

Palestine Polytechnic University



**College of Engineering and Technology
Civil & Architecture Engineering Department**

Project Title

Flow Transient Analysis for Al Duhaish Pumping Station and the Conveing Pipeline to Al Doha reservoir Using Hammer_Cad

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Hebron – Palestine

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**CIVIL & ARCHITECTURAL ENGINEERING DEPARTMENT COLLEGE OF
ENGINEERING AND TECHNOLOGY PALESTINE POLYTECHNIC
UNIVERSITY**

**Flow Transient Analysis for Al Duhaish Pumping Station and the Conveing Pipeline to Al
Doha reservoir Using Hammer_Cad**

By

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A PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
BACHELOR OF ENGINEERINGIN
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Project Supervisor

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CERTIFICATION

Palestine Polytechnic University

Hebron- Palestine



The Senior Project Entitled:

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Doha Reservoir Using Hammer_Cad**

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In accordance with the recommendations of the project supervisor, and the acceptance of all examining committee members, this project has been submitted to the Department of Civil and Architectural Engineering in the College of Engineering and Technology in partial fulfillment of the requirements of the department for the degree of Bachelor of Science in Engineering.

Project Supervisor

Department Chairman

إهداء

إلى من جرع الكاس فارغا ليسقيني قطرة حب
إلى من كلت أنامله ليقدّم لنا لحظة سعادة
إلى من حصد الأشواك عن دربي ليمهد لي طريق العلم
إلى القلب الكبير.....(والدي العزيز)

إلى من أرضعتني الحب والحنان
إلى رمز الحب وبلسم الشفاء.....(والدتي الحبيبة)

إلى القلوب الطاهرة الرقيقة والنفوس البرينة إلى رياحين حياتي
إلى من يحملون في عيونهم ذكريات طفولتي وشبابي إخوتي و أخواتي
إلى من سرنا سويًا ونحن نشق الطريق معًا نحو النجاح والابداع زملائي وزميلاتي

إلى من ضحوا بحريتهم من أجل حرية غيرهم..... الأسرى والمعتقلين
إلى من هم أكرم منا مكانة..... شهداء فلسطين

إلى هذا الصرح العلمي الفتى والجبار.....جامعة بوليتكنك فلسطين
إلى من احتضنتني كل هذا الكم من السنين فلسطين الحبيبة

فريق العمل

شكر و تقدير
(قل اعملوا فسيرى الله عملكم ورسوله والمؤمنون)
صدق الله العظيم
الهي لا يطيب الليل إلى بشرك ولا يطيب النهار إلا بطاعتك .. ولا تطيب اللحظات إلا بذكرك
ولا تطيب الآخرة إلا بعفوك .. ولا تطيب الجنة إلا برويتك
الله جل جلاله.....
لا بد لنا ونحن نخطو خطواتنا الأخيرة في الحياة الجامعية من وقفة نعود إلا اعوام قضيناها في

رحاب الجامعة مع أساتذتنا الكرام الذين قدموا لنا الكثير بأذلين بذلك جهودا كبيرة في بناء
جيل الغد لتبعث الأمة من جديد...
وقبل أن نمضي نقدم أسمى آيات الشكر والامتنان والتقدير والمحبة إلى الذين حملوا أقدس
رسالة في الحياة ...
إلى الذين مهدوا لنا طريق العلم والمعرفة ...
إلى جميع أساتذتنا الأفاضل.....
" كن عالما ... فإن لم تستطع فكن متعلما ، فإن لم تستطع فأحب العلماء ، فإن لم تستطع فلا تبغضهم"
ونخص بالتقدير والشكر إلى من قدمت لنا يد العون والمساعدة وكانت لنا سندا والتي علمتنا التفاؤل والمضي إلى الأمام
، إلى من راعانا وحافظ علينا ، إلى من وقف إلى جانبنا عندما ضللنا الطريق الدكتور اعتصام ابو عزية
التي نقول له بشراك قول رسول الله صلى الله عليه وسلم :
" إن الحوت في البحر ، والطير في السماء ، ليصلون على معلم الناس الخير "
وكذلك نشكر بلدية الدوحة وطواقمهم الإدارية والفنية التي لم تبخل علينا بتزويدنا بالمعلومات اللازمة ومدت لنا يد
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Work Team

ABSTRACT

Flow Transient Analysis for Al Duhaish Pumping Station and the Conveing Pipeline to Al Doha reservoir Using Hammer_Cad

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study case, which are suffering from water scarcity due to conditions of water supply, which is limited, the study aims to design a system for on demand supply for study region, which is adequately, satisfy the water requirements for a combination of domestic, commercial, public and firefighting purposes at the right time.

Individual pipelines may contain any of several kinds of pumps at one end; they may deliver water to or from storage tanks, In a water pipeline system, system flow control or active devices (gate valves, Air Valves pressure reducing or pressure sustaining valves...etc.) is an integrated part of its operation, for instance, the opening and closing of valves, and starting and stopping of pumps. When these operations are performed very quickly, they can cause hydraulic transient phenomena. To protect the physical integrity of a pipeline system, there is a need to install surge control devices, such as surge relief valves, surge tanks, or air-vacuum valves, at various points in the system.

To achieve our goals several models will be chosen and used such as WATER CAD and HAMMER CAD.

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