GEOPACIFIC CONSULTANTS

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Client Company Name
Project
Project Manager
Address
City, Province/State
Postal Code

Fri Feb 17 2023
Name of Professional, Designation
GeoPacific Consultants Ltd.
Professional Practice Number

GLOBAL **RISK ASSESSMENT:**
Address of Development/Project

This (Temporary Shoring / Drill Test Pit) documented risk assessment is to be completed during preparation of design drawings, before proposing or accepting contracts.
It is to be filed in the project folder after client acceptance.

Table 1. Considerations of Risk Assessment

Risk Consideration	Remark
Expertise of Professional	
Experience of Subordinates	
Similar Project Experience?	
Project Complexity	
Innovative Features	
Departures from Previous Practice	
Applicable Codes, Standards and Regulations that define Risk Tolerance	
Hazard Identification Techniques Used	
Recommended Documents and Client Information	

Table 2. Risk Matrix

Hazard	Consequence	Severity	Likelihood	Risk	Applicable?
Utility Strike (gas / electrical)	Possible loss to human life, minor to severe on site, off-site municipal or private property damage	5/5	2/5	4/5	
Utility Strike (water / storm / septic / low voltage electrical / telecom)	Minor on-site, off-site municipal or private property damage. Injury very unlikely	3/5	2/5	3/5	
Encountering Flowing Artesian Conditions (uncontrolled flow)	May overwhelm on-site / off-site drainage infrastructure, void creation, off-site dewatering related settlement, sediment laden runoff that may harm aquatic habitats, aquifer to aquifer contamination, waste of groundwater, may lower pressure in aquifer, affecting the yield of neighbouring wells and springs	4/5	1/5	3/5	
Encountering Flowing Artesian Conditions (controlled flow)	Temporary sediment laden runoff, small void creation	2/5	1/5	2/5	

Table 3. Mitigation Matrix

Hazard	Mitigation	Justification	Applicable?
Utility Strike	Conduct “BC One-Call (BCOC)” and engage sub-contractor to locate site-specific utilities prior to drilling. Gather as-built plans from client / civil designer.	A BCOC is required prior to any type of ground disturbance in BC. BCOC provides valuable information regarding existing off-site and some on-site utilities prior to drilling. Results of BCOC and as-built plans form a strong basis for utility location, prior to finalizing safe drilling sites.	Y
Artesian Conditions	Special consideration should be given to sites where artesian conditions are known to exist, prior to any drill based investigation. As defined by EGBC, the minimum “screening” for flowing artesian conditions should, at a minimum, include the following: • Evaluation of available geological, topographic, and aerial photography mapping • Review of well logs available online through the province of BC Groundwater Wells and Aquifers (GWELLS) application • Review of available Well Drilling Advisories for Flowing Artesian Conditions (Province of BC 2020b) • The development of a conceptual hydrogeological model for the project site that considers: available data, formations likely to be encountered, probable recharge area, potential for constrictors, potential for penetrating aquitards, potential for penetrating productive aquifers below the confining layers • Review of the Water Resource Atlas of British Columbia and any applicable well logs nearby to the proposed investigation • Development of a water management plan that addresses both controlled discharge of non-turbid groundwater, and uncontrolled discharge of potentially contaminated with fines, cement, or drilling fluid	Once the research has been considered, a conservative approach may be taken if artesian conditions may be present. This might include proactively incorporating measures that mitigate flowing artesian conditions into the monitoring well design or preparing to control artesian flows should they be encountered during drilling. If sufficient gaps in data exist, the engineering/geoscience professional on record managing the project should consider the eventualities related to both controlled and uncontrolled flowing artesian wells.	Y

When drilling in areas where artesian conditions are known to exist, a review of the proposed drill depths / locations / proposed well screen lengths should be carried out by an appropriately qualified and experienced Professional Registrant and/or project manager. Although the submission of well construction reports to the Comptroller of Water Rights is not required for certain classes of wells (such as monitoring wells and temporary dewatering wells), if artesian conditions are encountered, then a well construction report must be submitted.

Independent Review Requirement

Type 2 Professional of Record and Firm have less experience with the type and scale of the HRPAW, there are innovative or particularly complex aspects of the HRPAW, or the HRPAW involves problems without well- defined solutions. Type 2 Independent Review will usually be required for HRPAW involving new and emerging technologies.

Yours truly,

GeoPacific Consultants Ltd.

Reviewed By:

NamMike Kohane

Title

Name

Title