Contract No. of the Contractor	Contract No. of the Client
	423011

Contract for work

according to the provision of section 2586 et seq. of the Act No. 89/2012 Coll., the Civil Code

Parties of the Contract

Contractor		**Client**	
H. Anger's Söhne Bohr- und Brunnenbauges. mbH		**Czech geological survey**	
Institution residing at:	Gutenbergstr. 33 37235 Hessisch Lichtenau Germany	Institution residing at:	Klárov 131/3 ,118 21 Praha 1, Czech Republic
Represented by:	Mr. Uwe Schindler	Represented by:	Mgr. Zdeněk Venera, Ph.D.
Function:	Managing director	Function:	Director
Contact person:	Mr. Peter Kriebel	Contact person:	Mgr. Antonín Tym, Ph.D.
Function:	Project manager	Function:	project manager
Contact person:	Mr. Michael Grosser	Contact person:	Mgr. Vít Peřestý, Ph.D. technical advisor
	Operations Superintendent		person responsible for technical matters
Telephone No.:	[redacted]	Telephone No.:	[redacted]
Email:	info@angers-soehne.de	Email:	antonin.tym@geology.cz vit.peresty@geology.cz
Reg. No.:	HRB 2235	Reg. No.:	00025798
VAT No.:	DE812502752	VAT No.:	CZ00025798

hereinafter the "Parties"

The Parties hereby conclude this Contract for work

according to the provision of section 2586 et seq. of the Act No. 89/2012 Coll., the Civil Code

INTRODUCTORY PROVISIONS

This Contract is concluded in accordance with the result of the open tendering procedure under the title „*Realizace pilotních vrtů pro projekt PUSH-IT*", in accordance with the section 56 of the Act No 134/2016 Coll., on the Public Procurement, in which the Contractor has submitted a tender complying with all legal conditions and award criteria.

The Parties hereby agree that the provisions of this Contract shall not be taken into account, should they be contrary to the terms of the procurement documents. In such a case, provisions of the procurement documents shall prevail.

Law and language

Place of jurisdiction of this Contract shall be the Czech Republic.

Czech Law governs this Contract. Any and all matters not regulated by this Contract shall be governed by the Civil Code, or alternatively by other relevant legal regulations of the Czech legal order.

The language of the contract and mutual communication is English and Czech but the contact person of the Contractor designated to communicate with the Client and the Town of Litoměřice or other public authorities has to be able to actively control the Czech language during the fulfilment of the Contract.
Materially and locally competent court for resolving disputes under this Contract / in connection with the Contract shall be the general court authority of the Client.

Financial control

The Contractor acknowledges that, as a supplier of construction and drilling work paid from public funds, the Contractor is obliged to co-operate in the performance of financial control within the meaning of Section 2 e) of the Act No. 320/2001 Coll., on Financial Control. The Parties hereby undertake to provide the State tender grantor or other supervisory authorities with access to all parts of the documents related to the legal relationship established by this Contract. This obligation also applies to documents that are subject to protection under special legal regulations (eg. trade secrets, classified information, etc.) provided that the requirements imposed by legal regulations are met by the supervisory body (eg Act No. 255/2012 Coll.). The Contractor is obliged to ensure that all its potential subcontractors (hereinafter referred to as "subcontractors") are obliged to submit to the inspection pursuant to this Article.

1. PREAMBLE

The Client as a partner realizes project „*PUSH-IT - Piloting Underground Storage of Heat In geoThermal reservoirs*", funded by the EU Programme „HORIZON Europe". Within this project, the Client intends to drill two boreholes with several drilling methods, measurements and different completion specified further in this Contract. For this purpose, the Client makes this Contract with the Contractor for the provision of a drilling rig with the operating personnel and drilling and logging equipment.

2. SUBJECT OF THE CONTRACT

The subject of this Contract is drilling works described in Annex 1 of this Contract "Pilot boreholes technical description" (i.e. Annex No 7 of the tendering documentation) and further specified in the Annex 2 "Drilling works programme" provided by the Contractor and approved by the Client (hereinafter as "drilling works").

3. BASIS OF THE CONTRACT

The following legal and technical integral parts of the Contract shall be decisive for the type and the scope of the drilling works to be carried out, which in case of contradictions shall be applied in accordance with the sequence provided below:

1) Invitation to tender including the procurement documents
2) This Contract incl. annexes
3) Tender of the Contractor incl. annexes

4. PRINCIPLES OF COOPERATION

Article 4.1 Reporting

Article 4.1.1 Daily reports (documentation of activities)

The Contractor shall inform the Client at regular intervals about the status of the drilling works under this Contract. Unless otherwise agreed, the Contractor shall prepare daily reports in the form provided by the Client and submit these on the following working day (until 10:00 am) to the Mining Engineer of the Client. The daily reports shall contain the work including the time spent for the execution of works as well as all important observations and occurrences appeared during drilling and construction works as well as potential deviations from the drilling works programme.

The Client or the Mining Engineer shall confirm the work carried out by signing the daily reports and return these to the Contractor not later than on the following working day.

Article 4.1.2 Information about correspondence

The Client shall be promptly informed about the essential correspondence relating to the execution of the drilling and construction works.

Article 4.1.3 Special incidents

In case of special incidents, including labour accidents, the Contractor shall forthwith notify in writing the Client about such incident.

Article 4.1.4 Data and test results

The Contractor is obliged to provide measured data and related information to the Client allowing informed decisions of the Client´s technical team during realization of the work. The resulting datasets provided in the final report are not considered as confident and can be accessed by public.

Article 4.2 Compliance with the Czech law

The Contractor is obliged to observe all the regulations of the Mining authority in Most (Obvodní báňský úřad), address U Města Chersonu 1429, 434 01 Most and other authorities´ biding statements provided by the Client and to deliver a complete documentation as required according to the applicable regulations according to Czech Law.

Should, after the signature of this Contract, the execution of works not specified under this Contract be required by official orders or by other incidental provisions issued by authorities, the Contractor shall execute these as far as possible in a proper and timely manner as soon as the parties have concluded a written amendment to the Contract including costs of the works.

Article 4.3 Permitting

The Client proclaims that he has obtained all necessary permits and licences needed for execution of the planned works and will provide these to the Contractor.

Article 4.4 Cooperation during technical inspections

The Contractor shall cooperate during the execution of necessary approval and acceptance inspections performed by public authorities, associations, experts and other official representatives including the required material inspections and to provide to the Client, if necessary, documentation and information providing these are related to the execution of the drilling works. To reduce the drilling risks related to the local geology the drilling site should be accessible for the expert team selected by Client and approved by Contractor for assistance in evaluation of the current geological situation.

Article 4.5 Client´s requirements

The Client's requirements shall be observed. The drilling works shall be carried out on the basis of the permit for drilling construction works issued by the Mining authority in Most and in compliance with the approved Drilling works programme (Annex 2 of this Contract) prepared by the Contractor in cooperation with the Mining Engineer.

Article 4.6 Subcontracting

The Client does not allow executing the drilling works with use of a subcontractor. For other services such as cementing, casing or logging a subcontractor is allowed. The Contractor is fully responsible for services provided by its

subcontractors. He is free to choose the subcontractors.

5. CONTRACTOR'S SCOPE OF WORK

Article 5.1 Execution of the work

The drilling works shall be executed in accordance with the Pilot boreholes technical description (Annex 1 of this Contract) and Drilling works programme (Annex 2 of this Contract).

Article 5.2 Drilling rig and equipment

The Contractor shall provide the drilling works with drilling rig equipped in accordance with the offered equipment in the Tender of the Contractor, including:

- All the required technical documentation of this drilling rig and the required layout plan of units on the drilling site,
- The operating materials and wear parts required for the operation of the drilling rig,
- Safety equipment for the drilling rig and the drilling personnel as prescribed by the legal regulations (work clothes, helmet, work shoes, work gloves, protective goggles).

Article 5.3 Drilling personnel

For the execution of the drilling works the Contractor shall appoint suitable personnel in accordance with the list of qualified staff included in the tendering documentation (Tender of the Contractor).

Article 5.4 Shift operation

The drilling works are carried out in single-shift operation, i.e. in a shift of 12 hours per calendar day.
The Contractor, however, is allowed to carry out works in double-shift operation, i.e. 24 hours prior to written approval by the Client, providing this will not disrupt legal or hygienical norms (especially noise level during the night time).

Article 5.5 Modifications to this Contract

5.1.1 This Contract can be modified:

a) by an agreed upon change report in cases where such modification does not represent an increase in price of the work (e.g. less work) or deadlines; in such cases, the amendment to this Contract shall be concluded until the end of the calendar month or before handing over the work, or
b) by concluding an Amendment to this Contract in other cases

5.1.2 The Contractor is obliged to draw up change report in case of every modification of:

c) the scope of the Contract,
d) the price of the drilling works, or
e) the deadline for completion of the drilling works.

5.1.3 The Client shall draw up the amendment to this Contract on the basis of an agreed upon change report, should the Parties not agree upon otherwise.

5.1.4 Change reports drawn up by the Contractor shall include following:

a. brief but accurate technical description of the modifications on the work,
b. brief but accurate statement of changes in assessment,
c. proposition on increase or decrease of the price of the work,
d. impact of the modification on the work schedule.

6. DRILLING SITE

The Client shall provide to the Contractor free of charge:

Article 6.1 Suitable drilling site

The Client provides a suitable drilling site including the access road and sufficient parking space. The Client shall ensure that the drilling site including the access routes, necessary for the execution of works, are available on time. He shall also be responsible for the constructional maintenance of the drilling site, access road, the cleaning of the access road and winter service for the access road to and the bypass of the drilling site.

The same is applicable to the laydown yard.

The Client shall provide to the Contractor the planning documents for the drilling site and the access road,

created on the basis of Client's requirements.

The Contractor declares and confirms by signature of this Contract that he has checked out the drilling site and approved this as fully suitable for execution of the intended drilling works. Any further adjustments of the drilling site are responsibility of the Contractor and must be approved by the Client.

Article 6.2 Power supply

Electricity is supplied by the Contractor through a mobile generator set. The distribution of electricity on the well site for itself and its subcontractors is the responsibility of the Contractor.

Article 6.3 Water supply

6.3.1 Water (non-drinkable water) for the water tanks will be provided by tankers of the Town of Litoměřice´ Technical Services in cooperation with the Client according to the Contractor's requirements for the execution of drilling works. The Contractor shall be responsible for a proper installation of the water tanks and distribution lines on the drilling site. The costs for the water supply will be covered by the Contractor.

Article 6.4 Use of the drilling site

The Contractor shall be responsible that no land, which goes beyond the area allocated by the Client, will be used without consent of the landowner and/or the Client.

Article 6.5 Fencing of the drilling site

Unless otherwise stipulated, it shall be the responsibility of the Client to provide for the fencing of the drilling site as required under the applicable laws. However, the Client is not responsible for any damage or any loss of the property of Contractor. The costs of the fencing will be covered by the Contractor.

7. WORK MATERIALS

Article 7.1

Should the Contractor provide materials on the basis of this Contract, the Client shall only be allowed to demand quality proofs and certificates for such materials provided that this has been contractually agreed upon in advance.

Article 7.2

The Contractor shall supply and use only such hazardous substances, for which there are respective operating instructions available as required by the Ordinance on Hazardous Substances. The Contractor shall be responsible for appropriate storage and appropriate use of such substances and unless otherwise stipulated shall apply for and obtain necessary approvals.

Article 7.3

The contractor is obliged to follow instructions of the Mining Engineer and fulfil requirements stated in the drilling permit and related legal standards regarding hazardous substances management.

Article 7.4 Logging tools

The Client does not have any material responsibility for any instruments used by the subcontracting company (e.g. logging tools damage etc.)

8. WASTE DISPOSAL

Article 8.1

The waste disposal management will be described in the drilling works programme and must comply with the requirements of the Mining engineer and local authorities. It is obligation of the Contractor to secure all waste is properly treated and disposed.

A special attention needs to be paid to the chemicals (used oil, fuel, lubrication, polymere mud etc.) used during drilling works as they might require special treatment and supervision by the authorities.

The Client will provide assistance to the Contractor with waste disposal in cooperation with the Town of Litoměřice.

Article 8.2 Waste water disposal

The waste water disposal will be secured by the Client according to the requirements of the Contractor according to the description in the drilling works programme and approved by the Mining Engineer. The costs

of the waste water disposal will be covered by the Contractor.

Article 8.3
The proper disposal of household waste of the Contractor on the drilling site shall be the responsibility of the Client. He shall provide a suitable container and storage tank with a respective emptying thereof. The costs for the supply, emptying and disposal of the waste container will be covered by the Contractor.

9. LABOUR SAFETY

Article 9.1 Instructions
The Contractor shall carry out the drilling works under this Contract according to the health and safety (HSE) programme included in the drilling works programme provided by the Contractor and approved by the Mining Engineer, as well as the Client's instructions. Should the Contractor have concerns against the Client's or Mining Engineer´s instructions, as for example due to safety related reasons, the instructions of the Client/Mining Engineer to the Contractor shall be treated as binding only provided that they have been given in writing. In this case the Client shall bear the full risk.
The Client has the right to access the drilling site to make HSE inspection at anytime without prior notice.

Article 9.2 Access to the drilling site by third party
9.2.1 The access of the drilling site to persons, neither working for the Client or the Contractor nor for any third party employed thereby, shall only be permitted provided that the Client has given a written consent therefor. The access to and visit of the drilling site shall take place only accompanied by an employee of the Contractor due to safety-related reasons.

9.2.2 The rights of the respective State Mining Authority shall not be affected.

9.2.3 Authorized representatives of the Client shall be entitled to access the drilling site anytime; they can also bring visitors with them. Employees of Contractor's competitor-companies shall only be allowed to access the drilling site provided there is an explicit written consent of the Contractor therefor.

9.2.4 The Contractor shall ensure that visitors are equipped with the required protective gear (helmets etc.) and that the protective gear is worn properly. The protective gear is to be provided by the Client. Before accessing the drilling site, visitors shall be briefed about the safety regulations (smoking ban etc.). The access to parts of the drilling rig or the drilling site can be denied by the Contractor without giving any reasons.

Article 9.3 Alarm and fire safety plan
The Contractor is obliged to create, in coordination with the Client and Mining Engineer, an alarm and fire safety plan as well as a plan for averting oil and gas hazards. The integral part of the plans mentioned above shall be the general emergency plan.

10. MONITORING OF GEOLOGICAL AND HYDROGEOLOGICAL CONDITIONS
The monitoring of geological and hydrogeological conditions, conducted independently and beyond the scope of the logging measurements described in the Drilling works programme, shall be the responsibility of the Client. The Contractor is obliged to allow these experts to conduct necessary monitoring measures providing this will not cause delays of the drilling works or other deviations from the Drilling works programme.

11. ENVIRONMENTAL PROTECTION
The impairment of the environment, landscape and waters shall be limited to the unavoidable extent.
The Contractor is obliged to follow instructions of the Mining Engineer and requirements given in the drilling permit and related legal requirements.

12. EXECUTION DEADLINES

Article 12.1 Drilling programme
The execution deadlines for each of the drilling works phase is provided in the detailed Drilling works programme. The binding timeline is as follows:

- Commencement of the drilling works: **within 10 days** after effective day of the contract
- Drilling, logging and completion of the well 1 & 2: **within 80 days** after effective day of the contract
- Providing final summary report and data interpretation within **30 days** after handover/takeover of the works

Article 12.2 Handover and takeover

The drilling works shall be deemed as finished when the following works have been completed according to this Contract:

- Execution of the well 1 and well 2 in accordance with the Pilot boreholes technical description and Drilling works programme
- Handing over drilling diary and logging report including the table of the measured data,
- Work site demobilisation
- Handover protocol signed by Contracting parties.

Article 12.3. Penalties

In case of the Contractor's failure to comply with any of the deadlines within the binding timeline defined in paragraph 12.1 of this Contract, the Contractor is obliged to pay the Client a contractual penalty of 50€ for each day of delay in meeting specific deadline.

The payment of any contractual penalty under this Contract shall not affect the obligation of the Contractor to compensate the Client for the damage caused by the breach of the contractual obligation to which the contractual penalty relates in full, regardless of the agreed contractual penalty.

13. PAYMENT TERMS

Article 13.1 Price

The Parties hereby agreed that the full price of the drilling works shall be for the:

- **Option 1: 626.508,15 EUR without VAT, i.e. 758.074,86 EUR including VAT**
- **Option 2: 644.893,15 EUR without VAT, i.e. 780.320,71 EUR including VAT**.

The price has been agreed as full and final for the offered works and services.

Article 13.2 Payment

The Client does not provide advances. The Client shall pay the price for the performance of the drilling works in three instalments on the basis of a proper invoice (tax / accounting document) issued by the Contractor after performance of:

- **1. transport and preparation of the drilling rig (i.e. item 1 of the cost sheet - Mobilisation, rig move, demobilisation and materials)**
- **2. drilling of borehole No 1 (i.e. item No 2 of the cost sheet - Borehole 1 - coring)**
- **3. drilling of borehole No 2 (i.e. item No. 3 of the cost sheet - Borehole 2 - air hammer and rotary) + delivery of all documentation, handover and acceptance of the boreholes and site,**

and in any case not earlier than after the appropriate (above) performance has been duly provided by the Contractor and the Client has issued confirmation of acceptance of such performance via the signed handover protocol. Maturity of the invoice shall be 30 days from the date of delivery of the proper invoice to the Client.

Article 13.3 Invoicing

13.3.1 All the invoices shall be verifiable, i.e. they shall be delivered to the Client's accounting office together with the required cost evidences.

13.3.2 The Client shall approve the invoices and in case of any objections notify about this in writing not later than five (5) working days after receiving the invoice. If objections have not been notified on time, decisive shall be its receipt by the Contractor, the invoices shall be deemed as accepted.

13.3.3 Apart from the legal particulars, the invoice has to contain following identification of the project: **Project 101096566 - PUSH-IT**. Annex to the invoice should be a copy of handover protocol signed by the Contract parties.

In case of delay in payment, the Client shall be obliged to pay the default interest at the statutory rate.

14. OFFSET AND RIGHT OF RETENTION

The declaration of the offset or the exercise of rights of retention with and due to counter-claims shall only be

allowed provided that the counter-claims have been stated legally binding and/or provided that the respective other party has accepted them in writing.

15. FORCE MAJEURE

If the work, whether carried out completely or partially, prior to its acceptance is damaged or destroyed due to force majeure, war, riot or other circumstances, objectively unavoidable and beyond the Contractor's control, the Parties hereby undertake to make reasonable efforts to remove the effects of force majeure in order to achieve the purpose of this Contract. The Contracting Parties agree that in case of force majeure the Contractor shall be entitled to charge the carried out works according to the Cost sheet provided in the Tender of the Contractor.

The execution deadlines shall be extended by the time of hindrance caused by force majeure.

In case of force majeure every party affected is obliged to promptly with all technically possible and economically acceptable means to ensure that the conditions for the fulfilment of the Contract are restored.

16. ACCEPTANCE

The handover of the drilling site shall take place "clean-swept and completely cleared". The Contractor shall be responsible for the elimination of damages to the well site, parking areas, access roads and other areas, unless through gross negligence.

The Contractor is obliged to return the drilling site free from defects and cleared.

17. SANCTIONS AND LIABILITY FOR DAMAGE

Unless otherwise agreed under this Contract, the parties shall be liable according to the legal regulations.

The Contractor undertakes to compensate the Client and / or the Town of Litoměřice for any damage caused by performing activities contrary to the Contract and / or generally binding regulations, including damages in the amount of a fine or other sanction imposed on the Client or the Town of Litoměřice for breach of obligations by the competent Mining authority or other public authorities.

Article 17.1 Geological risks

The Contractor proclaims that he has read all materials provided by the Client related to the geological conditions of the drilling site and has adopted adequate measures to eliminated potential geological risks during the drilling works.

Both parties proclaim they are aware that some residual or unexpected geological risks may occur during execution of the drilling works that might negatively affect the drilling and completion of the wells. In such a case, technical teams of the Contractor and the Client shall negotiate and suggest solutions that will be approved in writing by the Contractor´s and Client´s official representatives.

It is responsibility of the Contractor to provide a detailed risk assessment as part of the Drilling works programme and indicate these risks and measures taken in case of their occurrence. The risk assessment must be approved by the Mining engineer and the Client prior to the execution of the drilling works.

The Contractor is aware that the Client cannot bear any responsibility for potential damage of the equipment (e.g. lost in the hole etc.) associated with the geological risks.
In case geological conditions in any borehole do not allow to perform full logging campaign as described in the Drilling works programme, both parties will co-operate to define the possible and safe set of measurements. The non-performed measurements will not be paid.

18. INSURANCE

The Contractor undertakes to maintain the following insurances for the duration of works under this Contract and when requested to provide to the Client the evidence thereof:

- Business liability insurance for damage to property, persons and financial damages including environmental damages with a cover-age amount of not less than 5.000.000 CZK per damage and insurance year; with a Contractor's participation of no more than 10%; the Contractor is obliged to prove the existence of the insurance at the request of the Client within no more than 3 working days.
- Machine failure insurance;

19. CONFIDENTIALITY

Article 19.1 Information

The parties undertake to handle all and any information, received from the other party within the scope of contractual relations or the execution of this Contract and which is not in the public knowledge, currently and in the future strictly confidentially. However, this is not applicable to the scientific data and information.

Article 19.2 Documents

The documents provided from one party to another party shall remain the property of the providing party. They must not be disclosed to third parties with the exception when third companies have been involved with the consent of the Client and obliged to confidential handling thereof.

Article 19.3 Advertising

Advertising on the drilling site shall be allowed with a prior written approval of the Client.

Shall the adverts (posters, banners et.) be displayed and mounted on the premises that are not in the ownership of the Client, prior written approval must be obtained from the respective owner.

Article 19.4 Publicity

Both parties are aware that publicity such as press release or newspaper articles is an integral part of the funding programme Horizon Europe and thus need to be allowed by the Contractor.

20. TERMINATION

- The Contractor is entitled to withdraw from the Contract solely for the reasons and under the conditions stipulated by Act No. 89/2012 Coll. However, the Contractor is not entitled to withdraw due to delay with the provision of the necessary cooperation by the Client or the Town of Litoměřice

- When one of the parties ceases its payments or the opening of an insolvency process is initiated.

21. FINAL PROVISIONS

Article 21.1 Written form

Changes in the Contract shall require a written form in order to be effective.

Article 21.2 Dispute Resolution

If a dispute arises between the Client and the Contractor in connection with or arising out of the Contract or the work then the Parties agree to use all reasonable measures to resolve such dispute amicably, expeditiously and in good faith. In the event that a dispute cannot be resolved by discussion between the Client designated representative and the Contractor designated representative within 24 hours of its first occurrence then such dispute shall be resolved by the dispute being dealt with through an agreed framework of resolution, being the CEO's of the Client and the Contractor.

Article 21.3 Severability clause

Should any provision under this Contract be or become completely or partially ineffective this shall not affect the validity of other provisions. The parties will act to replace the ineffective provision as soon as possible with another effective provision, which in terms of content is close to the ineffective provision.

Article 21.4 Mining Engineer

The Client hereby orders and pays the services of the Mining Engineer according to the quotation provided in the Invitation to tender and the procurement documents.

Article 21.5 Miscellaneous

The Parties declare that they have read the content of this Contract before signing it, that it was concluded after mutual consultation according to their true and free will, certainly, seriously and understandably, not in distress or under grossly disadvantageous conditions. The authenticity of this contract is confirmed by their signature.

The Contract is made in two counterparts, each of which will be received by the Parties.

This Contract shall enter into force upon a signature by all Parties. This Contract shall enter into effect upon publication of the Contract pursuant to the Act No. 340/2015 Sb. Such publication shall be made by the

Client.

Signature of the Contractor

In Uherský Ostroh 19.01.2024

[redacted]

managing director

Signature of the Client

In Prague 9.1.2024

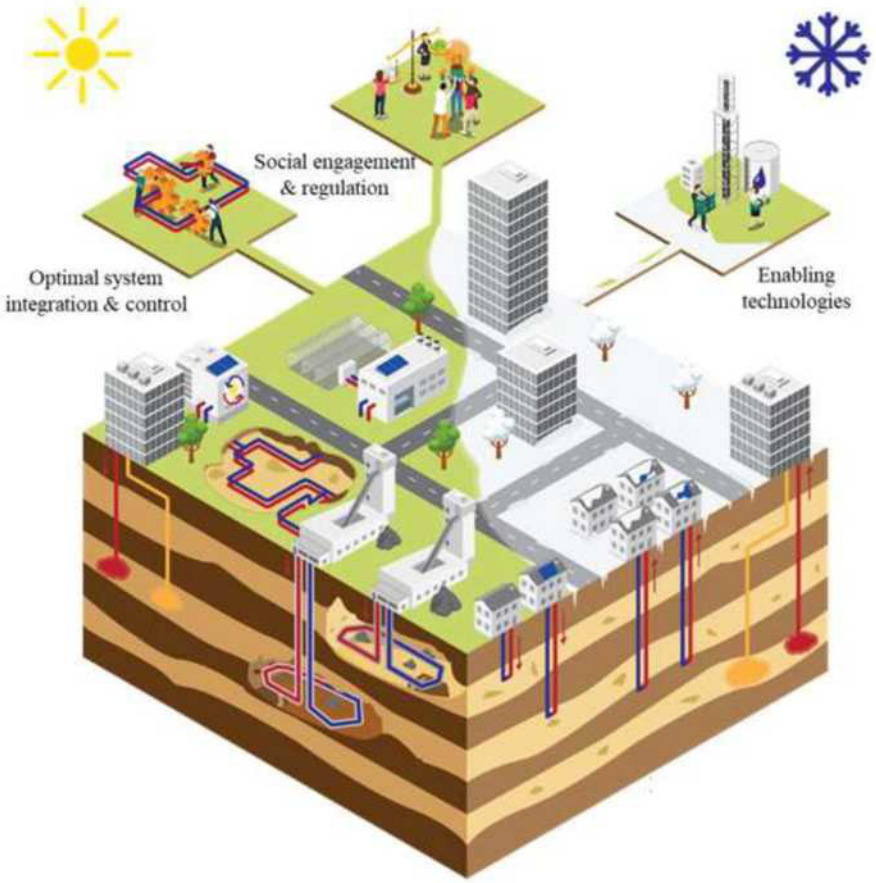
[redacted]

List of Annexes:

- Annex 1 of the Contract: Pilot boreholes technical description (Annex No 7 of the tendering documentation)
- Annex 2 of the Contract: Drilling works programme

PUSH-IT

Annex No 1 - Pilot boreholes technical description (Annex No 7 of the tendering documentation)



Introduction

This is the Request for Quotation (RFQ) for the drilling of two wells in Litomerice, the Czech Republic.

The document is structured as follows:

- Geological background information
- Technical description of the wells to be drilled
- Request for technical input from the interested party
- Request for QHSE (Quality, Health, Safety and Environment) input from the interested party
- Request for commercial input from the interested party - see annex "Vyzva_Priloha_08_Cost-sheet_NEW" for more information

It is essential to fill in the requested technical as well as the commercial information for the offer to be accepted and evaluated.

We would like to thank you in advance for your interest.

The provision of the requested technical and commercial information is free of charge for the requesting party and the acceptance of the requested information for evaluation is in no way binding to the award of the planned work.

Geological Background Information /1/

The drilling site is located in the brown field area of the former barracks in Litoměřice town, c. 50 km NW of Prague, Czech Republic. The requested wells are localized in a relatively well-known geological environment, which is constrained from several nearby boreholes.

The wells will reach only sedimentary cover sequences, which have been documented from cuttings in the nearby (c. 100 m) 2.1 km deep well PVGT-LT-1. The top part of the stratigraphic column is relevant also for the requested wells and is shown in Fig. 1. The topmost c. 25 m are anthropogenic and Quaternary sediments (fill, gravel, loess). Cretaceous sediments are expected to the depth of c. 180 - 190 m, Turonian, mainly marine, marlstones, limy siltstones and sandstones in the interval 25 - 141 m and Cenomanian mainly well-sorted sandstones to fine-grained conglomerates (possibly also poorly consolidated) with minor claystones (potentially with cm-scale horizons of organic matter) in the interval 141 – 190 m. Below c. 190 m, the formation consists of continental Permian-Carboniferous strata formed by alternating claystones and siltstones intercalated by polymict sandstones and conglomerates (claystones probably prevailing over sandstones). The site is in the vicinity of the Tertiary volcanic complex (foidites, trachytes and trachytic basalts), which implies that small scale dykes or sills may be encountered in the requested wells, however they were not reported in any nearby offset well, so the probability of encountering them is low.

While detailed lithostratigraphic description of the Cretaceous in the cored well nearby (J-874712, c. 300-400 m, NE) can be provided upon request, detailed lithological description of the Carboniferous is relatively unknown in the area and is constrained only by PVGT-LT-1 cuttings and from cored Brňany deep well c. 6 km south (Brňany lithological profile can be provided upon request).

The above mentioned boundaries of individual strata (shown in Fig. 1) are considered appropriate for the requested wells as the bedding is generally horizontal. The uncertainties are estimated to be between 10-40 m due to possible occurrence of relatively small-scale faults.

From the hydrogeological point of view, the most important is the Cenomanian (c. 150 – 180 m) aquifer A. Its water table is currently confined up to c. 21 m below surface. The overlying Turonian fractured aquifer is hydraulically connected to the basal Cenomanian aquifer. Because of the intensely developed fracture network in the Turonian sediments, some Turonian strata can be hydraulically connected with the Cenomanian, and thus, water inflow can sometimes be encountered well above the Turonian-Cenomanian sedimentary boundary. The hydrogeological wells in the area provide from 10 – 30 l/s with filtration coefficient $2x10^{-6}$ – $1x10^{-5}$ m/s. Permeability and flow would be beneficial to identify. The Cenomanian aquifer is the most significant in terms of the expected flow, and therefore has priority.

The Permian-Carboniferous strata have relatively low permeability and are considered as hydrogeological insulants. However, heterogeneously developed fractures may locally increase its permeability which is generally unknown in the area.

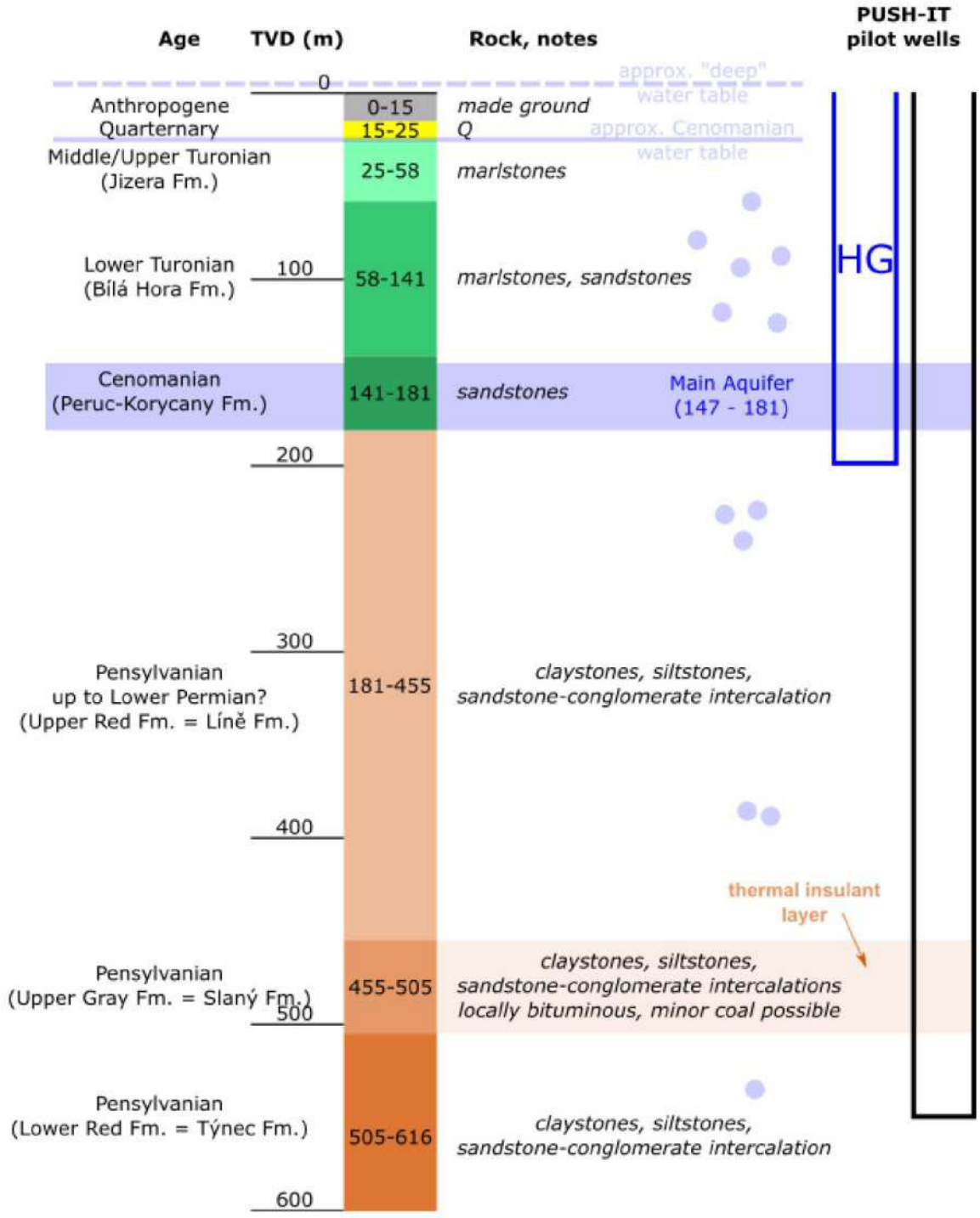


Figure 1 Relevant geological Profile from Well GTPVLT-1

Technical Description of the wells to be drilled

Well #1 Option 1 - NO CASING

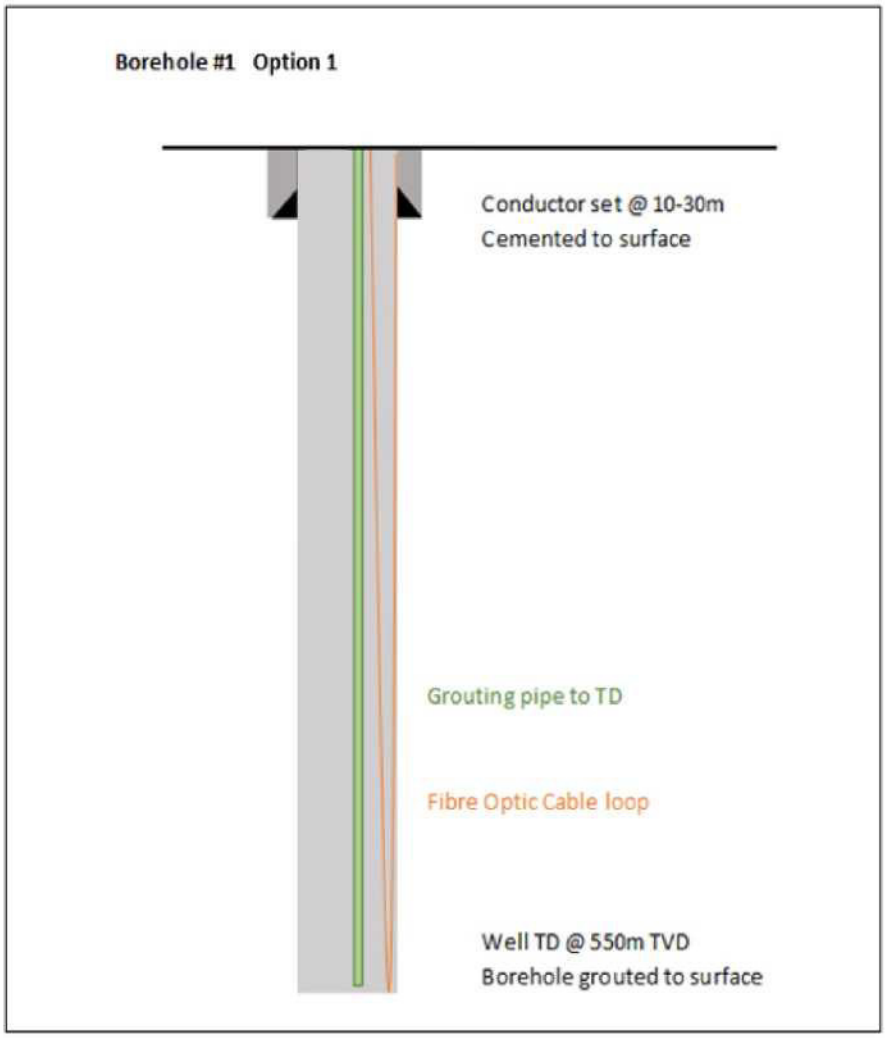


Figure 2 Diagram of Well #1 - Option 1

Well #1 Option 2

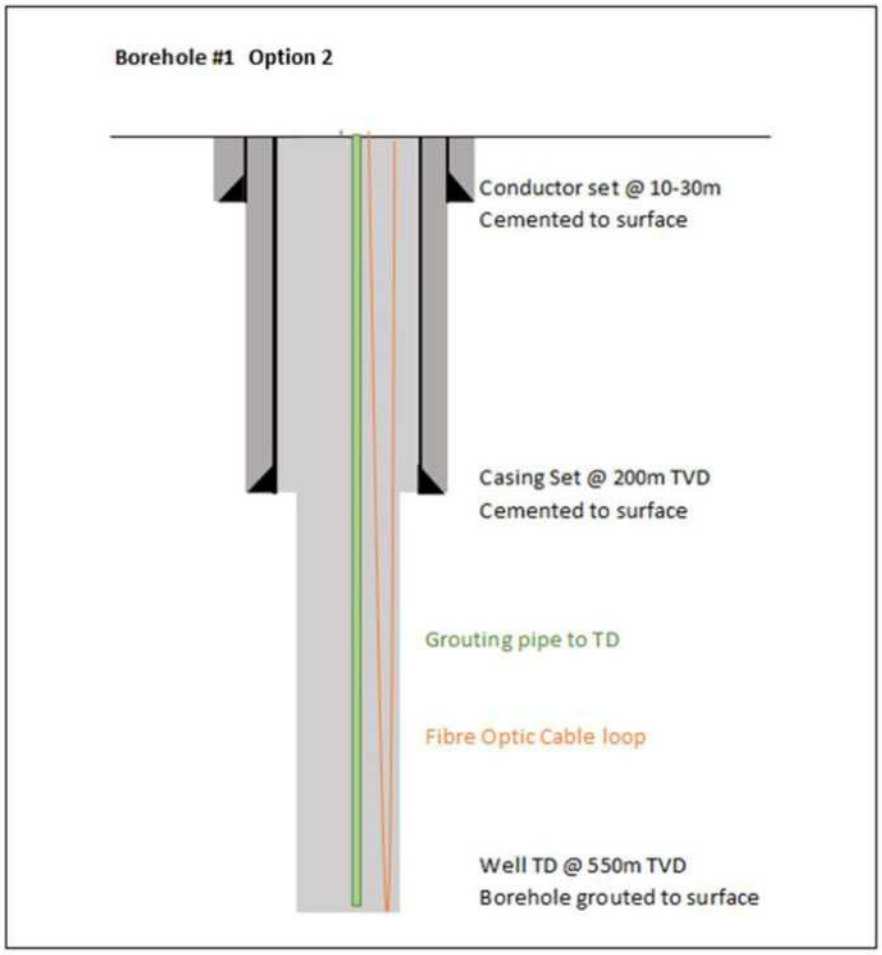


Figure 3 Diagram of Well #1 - Option 2

NB: Casing set at 200m is an option in case temporary casing will not be possible to be used.

Requirements on Well #1 - <u>Option 1</u>:

1. Drilling conductor:
    - Optional setting auxiliary casing to 5m
    - Rotary drilling to 30m
    - Run in and cement stand pipe (type welded casing)
    - Pulling auxiliary casing
2. Coring Requirements:
    - Core from 30m to TD
    - Minimum Core OD of 2in
    - Coring efficiency min. 90 % and at the same time, the yield of the drill core must not fall below 50% on an individual section of 3 m length.
3. Logging Requirements from 30m to TD:
    - Well deviation (Inclination / Azimuth) – confirm verticality of the borehole
    - Gamma Ray – measure lithological boundaries
    - Caliper log – measure diameter of the well, only possible in open hole

- Borehole imaging – image of the geological fractures. Preferably Optical borehole imaging (OBI), possible in stable open-hole with clear water. In case of turbid wate, Acoustic borehole imaging (ABI) has to be used. If conditions are optimal, both methods can be applied for their comparison.
- Resistivity logging (resistivity of rocks) – electric resistivity of the different lithologies, only possible in open hole
- Neutron-neutron logging – assessment of porosity
- Full waveform sonic logging – velocity of acoustic waves and geomechanical properties
- Resistivimetry (resistivity of water) combined with pumping test – assessment of permeable layers and groundwater flow

4. Casing/Cementing Requirements:

No casing set at well TD. The complete well will be grouted to surface after running the data acquisition strings.

Please provide a temporary casing (minimum 200m)!

5. Data Acquisition Requirements:
   - Installation of fibre optic cable Single Mode (SM) and Multi Mode (MM) fibre - looped to full depth of well.
   - Grout the fibre optic cables to surface
   - Fibre optic cables to be attached firmly to grouting pipe

Requirements on Well #1 - <u>Option 2</u>:

1. Drilling conductor:
   - Optional setting auxiliary casing to 5m
   - Rotary drilling to 30m
   - Run in and cement stand pipe (type welded casing)
   - Pulling auxiliary casing
2. Coring Requirements:
   - Core from 30m to TD
   - Minimum Core OD of 2in
   - Coring efficiency min. 90 % and at the same time, the yield of the drill core must not fall below 50% on an individual section of 3 m length.
3. Logging Requirements from 30m to TD (some of the methods may be applicable from 200m to TD according to the casing material, specified for each method below):
   - Well deviation (Inclination / Azimuth) – confirm verticality of the borehole, possible in open-hole or plastic casing (steel casing = only inclination is measurable)
   - Gamma Ray – measure lithological boundaries, possible in open-hole and all casing types
   - Caliper log – measure diameter of the well, possible only in open hole. In plastic casing can be replaced by ABI, in steel casing by Density logging.
   - Borehole imaging – image of the geological fractures. Preferably Optical borehole imaging (OBI), possible in stable open-hole with clear water. In case of turbid water Acoustic borehole imaging (ABI) has to be used (also possible in centred plastic casing). If conditions are optimal both methods can be applied for their comparison.

- Resistivity logging (resistivity of rocks) – resistivity of the different lithologies (only possible in open-hole, optionally Induction loggingin case of plastic casing)
- Neutron-neutron logging – assessment of porosity, possible in open-hole and all casing types
- Full waveform sonic logging – velocity of acoustic waves and geomechanical properties, possible in open-hole and plastic casing
- Resistivimetry (resistivity of water) combined with pumping test – assessment of porous layers and groundwater flow, possible in open-hole or with perforated casing

4. Casing/Cementing Requirements:
    - Set casing @ 200m
    - Minimum requirements
        - Collapse resistance of 139bar / internal yield of 243 bar / API thread casing (e.g. STC/LTC /BTC etc.)
        - (As an example: 7 in, 20,00 ppf, K55, BTC)
        - Minimum casing ID to run the required data acquisition strings (80 mm) at TD and to be able to core till well TD (minimum 2" core OD)
    - Cement to surface (optional)

No casing set at well TD. The complete well will be grouted to surface after running the data acquisition strings.

5. Data Acquisition Requirements:
    - Installation of fibre optic cable Single Mode (SM) and Multi Mode (MM) fibre - looped to full depth of well.
    -
    - Grout the fibre optic cable to surface
    - Fibre optic cable to be attached firmly to grouting pipe

6. Pressure Integrity Requirements:
    - Casing to be centred in conductor

Well #2

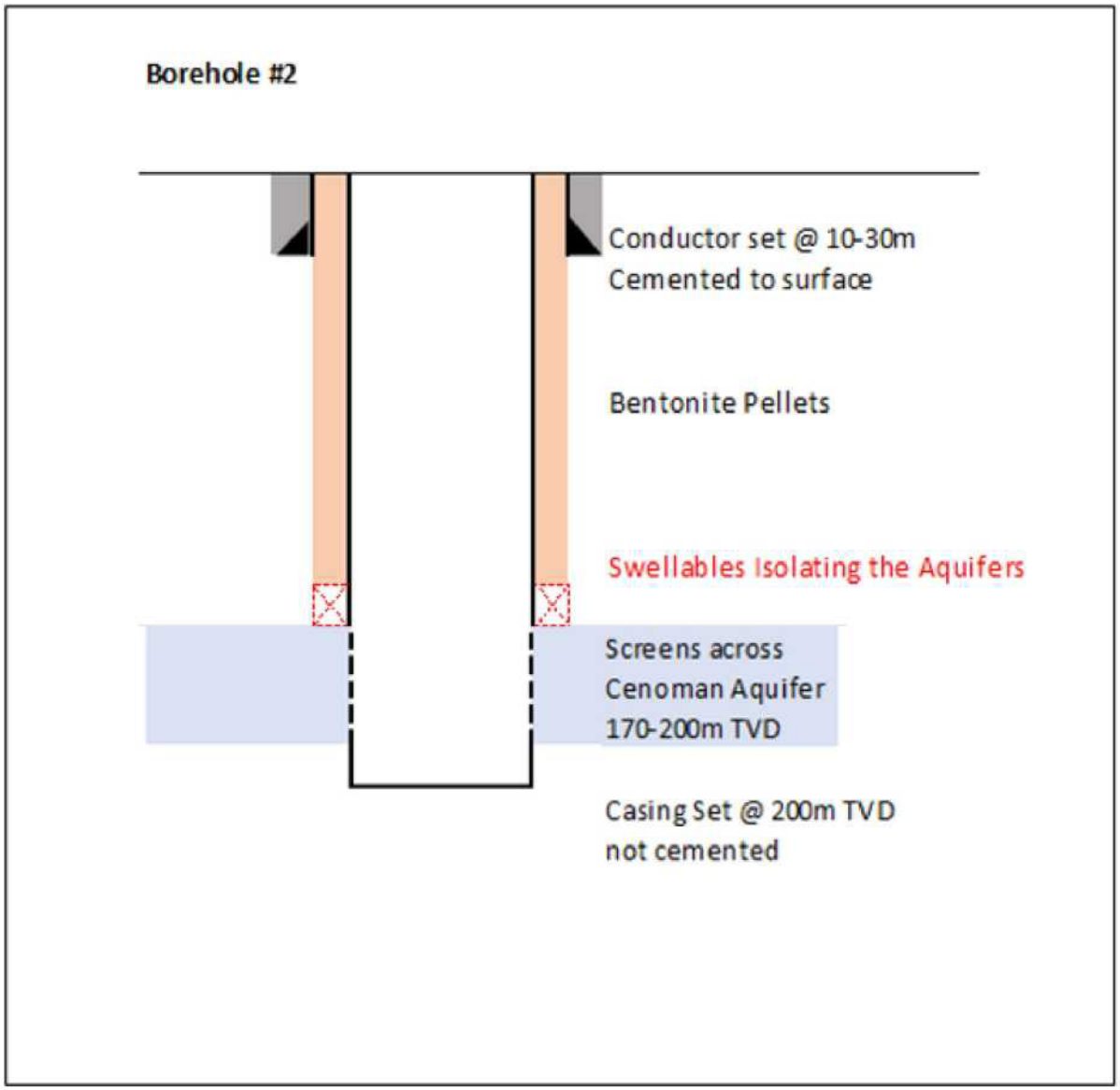


Figure 4 Diagram of Well #2

Requirements on Well #2

1. Drilling conductor:
    - Optional setting auxiliary casing to 5m
    - Rotary drilling to 30m
    - Run in and cement stand pipe (type welded casing)
    - Pulling auxiliary casing
2. Drilling requirement:
    - Air hammer drilling to 200m
    - Optional: Rotary drilling to 200m (in case air hammer drilling is not feasible)
    - Minimum hole ID depends on proposed casing size

3. Coring Requirement:
    - none

4. Logging Requirements from 30m to TD:
    - Well deviation (Inclination / Azimuth) – confirm verticality of the borehole (in steel casing only inclination is measurable)
    - Gamma Ray – measure lithological boundaries
    - Electric–induction logging – resistivity of lithologies (open-hole or plastic casing only)
    - Resistivimetry (resistivity of water) combined with pumping test – assessment of permeable layers and grounwater flow (for the perforated zone)
    - Direction of horizontal flow – optional, if resistivimetry reveals purely horizontal water flow, this method will be applied to assess its direction. Measurable only in plastic casing (for the perforated zone).

5. Casing/Cementing Requirement
    - Set casing @ 200m
    - Min requirements
        - Collapse resistance of 139bar / API thread casing (e.g. STC/LTC /BTC etc.)
        - (As an example: 5in, 11,50ppf, K55, BTC)
        - Minimum ID of 4.33 in (110mm) to grant the running of a pump.
        - Perforate casing between 170 and 200m (perforated interval will be specified according to the location of the aquifer)
        - Sand-free well completion (clean water in the well required)

Aquifer isolation via swellables / filling of annular void above top swellable with Bentonite pellets from surface.

6. Data acquisition requirements
    - none
7. Pressure Integrity Requirements:
    - Casing to be centred in conductor
    - Casing to be equipped with flanged connection, one master valve and one cap
    - Master valve ID to match the casing ID

NB: Please, follow further information on technical aspects of the drilling site and drilling works in the Annex No 10 of the tendering documentation (only in Czech language: Doplnujici_informace).

Technical Input from the interested party

In order to facilitate a technical evaluation of your proposal please describe your drilling unit your drilling experience and the details of your proposal by answering the following questions:

1. Have you drilled and completed similar wells? Provide examples from your track record
2. Provide track record including at least three wells over the last five years with the proposed drilling unit
3. What type of drilling unit shall be provided? Specify name and type
4. Provide technical specification, manufacture date, date of last overhaul, equipment drawings, layout drawings and full equipment list
5. What type of drilling fluid (mud) shall be provided?
6. Who is the supplier of the drilling fluid (mud)?
7. Proof of track record utilizing such drilling fluid (mud)
8. Specify rheological parameters of chosen drilling fluid (mud)
9. What type of drill bits shall be utilized?
10. Who is the supplier of the drill bits? provide data sheets
11. Who shall conduct the wireline logging?
12. Proof of similar logging runs - Provide example logs of similar borehole sizes
13. Who shall conduct the coring?
14. What coring system (type and size) is provided?
15. Proof of similar coring jobs - Provide example of documentation and recovery rates
16. What screen will be provided? Specify Manufacturer, Size and Mesh
17. What swellables will be provided? Specify Manufacturer, type and pressure rating
18. What casing shall be provided? Provide size, weight, grade, thread and manufacturer.
19. Provide documentation of 3rd party casing inspection
20. Specify provided centralizers – Specify make, type, volume and positioning.
21. Specify provided shoe and float - Type and manufacturer
22. Who shall conduct the cementation?
23. What type of cement is provided (define lead and tail slurry)
24. Proof of track record in cementing similar wells.
25. Who shall supply the grouting?
26. Provide specification of grouting slurry
27. Proof of track record in grouting similar wells
28. What type of fibre optic shall be provided? Specify provider and type
29. What type of geophone shall be provided? Specify provider and type
30. Who shall supply the wellhead, master valves and tree caps? Specify manufacturer and type
31. What type of air hammer is supplied? Specify manufacturer and type
32. Has this drilling unit worked with an air hammer before? Provide proof of same
33. What is your general experience with air hammer drilling? Provide track record

QHSE (Quality, Health, Safety and Environment) input from the interested party

In order to facilitate a QHSE evaluation of your proposal please describe your management system and your procedures by answering the following questions:

1. Provide a copy from your Management System, identifying the technical drilling procedures

2. Provide the incident, accident and Near Miss statistics of the last 24 month
3. Provide the training matrix of your personnel and identify their experience level
4. Provide the organogram of your team for this project - on rig site and in the office
5. Provide a copy from your maintenance system, identifying the continuous work on the proposed drilling unit
6. Provide rotation/work schedule of crews for this project
7. Provide your policy for visitors and third parties working on site during drilling operations, during stand-by and during mobilization/demobilization including requirements for site induction and Personal Protective Equipment

Commercial input from the interested party

The work for two wells shall be awarded as a turnkey contract.

The quoted prices shall include all costs, this includes but is not limited to cost of: Equipment, consumables, materials, labour, Site construction, transportation and fees required to construct the above requested wells.

Please use annex 7 "Vyzva_Priloha_08_Cost-sheet_NEW" to complete cost details.

Technical input - provide answers where relevant	
Question	**Answer**
Technical input - provide answers where relevant	
Technischer Beitrag - geben Sie Antworten, wo es angebracht ist	
1. Have you drilled and completed similar wells? Provide examples from your track record	Yes, references have already been submitted as an attacl the offer
1. Haben Sie ähnliche Brunnen gebohrt und fertiggestellt? Nennen Sie Beispiele aus Ihrer Erfolgsbilanz	Ja, Referenzen sind bereits übermittelt worden als Anlag Angebot
2. Provide track record including at least three wells over the last five years with the proposed drilling unit	Yes, references have already been submitted as an attacl the offer
2. Legen Sie eine Erfolgsbilanz mit mindestens drei Bohrungen in den letzten fünf Jahren mit der vorgeschlagenen Bohreinheit vor	Ja, Referenzen sind bereits übermittelt worden als Anlag Angebot
3. What type of drilling unit shall be provided? Specify name and type	Drilling rig UH 2
3. Welche Art von Bohreinheit soll bereitgestellt werden? Geben Sie Name und Typ an	Bohranlage UH 2
4. Provide technical specification, manufacture date, date of last overhaul, equipment, drawings, layout drawings and full equipment list	All documents have already been submitted
4. Legen Sie die technischen Spezifikationen, das Herstellungsdatum, das Datum der letzten Überholung, die Ausrüstung, Zeichnungen, Grundrisszeichnungen und eine vollständige Ausrüstungsliste vor.	Alle Unterlagen wurden bereits übermittelt
5. What type of drilling fluid (mud) shall be provided?	Water
5. Welche Art von Bohrspülung (Schlamm) ist vorzusehen?	Wasser
6. Who is the supplier of the drilling fluid (mud)?	City of Litomerice
6. Wer ist der Lieferant der Bohrspülung (Mud)?	Stadt Litomerice
7. Proof of track record utilizing such drilling fluid (mud)	Not applicable
7. Nachweis einer Erfolgsbilanz bei der Verwendung dieser Bohrspülung (Schlamm)	entfällt
8. Specify rheological parameters of chosen drilling fluid (mud)	Not applicable
8. Angabe der rheologischen Parameter der gewählten Bohrspülung (Mud)	entfällt
9. What type of drill bits shall be utilized?	Stratacut, Synset core crowns,surface studded diamond c crowns
9. Welche Art von Bohrern soll verwendet werden?	Kernkronen Stratacut, Synset, oberflächen besetzte Diamkernkronen
10. Who is the supplier of the drill bits? provide data sheets	DATC-Group
10. Wer ist der Lieferant der Bohrer? Datenblätter vorlegen	DATC-Deutschland
11. Who shall conduct the wireline logging?	SG Geotechnika
11. Wer soll die Drahtvermessung durchführen?	SG Geotechnika
12. Proof of similar logging runs - Provide example logs of similar borehole sizes	will be provided by the subcontractor
12. Nachweis ähnlicher Logging-Läufe - Legen Sie Beispiel-Logs von ähnlichen Bohrlochgrößen vor	
13. Who shall conduct the coring?	Anger Soehne
13. Wer soll die Kernbohrung durchführen?	Anger Soehne
14. What coring system (type and size) is provided?	Double core tube system with diameter 146mm and 122
14. Welches Kernbohrsystem (Art und Größe) ist vorgesehen?	Doppelkernrohrsystem mit Durchmesser 146mm und 12
15. Proof of similar coring jobs - Provide example of documentation and recovery rates	References have already been submitted as an attachme offer
15. Nachweis ähnlicher Kernbohrungen - Vorlage von Beispielen für die Dokumentation und die Kerngewinnungsraten	Referenzen sind bereits übermittelt worden als Anlage zu Angebot
16. What screen will be provided? Specify Manufacturer, Size and Mesh	PVC filters DN 115 with the sw 1mm are installed in the b 2, manufacturer is Stüwa
16. Welches Filter wird geliefert? Geben Sie Hersteller, Größe und Maschenweite an	Es werden in der Bohrung 2, PVC Filter DN 115 mit der s eingebaut, Hersteller ist Stüwa
17. What swellables will be provided? Specify Manufacturer, type and pressure rating	The swelling material is called Grow-Cem from Heidelber Materials, strength after approx. 1 day is 2 Mpa
17. Welche Quellstoffe werden zur Verfügung gestellt? Geben Sie Hersteller, Typ und Druckstufe an	Der Quellstoff heißt Grow-Cem von Heidelberg Materials Festigkeit nach ca. 1 Tag ist 2 Mpa
18. What casing shall be provided? Provide size, weight, grade, thread and manufacturer.	STÜWA PVC KV solid wall pipe DN 110-4½", 125.0x7.5mn walled, BL: 4.00m, 3,00m, 2,00m, 1,00m trapeziodal weig
18. Welche Verrohrung ist vorzusehen? Geben Sie Größe, Gewicht, Güte, Gewinde und Hersteller an.	STÜWA PVC-KV-Vollwandrohr DN 110-4½", 125,0x7,5mn starkwandig,Bl: 4,00m, 3,00m, 2,00m, 1,00m
19. Provide documentation of 3rd party casing inspection	Not applicable, as no API pipe
19. Dokumentation der Inspektion des Casing durch eine dritte Partei vorlegen	entfällt, da kein API Rohr
20. Specify provided centralizers – Specify make, type, volume and positioning.	Not applicable, as no API pipe
20. Spezifizieren Sie die mitgelieferten Zentralisatoren - Geben Sie Marke, Typ, Volumen und Positionierung an.	
21. Specify provided shoe and float - Type and manufacturer	Not applicable, as no API pipe
21. Angabe des vorgesehenen Schuhs und Schwimmers - Typ und Hersteller	entfällt, da kein API Rohr
22. Who shall conduct the cementation?	Anger Soehne
22. Wer soll die Zementierung durchführen?	Anger Soehne
23. What type of cement is provided (define lead and tail slurry)	Cementation using the contractor method via rods
23. Welche Art von Zement ist vorgesehen (definieren Sie Blei und Tail-Slurry)	Zementation im Kontraktorverfahren über Gestänge
24. Proof of track record in cementing similar wells.	The success rate for cementations using the contractor m 100%, as it is a very simple and straightforward procedur
24. Nachweis einer Erfolgsbilanz bei der Zementierung ähnlicher Bohrlöcher.	Die Erfolgsbilanz bei Zementationen im Kontraktorverfah bei 100 %, da es ein sehr einfaches und überschaubares Verfahren ist.
25. Who shall supply the grouting?	Anger Soehne
25. Wer soll das Zementationsmaterial liefern?	Anger Soehne

26. Provide specification of grouting slurry	Borehole 1 will be filled with the cementation material Cl from Heidelbergzement. All necessary certificates and da sheets can be downloaded from the Heidelbergzement w The 2nd borehole will be cemented with Growcem. This p is also from Heidelbergzement. All named products have water approval.
26. Spezifikationen des Zementmaterials	Das Bohrloch 1 wird mit den Zementationsmaterial CEM Heidelbergzement verfühlt. Alle dafür notwendigen Zerti und Datenblätter können auf der Webseite von Heidelbergzement heruntergeladen werden. Das 2. Bohrl wird mit Growcem zementiert. Das Produkt ist ebenfalls Heidelbergzement. Alle benannten Produkte haben eine Trinkwsserzulassung.
27. Proof of track record in grouting similar wells	references have already been submitted as an attachmer offer
27. Nachweis einer Erfolgsbilanz bei der Injektion ähnlicher Bohrlöcher	Referenzen sind bereits übermittelt worden als Anlage zu Angebot
28. What type of fibre optic shall be provided? Specify provider and type	not relevant
29. What type of geophone shall be provided? Specify provider and type	not relevant
30. Who shall supply the wellhead, master valves and tree caps? Specify manufacturer and type	Anger Soehne
30. Wer soll den Bohrlochkopf, die Hauptventile und die Baumkappen liefern? Geben Sie Hersteller und Typ an	Anger Soehne
31. What type of air hammer is supplied? Specify manufacturer and type	We have two systems to choose from. The decision on w system to use depends on the delivery times of the bits. : system: Manufacturer Rock Hog 8", drill hole diameter fr 254mm; 2nd system: Manufacturer Epiroc QL 80, drill ho diameter from 200-305mm
31. Welche Art von Drucklufthammer wird geliefert? Geben Sie Hersteller und Typ an	Wir haben zwei Systeme zur Auswahl. Die Entscheidung v System zum Einsatz kommt hängt von den Lieferzeiten d ab. 1. System: Hersteller Rock Hog 8", Bohrlochdurchme 200-254mm; 2. System: Hersteller Epiroc QL 80, Bohrlochdurchmesser von 200-305mm
32. Has this drilling unit worked with an air hammer before? Provide proof of same	No, this drill has not yet produced a hammer drill hole. Tl is mainly used for core drilling due to the fast rotating KD our master driller has already drilled several hammer hol is the important experience. The drilling rig is only of sec importance.
32. Hat dieses Bohrgerät schon einmal mit einem Presslufthammer gearbeitet? Legen Sie den entsprechenden Nachweis vor	Dieses Bohrgerät hat noch keine Hammerbohrung herge UH 2 wird vorallem für das Kernbohren eingesetzt, auf Gr schnell drehenden KDK. Aber unser Bohrmeister hat schc mehrere Hammerbohrungen hergestellt, das ist die wich Erfahrung. Das Bohrgerät hat nur sekundäre Bedeutung.
33. What is your general experience with air hammer drilling? Provide track record	provided in the references of the tendering documentati
QHSE - provide answers where relevant	
1. Provide a copy from your Management System, identifying the technical drilling procedures	will be specified in the drilling works programme
1. Legen Sie eine Kopie Ihres Managementsystems vor, aus dem die technischen Bohrverfahren hervorgehen	
2. Provide the incident, accident and Near Miss statistics of the last 24 month	will be specified in the drilling works programme
2. Legen Sie die Statistiken über Zwischenfälle, Unfälle und Beinaheunfälle der letzten 24 Monate vor	
3. Provide the training matrix of your personnel and identify their experience level	will be specified in the drilling works programme
3. Legen Sie die Ausbildungsmatrix Ihrer Mitarbeiter vor und geben Sie deren Erfahrungsstand an	
4. Provide the organogram of your team for this project - on rig site and in the office	will be specified in the drilling works programme
. Erstellen Sie ein Organigramm Ihres Teams für dieses Projekt - auf der Baustelle und im Büro	
5. Provide a copy from your maintenance system, identifying the continuous work on the proposed drilling unit	will be specified in the drilling works programme
5. Legen Sie eine Kopie Ihres Instandhaltungssystems vor, in dem die laufenden Arbeiten an der vorgeschlagenen Bohreinheit aufgeführt sind	
6. Provide rotation/work schedule of crews for this project	will be specified in the drilling works programme
6. Geben Sie einen Rotations-/Arbeitsplan für die Besatzungen für dieses Projekt an	
7. Provide your policy for visitors and third parties working on site during drilling operations, during stand-by and during mobilization/demobilization including requirements for site induction and Personal Protective Equipment	included in the contract

Annex No 2 - Drilling works programme (vrtný program)

Vrt č. 1

- Dodávka zařízení, zařízení staveniště, ustavení / vyrovnání vrtné soupravy
- Dle potřeby: Osazení hrdla vrtu trubkou (cca 220 mm) do hloubky cca 5 m
- Vložení úvodní pažnice (178 mm) do hloubky cca 30 m
- Cementace úvodní pažnice a případné vytažení trubky zajištění hrdla vrtu (220 mm)
- Technologická přestávka - vytvrzení cementu
- Instalace jádrové kolony s 3 m jádrovkou CSK 146 (d=146 mm) do hloubky cca 200 m (do cca 10 m pod zvodní), testování získaného jádra na stabilitu vrtu
- Demontáž jádrové kolony, výměna korunky
- Zajílování cca 10 m od hladiny (pro uzavření zvodnělé vrstvy)
- Přestavba vrtné soupravy (výměna čelisťových vložek) na CP tyče (d=122 mm), přestavba jádrových tyčí na CP
- Instalace jádrové sady CP s jádrovou trubkou 3 m s dovrtáním až na dno a výplach jílu (cca 10 m) ve instalované výpažnici
- Jádrování do maximální hloubky 550 m, testování jader v úseku cca 200-550 m na stabilitu stěny vrtu
- Dle potřeby: Instalace plastového potrubí až do konečné hloubky, pokud bude detekována nestabilní hornina pro provedení geofyzikálních měření
- Při stabilním vrtu demontáž jádrové kolony CP i výpažnice CSK
- V případě nestabilního vrtu demontáž kolony CP se současným vkládáním plastové kolony, jakož i demontáž výpažnice CSK se současným vkládáním plastového potrubí
- Následné geotechnické měření od cca 30 m do konečné hloubky dle požadavků - viz technická specifikace – Pilot_boreholes_technical_desription.

Bude-li nutno z důvodu nestability stěn horniny měření provést v pracovních umělohmotných pažnicích, bude namísto optického skeneru (OBI) použit skener akustický (ABI).
Při obou variantách je počítáno s dobou měření 24 hodin, během nichž se budou osádky / operátoři střídat. V případě technických problémů, jako je uvíznutí a vyprošťování sondy, porucha karotážního přístroje / aparatury atd. bude vyhrazen další čas pro měření.

- Po dokončení všech měření bude provedena instalace cementační kolony (cca 1") spolu s instalací optického kabelu
- Cementace vrtu buď dle možnosti s ponecháním nebo vytažením plastové kolony
- Osazení zhlaví vrtu do skruže s pochůzným víkem

Přemístění vrtné soupravy z vrtu 1 do vrtu 2

Vrt č. 2

Dle potřeby: Osazení hrdla vrtu pomocnou pažnicí (cca 220 mm) do hloubky cca 5 m

- Vložení úvodní pažnice (178 mm) do hloubky cca 30 m
- Cementace úvodní pažnice a vytažení kolony (220 mm)
- Technologická přestávka pro vytvrzení cementu
- Pneumatické vrtání s příklepem do konečné hloubky 200 m
- Volitelně: Rotační vrtání do 200 m (pokud nebude možné vrtání kladivem)
- Provedení následujících měření od cca 30 m do konečné hloubky v otevřeném vrtu: viz technická specifikace – Pilot_borcholes_technical_desription
- Osazení výpažnice do 200 m
  - Minimální vnitřní průměr 4.33 palce (110 mm) pro zapuštění čerpadla.
  - Perforované potrubí mezi cca 170 m a 200 m (interval perforace je určen podle umístění zvodnělé vrstvy)
  - Obsyp a výplach (nutná čistá voda ve studni)
- Izolace zvodně / vyplnění prstencového prostoru filtračním obsypem, zajílování pod a nad zvodnělou vrstvou jílem až po vrchol vrtu
- Vytažení výpažnice a osazení zhlaví do skruže s pochůzným víkem

Česká geologická služba

Schéma vrtání Vrt 1; Litoměřice

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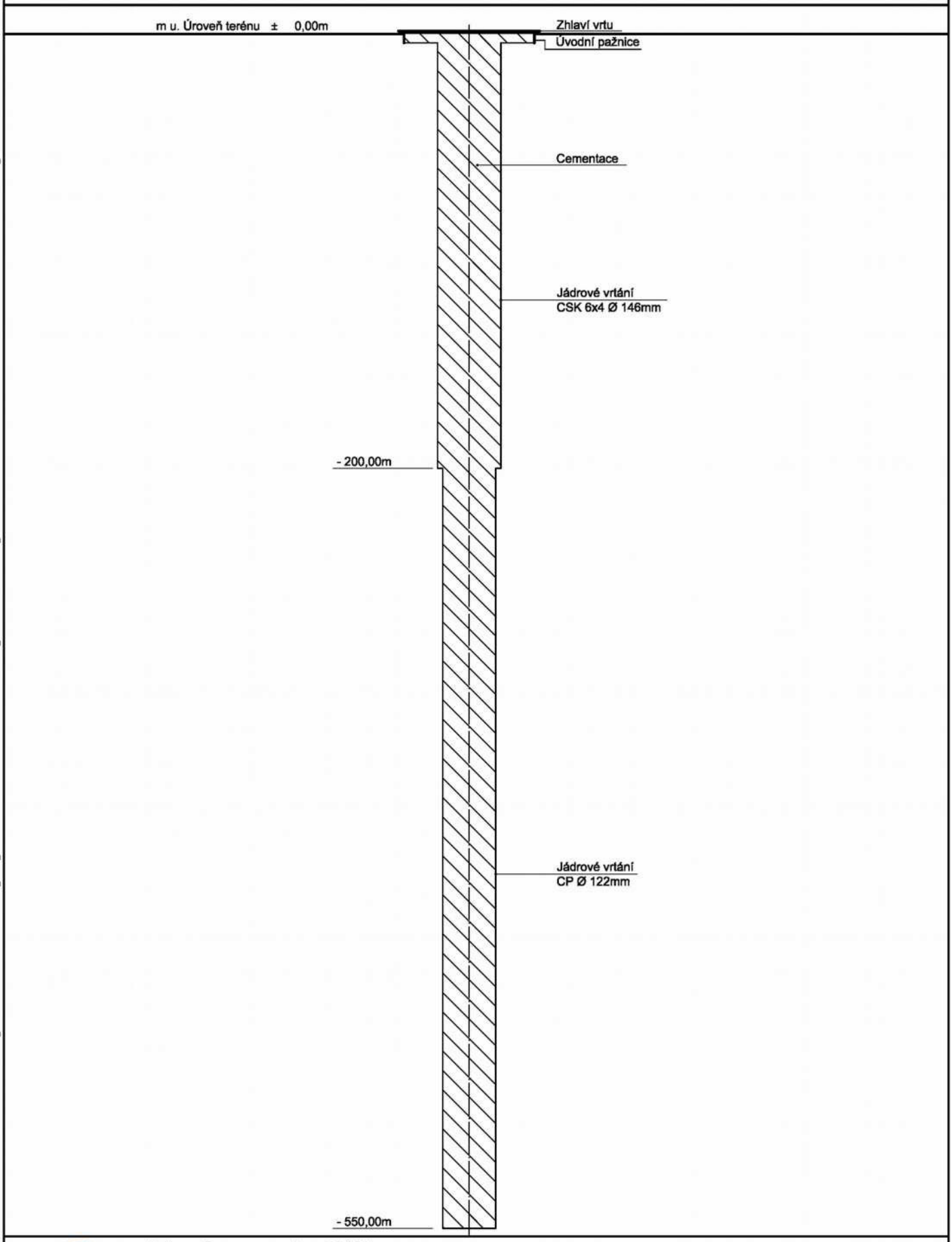

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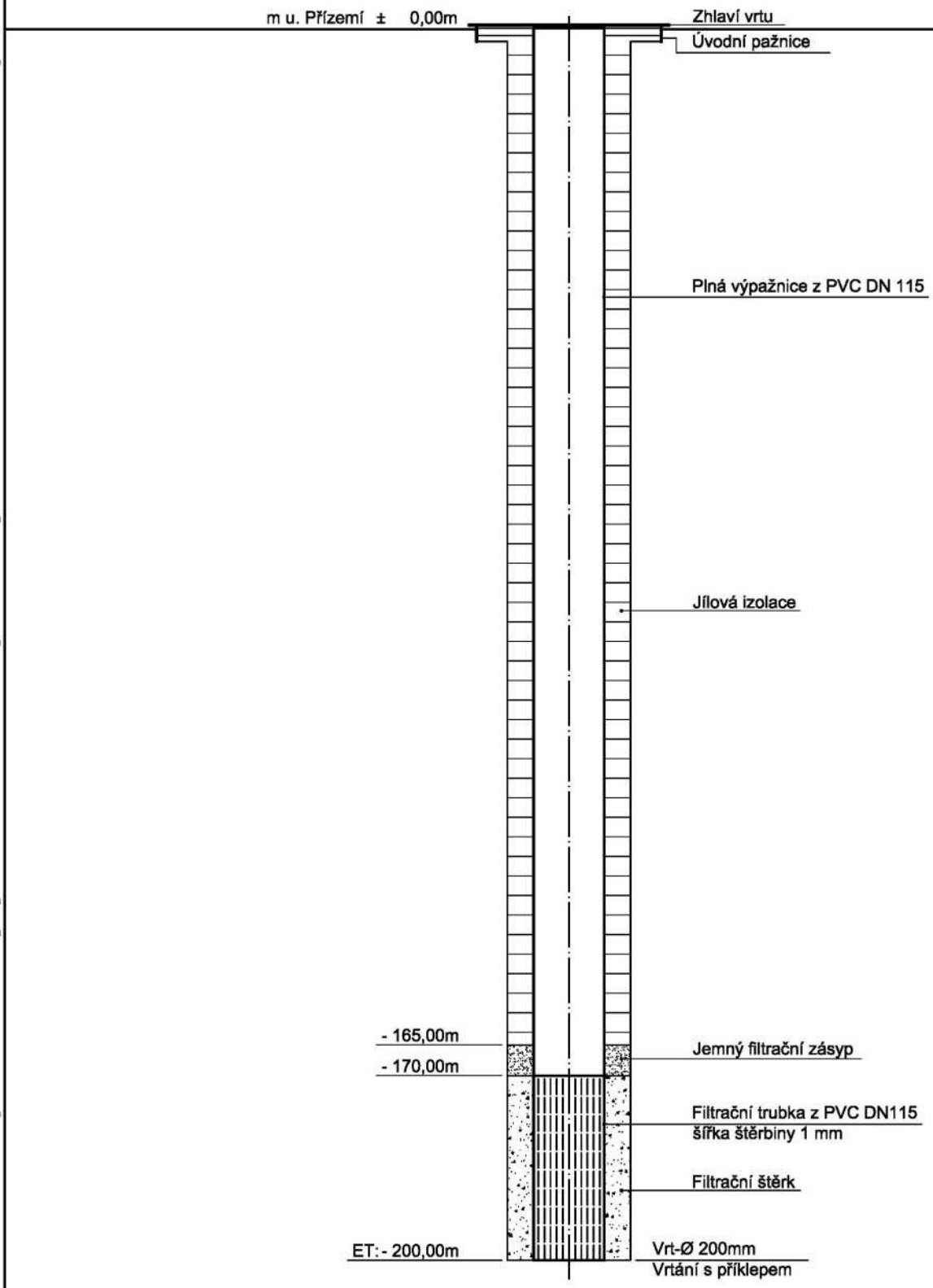
05.01.2024 S. Fey

Zeichnung nach DIN 4943

ohne Maßstab DINA4-Blatt

Česká geologická služba

Schéma vrtání / výstroj Vrt 2; Litoměřice



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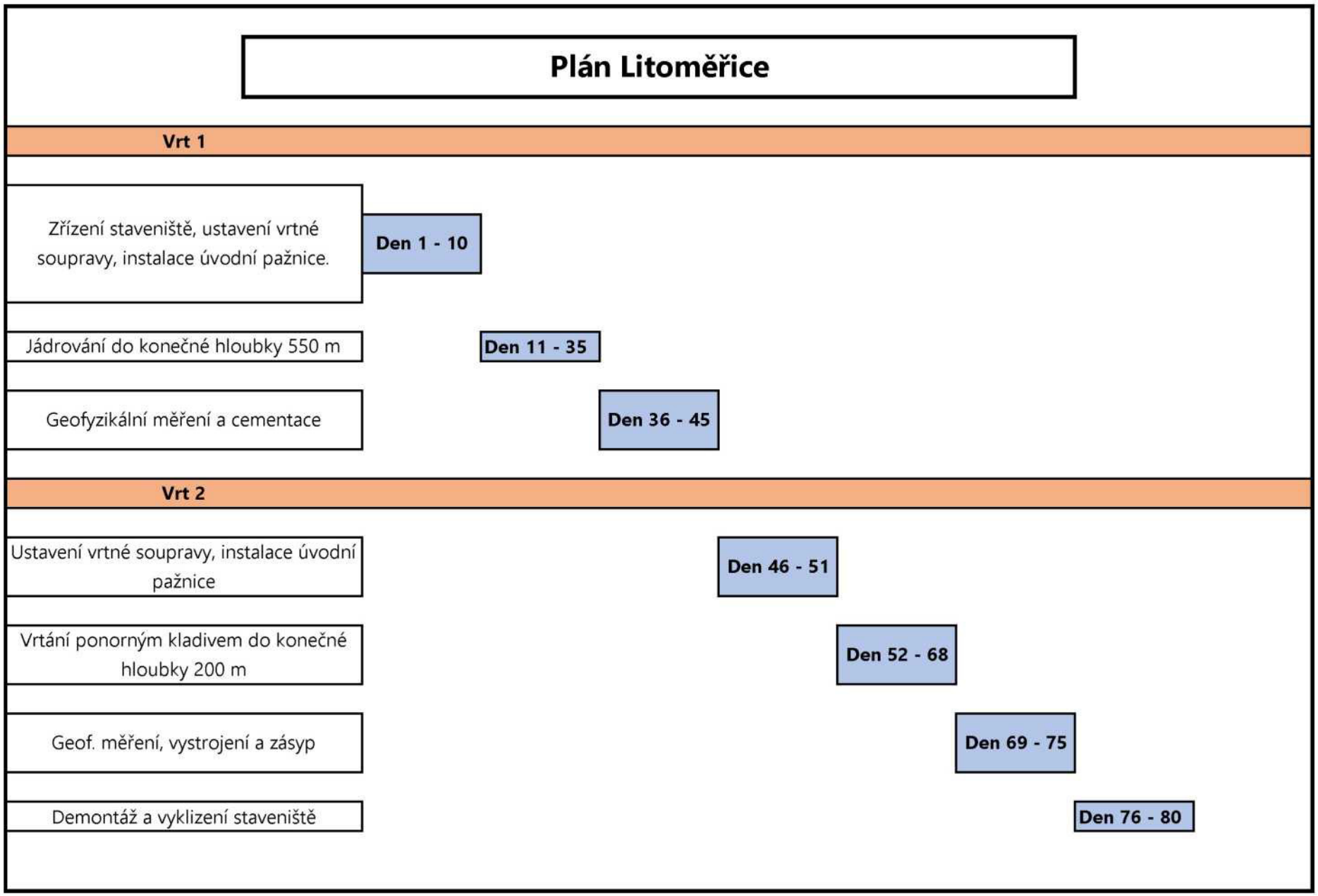
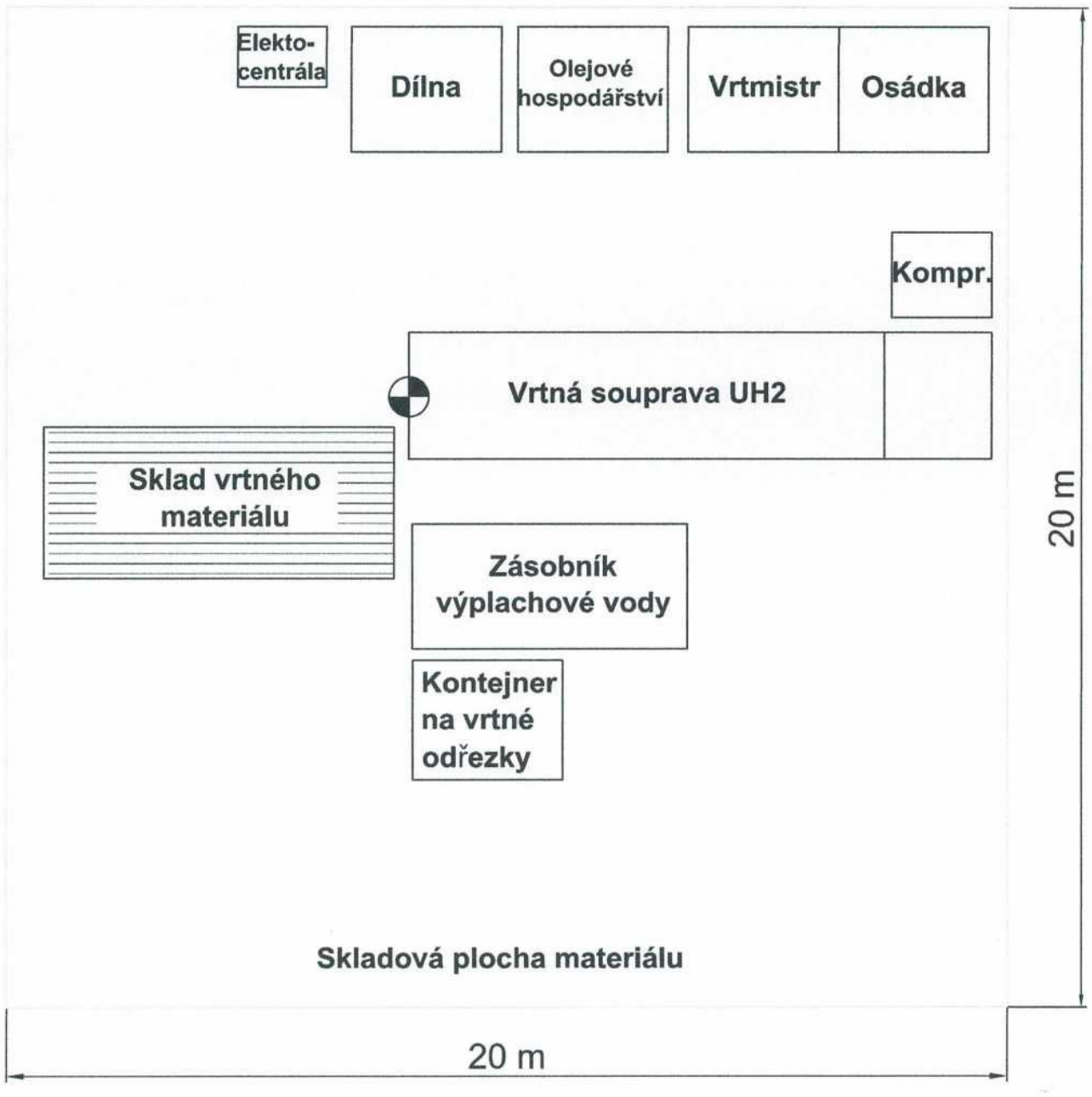
08.01.2024 S. Fey

Zeichnung nach DIN 4943

Maßstab horizontal: 1:10 . vertikal: 1:1000 bei DINA4-Blatt

Plán Litoměřice





	Datum	Name
gezeichnet	05.12.2023	S. Fey
geprüft	05.12.2023	M. Grosser
geändert	11.12.2023	S. Fey

H. Anger's Söhne
Bohr- und Brunnenbauges. mbH
Drilling and Water Well Construction
Gutenbergstraße 33 · 37235 Hess. Lichtenau
T +49 5602 9330-0 · F +49 5602 9330-70
info@angers-soehne.de · angers-soehne.de

Maßstab: o.M.

Vzorový plán uspořádání

UH2

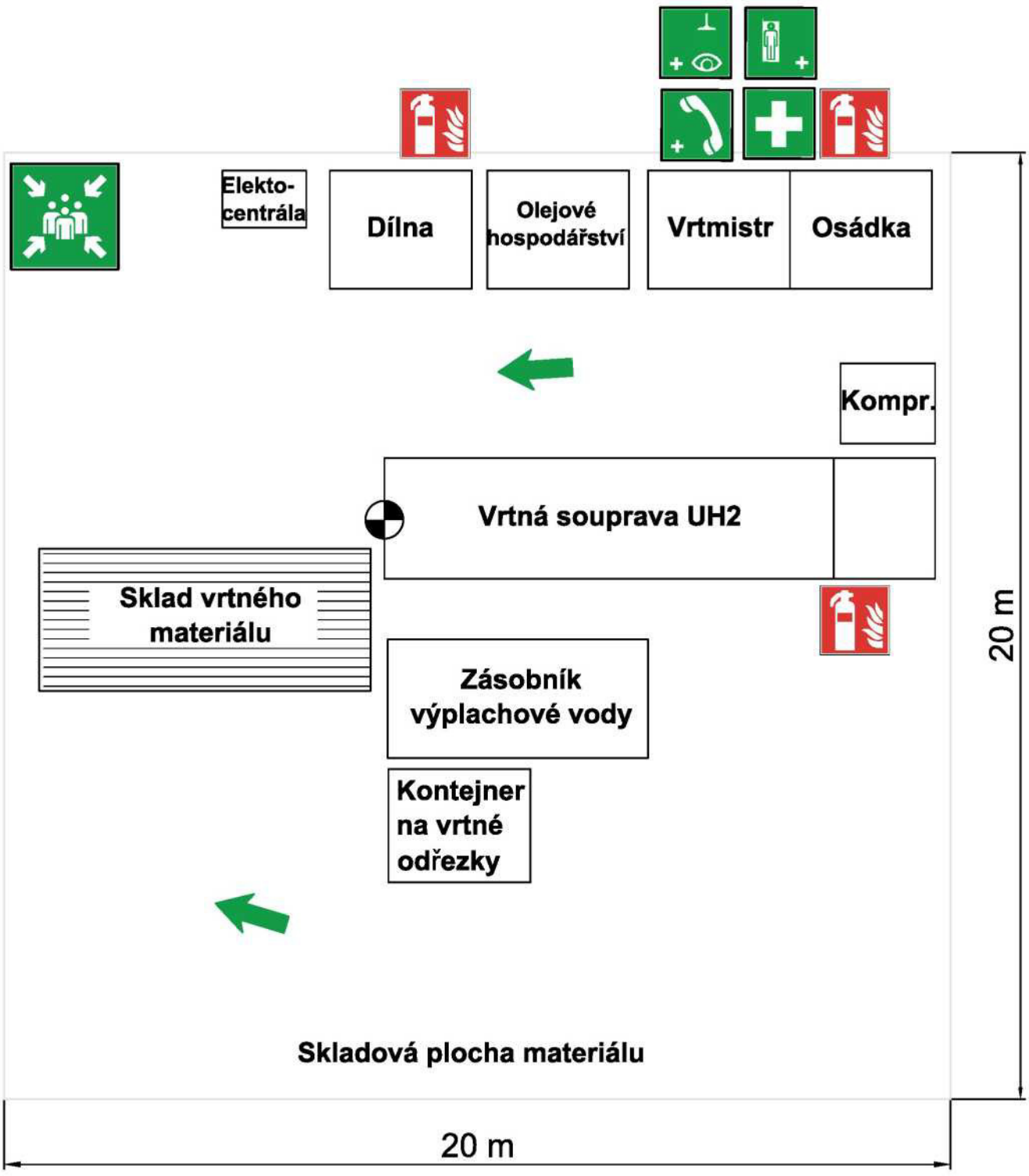
Litoměřice; Česká republika

Zeichng.-Nr.: 1419a_Sk

Betreff: Litoměřice/Tschechien

Kostenstelle:

Schutzvermerk nach DIN34 / ISO 16016 | Plotdatum: 11.12.2023 | Ersatz f.: | Ersetzt d.:



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Plán požární ochrany/úniku a záchrany
UH2
Litoměřice; Česká republika

Zeichng.-Nr.: 1420a_Sk

Betreff: **Litoměřice/Tschechien**

Kostenstelle:

Schutzvermerk nach DIN34 / ISO 16016 | Plotdatum: 11.12.2023 | Ersatz f.: | Ersetzt d.:

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
246721-2017-ASCC-GER-DAkkS

Initial certification date:
28 December 2006

Valid:
25 January 2023 – 28 December 2024

This is to certify that the company

ANGER seit 1863

H. Anger's Söhne Bohr- und Brunnenbau GmbH

Gutenbergstraße 33, 37235 Hessisch Lichtenau, Germany

has implemented an HSE management system in accordance with the standard

SCC^{P}

unrestricted certificate Petrochemicals
according to the certification program "Safety Certificate Contractors – SCC-VAZ 2021".

This certificate is valid for the following scope:

Drilling boreholes
- for reservoir prospecting and exploitational
- for reservoir development
- to gain geothermal energy
- redevelopment and work-over of boreholes for hydrogen and follow-on mining work as well as maintenance of drilling rigs, drilling tools and pumps

Place and date:
Essen, 01 February 2023

DAkkS Deutsche Akkreditierungsstelle D-ZM-18453-01-00

SCC Sicherheits Certifikat Contraktoren

For the issuing office:
DNV - Business Assurance
Wolbeckstr. 25, 45329 Essen, Germany

Thomas Beck / Frank Nicolaus
Management Representative / SCC Coordinator