 and the Soviet specifications, adapted to the conditions of the Republic of Peru. Various specialized agencies and suppliers of technological equipment participated in the process of its elaboration. This study was examined by expert commissions of the Ministry of Energy and the "State Committee for Construction" of the Council of Ministers of the USSR, and finally, between September and December 1981, it was endorsed by a joint commission of the Ministry of Energy and Mines and the Ministry of Agriculture of Peru, recommending its approval and final edition.

The Limón reservoir, one of the main structures proposed in this study, was designed with a useful capacity of 111 Hm³ and a total capacity of 191 Hm³. This reservoir would be formed at the Limón site by means of a dam of loose materials 85.0 meters high and 455.0 meters long at the crest. The levels established for the reservoir are: Normal Water Level (NAN) of 1 156.50 meters, Maximum Level (ML) of 1 160 meters, and Dead Volume Level (DVL) of 1 132.00 meters.

Technical File Transfer Works of Olmos Project Concesionaria Trasvase Olmos SA, 2005

This file contains the engineering that Odebrecht executed in 2005, as part of the first stage of the Olmos Project, which included the construction of the Limón Dam and its related structures. The dam was built with loose materials and a concrete screen, has a crest at an altitude of 1,123 meters above sea level and a length of 340 meters.

During the initial phase of the project, the by-pass tunnel and drainage system were developed, designed to handle peak flows of up to 1,740 m³/s, based on hydrological estimates derived from rainfall and runoff models.

Geotechnical studies ensured slope stability, obtaining a safety factor of 1.5 under the most critical operating conditions. A 0.5-meter-thick concrete screen was built to ensure the impermeability of the dam, complemented by a geotechnical instrumentation system to monitor displacements and pore pressures during operation.

The spillway, consisting of three gates, each 6 meters wide and 13.5 meters high, was designed to convey the peak flow, supported by a robust structure with 3-meter-wide side walls.

Study and evaluation of the performance of Limón dam, north south slope of the spillway, bottom spillway and trans-Andean tunnel, 2015.

This study is the evaluation of the current state of the Limón dam and the complementary works, an analysis of the failure modes of the structures that make up the dam was carried out and a risk analysis and analysis of the instrumentation and reliability of the results was performed.

Annual Auscultation Report, 2016

This report evaluates the performance of civil and electromechanical works, in relation to safety aspects of the works, based on measurements, data processing and analysis, controls and inspections, for the period October 2015-September 2016.

Annual Auscultation Report, 2017



This report evaluates the performance of civil and electromechanical works, in relation to safety aspects of the works, based on measurements, data processing and analysis, controls and inspections, for the period October 2016-September 2017.

Annual Auscultation Report, 2018.

This report evaluates the performance of civil and electromechanical works, in relation to safety aspects of the works, based on measurements, data processing and analysis, controls and inspections, for the period October 2017-September 2018.

Limón Dam Final Expert Report (INGETEC, 2018).

In 2018, the firm INGETEC was commissioned to evaluate the structural stability and performance of the geotechnical instrumentation system of the Limón Dam.

Settlements on the dam crest were monitored, recording values between 15 cm and 35 cm in key years such as 2009 and 2017, and piezometric levels were evaluated, confirming the effectiveness of the injection curtain and diaphragm wall in reducing pressures and seepage, which decreased from 100 l/s to 45-50 l/s in recent years. The reservoir level ranged from 1,120 m above sea level during normal operation to 1,113 m above sea level during floods, which allowed repairs to be made. Concrete face deflection was minimal and within acceptable limits.

The accumulation of sediment in the reservoir highlights the need for continuous management and cleaning.

The results of the evaluation showed that the dam meets the design criteria without compromising its safety, and it was recommended that the contingency plan and the operation manual be kept updated to mitigate future risks.

Limón Dam Annual Monitoring Report (RED Ingeniería S.R.L., 2019-2022)

RED Ingeniería S.R.L. carried out the annual dam performance report in 2022, covering the period from June 2019 to February 2022. The analysis focused on the CFRD (Concrete-Faced Rockfill Dam), with a height of 43 meters and a crest at 1125 masl. Internal and surface deformations were evaluated by means of asymeters and hydraulic gauges, recording horizontal displacements of up to 20 mm at critical points of the crown. During the period analyzed, the reservoir maintained operating levels of 1120 masl, with seepage efficiently controlled through a continuous monitoring system. The spillway, whose maximum discharge capacity is 1740 m³/s, was also evaluated.

The El Limón Dam is a fundamental part of the Olmos Project, designed to transfer water from the Atlantic basin to the Pacific slope. The project has allowed the irrigation of thousands of hectares in the Lambayeque region. The dam needs to be enlarged to improve its water regulation capacity and maintain the water service in the region, mainly for the agricultural sector. The project has been evaluated in previous stages and this consultancy will be in charge of developing the corresponding studies for stage II, reaching an elevation of 1165 meters above sea level.

TECHNICAL - ECONOMIC PROPOSAL FOR THE LEMON DAM, CONNECTED WORKS AND BY PASS TUNNEL OF THE OLMOS PROJECT (SyC SAC, 2021):

In 2021, S&C carried out the study for the raising of Limón Dam, whose current height is 1123 meters above sea level. Two alternatives were proposed for the second phase, which contemplates raising the dam to a total height of 85 meters, to the 1163 level.

Analyzed two alternatives for the overtopping. The first alternative maintains the existing slopes and preserves the current configuration of the concrete face, ensuring structural continuity.

The second alternative introduces minor modifications to the structural zones, eliminating the need for additional protection on the concrete face.



As for the waterproofing of the foundation, four options were evaluated, being recommended the construction of a new plastic screen in the crown of the existing dam, due to its capacity to improve the resistance of the system.

In hydraulic terms, the spillway was designed following the Creager type, with a crest at elevation 1106.80 meters above sea level, allowing a maximum hydraulic load of 13.2 meters and a maximum flow of 1740 m³/s.

It was concluded that the second alternative of over-elevation is the most viable from the structural point of view, since it optimizes slope stability and improves the waterproofing of the foundation. In addition, continuous geotechnical monitoring is recommended during the construction and operation phases, especially in the transition zones between the new and the old structure, to ensure compliance with safety standards.

5. Recruitment objectives

5.1. General Objective

- 5.1.1.** Evaluate the current state of the diversion components, including the dam up to 1,123 m above sea level (foundations, plinth, concrete slab, joints, injection screen) and other related structures, as well as the evaluation of the slope in a comprehensive manner; propose improvement measures for an adequate and sustainable solution in time with a suitable operation and maintenance, with the certainty of making the dam heightening to reach its final height of 85 m (elevation 1,165 masl), the north-south slope, the definitive tunnel, the provisional intake and other current components.
- 5.1.2.** Review of the state of the current instrumentation, to propose or recommend the installation of new measuring equipment that will allow its continuity and contribute to the accuracy of the emission, recording, and interpretation of the data from the enlarged dam.

5.2. Specific objective

- 5.2.1.** Comprehensive evaluation of the diversion component such as foundations, structures and stability of the Limón dam, under current conditions.
- 5.2.2.** Evaluation of the slope and its stability, under current conditions.
- 5.2.3.** Evaluation of the final tunnel, under current conditions.
- 5.2.4.** Classification of Limón Dam by the "consequences of failure" method in current conditions, according to ANA, Canadian Dam Association and/or ICOLD standards, with existing information.
- 5.2.5.** Proposal of design criteria to be taken into account by the experts of the future Concessionaire in charge of the Limón dam enlargement up to 1,165 meters above sea level, for the seismic analysis considering at least the following methods:
 - Pseudo - static
 - Permanent deformations
 - Dynamic analysis
- 5.2.6.** Evaluate and propose criteria for the automation of the geotechnical instrumentation of the Limón dam in comparison with the defined thresholds and implementation of the TARP (The Trigger Action Response Plan - Impulsador del Plan de Acción de Respuestas), for the current level 1123 and 1165 masl when the regrowth is carried out.
- 5.2.7.** Review of the current Operation and Maintenance Manual, and proposal for improvements.
- 5.2.8.** Review of current operating rules and proposed improvements.
- 5.2.9.** Review of the current Limón dam emergency plan and proposal for improvements.
- 5.2.10.** Review and evaluation of bathymetric topographic survey reports and issuance of technical opinion.
- 5.2.11.** Review of the experts' reports carried out by both the concessionaire and the supervisor.



6. Institutional Operational Plan - POI 2025

Activity A0100113300043-452: Retribution of the water transfer service of the Olmos Project.

7. Contracting System

This service is governed by the LOUD SUM system.

8. Scope and description of the consultancy

Without limitation, the expert in charge will be responsible for the fulfillment of the activities indicated in this TOR, such as previous coordination, work meetings, field visits, among others.

The consultancy involves the provision of highly qualified professional services in dam engineering, hydraulics, geotechnics, hydrology, sedimentation and instrumentation. The supplier will develop the report, detailed comprehensive analysis and recommendations to ensure the proper functioning of the diversion component and also when the dam regrowth occurs and the safest actions to take, ensuring proper operation of the system in a comprehensive manner.

8.1. Activities

Field Phase:

- Technical evaluation of the current and integral situation of the Olmos Diversion works concession, including addenda and any other binding document.
- Compilation and processing of existing information and documentation: analysis of contracts, manuals, regulations, technical reports and studies, plans, and all documentation related to the Limón Dam and all the components of the Diversion Project.
- Review of historical operation and maintenance records (Concessionaire's and Supervisor's reports).
- Detailed visual and technical inspections of the areas.
- Evaluation of hydrological and geological conditions.
- Identification and field evaluation of other geological and geotechnical factors that could have an impact on the operation and maintenance of the Limón dam.

Cabinet phase

- Detailed analysis of the underlying causes of some problems, including natural (hydrological, geological, geotechnical, etc.) and operational factors.
- Evaluation of the influence of external factors, such as climatic changes, human activities, among others, on the operation of the Limón dam.
- Recommendation on alternative solutions to help the Peruvian government make the best technical decision regarding the phenomenon of reservoir siltation and guarantee the useful volume, as well as efficient operation.
- Report on the diagnosis of the current and integral situation of the water transfer component.
- Others that the General Management may require within the framework of the purpose of this service.

8.2. Technical regulations, metrological and/or sanitary standards

The following global recommendations or other recommendations that may arise will be taken into account:

- Bulletin 56 - ICOLD (1986): Seismic calculation method for dams.
- Bulletin 72 - ICOLD (1989): Choice of seismic parameters for large dams.
- NCSE 94 (1995): The Spanish Earthquake Resistant Construction Standard.
- SPANCOLD Dam Safety Technical Guides (1996): Technical Guide No. 03 Geological, Geotechnical and Material Prospecting Study.
- Bulletin 112 - ICOLD (1998): Neotectonics and dams.
- Bulletin 113 (1999) - ICOLD: Seismic observations of dams.
- Bulletin 120 (2001) - ICOLD: Characteristics of earthquake-resistant dam projects.
- Bulletin 123 (2002) - ICOLD: Design and seismic evaluation of adjacent structures.



- XXI International Congress on Large Dams (2004): Seismic Aspects of Dams.
- Bulletin 137 - ICOLD (2009). Reservoirs and seismicity.
- Bulletin 062A - ICOLD (2009): Inspection of dams after earthquakes.
- Other standards related to the service.

If applicable and if any, the TOR shall comply with national technical regulations, metrological and/or sanitary standards.

- Article 02° of the Political Constitution of Peru (31-10-93), according to which it is the right of every person to enjoy a balanced and adequate environment for the development of life and with respect for Natural Resources.
- Sole Ordered Text of Law No. 30225, State Contracting Law, approved by Supreme Decree No. 082-2019-EF, as amended.
- Regulation of Law No. 30225, State Contracting Law in force; approved by Executive Order No. 344-2018-EF and its amendments Executive Order No. 377 - 2019- EF, Executive Order No. 168 - 2020 - EF, Executive Order No. 162-2021-EF and other amendments.
- Legislative Decree No. 1252, "Legislative Decree that creates the National System of Multiannual Programming and Investment Management".
- Supreme Decree N° 242 - 2018 - EF, "Approving the Sole Ordered Text of Decree No. 242 - 2018 - EF, "Approving the Sole Ordered Text of Decree No. 242 - 2018 - EF.
- Legislative Decree No. 1252, "Legislative Decree that creates the National System of Multiannual Programming and Investment Management".
- Legislative Decree No. 1432, "Legislative Decree that amends Legislative Decree No. 1252, "Legislative Decree that creates the National System of Multiannual Programming and Investment Management, and repeals Law No. 27293, Law of the National Public Investment System".
- Legislative Decree No. 1486, "Legislative Decree that establishes provisions to improve and optimize the execution of public investments".
- Supreme Decree No. 284-2018-EF, which approves the regulations of Legislative Decree No. 1252 "Legislative Decree that creates the National System of Multiannual Programming and Investment Management".
- Water Resources Law No. 29338, published on March 23, 2009.
- Regulation of Law No. 29338, Water Resources Law, Supreme Decree No. 001- 2010- AG.
- Regulation of Legislative Decree No. 1081 that creates the National Water Resources System Supreme Decree No. 021-2008-AG.
- National Water Resources Plan Supreme Decree N° 013-2015-MINAGRI.
- Supreme Decree No. 179- 2020- EF, amending the Regulations of Legislative Decree No. 1252, the Regulations of Legislative Decree No. 1435, and the Regulations of Special Projects and Public Investment under Emergency Decree No. 021 - 2020.
- Peru's National Irrigation Policy and Strategy, approved by RM 0498-2003-AG of June 2003.
- National Irrigation Policy and Strategy Guidelines 2015-2025, whose text in Annex is an integral part of this Ministerial Resolution. By Ministerial Resolution N°0507-2015-MINAGRI
- Regulation of Law No. 27446, Law of the National System of Environmental Impact Assessment Supreme Decree No. 019-2009-MINAM.
- National Building Regulations.
- Water Resources Law - Law No. 29338 and its Regulations.
- D.S N° 012-2018-MINAGRI, which amends the Regulation of Law N° 29338, Law on Water Resources approved by D.S. N° 001-2010-AG.
- Law No. 29664, Law that creates the National Disaster Risk Management System (SINAGERD).
- Law No. 29783, Occupational Safety and Health Law and its amendments.
- Law N° 28611, General Environmental Law and its amendments.
- Law No. 28245, Environmental Management Law and its amendments.
- Supreme Decree No. 048-2011-PCM, Supreme Decree approving the Regulations of Law No. 29664, which creates the National Disaster Risk Management System (SINAGERD).



- Supreme Decree N°013-2010-AG, Regulation for the execution of Soil Surveys.
- Law No. 27444, General Administrative Procedure Law.
- Water Resources Law - Law N° 29338, and its Regulations.
- Law No. 31366, Law on Financial Balance of the Public Sector Budget for Fiscal Year 2022
- Organic Law for the sustainable use of water resources, Law No. 26821.
- Forestry and Wildlife Law, Law No. 29763 and its Regulations, approved by Supreme Decree No. 018-2015-MINAGRI.
- Categorization of Endangered Species of Wild Flora, approved by Supreme Decree N° 043-2006-AG.
- Update of the List of Classification and Categorization of Legally Protected Endangered Species of Wild Fauna, approved by Supreme Decree N° 004-2014-MINAGRI.
- Natural Protected Areas Law, Law No. 26834 and its Regulations, approved by Supreme Decree No. 038-2001-AG.
- General Law of Solid Waste, Law No. 27314 and its Regulations, approved by Supreme Decree No. 057-2004-PCM.
- Integral Solid Waste Management Law, approved by Legislative Decree No. 1278.
- Environmental Management Regulations for the Agricultural Sector, approved by Supreme Decree No. 019-2012-AG and amended by Supreme Decrees No. 004-2013-AG and 013-2013-MINAGRI.
- Regulation on transparency, access to public environmental information and citizen participation and consultation in environmental matters, Supreme Decree N° 002-2009-MINAM.
- Regulation of Solid Waste Management in the Agricultural Sector, approved by Supreme Decree No. 016-2012-AG.
- Regulation of Citizen Participation for the Evaluation, Approval and Monitoring of Environmental Management Instruments of the Agrarian Sector, approved by Supreme Decree 018-2012-AG and amended by Supreme Decree No. 012-2013- MINAGRI.
- Directive No. 001- 2019- EF/63.01, General Directive of the National System of Multiannual Programming and Investment Management, approved by Directorial Resolution No. 001-2019-EF/63.01, published in the Official Gazette "El Peruano" on January 23, 2019, amended by Directorial Resolution No. 006-2020-EF/63.01, published in the Official Gazette El Peruano on July 19, 2020, and by R.O. No. 008-2020-EF/63.01.
- Supreme Decree No. 003-2014-MC, October 03, 2014-Approves the Regulation of Archaeological Interventions.
- Supreme Decree No. 004-2009-ED, Supreme Decree that establishes the deadlines for the preparation and approval of archaeological evaluation projects and certification of non-existence of archaeological remains (CIRA).
- Directive 012-2017-OSCE/CD Risk management in the planning of the execution of Works.
- Ministerial Resolution No. 1275-2021-MINSA Administrative Directive that establishes the provisions for the Surveillance, Prevention and Health Control of Workers at Risk of Exposure to SARS Cov-2.
- Directorial Resolution N° 33-2020-MINAGRI-PSI, which approves the use and implementation of the Investment Tracking System - SSI".
- Social Component for Agricultural Infrastructure and Irrigation Projects in accordance with Ministerial Resolution N°0183-2020-MINAGRI.
- Ministerial Resolution No. 484-2019-MINAGRI of December 31, 2019, Guidelines for the incorporation of Risk Management in a context of Climate Change in investment projects related to irrigation water in the framework of the National System of Multiannual Programming and Investment Management.



8.3. Technical standards

The Consultant will use the standards and guidelines for the formulation of investment projects, which will be mandatory for the design and technical specifications of hydraulic projects.

- Methodological Guide for the formulation of minor irrigation public investment projects- Ministry of Economy and Finance of the General Directorate of Public Sector Investment Policy- DGPI.

- Methodological Guide for the Identification, Formulation, and Evaluation of Large and Medium Irrigation Projects - Ministry of Economy and Finance, General Directorate of Multiannual Programming of the Public Sector - DGPM.
- Articles 09°, 10° and 11° of Chapter III of the Environment and Natural Resources Code, DL N° 613 - 08-09-90.
- Reglamento de Seguridad de Presas Públicas de embalses de agua, resolución Jefatural N° 272-2018-ANA del 10 de setiembre del año 2018.
- Regulation for the delimitation and maintenance of marginal strips, Head Resolution No. 332-2016-ANA, dated December 28, 2016.
- Law No. 28585, Law that creates the Technified Irrigation Program, the creation of the Technified Irrigation Program is declared of public need and utility, to promote the progressive replacement of traditional irrigation systems in the agricultural sector in general; Regulations of Law No. 28585 approved by Supreme Decree No. 004-2006-AG and its amendments given with Supreme Decree No. 008- 2013-MINAGRI, Supreme Decree No. 015-2014-MINAGRI.
- Manual: Design criteria for hydraulic works for the formulation of multi-sector hydraulic and water reinforcement projects - ANA.

The preceding list of standards should not be considered a restriction for the Consultant, since it should consider any other standard that is applicable to the subject of the solicitation and that is in force.

8.4. Minimum profile of key personnel and position.

Key personnel		
Cargo	Profession	Experience
PROJECT MANAGER	Civil and/or Hydraulic Engineer; graduate, with Master of Science (MSc.) degree in hydraulic engineering, minimum 2 years of duration	Minimum twenty-five (25) years of specific professional experience in the public and/or private sector in structural and/or risk/hazard assessment of hydraulic works or dams and/or integrated management of water resources and/or engineering and safety of hydraulic works and/or hydraulic infrastructure projects of large dams and tunnels of hydroelectric and/or irrigation projects, including sedimentation of reservoirs, sediment transport, hydrology, geotechnics, hydraulic infrastructure, dam engineering, tunnel engineering, large hydraulic works, contract management and financial evaluations of such hydraulic works. Accreditable with a simple copy of contracts or agreements and their respective conformity, certificates and/or resolutions and/or service orders, among other documents that reliably accredit the requested experience. Member of the International Committee on Large Dams (ICOLD) with the



		corresponding accreditation.
GEOLOGIST/GEOTECHNICIAN EXPERT	Graduate geological engineer with a master's degree in geology or geotechnics, licensed and authorized, depending on country of origin.	Specific professional experience of at least twenty-five (25) years in the public and/or private sector in structural and/or risk/hazard assessment of hydraulic works or dams and/or integrated management of water resources and/or engineering and safety of hydraulic works and/or hydraulic infrastructure projects of large dams and tunnels of hydroelectric and/or irrigation projects, including dam engineering, tunnel engineering and large hydraulic works. Accreditable with a simple copy of contracts or agreements and their respective conformity, certificates and/or certificates and/or resolutions and/or service orders, among other documents that reliably prove the requested experience.
HYDROLOGICAL/SEDIMENTOLOGY EXPERT	Civil engineer, agricultural, fluid mechanics, graduate, with a master's degree in hydraulics, water resources and/or hydrology, registered and authorized according to country of origin.	Specific professional experience of at least twenty-five (25) years in the public and/or private sector in structural and/or risk/hazard assessment of hydraulic works or dams and/or integrated management of water resources and/or engineering and safety of hydraulic works and/or hydraulic infrastructure projects of large dams and tunnels of hydroelectric and/or irrigation projects, including sedimentation of reservoirs, sediment transport, hydrology, hydraulic infrastructure, dam engineering, tunnel engineering and large hydraulic works. Accreditable with a simple copy of contracts or agreements and their respective conformity, certificates and/or certificates and/or resolutions and/or service orders, among other documents that reliably prove the requested experience.

Note: The PROJECT MANAGER, at the signing of the contract, shall support the CVs of the team he will lead, and shall also accredit all the professionals that will integrate his work team as required to perform this service, with their respective CVs.

8.5. Materials, equipment and facilities

Not applicable.



8.6. The consultant's experience in the specialty.

The bidder must accredit an accumulated invoiced amount equivalent to **ONE TIMES (1) THE ESTIMATED VALUE OF THE CONTRACT**, for the contracting of consulting services equal or similar to the object of the call for bids, during the ten (10) years prior to the date of submission of bids, which shall be computed from the date of compliance or issuance of proof of payment, as applicable.

8.7. Consultant's qualification

Not applicable.

8.8. Conditions of the consortia

Not applicable.

8.9. Work plan

The work plan shall be submitted ten (10) calendar days after the signing of the contract; it must have the technical opinion of the user area (GG), or of the areas designated by the manager as support for its subsequent approval.

8.10. Activities to be developed:

- Official confirmation of field visit by experts (10 calendar days):
- Field visit and ppt report presentation of problems at the end of the visit (30 to 35 calendar days):
 - ✓ Presentation developed on-site
 - ✓ Final delivery of all information in digital form for review by the authority, with access to online server and in 4 large capacity physical USBs (10 TB each). The 4 USBs are not returned.
- Field visit and problem assessment report (50 calendar days)
- Progress of the service, which includes the technical report and preliminary diagnosis of the current and integral situation of the water transfer component, having to review all studies, experts, manuals and others relevant to such analysis (90 calendar days).
- Progress of the service report and preliminary presentation of the technical report: diagnosis of the current and integral situation of the water transfer component (169 calendar days).
- Main service report and presentation. Includes the presentation to the bodies that the general management deems appropriate (195 calendar days).
- Native file delivery, via online delivery of the main service (221 calendar days)

8.11. Procedure or Methodology

It will be the one proposed by the Consultant responsible for the provision of this service, considered in the Work Plan, which must have the technical approval of the General Management (GG) or the support area designated by it.

8.12. Benefits ancillary to the principal benefit

Not applicable.

8.13. Control measures

For the provision of this service, coordination and supervision aspects have been considered, according to the following detail:

Supervising Area:



The area that will supervise this service will be the General Management (GG) in its capacity as User Area or the area designated by it.

Area that will coordinate with the Supplier:

The area that will coordinate with the consultant for the provision of this service will be the General Management (GG) as the User Area or the area designated by the management.

Area to be Conformed:

The area that will provide the conformity for the rendering of this service will be the General Management (GG) as User Area, with the support of a technical area designated by it.

8.14. Applicable insurance

For the provision of this service, the supplier shall be responsible for the payment of its All Risks Insurance SCTR - Health and Pension; which shall be in force during the entire development of the service, for key personnel and its personnel that it requires.

8.15. Place and term of the consultancy

Location.

In the area of the Olmos - Campamento Oriente Project Transfer Works, at Km. 86 of the Fernando Belaunde Terry highway, Pomahuaca district, Province of Jaén, Department of Cajamarca, for field evaluation and verification; and in the city of Chiclayo for virtual coordination meetings; and when required by the Supervisor, face-to-face meetings.

Deadline.

The service shall be executed for a maximum term of one hundred and twenty (120) calendar days, computable from the day following acceptance of the work plan, which shall be a maximum of fifteen (10) days after the respective contract is executed.

8.16. Expected products (deliverables)

I. EXPECTED PRODUCTS	CALENDAR DAYS							
	04	10	30-35	50	90	169	195	221
PRODUCT 1: Detailed work plan agreed upon for each product	x	--	--	--	--	--	--	--
OUTPUT 2: Official confirmation of expert field visit	--	x	--	--	--	--	--	--
PRODUCT 3: Field visit and ppt report presenting the problems at the end of the visit. Prepared in-situ.	--	--	x	--	--	--	--	--
PRODUCT 4: Report of the field visit and assessment of problems	--	--	--	x	--	--	--	--
PRODUCT 5: Progress of the service, which includes the technical report and preliminary diagnosis of the current and integral situation of the water transfer component, having to review all studies, experts, manuals and	--	--	--	--	x	--	--	--



others relevant to such analysis.								
PRODUCT 6: Progress of the service report and preliminary presentation of the technical report: diagnosis of the current and integral situation of the water transfer component.	--	--	--	--	--	X	--	--
PRODUCT 7: Main service report and presentation. It includes the presentation to the bodies that management deems appropriate.	--	--	--	--	--	--	X	--
PRODUCT 8: Native file delivery, via online delivery of the main service	--	--	--	--	--	--	--	X

8.17. Form of payment

The service will have the following payment schedule:

1st payment: thirteen percent (13%) of the cost of the service. Payment shall be made within a term not to exceed fifteen (15) calendar days from the delivery of Product 1.

2nd payment: twelve percent (12%) of the cost of the service. Payment shall be made within a term not to exceed fifteen (15) calendar days from the delivery of Product 2.

3rd payment: for twelve percent (12%) of the cost of the service. Payment shall be made within a term not to exceed fifteen (15) calendar days from the delivery of Product 3.

4th payment: fifteen percent (15%) of the cost of the service. Payment shall be made within a term not to exceed fifteen (15) calendar days from the delivery of Product 4.

5th payment: twenty-five percent (25%) of the cost of the service. Payment shall be made within fifteen (15) calendar days from the delivery of Product 5.

6th payment: fifteen percent (15%) of the cost of the service. Payment shall be made within a term not to exceed fifteen (15) calendar days from delivery of Product 6.

7th payment: for five percent (5%) of the cost of the service. Payment shall be made within a term not to exceed fifteen (15) calendar days from the delivery of Product 7.

8th payment: three percent (3%) of the cost of the service. Payment shall be made within a term not to exceed fifteen (15) calendar days from the delivery of Product 8.

One day late in payment means one day of extended service.

Mobilization from Chiclayo to Limón dam and other auxiliary and/or related infrastructure will be guided by the PEOT, together with personnel of the Entity.

To allow the timely payment of the service, THE CONTRACTOR shall submit the necessary corresponding documents, interbank account code and others that the entity deems necessary, the professional skill in force (or other document that makes its turn) and other documents requested by the Accounting and Treasury Unit.

In the event that THE HIRER is a foreign professional, the PEOT will be in charge of including and adding, in the award negotiations, the corresponding tax withholding amounts and applying the appropriate national regulations, since this is a very specialized call for work.

The Consultant shall include in its price all expenses required for the service, including travel, medical, life and risk insurance, whether domestic or foreign, as the case may be, and its logistical expenses that are not assumed by the entity.



Payment for the services may be in local currency and/or USD US dollars and/or EUR euros, whereby the international interbank transfer-sending costs shall be borne by the PEOT.

8.18. Readjustment formula
Not applicable.

8.19. Advances

If necessary, the Entity may grant 01 direct advance payment for 10% of the original contract amount.

The contractor must request the advances within 07 days after the signing of the contract, attaching to its request the guarantee for advances by means of a Letter of Guarantee accompanied by the corresponding proof of payment. Once this period has expired, the request will not be accepted.

The Entity must deliver the requested amount within ten (10) days following the submission of the contractor's request.

*The advance payment may be established for services of continuous, periodic or one-time performance, since the purpose of the advance payment is to provide liquidity to the contractor to facilitate the performance of the services under the conditions and in a timely manner as agreed in the contract.

In the case of single performance services in which it is not necessary to establish partial payments because the satisfaction of the need occurs with the reception of the deliverable, the work, tasks or activities that are foreseen to obtain said deliverable, and that will form part of the contract, may be financed with the delivery of an advance payment to the contractor.

8.20. Feasibility statement
Not applicable

8.21. Other applicable penalties

Other penalties			
N°	Penalty application assumptions	Calculation method	Procedure
1	In case the contractor fails to comply with its obligation to perform the service with the accredited or duly substituted personnel.	0.5 UIT for each day of absence of personnel.	The person in charge of the User Area shall communicate in writing.
2	Failure to attend meetings agreed with the user area, via email at least 3 days in advance.	For each non-attendance, 0.5 UIT will be applied. Except for reasons of force majeure and agreeing a new date.	The person in charge of the User Area shall communicate in writing.
3	Submission of incomplete reports.	For each incomplete report, 0.5 UIT will be applied.	The responsible of the User Area will communicate in writing the submission of an incomplete report, when the entity determines that it does not meet the minimum content



Other penalties			
N°	Penalty application assumptions	Calculation method	Procedure
			indicated in the TOR. According to the item identified and is within the scope of the service.
4	For failure to submit Deliverables	For each day of non-compliance, 0.5 UIT will be applied.	The person in charge of the User Area shall communicate in writing.
5	For failure to correct Observations.	For each day of non-compliance, 0.5 UIT will be applied.	The person in charge of the User Area shall communicate in writing.

VALUE OF THE UIT 2025: S/. 5,350.00 SOLES.

8.22. Subcontracting

Subcontracting is not allowed.

8.23. Other obligations

Obligations of the Consultant:

- The consultant is directly and fully responsible for the activities to be performed, and shall be liable for the services rendered, as appropriate. Likewise, the consultant shall assume full responsibility for the services rendered during the execution of the agreed service.
- The final report prepared and submitted by the consultant is a sworn statement, the veracity of which constitutes its responsibility, and the responsibilities determined by the Comptroller General of the Republic and the legislation in force are also applicable.
- The Consultant responsible for the provision of the service must attend the technical meetings called by the Olmos Development Management, and may not be replaced, without having previously communicated the fact and his replacement to the Entity, for the respective approval.

Obligations of the Entity:

- PEOT will provide the consultant with all available technical information related to this service.
- PEOT will provide mobility support for transportation for necessary field work, if requested in advance.
- PEOT will provide the facilities to the Consultant to enter the facilities of the Transfer Works for the execution of the service.

8.24. Confidentiality.

The Consultant shall comply with all policies and standards defined by the entity regarding information security. This obligation includes the information delivered, as well as the information generated during the performance of the activities and the information produced once the service has been completed.

8.25. Liability for hidden defects.

The Supplier's liability for any hidden defect in the service offered is for a period of two (2) years from the date of the conformity granted.



8.26. Intellectual Property

The Entity shall have all intellectual property rights on the products or documents and other materials, which are directly related to the performance of the service, or which have been created or produced as a consequence, or in the course of the performance of the service.

9. Annexes



9.1. Annex 1. Cost structure, experts, it should be noted that any contracting carried out by the project manager will be assumed by him, without this demanding any additional costs to the entity, therefore, it should be considered in his estimate according to his experience in the execution of these works.

COST STRUCTURE

SERVICE FOR THE CONTRACTING OF THE EXPERTISE IN THE EVALUATION OF THE LEMON DAM

COST OF SERVICE				
Cargo	Unit of measure	Quantity	Unit Cost (dollars / euros / soles)	Total
PROJECT MANAGER	months	4		
GEOLOGIST/GEOTECHNICIAN EXPERT	months	2		
HYDROLOGICAL/SEDIMENTOLOGY EXPERT	months	2		
ROUND-TRIP TRAVEL EXPENSES (INCLUDING INSURANCE)	GLOBAL	1		
COST OF TRANSFERS, LODGING AND DOMESTIC FLIGHTS	GLOBAL	1		
DIRECT COST				
OVERHEADS	%	20		
UTILITY	%	10		
SUB TOTAL				
TAXES	%	18		
TOTAL, OF THE SERVICE				

Note: this table of the cost of the service may be varied according to experience and need as recommended by the director and approved by the user area.²⁶

This cost structure is referential in nature, and the consultant may or may not consider it in its proposal.



9.2. Annex 2: Views of the diversion infrastructure.

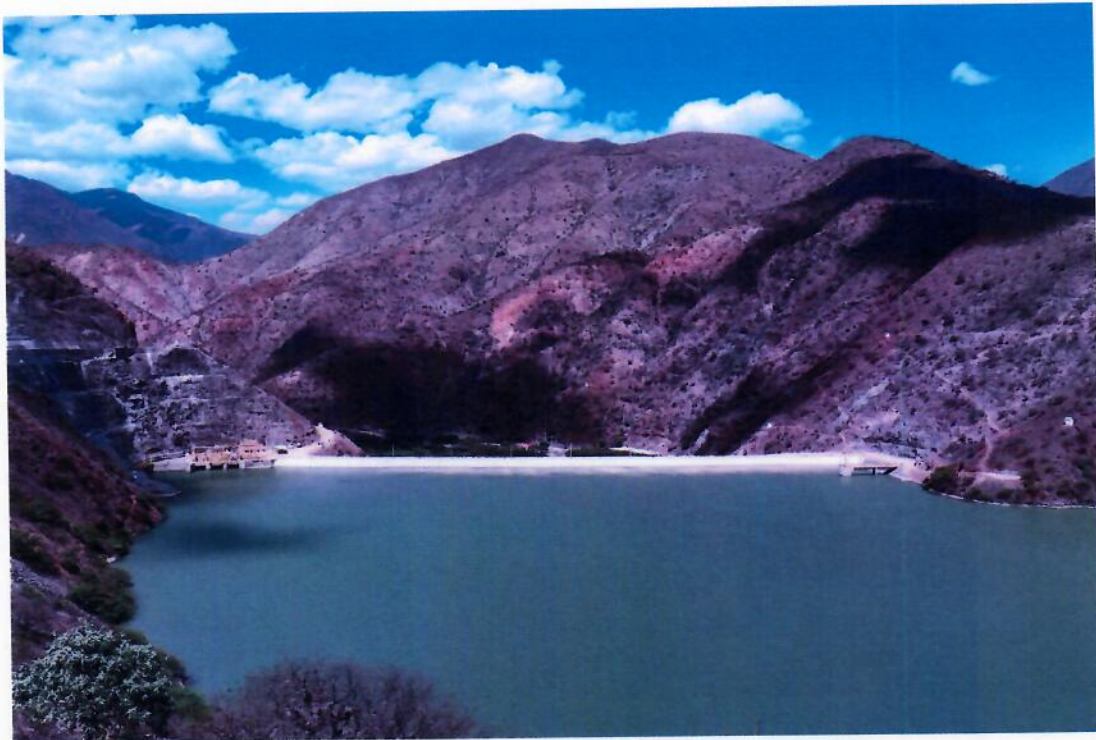


Photo N°01: Panoramic shot showing the dam embankment, north-south slope and the provisional intake on the right.



Photo N°02: shot showing the dam dike, the infrastructure of the control house and the operation of the gates located next to the north south slope.



Photo N°03: Panoramic shot showing the infrastructure of the control and operation hut of the floodgates located next to the north-south slope.

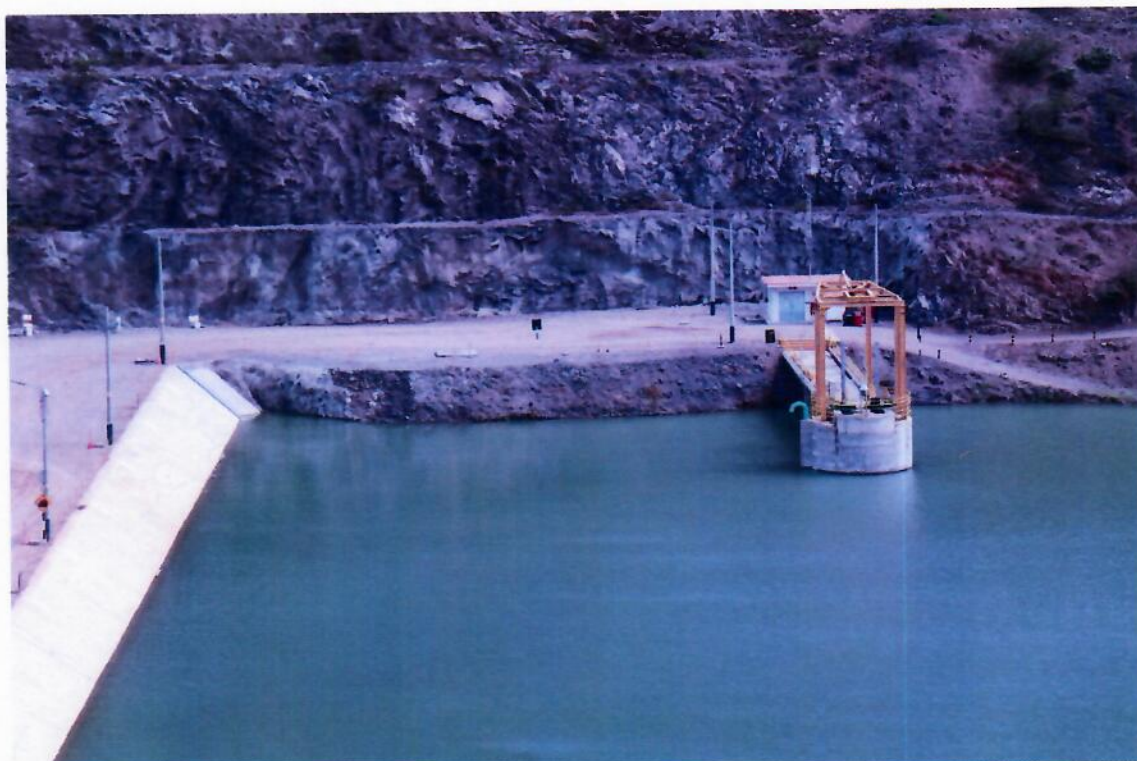


Photo N°04: This photo shows the provisional intake.



Photo N°05: Panoramic view of the site where the lemon dam is located and on the right side the area where the final tunnel is located.



Photo N°06: definitive diversion tunnel.



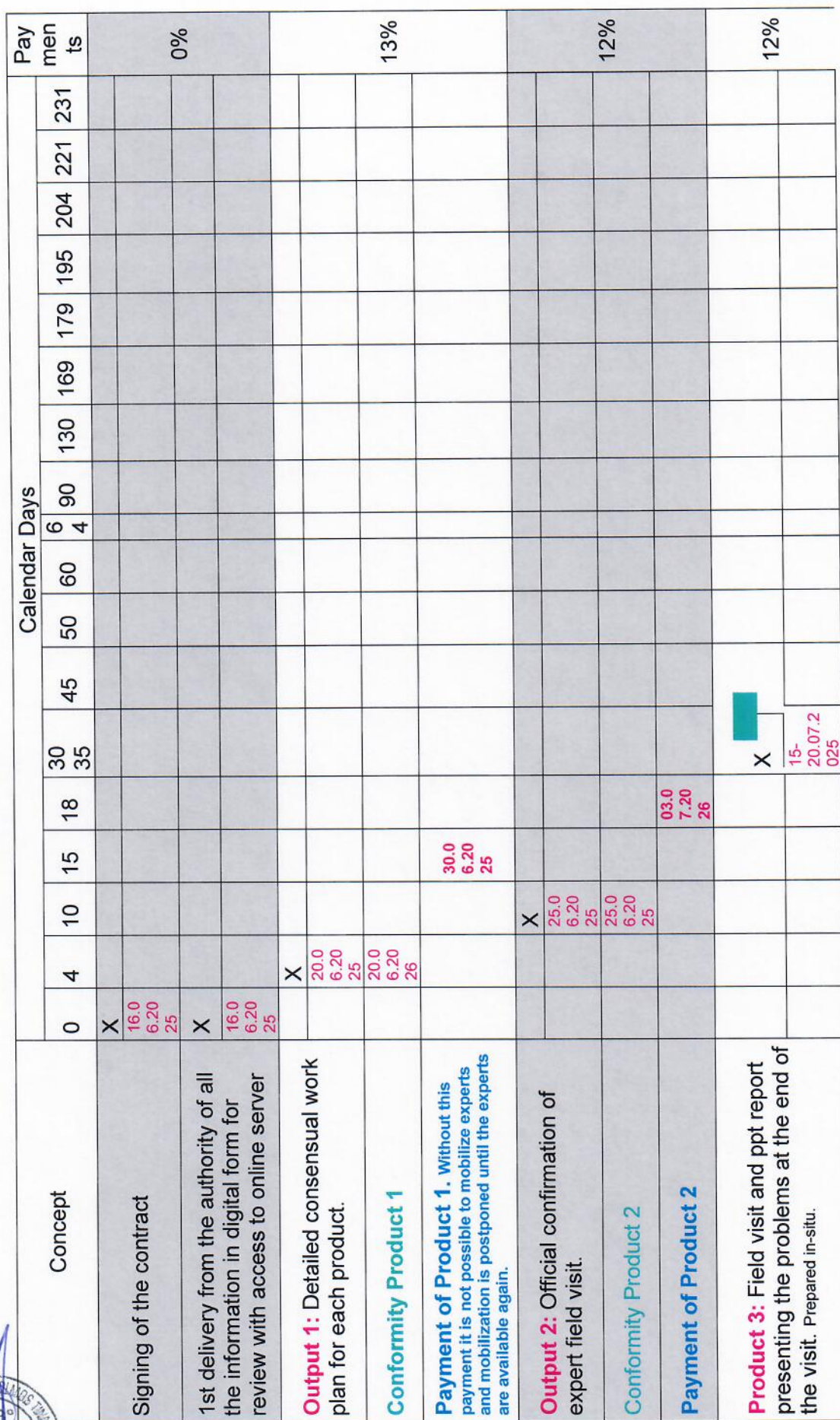
Photo N°07: definitive diversion tunnel.



Photo N°08 and 09: lajas tunnel that captures water from the lajas stream and exit tunnel.

9.3. Annex A: Olmos Basis Schedule





II. QUALIFICATION REQUIREMENTS

For the case of consulting services corresponding to Simplified Award.

THE CONTRACTOR shall comply with the following requirements:

- To be a natural person. *Accreditable with a simple copy of the national identity card or similar document.*
- Minimum academic training is a **degree in Civil Engineering, with a Master of Science in Hydraulic Engineering**, with specialization in hydraulic engineering and dam engineering. Must be registered in the SUNEDU portal and/or equivalent institution in the country of origin, in which case it must be accredited *with a simple copy of the diploma.*
- At least a **Master of Science degree** in hydraulic engineering and/or water resources engineering with extensive experience and knowledge of geotechnical engineering, sediment transport, hydrology, hydraulic infrastructure, dam engineering, tunnel engineering, large hydraulic works, contract management, financial evaluation of such hydraulic works. *Accreditable with a simple copy of work certificates and/or certificates and/or diplomas from training programs in this field.*
- Have more than twenty-five (25) years of **general work experience** in the public and/or private sector in integrated management of water resources and/or engineering and safety of hydraulic works and/or hydraulic engineering and/or hydraulic engineering and/or water resources engineering and/or hydraulic infrastructure projects of large dams and tunnels of hydroelectric and/or irrigation projects and/or geotechnical and/or sediment transport and/or hydrology and/or dam engineering and/or tunnel engineering of large hydraulic works, including contract management and financial evaluations of such hydraulic works. *Accreditable with a simple copy of contracts or agreements and/or their respective conformity, certificates and/or certificates and/or resolutions and/or service orders, among other documents that reliably prove the requested experience.*
- Have more than twenty (20) years of **specific work experience** in the public and/or private sector in structural and/or risk/hazard assessment of hydraulic works or dams and/or integrated management of water resources and/or engineering and safety of hydraulic works and/or hydraulic infrastructure projects of large dams and tunnels of hydroelectric and/or irrigation projects, including management of contracts and financial evaluations of such hydraulic works. *Accreditable with a simple copy of contracts or agreements and their respective conformity, certificates and/or resolutions and/or service orders, among other documents that reliably prove the requested experience.*
- **Have more than 5 years of general experience in Peru.**
- **Regional and international experience of more than 15 years.**
- To be a member of the **International Committee on Large Dams (ICOLD)**, which shall be supported with pertinent documentation: certificate or membership form, and receipt of payment from the national committee to which it belongs and pertinent documentation to be considered.



Have been **Chairman or Team Leader of a Panel of Experts or International Expert as an Independent Consultant**, hired by state authorities or international development banks (IDB, KfW, WB, ADB, AfDB, JICA, EBRD, etc.), for major projects of large dams and diversion tunnels for hydroelectric, irrigation, flood control or multipurpose power plant projects. *Accreditable with a simple copy of contracts or agreements and their respective conformity, certificates and/or*

resolutions and/or service orders, among other documents that reliably prove the requested experience.

- Have been **Team Leader or Project Leader or Project Director or Project Manager** of major projects of large dams and transfer tunnels for hydroelectric power plants, irrigation, flood control or multipurpose projects. *Accreditable with a simple copy of contracts or agreements and their respective conformity, certificates and/or resolutions and/or service orders, among other documents that reliably prove the requested experience.*
- To have publications and/or research and/or scientific articles in the specialized area of the call. Minimum 05 five articles.
- To have knowledge of two languages (Spanish and English) at the advanced level (speaking, reading and writing), which will be certified with a minimum of 5 five articles published in English and 5 five articles published in Spanish.
- Not to have any impediment to contract with the State.
- Not to incur in a situation of nepotism. *Accreditable with a simple affidavit*
- No criminal, judicial or police record. *Accreditable with a simple affidavit.*
- Since this is a specialized national and international call for papers, a curriculum vitae in English or Spanish will be allowed. All reports must be completely written in Spanish and English.
- The professional will be responsible for the team of professionals accompanying him/her in this service and for the reports issued by them, as well as for their remuneration, which must be presented upon delivery of the work plan.

