MEMO

From	Macoura Koné, Manager Environment, B2Gold Nunavut
To	Richard Dwyer, Manager of Licensing, Nunavut Water Board
Cc	Ali Shaikh, Technical Advisor, Nunavut Water Board Sergey Kuflevskiy, Technical Advisor, Nunavut Water Board Dan Gagnon, General Manager, B2Gold Nunavut Jamie Richards, Operations Manager, B2Gold Nunavut
Ref.	Notice of Construction under Parts D of Water License 2AM-BRP1831 (Amendment No.1)
Date	September 10, 2026
Subject	**Rascal Stream East Fishway Design and Construction at Goose Mine Site**

Dear Mr. Dwyer,

Please find attached a technical memo that outlines B2Gold Nunavut's proposal to construct the Rascal Stream East (RSE) Diversion Fishway (Appendix 1). This memo is intended to address each of the requirements of Part D, Item 3 of B2Gold Nunavut's Back River Project Type A Water License (2AM-BRP1831 Amendment No. 1). For ease of review, a concordance table that outlines the regulatory requirements with section to which the information is discussed in the technical memo is provided below.

Table 1- Compliance Requirement Concordance Table

Approval Section	Approval Requirements	Report Sub-section
Part D, Condition 3		
The detailed reports referred to in Part D, Item 2 shall include:		
3a	Design rational, requirements, criteria, parameters, standards analysis, methods, assumptions and limitations;	Sections 3 & 4; Appendix A
3b	Site specific data and analysis to support the design and management decisions;	Section 4
3c	Geochemical analysis of Waste Rock and fill, demonstrating their Acid Rock Drainage and Metal Leaching characteristics;	Section 7 & Appendix D
3d	Construction methods and procedures regarding how infrastructure will be put in place, including quality assurance and quality control measures and equipment to be used;	Sections 4 & 5
3e	Technical specifications for sedimentation, erosion control and bank stabilization measures, including proposed materials, location and extent, place methods and quantities required;	Sections 4, 5 & 6; Appendix B & C
3f	Timetable for submission, including date of Construction and proposed date of commissioning of infrastructure; and	Section 5
3g	Where required, signature and seal of the appropriately qualified Engineer.	Appendix A

We trust that this information meets the requirements to speed up the review and for B2Gold Nunavut to get the Approval needed to construct the RSE Fishway Diversion channel. Should you have any questions, or require additional information, please do not hesitate to contact us.

Sincerely,



Macoura Koné, PhD., PGeol., PGeo.
Manager, Environment
B2Gold Nunavut

APPENDIX 1 TECHNICAL MEMORANDUM

Technical Memo

To:	Macoura Kone
From:	Nina Tolnai, Daniel Mullen, and Curtis VanWerkhoven
Project title	B2Gold Back River Project
Client:	B2Gold Back River Corp.
Project number:	CA0069616.1932-209-TM-Rev0-5000
Subject:	Rascal Stream East Fishway Design
Date:	2026-09-04

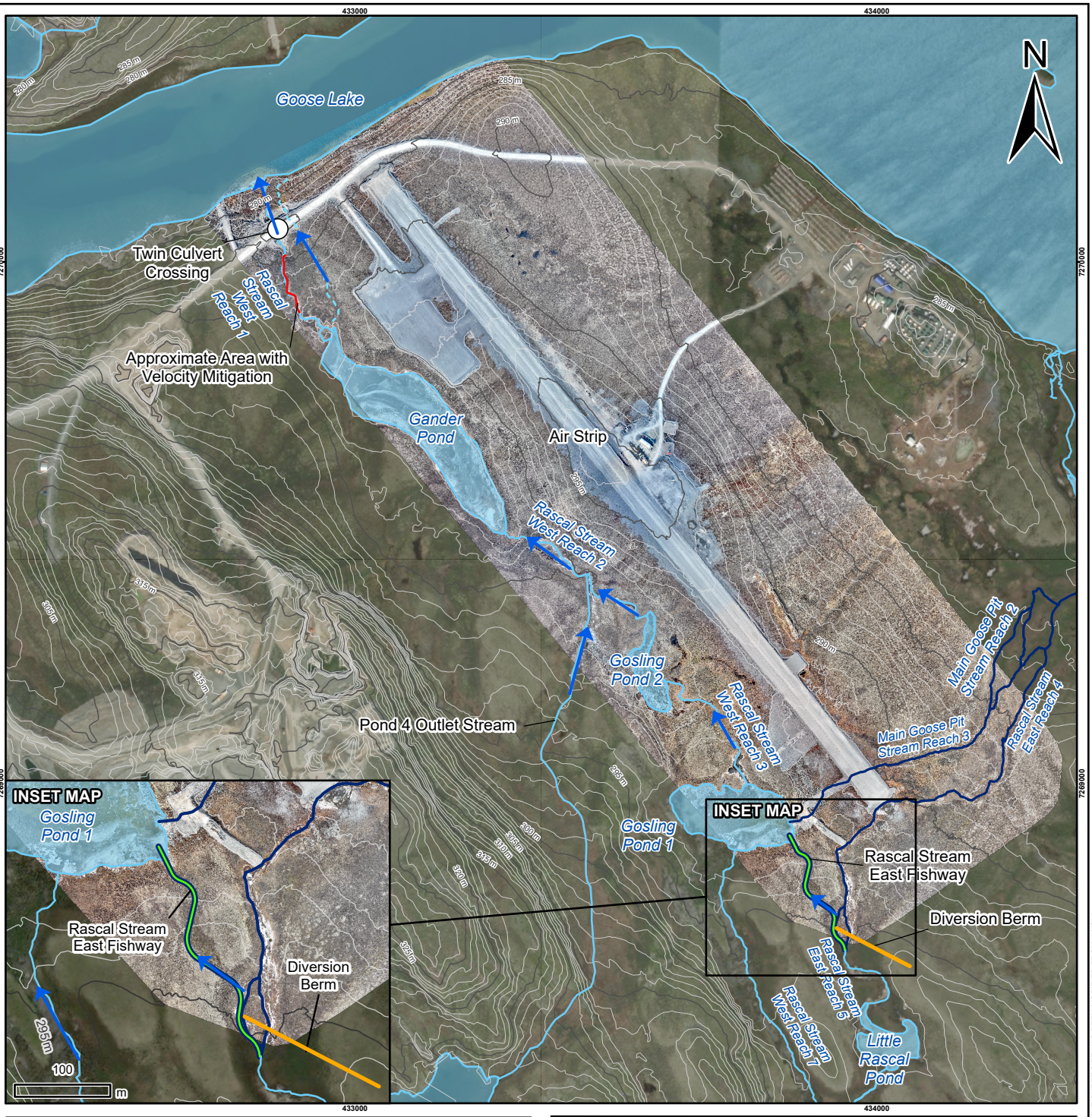
1. Introduction

B2Gold Back River Corp. (B2Gold Nunavut) are advancing the Back River Project (the Project) where a key construction activity is the airstrip extension. Extension of the airstrip requires that Rascal Stream East (RSE), a fish-bearing stream, be diverted through a constructed channel (the RSE Fishway) to Gosling Pond 1. As per conditions of the Back River Project Fisheries Act Authorization (FAA) and commitments for the Nunavut Impact Review Board (NIRB) Project Certificate, B2Gold Nunavut must demonstrate that the diversion of water can provide suitable conditions for the migration of Arctic Grayling from Goose Lake to access upstream spawning habitats on Rascal Stream East and West (Figure 1).

The RSE Fishway detailed design builds upon previous hydrotechnical and fisheries investigations completed for the Back River Project, including the *Rascal Stream Fishway Hydrotechnical Assessment* (Golder 2020a), the *Fish Passage Evaluation, Mitigation, and Monitoring for the Rascal Stream Diversion* (Golder 2020b), and the *Back River: Updated Feasibility Study – Hydrology Update* (SRK 2021). These studies established the hydrologic, hydraulic, and fish passage framework for the diversion concept, and have been reviewed, refined, and updated during the development of the current detailed design to reflect the latest available topographic information, design requirements, and project-specific considerations.

This technical memorandum details the RSE Fishway design and includes a construction monitoring plan and a fisheries monitoring plan to meet the FAA and NIRB requirements. This technical memorandum is accompanied with:

- Issued for Construction (IFC) drawings (Appendix A)
- Technical Specifications (Appendix B)
- Erosion and Sediment Control Plan (ESCP, Appendix C), and
- Geochemical monitoring results (Appendix D)



LEGEND

- TWIN CULVERT CROSSING
- APPROXIMATE AREA WITH VELOCITY MITIGATION
- DIVERSION BERM
- RASCAL STREAM EAST FISHWAY
- DIVERTED WATERCOURSE
- FLOW DIRECTION
- GANDER POND OUTFLOW SIDE CHANNEL
- WATERCOURSE
- CONTOUR INTERVAL (5m)
- CONTOUR INTERVAL (1m)
- WATERBODY

0 200 400
1:11,000 METRES

REFERENCE(S)

1. HYDROGRAPHY DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA.
2. WATERCOURSE UPDATED BASED ON CLIENT INPUT.
3. TOPOGRAPHY DATA PROVIDED BY B2GOLD NUNAVUT; 2023 LIDAR, FLOWN DATE UNKNOWN (FILE NAME: '2023 LIDAR (CLIPPED)', AND 2025 AIRSTRIP LIDAR, FLOWN OCTOBER 5, 2025, FILE NAME: '251005 AIRSTRIP FLYOVER SURFACE'.
4. IMAGERY COPYRIGHT © ESRI. ALL RIGHTS RESERVED. SOURCE: VANTOR. IMAGERY DATED: 2024-07-14.
5. SPATIAL REFERENCE: NAD 1983 UTM ZONE 13N

CLIENT
B2GOLD BACK RIVER CORP.

PROJECT
BACK RIVER PROJECT
RASCAL STREAM EAST FISHWAY DESIGN

TITLE
RASCAL STREAM FISHWAY AND DIVERSION BERM GENERAL LAYOUT

CONSULTANT
wsp

YYYY-MM-DD	2026-09-02
DESIGNED	NT
PREPARED	CD | LH
REVIEWED	DM
APPROVED	CVW

PROJECT NO.	CONTROL	REV.	FIGURE
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2. Permitting

The RSE Fishway and Diversion Berm works are subject to requirements under B2Gold Nunavut's Back River Project Type A Water Licence (No. 2AM-BRP1831, Amendment No. 1) and Fisheries Act Authorization (FAA No. 12-HCAA-CA7-00007). This technical memorandum and supporting appendices were prepared to document the design basis, construction requirements, and monitoring plans relevant to these authorizations. This section summarizes where the applicable permit requirements are addressed in this submission.

The Type A Water Licence (Part D, Item 3) requires detailed reports to include the design rationale, design requirements and criteria, standards, analyses, methods, assumptions, and limitations; these are provided in Sections 3 and 4 of this memorandum. Site-specific data and analyses supporting the design and related management decisions are also provided in Sections 3 and 4, with construction and fisheries monitoring measures described in Section 5. Material quantities are outlined in Section 6. Geochemical information demonstrating the acid rock drainage and metal leaching characteristics of waste rock and fill proposed for use in construction is provided in Section 7.

Additional Water Licence requirements related to construction methods, procedures, quality assurance and quality control measures, equipment, and technical specifications are addressed in Section 5 and in the Technical Specifications provided in Appendix B. Technical specifications for sedimentation, erosion control, and bank stabilization measures, including proposed materials, locations, extent, and placement methods are provided in Appendix B and the Erosion and Sediment Control Plan provided in Appendix C. The construction timing, including the anticipated construction start date and proposed commissioning timing for the infrastructure, is described in Section 5 of this memorandum, where relevant.

For the FAA, Condition 6.4 requires the final design and monitoring plan for the Rascal Stream diversion to be submitted to DFO for approval at least 60 days prior to the beginning of diversion works, in accordance with Condition 3.2.2. The final design of the RSE Fishway and Diversion Berm is documented in Section 4 and the IFC drawings provided in Appendix A. The monitoring plan required under Condition 3.2.2, including measures to demonstrate that adequate flow is maintained for Arctic Grayling access to upstream habitats and that the diversion channel functions as intended, is provided in Section 5.

Section 5 also documents the proposed construction and post-construction fisheries monitoring activities, including fish salvage, turbidity monitoring, erosion and sediment control monitoring, annual inspections, and biological monitoring to evaluate Arctic Grayling passage. If monitoring identifies additional serious harm to Arctic Grayling not previously addressed by the FAA, B2Gold Nunavut will consult with DFO and develop an appropriate mitigation strategy, as applicable.

3. Design basis and criteria

The design basis includes hydraulic and hydrologic design parameters and criteria for the RSE Fishway and the Diversion Berm design work at B2Gold Nunavut and are summarized in Table 3.1 below. Design criteria are based on the presented design criteria in *Rascal Stream East Fishway Design Basis* (WSP 2026a).

Table 3.1 Design criteria

Parameter	Criteria	Reference/comment
Hydrology	Baseline hydrology remains consistent with previous assessments	Golder 2020a
Climate change adjustment	A 24% climate change adjustment was applied to baseline design flows	SRK (2021)
Topography	Evaluated based on 2025 Airstrip Flyover Surface	Provided by B2Gold Nunavut (October 5, 2025)
June 50th percentile flow	0.45 m³/s, adjusted for climate change	Used as the design basis for low-flow fish passage depth
June 50th percentile water depth	Minimum 0.25 m	Used in conjunction with the flow as the design basis for low-flow fish passage
June 90th percentile velocity	Maximum 1.2 m/s	Used as the design basis for fish passage velocity
June 90th percentile flow	1.31 m³/s, adjusted for climate change	Used in conjunction with the velocity as the design basis for effective fish passage
Q2 (bankfull) flow	1.69 m³/s, adjusted for climate change	Used as the design basis for bankfull channel sizing
Q100 flow	3.41 m³/s, adjusted for climate change	Used as the design basis for high-flow channel sizing and erosion protection
RSE Fishway channel freeboard	Minimum 0.15 m	Adopted
Diversion Berm freeboard	Minimum 0.3 m to top of berm core	Adopted
Hydraulic modelling basis	Updated HEC-RAS hydraulic model	Golder (2020a) developed and validated HEC-RAS hydraulic model to assess the effects of proposed Rascal Stream realignment scenarios on flow conditions and fish habitat
Channel roughness	Manning's roughness (n) of 0.045	Adopted to represent channel armouring

4. Fishway and diversion berm design

4.1 Fishway design

The RSE Fishway is designed to provide a continuous fish passage channel between Rascal stream East Reach 5 and Gosling Pond 1 while maintaining hydraulic performance across a range of flow conditions. Flow from Reach 5 is initially directed into the fishway by the in-stream bankfull diversion boulders that train existing channel flows into the fishway alignment. The channel ties into the existing stream thalweg and consists of a low-flow channel nested within a wider floodplain channel. The low-flow channel incorporates a triangular cross-section to maintain sufficient water depths for fish passage during lower flow conditions, while the surrounding floodplain channel is designed to safely convey flows up to the 1:100-year design flood event. Boulder clusters are incorporated throughout the fishway to provide areas of reduced velocity and fish resting habitat. During high-flow events exceeding bankfull conditions, the diversion berm redirects additional flow into the fishway; however, under normal day-to-day conditions flow redirection is achieved primarily by the in-stream bankfull diversion boulders. At the downstream end, the fishway discharges into Gosling Pond 1 through a field-fit outlet designed to smoothly transition flow into the receiving waterbody.

4.1.1 Subsurface investigation

The following summary of subsurface conditions and design considerations is based on the findings of the *Rascal Stream East Fishway Diversion Geotechnical Site Investigation Factual Report* (WSP 2026b).

- Surficial organics overlie silty sand to sandy silt soils with moisture contents ranging from approximately 4% to 21%.
- Bedrock was encountered at depths ranging from approximately 3.3 m to greater than 5.0 m below ground surface.
- The silty sand and sandy silt materials are suitable for fishway channel excavation and diversion berm foundation support.
- The native soils contain sufficient fines to act as a hydraulic barrier and are expected to limit substantial flow losses from the fishway channel due to infiltration.
- Limited differential settlement of the diversion berm is anticipated.
- Silty sand and sandy silt materials are not recommended for use as construction materials due to frozen moisture conditions at the time of the investigation.

- Surficial organics should be stripped within the design footprint prior to construction, while trace rootlets below the stripped organic layer may remain in place.
- Any visible ice structures encountered within the RSE Fishway and Diversion Berm footprint should be removed during construction and replaced with granular material at the direction of the Engineer.
- The proposed channel excavation is not expected to extend to bedrock; however, if bedrock is encountered, additional evaluation of bedrock hydraulic conductivity may be required.

Overall, the subsurface investigation confirmed that the native soils are suitable for the RSE Fishway and Diversion Berm construction and contain sufficient fines to limit substantial seepage losses from the channel. These findings supported the decision to exclude an impermeable channel liner from the detailed design. While frozen ground conditions were encountered during the investigation, the results did not indicate a requirement for specific permafrost mitigation measures within the RSE Fishway or Diversion Berm design. The existing foundation conditions for the RSE Fishway and Diversion Berm are not anticipated to result in large scale and extensive differential settlement, but localized settlement may occur and can be repaired as required during the lifespan of the RSE Fishway and Diversion Berm.

4.1.2 Hydrotechnical design

RSE Fishway was designed as an approximately 250 m long constructed channel connecting RSE Reach 5 to Gosling Pond 1 (Figure 1). The previously proposed alignment was advanced for detailed design as it is consistent with Fisheries and Oceans Canada's (DFO) understanding of the Project to date and was identified as the preferred alignment based on updated topographic information and consideration of channel complexity features, sinuosity, and constructability. The RSE Fishway profile consists of two channel segments with design bed slopes of 0.9% and 1.7%. See Drawing 02 in Appendix A for the plan view and profile of the RSE Fishway.

Channel sizing was completed using open-channel hydraulic analyses based on the Chezy equation. Hydraulic calculations were performed iteratively to develop a channel geometry that satisfies the design criteria summarized in Table 3.1, including:

- fish passage requirements, both for low-flow and high flow conditions
- Design flood channel capacity requirements

For each cross-section, the design discharges were modelled to calculate flow depths, velocities, and freeboard. The selected channel geometry is anticipated to provide a flow depth of 0.26 m to 0.29 m during low-flow conditions (June 50th percentile flows) and 0.76 to 0.97 m/s velocities during the June 90th percentile flows.

For the 1:100-year flood event, the channel was selected to maintain a minimum of 0.15 m freeboard.

Channel freeboard requirements were incorporated into the hydraulic design in accordance with the approved design basis criteria (Table 3.1). See Drawing 03 in Appendix A for RSE Fishway channel typical cross sections.

In-stream boulder clusters are part of the design, but depth/velocities indicated above do not account for boulder clusters. The expected hydraulic conditions as a result of the boulder clusters are localized zones of lower velocity and minor changes to flow depths, within the design channel freeboard.

The channel is expected to be constructed in cut to convey the Q2 (bankfull) design flow (see Table 3.1). In locations where existing ground elevations are below the design flood-stage channel limits, floodplain banks may be field fit under the direction of the Engineer.

4.1.3 Erosion protection

Erosion protection for the RSE Fishway channel was developed by selecting channel armouring and bedding materials capable of withstanding the predicted channel velocities during the 1:100-year flood event (adjusted for climate change). Armouring sizing was based on the simulated design velocity of 1.37 m/s for the 1:100-year flood event.

The channel erosion protection system consists of a granular bedding layer overlain by channel armouring. Transition Material (referred to as a 4" minus material on site) will be used as the bedding layer between native subgrade soils and channel armouring will consist of Bulk Esker material (350 mm minus), which provides a well-graded, void-filled erosion protection layer. The materials are described in the Technical Specifications (Appendix B).

To provide erosion protection and long-term stability, the upstream (west) face of the Diversion Berm will be armoured with Bulk Esker Material (350 mm minus) as shown in Drawing 05.

The materials proposed for construction have demonstrated they do not have either acid rock drainage or metal leaching characteristics as documented in Appendix D.

4.1.4 Fish passage evaluation

The hydraulic parameters (water depth, top width, and average flow velocities) estimated for the RSE Fishway were made without inclusion of the velocity mitigation boulder clusters for conservative fish passage assessment. Boulder clusters provide areas of reduced flow velocity and resting habitat for fish, promote fish movement through the fishway under a range of flow conditions, and create scour pools downstream of the clusters during higher flows.

The fish passage evaluation was completed using the methodology previously applied by Golder (Golder 2020b), using a fork length of 25 cm for an adult Arctic Grayling and considering 50% and 87.5% prediction intervals from salmonid fatigue equation (Katopodis and Gervais 2016). The evaluation was used to determine the maximum permissible spacing between boulder clusters based on fish fatigue distance. Based on the results of this evaluation, the recommended maximum boulder cluster spacing for the 50% and 87.5% prediction intervals are presented in Table 4.1.

Table 4.1 Maximum boulder cluster spacing by channel segment

Channel segment (#)	Segment length (m)	Channel slope (%)	Channel velocity [a] (m/s)	Distance before fatigue (m)		Recommended boulder cluster spacing (m)	Recommended minimum number of boulder clusters (#)
				50% [b]	87.5% [c]		
1	107	0.9	0.76	59	12	12	10
2	116	1.7	0.97	28	6	6	18

Notes:

a. Using the June 90th percentile velocity modelled at each channel segment.
b. Assuming a fork length of 25 cm for an adult Arctic Grayling; based on 50% prediction interval from salmonid fatigue equation (Katopodis and Gervais 2016).
c. Assuming a fork length of 25 cm for an adult Arctic Grayling; based on 87.5% prediction interval from salmonid fatigue equation (Katopodis and Gervais 2016).

Although fatigue distance calculations for the 50% prediction interval indicated maximum boulder cluster spacings of 59 m and 28 m for channel segments 1 and 2, respectively, the more conservative 87.5% prediction interval spacing of 12 m for segment 1 and 6 m spacing for segment 2 was selected for design. Boulder clusters consisting of five rocks, each with a diameter of 400 to 450 mm, will be installed at a maximum spacing of 12 m for segment 1 and 6 m for segment 2 within the low-flow channel in an upstream-facing V-shape as per Drawing 03 of Appendix A. Boulders are to be embedded into the channel armouring by 100 mm to increase roll resistance. Boulder cluster installation should occur under dry conditions prior to diversion of flow into the RSE Fishway.

4.2 Diversion berm design

The Diversion Berm is located adjacent to the upstream tie-in between RSE Reach 5 and the RSE Fishway and is intended to divert flows above bankfull levels from the existing RSE into the RSE Fishway. The Diversion Berm is designed to withstand a 1:100-year flood event with 0.3 m of freeboard to the top of the berm core (inner hydraulic barrier of the Diversion Berm). During lower flow conditions, a naturalized in-channel diversion structure (field-fit and hand placed) will be used to direct fish and streamflow into the RSE Fishway.

Berm crest elevations were established by updating the 1-dimensional HEC-RAS hydraulic model (Golder 2020a), with a levee feature representing the proposed Diversion Berm. The Diversion Berm crest was set to maintain a minimum 0.3 m freeboard above the modelled design water surface elevation. The Diversion Berm is approximately 1.4 m above existing ground and is designed with 3H:1V side slopes, although height may vary along the alignment in response to existing topography. Typical cross sections and the Diversion Berm location are shown in Drawing 05 of Appendix A.

The Diversion Berm core will be constructed using compacted Transition Material (referred to as a 4" minus material on site) as shown in Drawing 05 of Appendix A. Transition Material was selected based on its favourable gradation, demonstrated compaction performance, and relatively low permeability

associated with its fines content, making it suitable for limiting seepage through the Diversion Berm while providing a stable embankment material.

As described in Section 4.1.3 above, the upstream (west) face of the Diversion Berm will be armoured with Bulk Esker Material (350 mm minus) as shown in the design drawings.

The Diversion Berm crest and downstream (east) face will be protected against wind and precipitation-induced erosion using Bulk Non-Acid Generating (NAG) material with a maximum particle size of 300 mm as shown in the design drawings. Prior to berm construction, surface organics and other unsuitable materials within the Diversion Berm footprint will be stripped to expose a competent foundation surface. Based on the April 29-30, 2026 subsurface investigation, organic and topsoil depths within the RSE Fishway construction zone ranged from 0.0 m to 1.0 m across the three boreholes completed, with observed depths of 0.0 m, 0.5 m, and 1.0 m (WSP, 2026b). For the purpose of design and quantity estimation, a stripping depth of 0.5 m was assumed.

5. Construction and fisheries monitoring plan

In partial fulfilment of the FAA, environmental monitoring activities, such as a fish salvage and turbidity monitoring, are recommended before and during in-water construction activities. Prior to diversions, a fish salvage is recommended to reduce risk of fish mortality associated with dry channel conditions, and related non-compliance under Section 34.4 of the Fisheries Act (GOC 1985). Turbidity monitoring is recommended to confirm erosion, and sediment controls are working and to prevent a release of a deleterious substance in water (GOC 1985 [Section 36.3, Section 35]).

Erosion and sediment controls are described in the ESCP (Appendix C).

5.1 General construction and schedule

The construction is planned to occur in September and October of 2026 over a duration of approximately 3 weeks, pending regulatory approvals. The RSE Fishway will either be commissioned during low-flow conditions prior to 2026 freeze-up or in Spring 2027.

The work shall comply with all Project specifications:

- Technical Specifications Earthworks and Geotechnical Engineering Back River Gold Project, Nunavut, Canada (Revision 2) – Issued for Construction (SRK 2023).
- Specification – Civil Works. B2Gold. SBR6SDE-4000-C-SPC-0008. Revision 0. May 1, 2024. (Sacré-Davey 2024).

However, where conflicts arise, requirements of the Project-specific technical specifications included in Appendix B shall explicitly govern over the above referenced project specifications.

A construction access road is required to access the north portion of the RSE Fishway. From there, the construction access will be via the RSE Fishway and Diversion Berm alignments. If the construction access within the RSE Fishway alignments pose a safety concern, an additional access road along the east side of the RSE Fishway would be required. Based on the estimated 0.5 m depth of organics and topsoil, the Diversion Berm footprint is considered to be sufficient for the construction access road is anticipated to serve as a maintenance access road post construction.

5.2 Construction during open-water conditions

This monitoring plan is generally consistent with the *Workplan for Airstrip Extension and Diversion Construction Monitoring Draft Technical Memorandum* (WSP Golder 2022) but updated to reflect the detailed design of the RSE Fishway and Diversion Berm.

5.2.1 Fish salvage

To minimize construction constraints and reduce the potential for schedule delays, a single fish salvage will be completed prior to isolation diversion berm construction. The fish salvage will be completed within RSE Reach 5 and RSE Reach 4 to the confluence of RSE Reach 2 with an approximate length of 1,070 m and will be conducted in accordance with methods and recommendations *In-water site isolation* (DFO 2025). During fishway construction, flow within RSE Reach 5 will be maintained through the east branch while the west branch is isolated as required.

Fish salvage is to work from upstream to downstream in a set-wise fashion blocking off 100 m sections of watercourse at a time using multiple small mesh block nets. Captured fish from salvaged areas will be transferred to RSE Reach 2 or Rascal Stream West (RSW). Primary fishing techniques will include backpack electrofishing and dip netting; minnow trapping and seining may also be used in areas with suitable habitat (e.g., deep pools for trapping and suitable substrate for seining). Once the salvage is complete, upstream block nets (berm placement location across watercourses) will be monitored regularly until the Diversion Berm is installed.

It is recommended that a block net is installed at RSE Reach 5 just above the RSE Fishway inlet location. Block nets will extend across the entire bankfull width of these watercourses and in an arc at the RSE Fishway Diversion outlet to Gosling Pond 1 to prevent fish passage. After installation, these block nets will need to be monitored regularly to ensure they continue to function as an effective barrier to fish movement until completion of the RSE Fishway and Diversion Berm.

5.2.2 Construction monitoring

Turbidity will be monitored throughout the duration of in-water construction works. Turbidity guidelines provided in the Canadian Council of Ministers of the Environment (CCME) for the protection of freshwater aquatic life will be incorporated into the field monitoring program (CCME 2015). In situ

turbidity measurements at upstream control stations and downstream stations from potentially impacted watercourses (e.g., RSE Reach 4, RSE Reach 2, RSW and Gosling Pond 1) will be collected. Should turbidity values increase beyond those stipulated in the above-mentioned guidelines, work should slow, or potentially halt, until background turbidity values have re-established before continuing at the direction of the Environmental Monitor.

Turbidity monitoring on potentially impacted watercourses for the duration of in-water construction is required. A portable Lamotte meter will be used to measure turbidity in the field. This scope assumes that total suspended solids (TSS) monitoring is not required.

The erosion and sediment control measures outlined in the ESCP (Appendix C) need to be regularly monitored to identify any maintenance or repair required, particularly during and after rainfall events. Twice daily visual inspections of the RSE Fishway and Rascal Stream Reach 3 are recommended during construction.

Turbidity monitoring upstream and downstream of the RSE Fishway, and at the mouth of Rascal Stream during construction will confirm adherence to turbidity guidelines. Additionally, it will help to identify exceedances early, so that measures can be implemented to manage effects and help to quantify the geographical extent, duration, and magnitude of the release for potential restoration requirements and incident reporting. The Environmental Monitor will dictate water sampling locations, parameters, frequencies, and monitor criteria threshold limits consistent with applicable turbidity guidelines for characterization of unauthorized discharges of sediment-laden run-off.

Turbidity monitoring is required during flushing and adherence to the CCME guidelines is required before activation of the RSE Fishway.

5.3 Construction during frozen conditions

A freshwater environment monitoring plan is not required should the RSE Fishway and Diversion Berm be constructed during frozen conditions, as the stream does not contain overwintering habitat for Arctic Grayling. The affected reach is used primarily for seasonal fish passage and spawning, and Arctic Grayling are not expected to occupy the area during winter conditions. Consequently, the risk of adverse effects to fish and fish habitat during frozen-ground construction is considered low.

5.4 Post-construction fisheries monitoring plan

The fisheries monitoring plan was derived from the conceptual monitoring plan (Golder 2020b) and the addendum to the monitoring plan (Golder 2020c) authored by Cam Stevens, RPBio, and has not been substantially modified. The monitoring plan has been adjusted to include the updated RSE Fishway alignment and the Diversion Berm location and also considers recommendations related to the monitoring design and methods provided in WSP (2024). All fisheries monitoring remains relevant to the Rascal Stream system.

A monitoring program will be implemented to determine if the diversion channel and the previously installed downstream rock weir velocity mitigation (RSW Reach 1) are functioning effectively for Arctic Grayling. Monitoring will assess whether discharge and water depths within the diversion channel and upstream reaches remain sufficient to support Arctic Grayling passage to Reach 5, Reach 6, Reach 7, Little Rascal Pond, and Rascal Lake during the spawning migration period. Monitoring will commence during Year 1 (first year RSE Fishway is activated following winter frozen conditions) following the implementation of the RSE Fishway and may span 6 years, but not necessarily 6 years in total. The duration and frequency of monitoring may be adjusted depending on results from early monitoring efforts as described in the monitoring framework in Golder (2020c) where action thresholds and management actions are listed.

The proposed monitoring schedule includes annual hydrotechnical and fish habitat inspections, and annual reports during the monitoring period with detailed biological monitoring and reporting starting Year 1. Three years of detailed biological monitoring is recommended (Year 1, Year 2, and Year 6), including detailed biological monitoring during Year 6, which would be the first year that recruits could return from adults that spawned in Year 1 (based on age at maturity statistics provided in Stewart et al. [2007]).

The duration of monitoring when combined with the proposed level of annual effort is expected to adequately demonstrate that the mitigation objectives have been achieved. The monitoring effort will allow B2Gold Nunavut to confirm assessment predictions made as part of the environmental assessment (e.g., that increased flows on RSW have the potential to benefit the Arctic Grayling population).

Two types of monitoring activities will be completed: annual inspections (as functional monitoring) and biological monitoring (as effectiveness monitoring). Annual inspections by a qualified aquatic specialist are recommended to collect data to characterize habitat functions and suitability, including data on the physical integrity of the previously installed rock weirs (RSW Reach 1) and natural channel below the RSE Fishway. Field measurements related to annual inspections are recommended to include, but are not limited to, the following:

- RSW Reach 1
  - Rock weir habitat characterization such as depths, velocities, channel widths (wetted and bankfull), and substrate composition collected on transects deployed within the weir pool and immediately downstream of the weir.
  - Physical dimensions of each rock weir and notch mapped either on-screen or on grid paper showing measurements of width, depth and length of the rock weir and notch.
  - Qualitative characterization of the integrity of each rock weir and the passability of each rock weir, supported by photographs (upstream, downstream, left downstream bank, and right downstream bank views).
- RSE Fishway

- Measurement of discharge and characterization of depths, velocities, channel widths (wetted and bankfull), and substrate composition collected at a representative transect of the RSE Fishway.
- Qualitative inspection of the channel bed and banks, and any evidence of channel erosion, migration, and sediment transport, supported by photographs.
- Boulder cluster habitat characterization such as depths, velocities, channel widths (wetted and bankfull), and substrate composition collected on transects deployed within the cluster pool and immediately downstream of the cluster.
- Qualitative characterization of the integrity of each boulder cluster and the passability of each boulder cluster, supported by photographs (upstream, downstream, left downstream bank, and right downstream bank views).

- RSW (Gosling Pond 1 to Gander Pond)
  - Characterization of pond outlets (number, locations, condition, etc.) at Gosling Pond 1, Gosling Pond 2, and Gander Pond, supported by photographs.
  - Quantitative measurements of depths, velocities, channel widths (wetted and bankfull), and substrate composition collected at four representative cross-sections on RSW Reach 2 and 3 (two cross-sections per reach).
  - Qualitative inspection of the stream bed and banks, and any evidence of channel erosion, migration, and sediment transport, supported by photographs.
- RSW Reach 1 Twin Culvert Crossing
  - Annual inspection during spring freshet of the twin culvert crossing at the Gander Outflow by a qualified aquatic specialist.
  - Inspection will assess the presence of fish passage barriers resulting from ice accumulation, debris jams, flooding, channel instability, scour, erosion, bridge damage, or channel aggradation/degradation.
  - Inspection findings will be documented with photographs and recommendations for maintenance or corrective actions where required.

Based on the outcome of an annual inspection of the RSE Fishway and RSW Reach 1 rock weirs, maintenance or installation of erosion and sediment control mitigation measures will be immediately conducted where needed for minor disturbances such as boulders displaced due to high flows or ice scour. If major repairs or improvements are noted during the inspection, recommendations for additional work will be provided in the annual inspection report. Inspection reports will be submitted to DFO by January 31 of any given year that observational monitoring is carried out.

Biological monitoring by qualified aquatic specialists is recommended to confirm passage of Arctic Grayling through RSW Reach 1, Reach 2, Reach 3, Gosling Pond 1, the RSE Fishway and access to upstream habitats including Reach 5, Reach 6, Reach 7, Little Rascal Pond, and Rascal Lake.
The scope of monitoring includes detailed habitat measurements collected concurrently with monitoring of the Arctic Grayling spawning migration. The biological monitoring scope should include a minimum of

three years (Year 1, Year 2, and Year 6) of data collection using radio frequency identification (RFID) tags inserted within adult fish that would be tracked using multiple detection arrays deployed throughout the Rascal Stream system. RFID antenna arrays will be positioned at strategic locations to confirm Arctic Grayling passage throughout the Rascal Stream system.

The first two years of RFID fish tracking would be combined with a two-way trap installed at the mouth of RSW or a similar location as recommended in WSP (2024) where fish would be enumerated and tagged during their migration, subsequent biological monitoring years would only include data collected from the remotely deployed detection arrays (assuming sufficient numbers of fish were tagged during the previous trapping years). The seasonal timing of detailed biological monitoring will cover the upstream migration during spring freshet conditions, assumed to be a minimum 2-week window in late-May to early-June with RFID antennae readers installed for the duration of spring and early to mid-summer to collect autonomous, continuous data on migratory movements when field crews are not present.

Field measurements related to biological monitoring are recommended to include, but are not limited to, the following:

- Daily discharge and continuous water temperature data at predetermined locations for RSW Reach 1 for the duration of the upstream migration period.
- Length and weight of captured adult fish, enumeration of migrating adult fish captured in the two-trap installed near the confluence with Goose Lake in lower RSW Reach 1 as recommended by WSP (2024) for the duration of the upstream migration period.
- Movement data of tagged fish to be collected at antennae array loggers positioned at multiple locations in RSE and RSW for the duration of spring and through early to mid-summer.

If monitoring results indicate additional serious harm to Arctic Grayling not previously assessed under this Authorization, B2Gold Nunavut will consult with DFO and develop an appropriate mitigation strategy to address the additional serious harm.

6. Material quantities

The table below presents the estimated material quantities for the RSE Fishway and Diversion Berm IFC design. Based on the IFC drawings provided in Appendix A, quantity estimates have been developed for the following materials: transition material (4-inch minus), bulk esker material (350 mm minus), bulk NAG material (300 mm minus), boulder clusters (400 to 450 mm diameter), and in-stream bankfull diversion boulders (hand-placed boulders). These estimates represent the best available quantity assessment based on the current IFC design package and are intended for planning and cost estimating purposes. Uncertainty ranges and contingency allowances have not been applied and are therefore not included in the quantities presented. Quantities associated with temporary workspaces, construction access roads,

and other contractor means and methods have not been estimated, as these requirements will be determined by the Contractor during construction planning.

Table 6.1 Material quantities

Material name	Unit	Quantity	Technical specification reference (section)
Bulk esker material (350 mm minus)	m^3	1800	5.1
Transition material (4" minus)	m^3	1700	5.2
Boulder clusters (400-450 mm dia.)	No.	165	5.3
In-stream bankfull diversion boulders (minimum 350 mm dia.)	No.	225	5.3
Bulk NAG (300 mm minus)	m^3	400	5.4

7. Geochemical analysis of waste rock and fill

In accordance with Schedule B, Condition 6(a) of B2Gold Nunavut's Back River Project Type A Water Licence (N0. 2AM-BPR1831) and the approved Waste Rock Management Plan, eight (8) samples per 100,000 tonnes of waste rock are collected and analyzed in-house following the Sobek method to determine the acid base accounting (ABA) which is then used to segregate and determine the appropriate application of the materials. Only non-acid generating (NAG) materials are used for construction. Waste rock classification is currently based on the following methods.

1. Acid production potential (AP) of the sample is determined using the following formula:

$$AP = Total\ Sulphur * 31.35$$

2. Neutralization potential (NP) of the sample is obtained from the Sobek leach test.

3. NPR of the sample is determined using the following formula:

$$NPR = NP / AP$$

The sample is classified as either NAG or PAG using the following site-specific criteria developed during the baseline geochemical assessment (Sabina 2022):

- An NPR >= 3 or S <= 0.15% is classified as NAG.
- An NPR < 3 and S > 0.15% is classified as PAG.

NAG and PAG classifications for each waste rock sample collected in 2025 and reported in the annual report submitted to the Nunavut Water Board in March 2026, are presented in Appendix D, Table D-1 (RainCoast Environmental Services Ltd. 2025). In 2025, a total of 1,830,807 m^3 of NAG was generated and about 646,512 m^3 was used for site construction projects. There is enough NAG material available at the Back River Project for the construction of the Rascal Stream East Fishway and Diversion Berm. The 2026 NAG waste rock volume are being recorded and will be provided in the 2026 annual report.

8. Closure

The reader is referred to the limitations statement section, which follows the text and forms an integral part of this memorandum.

We trust the above meets your present requirements. If you have any questions or comments, please contact the undersigned.



Nina Tolnai, BASc
Water Resources Specialist



Daniel Mullen, BASc
Water Resources Specialist

Curtis VanWerkhoven, MASc, P.Eng.
Senior Principal Water Resources Engineer

Attachments
Appendix A: Issued for Construction (IFC) drawings
Appendix B: Technical specifications
Appendix C: Erosion and sediment control plan (ESCP)
Appendix D: 2025 Waste rock geochemical analysis results (RainCoast Environmental Services Ltd. 2025)

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WSP. 2026b. Rascal Stream East Fishway Diversion Geotechnical Site Investigation Factual Report. Reference No. CA0069616.1932-207-TM-RevA. Dated June 25, 2026.

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WSP Golder. 2022. DRAFT Workplan for Airstrip Extension and Diversion Construction Monitoring.

Limitations statement

WSP Canada Inc. (“WSP”) prepared this report solely for the use of the intended recipient, B2Gold Nunavut, in accordance with the professional services agreement between the parties. In the event a contract has not been executed, the parties agree that the WSP General Terms for Consultant shall govern their business relationship which was provided to you prior to the preparation of this report.

The report is intended to be used in its entirety. No excerpts may be taken to be representative of the findings in the assessment.

The conclusions presented in this report are based on work performed by trained, professional and technical staff, in accordance with their reasonable interpretation of current and accepted engineering and scientific practices at the time the work was performed.

The content and opinions contained in the present report are based on the observations and/or information available to WSP at the time of preparation, using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by WSP and other engineering/scientific practitioners working under similar conditions, and subject to the same time, financial and physical constraints applicable to this project.

WSP disclaims any obligation to update this report if, after the date of this report, any conditions appear to differ significantly from those presented in this report; however, WSP reserves the right to amend or supplement this report based on additional information, documentation, or evidence.

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In preparing this report, WSP has relied in good faith on information provided by others, as noted in the report. WSP has reasonably assumed that the information provided is correct and WSP is not responsible for the accuracy or completeness of such information.

Benchmark and elevations used in this report are primarily to establish relative elevation differences between the specific testing and/or sampling locations and should not be used for other purposes, such as grading, excavating, construction, planning, development, etc.

Design recommendations given in this report are applicable only to the project and areas as described in the text and then only if constructed in accordance with the details stated in this report. The comments made in this report on potential construction issues and possible methods are intended only for the guidance of the designer. The number of testing and/or sampling locations may not be sufficient to determine all the factors that may affect construction methods and costs. We accept no responsibility for any decisions made or actions taken as a result of this report unless we are specifically advised of and participate in such action, in which case our responsibility will be as agreed to at that time.

Overall conditions can only be extrapolated to an undefined limited area around these testing and sampling locations. The conditions that WSP interprets to exist between testing and sampling points may differ from those that actually exist. The accuracy of any extrapolation and interpretation beyond the sampling locations will depend on natural conditions, the history of Site development and changes through construction and other activities. In addition, analysis has been carried out for the identified chemical and physical parameters only, and it should not be inferred that other chemical species or physical conditions are not present. WSP cannot warrant against undiscovered environmental liabilities or adverse impacts off-Site.

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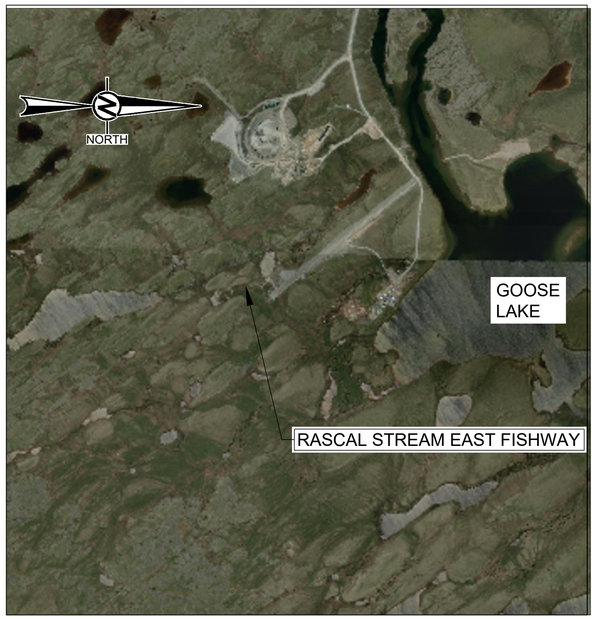
This limitations statement is considered an integral part of this report.

Appendix A Issued for Construction (IFC) drawings

B2GOLD BACK RIVER PROJECT
RASCAL STREAM EAST FISHWAY AND DIVERSION BERM - DETAIL DESIGN
NUNAVUT



PROJECT LOCATION MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

DRAWING LIST				
DRAWING NUMBER	DRAWING TITLE	REVISION NUMBER	PURPOSE OF ISSUE	DATE OF ISSUE
01	COVER AND DRAWING TABLE	0	ISSUED FOR CONSTRUCTION	2026-09-03
02	FISHWAY CHANNEL PLAN AND PROFILE	0	ISSUED FOR CONSTRUCTION	2026-09-03
03	FISHWAY CHANNEL TYPICAL DETAILS	0	ISSUED FOR CONSTRUCTION	2026-09-03
04	FISHWAY CHANNEL INLET AND OUTLET DETAIL PLAN	0	ISSUED FOR CONSTRUCTION	2026-09-03
05	DIVERSION BERM PLAN AND PROFILE AND TYPICAL CROSS SECTION	0	ISSUED FOR CONSTRUCTION	2026-09-03
06	TABLE FOR KEY SETOUT POINTS	0	ISSUED FOR CONSTRUCTION	2026-09-03

NOTE(S)

1. LOCATION MAP IMAGERY VIA VIVOR, CAPTURE DATE JULY 2024.

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PROJECT
RASCAL STREAM EAST FISHWAY AND DIVERSION BERM DESIGN

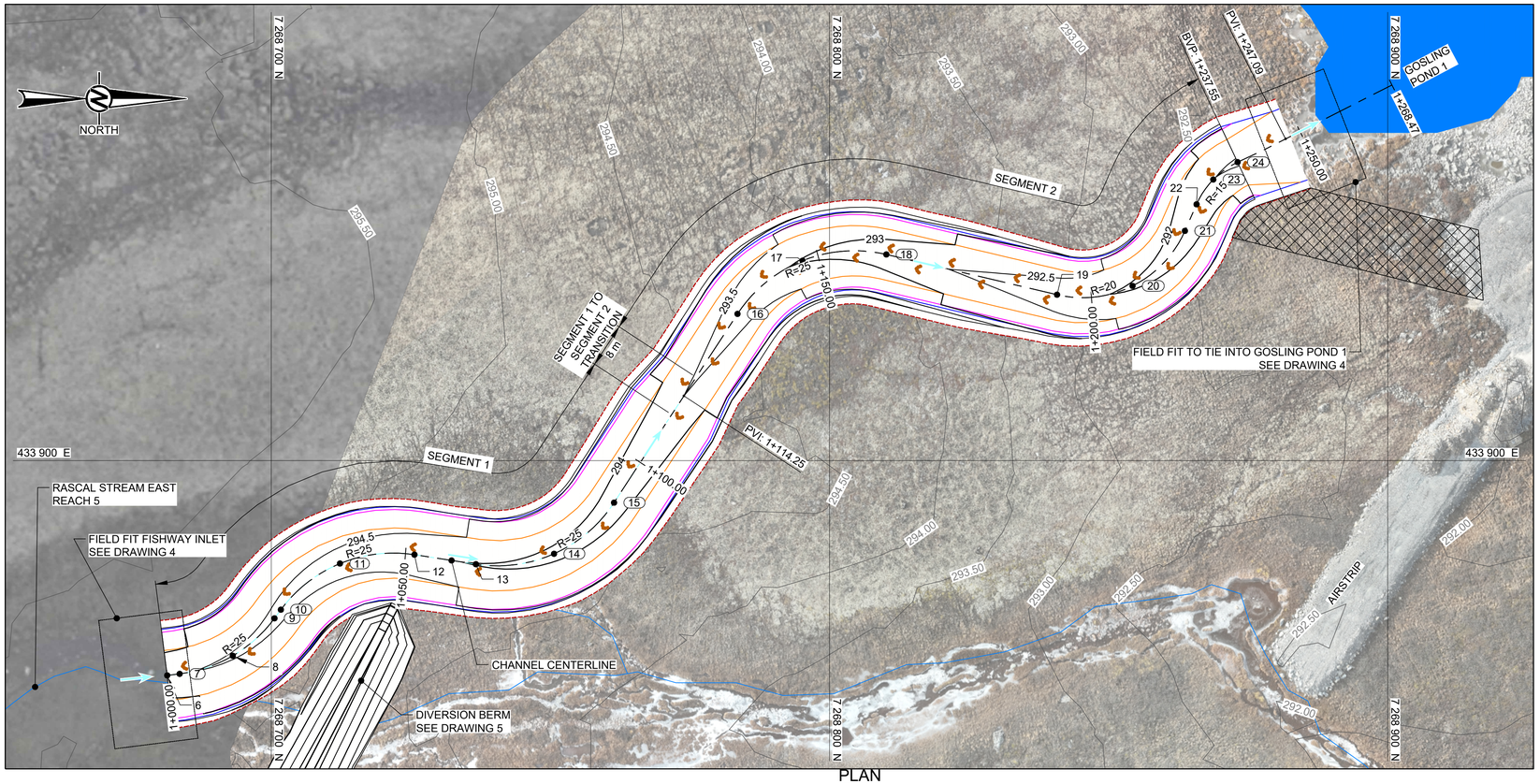
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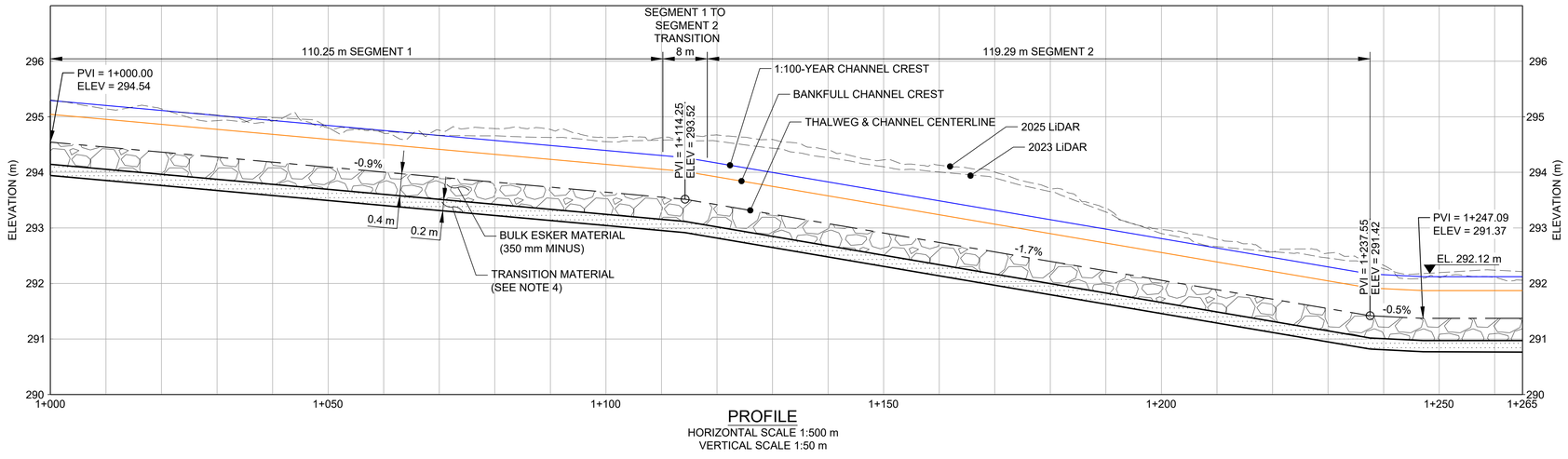
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PLAN
SCALE 1:500 m



PROFILE
HORIZONTAL SCALE 1:500 m
VERTICAL SCALE 1:50 m

LEGEND

- EXISTING GROUND CONTOURS (SEE NOTE 2)
- DESIGN GROUND CONTOURS (SEE NOTE 2)
- CHANNEL CENTERLINE
- BANKFULL CHANNEL CREST
- EDGE OF BANKFULL CHANNEL BENCH
- 1:100-YEAR CHANNEL CREST
- EXTENT OF EXCAVATION
- EXISTING GROUND
- BULK ESKER MATERIAL
- TRANSITION MATERIAL (SEE NOTE 4)
- FLOW DIRECTION
- BOULDER CLUSTER (SEE NOTE 3)
- WATERCOURSE
- WATERBODY
- APPROXIMATE CONSTRUCTION ACCESS (SEE NOTE 5)

NOTE(S)

1. ALL UNITS ARE IN METRES UNLESS NOTED OTHERWISE.
2. CONTOUR INTERVAL SHOWN AT 0.5 m.
3. FOR BOULDER CLUSTER DETAILS SEE DRAWING 3.
4. TRANSITION MATERIAL DESCRIPTION ON SITE IS 4" MINUS.
5. CONSTRUCTION ACCESS ROAD TO BE FIELD FIT BY B2GOLD. ADDITIONAL CONSTRUCTION ACCESS ALONG NORTH EAST SIDE OF RASCAL STREAM EAST FISHWAY CHANNEL MAY BE REQUIRED FOR SAFE OPERATION OF MOBILE EQUIPMENT.

REFERENCE(S)

1. EXISTING GROUND INFORMATION AS PROVIDED IN FILES "251005 Airstrip flyover SURFACE.xml" AND "2023 LiDAR (Clipped).xml". 2023 LiDAR CONTOURS SHOWN IN PLAN.
2. AERIAL IMAGERY AS PROVIDED IN FILES "2023 LiDAR (Clipped).tif" AND "251005 Airstrip_transparent_mosaic_group1.tif".
3. HORIZONTAL COORDINATES ARE NAD83(CSRS) UTM ZONE 13N. VERTICAL DATUM OF PROVIDED EXISTING GROUND INFORMATION IS ASSUMED TO BE CGVD28.

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0 20 40
1:500 METRES

0 2 4
1:50 METRES

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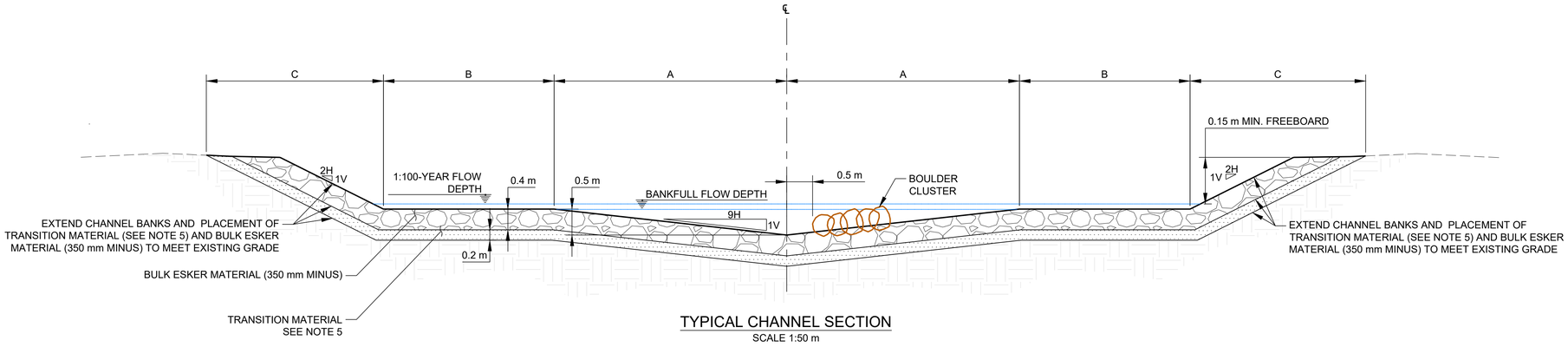
PROJECT
RASCAL STREAM EAST FISHWAY AND DIVERSION BERM DESIGN

TITLE
FISHWAY CHANNEL PLAN AND PROFILE

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TYPICAL CHANNEL SECTION

SCALE 1:50 m

LEGEND

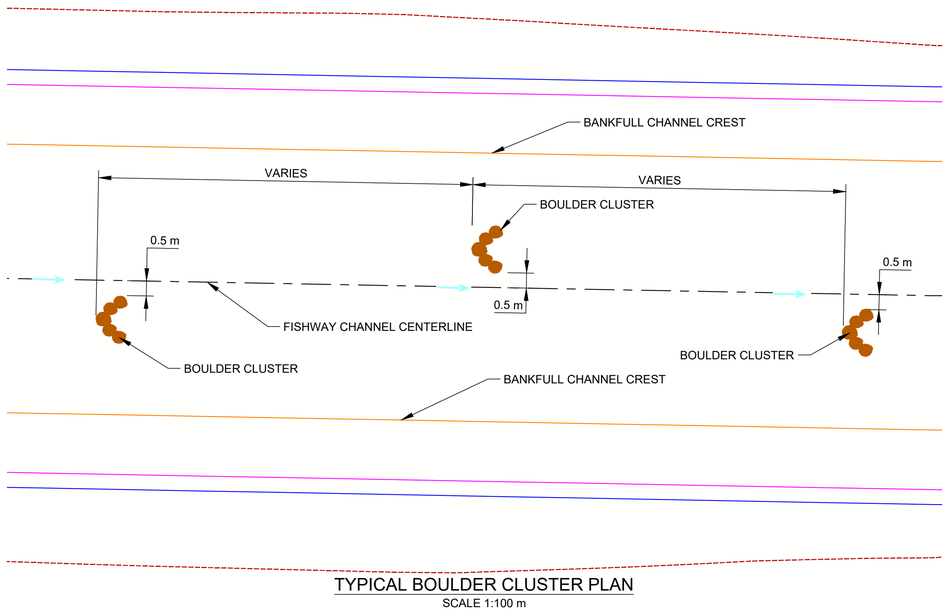
- EXISTING GROUND
- BULK ESKER MATERIAL (350 mm MINUS)
- TRANSITION MATERIAL (SEE NOTE 5)
- FLOW DEPTH
- CHANNEL CENTERLINE
- BANKFULL CHANNEL CREST
- EDGE OF BANKFULL CHANNEL BENCH
- 1:100-YEAR CHANNEL CREST
- EXTENT OF EXCAVATION

NOTES

1. BOULDER CLUSTERS WITH BOULDER SIZES OF 400 - 450 mm Ø.
2. BOULDER CLUSTERS SHALL BE COMPOSED OF 5 BOULDERS ARRANGED IN A 'V" SHAPE POINTED TOWARDS THE UPSTREAM DIRECTION.
3. INDIVIDUAL BOULDERS SHALL BE EMBEDDED MINIMUM 100 mm WITHIN BULK ESKER MATERIAL TO ANCHOR BOULDERS IN PLACE.
4. TRANSITION MATERIAL DESCRIPTION ON SITE IS 4" MINUS.

CHANNEL WIDTH TABLE					
SEGMENT	CHAINAGE	BOULDER CLUSTER SPACING	A	B	C
1	1+000 - 1+110.25	12 m	4.5 m	3.3 m	VARIES
TRANSITION 1-2	1+110.25 - 1+118.25	6 m	4.5 m	3.3 m TO 2.0 m	VARIES
2	1+118.25 - 1+237.55	6 m	4.5 m	2.0 m	VARIES

FLOW DEPTH TABLE				
SEGMENT	JUNE 50th PERCENTILE	JUNE 90th PERCENTILE	BANKFULL (Q_2)	1:100-YEAR (Q_{100})
1	0.29 m	0.44 m	0.48 m	0.60 m
2	0.26 m	0.39 m	0.43 m	0.55 m



TYPICAL BOULDER CLUSTER PLAN

SCALE 1:100 m

ISSUED FOR

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0 5 10
1:100 METRES

0 2 4
1:50 METRES

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PROJECT
RASCAL STREAM EAST FISHWAY AND DIVERSION BERM DESIGN

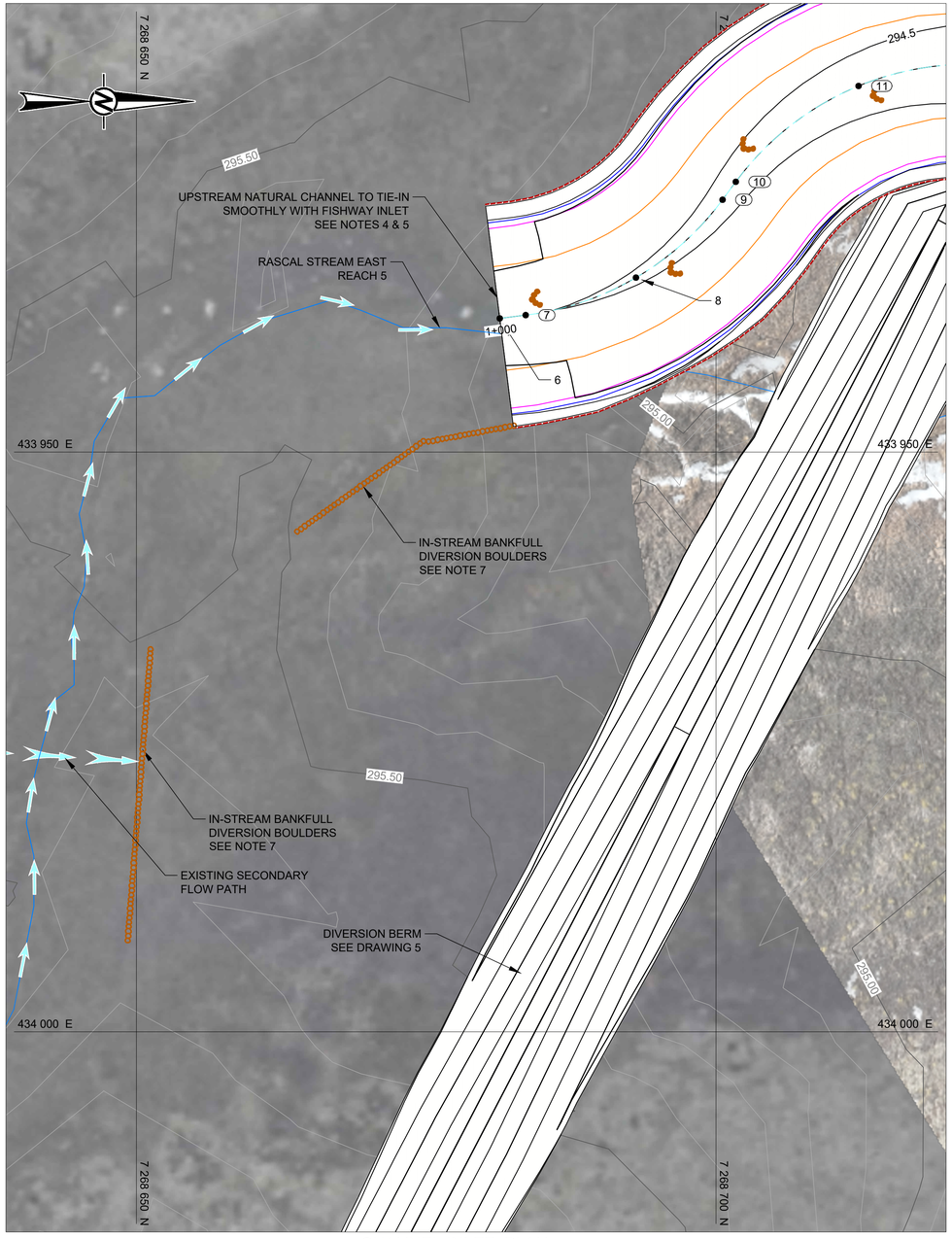
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FISHWAY CHANNEL TYPICAL DETAILS

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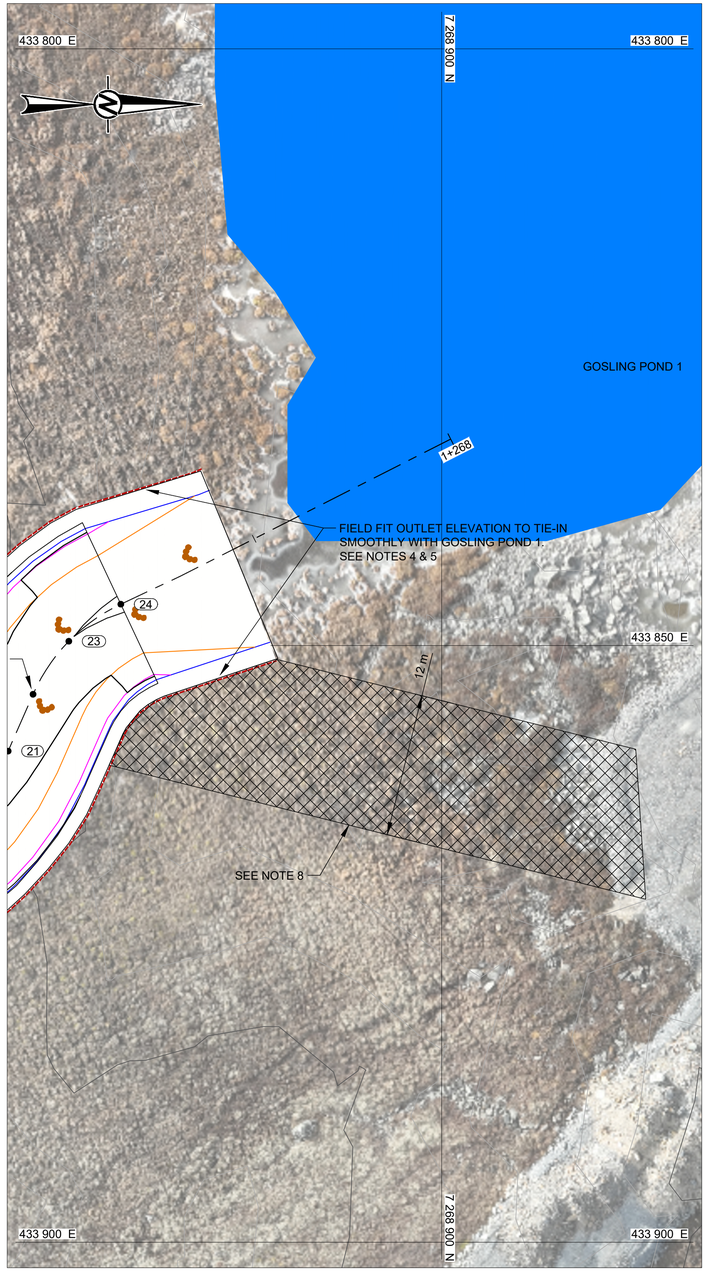
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

0 25 mm



CHANNEL INLET PLAN

SCALE: 1:250 m



CHANNEL OUTLET PLAN

SCALE 1:250 m

LEGEND

- EXISTING GROUND CONTOURS (SEE NOTE 2)
- DESIGN GROUND CONTOURS (SEE NOTE 2)
- BANKFULL (Q_2) FLOW DIRECTION
- EXISTING SECONDARY FLOW PATH
- BOULDER CLUSTER
- IN-STREAM BANKFULL DIVERSION BOULDERS
- WATERCOURSE
- WATERBODY
- CHANNEL CENTERLINE
- BANKFULL CHANNEL CREST
- EDGE OF BANKFULL CHANNEL BENCH
- 1:100-YEAR CHANNEL CREST
- EXTENT OF EXCAVATION
- EXISTING GROUND
- APPROXIMATE CONSTRUCTION ACCESS (SEE NOTE 8)

NOTE(S)

1. ALL UNITS ARE IN METRES UNLESS NOTED OTHERWISE.
2. EXISTING GROUND CONTOUR INTERVAL SHOWN AT 0.1 m.
3. FIELD FITTING TO BE UNDER DIRECTION AND APPROVED BY ENGINEER AND/OR ENVIRONMENTAL MONITOR.
4. FIELD FIT FISHWAY INLET AND OUTLET LOCATIONS TO ALIGN WITH LOWS AND INSTALL SO THAT ARMOURING TIES-IN SMOOTHLY TO THE EXISTING CHANNEL AND GOSLING POND 1.
5. ALL TRANSITIONS MUST BE SMOOTH AND CONSTRUCTED WITHOUT BARRIERS TO FISH PASSAGE.
6. PROVIDE APPROXIMATELY 0.5% SLOPE FROM FISHWAY CHANNEL OUTLET TO SHORELINE (FIELD FIT BETWEEN 0.5% - 1.7% GRADE TO DOWNSTREAM SECTION) TO FIELD FIT FISHWAY OUTLET TO GOSLING POND 1.
7. FIELD FIT IN-STREAM BANKFULL DIVERSION BOULDERS WITH MINIMUM 350 mm (INTERMEDIATE DIMENSION) HAND-PLACED BOULDERS TO TRAIN EXISTING LOW FLOW CHANNEL INTO RASCAL STREAM EAST FISHWAY.
8. CONSTRUCTION ACCESS ROAD TO BE FIELD FIT BY B2GOLD. ADDITIONAL CONSTRUCTION ACCESS ALONG NORTH EAST SIDE OF RASCAL STREAM EAST FISHWAY CHANNEL MAY BE REQUIRED FOR SAFE OPERATION OF MOBILE EQUIPMENT.

REFERENCE(S)

1. EXISTING GROUND INFORMATION AS PROVIDED IN FILES "251005 Airstrip flyover SURFACE.xml" AND "2023 LiDAR (Clipped).xml". 2023 LiDAR CONTOURS SHOWN IN PLAN.
2. AERIAL IMAGERY AS PROVIDED IN FILES "2023 LiDAR (Clipped).tif" AND "251005 Airstrip_transparent_mosaic_group1.tif".
3. HORIZONTAL COORDINATES ARE NAD83(CSRS) UTM ZONE 13N. VERTICAL DATUM OF PROVIDED EXISTING GROUND INFORMATION IS ASSUMED TO BE CGVD28.

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0 10 20

1:250 METRES

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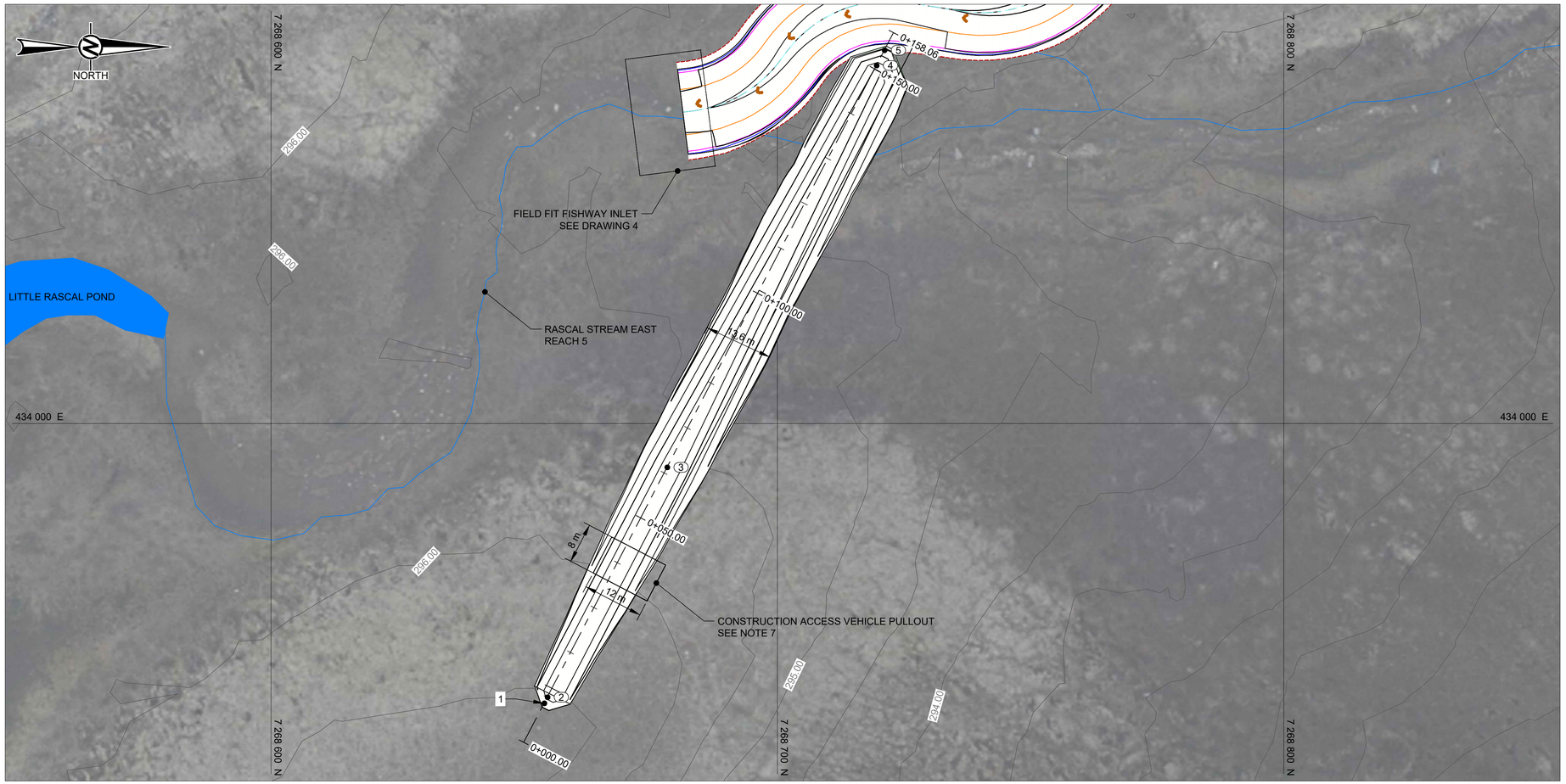
PROJECT
RASCAL STREAM EAST FISHWAY AND DIVERSION BERM DESIGN

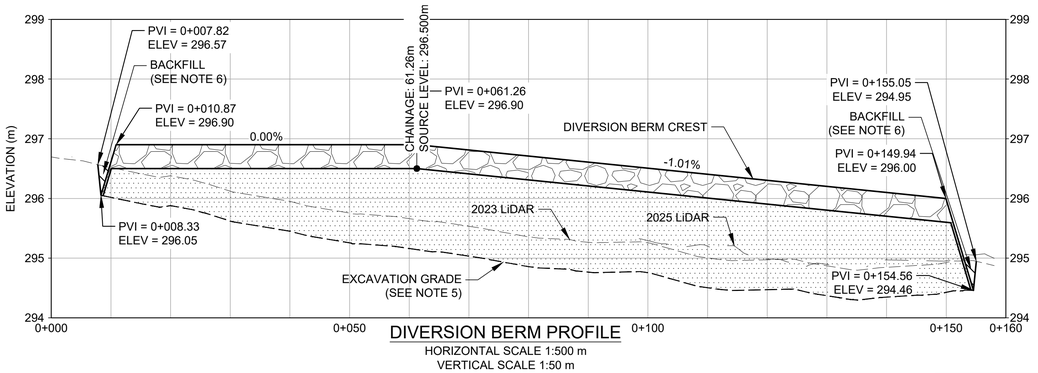
TITLE
FISHWAY CHANNEL INLET AND OUTLET DETAIL PLAN

PROJECT NO.	PHASE/TASK/DOC.	REV.		DRAWING
CA0069616.1932	5000/20/209	0	04 of 06	04

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D
0 25 mm



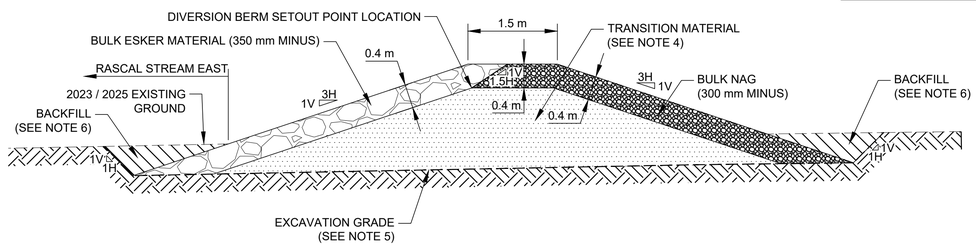


DIVERSION BERM PROFILE

HORIZONTAL SCALE 1:500 m
VERTICAL SCALE 1:50 m

DIVERSION BERM PLAN

SCALE 1:500 m



DIVERSION BERM TYPICAL SECTION

SCALE 1:50

LEGEND

- EXISTING GROUND CONTOURS (SEE NOTE 2)
- DESIGN GROUND CONTOURS (SEE NOTE 2)
- EXISTING GROUND
- BULK NAG (300 mm MINUS)
- BULK ESKER MATERIAL (350 mm MINUS)
- TRANSITION MATERIAL (SEE NOTE 4)
- DIVERSION BERM CREST
- BANKFULL CHANNEL CREST
- EDGE OF BANKFULL CHANNEL BENCH
- 1:100-YEAR CHANNEL CREST
- EXTENT OF EXCAVATION
- EXISTING GROUND

NOTE(S)

1. ALL UNITS ARE IN METRES UNLESS NOTED OTHERWISE.
2. CONTOUR INTERVAL SHOWN AT 0.5 m.
3. FINAL LIFT OF NAG MATERIAL TO BE SELECT LOAD NAG.
4. TRANSITION MATERIAL DESCRIPTION ON SITE IS 4" MINUS.
5. ASSUMED 0.5 m DEPTH TO SUITABLE FOUNDATION MATERIAL TO BE APPROVED BY THE ENGINEER.
6. BACKFILL MATERIAL SHALL CONSIST OF STRIPPED TOPSOIL OR ORGANICS.
7. REMOVAL OF ORGANICS AND TOPSOIL AND PLACEMENT OF TRANSITION MATERIAL FOR CONSTRUCTION ACCESS. VEHICLE PULLOUT IS REQUIRED FOR SAFE OPERATION OF MOBILE EQUIPMENT.
8. PREPARED SURFACE FOR THE DIVERSION BERM TO BE USED FOR CONSTRUCTION ACCESS. THE PREPARED SURFACE SHALL BE MINIMUM 8 m WIDE FROM STATION 0+000 TO 0+060, THEN SHALL BE MINIMUM 12 m WIDE FOR CONSTRUCTION ACCESS OR AS APPROVED BY B2GOLD.

REFERENCE(S)

1. EXISTING GROUND INFORMATION AS PROVIDED IN FILES "251005 Airstrip flyover SURFACE.xml" AND "2023 LiDAR (Clipped).xml". 2023 LiDAR CONTOURS SHOWN IN PLAN.
2. AERIAL IMAGERY AS PROVIDED IN FILES "2023 LiDAR (Clipped).tif" AND "251005 Airstrip_transparent_mosaic_group1.tif".
3. HORIZONTAL COORDINATES ARE NAD83(CSRS) UTM ZONE 13N. VERTICAL DATUM OF PROVIDED EXISTING GROUND INFORMATION IS ASSUMED TO BE CGVD28.

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0 20 40
1:500 METRES

0 2 4
1:50 METRES

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PROJECT
RASCAL STREAM EAST FISHWAY AND DIVERSION BERM DESIGN

TITLE
DIVERSION BERM PLAN AND PROFILE AND TYPICAL CROSS SECTION

PROJECT NO.	PHASE/TASK/DOC.	REV.	05 of 06	DRAWING
CA0069616.1932	5000/20/209	0		05

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0 25 mm

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TABLE 1
FISHWAY CENTERLINE SETOUT POINTS AND ELEVATIONS

STATION	EASTING (m)	NORTHING (m)	FINISHED GRADE ELEVATION (m)
1+000	433938.48	7268681.34	294.54
1+002.26	433938.20	7268683.58	294.52
1+012.37	433934.96	7268693.09	294.43
1+022.49	433928.25	7268700.56	294.34
1+024.41	433926.70	7268701.71	294.32
1+038.01	433918.44	7268712.30	294.20
1+051.61	433916.85	7268725.64	294.08
1+062.76	433918.55	7268736.66	293.98
1+077.08	433916.68	7268750.65	293.85
1+091.39	433907.53	7268761.40	293.72
1+131.80	433873.71	7268783.52	293.22
1+147.09	433864.18	7268795.17	292.96
1+162.38	433863.06	7268810.18	292.70
1+193.80	433870.28	7268840.77	292.16
1+207.69	433868.70	7268854.29	291.93
1+221.58	433858.84	7268863.67	291.69
1+226.78	433854.08	7268865.76	291.60
1+232.16	433849.64	7268868.75	291.51
1+237.55	433846.54	7268873.11	291.42

TABLE 2
DIVERSION BERM SETOUT POINTS AND ELEVATIONS

STATION	NORTHING (m)	EASTING (m)	TOP OF TRANSITION MATERIAL ELEVATION (m)
0+010.07	7268653.97	434055.27	296.05
0+010.87	7268654.60	434054.06	296.50
0+061.26	7268678.25	434008.65	296.50
0+150.76	7268719.60	433929.28	295.59
0+154.16	7268721.17	433926.26	294.46

REFERENCE(S)

1. HORIZONTAL COORDINATES ARE NAD83(CSRS) UTM ZONE 13N. VERTICAL DATUM OF PROVIDED EXISTING GROUND INFORMATION IS ASSUMED TO BE CGVD28.

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PROJECT
RASCAL STREAM EAST FISHWAY AND DIVERSION BERM DESIGN

TITLE
TABLE FOR KEY SETOUT POINTS

PROJECT NO.	PHASE/TASK/DOC.	REV.		DRAWING
CA0069616.1932	5000/20/209	0	06 of 06	06

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25 mm

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Appendix B Technical specifications

APPENDIX B – TECHNICAL SPECIFICATIONS

THESE TECHNICAL SPECIFICATIONS SHALL BE READ IN CONJUCTION WITH THE DESIGN REPORT, THE ISSUED FOR REVIEW (IFC) DESIGN DRAWINGS, PROVIDED IN APPENDIX A, AND THE EROSION AND SEDIMENT CONTROL PLAN (ESCP), PROVIDED IN APPENDIX C.

THE WORK SHALL COMPLY WITH ALL PROJECT SPECIFICATIONS:

- *TECHNICAL SPECIFICATIONS EARTHWORKS AND GEOTECHNICAL ENGINEERING BACK RIVER GOLD PROJECT, NUNAVUT, CANADA (REVISION 2) – ISSUED FOR CONSTRUCTION* (SRK 2023)
- *SPECIFICATION – CIVIL WORKS. B2GOLD. SBR6SDE-4000-C-SPC-0008. REVISION 0. MAY 1, 2024.*

HOWEVER, WHERE CONFLICTS ARISE, REQUIREMENTS OF THE PROJECT-SPECIFIC TECHNICAL SPECIFICATIONS THAT FOLLOW SHALL EXPLICITLY GOVERN OVER THE ABOVE REFERENCED PROJECT SPECIFICATIONS.

1.0 SCHEDULE

THE PROPOSED WORK IS PLANNED TO TAKE PLACE IN 2026 FOR AN APPROXIMATE DURATION OF 3 WEEKS.

2.0 ENVIRONMENTAL PROTECTION

1. THE WORK AREAS SHALL BE MONITORED FOR EROSION AND SEDIMENT TRANSPORT AS REQUIRED DURING CONSTRUCTION. ANY REQUIRED MITIGATION MEASURES WILL BE PUT IN PLACE AS PER THE EROSION AND SEDIMENT CONTROL PLAN (APPENDIX C).
2. EXECUTION OF THE WORK IS RECOMMENDED TO FOLLOW FISHERIES AND OCEANS CANADA (DFO) STANDARDS AND CODE OF PRACTICES, WHICH MAY INCLUDE THE FOLLOWING: TEMPORARY FORDS AND IN-WATER ISOLATION (DFO 2024), AND ADDITIONAL MEASURES OR RECOMMENDATIONS PROVIDED BY DFO DURING THE PERMITTING PROCESS.

3.0 GENERAL REQUIREMENTS

1. ALL ENVIRONMENTAL PERMITS AND APPROVALS SHALL BE OBTAINED PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR(S) SHALL CONFORM TO ALL PERMIT AND SITE-SPECIFIC ENVIRONMENTAL MANAGEMENT PLAN REQUIREMENTS.
3. CLEARING AND STRIPPING WITHIN THE CONSTRUCTION LIMITS SHALL CONFORM WITH ANY ENVIRONMENTAL MANAGEMENT PLAN REQUIREMENTS.
4. CONSTRUCTION LIMITS ARE SHOWN ON DESIGN DRAWINGS. THE CONTRACTOR(S) SHALL NOT UNDERTAKE ACTIVITY THAT WILL RESULT IN DISTURBANCE OUTSIDE OF THESE LIMITS WITHOUT PRIOR APPROVAL BY OWNER'S REPRESENTATIVE AND THE ENGINEER.
5. UPSTREAM INLET OF RASCAL STREAM EAST (RSE) FISHWAY SHALL BE FIELD FIT TO TIE INTO EXISTING RASCAL STREAM EAST AT THE UPSTREAM LIMITS OF THE CONSTRUCTION FOOTPRINT.

FIELD FITTING OF IN-STREAM BANKFULL DIVERSION BOULDERS MAY BE REQUIRED AT THE DIRECTION OF THE ENGINEER AND ENVIRONMENTAL MONITOR.

6. DOWNSTREAM OUTLET OF RSE FISHWAY SHALL BE FIELD FIT TO TIE INTO EXISTING GOSLING POND 1 AT THE DOWNSTREAM LIMITS OF THE CONSTRUCTION FOOTPRINT.
7. ENVIRONMENTAL COMPLIANCE MONITORING SHALL BE COMPLETED IN ACCORDANCE WITH THE SITE-SPECIFIC EROSION SEDIMENT CONTROL PLAN (ESCP) AND CONSTRUCTION AND FISHERIES MONITORING PLANS.

4.0 QUALITY ASSURANCE INSPECTIONS

1. WORK THROUGHOUT THE ENTIRE PROJECT SHALL BE COMPLETED IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTIONS AND TESTING GUIDELINES SUMMARIZED BELOW.
2. MONITORING OF THE QUALITY ASSURANCE (QA)/QUALITY CONTROL (QC) WILL BE CONDUCTED BY QUALIFIED PERSONNEL SO THAT WORK IS COMPLETED IN ACCORDANCE WITH THE DESIGN DRAWINGS AND THESE TECHNICAL SPECIFICATIONS.
3. PRODUCTS SHALL BE MADE AVAILABLE FOR INSPECTION AND ACCEPTANCE BY THE ENGINEER AT THE POINT AND TIME OF INCORPORATION INTO THE WORK.
4. MINIMUM QUALITY ASSURANCE(QA) TESTS AND INSPECTIONS, TO BE PERFORMED BY THE CONTRACTOR, SHALL BE PER TABLE 4.1.

TABLE 4.1: QUALITY ASSURANCE REQUIREMENTS

ELEMENT	DESCRIPTION	REQUIREMENT
VISUAL INSPECTIONS	INSPECT FOUNDATION PREPARATION FOR SUITABILITY OF MATERIAL AND PRESENCE OF HIGH MOISTURE OR ICE.	INSPECT AND DOCUMENT FOUNDATION MATERIAL SUITABILITY FOR APPROVAL BY THE ENGINEER.
VISUAL INSPECTIONS	INSPECT ALL MATERIALS FOR ADHERENCE TO THE DESCRIPTIONS PROVIDED IN THESE SPECIFICATIONS.	INSPECT AND DOCUMENT MATERIAL CONDITION BEFORE INSTALLATION.
SURVEY	COMPLETE SURVEYS FOR APPROVAL FOR ITEMS LISTED BELOW: 1. EXCAVATED SURFACE 2. FINAL SURFACE 3. BOULDER CLUSTERS	COMPLETE, DOCUMENT, AND PROVIDE SURVEYS FOLLOWING COMPLETION OF EVERY ITEM FOR APPROVAL BY THE ENGINEER.

5.0 MATERIALS

ALL MATERIALS USED SHALL CONSIST OF COMPETENT NON-ACID-GENERATING AND NON-METAL LEACHING MATERIAL THAT IS FREE OF ORGANIC MATTER, FROZEN SOIL, SNOW, AND ICE. ANY NEWLY SOURCED MATERIALS SHALL BE COLLECTED AND ANALYZED TO CONFIRM THEY ARE NON-ACID GENERATING (NAG) AND NON-METAL LEACHING.

SILTY SAND AND SANDY SILT MATERIALS ARE NOT RECOMMENDED FOR USE AS CONSTRUCTION MATERIALS DUE TO FROZEN MOISTURE CONDITIONS AT THE TIME OF THE GEOTECHNICAL INVESTIGATION.

5.1 BULK ESKER

1. THE BULK ESKER MATERIAL USED FOR CHANNEL ARMOURING AND THE UPSTREAM BERM FACE SHALL BE WELL-GRADED WITH A MAXIMUM PARTICLE SIZE OF 350 mm AS MEASURED IN ANY DIRECTION, AND A D50 of 200 mm.
2. BULK ESKER MATERIAL SHALL BE FREE OF FINE SEDIMENT (SOIL, SILT, CLAY, ORGANIC MATTER) THAT COULD WASH INTO THE WATER AND DEGRADE WATER QUALITY. FINE SEDIMENTS OF <2 mm SHOULD NOT EXCEED 10%.
3. MATERIAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.

5.2 TRANSITION MATERIAL

1. THE TRANSITION MATERIAL USED FOR CHANNEL BEDDING LAYER AND BERM CORE CONSTRUCTION SHALL HAVE MAX PARTICLE SIZE 150 mm AND PARTICLE SIZE DISTRIBUTION FALLING WITHIN THE LIMITS PRESENTED IN Table 5.1.

Table 5.1: TRANSITION MATERIAL PARTICLE SIZE DISTRIBUTION

PARTICLE SIZE (mm)	% PASSING
150	100
100	60-100
50	40-70
20	20-50
10	0-30
5	0-10

5.3 BOULDERS

1. INDIVIDUAL BOULDERS USED FOR BOULDER CLUSTERS SHALL HAVE AN INTERMEDIATE DIMENSION OF 400 mm TO 450 mm AS MEASURED PERPENDICULAR TO THE LONGEST AXIS.
2. INDIVIDUAL BOULDERS USED FOR THE IN-STREAM BANKFULL DIVERSION SHALL HAVE A MINIMUM INTERMEDIATE DIMENSION OF 350 mm AS MEASURED PERPENDICULAR TO THE LONGEST AXIS.
3. MATERIAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.

5.4 BULK NAG MATERIAL

1. BULK NAG MATERIAL USED FOR BERM SURFACING SHALL BE WELL-GRADED MATERIAL WITH A MAXIMUM PARTICLE SIZE OF 300 mm AS MEASURED IN ANY DIRECTION.
2. THE BULK NAG MATERIAL SHALL BE WASHED TO REMOVE BLAST RESIDUE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

3. MATERIAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.

6.0 EXCAVATION AND WATER CONTROL

1. IN-WATER WORK TO BE MINIMIZED WITH THE USE OF TEMPORARY ISOLATION BERMS AND SHALL BE COMPLETED DURING LOW-FLOW CONDITIONS.
2. ISOLATE THE CONSTRUCTION AREA FOR THE RSE FISHWAY WITHOUT CREATION OF FISH BARRIERS IN ALL NATURAL STREAM REACHES DURING CONSTRUCTION. FLOWS ARE TO CONTINUE ALONG THE NATURAL FLOW PATH UNTIL COMPLETION OF THE RSE FISHWAY. INSTALLATION OF A TEMPORARY FISH FENCE AND ISOLATION BERM (USING WELL-GRADED GRAVELS AND COBBLES ALONG WITH A LAYER OF IMPERVIOUS POLY SHEETING) INSTALLED TO BANKFULL HEIGHT AT THE UPSTREAM END OF THE RSE FISHWAY, TO KEEP FISH AND WATER OUT OF THE CONSTRUCTION ZONE WITH CONTINUED PASSAGE FROM RASCAL STREAM EAST REACH 5 THROUGH RASCAL STREAM EAST REACH 4.
3. CONSTRUCT A TEMPORARY SUMP AT THE DOWNSTREAM END OF THE RSE FISHWAY TO COLLECT GROUNDWATER OR RUNOFF AND ANY MOBILIZED SEDIMENT FROM THE CONSTRUCTION ZONE.
4. SEDIMENT LADEN WATER THAT ACCUMULATES IN THE ISOLATED WORK AREA DURING CONSTRUCTION (FROM GROUNDWATER, RAINFALL, OR POTENTIAL FLOODING) MUST BE PUMPED TO A VEGETATED BUFFER IN AN AREA THAT WILL PREVENT DIRECT FLOW TO A WATERCOURSE OR WATERBODY. DETERMINING A SUFFICIENT DISTANCE FROM THE WATERCOURSE WILL BE AT THE DISCRETION OF THE ENVIRONMENTAL MONITOR TO ALLOW THE WATER TO INFILTRATE TO GROUND, PRIOR TO RE-ENTERING THE WATERCOURSE AND WITHOUT CAUSING FURTHER EROSION. THE PUMP OUTLET MUST BE STABILIZED TO PREVENT EROSION FROM DISCHARGE FLOW VELOCITY.
5. FLOWS ARE TO BE DIRECTED TO THE RSE FISHWAY (AS-PER THE ESCP AND MONITORING PLANS) PRIOR TO EXCAVATION OF THE DIVERSION BERM FOOTPRINT WITHIN THE RSE ORDINARY HIGH WATER MARK.
6. EXCAVATION IS NOT EXPECTED TO EXTEND OT BEDROCK, HOWEVER, IF BEDROCK IS ENCOUNTERED, ADDITIONAL EVALUATION OF BEDROCK HYDRAULIC CONDUCTIVITY MAY BE REQUIRED.

7.0 EXECUTION

7.1 SITE SURVEY

1. SITE SURVEYS TO LAYOUT OUT THE CONSTRUCTION AND DISTURBANCE FOOTPRINT FOR THE RSE FISHWAY AND DIVERSION BERM SHALL BE COMPELTED PRIOR TO ANY DISTURBANCE.
2. SURVEYS TO BE COMPLETED AS DECRIBED IN SECTION 4.0 AND SECTION 9.0.

7.2 PREPARATION OF THE SITE

1. CLEARING AND STRIPPING SHALL OCCUR WITHIN THE LIMITS OF THE CONSTRUCTION FOOTPRINT AND FOLLOW THE LINES AND GRADES SHOWN IN THE DESIGN DRAWINGS, AND AS PER THE ESCP.

2. SURFICIAL ORGANICS SHOULD BE STRIPPED WITHIN THE DESIGN FOOTPRINT PRIOR TO CONSTRUCTION, WHILE TRACE ROOTLETS BELOW THE STRIPPED ORGANIC LAYER REMAIN IN PLACE.
3. EXCAVATED SUBGRADE CONDITIONS SHALL BE INSPECTED FOR THE SUITABILITY OF MATERIAL PLACEMENT. SATURATED FINE-GRAINED SOILS, ICE-RICH FINE-GRAINED SOILS IN THE THAWED ACTIVE LAYER, OR ICE STRUCTURES SHALL BE STRIPPED UNTIL COMPETENT SUBGRADE MATERIAL IS FOUND, SUBJECT TO APPROVAL BY THE ENGINEER.
4. IF REMOVAL OF MATERIAL BELOW THE EXCAVATION SURFACE IS REQUIRED, TRANSITION MATERIAL SHALL BE PLACED AS PER SECTION 7.3.1 (FOR FISHWAY INSTALLATION) OR 7.4.1 (FOR BERM INSTALLATION) OF THESE SPECIFICATIONS, TO THE DESIGNED EXCAVATION SURFACE AS SHOWN IN THE DRAWINGS, AND AS DIRECTED BY THE ENGINEER.
5. MATERIAL STOCKPILES PLACED ADJACENT TO ANY EXCAVATION OR EMBANKMENT SHALL BE LIMITED TO MAXIMUM 1.2 m IN HEIGHT.
6. MATERIAL STOCKPILES SHALL BE PLACED A HORIZONTAL DISTANCE AWAY FROM AN EXCAVATION EQUIVALENT TO (OR GREATER THAN) THE EXCAVATION DEPTH.
7. MATERIAL STOCKPILES SHALL BE KEPT FREE OF DEBRIS, OIL OR OTHER CONTAMINANTS, SNOW, AND OTHER SOURCES OF MOISTURE.
8. STOCKPILES SHALL BE SIZED TO MINIMIZE SEGREGATION AND TO FACILITATE FUTURE USE.

7.3 FISHWAY INSTALLATION

7.3.1 TRANSITION MATERIAL

1. TRANSITION MATERIAL SHALL BE PLACED ACCORDING THE DESIGN DRAWINGS AND BUCKET TAMPED TO PROVIDE A BEDDING FOR CHANNEL ARMOURING.

7.3.2 BULK ESKER

1. BULK ESKER SHALL BE PLACED ACCORDING TO THE DESIGN DRAWINGS.
2. THE CONTRACTOR SHALL EXERCISE CARE DURING PLACEMENT TO AVOID DAMAGE OR DISPLACEMENT OF THE TRANSITION MATERIAL LAYER.
3. BULK ESKER SHALL NOT BE END-DUMPED INTO THE CHANNEL.
4. BULK ESKER PLACEMENT SHALL BE FIELD FIT AT THE INLET OF THE FISHWAY TO FOLLOW THE NATURAL STREAM CHANNEL, CENTERED AT THE THALWEG.
5. BULK ESKER PLACEMENT SHALL BE FIELD FIT AT THE OUTLET OF THE FISHWAY WHERE ONLY THE LOW-FLOW CHANNEL SHALL CUT INTO GOSLING POND 1.

7.4 DIVERSION BERM INSTALLATION

PRIOR TO CONSTRUCTION OF THE DIVERSION BERM, FLOWS ARE TO BE DIVERTED INTO THE CONSTRUCTED RSE FISHWAY, ACCORDING TO THE PROCEDURES AND REQUIREMENTS IN THE ESCP AND THE MONITORING PLANS TO ALLOW WORKS FOR THE DIVERSION BERM TO BE COMPLETED UNDER DRY CONDITIONS.

7.4.1 TRANSITION MATERIAL

1. TRANSITION MATERIAL SHALL BE PLACED ACCORDING TO THE DESIGN DRAWGINS IN UNCOMPACTED LIFTS NOT EXCEEDING 200 mm.

2. EACH LAYER SHALL BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698).
3. MOISTURE CONTENT SHALL BE MAINTAINED WITHIN +/- 2% OF OPTIMUM MOISTURE CONTENT DURING COMPACTION (ASTM D698).
4. WHERE THE MOISTURE CONTENT IS OUTSIDE THESE LIMITS, THE LIDT MUST BE EITHER DRIED OR WETTED AS DIRECTED BY THE ENGINEER.

7.4.2 BULK ESKER

1. BULK ESKER MATERIAL SHALL BE PLACED ACCORDING TO THE DESIGN DRAWINGS ON THE UPSTREAM (WEST) FACE OF THE BERM.

7.4.3 BULK NAG

2. BULK NAG MATERIAL SHALL BE PLACED ACCORDING TO THE DESIGN DRAWINGS ON THE TOP SURFACE AND DOWNSTREAM (EAST) FACE OF THE BERM.

8.0 CONSTRUCTION HOLD POINTS AND SURVEYS

3. ALL MATERIALS THAT ARE TO BE USED FOR CONSTRUCTION TO BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.
4. EXCAVATION SURVEYS AND SUITABLE FOUNDATION MATERIAL TO BE APPROVED BY THE ENGINEER UPON COMPLETION OF EXCAVATION.
5. TRANSITION MATERIAL PLACEMENT TO BE INSPECTED BY THE ENGINEER AND SURVEYED AND TO CONFIRM TRANSITION MATERIAL LAYER THICKNESS PRIOR TO BULK ESKER PLACEMENT.
6. BULK ESKER MATERIAL PLACEMENT TO BE INSPECTED BY THE ENGINEER AND SURVEYED TO CONFIRM BULK ESKER LAYER THICKNESS.
7. THE RSE FISHWAY, INCLUDING OUTLET AND INLET FIELD FITTING TO BE APPROVED BY THE ENGINEER PRIOR TO CONVEYING FLOWS IN THE CONSRUCTED RSE FISHWAY.
8. RSE FISHWAY PERFORMANCE AND FIELD FIT FLOW DIRECTION FROM THE UPSTREAM CHANNEL INTO THE RSE FISHWAY TO BE APPROVED BY THE ENGINEER PRIOR TO DIVERSION BERM CONSTRTION WORKS IN THE EXISTING RASCAL STREAM EAST REACH 5.

Appendix C Erosion and sediment control plan (ESCP)

Introduction and General Notes

The following construction erosion and sediment control plan (ESCP) is aimed to minimize sediment runoff and effects to the fish communities during construction of the Rascal Stream East (RSE) Fishway downstream of Rascal Stream East Reach 5 connecting Gosling Pond 1 (see Figure 1). This ESCP is updated from the June 29, 2020, Conceptual Construction and Erosion Sediment Control Plan (18114181-062-TM-Rev0) for the RSE Fishway and velocity mitigation measures in Rascal Stream West Reach 1. Sediment runoff is considered a deleterious substance that can adversely affect fish and fish habitat.

The following measures are not exhaustive and should be adapted by the Contractor as necessitated by changing site conditions. This ESCP is intended to provide erosion and sediment control procedures and measures associated with construction, with the long-term erosion and sediment control monitoring described in the main Technical Memorandum. In addition, construction and fisheries monitoring requirements during and post-construction are described in *Section 4* of the main Technical Memorandum.

During general construction activities, the objective is to prevent erosion and sediment mobilization into Rascal Stream downstream of the proposed works. The work area must be isolated from all flowing water without disrupting flow to downstream areas.

Machinery crossing (fording) of a stream or watercourse shall be avoided unless necessary. If fording cannot be avoided, machinery crossing shall be limited to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the watercourse are required, a temporary crossing structure must be constructed. Spill kits shall have enough capacity to contain the largest potential spill on-site and remain accessible at all times.

Construction Sequence

The proposed fish passage mitigation activities will include the construction of the RSE Fishway. The proposed construction sequence is summarized below – for each sequence, refer to the ESCP details below.

1. Isolate the construction area for the RSE Fishway without creation of fish barriers in all natural stream reaches during construction. Flows are to continue along the natural flow path until completion of the RSE Fishway. Installation of a temporary fish fence and isolation berm (using well-graded gravels and cobbles along with a layer of impervious poly sheeting) installed to bankfull height at the upstream end of the RSE Fishway, to keep fish and water out of the construction zone with continued passage from Rascal Stream East Reach 5 through Rascal Stream East Reach 4.

2. Construction of the RSE Fishway and in-stream boulder clusters as described in *Section 4.1 Constructions During Open-Water Conditions* of the main Technical Memorandum and Figure 1.
3. Prior to introducing natural flows into the new channel, wash fines/substrate at the upstream end of the isolated new channel area, using pumped water (or from a partial diversion) from the Rascal Stream East Reach 5, and pump it out at the sump at the downstream end of the isolated area into an upland area (location/distance from the stream channel determined by the Environmental Monitor), until it flows clear.
4. Remove the temporary silt fences and restore the sump area from the upstream end first to minimize sediment disturbance.
5. Removal of the temporary fish fence and isolation berm, and placement of river training boulders to direct flows into the constructed RSE Fishway. Follow monitoring plan below.
6. With natural flows conveyed through the RSE fishway, construct the diversion berm. Silt fencing erosion and sediment control shall be completed prior to construction of the diversion berm.

Construction Erosion and Sediment Control for RSE Fishway

There are two phases of the RSE Fishway:

1. Construction of the RSE Fishway between Rascal Stream East Reach 5 and Gosling Pond 1; and
2. Construction of a diversion berm to the east of the RSE Fishway.

The following erosion sediment control (ESC) measures should be implemented for construction of the RSE Fishway and diversion berm. The information is provided as guidance, however, erosion and sediment control measures shall be adapted on a field fit basis where modifications may be required to address general site and watercourse flow conditions.

- Placement of silt fences (two rows) at the RSE Fishway inlet to Gosling Pond 1 across the entire channel transect in a U-shape (convex) with the bulge facing upstream to capture transported sediment during flushing of the diversion channel when under controlled flows. Once the diversion channel is activated, silt fences shall be re-installed as to not span the entire channel. See Figure 1 below.
- Construct a sump at the downstream end of the RSE Fishway to collect groundwater or runoff and any mobilized sediment from the construction zone. See Figure 1 below.
- Sediment laden water that accumulates in the isolated work area during construction (from groundwater, rainfall, or potential flooding) must be pumped to a vegetated buffer in an area that will prevent direct flow to a watercourse or waterbody. Determining a sufficient distance from the watercourse will be at the discretion of the Environmental Monitor to allow the water to infiltrate to

ground, prior to re-entering the watercourse and without causing further erosion. The pump outlet must be stabilized to prevent erosion from discharge flow velocity.

- Silt fencing shall be installed around the diversion berm working area capture potentially sediment laden runoff from leaving the work area.
- Installation of a temporary berm (using well-graded gravels and cobbles along with a layer of impervious poly sheeting) installed to bankfull height at the upstream end of the RSE Fishway, to keep fish and water out of the construction zone with continued passage from Rascal Stream East Reach 5 through Rascal Stream East Reach 4.
- All equipment and materials (e.g., cobbles and gravel) used to construct the diversion shall follow the Design Drawings [Appendix A] and the Technical Specifications [Appendix B]) and must not contain any substances that could be harmful to fish, wildlife or aquatic ecosystems. Vehicles and equipment shall arrive on-site in a clean condition (i.e., pressure-washed prior to arrival on-site and clean and free of deleterious substances such as oil, grease, and soil).
- Fines and substrates used for lining the diversion channel must be composed of non-potentially acid generating rock.
- Refuelling equipment (e.g., pumps) or other mobile or large equipment, refilling small field containers, and conducting fuel transfers must be completed a minimum of 30 metres from any watercourse.
- If access roads are required, grade roads in such a manner as to avoid materials from being directed into any watercourses when practical.
- Should turbidity values increase beyond those stipulated in *Section 4.1.2 Turbidity Monitoring* of the main Technical Memorandum, work should slow, or potentially halt, under the direction of the Environmental Monitor until background turbidity values have re-established before continuing.
- During excavations, temporary material stockpiles must be located at least 15 m away from watercourses or other potential off-site transport pathways (i.e., ditches) on flat, stable ground. Temporary stockpiles should be inspected twice daily and if sediment from temporary stockpiles is mobilized due to precipitation, silt fences shall be installed downstream of stockpiles to intercept mobilized sediment from entering watercourses.
- Soil disturbance must not occur during heavy rain conditions.
- Prior to introducing flow into the new channel, wash fines/substrate at the upstream end of the isolated new channel area, using pumped water (or from a partial diversion) from the Rascal Stream East Reach 5, and pump it out at the downstream end of the isolated area into an upland area (location/distance from the stream channel determined by the Environmental Monitor), until it flows clear.

- Upon completion of project works, remove the temporary silt fences required for the RSE Fishway and the diversion berm and restore the sump area from the upstream end first to minimize sediment disturbance. Removal of silt fencing should occur only if the turbidity readings meet guidelines outlined in *Section 4.1.2 Construction Monitoring* of the main Technical Memorandum.

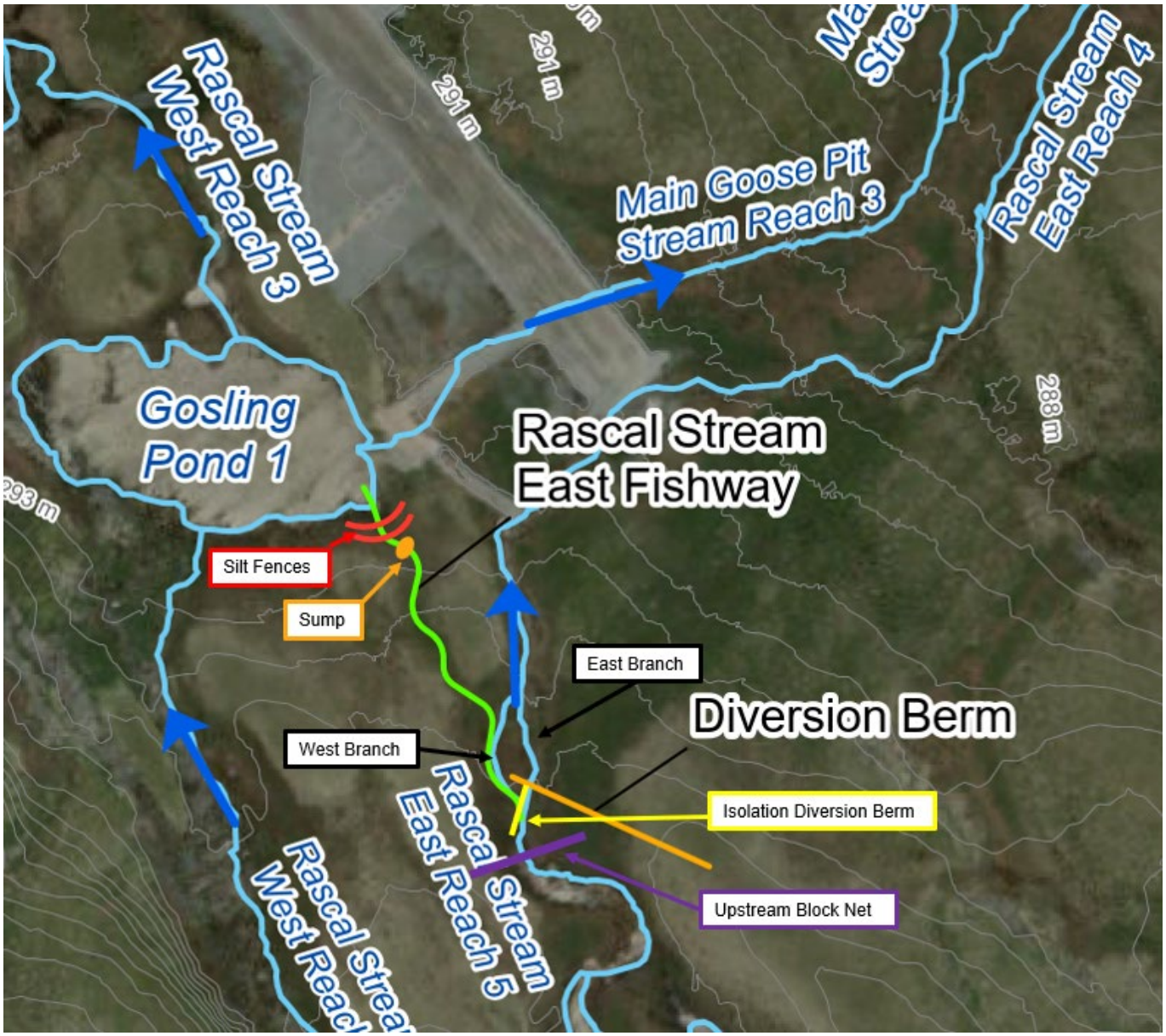


Figure 1-1: Erosion and sediment control measures

Appendix D 2025 Waste rock geochemical analysis results (RainCoast Environmental Services Ltd. 2025)

Table D.1 2025 Acid Base Accounting Results from B2Gold Site Laboratory

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
EPBH250R10F	1/1/2025	EP250R10	Echo	250	0.178	5.24	6.49	1.24	PAG
EPBH250R129F	1/1/2025	EP250R129	Echo	250	0.190	5.29	8.97	1.70	PAG
EPBH250R65F	1/1/2025	EP250R65	Echo	250	0.067	2.08	7.50	3.61	NAG
EPBH250R47F	1/1/2025	EP250R47	Echo	250	0.120	3.68	7.36	2.00	NAG
EPBH250R49F	1/1/2025	EP250R49	Echo	250	0.138	4.05	6.50	1.60	NAG
EPBH250R52F	1/1/2025	EP250R52	Echo	250	0.174	4.14	7.24	1.75	PAG
EPBH250R12F	1/1/2025	EP250R12	Echo	250	0.212	5.78	5.25	0.91	PAG
EPBH250R123F	1/2/2025	EP250R123	Echo	250	0.328	10.07	6.51	0.65	PAG
EPBH250R58F	1/2/2025	EP250R58	Echo	250	0.332	10.36	6.75	0.65	PAG
EPBH250R60F	1/2/2025	EP250R60	Echo	250	0.212	5.83	7.24	1.24	PAG
EPBH250R69F	1/2/2025	EP250R69	Echo	250	0.108	2.99	6.99	2.34	NAG
EPBH250R112F	1/2/2025	EP250R112	Echo	250	0.185	5.52	6.73	1.22	PAG
EPBH250R116F	1/2/2025	EP250R116	Echo	250	0.119	3.71	6.87	1.85	NAG
EPBH250R119F	1/2/2025	EP250R119	Echo	250	0.236	4.14	5.98	1.44	PAG
EPBH250R175F	1/2/2025	EP250R175	Echo	250	0.127	2.61	9.74	3.73	NAG
EPBH250R179F	1/2/2025	EP250R179	Echo	250	0.130	4.06	8.22	2.02	NAG
EPBH250R181F	1/2/2025	EP250R181	Echo	250	0.142	4.44	6.48	1.46	NAG
EPBH250R185F	1/2/2025	EP250R185	Echo	250	0.162	5.06	8.74	1.73	PAG
EPBH250R190F	1/2/2025	EP250R190	Echo	250	0.171	5.34	8.50	1.59	PAG
EPBH250R199F	1/3/2025	EP250R199	Echo	250	0.145	4.28	8.04	1.88	NAG
EPBH250R201F	1/3/2025	EP250R201	Echo	250	0.133	3.79	7.10	1.87	NAG
EPBH250R22F	1/3/2025	EP250R22	Echo	250	0.140	4.09	6.72	1.64	NAG
EPBH250R24F	1/3/2025	EP250R24	Echo	250	0.154	4.64	9.17	1.98	PAG
EPBH250R28F	1/3/2025	EP250R28	Echo	250	0.166	4.92	7.40	1.50	PAG
EPBH250R31F	1/3/2025	EP250R31	Echo	250	0.104	3.24	7.00	2.16	NAG
EPBH250R109F	1/3/2025	EP250R109	Echo	250	0.136	4.03	6.45	1.60	NAG
EPBH250R152F	1/3/2025	EP250R152	Echo	250	0.096	2.67	5.61	2.10	NAG
EPBH250R155F	1/3/2025	EP250R155	Echo	250	0.103	3.12	6.27	2.01	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
EPBH250R169F	1/3/2025	EP250R169	Echo	250	0.117	3.42	7.43	2.17	NAG
EPBH250R89F	1/3/2025	EP250R89	Echo	250	0.139	3.98	7.78	1.96	NAG
EPBH250R93F	1/3/2025	EP250R93	Echo	250	0.179	5.57	6.27	1.12	PAG
EPBH250R99F	1/3/2025	EP250R99	Echo	250	0.113	3.55	7.09	2.00	NAG
EPBH25001P74F	1/5/2025	EP25001P74	Echo	250	0.387	11.92	6.72	0.56	PAG
EPBH25001P99F	1/5/2025	EP25001P99	Echo	250	0.358	10.82	6.55	0.61	PAG
EPBH25001P101F	1/5/2025	EP25001P101	Echo	250	0.291	9.10	6.51	0.72	PAG
EPBH25001P147F	1/6/2025	EP25001P147	Echo	250	0.131	3.76	8.98	2.39	NAG
EPBH25001P19F	1/6/2025	EP25001P19	Echo	250	0.104	2.80	7.10	2.54	NAG
EPBH25001P25F	1/6/2025	EP25001P25	Echo	250	0.122	2.97	7.30	2.46	NAG
EPBH25001P45F	1/6/2025	EP25001P45	Echo	250	0.202	6.30	7.00	1.11	PAG
EPBH25001P51F	1/6/2025	EP25001P51	Echo	250	0.221	6.24	6.83	1.10	PAG
EPBH25001P66F	1/8/2025	EP25001P66	Echo	250	0.249	7.77	7.75	1.00	PAG
EPBH25001P40F	1/8/2025	EP25001P40	Echo	250	0.164	5.01	7.74	1.54	PAG
EPBH25001P15F	1/8/2025	EP25001P15	Echo	250	0.152	4.63	7.75	1.68	PAG
EPBH25001P111F	1/8/2025	EP25001P111	Echo	250	0.233	7.28	8.11	1.11	PAG
EPBH25001P113F	1/8/2025	EP25001P113	Echo	250	0.253	7.37	7.86	1.07	PAG
EPBH25001P93F	1/8/2025	EP25001P93	Echo	250	0.178	5.55	7.25	1.31	PAG
EPBH25002P124	1/10/2025	EP25002P124	Echo	250	0.033	1.02	6.00	5.87	NAG
EPBH25002P158	1/10/2025	EP25002P158	Echo	250	-	-	8.86	-	NAG
EPBH25002P159	1/10/2025	EP25002P159	Echo	250	0.304	9.50	6.50	0.68	PAG
EPBH25002P161	1/10/2025	EP25002P161	Echo	250	0.121	3.48	6.13	1.76	NAG
EPBH25002P128	1/10/2025	EP25002P128	Echo	250	0.087	2.60	6.24	2.41	NAG
EPBH25001P118	1/10/2025	EP25001P118	Echo	250	0.109	3.26	9.25	2.84	NAG
EPBH25001P159	1/10/2025	EP25001P159	Echo	250	0.116	3.63	7.73	2.13	NAG
EPBH260-10P-11	1/12/2025	EP26010P11	Echo	260	0.092	2.89	17.09	5.92	NAG
EPBH260-10P-12	1/12/2025	EP26010P12	Echo	260	0.081	2.53	6.63	2.62	NAG
EPBH260-10P-31	1/12/2025	EP26010P31	Echo	260	0.106	3.31	6.90	2.08	NAG
EPBH260-10P-48	1/12/2025	EP26010P48	Echo	260	0.137	4.08	6.64	1.63	NAG
EPBH260-10P-79	1/12/2025	EP26010P79	Echo	260	0.121	3.64	7.01	1.93	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
EPBH260-10P-96	1/12/2025	EP26010P96	Echo	260	0.136	4.25	6.96	1.64	NAG
EPBH25002P129F	1/14/2025	EP25002P129	Echo	250	1.139	34.81	20.05	0.58	PAG
EPBH25002P15F	1/14/2025	EP25002P15	Echo	250	0.930	29.06	36.56	1.26	PAG
EPBH25002P127F	1/14/2025	EP25002P127	Echo	250	0.048	1.50	4.87	3.26	NAG
EPBH25002P21F	1/14/2025	EP25002P21	Echo	250	0.331	10.35	13.32	1.29	PAG
EPBH25002P39F	1/14/2025	EP25002P39	Echo	250	0.102	3.02	5.53	1.83	NAG
EPBH25002P45F	1/14/2025	EP25002P45	Echo	250	1.617	47.84	19.65	0.41	PAG
EPBH25002P70F	1/14/2025	EP25002P70	Echo	250	0.411	12.68	7.05	0.56	PAG
EPBH25002P74F	1/14/2025	EP25002P74	Echo	250	0.189	5.90	8.98	1.52	PAG
EPBH25002P77F	1/14/2025	EP25002P77	Echo	250	0.165	4.87	8.36	1.72	PAG
EPBH25002P169F	1/16/2025	EP25002P169	Echo	250	0.219	6.22	7.37	1.19	PAG
EPBH25003B03F	1/17/2025	EP25003B03	Echo	250	0.159	4.95	8.24	1.66	PAG
EPBH25003B07F	1/17/2025	EP25003B07	Echo	250	0.182	5.05	6.49	1.29	PAG
EPBH25003B10F	1/17/2025	EP25003B10	Echo	250	0.244	7.61	7.60	1.00	PAG
EPBH25003P19F	1/17/2025	EP25003P19	Echo	250	0.158	4.93	8.96	1.82	PAG
EPBH25003P22F	1/17/2025	EP25003P22	Echo	250	0.067	2.09	5.86	2.81	NAG
EPBH25003P25F	1/17/2025	EP25003P25	Echo	250	0.104	3.12	7.58	2.43	NAG
EPBH25003P71F	1/17/2025	EP25003P71	Echo	250	0.211	6.60	7.48	1.13	PAG
EPBH25003P45F	1/17/2025	EP25003P45	Echo	250	-	-	7.47	-	NAG
EPBH25003P51F	1/18/2025	EP25003P51	Echo	250	0.182	5.70	8.62	1.51	PAG
EPBH25003P36F	1/18/2025	EP25003P36	Echo	250	0.292	9.11	10.04	1.10	PAG
EPBH25003P122F	1/18/2025	EP25003P122	Echo	250	0.032	0.88	10.52	11.95	NAG
EPBH25003P16F	1/18/2025	EP25003P16	Echo	250	0.147	4.01	11.23	2.80	NAG
UPBH29702P73C	1/18/2025	UP29702P73	Umwelt	297	0.142	4.31	7.02	1.63	NAG
UPBH29702P81C	1/18/2025	UP29702P81	Umwelt	297	0.038	1.20	7.72	6.43	NAG
UPBH29702P130C	1/19/2025	UP29702P130	Umwelt	297	0.012	0.20	6.57	33.17	NAG
UPBH29702P133C	1/19/2025	UP29702P133	Umwelt	297	0.266	7.03	5.85	0.83	PAG
UPBH29702P136C	1/19/2025	UP29702P136	Umwelt	297	0.216	6.74	7.02	1.04	PAG
EPBH25003P81F	1/19/2025	EP25003P81	Echo	250	0.143	3.90	9.52	2.44	NAG
EPBH25003P84F	1/19/2025	EP25003P84	Echo	250	0.076	2.38	8.67	3.65	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
EPBH25003P114F	1/19/2025	EP25003P114	Echo	250	0.273	8.52	9.67	1.14	PAG
UPBH29702P153C	1/20/2025	UP29702P153	Umwelt	297	0.048	1.42	6.64	4.66	NAG
UPBH29702P158C	1/20/2025	UP29702P158	Umwelt	297	-	-	3.88	N/A	NAG
UPBH29702P188C	1/20/2025	UP29702P188	Umwelt	297	0.025	0.79	5.33	6.71	NAG
UPBH29703P58C	1/22/2025	UP29703P58	Umwelt	297	-	-	7.13	N/A	NAG
UPBH29703P63C	1/22/2025	UP29703P63	Umwelt	297	0.250	7.81	6.63	0.85	PAG
UPBH29703P66C	1/22/2025	UP29703P66	Umwelt	297	0.050	1.56	7.84	5.02	NAG
UPBH29703P70C	1/22/2025	UP29703P70	Umwelt	297	0.130	3.75	7.00	1.87	NAG
UPBH29703P73C	1/22/2025	UP29703P73	Umwelt	297	0.110	3.13	6.13	1.96	NAG
UPBH29703P117C	1/23/2025	UP29703P117	Umwelt	297	0.600	17.81	11.90	0.67	PAG
UPBH29703P122C	1/23/2025	UP29703P122	Umwelt	297	0.050	1.56	7.78	4.98	NAG
UPBH29703P131C	1/23/2025	UP29703P131	Umwelt	297	2.310	70.00	15.38	0.22	PAG
UPBH29703P140C	1/23/2025	UP29703P140	Umwelt	297	0.340	9.38	7.78	0.83	PAG
EPBH25004P24F	1/23/2025	EP25004P24	Echo	250	0.010	0.31	6.87	21.98	NAG
EPBH25004P26F	1/23/2025	EP25004P26	Echo	250	0.020	0.63	6.52	10.43	NAG
EPBH25004P78F	1/23/2025	EP25004P78	Echo	250	0.090	2.81	7.75	2.75	NAG
EPBH25004P55F	1/26/2025	EP25004P55	Echo	250	1.230	37.50	5.65	0.15	PAG
EPBH25004P144F	1/27/2025	EP25004P144	Echo	250	0.120	2.81	15.64	5.56	NAG
EPBH25004P149F	1/27/2025	EP25004P149	Echo	250	0.040	1.25	10.31	8.25	NAG
EPBH25004P200F	1/27/2025	EP25004P200	Echo	250	0.180	5.63	12.75	2.27	PAG
EPBH25004P219F	1/28/2025	EP25004P219	Echo	250	0.350	10.94	6.51	0.60	PAG
EPBH25004P157F	1/28/2025	EP25004P157	Echo	250	0.250	7.81	12.06	1.54	PAG
EPBH25004P10F	1/28/2025	EP25004P10	Echo	250	-	-	6.60	N/A	NAG
EPBH25004P60F	1/28/2025	EP25004P60	Echo	250	0.610	18.44	6.99	0.38	PAG
EPBH25005P102F	1/31/2025	EP25005P102	Echo	250	0.010	-	5.53	N/A	NAG
EPBH25005P35F	1/31/2025	EP25005P35	Echo	250	0.080	2.50	9.13	3.65	NAG
EPBH25005P40F	1/31/2025	EP25005P40	Echo	250	0.290	8.13	14.00	1.72	PAG
EPBH25005P49F	1/31/2025	EP25005P49	Echo	250	0.140	3.44	10.79	3.14	NAG
EPBH25005P71F	1/31/2025	EP25005P71	Echo	250	0.770	24.06	13.32	0.55	PAG
EPBH25005P73F	2/1/2025	EP25005P73	Echo	250	0.290	8.44	7.67	0.91	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
EPBH25005P53F	2/1/2025	EP25005P53	Echo	250	0.250	6.56	10.21	1.56	PAG
EPBH25005P170F	2/1/2025	EP25005P170	Echo	250	0.130	4.06	7.66	1.88	NAG
EPBH25005P172F	2/1/2025	EP25005P172	Echo	250	0.150	4.38	14.61	3.34	NAG
EPBH25005P191F	2/1/2025	EP25005P191	Echo	250	0.310	9.69	4.43	0.46	PAG
EPBH25005P203F	2/1/2025	EP25005P203	Echo	250	0.180	5.31	9.58	1.80	PAG
EPBH25005P22F	2/1/2025	EP25005P22	Echo	250	0.200	5.94	10.26	1.73	PAG
EPBH25005P31F	2/1/2025	EP25005P31	Echo	250	0.620	19.06	11.03	0.58	PAG
EPBH25005P184F	2/2/2025	EP25005P184	Echo	250	0.170	5.00	11.86	2.37	PAG
EPBH25005P188F	2/2/2025	EP25005P188	Echo	250	0.160	4.06	13.86	3.41	NAG
EPBH25005P136F	2/2/2025	EP25005P136	Echo	250	0.170	4.38	13.75	3.14	NAG
EPBH25005P139F	2/2/2025	EP25005P139	Echo	250	0.190	5.94	7.09	1.19	PAG
EPBH25005P165F	2/2/2025	EP25005P165	Echo	250	0.120	3.44	9.22	2.68	NAG
EPBH25005P56F	2/2/2025	EP25005P56	Echo	250	0.330	8.44	7.57	0.90	PAG
EPBH25005P82F	2/2/2025	EP25005P82	Echo	250	0.520	15.00	20.57	1.37	PAG
EPBH25005P91F	2/2/2025	EP25005P91	Echo	250	0.100	2.81	7.53	2.68	NAG
EPBH25006P108F	2/5/2025	EP25006P108	Echo	250	0.140	4.38	8.67	1.98	NAG
EPBH25006P11F	2/5/2025	EP25006P11	Echo	250	0.280	8.75	7.78	0.89	PAG
EPBH25006P139F	2/5/2025	EP25006P139	Echo	250	0.100	3.13	8.12	2.60	NAG
EPBH25006P45F	2/5/2025	EP25006P45	Echo	250	0.110	3.44	8.71	2.53	NAG
EPBH25006P85F	2/5/2025	EP25006P85	Echo	250	0.120	3.75	9.13	2.43	NAG
EPBH25006P93F	2/8/2025	EP25006P93	Echo	250	0.140	4.06	6.13	1.51	NAG
EPBH25006P95F	2/8/2025	EP25006P95	Echo	250	0.150	4.38	7.06	1.61	NAG
EPBH25006P50F	2/8/2025	EP25006P50	Echo	250	0.250	7.81	5.66	0.72	PAG
EPBH25006P54F	2/8/2025	EP25006P54	Echo	250	0.140	4.38	5.87	1.34	NAG
EPBH25006P61F	2/8/2025	EP25006P61	Echo	250	0.130	3.75	7.28	1.94	NAG
EPBH25006P75F	2/8/2025	EP25006P75	Echo	250	0.120	3.13	7.70	2.46	NAG
EPBH25006P144F	2/8/2025	EP25006P144	Echo	250	0.110	3.13	15.38	4.92	NAG
EPBH25006P31F	2/8/2025	EP25006P31	Echo	250	0.270	7.81	5.29	0.68	PAG
EPBH25006P33F	2/8/2025	EP25006P33	Echo	250	0.110	3.44	6.93	2.02	NAG
EPBH25006P135F	2/8/2025	EP25006P135	Echo	250	0.100	3.13	14.16	4.53	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
EPBH25007B12F	2/11/2025	EP25007B12	Echo	250	0.120	3.75	9.85	2.63	NAG
EPBH25007P12F	2/11/2025	EP25007P12	Echo	250	0.220	6.25	4.73	0.76	PAG
EPBH25007B14F	2/11/2025	EP25007B14	Echo	250	0.100	3.13	8.71	2.79	NAG
EPBH25007P14F	2/11/2025	EP25007P14	Echo	250	0.140	4.38	8.98	2.05	NAG
EPBH25007P16F	2/11/2025	EP25007P16	Echo	250	0.080	2.19	9.36	4.28	NAG
EPBH25007P32F	2/11/2025	EP25007P32	Echo	250	0.430	13.44	7.31	0.54	PAG
EPBH25007P34F	2/11/2025	EP25007P34	Echo	250	0.100	3.13	6.72	2.15	NAG
EPBH25007P52F	2/11/2025	EP25007P52	Echo	250	0.120	3.44	6.70	1.95	NAG
EPBH25007P56F	2/11/2025	EP25007P56	Echo	250	0.140	4.06	6.86	1.69	NAG
EPBH25007P63F	2/12/2025	EP25007P63	Echo	250	0.087	2.54	7.53	2.97	NAG
EPBH25007P76F	2/12/2025	EP25007P76	Echo	250	0.392	10.70	8.61	0.80	PAG
EPBH25007P88F	2/12/2025	EP25007P88	Echo	250	0.298	9.15	5.98	0.65	PAG
EPBH25007P94F	2/12/2025	EP25007P94	Echo	250	0.209	6.53	6.51	1.00	PAG
EPBH25007P96F	2/12/2025	EP25007P96	Echo	250	0.243	6.81	6.98	1.03	PAG
EPBH25007P42F	2/12/2025	EP25007P42	Echo	250	0.093	2.87	7.79	2.71	NAG
EPBH25007P124F	2/12/2025	EP25007P124	Echo	250	0.222	6.95	5.51	0.79	PAG
EPBH25007P107F	2/12/2025	EP25007P107	Echo	250	0.167	5.23	5.78	1.10	PAG
EPBH25007P111F	2/12/2025	EP25007P111	Echo	250	0.240	7.45	7.31	0.98	PAG
EPBH25007P114F	2/12/2025	EP25007P114	Echo	250	0.164	5.13	6.94	1.35	PAG
UPBH29703P160C	2/13/2025	UP29703P160	Umwelt	297	0.445	13.07	3.39	0.26	PAG
UPBH29703P176C	2/13/2025	UP29703P176	Umwelt	297	0.573	16.55	5.58	0.34	PAG
UPBH29703P182C	2/13/2025	UP29703P182	Umwelt	297	4.042	126.31	5.61	0.04	PAG
UPBH29703P197C	2/13/2025	UP29703P197	Umwelt	297	0.151	4.31	5.12	1.19	PAG
EPBH240R62F	2/18/2025	EP240R62	Echo	240	0.362	10.09	8.85	0.88	PAG
EPBH240R8F	2/18/2025	EP240R8	Echo	240	0.143	4.47	5.11	1.14	NAG
EPBH240R82F	2/18/2025	EP240R82	Echo	240	0.333	10.40	8.22	0.79	PAG
EPBH240R84F	2/18/2025	EP240R84	Echo	240	0.150	4.70	7.81	1.66	PAG
EPBH240R87F	2/18/2025	EP240R87	Echo	240	0.089	2.78	5.74	2.07	NAG
EPBH240R90F	2/18/2025	EP240R90	Echo	240	0.092	2.87	7.48	2.61	NAG
EPBH240R10F	2/18/2025	EP240R10	Echo	240	0.272	7.79	8.87	1.14	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
EPBH240R12F	2/18/2025	EP240R12	Echo	240	0.299	9.06	8.47	0.93	PAG
EPBH240R14F	2/18/2025	EP240R14	Echo	240	1.068	33.36	20.17	0.60	PAG
EPBH240P17F	2/19/2025	EP240P17	Echo	240	0.208	6.17	7.36	1.19	PAG
EPBH240B29F	2/19/2025	EP240B29	Echo	240	0.016	0.41	8.10	19.90	NAG
EPBH240P35F	2/19/2025	EP240P35	Echo	240	0.224	6.22	7.75	1.25	PAG
EPBH240R5F	2/19/2025	EP240R5	Echo	240	0.152	4.54	8.19	1.81	PAG
EPBH240P51	2/21/2025	EP240P51	Echo	240	0.664	20.07	14.54	0.72	PAG
EPBH240P10	2/21/2025	EP240P10	Echo	240	0.168	5.25	9.22	1.76	PAG
EPBH240P40	2/21/2025	EP240P40	Echo	240	0.361	11.29	9.09	0.81	PAG
EPBH240P46	2/21/2025	EP240P46	Echo	240	0.190	5.33	9.24	1.73	PAG
EPBH240P23	2/21/2025	EP240P23	Echo	240	0.155	4.31	9.47	2.20	PAG
EPBH240P67	2/21/2025	EP240P67	Echo	240	0.300	9.29	9.36	1.01	PAG
EPBH24001P06F	2/25/2025	EP24001P06	Echo	240	0.165	5.08	9.12	1.80	PAG
EPBH24001P33F	2/25/2025	EP24001P33	Echo	240	0.348	10.86	8.10	0.75	PAG
EPBH24001P42F	2/25/2025	EP24001P42	Echo	240	0.124	3.81	10.00	2.63	NAG
EPBH24001P56F	2/25/2025	EP24001P56	Echo	240	0.312	8.66	9.62	1.11	PAG
EPBH24001P67F	2/25/2025	EP24001P67	Echo	240	4.708	147.13	46.52	0.32	PAG
EPBH24001P97F	2/25/2025	EP24001P97	Echo	240	-	-	5.36	-	NAG
UPBH29704P101	2/27/2025	UP29704P101	Umwelt	297	0.192	5.34	9.45	1.77	PAG
UPBH29704P108	2/27/2025	UP29704P108	Umwelt	297	0.104	2.51	13.16	5.23	NAG
UPBH29704P41	2/27/2025	UP29704P41	Umwelt	297	0.224	6.15	7.98	1.30	PAG
EPBH24003A05	3/3/2025	EP24003A05	Echo	240	0.447	13.60	8.72	0.64	PAG
EPBH24003P127F	3/3/2025	EP24003P127	Echo	240	0.128	4.01	8.86	2.21	NAG
EPBH24003P162F	3/3/2025	EP24003P162	Echo	240	0.340	10.25	9.11	0.89	PAG
EPBH24003P164F	3/3/2025	EP24003P164	Echo	240	0.046	1.45	11.00	7.59	NAG
EPBH24003P55F	3/5/2025	EP24003P55	Echo	240	0.240	7.50	10.24	1.37	PAG
EPBH24003P73F	3/5/2025	EP24003P73	Echo	240	0.230	6.88	9.48	1.38	PAG
EPBH24003P87F	3/5/2025	EP24003P87	Echo	240	0.150	4.69	9.49	2.02	NAG
EPBH24003P93F	3/5/2025	EP24003P93	Echo	240	1.200	36.56	5.38	0.15	PAG
EPBH24003P152F	3/5/2025	EP24003P152	Echo	240	0.350	10.94	20.99	1.92	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
EPBH24003P154F	3/5/2025	EP24003P154	Echo	240	0.350	10.94	15.34	1.40	PAG
EPBH24003P119F	3/5/2025	EP24003P119	Echo	240	0.200	5.63	12.59	2.24	PAG
EPBH24003B08F	3/5/2025	EP24003B08	Echo	240	0.200	5.63	8.37	1.49	PAG
UPBH29705P108C	3/6/2025	UP29705P108	Umwelt	297	-	-	5.06	N/A	NAG
UPBH29705P25C	3/6/2025	UP29705P25	Umwelt	297	-	-	5.48	N/A	NAG
UPBH29705P28C	3/6/2025	UP29705P28	Umwelt	297	-	-	5.08	N/A	NAG
UPBH29705P31C	3/6/2025	UP29705P31	Umwelt	297	0.030	0.63	5.28	8.44	NAG
UPBH29705P138C	3/6/2025	UP29705P138	Umwelt	297	0.020	0.31	3.96	12.68	NAG
UPBH29705P154C	3/6/2025	UP29705P154	Umwelt	297	-	-	3.90	N/A	NAG
UPBH29705P160C	3/6/2025	UP29705P160	Umwelt	297	-	-	4.83	N/A	NAG
UPBH29705P164C	3/6/2025	UP29705P164	Umwelt	297	0.110	2.81	6.19	2.20	NAG
UPBH29705P21C	3/9/2025	UP29705P21	Umwelt	297	-	-	5.35	N/A	NAG
UPBH29705P59C	3/9/2025	UP29705P59	Umwelt	297	0.150	4.69	6.10	1.30	NAG
UPBH29705P80C	3/9/2025	UP29705P80	Umwelt	297	0.190	5.94	8.34	1.40	PAG
UPBH29705P86C	3/9/2025	UP29705P86	Umwelt	297	0.100	3.13	8.04	2.57	NAG
UPBH29705P11C	3/9/2025	UP29705P11	Umwelt	297	1.450	43.13	6.27	0.15	PAG
UPBH29705P02C	3/9/2025	UP29705P02	Umwelt	297	0.190	5.31	6.48	1.22	PAG
UPBH29705P07C	3/9/2025	UP29705P07	Umwelt	297	-	-	6.77	N/A	NAG
EPBH24003P04	3/9/2025	EP24003P04	Echo	240	0.180	5.63	9.49	1.69	PAG
EPBH24004P49	3/9/2025	EP24004P49	Echo	240	0.210	5.94	7.45	1.26	PAG
EPBH24003B27	3/9/2025	EP24003B27	Echo	240	0.150	4.06	8.98	2.21	NAG
EPBH24003B34	3/9/2025	EP24003B34	Echo	240	0.140	3.75	8.42	2.25	NAG
EPBH24003B37	3/9/2025	EP24003B37	Echo	240	0.200	6.25	9.09	1.46	PAG
EPBH24004P67	3/9/2025	EP24004P67	Echo	240	0.420	13.13	9.62	0.73	PAG
EPBH24004P78	3/9/2025	EP24004P78	Echo	240	0.200	5.31	12.31	2.32	PAG
EPBH24004P97	3/9/2025	EP24004P97	Echo	240	0.100	3.13	12.94	4.14	NAG
EPBH24004P81F	3/13/2025	EP24004P81	Echo	240	0.078	2.32	10.15	4.39	NAG
EPBH24003P50F	3/13/2025	EH24003P50	Echo	240	0.122	3.44	9.09	2.64	NAG
EPBH24004P64F	3/13/2025	EP24004P64	Echo	240	0.180	5.63	8.34	1.48	PAG
EPBH24004P26F	3/13/2025	EP24004P26	Echo	240	0.323	10.11	9.19	0.91	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
EPBH24004P32F	3/13/2025	EP24004P32	Echo	240	0.196	5.94	9.44	1.59	PAG
EPBH24004P47F	3/13/2025	EP24004P47	Echo	240	0.323	10.08	8.91	0.88	PAG
EPBH24004P17F	3/13/2025	EP24004P17	Echo	240	0.281	8.71	10.18	1.17	PAG
EPBH24003P110F	3/13/2025	EP24003P110	Echo	240	0.149	4.08	10.31	2.53	NAG
EPBH24003P149F	3/13/2025	EP24003P149	Echo	240	0.233	7.14	10.05	1.41	PAG
EPBH24004A25F	3/14/2025	EP24004A25	Echo	240	0.230	5.94	9.35	1.57	PAG
EPBH24004P104F	3/14/2025	EP24004P104	Echo	240	-	-	7.49	N/A	NAG
EPBH24004P91F	3/14/2025	EP24004P91	Echo	240	0.120	3.75	6.09	1.62	NAG
EPBH24004P106F	3/14/2025	EP24004P106	Echo	250	0.070	2.19	12.37	5.66	NAG
UPBH29707P183C	3/15/2025	UP29707P183	Umwelt	297	0.020	0.31	3.72	11.91	NAG
UPBH29707P227C	3/15/2025	UP29707P227	Umwelt	297	0.480	14.38	7.80	0.54	PAG
UPBH29707P229C	3/15/2025	UP29707P229	Umwelt	297	0.400	11.25	6.56	0.58	PAG
UPBH29707P132C	3/16/2025	UP29707P132	Umwelt	297	0.135	3.80	5.21	1.37	NAG
UPBH29707P134C	3/16/2025	UP29707P134	Umwelt	297	0.605	18.32	5.24	0.29	PAG
UPBH29707P27C	3/16/2025	UP29707P27	Umwelt	297	-	-	6.03	N/A	NAG
UPBH29707P30C	3/16/2025	UP29707P30	Umwelt	297	-	-	8.89	N/A	NAG
UPBH29707P33C	3/16/2025	UP29707P33	Umwelt	297	0.060	1.75	8.21	4.68	NAG
UPBH29707P36C	3/16/2025	UP29707P36	Umwelt	297	-	-	6.79	N/A	NAG
UPBH29707P39C	3/16/2025	UP29707P39	Umwelt	297	-	-	3.23	N/A	NAG
UPBH29707P42C	3/16/2025	UP29707P42	Umwelt	297	0.933	29.17	7.00	0.24	PAG
UPBH29707P86C	3/16/2025	UP29707P86	Umwelt	297	-	-	3.54	N/A	NAG
UPBH29707P88C	3/16/2025	UP29707P88	Umwelt	297	0.169	5.19	16.29	3.14	NAG
UPBH29707P181C	3/16/2025	UP29707P181	Umwelt	297	0.290	8.75	3.95	0.45	PAG
UPBH29707P79C	3/17/2025	UP29707P79	Umwelt	297	0.024	0.74	4.32	5.84	NAG
UPBH29707P82C	3/17/2025	UP29707P82	Umwelt	297	0.467	14.13	5.39	0.38	PAG
UPBH29707P173C	3/17/2025	UP29707P173	Umwelt	297	0.150	4.39	4.13	0.94	NAG
UPBH29707P175C	3/17/2025	UP29707P175	Umwelt	297	0.031	0.84	5.10	6.05	NAG
UPBH29707P217C	3/17/2025	UP29707P217	Umwelt	297	0.146	4.36	6.19	1.42	NAG
UPBH29707P219C	3/17/2025	UP29707P219	Umwelt	297	0.348	10.71	5.81	0.54	PAG
UPBH29707P221C	3/17/2025	UP29707P221	Umwelt	297	0.304	8.75	5.77	0.66	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29707P125C	3/17/2025	UP29707P125	Umwelt	297	-	-	5.94	N/A	NAG
UPBH29707P128C	3/17/2025	UP29707P128	Umwelt	297	0.350	9.92	5.11	0.52	PAG
EPBH230R69F	3/17/2025	EP230R69	Echo	230	0.162	4.78	8.02	1.68	PAG
EPBH230R71F	3/17/2025	EP230R71	Echo	230	-	-	4.88	N/A	NAG
EPBH230R21F	3/17/2025	EP230R21	Echo	230	0.064	1.81	6.26	3.45	NAG
EPBH230R24F	3/17/2025	EP230R24	Echo	230	0.001	0.03	6.64	236.02	NAG
EPBH230R27F	3/17/2025	EP230R27	Echo	230	0.085	2.51	5.36	2.14	NAG
EPBH230R29F	3/17/2025	EP230R29	Echo	230	0.292	8.91	5.65	0.63	PAG
EPBH230R65F	3/18/2025	EP230R65	Echo	230	0.205	6.23	19.57	3.14	NAG
EPBH230P11F	3/18/2025	EP230P11	Echo	230	0.347	10.83	9.91	0.91	PAG
UPBH29707P73C	3/18/2025	UP29707P73	Umwelt	297	0.652	19.89	2.73	0.14	PAG
UPBH29707P242C	3/19/2025	UP29707P242	Umwelt	297	0.740	21.88	5.62	0.26	PAG
UPBH29707P245C	3/19/2025	UP29707P245	Umwelt	297	-	-	6.79	N/A	NAG
EPBH230R12F	3/19/2025	EP230R12	Echo	230	0.040	1.25	8.55	6.84	NAG
EPBH230R16F	3/19/2025	EP230R16	Echo	230	-	-	25.75	N/A	NAG
EPBH230P2F	3/19/2025	EP230P2	Echo	230	0.050	1.25	7.28	5.82	NAG
EPBH230R10F	3/19/2025	EP230R10	Echo	230	0.430	12.81	7.41	0.58	PAG
EPBH230R8F	3/19/2025	EP230R8	Echo	230	0.240	7.50	6.03	0.80	PAG
EPBH230R42F	3/19/2025	EP230R42	Echo	230	0.180	5.46	12.38	2.27	PAG
EPBH230R45F	3/19/2025	EP230R45	Echo	230	-	-	7.79	N/A	NAG
UPBH29708P110C	3/20/2025	UP29708P110	Umwelt	297	-	-	5.81	N/A	NAG
UPBH29708P125C	3/20/2025	UP29708P125	Umwelt	297	0.480	12.81	9.70	0.76	PAG
UPBH29708P141C	3/20/2025	UP29708P141	Umwelt	297	0.190	5.00	8.17	1.63	PAG
UPBH29708P150C	3/20/2025	UP29708P150	Umwelt	297	0.260	7.50	15.36	2.05	PAG
UPBH29708P152C	3/20/2025	UP29708P152	Umwelt	297	0.080	2.19	7.79	3.56	NAG
UPBH29708P75C	3/20/2025	UP29708P75	Umwelt	297	0.030	0.63	7.60	12.16	NAG
UPBH29708P98C	3/20/2025	UP29708P98	Umwelt	297	0.110	2.19	6.44	2.95	NAG
UPBH29708P92C	3/21/2025	UP29708P92	Umwelt	297	0.130	3.13	8.09	2.59	NAG
UPBH29708P65C	3/21/2025	UP29708P65	Umwelt	297	-	-	6.93	N/A	NAG
UPBH29708P176C	3/21/2025	UP29708P176	Umwelt	297	-	-	6.89	N/A	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29708P179C	3/21/2025	UP29708P179	Umwelt	297	0.180	4.69	5.21	1.11	PAG
UPBH29708P182C	3/21/2025	UP29708P182	Umwelt	297	0.430	12.19	6.10	0.50	PAG
UPBH29708P41C	3/21/2025	UP29708P41	Umwelt	297	0.210	5.63	8.21	1.46	PAG
UPBH29708P154C	3/21/2025	UP29708P154	Umwelt	297	-	-	5.81	N/A	NAG
UPBH29708P17C	3/21/2025	UP29708P17	Umwelt	297	0.080	1.56	7.58	4.85	NAG
UPBH29708P170C	3/21/2025	UP29708P170	Umwelt	297	0.070	1.25	8.87	7.10	NAG
UPBH29708P142C	3/21/2025	UP29708P142	Umwelt	297	-	-	7.08	N/A	NAG
UPBH29708P133C	3/21/2025	UP29708P133	Umwelt	297	0.040	0.63	8.47	13.55	NAG
UPBH29708P108C	3/21/2025	UP29708P108	Umwelt	297	-	-	5.39	N/A	NAG
UPBH29708P173C	3/22/2025	UP29708P173	Umwelt	297	-	-	9.85	N/A	NAG
UPBH29708P55C	3/22/2025	UP29708P55	Umwelt	297	0.560	16.88	9.86	0.58	PAG
UPBH29708P70C	3/22/2025	UP29708P70	Umwelt	297	0.060	1.88	11.10	5.92	NAG
UPBH29708P72C	3/22/2025	UP29708P72	Umwelt	297	0.070	1.88	11.04	5.89	NAG
EPBH22501P93F	3/23/2025	EP22501P93	Echo	225	0.710	22.19	9.87	0.44	PAG
EPBH22501P98F	3/23/2025	EP22501P98	Echo	225	0.220	6.56	9.61	1.46	PAG
EPBH22501P38F	3/23/2025	EP22501P38	Echo	225	0.210	6.56	8.17	1.24	PAG
EPBH22501P45F	3/23/2025	EP22501P45	Echo	225	0.140	4.38	5.93	1.36	NAG
EPBH22501P10F	3/24/2025	EP22501P10	Echo	225	0.180	5.63	8.47	1.50	PAG
EPBH22501P73F	3/25/2025	EP22501P73	Echo	225	0.180	5.63	8.55	1.52	PAG
EPBH22501P89F	3/25/2025	EP22501P89	Echo	225	0.120	3.44	13.54	3.94	NAG
EPBH22501P59F	3/25/2025	EP22501P59	Echo	225	0.170	5.31	8.72	1.64	PAG
EPBH22501P61F	3/25/2025	EP22501P61	Echo	225	0.170	5.00	8.05	1.61	PAG
EPBH22501P18F	3/25/2025	EP22501P18	Echo	225	0.270	7.81	9.19	1.18	PAG
EPBH22501P22F	3/25/2025	EP22501P22	Echo	225	0.160	5.00	8.05	1.61	PAG
EPBH22501P27F	3/25/2025	EP22501P27	Echo	225	0.130	4.06	8.50	2.09	NAG
EPBH22501P35F	3/25/2025	EP22501P35	Echo	225	0.140	4.38	11.35	2.59	NAG
EPBH22501P135F	3/25/2025	EP22501P135	Echo	225	0.080	2.50	7.01	2.80	NAG
EPBH22501P15F	3/25/2025	EP22501P15	Echo	225	0.210	5.94	10.82	1.82	PAG
EPBH22501P155F	3/25/2025	EP22501P155	Echo	225	0.190	5.31	10.10	1.90	PAG
EPBH22501P157F	3/25/2025	EP22501P157	Echo	225	-	-	7.11	N/A	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
EPBH22501P168F	3/26/2025	EP22501P168	Echo	225	0.203	5.73	7.90	1.38	PAG
EPBH22501P71F	3/26/2025	EP22501P71	Echo	225	0.145	4.21	13.70	3.25	NAG
EPBH22501P120F	3/26/2025	EP22501P120	Echo	225	0.644	19.69	12.04	0.61	PAG
EPBH22501P122F	3/26/2025	EP22501P122	Echo	225	0.245	7.56	17.09	2.26	PAG
EPBH22502P4F	3/30/2025	EP22502P4	Echo	225	0.240	7.46	7.63	1.02	PAG
EPBH22502P6F	3/30/2025	EP22502P6	Echo	225	0.254	7.76	8.86	1.14	PAG
EPBH22502P8F	3/30/2025	EP22502P8	Echo	225	0.472	14.38	6.99	0.49	PAG
EPBH22502P10F	3/30/2025	EP22502P10	Echo	225	0.414	12.85	5.62	0.44	PAG
EPBH22502P13F	3/30/2025	EP22502P13	Echo	225	0.518	16.20	5.63	0.35	PAG
EPBH22502P20F	3/30/2025	EP22502P20	Echo	225	0.388	12.14	5.98	0.49	PAG
EPBH22502P42F	3/30/2025	EP22502P42	Echo	225	0.173	4.92	6.49	1.32	PAG
EPBH22502P45F	3/30/2025	EP22502P45	Echo	225	0.354	11.06	5.99	0.54	PAG
EPBH22502P47F	3/30/2025	EP22502P47	Echo	225	0.522	15.81	9.47	0.60	PAG
EPBH22502P49F	3/30/2025	EP22502P49	Echo	225	0.306	9.09	6.37	0.70	PAG
EPBH22502P54F	3/30/2025	EP22502P54	Echo	225	0.288	8.99	7.00	0.78	PAG
EPBH22502P58F	3/30/2025	EP22502P58	Echo	225	0.312	9.76	5.38	0.55	PAG
EPBH22502P79F	3/30/2025	EP22502P79	Echo	225	0.257	8.02	10.61	1.32	PAG
EPBH22502P89F	3/30/2025	EP22502P89	Echo	225	0.255	7.51	9.98	1.33	PAG
EPBH22502P91F	3/30/2025	EP22502P91	Echo	225	0.156	4.55	5.75	1.26	PAG
EPBH22502P97F	3/30/2025	EP22502P97	Echo	225	0.151	4.71	5.49	1.17	PAG
EPBH22502P1F	3/31/2025	EP22502P1	Echo	225	0.272	8.50	7.75	0.91	PAG
EPBH22502P100F	3/31/2025	EP22502P100	Echo	225	0.268	7.82	15.70	2.01	PAG
EPBH22503V2P34F	4/5/2025	EP22503V2P34	Echo	225	0.260	7.50	8.75	1.17	PAG
EPBH22503V2P73F	4/5/2025	EP22503V2P73	Echo	225	0.400	12.38	8.24	0.67	PAG
EPBH22503V2P89F	4/6/2025	EP22503V2P89	Echo	225	0.330	9.39	11.98	1.28	PAG
EPBH22503V2P142F	4/6/2025	EP22503V2P142	Echo	225	0.280	8.62	10.11	1.17	PAG
UPBH29710P34C	4/6/2025	UP29710P34	Umwelt	297	0.970	29.68	22.80	0.77	PAG
UPBH29710P37C	4/6/2025	UP29710P37	Umwelt	297	5.200	159.13	7.50	0.05	PAG
UPBH29710P40C	4/6/2025	UP29710P40	Umwelt	297	0.380	11.80	7.74	0.66	PAG
UPBH29710P43C	4/6/2025	UP29710P43	Umwelt	297	0.440	13.31	3.67	0.28	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29711P78C	4/7/2025	UP29711P78	Umwelt	297	-	-	5.88	-	NAG
UPBH29711P82C	4/7/2025	UP29711P82	Umwelt	297	-	-	5.98	-	NAG
UPBH29711P119C	4/7/2025	UP29711P119	Umwelt	297	0.090	2.75	5.38	1.95	NAG
UPBH29711P148C	4/7/2025	UP29711P148	Umwelt	297	0.270	7.83	7.38	0.94	PAG
UPBH29711P37C	4/7/2025	UP29711P37	Umwelt	297	-	-	5.75	-	NAG
UPBH29710P118C	4/8/2025	UP29710P118	Umwelt	297	0.930	28.27	5.51	0.19	PAG
UPBH29710P124C	4/8/2025	UP29710P124	Umwelt	297	0.030	0.82	6.98	8.49	NAG
UPBH29710P135C	4/8/2025	UP29710P135	Umwelt	297	0.950	27.71	5.00	0.18	PAG
UPBH29710P70C	4/8/2025	UP29710P70	Umwelt	297	0.020	-	5.37	-	NAG
UPBH29710P73C	4/8/2025	UP29710P73	Umwelt	297	0.050	0.99	5.75	5.82	NAG
UPBH29710P76C	4/8/2025	UP29710P76	Umwelt	297	-	-	6.23	-	NAG
UPBH29710P80C	4/8/2025	UP29710P80	Umwelt	297	-	-	5.75	-	NAG
UPBH29710P84C	4/8/2025	UP29710P84	Umwelt	297	-	-	5.24	-	NAG
UPBH29710P88C	4/8/2025	UP29710P88	Umwelt	297	-	-	3.25	-	NAG
UPBH29710P92C	4/8/2025	UP29710P92	Umwelt	297	-	-	4.00	-	NAG
UPBH29710P236C	4/9/2025	UP29710P236	Umwelt	297	0.200	5.82	13.49	2.32	PAG
UPBH29710P245C	4/9/2025	UP29710P245	Umwelt	297	0.040	1.16	6.75	5.79	NAG
UPBH29710P253C	4/9/2025	UP29710P253	Umwelt	297	0.070	1.80	3.88	2.15	NAG
UPBH29711P236C	4/9/2025	UP29711P236	Umwelt	297	0.080	2.37	5.00	2.10	NAG
UPBH29711P89C	4/9/2025	UP29711P89	Umwelt	297	0.340	9.73	6.01	0.62	PAG
UPBH29711P267C	4/10/2025	UP29711P267	Umwelt	297	-	-	4.24	-	NAG
UPBH29711P294C	4/10/2025	UP29711P294	Umwelt	297	0.003	-	4.61	-	NAG
UPBH29711P214C	4/10/2025	UP29711P214	Umwelt	297	0.102	1.07	5.75	5.38	NAG
UPBH29711P417C	4/11/2025	UP29711P417	Umwelt	297	-	-	3.97	N/A	NAG
UPBH29711P302C	4/11/2025	UP29711P302	Umwelt	297	0.073	2.12	6.79	3.21	NAG
UPBH29711P350C	4/11/2025	UP29711P350	Umwelt	297	0.049	1.42	5.28	3.73	NAG
UPBH29711P358C	4/11/2025	UP29711P358	Umwelt	297	0.078	1.92	6.15	3.21	NAG
UPBH29712P11F	4/14/2025	UP29712P11	Umwelt	297	-	-	3.98	N/A	NAG
UPBH29712P117F	4/14/2025	UP29712P117	Umwelt	297	-	-	4.68	N/A	NAG
UPBH29712P240F	4/14/2025	UP29712P240	Umwelt	297	0.029	0.75	3.51	4.70	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29712P245F	4/14/2025	UP29712P245	Umwelt	297	0.228	6.09	4.53	0.74	PAG
UPBH29712P41F	4/14/2025	UP29712P41	Umwelt	297	0.105	2.95	4.12	1.40	NAG
UPBH29712P349C	4/15/2025	UP29712P349	Umwelt	297	0.009	0.27	3.00	10.99	NAG
UPBH29712P293C	4/16/2025	UP29712P293	Umwelt	297	0.070	1.88	5.60	2.99	NAG
UPBH29713P31C	4/17/2025	UP29713P31	Umwelt	297	-	-	3.51	N/A	NAG
UPBH29713P19C	4/17/2025	UP29713P19	Umwelt	297	0.150	4.38	4.58	1.05	NAG
UPBH29713P09C	4/17/2025	UP29713P09	Umwelt	297	0.220	6.25	7.28	1.16	PAG
UPBH29713P75C	4/17/2025	UP29713P75	Umwelt	297	0.420	10.94	10.00	0.91	PAG
UPBH29713P81C	4/17/2025	UP29713P81	Umwelt	297	0.160	4.69	6.38	1.36	PAG
UPBH29713P43C	4/18/2025	UP29713P43	Umwelt	297	0.070	2.19	3.70	1.69	NAG
UPBH29713P130C	4/18/2025	UP29713P130	Umwelt	297	-	-	2.87	N/A	NAG
UPBH29713P134C	4/18/2025	UP29713P134	Umwelt	297	0.100	2.81	3.54	1.26	NAG
UPBH29713P201C	4/20/2025	UP29713P201	Umwelt	297	0.210	6.56	6.13	0.93	PAG
UPBH29713P206C	4/20/2025	UP29713P206	Umwelt	297	0.050	1.56	5.03	3.22	NAG
UPBH29713P222C	4/20/2025	UP29713P222	Umwelt	297	-	-	4.76	N/A	NAG
UPBH29713P256C	4/20/2025	UP29713P256	Umwelt	297	0.770	24.06	12.81	0.53	PAG
UPBH29713P312C	4/20/2025	UP29713P312	Umwelt	297	0.320	10.00	3.76	0.38	PAG
UPBH29713P352C	4/21/2025	UP29713P352	Umwelt	297	0.100	3.13	4.93	1.58	NAG
UPBH29713P488C	4/21/2025	UP29713P488	Umwelt	297	-	-	9.15	N/A	NAG
UPBH29713P505C	4/22/2025	UP29713P505	Umwelt	297	-	-	6.10	N/A	NAG
UPBH29713P515C	4/22/2025	UP29713P515	Umwelt	297	0.060	1.88	5.19	2.77	NAG
UPBH29713P583C	4/22/2025	UP29713P583	Umwelt	297	-	-	2.86	N/A	NAG
UPBH29714P105C	4/23/2025	UP29714P105	Umwelt	297	-	-	3.99	N/A	NAG
UPBH29714P123C	4/23/2025	UP29714P123	Umwelt	297	0.340	10.63	4.60	0.43	PAG
UPBH29714P128C	4/23/2025	UP29714P128	Umwelt	297	0.030	0.63	4.11	6.58	NAG
UPBH29714P59C	4/23/2025	UP29714P59	Umwelt	297	1.600	50.00	28.74	0.57	PAG
UPBH29714P63C	4/23/2025	UP29714P63	Umwelt	297	0.070	2.19	7.29	3.33	NAG
UPBH29714P67C	4/23/2025	UP29714P67	Umwelt	297	1.010	31.56	10.18	0.32	PAG
UPBH29714P97	4/24/2025	UP29714P97	Umwelt	297	0.100	2.19	4.24	1.94	NAG
UPBH29714P141	4/24/2025	UP29714P141	Umwelt	297	0.120	2.81	6.77	2.41	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29714P147	4/24/2025	UP29714P147	Umwelt	297	0.310	9.69	4.60	0.47	PAG
UPBH29714P151	4/24/2025	UP29714P151	Umwelt	297	0.320	9.69	20.60	2.13	PAG
UPBH29714P101	4/24/2025	UP29714P101	Umwelt	297	-	-	3.58	N/A	NAG
UPBH29714P44	4/24/2025	UP29714P44	Umwelt	297	0.140	3.44	2.82	0.82	NAG
UPBH29714P47	4/24/2025	UP29714P47	Umwelt	297	1.100	34.06	14.79	0.43	PAG
UPBH29714P52	4/24/2025	UP29714P52	Umwelt	297	0.280	8.75	10.28	1.17	PAG
UPBH29714P192	4/25/2025	UP29714P192	Umwelt	297	-	-	3.42	N/A	NAG
UPBH29714P195	4/25/2025	UP29714P195	Umwelt	297	-	-	5.73	N/A	NAG
UPBH29714P198	4/25/2025	UP29714P198	Umwelt	297	0.980	29.38	4.93	0.17	PAG
EPBH210P08	4/26/2025	EP210P08	Echo	210	0.200	4.38	5.62	1.28	PAG
EPBH210P126	4/26/2025	EP210P126	Echo	210	0.590	18.44	6.89	0.37	PAG
EPBH210P19	4/26/2025	EP210P19	Echo	210	0.440	11.25	19.77	1.76	PAG
EPBH210P214	4/26/2025	EP210P214	Echo	210	0.310	8.75	11.48	1.31	PAG
EPBH210P218	4/26/2025	EP210P218	Echo	210	0.140	3.75	6.66	1.78	NAG
EPBH210P56	4/26/2025	EP210P56	Echo	210	1.310	40.63	13.60	0.33	PAG
EPBH210P81	4/26/2025	EP210P81	Echo	210	0.660	20.00	21.61	1.08	PAG
EPBH210B85	4/26/2025	EP210B85	Echo	210	-	-	4.34	N/A	NAG
EPBH210B88	4/26/2025	EP210B88	Echo	210	0.480	14.06	13.47	0.96	PAG
UPBH29715P160	4/29/2025	UP29715P160	Umwelt	297	-	-	2.55	N/A	NAG
UPBH29715P165	4/29/2025	UP29715P165	Umwelt	297	0.280	8.13	6.96	0.86	PAG
UPBH29715P170	4/29/2025	UP29715P170	Umwelt	297	-	-	4.76	N/A	NAG
UPBH29715P175	4/29/2025	UP29715P175	Umwelt	297	-	-	3.33	N/A	NAG
UPBH29715P75	4/29/2025	UP29715P75	Umwelt	297	0.230	6.56	6.16	0.94	PAG
UPBH29715P80	4/29/2025	UP29715P80	Umwelt	297	0.400	11.25	11.48	1.02	PAG
UPBH29715P85	4/29/2025	UP29715P85	Umwelt	297	-	-	3.34	N/A	NAG
UPBH29715P310	4/30/2025	UP29715P310	Umwelt	297	0.110	2.81	3.41	1.21	NAG
UPBH29715P315	4/30/2025	UP29715P315	Umwelt	297	0.080	2.19	3.20	1.46	NAG
UPBH29715P320	4/30/2025	UP29715P320	Umwelt	297	0.010	-	3.18	N/A	NAG
UPBH29715P325	4/30/2025	UP29715P325	Umwelt	297	0.050	1.56	1.79	1.14	NAG
UPBH29715P70	4/30/2025	UP29715P70	Umwelt	297	0.030	0.31	3.36	10.75	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29714P244	5/1/2025	UP29714P244	Umwelt	297	0.080	2.19	4.52	2.07	NAG
UPBH29714P255	5/1/2025	UP29714P255	Umwelt	297	0.060	1.88	6.84	3.65	NAG
UPBH29714P278	5/1/2025	UP29714P278	Umwelt	297	0.350	10.94	11.23	1.03	PAG
UPBH29714P291	5/1/2025	UP29714P291	Umwelt	297	0.060	1.88	3.76	2.00	NAG
UPBH29715P400	5/1/2025	UP29715P400	Umwelt	297	0.060	0.94	4.70	5.02	NAG
UPBH29715P405	5/1/2025	UP29715P405	Umwelt	297	0.040	0.63	4.66	7.45	NAG
UPBH29715P410	5/1/2025	UP29715P410	Umwelt	297	0.050	0.94	5.29	5.64	NAG
UPBH29715P415	5/1/2025	UP29715P415	Umwelt	297	-	-	3.04	N/A	NAG
UPBH29715P431	5/1/2025	UP29715P431	Umwelt	297	0.010	0.31	3.33	10.64	NAG
UPBH29715P442	5/1/2025	UP29715P442	Umwelt	297	0.040	0.94	4.93	5.26	NAG
UPBH29715P468	5/1/2025	UP29715P468	Umwelt	297	0.020	0.63	5.66	9.06	NAG
UPBH29715P478	5/1/2025	UP29715P478	Umwelt	297	-	-	4.58	N/A	NAG
UPBH29716P350	5/2/2025	UP29716P350	Umwelt	297	0.119	3.73	4.53	1.21	NAG
UPBH29716P183	5/2/2025	UP29716P183	Umwelt	297	0.001	-	3.53	N/A	NAG
UPBH29716P198	5/2/2025	UP29716P198	Umwelt	297	-	-	4.00	N/A	NAG
UPBH29716P221	5/2/2025	UP29716P221	Umwelt	297	0.039	1.21	4.37	3.61	NAG
UPBH29716P257	5/2/2025	UP29716P257	Umwelt	297	0.103	3.21	4.07	1.27	NAG
UPBH29716P261	5/2/2025	UP29716P261	Umwelt	297	-	-	2.98	N/A	NAG
UPBH29716P265	5/2/2025	UP29716P265	Umwelt	297	0.060	1.88	4.46	2.37	NAG
UPBH29716P338	5/2/2025	UP29716P338	Umwelt	297	0.019	0.61	5.39	8.89	NAG
UPBH29716P342	5/2/2025	UP29716P342	Umwelt	297	-	-	3.60	N/A	NAG
UPBH29716P346	5/2/2025	UP29716P346	Umwelt	297	-	-	4.65	N/A	NAG
UPBH29716P419	5/2/2025	UP29716P419	Umwelt	297	-	-	4.53	N/A	NAG
UPBH29716P423	5/2/2025	UP29716P423	Umwelt	297	0.836	26.11	9.20	0.35	PAG
UPBH29716P427	5/2/2025	UP29716P427	Umwelt	297	0.001	0.03	3.44	109.92	NAG
UPBH29716P431	5/2/2025	UP29716P431	Umwelt	297	-	-	2.86	N/A	NAG
UPBH29716P435	5/2/2025	UP29716P435	Umwelt	297	-	-	3.98	N/A	NAG
UPBH29716P511	5/2/2025	UP29716P511	Umwelt	297	0.020	0.63	3.04	4.79	NAG
UPBH29716P515	5/2/2025	UP29716P515	Umwelt	297	-	-	3.28	N/A	NAG
UPBH29716P519	5/2/2025	UP29716P519	Umwelt	297	-	-	3.47	N/A	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29716P523	5/2/2025	UP29716P523	Umwelt	297	0.065	2.03	4.09	2.02	NAG
UPBH29716P527	5/2/2025	UP29716P527	Umwelt	297	0.018	0.56	3.44	6.18	NAG
UPBH29715P462	5/3/2025	UP29715P462	Umwelt	297	0.033	1.04	3.82	3.67	NAG
UPBH29715P226	5/3/2025	UP29715P226	Umwelt	297	0.186	4.59	4.34	0.95	PAG
UPBH29715P231	5/3/2025	UP29715P231	Umwelt	297	0.067	1.72	3.83	2.23	NAG
UPBH29715P236	5/3/2025	UP29715P236	Umwelt	297	0.058	1.82	3.09	1.70	NAG
UPBH29715P241	5/3/2025	UP29715P241	Umwelt	297	1.109	34.61	13.47	0.39	PAG
UPBH29715P329	5/3/2025	UP29715P329	Umwelt	297	0.045	1.40	3.60	2.56	NAG
UPBH29715P376	5/3/2025	UP29715P376	Umwelt	297	0.090	2.81	3.54	1.26	NAG
UPBH29716P35	5/4/2025	UP29716P35	Umwelt	297	-	-	4.11	N/A	NAG
UPBH29716P77	5/4/2025	UP29716P77	Umwelt	297	-	-	3.81	N/A	NAG
UPBH29716P81	5/4/2025	UP29716P81	Umwelt	297	1.352	42.25	4.20	0.10	PAG
UPBH29716P85	5/4/2025	UP29716P85	Umwelt	297	-	-	3.13	N/A	NAG
UPBH29716P39	5/4/2025	UP29716P39	Umwelt	297	0.032	1.00	3.70	3.69	NAG
UPBH29716P13	5/4/2025	UP29716P13	Umwelt	297	0.106	2.80	8.84	3.16	NAG
UPBH29716P131	5/4/2025	UP29716P131	Umwelt	297	0.154	3.73	5.13	1.38	PAG
UPBH29716P136	5/4/2025	UP29716P136	Umwelt	297	0.051	1.59	3.76	2.36	NAG
UPBH29716P140	5/4/2025	UP29716P140	Umwelt	297	-	-	4.09	N/A	NAG
UPBH29716P16	5/4/2025	UP29716P16	Umwelt	297	0.056	1.36	5.01	3.68	NAG
UPBH29717P145C	5/10/2025	UP29717P145	Umwelt	297	0.082	0.75	5.11	6.85	NAG
UPBH29717P149C	5/10/2025	UP29717P149	Umwelt	297	0.191	5.87	4.75	0.81	PAG
UPBH29717P153C	5/10/2025	UP29717P153	Umwelt	297	-	-	3.25	N/A	NAG
UPBH29717P157C	5/10/2025	UP29717P157	Umwelt	297	0.052	1.63	4.00	2.45	NAG
UPBH29717P226C	5/10/2025	UP29717P226	Umwelt	297	0.052	1.54	4.51	2.92	NAG
UPBH29717P230C	5/10/2025	UP29717P230	Umwelt	297	0.032	1.01	3.00	2.98	NAG
UPBH29717P234C	5/10/2025	UP29717P234	Umwelt	297	0.033	0.14	4.88	34.48	NAG
UPBH29717P285C	5/10/2025	UP29717P285	Umwelt	297	0.182	4.64	4.51	0.97	PAG
UPBH29717P289C	5/10/2025	UP29717P289	Umwelt	297	0.337	9.76	3.75	0.38	PAG
UPBH29717P294C	5/10/2025	UP29717P294	Umwelt	297	0.065	2.02	3.75	1.86	NAG
UPBH29717P84C	5/10/2025	UP29717P84	Umwelt	297	0.025	0.57	5.62	9.94	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29717P87C	5/10/2025	UP29717P87	Umwelt	297	-	-	4.98	N/A	NAG
UPBH29717P90C	5/10/2025	UP29717P90	Umwelt	297	0.006	0.20	3.88	19.43	NAG
UPBH29717P94C	5/10/2025	UP29717P94	Umwelt	297	0.009	0.27	4.87	18.34	NAG
UPBH29717P373C	5/11/2025	UP29717P373	Umwelt	297	-	-	4.51	N/A	NAG
UPBH29717P378C	5/11/2025	UP29717P378	Umwelt	297	0.182	5.67	3.76	0.66	PAG
UPBH29717P381C	5/11/2025	UP29717P381	Umwelt	297	0.121	3.63	5.63	1.55	NAG
UPBH29717P458C	5/11/2025	UP29717P458	Umwelt	297	0.132	4.02	3.88	0.96	NAG
UPBH29717P463C	5/11/2025	UP29717P463	Umwelt	297	0.120	3.32	4.51	1.36	NAG
UPBH29717P467C	5/11/2025	UP29717P467	Umwelt	297	0.322	8.87	6.50	0.73	PAG
UPBH29717P474C	5/13/2025	UP29717P474	Umwelt	297	0.050	1.49	4.13	2.78	NAG
UPBH29717P527C	5/13/2025	UP29717P527	Umwelt	297	0.169	4.89	4.25	0.87	PAG
UPBH29717P570C	5/13/2025	UP29717P570	Umwelt	297	0.034	0.82	3.50	4.25	NAG
UPBH29717P582C	5/13/2025	UP29717P582	Umwelt	297	0.056	1.48	4.25	2.87	NAG
UPBH29717P351C	5/13/2025	UP29717P351	Umwelt	297	0.245	7.09	4.86	0.69	PAG
UPBH29718P104C	5/15/2025	UP29718P104	Umwelt	297	0.022	0.68	6.26	9.17	NAG
UPBH29718P108C	5/15/2025	UP29718P108	Umwelt	297	-	-	4.24	N/A	NAG
UPBH29718P112C	5/15/2025	UP29718P112	Umwelt	297	0.455	13.87	4.24	0.31	PAG
UPBH29718P118C	5/15/2025	UP29718P118	Umwelt	297	0.488	15.22	5.49	0.36	PAG
UPBH29718P120C	5/15/2025	UP29718P120	Umwelt	297	0.912	28.49	5.86	0.21	PAG
UPBH29718P206C	5/15/2025	UP29718P206	Umwelt	297	0.030	0.76	5.61	7.42	NAG
UPBH29718P21C	5/15/2025	UP29718P21	Umwelt	297	1.073	32.81	16.45	0.50	PAG
UPBH29718P210C	5/15/2025	UP29718P210	Umwelt	297	0.104	2.97	1.75	0.59	NAG
UPBH29718P214C	5/15/2025	UP29718P214	Umwelt	297	0.053	1.54	4.86	3.16	NAG
UPBH29718P219C	5/15/2025	UP29718P219	Umwelt	297	0.113	3.54	4.00	1.13	NAG
UPBH29718P261C	5/15/2025	UP29718P261	Umwelt	297	0.067	1.94	3.74	1.93	NAG
UPBH29718P264C	5/15/2025	UP29718P264	Umwelt	297	0.240	7.31	3.51	0.48	PAG
UPBH29718P267C	5/15/2025	UP29718P267	Umwelt	297	0.088	2.31	4.74	2.06	NAG
UPBH29718P271C	5/15/2025	UP29718P271	Umwelt	297	0.154	4.18	3.25	0.78	PAG
UPBH29718P306C	5/15/2025	UP29718P306	Umwelt	297	0.040	0.89	3.50	3.94	NAG
UPBH29718P310C	5/15/2025	UP29718P310	Umwelt	297	0.030	0.79	3.38	4.27	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29718P314C	5/15/2025	UP29718P314	Umwelt	297	0.038	0.95	4.50	4.73	NAG
UPBH29718P341C	5/15/2025	UP29718P341	Umwelt	297	-	-	3.87	N/A	NAG
UPBH29718P345C	5/15/2025	UP29718P345	Umwelt	297	0.002	0.05	5.24	N/A	NAG
UPBH29718P348C	5/15/2025	UP29718P348	Umwelt	297	0.080	2.50	4.75	1.90	NAG
UPBH30001P477C	5/18/2025	UP30001P477	Umwelt	300	0.007	0.05	6.13	114.49	NAG
UPBH30001P52C	5/18/2025	UP30001P52	Umwelt	300	0.139	4.34	10.74	2.47	NAG
UPBH30001P148C	5/18/2025	UP30001P148	Umwelt	300	0.098	2.33	5.11	2.19	NAG
UPBH30001P251C	5/18/2025	UP30001P251	Umwelt	300	0.099	3.00	5.26	1.75	NAG
UPBH30001P351C	5/18/2025	UP30001P351	Umwelt	300	0.092	2.80	4.75	1.70	NAG
UPBH30001P369C	5/18/2025	UP30001P369	Umwelt	300	0.295	8.79	5.99	0.68	PAG
UPBH30001P391C	5/19/2025	UP30001P391	Umwelt	300	-	-	3.62	N/A	NAG
UPBH30001P447C	5/19/2025	UP30001P447	Umwelt	300	-	-	3.50	N/A	NAG
UPBH30001P541C	5/19/2025	UP30001P541	Umwelt	300	0.061	1.92	5.50	2.87	NAG
UPBH30001P71C	5/19/2025	UP30001P71	Umwelt	300	0.072	1.86	6.23	3.36	NAG
UPBH30001P499C	5/19/2025	UP30001P499	Umwelt	300	0.065	2.02	4.87	2.42	NAG
UPBH29719P113C	5/23/2025	UP29719P113	Umwelt	297	0.080	1.98	7.24	3.65	NAG
UPBH29719P202C	5/23/2025	UP29719P202	Umwelt	297	0.386	11.68	7.24	0.62	PAG
UPBH29719P41C	5/23/2025	UP29719P41	Umwelt	297	0.343	9.58	6.49	0.68	PAG
UPBH29719P66C	5/23/2025	UP29719P66	Umwelt	297	0.074	2.32	7.63	3.29	NAG
UPBH29719P131	5/25/2025	UP29719P131	Umwelt	297	0.056	1.61	8.13	5.05	NAG
UPBH29001P01	5/31/2025	UP29001P01	Umwelt	290	0.007	0.22	4.88	22.64	NAG
UPBH29001P04	5/31/2025	UP29001P04	Umwelt	290	0.054	1.70	2.77	1.63	NAG
UPBH29001P08	5/31/2025	UP29001P08	Umwelt	290	0.107	3.35	5.24	1.56	NAG
UPBH29001P102	5/31/2025	UP29001P102	Umwelt	290	0.152	4.73	5.14	1.08	PAG
UPBH29001P160	5/31/2025	UP29001P160	Umwelt	290	0.066	2.05	3.85	1.88	NAG
UPBH29001P164	5/31/2025	UP29001P164	Umwelt	290	0.121	3.79	5.43	1.43	NAG
UPBH29001P212	5/31/2025	UP29001P212	Umwelt	290	0.949	29.50	4.34	0.15	PAG
UPBH29001P263	5/31/2025	UP29001P263	Umwelt	290	0.011	0.34	4.61	13.41	NAG
UPBH29001P267	5/31/2025	UP29001P267	Umwelt	290	0.087	2.73	5.26	1.93	NAG
UPBH29001P270	5/31/2025	UP29001P270	Umwelt	290	0.473	14.79	7.28	0.49	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29001P334	5/31/2025	UP29001P334	Umwelt	290	0.231	7.23	11.10	1.54	PAG
UPBH29001P338	5/31/2025	UP29001P338	Umwelt	290	0.272	7.37	18.36	2.49	PAG
UPBH29001P392	5/31/2025	UP29001P392	Umwelt	290	0.268	8.37	10.05	1.20	PAG
UPBH29001P449	5/31/2025	UP29001P449	Umwelt	290	0.105	3.29	7.71	2.34	NAG
UPBH29001P453	5/31/2025	UP29001P453	Umwelt	290	0.467	14.60	17.54	1.20	PAG
UPBH29001P95	5/31/2025	UP29001P95	Umwelt	290	0.137	4.27	3.83	0.90	NAG
UPBH29001P99	5/31/2025	UP29001P99	Umwelt	290	0.140	4.37	4.22	0.97	NAG
UPBH29001P443	6/1/2025	UP29001P443	Umwelt	290	0.145	4.51	15.02	3.33	NAG
UPBH29001P257	6/1/2025	UP29001P257	Umwelt	290	0.525	15.60	6.66	0.43	PAG
UPBH29001P344	6/1/2025	UP29001P344	Umwelt	290	0.307	8.83	7.15	0.81	PAG
UPBH29001P170	6/1/2025	UP29001P170	Umwelt	290	0.125	3.28	7.11	2.17	NAG
UPBH29001P89	6/1/2025	UP29001P89	Umwelt	290	0.140	3.84	6.51	1.69	NAG
UPBH29001P174	6/2/2025	UP29001P174	Umwelt	290	0.287	8.51	8.72	1.02	PAG
UPBH29001P18	6/2/2025	UP29001P18	Umwelt	290	0.071	2.19	4.22	1.93	NAG
UPBH29001P253	6/2/2025	UP29001P253	Umwelt	290	0.118	3.28	6.64	2.02	NAG
UPBH29001P348	6/2/2025	UP29001P348	Umwelt	290	0.092	2.64	7.29	2.76	NAG
UPBH29001P439	6/2/2025	UP29001P439	Umwelt	290	0.217	6.73	6.10	0.91	PAG
UPBH29001P85	6/2/2025	UP29001P85	Umwelt	290	0.120	3.28	6.86	2.09	NAG
UPBH29001P73	6/3/2025	UP29001P73	Umwelt	290	0.148	4.63	3.98	0.86	NAG
UPBH29001P308	6/3/2025	UP29001P308	Umwelt	290	0.101	2.77	4.20	1.52	NAG
UPBH29001P415	6/3/2025	UP29001P415	Umwelt	290	0.184	5.37	8.51	1.58	PAG
UPBH29001P134	6/3/2025	UP29001P134	Umwelt	290	0.143	4.38	4.74	1.08	NAG
UPBH29001P235	6/3/2025	UP29001P235	Umwelt	290	0.133	3.74	6.13	1.64	NAG
UPBH29719P520	6/3/2025	UP29719P520	Umwelt	297	0.076	2.20	3.23	1.47	NAG
UPBH29719P490	6/3/2025	UP29719P490	Umwelt	297	0.004	0.12	3.31	27.14	NAG
UPBH29719P437	6/3/2025	UP29719P437	Umwelt	297	0.095	2.95	4.34	1.47	NAG
UPBH29719P441	6/3/2025	UP29719P441	Umwelt	297	0.457	13.64	5.01	0.37	PAG
UPBH29001P239	6/4/2025	UP29001P239	Umwelt	290	0.280	8.56	7.67	0.90	PAG
UPBH29001P304	6/4/2025	UP29001P304	Umwelt	290	0.120	3.47	6.61	1.91	NAG
UPBH29001P130	6/4/2025	UP29001P130	Umwelt	290	0.120	3.78	3.50	0.92	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29001P419	6/4/2025	UP29001P419	Umwelt	290	0.300	9.39	7.60	0.81	PAG
UPBH29001P360	6/4/2025	UP29001P360	Umwelt	290	0.160	4.69	7.72	1.65	PAG
UPBH29001P490	6/4/2025	UP29001P490	Umwelt	290	0.200	6.27	8.12	1.30	PAG
UPBH29001P494	6/4/2025	UP29001P494	Umwelt	290	0.180	5.69	6.50	1.14	PAG
UPBH29719P449	6/6/2025	UP29719P449	Umwelt	297	0.060	1.44	4.17	2.90	NAG
UPBH29719P452	6/6/2025	UP29719P452	Umwelt	297	0.140	4.44	5.11	1.15	NAG
UPBH29719P488	6/6/2025	UP29719P488	Umwelt	297	0.010	0.45	4.88	10.84	NAG
UPBH29719P491	6/6/2025	UP29719P491	Umwelt	297	0.010	0.21	5.16	25.03	NAG
UPBH29719P496	6/6/2025	UP29719P496	Umwelt	297	0.320	9.85	3.87	0.39	PAG
UPBH29719P519	6/6/2025	UP29719P519	Umwelt	297	0.460	14.19	5.49	0.39	PAG
UPBH29719P560	6/6/2025	UP29719P560	Umwelt	297	0.060	1.75	3.15	1.80	NAG
UPBH29719P563	6/6/2025	UP29719P563	Umwelt	297	-	-	3.71	N/A	NAG
UPBH295R02P295	6/10/2025	UP295R02P295	Umwelt	295	0.220	6.23	5.46	0.88	PAG
UPBH295R02P302	6/10/2025	UP295R02P302	Umwelt	295	0.160	4.59	10.36	2.26	PAG
UPBH295R02P313	6/10/2025	UP295R02P313	Umwelt	295	0.070	1.61	5.66	3.52	NAG
UPBH295R02P327	6/10/2025	UP295R02P327	Umwelt	295	0.090	2.77	6.64	2.39	NAG
UPBH295R02P332	6/10/2025	UP295R02P332	Umwelt	295	0.350	10.46	11.62	1.11	PAG
UPBH295R02P342	6/10/2025	UP295R02P342	Umwelt	295	0.140	3.99	9.35	2.34	NAG
UPBH295R02P343	6/10/2025	UP295R02P343	Umwelt	295	0.130	3.38	6.41	1.90	NAG
UPBH295R02P345	6/10/2025	UP295R02P345	Umwelt	295	0.140	3.83	9.36	2.44	NAG
UPBH295R02P350	6/10/2025	UP295R02P350	Umwelt	295	0.150	3.72	8.26	2.22	NAG
UPBH295R02P355	6/10/2025	UP295R02P355	Umwelt	295	0.100	2.96	6.86	2.32	NAG
UPBH295R02P364	6/10/2025	UP295R02P364	Umwelt	295	0.070	1.86	4.66	2.51	NAG
UPBH295R02R152	6/13/2025	UP295R02R152	Umwelt	295	0.180	4.31	5.74	1.33	PAG
UPBH295R02R154	6/13/2025	UP295R02R154	Umwelt	295	0.170	4.54	8.33	1.83	PAG
UPBH295R02R193	6/13/2025	UP295R02R193	Umwelt	295	0.190	5.16	10.03	1.94	PAG
UPBH295R02P103	6/13/2025	UP295R02P103	Umwelt	295	0.140	3.98	5.25	1.32	NAG
UPBH295R02P105	6/14/2025	UP295R02P105	Umwelt	295	0.140	3.79	5.37	1.42	NAG
UPBH295R02R116	6/14/2025	UP295R02R116	Umwelt	295	0.170	4.78	8.33	1.74	PAG
UPBH295R02R148	6/14/2025	UP295R02R148	Umwelt	295	0.080	2.35	6.48	2.76	NAG

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UPBH295R02R219	6/14/2025	UP295R02R219	Umwelt	295	0.130	3.17	5.61	1.77	NAG
UPBH295R02P24	6/14/2025	UP295R02P24	Umwelt	295	0.120	3.09	5.25	1.70	NAG
UPBH295R02P28	6/14/2025	UP295R02P28	Umwelt	295	0.140	4.44	5.74	1.29	NAG
UPBH295R02P65	6/14/2025	UP295R02P65	Umwelt	295	0.110	2.89	5.13	1.78	NAG
UPBH295R02P74	6/14/2025	UP295R02P74	Umwelt	295	0.080	2.42	5.25	2.18	NAG
UPBH29723P12	6/16/2025	UP29723P12	Umwelt	297	0.070	1.88	8.22	4.38	NAG
UPBH29723P127	6/16/2025	UP29723P127	Umwelt	297	0.120	3.73	4.55	1.22	NAG
UPBH29723P168	6/16/2025	UP29723P168	Umwelt	297	0.090	2.49	5.63	2.26	NAG
UPBH29723P171	6/16/2025	UP29723P171	Umwelt	297	0.010	0.29	3.95	13.58	NAG
UPBH29723P219	6/16/2025	UP29723P219	Umwelt	297	0.030	0.95	6.26	6.59	NAG
UPBH29723P222	6/16/2025	UP29723P222	Umwelt	297	0.110	2.80	6.61	2.36	NAG
UPBH29723P225	6/16/2025	UP29723P225	Umwelt	297	0.470	13.39	8.95	0.67	PAG
UPBH29723P228	6/16/2025	UP29723P228	Umwelt	297	0.330	7.50	9.17	1.22	PAG
UPBH29723P261	6/16/2025	UP29723P261	Umwelt	297	0.730	21.44	5.17	0.24	PAG
UPBH29723P264	6/16/2025	UP29723P264	Umwelt	297	0.140	4.38	4.62	1.05	NAG
UPBH29723P67	6/16/2025	UP29723P67	Umwelt	297	0.060	1.14	5.79	5.06	NAG
UPBH29723P70	6/16/2025	UP29723P70	Umwelt	297	0.110	2.71	10.25	3.79	NAG
UPBH29723P76	6/17/2025	UP29723P76	Umwelt	297	-	-	3.98	N/A	NAG
UPBH29723P79	6/17/2025	UP29723P79	Umwelt	297	0.260	8.19	4.51	0.55	PAG
UPBH29723P97	6/17/2025	UP29723P97	Umwelt	297	0.030	0.82	6.78	8.28	NAG
UPBH29723P279	6/17/2025	UP29723P279	Umwelt	297	0.160	4.48	5.28	1.18	PAG
UPBH29723P24	6/17/2025	UP29723P24	Umwelt	297	0.010	0.08	4.33	53.33	NAG
UPBH29723P202	6/17/2025	UP29723P202	Umwelt	297	0.090	2.39	5.35	2.24	NAG
UPBH29723P21	6/17/2025	UP29723P21	Umwelt	297	0.080	1.82	6.74	3.71	NAG
UPBH29723P147	6/17/2025	UP29723P147	Umwelt	297	0.060	1.44	4.97	3.45	NAG
UPBH29723P151	6/17/2025	UP29723P151	Umwelt	297	0.140	3.83	4.43	1.16	NAG
3P001	6/19/2025	TH-3P01	Umwelt	290	0.650	20.39	8.47	0.42	PAG
3P002	6/19/2025	TH-3P02	Umwelt	290	0.320	9.59	8.25	0.86	PAG
3P003	6/19/2025	TH-3P03	Umwelt	290	-	0.03	2.13	N/A	NAG
3P004	6/19/2025	TH-3P04	Umwelt	290	0.050	0.03	6.97	N/A	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
3P005	6/19/2025	TH-3P05	Umwelt	290	0.010	0.42	6.93	16.61	NAG
3P006	6/19/2025	TH-3P06	Umwelt	290	0.070	2.24	5.83	2.60	NAG
3P007	6/19/2025	TH-3P07	Umwelt	290	-	0.03	5.36	N/A	NAG
3P008	6/19/2025	TH-3P08	Umwelt	290	-	0.03	5.74	N/A	NAG
3P010	6/19/2025	TH-3P10	Umwelt	290	0.200	6.03	4.60	0.76	PAG
3P011	6/19/2025	TH-3P11	Umwelt	290	-	0.03	6.54	N/A	NAG
3P013	6/19/2025	TH-3P13	Umwelt	290	0.040	0.92	5.59	6.07	NAG
3P014	6/19/2025	TH-3P14	Umwelt	290	0.040	1.19	5.05	4.25	NAG
3P015	6/19/2025	TH-3P15	Umwelt	290	0.040	1.23	5.35	4.34	NAG
3P016	6/19/2025	TH-3P16	Umwelt	290	0.100	2.57	5.12	2.00	NAG
3P017	6/19/2025	TH-3P17	Umwelt	290	0.130	4.20	4.94	1.17	NAG
3P018	6/19/2025	TH-3P18	Umwelt	290	0.080	2.57	6.23	2.42	NAG
3P019	6/19/2025	TH-3P19	Umwelt	290	0.090	2.31	4.37	1.89	NAG
3P020	6/19/2025	TH-3P20	Umwelt	290	0.120	3.89	7.68	1.98	NAG
3P021	6/19/2025	TH-3P21	Umwelt	290	-	0.03	4.35	N/A	NAG
3P022	6/19/2025	TH-3P22	Umwelt	290	0.010	0.03	4.25	N/A	NAG
UPBH29003P14C	6/20/2025	UP29003P14	Umwelt	290	0.910	26.79	9.55	0.36	PAG
UPBH29003P150C	6/20/2025	UP29003P150	Umwelt	290	0.120	3.74	5.53	1.48	NAG
UPBH29003P154C	6/20/2025	UP29003P154	Umwelt	290	0.120	3.49	5.30	1.52	NAG
UPBH29003P157C	6/20/2025	UP29003P157	Umwelt	290	0.160	4.95	5.05	1.02	PAG
UPBH29003P18C	6/20/2025	UP29003P18	Umwelt	290	0.070	2.05	6.01	2.94	NAG
UPBH29003P23C	6/20/2025	UP29003P23	Umwelt	290	0.050	1.66	6.92	4.18	NAG
UPBH29003P63C	6/20/2025	UP29003P63	Umwelt	290	0.040	1.21	5.12	4.25	NAG
UPBH29003P74C	6/20/2025	UP29003P74	Umwelt	290	0.070	2.07	4.60	2.23	NAG
UPBH29003P36C	6/21/2025	UP29003P36	Umwelt	290	0.040	1.26	6.84	5.44	NAG
UPBH29003P143C	6/21/2025	UP29003P143	Umwelt	290	0.400	12.00	6.70	0.56	PAG
UPBH29003P123C	6/21/2025	UP29003P123	Umwelt	290	0.080	2.44	5.24	2.15	NAG
UPBH29725P1C	6/21/2025	UP29725P1	Umwelt	297	0.130	3.89	3.66	0.94	NAG
UPBH29725P107C	6/21/2025	UP29725P107	Umwelt	297	-	0.03	3.70	N/A	NAG
UPBH29725P110C	6/21/2025	UP29725P110	Umwelt	297	0.070	2.26	2.49	1.10	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29725P113C	6/21/2025	UP29725P113	Umwelt	297	0.140	3.87	2.09	0.54	NAG
UPBH29725P128C	6/21/2025	UP29725P128	Umwelt	297	0.010	0.03	3.96	N/A	NAG
UPBH29725P131C	6/21/2025	UP29725P131	Umwelt	297	-	0.03	3.48	N/A	NAG
UPBH29725P147C	6/21/2025	UP29725P147	Umwelt	297	0.230	6.93	5.17	0.75	PAG
UPBH29725P25C	6/21/2025	UP29725P25	Umwelt	297	0.140	3.01	4.60	1.53	NAG
UPBH29725P28C	6/21/2025	UP29725P28	Umwelt	297	-	0.03	3.81	N/A	NAG
UPBH29725P3C	6/21/2025	UP29725P3	Umwelt	297	0.010	0.03	4.09	N/A	NAG
UPBH29725P30C	6/21/2025	UP29725P30	Umwelt	297	0.070	1.22	4.28	3.52	NAG
UPBH29725P46C	6/21/2025	UP29725P46	Umwelt	297	0.120	2.78	6.96	2.50	NAG
UPBH29725P49C	6/21/2025	UP29725P49	Umwelt	297	0.110	2.32	6.47	2.79	NAG
UPBH29725P5C	6/21/2025	UP29725P5	Umwelt	297	0.480	14.87	6.03	0.41	PAG
UPBH29725P52C	6/21/2025	UP29725P52	Umwelt	297	0.050	1.12	4.53	4.04	NAG
UPBH29725P68C	6/21/2025	UP29725P68	Umwelt	297	0.380	11.04	9.96	0.90	PAG
UPBH29725P71C	6/21/2025	UP29725P71	Umwelt	297	0.290	7.74	4.82	0.62	PAG
UPBH29725P73C	6/21/2025	UP29725P73	Umwelt	297	0.050	0.66	4.58	6.93	NAG
UPBH29725P8C	6/21/2025	UP29725P8	Umwelt	297	-	0.03	4.78	N/A	NAG
UPBH29725P89C	6/21/2025	UP29725P89	Umwelt	297	0.100	2.99	6.16	2.06	NAG
UPBH29725P91C	6/21/2025	UP29725P91	Umwelt	297	0.010	0.03	2.70	N/A	NAG
UPBH29725P93C	6/21/2025	UP29725P93	Umwelt	297	0.060	1.70	4.69	2.75	NAG
UPBH29723P304F	6/25/2025	UP29723P304	Umwelt	297	0.030	1.08	(0.11)	(0.10)	NAG
UPBH29723P327F	6/25/2025	UP29723P327	Umwelt	297	0.060	1.66	4.29	2.58	NAG
UPBH29724P12F	6/25/2025	UP29724P12	Umwelt	297	0.940	29.24	10.22	0.35	PAG
UPBH29724P167F	6/25/2025	UP29724P167	Umwelt	297	0.020	0.57	10.72	18.89	NAG
UPBH29724P256F	6/25/2025	UP29724P256	Umwelt	297	0.150	4.75	9.66	2.03	NAG
UPBH29724P306F	6/25/2025	UP29724P306	Umwelt	297	0.040	1.17	5.63	4.80	NAG
UPBH29724P49F	6/25/2025	UP29724P49	Umwelt	297	0.260	8.13	11.14	1.37	PAG
UPBH29724P52F	6/25/2025	UP29724P52	Umwelt	297	0.020	0.61	5.98	9.74	NAG
UPBH29724P55F	6/25/2025	UP29724P55	Umwelt	297	0.070	2.10	11.98	5.69	NAG
UPBH29724P191F	6/26/2025	UP29724P191	Umwelt	297	0.120	3.79	14.06	3.71	NAG
UPBH29724P202F	6/26/2025	UP29724P202	Umwelt	297	0.400	12.64	5.25	0.42	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29724P250F	6/26/2025	UP29724P250	Umwelt	297	0.760	23.37	9.34	0.40	PAG
UPBH29724P254F	6/26/2025	UP29724P254	Umwelt	297	0.540	16.68	8.59	0.52	PAG
UPBH29004P109F	6/27/2025	UP29004P109	Umwelt	290	0.390	10.85	5.13	0.47	PAG
UPBH29004P117F	6/27/2025	UP29004P117	Umwelt	290	0.400	11.70	6.43	0.55	PAG
UPBH29004P134C	6/27/2025	UP29004P134	Umwelt	290	0.200	5.50	5.26	0.96	PAG
UPBH29004P167F	6/27/2025	UP29004P167	Umwelt	290	0.170	4.10	5.38	1.31	PAG
UPBH29004P172F	6/27/2025	UP29004P172	Umwelt	290	0.140	4.08	6.76	1.66	NAG
UPBH29004P174F	6/27/2025	UP29004P174	Umwelt	290	0.200	5.28	(1.74)	(0.33)	PAG
UPBH29004P177C	6/27/2025	UP29004P177	Umwelt	290	0.270	8.10	5.26	0.65	PAG
UPBH29004P31C	6/27/2025	UP29004P31	Umwelt	290	0.040	1.10	7.39	6.71	NAG
UPBH29004P39F	6/27/2025	UP29004P39	Umwelt	290	0.140	1.28	3.51	2.74	NAG
UPBH29004P71C	6/27/2025	UP29004P71	Umwelt	290	0.050	1.59	5.01	3.15	NAG
UPBH29004P83F	6/27/2025	UP29004P83	Umwelt	290	0.600	17.79	7.25	0.41	PAG
UPBH29004P24F	6/28/2025	UP29004P24	Umwelt	290	0.360	10.71	4.75	0.44	PAG
UPBH29004P146F	6/28/2025	UP29004P146	Umwelt	290	0.320	9.61	6.61	0.69	PAG
UPBH29002P143F	6/29/2025	UP29002P143	Umwelt	290	0.100	2.82	5.89	2.09	NAG
UPBH29002P178F	6/29/2025	UP29002P178	Umwelt	290	0.120	3.52	8.18	2.32	NAG
UPBH29002P183F	6/29/2025	UP29002P183	Umwelt	290	0.260	7.89	4.46	0.57	PAG
UPBH29002P213F	6/29/2025	UP29002P213	Umwelt	290	0.180	5.69	5.75	1.01	PAG
UPBH29002P248F	6/29/2025	UP29002P248	Umwelt	290	0.090	2.84	6.27	2.20	NAG
UPBH29002P253F	6/29/2025	UP29002P253	Umwelt	290	0.130	3.82	6.45	1.69	NAG
UPBH29002P300F	6/29/2025	UP29002P300	Umwelt	290	0.040	1.40	13.27	9.46	NAG
UPBH29002P272C	6/30/2025	UP29002P272	Umwelt	290	0.560	16.32	7.47	0.46	PAG
UPBH29002P291F	7/1/2025	UP29002P291	Umwelt	290	0.440	12.90	8.73	0.68	PAG
UPBH29002P86C	7/1/2025	UP29002P86	Umwelt	290	0.160	4.15	7.64	1.84	PAG
UPBH29002P265C	7/1/2025	UP29002P265	Umwelt	290	0.300	9.35	7.06	0.75	PAG
UPBH29002P238F	7/1/2025	UP29002P238	Umwelt	290	0.240	7.28	10.52	1.44	PAG
UPBH29002P189C	7/1/2025	UP29002P189	Umwelt	290	-	0.03	4.98	N/A	NAG
UPBH29002P157C	7/1/2025	UP29002P157	Umwelt	290	0.260	7.93	9.43	1.19	PAG
UPBH29002P163F	7/2/2025	UP29002P163	Umwelt	290	0.270	7.96	23.71	2.98	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29002P100F	7/2/2025	UP29002P100	Umwelt	290	1.410	43.91	7.34	0.17	PAG
UPBH29002P14F	7/2/2025	UP29002P14	Umwelt	290	0.270	7.22	8.36	1.16	PAG
UPBH29002P43F	7/2/2025	UP29002P43	Umwelt	290	0.260	8.25	5.75	0.70	PAG
UPBH29002P47F	7/2/2025	UP29002P47	Umwelt	290	0.700	21.96	18.93	0.86	PAG
UPBH29002P5F	7/2/2025	UP29002P5	Umwelt	290	0.170	5.18	7.96	1.54	PAG
UPBH29002P64F	7/2/2025	UP29002P64	Umwelt	290	0.160	3.97	7.96	2.01	PAG
UPBH29005P01F	7/3/2025	UP29005P01	Umwelt	290	0.280	8.37	5.26	0.63	PAG
UPBH29005P88F	7/3/2025	UP29005P88	Umwelt	290	0.020	0.03	5.87	N/A	NAG
UPBH29005P24F	7/3/2025	UP29005P24	Umwelt	290	1.870	56.37	9.60	0.17	PAG
UPBH29005P37F	7/3/2025	UP29005P37	Umwelt	290	0.140	3.86	8.54	2.21	NAG
UPBH29005P45F	7/3/2025	UP29005P45	Umwelt	290	0.040	0.60	3.87	6.51	NAG
UPBH29005P59F	7/3/2025	UP29005P59	Umwelt	290	0.280	8.28	9.58	1.16	PAG
UPBH29005P72F	7/3/2025	UP29005P72	Umwelt	290	-	0.03	5.82	N/A	NAG
UPBH29005P81F	7/4/2025	UP29005P81	Umwelt	290	0.210	6.08	8.81	1.45	PAG
UPBH29005P100F	7/4/2025	UP29005P100	Umwelt	290	0.150	4.37	4.81	1.10	NAG
UPBH29005P110F	7/4/2025	UP29005P110	Umwelt	290	0.140	4.35	3.26	0.75	NAG
UPBH29005P122F	7/4/2025	UP29005P122	Umwelt	290	0.020	0.58	3.51	6.09	NAG
UPBH29005P144C	7/4/2025	UP29005P144	Umwelt	290	0.330	9.70	4.74	0.49	PAG
UPBH290RAMPV2P69F	7/6/2025	UP290RAMPV2P69	Umwelt	290	0.470	14.09	10.12	0.72	PAG
UPBH290RAMPV2P73F	7/6/2025	UP290RAMPV2P73	Umwelt	290	0.180	4.30	8.98	2.09	PAG
UPBH290RAMPV2P80F	7/6/2025	UP290RAMPV2P80	Umwelt	290	0.070	2.12	15.23	7.20	NAG
UPBH290RAMPV2P94F	7/6/2025	UP290RAMPV2P94	Umwelt	290	0.130	4.06	8.90	2.19	NAG
UPBH290RAMPV2P151F	7/6/2025	UP290RAMPV2P151	Umwelt	290	0.340	10.30	8.55	0.83	PAG
UPBH290RAMPV2P154F	7/6/2025	UP290RAMPV2P154	Umwelt	290	0.440	13.75	11.55	0.84	PAG
UPBH290RAMPV2P157F	7/6/2025	UP290RAMPV2P157	Umwelt	290	0.280	8.27	14.49	1.75	PAG
UPBH290RAMPV2P190F	7/6/2025	UP290RAMPV2P190	Umwelt	290	0.160	4.28	7.08	1.65	PAG
UPBH290RAMPV2P109F	7/6/2025	UP290RAMPV2P109	Umwelt	290	0.200	5.81	7.23	1.24	PAG
UPBH290RAMPV2P128F	7/7/2025	UP290RAMPV2P128	Umwelt	290	0.470	13.44	13.21	0.98	PAG
UPBH290RAMPV2P199F	7/7/2025	UP290RAMPV2P199	Umwelt	290	0.010	0.03	10.45	N/A	NAG
UPBH290RAMPV2P27C	7/7/2025	UP290RAMPV2P27	Umwelt	290	3.070	91.49	9.60	0.10	PAG

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UPBH290RAMPV2P61F	7/7/2025	UP290RAMPV2P61	Umwelt	290	0.070	1.72	7.43	4.31	NAG
UPBH290RAMPV2P161F	7/7/2025	UP290RAMPV2P161	Umwelt	290	0.360	10.69	8.01	0.75	PAG
UPBH29006B01F	7/9/2025	UP29006B01	Umwelt	290	0.140	3.15	6.19	1.97	NAG
UPBH29006P01F	7/9/2025	UP29006P01	Umwelt	290	0.300	9.49	8.68	0.91	PAG
UPBH29006P08F	7/9/2025	UP29006P08	Umwelt	290	0.200	6.30	5.48	0.87	PAG
UPBH29006P13F	7/9/2025	UP29006P13	Umwelt	290	0.320	9.88	11.06	1.12	PAG
UPBH29006P20F	7/9/2025	UP29006P20	Umwelt	290	-	0.03	7.25	N/A	NAG
UPBH29006P33F	7/9/2025	UP29006P33	Umwelt	290	0.230	7.02	6.04	0.86	PAG
UPBH29006P47F	7/9/2025	UP29006P47	Umwelt	290	0.200	5.50	4.68	0.85	PAG
UPBH29006P57F	7/9/2025	UP29006P57	Umwelt	290	1.110	34.18	7.45	0.22	PAG
UPBH29006P61F	7/9/2025	UP29006P61	Umwelt	290	0.350	10.95	13.77	1.26	PAG
UPBH29006P78F	7/9/2025	UP29006P78	Umwelt	290	0.240	7.30	15.31	2.10	PAG
UPBH29006P87F	7/9/2025	UP29006P87	Umwelt	290	0.310	9.68	5.84	0.60	PAG
UPBH29007P135F	7/11/2025	UP29007P135	Umwelt	290	0.170	3.53	5.76	1.63	PAG
UPBH29007P139F	7/11/2025	UP29007P139	Umwelt	290	0.140	4.05	5.51	1.36	NAG
UPBH29007P142F	7/11/2025	UP29007P142	Umwelt	290	0.110	3.49	5.55	1.59	NAG
UPBH29007P146F	7/11/2025	UP29007P146	Umwelt	290	0.010	0.03	5.33	N/A	NAG
UPBH29007P149C	7/11/2025	UP29007P149	Umwelt	290	0.060	1.63	7.02	4.29	NAG
UPBH29007P152C	7/11/2025	UP29007P152	Umwelt	290	0.210	2.71	5.52	2.03	PAG
UPBH29007P209F	7/11/2025	UP29007P209	Umwelt	290	0.090	1.06	5.26	4.95	NAG
UPBH29007P212F	7/11/2025	UP29007P212	Umwelt	290	0.100	1.33	5.93	4.46	NAG
UPBH29007P215C	7/11/2025	UP29007P215	Umwelt	290	0.330	10.28	8.58	0.83	PAG
UPBH29007P219C	7/11/2025	UP29007P219	Umwelt	290	0.300	6.80	7.30	1.07	PAG
UPBH29007P78C	7/11/2025	UP29007P78	Umwelt	290	0.120	3.67	6.16	1.68	NAG
UPBH29007P81F	7/11/2025	UP29007P81	Umwelt	290	0.130	3.28	5.01	1.53	NAG
UPBH29007P84F	7/11/2025	UP29007P84	Umwelt	290	0.130	4.08	4.98	1.22	NAG
UPBH29007P87F	7/11/2025	UP29007P87	Umwelt	290	0.170	5.02	9.47	1.89	PAG
UPBH29007P24F	7/13/2025	UP29007P24	Umwelt	290	0.080	2.32	4.70	2.02	NAG
UPBH29007P28F	7/13/2025	UP29007P28	Umwelt	290	0.070	2.20	7.44	3.38	NAG
UPBH29007P21F	7/13/2025	UP29007P21	Umwelt	290	0.120	3.47	5.19	1.50	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29007P15F	7/13/2025	UP29007P15	Umwelt	290	0.250	7.71	6.55	0.85	PAG
UPBH29007P47F	7/13/2025	UP29007P47	Umwelt	290	0.040	1.14	6.95	6.09	NAG
UPBH29008P206F	7/14/2025	UP29008P206	Umwelt	290	0.040	1.33	6.21	4.68	NAG
UPBH29008P223F	7/14/2025	UP29008P223	Umwelt	290	0.050	1.28	5.95	4.65	NAG
UPBH29008P230C	7/14/2025	UP29008P230	Umwelt	290	0.200	6.12	10.18	1.66	PAG
UPBH29008P209F	7/15/2025	UP29008P209	Umwelt	290	0.340	9.90	8.37	0.85	PAG
UPBH29008P242C	7/15/2025	UP29008P242	Umwelt	290	0.220	6.75	10.11	1.50	PAG
UPBH29008P132F	7/15/2025	UP29008P132	Umwelt	290	0.320	7.58	7.53	0.99	PAG
UPBH29008P135F	7/15/2025	UP29008P135	Umwelt	290	0.360	10.59	12.25	1.16	PAG
UPBH29008P138F	7/15/2025	UP29008P138	Umwelt	290	0.560	16.42	9.58	0.58	PAG
UPBH29008P156F	7/15/2025	UP29008P156	Umwelt	290	0.410	11.69	9.31	0.80	PAG
UPBH29008P162C	7/15/2025	UP29008P162	Umwelt	290	0.170	5.02	6.88	1.37	PAG
UPBH29008P191C	7/15/2025	UP29008P191	Umwelt	290	0.580	17.40	8.97	0.52	PAG
UPBH29008P113C	7/16/2025	UP29008P113	Umwelt	290	-	0.03	8.04	N/A	NAG
UPBH29008P116C	7/16/2025	UP29008P116	Umwelt	290	0.050	1.11	7.61	6.84	NAG
UPBH29008P119C	7/16/2025	UP29008P119	Umwelt	290	0.130	0.03	9.66	N/A	NAG
UPBH29007P157C	7/17/2025	UP29007P157	Umwelt	290	0.090	1.55	6.56	4.24	NAG
UPBH29007P199C	7/17/2025	UP29007P199	Umwelt	290	0.140	3.52	4.25	1.21	NAG
UPBH29007P30C	7/17/2025	UP29007P30	Umwelt	290	0.350	10.12	9.42	0.93	PAG
UPBH29007P110C	7/17/2025	UP29007P110	Umwelt	290	0.030	0.74	5.86	7.88	NAG
UPBH29008P27C	7/17/2025	UP29008P27	Umwelt	290	0.130	2.39	6.60	2.76	NAG
UPBH29008P30C	7/17/2025	UP29008P30	Umwelt	290	0.050	1.31	5.34	4.07	NAG
UPBH29008P59C	7/17/2025	UP29008P59	Umwelt	290	0.070	2.04	6.03	2.96	NAG
UPBH29008P62C	7/17/2025	UP29008P62	Umwelt	290	0.090	1.61	5.22	3.25	NAG
UPBH29008P65C	7/17/2025	UP29008P65	Umwelt	290	0.090	1.52	6.48	4.26	NAG
UPBH29007P72C	7/17/2025	UP29007P72	Umwelt	290	0.460	13.42	8.98	0.67	PAG
UPBH29008P24C	7/17/2025	UP29008P24	Umwelt	290	0.270	2.70	7.70	2.85	PAG
UPBH29013P29C	7/19/2025	UP29013P29	Umwelt	290	3.800	109.46	7.46	0.07	PAG
UPBH29013P31C	7/19/2025	UP29013P31	Umwelt	290	1.460	40.22	7.08	0.18	PAG
UPBH29013P34C	7/19/2025	UP29013P34	Umwelt	290	0.270	6.21	7.43	1.20	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29013P04C	7/19/2025	UP29013P04	Umwelt	290	0.790	24.72	7.90	0.32	PAG
UPBH29013P07C	7/19/2025	UP29013P07	Umwelt	290	1.450	42.94	8.13	0.19	PAG
UPBH29013P09C	7/19/2025	UP29013P09	Umwelt	290	0.110	2.39	7.71	3.23	NAG
UPBH29014P114C	7/21/2025	UP29014P114	Umwelt	290	0.650	19.79	7.12	0.36	PAG
UPBH29014P125C	7/21/2025	UP29014P125	Umwelt	290	1.440	45.04	9.55	0.21	PAG
UPBH29014P15C	7/21/2025	UP29014P15	Umwelt	290	0.630	18.16	10.62	0.58	PAG
UPBH29014P19C	7/21/2025	UP29014P19	Umwelt	290	0.180	5.23	7.73	1.48	PAG
UPBH29014P22C	7/21/2025	UP29014P22	Umwelt	290	0.230	6.57	7.99	1.22	PAG
UPBH29014P49C	7/21/2025	UP29014P49	Umwelt	290	0.330	9.99	8.89	0.89	PAG
UPBH29014P53C	7/21/2025	UP29014P53	Umwelt	290	0.810	24.24	17.48	0.72	PAG
UPBH29014P56C	7/21/2025	UP29014P56	Umwelt	290	0.870	26.18	7.84	0.30	PAG
UPBH29014P82C	7/21/2025	UP29014P82	Umwelt	290	0.680	19.93	10.61	0.53	PAG
UPBH29014P88C	7/21/2025	UP29014P88	Umwelt	290	0.610	19.14	22.45	1.17	PAG
UPBH29011P143C	7/22/2025	UP29011P143	Umwelt	290	0.470	13.28	11.52	0.87	PAG
UPBH29011P146C	7/22/2025	UP29011P146	Umwelt	290	0.090	2.09	4.99	2.39	NAG
UPBH29011P149C	7/22/2025	UP29011P149	Umwelt	290	0.150	4.48	9.12	2.03	NAG
UPBH29011P152C	7/22/2025	UP29011P152	Umwelt	290	0.270	7.71	6.85	0.89	PAG
UPBH29011P155C	7/22/2025	UP29011P155	Umwelt	290	0.120	3.63	9.18	2.53	NAG
UPBH29011P158C	7/22/2025	UP29011P158	Umwelt	290	1.350	42.27	8.64	0.20	PAG
UPBH29011P83C	7/22/2025	UP29011P83	Umwelt	290	0.120	3.49	7.44	2.13	NAG
UPBH29011P86C	7/22/2025	UP29011P86	Umwelt	290	0.060	1.65	8.10	4.90	NAG
UPBH29011P89C	7/22/2025	UP29011P89	Umwelt	290	0.350	10.30	6.98	0.68	PAG
UPBH29011P92C	7/22/2025	UP29011P92	Umwelt	290	0.390	11.56	8.19	0.71	PAG
UPBH29011P95C	7/22/2025	UP29011P95	Umwelt	290	0.180	5.15	8.55	1.66	PAG
UPBH29011P98C	7/22/2025	UP29011P98	Umwelt	290	0.250	7.35	12.04	1.64	PAG
UPBH29016P64C	7/23/2025	UP29016P64	Umwelt	290	0.330	10.29	9.78	0.95	PAG
UPBH29016P67C	7/23/2025	UP29016P67	Umwelt	290	0.010	0.03	16.02	N/A	NAG
UPBH29016P70C	7/23/2025	UP29016P70	Umwelt	290	0.600	18.43	20.98	1.14	PAG
UPBH29016P73C	7/23/2025	UP29016P73	Umwelt	290	-	0.03	6.25	N/A	NAG
UPBH29016P78C	7/23/2025	UP29016P78	Umwelt	290	0.410	11.82	11.81	1.00	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29016P81C	7/23/2025	UP29016P81	Umwelt	290	0.240	6.65	12.07	1.82	PAG
UPBH29012P106C	7/24/2025	UP29012P106	Umwelt	290	0.100	2.75	8.97	3.26	NAG
UPBH29012P109C	7/24/2025	UP29012P109	Umwelt	290	0.170	4.44	7.73	1.74	PAG
UPBH29012P112C	7/24/2025	UP29012P112	Umwelt	290	0.180	5.21	13.60	2.61	PAG
UPBH29012P115C	7/24/2025	UP29012P115	Umwelt	290	0.560	15.53	15.55	1.00	PAG
UPBH29012P136C	7/24/2025	UP29012P136	Umwelt	290	0.110	3.11	7.15	2.30	NAG
UPBH29012P41C	7/24/2025	UP29012P41	Umwelt	290	0.650	19.65	9.47	0.48	PAG
UPBH29012P44C	7/24/2025	UP29012P44	Umwelt	290	0.350	10.44	9.14	0.88	PAG
UPBH29012P47C	7/24/2025	UP29012P47	Umwelt	290	0.150	3.68	7.00	1.90	NAG
UPBH29012P50C	7/24/2025	UP29012P50	Umwelt	290	0.140	3.94	7.75	1.97	NAG
UPBH29012P53C	7/24/2025	UP29012P53	Umwelt	290	0.090	2.42	6.87	2.84	NAG
UPBH29012P93C	7/24/2025	UP29012P93	Umwelt	290	0.060	1.61	9.48	5.90	NAG
UPBH29012P96C	7/24/2025	UP29012P96	Umwelt	290	0.080	1.28	6.36	4.96	NAG
UPBH29011P36C	7/26/2025	UP29011P36	Umwelt	290	0.660	20.63	8.35	0.40	PAG
UPBH29011P39C	7/26/2025	UP29011P39	Umwelt	290	0.250	7.49	7.59	1.01	PAG
UPBH29011P22C	7/27/2025	UP29011P22	Umwelt	290	0.860	26.96	8.12	0.30	PAG
UPBH29011P25C	7/27/2025	UP29011P25	Umwelt	290	0.250	7.81	7.01	0.90	PAG
UPBH29011P28C	7/27/2025	UP29011P28	Umwelt	290	0.230	6.29	8.44	1.34	PAG
UPBH29012P187C	7/28/2025	UP29012P187	Umwelt	290	0.100	1.50	6.22	4.15	NAG
UPBH29012P190C	7/28/2025	UP29012P190	Umwelt	290	0.090	2.18	6.04	2.78	NAG
UPBH29012P147C	7/28/2025	UP29012P147	Umwelt	290	0.170	4.79	11.24	2.35	PAG
UPBH29012P151C	7/28/2025	UP29012P151	Umwelt	290	0.540	14.38	10.63	0.74	PAG
UPBH29019P55C	7/28/2025	UP29019P55	Umwelt	290	0.260	7.22	7.29	1.01	PAG
UPBH29019P57C	7/28/2025	UP29019P57	Umwelt	290	0.790	22.80	10.48	0.46	PAG
UPBH29019P60C	7/28/2025	UP29019P60	Umwelt	290	0.400	11.12	9.96	0.90	PAG
UPBH29019P62C	7/28/2025	UP29019P62	Umwelt	290	0.320	8.12	7.70	0.95	PAG
UPBH29019P83C	7/28/2025	UP29019P83	Umwelt	290	0.010	0.03	4.71	N/A	NAG
UPBH29019P85C	7/28/2025	UP29019P85	Umwelt	290	0.470	12.32	9.63	0.78	PAG
UPBH29019P87C	7/28/2025	UP29019P87	Umwelt	290	-	0.03	6.23	N/A	NAG
UPBH29019P89C	7/28/2025	UP29019P89	Umwelt	290	0.450	10.60	6.91	0.65	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29019P91C	7/28/2025	UP29019P91	Umwelt	290	0.370	9.41	9.50	1.01	PAG
UPBH29012P153C	7/29/2025	UP29012P153	Umwelt	290	0.100	2.77	6.53	2.36	NAG
UPBH29012P178C	7/29/2025	UP29012P178	Umwelt	290	0.080	1.98	6.58	3.32	NAG
UPBH29012P181C	7/29/2025	UP29012P181	Umwelt	290	0.010	0.32	6.15	19.08	NAG
UPBH29012P184C	7/29/2025	UP29012P184	Umwelt	290	0.030	0.51	5.33	10.39	NAG
UPBH29012P194C	7/29/2025	UP29012P194	Umwelt	290	0.130	4.04	7.34	1.81	NAG
UPBH29012P140C	7/29/2025	UP29012P140	Umwelt	290	-	0.03	4.72	N/A	NAG
UPBH29012P143C	7/29/2025	UP29012P143	Umwelt	290	0.110	2.63	7.05	2.68	NAG
UPBH29010P07C	8/1/2025	UP29010P07	Umwelt	290	0.090	1.58	6.50	4.11	NAG
UPBH29010P10C	8/1/2025	UP29010P10	Umwelt	290	0.160	4.88	8.01	1.64	PAG
UPBH29010P101C	8/1/2025	UP29010P101	Umwelt	290	0.440	13.81	5.61	0.41	PAG
UPBH29010P104C	8/1/2025	UP29010P104	Umwelt	290	-	0.03	4.50	N/A	NAG
UPBH29010P107C	8/1/2025	UP29010P107	Umwelt	290	0.090	2.45	4.38	1.79	NAG
UPBH29010P110C	8/1/2025	UP29010P110	Umwelt	290	0.080	1.37	4.88	3.57	NAG
UPBH29010P13C	8/1/2025	UP29010P13	Umwelt	290	0.100	2.35	5.15	2.19	NAG
UPBH29010P16C	8/1/2025	UP29010P16	Umwelt	290	0.130	3.79	4.86	1.28	NAG
UPBH29010P170C	8/1/2025	UP29010P170	Umwelt	290	0.080	2.35	5.25	2.23	NAG
UPBH29010P173C	8/1/2025	UP29010P173	Umwelt	290	0.080	2.34	4.37	1.87	NAG
UPBH29010P176C	8/1/2025	UP29010P176	Umwelt	290	0.140	3.11	4.24	1.37	NAG
UPBH29010P179C	8/1/2025	UP29010P179	Umwelt	290	0.150	2.78	5.38	1.94	NAG
UPBH29010P182C	8/1/2025	UP29010P182	Umwelt	290	0.080	2.02	5.38	2.66	NAG
UPBH29010P20C	8/1/2025	UP29010P20	Umwelt	290	0.100	2.75	5.26	1.91	NAG
UPBH29010P221C	8/1/2025	UP29010P221	Umwelt	290	0.220	6.89	8.22	1.19	PAG
UPBH29010P224C	8/1/2025	UP29010P224	Umwelt	290	0.080	2.23	6.97	3.13	NAG
UPBH29010P227C	8/1/2025	UP29010P227	Umwelt	290	0.080	2.16	10.25	4.76	NAG
UPBH29010P230C	8/1/2025	UP29010P230	Umwelt	290	-	0.03	6.63	N/A	NAG
UPBH29010P233C	8/1/2025	UP29010P233	Umwelt	290	0.360	9.19	7.25	0.79	PAG
UPBH29010P236C	8/1/2025	UP29010P236	Umwelt	290	0.060	1.56	8.22	5.27	NAG
UPBH29010P259C	8/1/2025	UP29010P259	Umwelt	290	0.010	0.03	6.00	N/A	NAG
UPBH29010P47C	8/1/2025	UP29010P47	Umwelt	290	0.120	3.55	7.99	2.25	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29010P50C	8/1/2025	UP29010P50	Umwelt	290	0.100	1.99	7.52	3.77	NAG
UPBH29010P53C	8/1/2025	UP29010P53	Umwelt	290	0.110	3.43	5.63	1.64	NAG
UPBH29010P56C	8/1/2025	UP29010P56	Umwelt	290	0.170	3.94	5.50	1.40	PAG
UPBH29010P59C	8/1/2025	UP29010P59	Umwelt	290	0.160	3.06	4.89	1.60	PAG
UPBH29030P12C	8/4/2025	UP29030P12	Umwelt	290	-	0.03	10.14	N/A	NAG
UPBH29030P129C	8/4/2025	UP29030P129	Umwelt	290	0.080	2.12	11.65	5.49	NAG
UPBH29030P15C	8/4/2025	UP29030P15	Umwelt	290	0.250	5.99	8.42	1.41	PAG
UPBH29030P186C	8/4/2025	UP29030P186	Umwelt	290	0.060	1.26	10.40	8.25	NAG
UPBH29030P190C	8/4/2025	UP29030P190	Umwelt	290	-	0.03	10.89	N/A	NAG
UPBH29030P68C	8/4/2025	UP29030P68	Umwelt	290	0.430	12.20	7.29	0.60	PAG
UPBH29030P71C	8/4/2025	UP29030P71	Umwelt	290	0.070	2.15	10.88	5.07	NAG
UPBH29030P253C	8/4/2025	UP29030P253	Umwelt	290	0.240	6.16	10.89	1.77	PAG
UPBH29030P38C	8/4/2025	UP29030P38	Umwelt	290	0.750	17.29	10.89	0.63	PAG
UPBH29030P51C	8/5/2025	UP29030P51	Umwelt	290	0.010	0.03	7.19	N/A	NAG
UPBH29030P217C	8/5/2025	UP29030P217	Umwelt	290	0.030	0.97	7.89	8.14	NAG
UPBH29030P227C	8/5/2025	UP29030P227	Umwelt	290	3.120	97.38	32.47	0.33	PAG
UPBH29030P174C	8/5/2025	UP29030P174	Umwelt	290	0.050	1.06	5.74	5.42	NAG
UPBH29030P01C	8/5/2025	UP29030P01	Umwelt	290	0.970	29.57	20.40	0.69	PAG
UPBH29030P112C	8/5/2025	UP29030P112	Umwelt	290	0.240	6.61	11.92	1.80	PAG
UPBH29030P115C	8/5/2025	UP29030P115	Umwelt	290	0.240	7.28	7.40	1.02	PAG
UPBH29030P118C	8/5/2025	UP29030P118	Umwelt	290	0.070	1.88	7.70	4.09	NAG
UPBH29026P244C	8/6/2025	UP29026P244	Umwelt	290	0.110	3.46	14.88	4.30	NAG
UPBH29026P12C	8/6/2025	UP29026P12	Umwelt	290	0.550	17.10	19.21	1.12	PAG
UPBH29026P123C	8/6/2025	UP29026P123	Umwelt	290	0.660	20.06	27.37	1.36	PAG
UPBH29026P125C	8/6/2025	UP29026P125	Umwelt	290	0.390	12.05	16.96	1.41	PAG
UPBH29026P15C	8/6/2025	UP29026P15	Umwelt	290	0.230	7.09	13.26	1.87	PAG
UPBH29026P183C	8/6/2025	UP29026P183	Umwelt	290	0.210	6.62	5.59	0.84	PAG
UPBH29026P198C	8/7/2025	UP29026P198	Umwelt	290	0.210	6.55	10.62	1.62	PAG
UPBH29026P169C	8/7/2025	UP29026P169	Umwelt	290	0.570	16.60	17.21	1.04	PAG
UPBH29026P171C	8/7/2025	UP29026P171	Umwelt	290	0.220	7.02	6.95	0.99	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29026P251C	8/7/2025	UP29026P251	Umwelt	290	0.160	5.06	5.79	1.14	PAG
UPBH29026P282C	8/7/2025	UP29026P282	Umwelt	290	0.080	2.05	5.67	2.76	NAG
UPBH29026P287C	8/7/2025	UP29026P287	Umwelt	290	1.700	52.98	18.38	0.35	PAG
UPBH29026P81C	8/7/2025	UP29026P81	Umwelt	290	0.390	12.12	11.83	0.98	PAG
UPBH29026P83C	8/7/2025	UP29026P83	Umwelt	290	0.270	7.61	8.56	1.12	PAG
UPBH29026P10C	8/7/2025	UP29026P10	Umwelt	290	-	0.03	4.33	N/A	NAG
UPBH29026P108C	8/7/2025	UP29026P108	Umwelt	290	0.460	13.99	19.83	1.42	PAG
UPBH29040P01	8/8/2025	UP29040P01	Umwelt	290	0.080	2.12	9.30	4.38	NAG
UPBH29040P04	8/8/2025	UP29040P04	Umwelt	290	0.130	3.63	8.30	2.28	NAG
UPBH29040P107	8/8/2025	UP29040P107	Umwelt	290	0.210	6.05	7.76	1.28	PAG
UPBH29040P110	8/8/2025	UP29040P110	Umwelt	290	0.350	10.03	5.54	0.55	PAG
UPBH29040P163	8/8/2025	UP29040P163	Umwelt	290	0.190	5.05	7.96	1.58	PAG
UPBH29040P204	8/8/2025	UP29040P204	Umwelt	290	0.180	4.43	7.73	1.74	PAG
UPBH29040P246	8/8/2025	UP29040P246	Umwelt	290	0.880	26.15	13.33	0.51	PAG
UPBH29040P249	8/8/2025	UP29040P249	Umwelt	290	1.150	35.30	20.64	0.58	PAG
UPBH29040P259	8/9/2025	UP29040P259	Umwelt	290	0.230	6.38	12.97	2.03	PAG
UPBH29040P236	8/9/2025	UP29040P236	Umwelt	290	0.410	10.99	4.72	0.43	PAG
UPBH29040P239	8/9/2025	UP29040P239	Umwelt	290	0.320	7.63	4.66	0.61	PAG
UPBH29040P96	8/9/2025	UP29040P96	Umwelt	290	0.130	3.83	6.84	1.79	NAG
UPBH29040P98	8/9/2025	UP29040P98	Umwelt	290	-	0.03	6.16	N/A	NAG
UPBH29040P166	8/9/2025	UP29040P166	Umwelt	290	0.060	1.74	7.07	4.06	NAG
UPBH29040P169	8/9/2025	UP29040P169	Umwelt	290	0.220	6.57	7.61	1.16	PAG
UPBH29040P172	8/9/2025	UP29040P172	Umwelt	290	0.120	3.07	7.44	2.43	NAG
UPBH29040P145	8/9/2025	UP29040P145	Umwelt	290	0.120	3.59	8.77	2.45	NAG
UPBH29040P15	8/9/2025	UP29040P15	Umwelt	290	0.100	2.57	6.16	2.39	NAG
UPBH29040P12	8/9/2025	UP29040P12	Umwelt	290	0.990	30.04	7.08	0.24	PAG
UPBH29040P09	8/9/2025	UP29040P09	Umwelt	290	0.140	3.99	7.01	1.75	NAG
UPBH29040P101	8/9/2025	UP29040P101	Umwelt	290	0.170	4.54	6.55	1.44	PAG
UPBH29040P104	8/9/2025	UP29040P104	Umwelt	290	0.180	4.80	8.37	1.74	PAG
UPBH29040P177	8/10/2025	UP29040P177	Umwelt	290	0.060	1.79	14.09	7.86	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29040P18	8/10/2025	UP29040P18	Umwelt	290	0.160	3.98	14.82	3.72	NAG
UPBH29040P93	8/10/2025	UP29040P93	Umwelt	290	0.400	11.27	14.72	1.31	PAG
UPBH29040P23	8/11/2025	UP29040P23	Umwelt	290	0.140	2.26	15.88	7.01	NAG
UPBH29040P27	8/11/2025	UP29040P27	Umwelt	290	0.040	0.88	15.21	17.32	NAG
UPBH29040P81	8/11/2025	UP29040P81	Umwelt	290	0.050	1.32	14.71	11.11	NAG
UPBH29040P183	8/11/2025	UP29040P183	Umwelt	290	0.110	3.21	20.12	6.27	NAG
UPBH29040P131	8/11/2025	UP29040P131	Umwelt	290	0.090	2.23	15.11	6.77	NAG
UPBH29034P01	8/12/2025	UP29034P01	Umwelt	290	0.370	11.31	4.90	0.43	PAG
UPBH29034P101	8/12/2025	UP29034P101	Umwelt	290	0.110	3.43	5.21	1.52	NAG
UPBH29034P104	8/12/2025	UP29034P104	Umwelt	290	0.110	3.43	7.43	2.16	NAG
UPBH29034P157	8/12/2025	UP29034P157	Umwelt	290	0.300	9.42	4.77	0.51	PAG
UPBH29034P160	8/12/2025	UP29034P160	Umwelt	290	0.060	1.71	5.87	3.43	NAG
UPBH29034P260	8/12/2025	UP29034P260	Umwelt	290	0.080	2.44	6.31	2.58	NAG
UPBH29034P04	8/12/2025	UP29034P04	Umwelt	290	0.260	7.63	2.78	0.36	PAG
UPBH29009P76	8/12/2025	UP29009P76	Umwelt	290	0.030	0.85	9.40	11.12	NAG
UPBH29009P81	8/12/2025	UP29009P81	Umwelt	290	0.020	0.49	8.35	16.92	NAG
UPBH29009P44	8/12/2025	UP29009P44	Umwelt	290	0.040	1.10	5.50	4.99	NAG
UPBH29009P47	8/12/2025	UP29009P47	Umwelt	290	-	0.03	5.48	N/A	NAG
UPBH29009P52	8/12/2025	UP29009P52	Umwelt	290	0.110	3.05	7.86	2.57	NAG
UPBH29009P55	8/12/2025	UP29009P55	Umwelt	290	0.290	8.43	13.29	1.58	PAG
UPBH29009P63	8/12/2025	UP29009P63	Umwelt	290	0.190	5.96	15.10	2.53	PAG
UPBH29009P66	8/12/2025	UP29009P66	Umwelt	290	-	0.03	9.69	N/A	NAG
UPBH29009P73	8/13/2025	UP29009P73	Umwelt	290	-	0.03	8.62	N/A	NAG
UPBH29009P41	8/13/2025	UP29009P41	Umwelt	290	0.050	1.58	6.94	4.38	NAG
UPBH29034P60	8/13/2025	UP29034P60	Umwelt	290	0.180	5.61	6.93	1.23	PAG
UPBH29034P264	8/13/2025	UP29034P264	Umwelt	290	0.040	1.33	7.10	5.34	NAG
UPBH29034P14	8/13/2025	UP29034P14	Umwelt	290	0.040	1.25	6.95	5.56	NAG
UPBH29034P149	8/13/2025	UP29034P149	Umwelt	290	0.170	5.33	6.51	1.22	PAG
UPBH29034P254	8/13/2025	UP29034P254	Umwelt	290	0.660	20.44	13.94	0.68	PAG
UPBH29034P91	8/13/2025	UP29034P91	Umwelt	290	2.440	76.28	41.30	0.54	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29034P94	8/13/2025	UP29034P94	Umwelt	290	-	0.03	5.26	N/A	NAG
UPBH29034P11	8/13/2025	UP29034P11	Umwelt	290	-	0.03	4.29	N/A	NAG
UPBH29034P35	8/13/2025	UP29034P35	Umwelt	290	0.310	9.60	8.98	0.93	PAG
UPBH29034P169	8/14/2025	UP29034P169	Umwelt	290	0.030	0.93	16.05	17.32	NAG
UPBH29034P190	8/14/2025	UP29034P190	Umwelt	290	0.210	6.27	16.49	2.63	PAG
UPBH29034P23	8/14/2025	UP29034P23	Umwelt	290	0.300	9.16	19.70	2.15	PAG
UPBH29034P271	8/14/2025	UP29034P271	Umwelt	290	0.830	23.91	16.92	0.71	PAG
UPBH29034P276	8/14/2025	UP29034P276	Umwelt	290	2.550	77.56	12.81	0.17	PAG
UPBH29034P279	8/14/2025	UP29034P279	Umwelt	290	1.040	31.84	25.48	0.80	PAG
UPBH29034P83	8/14/2025	UP29034P83	Umwelt	290	0.510	15.13	22.97	1.52	PAG
UPBH29034P87	8/14/2025	UP29034P87	Umwelt	290	0.020	0.48	19.36	40.04	NAG
UPBH29034P282	8/15/2025	UP29034P282	Umwelt	290	0.140	4.28	14.23	3.33	NAG
UPBH29034P286	8/15/2025	UP29034P286	Umwelt	290	2.430	73.03	63.88	0.87	PAG
UPBH29034P26	8/15/2025	UP29034P26	Umwelt	290	0.040	1.17	6.22	5.33	NAG
UPBH29034P133	8/15/2025	UP29034P133	Umwelt	290	0.050	1.58	7.87	4.98	NAG
UPBH28002P3	8/16/2025	UP28002P03	Umwelt	280	0.120	3.64	7.06	1.94	NAG
UPBH28002P13	8/16/2025	UP28002P13	Umwelt	280	0.140	4.23	5.90	1.39	NAG
UPBH28002P16	8/16/2025	UP28002P16	Umwelt	280	0.120	3.67	7.12	1.94	NAG
UPBH28002P25	8/16/2025	UP28002P25	Umwelt	280	0.130	3.72	6.18	1.66	NAG
UPBH29020P18	8/18/2025	UP29020P18	Umwelt	290	0.080	2.51	6.85	2.73	NAG
UPBH29020P21	8/18/2025	UP29020P21	Umwelt	290	0.150	4.45	9.70	2.18	NAG
UPBH29020P107	8/18/2025	UP29020P107	Umwelt	290	0.400	11.93	10.74	0.90	PAG
UPBH29020P83	8/18/2025	UP29020P83	Umwelt	290	0.260	8.25	11.11	1.35	PAG
UPBH29020P97	8/19/2025	UP29020P97	Umwelt	290	0.140	3.75	16.34	4.36	NAG
UPBH29020P117	8/19/2025	UP29020P117	Umwelt	290	0.450	12.81	11.85	0.92	PAG
UPBH29020P144	8/19/2025	UP29020P144	Umwelt	290	0.300	9.06	12.69	1.40	PAG
UPBH29020P153	8/19/2025	UP29020P153	Umwelt	290	0.120	2.81	6.53	2.32	NAG
UPBH29020P158	8/19/2025	UP29020P158	Umwelt	290	0.280	8.13	14.88	1.83	PAG
UPBH29020P175	8/19/2025	UP29020P175	Umwelt	290	0.260	7.19	11.98	1.67	PAG
UPBH29020P26	8/19/2025	UP29020P26	Umwelt	290	0.080	1.88	10.86	5.79	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29020P29	8/19/2025	UP29020P29	Umwelt	290	0.360	9.69	14.61	1.51	PAG
UPBH29020P78	8/19/2025	UP29020P78	Umwelt	290	0.180	4.69	10.89	2.32	PAG
UPBH29020P34	8/20/2025	UP29020P34	Umwelt	290	0.330	9.69	16.00	1.65	PAG
UPBH29020P35	8/20/2025	UP29020P35	Umwelt	290	0.320	9.38	20.32	2.17	PAG
UPBH29020P38	8/20/2025	UP29020P38	Umwelt	290	0.130	3.75	10.40	2.77	NAG
UPBH29020P39	8/20/2025	UP29020P39	Umwelt	290	0.220	6.25	11.64	1.86	PAG
UPBH29020P40	8/20/2025	UP29020P40	Umwelt	290	0.390	11.88	39.88	3.36	NAG
UPBH29020P41	8/20/2025	UP29020P41	Umwelt	290	0.120	3.13	8.64	2.76	NAG
297902	8/21/2025	UP29025P181	Umwelt	290	0.510	12.36	10.64	0.86	PAG
297905	8/21/2025	UP29025P197	Umwelt	290	0.250	7.80	10.01	1.28	PAG
UPBH29025P23C	8/22/2025	UP29025P23	Umwelt	290	0.060	1.72	4.66	2.71	NAG
UPBH29025P187C	8/22/2025	UP29025P187	Umwelt	290	0.350	10.81	32.26	2.99	PAG
UPBH29025P144C	8/22/2025	UP29025P144	Umwelt	290	0.120	3.62	4.89	1.35	NAG
UPBH29025P153C	8/22/2025	UP29025P153	Umwelt	290	0.360	10.55	6.25	0.59	PAG
UPBH29025P162C	8/22/2025	UP29025P162	Umwelt	290	0.160	4.66	5.31	1.14	PAG
UPBH29025P165C	8/22/2025	UP29025P165	Umwelt	290	0.110	3.40	5.63	1.66	NAG
UPBH29025P70C	8/22/2025	UP29025P70	Umwelt	290	0.130	3.62	7.36	2.03	NAG
UPBH29025P90C	8/22/2025	UP29025P90	Umwelt	290	0.080	2.21	6.28	2.84	NAG
UPBH29025P45C	8/22/2025	UP29025P45	Umwelt	290	0.040	1.24	4.66	3.76	NAG
UPBH29025P51C	8/22/2025	UP29025P51	Umwelt	290	0.170	4.92	7.10	1.44	PAG
UPBH29025P54C	8/22/2025	UP29025P54	Umwelt	290	0.140	3.66	5.51	1.51	NAG
UPBH29025P3C	8/22/2025	UP29025P3	Umwelt	290	0.260	8.03	5.29	0.66	PAG
UPBH29025P110C	8/22/2025	UP29025P110	Umwelt	290	0.090	2.24	8.88	3.97	NAG
UPBH29025P113C	8/22/2025	UP29025P113	Umwelt	290	0.300	9.11	4.62	0.51	PAG
UPBH29025P131C	8/22/2025	UP29025P131	Umwelt	290	0.060	1.49	8.11	5.46	NAG
UPBH29025P134C	8/24/2025	UP29025P134	Umwelt	290	1.760	54.90	22.81	0.42	PAG
UPBH29025P65C	8/24/2025	UP29025P65	Umwelt	290	0.400	11.99	10.15	0.85	PAG
UPBH29025P36C	8/24/2025	UP29025P36	Umwelt	290	1.190	34.94	9.29	0.27	PAG
UPBH29041P122C	8/27/2025	UP29041P122	Umwelt	290	0.420	13.09	10.18	0.78	PAG
UPBH29041P159C	8/27/2025	UP29041P159	Umwelt	290	0.080	2.64	11.55	4.38	NAG

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UPBH29041P162C	8/27/2025	UP29041P162	Umwelt	290	0.370	11.53	11.29	0.98	PAG
UPBH29041P208C	8/27/2025	UP29041P208	Umwelt	290	0.120	3.69	8.61	2.33	NAG
UPBH29041P212C	8/27/2025	UP29041P212	Umwelt	290	0.150	4.75	9.04	1.90	NAG
UPBH29041P8C	8/27/2025	UP29041P8	Umwelt	290	1.230	38.40	11.13	0.29	PAG
UPBH29041P87C	8/27/2025	UP29041P87	Umwelt	290	0.120	3.24	8.78	2.71	NAG
UPBH29041P99C	8/28/2025	UP29041P99	Umwelt	290	-	0.03	7.78	N/A	NAG
UPBH29041P37C	8/28/2025	UP29041P37	Umwelt	290	-	0.03	4.19	N/A	NAG
UPBH29041P55C	8/28/2025	UP29041P55	Umwelt	290	0.820	25.59	7.21	0.28	PAG
UPBH29041P72C	8/28/2025	UP29041P72	Umwelt	290	0.630	19.75	11.20	0.57	PAG
UPBH29041P75C	8/28/2025	UP29041P75	Umwelt	290	0.080	2.57	10.39	4.05	NAG
UPBH29041P166C	8/28/2025	UP29041P166	Umwelt	290	0.350	10.98	13.79	1.26	PAG
UPBH29041P174C	8/28/2025	UP29041P174	Umwelt	290	0.280	8.66	13.89	1.60	PAG
UPBH29041P198C	8/28/2025	UP29041P198	Umwelt	290	0.020	0.65	7.86	12.09	NAG
UPBH29041P205C	8/28/2025	UP29041P205	Umwelt	290	0.040	1.17	8.58	7.33	NAG
UPBH29041P139C	8/28/2025	UP29041P139	Umwelt	290	0.110	3.52	14.08	4.00	NAG
UPBH29041P142C	8/28/2025	UP29041P142	Umwelt	290	0.110	3.48	11.72	3.37	NAG
UPBH29041P148C	8/28/2025	UP29041P148	Umwelt	290	0.040	1.29	10.56	8.20	NAG
UPBH29041P118C	8/28/2025	UP29041P118	Umwelt	290	0.730	22.73	26.67	1.17	PAG
UPBH29043P101C	8/29/2025	UP29043P101	Umwelt	290	0.050	1.66	7.70	4.64	NAG
UPBH29043P104C	8/29/2025	UP29043P104	Umwelt	290	0.100	3.12	7.61	2.44	NAG
UPBH29043P107C	8/29/2025	UP29043P107	Umwelt	290	0.120	3.71	7.26	1.95	NAG
UPBH29043P152C	8/29/2025	UP29043P152	Umwelt	290	0.200	6.31	16.26	2.58	PAG
UPBH29043P155C	8/29/2025	UP29043P155	Umwelt	290	0.970	29.65	13.80	0.47	PAG
UPBH29043P158C	8/29/2025	UP29043P158	Umwelt	290	0.010	0.03	7.09	N/A	NAG
UPBH29043P26C	8/29/2025	UP29043P26	Umwelt	290	0.010	0.03	8.30	N/A	NAG
UPBH29043P29C	8/29/2025	UP29043P29	Umwelt	290	0.070	2.20	9.35	4.25	NAG
UPBH29043P32C	8/29/2025	UP29043P32	Umwelt	290	1.320	40.04	12.80	0.32	PAG
UPBH29043P35C	8/29/2025	UP29043P35	Umwelt	290	0.180	5.03	13.21	2.63	PAG
UPBH29043P98C	8/29/2025	UP29043P98	Umwelt	290	0.090	2.60	7.86	3.03	NAG
UPBH29043P49C	8/30/2025	UP29043P49	Umwelt	290	0.250	6.54	4.62	0.71	PAG

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UPBH29043P82C	8/30/2025	UP29043P82	Umwelt	290	0.510	15.95	19.77	1.24	PAG
UPBH29043P86C	8/30/2025	UP29043P86	Umwelt	290	-	0.03	5.33	N/A	NAG
UPBH29043P131C	8/30/2025	UP29043P131	Umwelt	290	0.190	5.98	20.48	3.42	NAG
UPBH29043P133C	8/30/2025	UP29043P133	Umwelt	290	0.370	11.35	14.85	1.31	PAG
UPBH29043P2C	8/30/2025	UP29043P2	Umwelt	290	0.780	22.69	11.84	0.52	PAG
UPBH29043P6C	8/30/2025	UP29043P6	Umwelt	290	0.220	6.89	5.92	0.86	PAG
UPBH29043P162C	8/31/2025	UP29043P162	Umwelt	290	0.640	18.34	20.19	1.10	PAG
UPBH29035P100C	8/31/2025	UP29035P100	Umwelt	290	0.190	2.80	6.12	2.18	PAG
UPBH29035P103C	8/31/2025	UP29035P103	Umwelt	290	0.180	5.51	6.54	1.19	PAG
UPBH29035P181C	8/31/2025	UP29035P181	Umwelt	290	0.110	2.27	6.34	2.79	NAG
UPBH29035P186C	8/31/2025	UP29035P186	Umwelt	290	0.590	16.96	6.20	0.37	PAG
UPBH29035P49C	8/31/2025	UP29035P49	Umwelt	290	0.350	9.22	6.15	0.67	PAG
UPBH29035P52C	8/31/2025	UP29035P52	Umwelt	290	0.230	5.49	6.53	1.19	PAG
UPBH29035P62C	9/1/2025	UP29035P62	Umwelt	290	0.160	4.43	5.72	1.29	PAG
UPBH29035P78C	9/1/2025	UP29035P78	Umwelt	290	0.060	1.17	5.65	4.84	NAG
UPBH29035P191C	9/1/2025	UP29035P191	Umwelt	290	0.090	1.99	6.38	3.20	NAG
UPBH29035P26C	9/1/2025	UP29035P26	Umwelt	290	0.140	3.25	5.78	1.78	NAG
UPBH29035P32C	9/1/2025	UP29035P32	Umwelt	290	0.040	1.12	5.41	4.85	NAG
UPBH29035P39C	9/1/2025	UP29035P39	Umwelt	290	-	0.03	6.73	N/A	NAG
UPBH29035P45C	9/1/2025	UP29035P45	Umwelt	290	0.240	6.31	6.46	1.02	PAG
UPBH29035P110C	9/1/2025	UP29035P110	Umwelt	290	0.100	2.55	7.31	2.86	NAG
UPBH29035P117C	9/1/2025	UP29035P117	Umwelt	290	0.570	17.61	10.56	0.60	PAG
UPBH29035P130C	9/1/2025	UP29035P130	Umwelt	290	0.060	0.77	6.91	8.99	NAG
UPBH29035P136C	9/1/2025	UP29035P136	Umwelt	290	0.460	10.89	5.82	0.53	PAG
UPBH29035P161C	9/1/2025	UP29035P161	Umwelt	290	0.130	2.90	6.90	2.38	NAG
UPBH29035P167C	9/1/2025	UP29035P167	Umwelt	290	-	0.03	7.05	N/A	NAG
UPBH29035P174C	9/1/2025	UP29035P174	Umwelt	290	0.010	0.03	6.34	N/A	NAG
UPBH29046P119C	9/6/2025	UP29046P119	Umwelt	290	0.160	4.94	6.63	1.34	PAG
UPBH29046P175C	9/6/2025	UP29046P175	Umwelt	290	0.180	5.32	6.13	1.15	PAG
UPBH29046P35C	9/6/2025	UP29046P35	Umwelt	290	0.160	4.11	8.46	2.06	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29046P44C	9/6/2025	UP29046P44	Umwelt	290	0.130	4.20	9.65	2.30	NAG
UPBH29046P48C	9/8/2025	UP29046P48	Umwelt	290	0.490	14.64	9.36	0.64	PAG
UPBH29046P51C	9/8/2025	UP29046P51	Umwelt	290	0.250	7.33	7.24	0.99	PAG
UPBH29046P89C	9/8/2025	UP29046P89	Umwelt	290	0.280	8.26	7.63	0.92	PAG
UPBH29046P97C	9/8/2025	UP29046P97	Umwelt	290	0.160	4.48	8.25	1.84	PAG
UPBH29046P42C	9/8/2025	UP29046P42	Umwelt	290	0.160	4.59	7.13	1.55	PAG
UPBH29046P112C	9/8/2025	UP29046P112	Umwelt	290	0.100	2.68	8.50	3.18	NAG
UPBH29046P26C	9/8/2025	UP29046P26	Umwelt	290	0.130	3.99	7.50	1.88	NAG
UPBH29046P160C	9/8/2025	UP29046P160	Umwelt	290	0.140	4.09	7.38	1.80	NAG
UPBH29046P171C	9/8/2025	UP29046P171	Umwelt	290	0.500	14.60	9.13	0.63	PAG
UPBH29046P122C	9/8/2025	UP29046P122	Umwelt	290	0.140	4.02	6.37	1.58	NAG
UPBH29046P145C	9/9/2025	UP29046P145	Umwelt	290	0.130	3.80	7.49	1.97	NAG
UPBH29046P183C	9/9/2025	UP29046P183	Umwelt	290	0.130	3.99	17.76	4.45	NAG
UPBH29046P197C	9/9/2025	UP29046P197	Umwelt	290	0.070	1.30	8.62	6.62	NAG
UPBH29046P62C	9/9/2025	UP29046P62	Umwelt	290	0.110	3.33	6.75	2.03	NAG
UPBH28003P73	9/13/2025	UP28003P73	Umwelt	280	0.210	5.10	7.72	1.52	PAG
UPBH29017P108	9/14/2025	UP29017P108	Umwelt	290	0.150	4.37	5.36	1.23	NAG
UPBH29017P114	9/14/2025	UP29017P114	Umwelt	290	0.270	7.79	4.50	0.58	PAG
UPBH29017P118	9/14/2025	UP29017P118	Umwelt	290	-	0.03	4.12	N/A	NAG
UPBH28003P76	9/15/2025	UP28003P76	Umwelt	280	0.030	0.85	6.86	8.08	NAG
UPBH28003P176	9/15/2025	UP28003P176	Umwelt	280	0.010	0.03	6.75	N/A	NAG
UPBH28003P67	9/15/2025	UP28003P67	Umwelt	280	0.240	7.57	6.73	0.89	PAG
UPBH28003P70	9/15/2025	UP28003P70	Umwelt	280	0.050	1.21	5.87	4.86	NAG
UPBH28003P115	9/15/2025	UP28003P115	Umwelt	280	0.100	2.42	7.11	2.94	NAG
UPBH28003P118	9/15/2025	UP28003P118	Umwelt	280	0.230	7.20	14.28	1.98	PAG
UPBH28003P120	9/15/2025	UP28003P120	Umwelt	280	0.190	5.12	8.84	1.73	PAG
UPBH28003P122	9/15/2025	UP28003P122	Umwelt	280	0.240	6.69	7.60	1.14	PAG
UPBH28003P137	9/16/2025	UP28003P137	Umwelt	280	0.140	3.66	7.50	2.05	NAG
UPBH28003P163	9/16/2025	UP28003P163	Umwelt	280	0.140	3.71	9.65	2.60	NAG
UPBH28003P170	9/16/2025	UP28003P170	Umwelt	280	0.120	3.60	7.48	2.08	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH28008P11	9/20/2025	UP28008P11	Umwelt	280	0.150	2.40	5.87	2.44	NAG
UPBH28008P31	9/20/2025	UP28008P31	Umwelt	280	0.120	3.37	4.38	1.30	NAG
UPBH28008P68	9/20/2025	UP28008P68	Umwelt	280	0.180	4.37	4.75	1.09	PAG
UPBH28005P121	9/21/2025	UP28005P121	Umwelt	280	0.740	21.18	4.49	0.21	PAG
UPBH28005P67	9/21/2025	UP28005P67	Umwelt	280	0.110	3.08	6.31	2.05	NAG
UPBH28005P102	9/21/2025	UP28005P102	Umwelt	280	1.260	38.79	7.70	0.20	PAG
UPBH28005P113	9/21/2025	UP28005P113	Umwelt	280	0.080	2.16	4.75	2.20	NAG
UPBH28005P118	9/22/2025	UP28005P118	Umwelt	280	1.640	50.42	19.45	0.39	PAG
UPBH28005P71	9/22/2025	UP28005P71	Umwelt	280	0.290	7.97	8.20	1.03	PAG
UPBH28005P86	9/22/2025	UP28005P86	Umwelt	280	0.800	24.92	10.16	0.41	PAG
UPBH28005P23	9/22/2025	UP28005P23	Umwelt	280	0.100	1.76	6.84	3.89	NAG
UPBH28005P38	9/22/2025	UP28005P38	Umwelt	280	0.160	5.05	7.83	1.55	PAG
UPBH28005P45	9/22/2025	UP28005P45	Umwelt	280	0.360	10.91	8.07	0.74	PAG
UPBH28005P63	9/22/2025	UP28005P63	Umwelt	280	0.160	3.83	7.58	1.98	PAG
UPBH28004P90	9/23/2025	UP28004P90	Umwelt	280	0.370	11.47	7.47	0.65	PAG
UPBH28004P93	9/23/2025	UP28004P93	Umwelt	280	1.740	54.22	8.98	0.17	PAG
UPBH28004P97	9/23/2025	UP28004P97	Umwelt	280	0.330	10.29	6.73	0.65	PAG
UPBH28004P10	9/23/2025	UP28004P10	Umwelt	280	0.210	5.25	4.37	0.83	PAG
UPBH28004P121	9/23/2025	UP28004P121	Umwelt	280	0.540	16.86	5.63	0.33	PAG
UPBH28004P124	9/23/2025	UP28004P124	Umwelt	280	0.450	14.06	9.25	0.66	PAG
UPBH28004P14	9/23/2025	UP28004P14	Umwelt	280	0.210	6.29	7.24	1.15	PAG
UPBH28004P145	9/23/2025	UP28004P145	Umwelt	280	1.110	33.55	6.29	0.19	PAG
UPBH28004P148	9/23/2025	UP28004P148	Umwelt	280	0.650	20.47	4.25	0.21	PAG
UPBH28004P158	9/23/2025	UP28004P158	Umwelt	280	0.390	11.43	5.26	0.46	PAG
UPBH28004P162	9/23/2025	UP28004P162	Umwelt	280	0.720	22.61	8.77	0.39	PAG
UPBH28004P173	9/23/2025	UP28004P173	Umwelt	280	0.660	20.53	6.60	0.32	PAG
UPBH28004P29	9/24/2025	UP28004P29	Umwelt	280	0.500	14.97	6.48	0.43	PAG
UPBH28004P50	9/24/2025	UP28004P50	Umwelt	280	0.370	10.35	13.61	1.31	PAG
UPBH28004P2	9/24/2025	UP28004P2	Umwelt	280	1.050	29.29	6.48	0.22	PAG
UPBH28004P5	9/24/2025	UP28004P5	Umwelt	280	0.400	12.39	17.83	1.44	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29022P1	9/25/2025	UP29022P01	Umwelt	290	0.310	8.54	18.72	2.19	PAG
UPBH29022B14	9/25/2025	UP29022B14	Umwelt	290	0.190	6.06	14.32	2.36	PAG
UPBH29022P23	9/25/2025	UP29022P23	Umwelt	290	0.670	19.02	7.93	0.42	PAG
UPBH29022P37	9/25/2025	UP29022P37	Umwelt	290	0.420	11.76	5.23	0.44	PAG
UPBH29022P46	9/25/2025	UP29022P46	Umwelt	290	0.280	8.60	28.30	3.29	NAG
UPBH29022P49	9/25/2025	UP29022P49	Umwelt	290	0.780	23.08	11.38	0.49	PAG
UPBH29022P52	9/25/2025	UP29022P52	Umwelt	290	0.010	0.03	10.24	N/A	NAG
UPBH29022B9	9/25/2025	UP29022B9	Umwelt	290	0.330	10.07	5.74	0.57	PAG
UPBH29023B1	9/26/2025	UP29023B1	Umwelt	290	0.200	6.20	8.02	1.29	PAG
UPBH29023B10	9/26/2025	UP29023B10	Umwelt	290	0.080	2.46	5.78	2.35	NAG
UPBH29023P101	9/26/2025	UP29023P101	Umwelt	290	0.130	3.74	5.39	1.44	NAG
UPBH29023P106	9/26/2025	UP29023P106	Umwelt	290	0.180	5.21	6.99	1.34	PAG
UPBH29023P111	9/26/2025	UP29023P111	Umwelt	290	0.130	4.12	7.02	1.70	NAG
UPBH29023P114	9/26/2025	UP29023P114	Umwelt	290	0.290	8.18	6.02	0.74	PAG
UPBH29023P118	9/26/2025	UP29023P118	Umwelt	290	1.260	39.25	10.97	0.28	PAG
UPBH29023B15	9/26/2025	UP29023B15	Umwelt	290	0.090	2.95	4.76	1.61	NAG
UPBH29023B19	9/26/2025	UP29023B19	Umwelt	290	0.560	15.60	5.01	0.32	PAG
UPBH29023B27	9/26/2025	UP29023B27	Umwelt	290	0.030	0.78	5.26	6.75	NAG
UPBH29023B33	9/26/2025	UP29023B33	Umwelt	290	0.040	0.95	5.76	6.06	NAG
UPBH29023P35	9/26/2025	UP29023P35	Umwelt	290	0.100	3.08	5.76	1.87	NAG
UPBH29023P40	9/26/2025	UP29023P40	Umwelt	290	0.450	13.82	7.00	0.51	PAG
UPBH29023P44	9/26/2025	UP29023P44	Umwelt	290	0.160	3.29	11.71	3.56	NAG
UPBH29023P47	9/26/2025	UP29023P47	Umwelt	290	0.420	11.17	7.13	0.64	PAG
UPBH29023B5	9/26/2025	UP29023B5	Umwelt	290	0.140	3.46	5.76	1.66	NAG
UPBH29023P57	9/26/2025	UP29023P57	Umwelt	290	0.020	0.72	7.50	10.41	NAG
UPBH29023P72	9/26/2025	UP29023P72	Umwelt	290	0.280	7.59	7.14	0.94	PAG
UPBH280RAMPR301	9/27/2025	UP280RAMPR301	Umwelt	280	0.170	4.97	9.57	1.93	PAG
UPBH280RAMPR304	9/27/2025	UP280RAMPR304	Umwelt	280	0.530	16.35	10.45	0.64	PAG
UPBH280RAMPR4	9/27/2025	UP280RAMPR4	Umwelt	280	0.190	6.01	11.33	1.89	PAG
UPBH280RAMPR1	9/27/2025	UP280RAMPR1	Umwelt	280	0.160	4.29	8.38	1.95	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH280RAMPR123	9/27/2025	UP280RAMPR123	Umwelt	280	0.190	5.47	7.34	1.34	PAG
UPBH280RAMPR127	9/27/2025	UP280RAMPR127	Umwelt	280	0.130	3.05	8.88	2.91	NAG
UPBH280RAMPR237	9/27/2025	UP280RAMPR237	Umwelt	280	0.190	4.92	7.74	1.57	PAG
UPBH280RAMPR239	9/27/2025	UP280RAMPR239	Umwelt	280	0.260	7.66	8.30	1.08	PAG
UPBH280RAMPR241	9/27/2025	UP280RAMPR241	Umwelt	280	0.290	7.88	9.56	1.21	PAG
UPBH280RAMPR249	9/28/2025	UP280RAMPR249	Umwelt	280	0.130	3.21	7.36	2.29	NAG
UPBH280RAMPR253	9/28/2025	UP280RAMPR253	Umwelt	280	0.100	3.14	7.24	2.30	NAG
UPBH280RAMPB26	9/28/2025	UP280RAMPB26	Umwelt	280	0.090	2.83	6.01	2.13	NAG
UPBH280RAMPR69	9/28/2025	UP280RAMPR69	Umwelt	280	0.520	16.27	6.67	0.41	PAG
UPBH280RAMPR72	9/28/2025	UP280RAMPR72	Umwelt	280	0.170	4.10	8.42	2.05	PAG
UPBH280RAMPR310	9/28/2025	UP280RAMPR310	Umwelt	280	0.040	0.98	6.29	6.41	NAG
UPBH280RAMPR171	9/28/2025	UP280RAMPR171	Umwelt	280	0.250	7.41	8.09	1.09	PAG
UPBH280RAMPR211	9/29/2025	UP280RAMPR211	Umwelt	280	0.140	3.97	8.69	2.19	NAG
UPBH280RAMPR214	9/29/2025	UP280RAMPR214	Umwelt	280	0.950	24.89	9.56	0.38	PAG
UPBH280RAMPR217	9/29/2025	UP280RAMPR217	Umwelt	280	-	0.03	5.21	N/A	NAG
UPBH280RAMPR220	9/29/2025	UP280RAMPR220	Umwelt	280	1.600	45.24	12.76	0.28	PAG
UPBH280RAMPR223	9/29/2025	UP280RAMPR223	Umwelt	280	0.120	3.05	8.37	2.75	NAG
UPBH280RAMPR329	9/29/2025	UP280RAMPR329	Umwelt	280	0.060	0.65	4.80	7.39	NAG
UPBH280RAMPR34	9/29/2025	UP280RAMPR34	Umwelt	280	0.250	5.73	15.18	2.65	PAG
UPBH280RAMPR38	9/29/2025	UP280RAMPR38	Umwelt	280	0.130	3.03	9.89	3.27	NAG
UPBH280RAMPR42	9/29/2025	UP280RAMPR42	Umwelt	280	0.190	2.68	6.48	2.41	PAG
UPBH280RAMPR45	9/29/2025	UP280RAMPR45	Umwelt	280	1.220	34.48	6.87	0.20	PAG
UPBH280RAMPR48	9/29/2025	UP280RAMPR48	Umwelt	280	0.140	2.85	7.57	2.66	NAG
UPBH280RAMPR281	9/29/2025	UP280RAMPR281	Umwelt	280	0.100	2.34	8.22	3.51	NAG
UPBH280RAMPR284	9/29/2025	UP280RAMPR284	Umwelt	280	0.120	2.69	6.30	2.34	NAG
UPBH280RAMPR139	9/29/2025	UP280RAMPR139	Umwelt	280	0.080	2.42	8.87	3.66	NAG
UPBH280RAMPR142	9/29/2025	UP280RAMPR142	Umwelt	280	0.110	3.07	12.35	4.02	NAG
UPBH280RAMPR145	9/29/2025	UP280RAMPR145	Umwelt	280	0.250	5.37	9.29	1.73	PAG
UPBH280RAMPR148	9/29/2025	UP280RAMPR148	Umwelt	280	0.020	0.48	14.02	29.29	NAG
UPBH28007P1	10/1/2025	UP28007P1	Umwelt	280	0.210	6.56	12.14	1.85	PAG

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UPBH28007P10	10/1/2025	UP28007P10	Umwelt	280	0.850	26.28	22.13	0.84	PAG
UPBH28007P7	10/1/2025	UP28007P7	Umwelt	280	0.180	4.69	6.70	1.43	PAG
UPBH28007P32	10/1/2025	UP28007P32	Umwelt	280	0.340	8.74	6.46	0.74	PAG
UPBH28007P35	10/1/2025	UP28007P35	Umwelt	280	0.330	9.19	6.16	0.67	PAG
UPBH28007P4	10/1/2025	UP28007P4	Umwelt	280	0.130	3.54	8.43	2.38	NAG
UPBH28007P180	10/2/2025	UP28007P180	Umwelt	280	0.020	0.03	4.74	N/A	NAG
UPBH28007P161	10/2/2025	UP28007P161	Umwelt	280	0.550	17.01	11.77	0.69	PAG
UPBH28007P101	10/2/2025	UP28007P101	Umwelt	280	0.260	7.86	9.89	1.26	PAG
UPBH28007P132	10/2/2025	UP28007P132	Umwelt	280	0.290	8.84	5.63	0.64	PAG
UPBH28007P134	10/2/2025	UP28007P134	Umwelt	280	0.380	11.85	6.48	0.55	PAG
UPBH28007P73	10/2/2025	UP28007P73	Umwelt	280	0.010	0.41	6.88	16.65	NAG
UPBH28007P98	10/2/2025	UP28007P98	Umwelt	280	1.820	54.83	6.58	0.12	PAG
UPBH28007P151	10/3/2025	UP28007P151	Umwelt	280	0.340	4.02	6.16	1.53	PAG
UPBH28007P107	10/3/2025	UP28007P107	Umwelt	280	0.060	1.83	7.10	3.88	NAG
UPBH28007P126	10/3/2025	UP28007P126	Umwelt	280	0.270	8.38	7.38	0.88	PAG
UPBH28007P174	10/3/2025	UP28007P174	Umwelt	280	3.940	118.04	6.46	0.05	PAG
UPBH28007P70	10/3/2025	UP28007P70	Umwelt	280	0.120	3.69	18.11	4.90	NAG
UPBH28007P199	10/3/2025	UP28007P199	Umwelt	280	0.870	27.21	7.27	0.27	PAG
UPBH28007P42	10/3/2025	UP28007P42	Umwelt	280	0.240	7.58	12.92	1.70	PAG
UPBH28007P44	10/3/2025	UP28007P44	Umwelt	280	0.030	1.01	8.22	8.10	NAG
UPBH28007P67	10/3/2025	UP28007P67	Umwelt	280	0.250	7.68	5.95	0.77	PAG
UPBH28007P232	10/4/2025	UP28007P232	Umwelt	280	0.010	0.03	5.00	N/A	NAG
UPBH28007P246	10/4/2025	UP28007P246	Umwelt	280	0.420	0.80	5.40	6.77	NAG
UPBH29039P68	10/5/2025	UP29039P68	Umwelt	290	0.480	14.06	14.34	1.02	PAG
UPBH29039P9	10/5/2025	UP29039P9	Umwelt	290	0.170	5.40	8.52	1.58	PAG
UPBH29039P100	10/6/2025	UP29039P100	Umwelt	290	-	0.03	8.77	N/A	NAG
UPBH29039P2	10/6/2025	UP29039P2	Umwelt	290	0.660	20.73	4.11	0.20	PAG
UPBH28011P100	10/7/2025	UP28011P100	Umwelt	280	0.080	1.51	6.64	4.40	NAG
UPBH28011P102	10/7/2025	UP28011P102	Umwelt	280	0.330	7.81	8.58	1.10	PAG
UPBH28011P127	10/7/2025	UP28011P127	Umwelt	280	-	0.03	7.11	N/A	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH28011P137	10/7/2025	UP28011P137	Umwelt	280	0.140	4.08	10.91	2.68	NAG
UPBH28011P153	10/7/2025	UP28011P153	Umwelt	280	0.640	17.47	28.16	1.61	PAG
UPBH28011P156	10/7/2025	UP28011P156	Umwelt	280	0.180	5.56	8.42	1.51	PAG
UPBH28011P45	10/7/2025	UP28011P45	Umwelt	280	0.460	13.50	7.48	0.55	PAG
UPBH28011P49	10/7/2025	UP28011P49	Umwelt	280	0.190	4.83	7.18	1.49	PAG
UPBH28011P5	10/8/2025	UP28011P5	Umwelt	280	0.120	3.60	2.97	0.82	NAG
UPBH28011P56	10/8/2025	UP28011P56	Umwelt	280	0.160	4.95	9.24	1.87	PAG
UPBH28011P70	10/8/2025	UP28011P70	Umwelt	280	0.490	15.16	6.93	0.46	PAG
UPBH28011P8	10/8/2025	UP28011P8	Umwelt	280	0.390	12.16	14.88	1.22	PAG
UPBH28011P86	10/8/2025	UP28011P86	Umwelt	280	0.320	9.96	16.69	1.68	PAG
UPBH28011P91	10/8/2025	UP28011P91	Umwelt	280	0.230	7.23	15.69	2.17	PAG
UPBH28011P110	10/8/2025	UP28011P110	Umwelt	280	0.550	16.49	9.96	0.60	PAG
UPBH28011P116	10/8/2025	UP28011P116	Umwelt	280	0.500	15.03	11.10	0.74	PAG
UPBH28006P4	10/9/2025	UP28006P4	Umwelt	280	0.230	7.33	12.16	1.66	PAG
UPBH28006P50	10/9/2025	UP28006P50	Umwelt	280	0.490	15.17	19.71	1.30	PAG
UPBH28006P53	10/9/2025	UP28006P53	Umwelt	280	0.340	10.08	18.22	1.81	PAG
UPBH28006P8	10/9/2025	UP28006P8	Umwelt	280	0.360	11.16	14.76	1.32	PAG
UPBH29049P100	10/14/2025	UP29049P100	Umwelt	290	0.340	9.12	6.22	0.68	PAG
UPBH29049P3	10/14/2025	UP29049P3	Umwelt	290	0.220	6.89	3.98	0.58	PAG
UPBH29049P39	10/14/2025	UP29049P39	Umwelt	290	0.250	7.95	2.48	0.31	PAG
UPBH29049P41	10/14/2025	UP29049P41	Umwelt	290	0.300	9.17	2.75	0.30	PAG
UPBH29049P6	10/14/2025	UP29049P6	Umwelt	290	0.230	7.17	3.68	0.51	PAG
UPBH29049P61	10/14/2025	UP29049P61	Umwelt	290	0.170	4.36	4.56	1.05	PAG
UPBH29045P14	10/14/2025	UP29045P14	Umwelt	290	0.320	9.53	9.01	0.95	PAG
UPBH29045P73	10/14/2025	UP29045P73	Umwelt	290	1.140	35.49	6.24	0.18	PAG
UPBH29045P76	10/14/2025	UP29045P76	Umwelt	290	0.110	3.43	8.06	2.35	NAG
UPBH29045P18	10/14/2025	UP29045P18	Umwelt	290	0.330	7.62	8.60	1.13	PAG
UPBH29045P28	10/14/2025	UP29045P28	Umwelt	290	0.120	3.45	6.20	1.80	NAG
UPBH29045P37	10/15/2025	UP29045P37	Umwelt	290	0.240	7.46	4.50	0.60	PAG
UPBH29045P42	10/15/2025	UP29045P42	Umwelt	290	0.050	1.71	6.67	3.89	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29045P46	10/15/2025	UP29045P46	Umwelt	290	0.100	3.14	6.62	2.11	NAG
UPBH29045P111	10/15/2025	UP29045P111	Umwelt	290	0.100	3.01	3.94	1.31	NAG
UPBH29045P115	10/15/2025	UP29045P115	Umwelt	290	0.260	8.15	17.76	2.18	PAG
UPBH29045P131	10/15/2025	UP29045P131	Umwelt	290	0.190	5.99	9.79	1.64	PAG
UPBH29045P83	10/15/2025	UP29045P83	Umwelt	290	0.220	6.77	8.69	1.28	PAG
UPBH29045P92	10/15/2025	UP29045P92	Umwelt	290	0.070	2.27	5.66	2.49	NAG
UPBH29045P97	10/15/2025	UP29045P97	Umwelt	290	0.120	3.49	7.34	2.11	NAG
UPBH29045P147	10/15/2025	UP29045P147	Umwelt	290	0.190	5.26	7.02	1.33	PAG
UPBH29049P79	10/15/2025	UP29049P79	Umwelt	290	0.130	4.09	3.91	0.96	NAG
UPBH29049P83	10/15/2025	UP29049P83	Umwelt	290	0.090	2.97	12.47	4.20	NAG
UPBH29049P88	10/15/2025	UP29049P88	Umwelt	290	0.180	5.27	5.72	1.09	PAG
UPBH29049P36	10/15/2025	UP29049P36	Umwelt	290	0.210	6.71	4.85	0.72	PAG
UPBH29049P26	10/15/2025	UP29049P26	Umwelt	290	0.900	26.44	7.36	0.28	PAG
UPBH29049P27	10/15/2025	UP29049P27	Umwelt	290	0.420	13.03	4.64	0.36	PAG
UPBH29049P29	10/15/2025	UP29049P29	Umwelt	290	0.230	7.02	(1.51)	(0.22)	PAG
UPBH28010P101	10/16/2025	UP28010P101	Umwelt	280	0.060	1.68	4.36	2.60	NAG
UPBH28010P131	10/16/2025	UP28010P131	Umwelt	280	0.500	15.57	17.07	1.10	PAG
UPBH28010P134	10/16/2025	UP28010P134	Umwelt	280	0.340	9.47	9.94	1.05	PAG
UPBH28010P148	10/16/2025	UP28010P148	Umwelt	280	0.600	16.99	8.51	0.50	PAG
UPBH28010P151	10/16/2025	UP28010P151	Umwelt	280	0.550	15.74	9.23	0.59	PAG
UPBH28010P161	10/16/2025	UP28010P161	Umwelt	280	0.300	8.52	5.41	0.63	PAG
UPBH28010P25	10/17/2025	UP28010P25	Umwelt	280	0.130	3.98	7.00	1.76	NAG
UPBH28010P48	10/17/2025	UP28010P48	Umwelt	280	0.550	14.90	9.37	0.63	PAG
UPBH28010P51	10/17/2025	UP28010P51	Umwelt	280	0.080	2.42	6.13	2.53	NAG
UPBH28010P55	10/17/2025	UP28010P55	Umwelt	280	0.110	2.85	5.13	1.80	NAG
UPBH28010P76	10/17/2025	UP28010P76	Umwelt	280	0.330	9.27	10.49	1.13	PAG
UPBH28010P79	10/17/2025	UP28010P79	Umwelt	280	0.350	10.81	3.66	0.34	PAG
UPBH28010P91	10/17/2025	UP28010P91	Umwelt	280	0.630	19.80	9.24	0.47	PAG
UPBH28010P105	10/17/2025	UP28010P105	Umwelt	280	0.730	22.94	7.93	0.35	PAG
UPBH28010P127	10/17/2025	UP28010P127	Umwelt	280	0.240	6.86	8.99	1.31	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH28012P22	10/19/2025	UP28012P22	Umwelt	280	0.070	2.18	5.38	2.46	NAG
UPBH28012P25	10/19/2025	UP28012P25	Umwelt	280	0.040	1.14	6.50	5.70	NAG
UPBH28012P28	10/19/2025	UP28012P28	Umwelt	280	0.060	1.78	7.00	3.93	NAG
UPBH28012P05	10/19/2025	UP28012P05	Umwelt	280	0.250	7.67	8.25	1.08	PAG
UPBH28012P01	10/19/2025	UP28012P01	Umwelt	280	0.140	4.40	7.25	1.65	NAG
UPBH28012P106	10/20/2025	UP28012P106	Umwelt	280	0.340	10.54	13.74	1.30	PAG
UPBH28012P109	10/20/2025	UP28012P109	Umwelt	280	0.410	12.22	17.86	1.46	PAG
UPBH28012P113	10/20/2025	UP28012P113	Umwelt	280	0.370	11.47	12.48	1.09	PAG
UPBH28012P56	10/20/2025	UP28012P56	Umwelt	280	0.140	4.21	7.38	1.75	NAG
UPBH28012P60	10/20/2025	UP28012P60	Umwelt	280	0.560	16.37	8.25	0.50	PAG
UPBH28012P63	10/20/2025	UP28012P63	Umwelt	280	0.670	18.10	10.38	0.57	PAG
UPBH28012P78	10/20/2025	UP28012P78	Umwelt	280	0.220	6.96	6.14	0.88	PAG
UPBH28012P81	10/20/2025	UP28012P81	Umwelt	280	0.360	11.25	10.24	0.91	PAG
UPBH28012P134	10/21/2025	UP28012P134	Umwelt	280	0.180	5.52	6.99	1.27	PAG
UPBH28012P138	10/21/2025	UP28012P138	Umwelt	280	0.120	3.41	8.40	2.46	NAG
UPBH28012P150	10/21/2025	UP28012P150	Umwelt	280	0.670	20.56	24.95	1.21	PAG
UPBH28015P37	10/21/2025	UP28015P37	Umwelt	280	0.710	21.21	29.93	1.41	PAG
UPBH28015P41	10/21/2025	UP28015P41	Umwelt	280	0.170	4.66	6.91	1.48	PAG
UPBH28015P57	10/21/2025	UP28015P57	Umwelt	280	0.390	12.21	24.54	2.01	PAG
UPBH28015P61	10/21/2025	UP28015P61	Umwelt	280	0.100	3.19	6.96	2.18	NAG
UPBH28015P80	10/21/2025	UP28015P80	Umwelt	280	0.480	13.95	13.56	0.97	PAG
UPBH28015P84	10/21/2025	UP28015P84	Umwelt	280	0.060	1.89	7.80	4.12	NAG
UPBH28015P87	10/21/2025	UP28015P87	Umwelt	280	0.280	8.74	5.06	0.58	PAG
UPBH28015P90	10/21/2025	UP28015P90	Umwelt	280	0.230	7.11	5.10	0.72	PAG
UPBH28018P4	10/27/2025	UP28018P04	Umwelt	280	0.620	14.08	8.49	0.60	PAG
UPBH28018P41	10/27/2025	UP28018P41	Umwelt	280	0.060	1.51	5.25	3.49	NAG
UPBH28018P45	10/27/2025	UP28018P45	Umwelt	280	0.130	3.92	4.51	1.15	NAG
UPBH28018P7	10/27/2025	UP28018P07	Umwelt	280	0.210	6.53	6.36	0.97	PAG
UPBH28018P77	10/27/2025	UP28018P77	Umwelt	280	0.480	12.99	5.25	0.40	PAG
UPBH28018P79	10/27/2025	UP28018P79	Umwelt	280	-	0.03	5.11	N/A	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH28018P204	10/27/2025	UP28018P204	Umwelt	280	0.140	3.25	4.75	1.46	NAG
UPBH28018P1	10/27/2025	UP28018P01	Umwelt	280	0.060	1.95	6.47	3.32	NAG
UPBH28018P103	10/27/2025	UP28018P103	Umwelt	280	0.650	17.75	4.72	0.27	PAG
UPBH28018P105	10/27/2025	UP28018P105	Umwelt	280	0.050	1.71	3.63	2.12	NAG
UPBH28018P120	10/27/2025	UP28018P120	Umwelt	280	0.820	23.74	18.19	0.77	PAG
UPBH28018P124	10/27/2025	UP28018P124	Umwelt	280	0.210	5.78	4.01	0.69	PAG
UPBH28018P155	10/27/2025	UP28018P155	Umwelt	280	0.140	4.34	4.24	0.98	NAG
UPBH28018P157	10/27/2025	UP28018P157	Umwelt	280	0.100	2.64	3.26	1.23	NAG
UPBH28018P160	10/27/2025	UP28018P160	Umwelt	280	0.710	21.19	11.00	0.52	PAG
UPBH28018P180	10/27/2025	UP28018P180	Umwelt	280	0.080	2.43	4.62	1.90	NAG
UPBH28018P184	10/27/2025	UP28018P184	Umwelt	280	0.610	15.18	4.87	0.32	PAG
UPBH28018P188	10/28/2025	UP28018P188	Umwelt	280	1.020	31.93	25.02	0.78	PAG
UPBH28018P152	10/28/2025	UP28018P152	Umwelt	280	0.860	24.61	7.00	0.28	PAG
UPBH28018P215	10/28/2025	UP28018P215	Umwelt	280	0.690	21.70	6.25	0.29	PAG
UPBH29722P20	10/30/2025	UP29722P20	Umwelt	297	-	0.03	4.75	N/A	NAG
UPBH29722P202	10/30/2025	UP29722P202	Umwelt	297	-	0.03	6.13	N/A	NAG
UPBH29722P226	10/30/2025	UP29722P226	Umwelt	297	-	0.03	3.25	N/A	NAG
UPBH29722P247	10/30/2025	UP29722P247	Umwelt	297	-	0.03	7.61	N/A	NAG
UPBH29722P26	10/30/2025	UP29722P26	Umwelt	297	-	0.03	6.72	N/A	NAG
UPBH29722P272	10/30/2025	UP29722P272	Umwelt	297	0.060	1.23	7.49	6.08	NAG
UPBH29722P51	10/30/2025	UP29722P51	Umwelt	297	-	0.03	5.26	N/A	NAG
UPBH29722P9	10/30/2025	UP29722P9	Umwelt	297	-	0.03	3.75	N/A	NAG
UPBH29722P93	10/30/2025	UP29722P93	Umwelt	297	-	0.03	6.73	N/A	NAG
UPBH28016P111	11/1/2025	UP28016P111	Umwelt	280	0.410	10.38	29.05	2.80	PAG
UPBH28016P120	11/1/2025	UP28016P120	Umwelt	280	0.150	4.11	3.26	0.79	NAG
UPBH28016P138	11/1/2025	UP28016P138	Umwelt	280	0.380	11.17	4.49	0.40	PAG
UPBH28016P143	11/1/2025	UP28016P143	Umwelt	280	0.460	10.19	3.25	0.32	PAG
UPBH28016P154	11/1/2025	UP28016P154	Umwelt	280	0.170	5.10	4.50	0.88	PAG
UPBH28016P200	11/1/2025	UP28016P200	Umwelt	280	0.130	3.61	1.76	0.49	NAG
UPBH28016P204	11/1/2025	UP28016P204	Umwelt	280	0.110	2.23	8.87	3.98	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH28016P207	11/1/2025	UP28016P207	Umwelt	280	0.040	0.66	6.50	9.78	NAG
UPBH28016P70	11/1/2025	UP28016P70	Umwelt	280	0.190	5.15	5.99	1.16	PAG
UPBH28016P79	11/1/2025	UP28016P79	Umwelt	280	0.050	1.48	3.26	2.19	NAG
UPBH28016P87	11/1/2025	UP28016P87	Umwelt	280	0.380	11.65	10.63	0.91	PAG
UPBH28013P14	11/3/2025	UP28013P14	Umwelt	280	0.390	11.46	5.75	0.50	PAG
UPBH28013P17	11/3/2025	UP28013P17	Umwelt	280	0.290	8.99	4.13	0.46	PAG
UPBH28013P44	11/3/2025	UP28013P44	Umwelt	280	0.320	10.12	3.50	0.35	PAG
UPBH28013P47	11/3/2025	UP28013P47	Umwelt	280	0.030	0.03	3.50	N/A	NAG
UPBH28013P58	11/4/2025	UP28013P58	Umwelt	280	0.120	3.62	5.25	1.45	NAG
UPBH28013P66	11/4/2025	UP28013P66	Umwelt	280	0.760	23.39	5.33	0.23	PAG
UPBH28013P70	11/4/2025	UP28013P70	Umwelt	280	0.100	3.08	5.02	1.63	NAG
UPBH28013P87	11/4/2025	UP28013P87	Umwelt	280	0.220	5.97	6.68	1.12	PAG
UPBH28013P142	11/5/2025	UP28013P142	Umwelt	280	0.130	3.81	3.75	0.98	NAG
UPBH28013P110	11/5/2025	UP28013P110	Umwelt	280	0.340	9.56	5.74	0.60	PAG
UPBH28013P114	11/5/2025	UP28013P114	Umwelt	280	0.040	1.02	3.25	3.18	NAG
UPBH28013P123	11/6/2025	UP28013P123	Umwelt	280	0.370	11.43	4.50	0.39	PAG
UPBH28013P139	11/6/2025	UP28013P139	Umwelt	280	0.010	0.03	3.00	N/A	NAG
UPBH28013P95	11/6/2025	UP28013P95	Umwelt	280	0.080	2.49	7.74	3.11	NAG
UPBH28020P124	11/7/2025	UP28020P124	Umwelt	280	0.020	0.44	4.25	9.57	NAG
UPBH28020P127	11/7/2025	UP28020P127	Umwelt	280	0.070	2.19	8.40	3.84	NAG
UPBH28020P130	11/7/2025	UP28020P130	Umwelt	280	0.390	12.06	13.90	1.15	PAG
UPBH28020P17	11/7/2025	UP28020P17	Umwelt	280	0.240	7.41	14.74	1.99	PAG
UPBH28020P19	11/7/2025	UP28020P19	Umwelt	280	0.410	12.63	10.11	0.80	PAG
UPBH28020P41	11/7/2025	UP28020P41	Umwelt	280	0.230	6.77	8.47	1.25	PAG
UPBH28020P56	11/7/2025	UP28020P56	Umwelt	280	0.880	26.07	15.65	0.60	PAG
UPBH28020P59	11/7/2025	UP28020P59	Umwelt	280	0.160	4.55	8.40	1.85	PAG
UPBH28020P96	11/7/2025	UP28020P96	Umwelt	280	0.280	8.30	10.24	1.23	PAG
UPBH28020P99	11/7/2025	UP28020P99	Umwelt	280	0.160	4.78	5.63	1.18	PAG
UPBH28019P136	11/8/2025	UP28019P136	Umwelt	280	0.400	10.72	8.13	0.76	PAG
UPBH28019P141	11/8/2025	UP28019P141	Umwelt	280	0.300	8.74	8.85	1.01	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH28019P150	11/8/2025	UP28019P150	Umwelt	280	0.050	0.73	4.57	6.27	NAG
UPBH28019P165	11/8/2025	UP28019P165	Umwelt	280	0.310	7.94	4.90	0.62	PAG
UPBH28019P186	11/8/2025	UP28019P186	Umwelt	280	0.460	13.36	5.02	0.38	PAG
UPBH28019P192	11/8/2025	UP28019P192	Umwelt	280	0.010	0.39	2.48	6.40	NAG
UPBH28019P201	11/8/2025	UP28019P201	Umwelt	280	0.030	0.73	4.94	6.75	NAG
UPBH28019P230	11/8/2025	UP28019P230	Umwelt	280	0.150	3.60	7.59	2.11	NAG
UPBH28019P236	11/8/2025	UP28019P236	Umwelt	280	0.240	7.34	6.03	0.82	PAG
UPBH28019P240	11/8/2025	UP28019P240	Umwelt	280	0.150	3.73	6.38	1.71	NAG
UPBH28019P251	11/8/2025	UP28019P251	Umwelt	280	0.110	3.33	5.63	1.69	NAG
UPBH28019P270	11/8/2025	UP28019P270	Umwelt	280	0.340	9.99	8.34	0.83	PAG
UPBH28019P281	11/8/2025	UP28019P281	Umwelt	280	0.120	3.25	4.94	1.52	NAG
UPBH28019P32	11/9/2025	UP28019P32	Umwelt	280	0.330	9.58	4.68	0.49	PAG
UPBH28019P34	11/9/2025	UP28019P34	Umwelt	280	0.090	2.48	5.35	2.15	NAG
UPBH28019P66	11/9/2025	UP28019P66	Umwelt	280	0.130	3.67	5.43	1.48	NAG
UPBH28019P93	11/9/2025	UP28019P93	Umwelt	280	0.440	13.03	6.84	0.52	PAG
UPBH28019P104	11/9/2025	UP28019P104	Umwelt	280	0.340	9.93	6.03	0.61	PAG
UPBH29027P177	11/9/2025	UP29027P177	Umwelt	290	0.050	0.93	4.40	4.72	NAG
UPBH29027P183	11/9/2025	UP29027P183	Umwelt	290	0.290	7.27	4.85	0.67	PAG
UPBH29027P185	11/9/2025	UP29027P185	Umwelt	290	0.340	9.52	3.57	0.38	PAG
UPBH29027P146	11/9/2025	UP29027P146	Umwelt	290	0.690	20.43	3.19	0.16	PAG
UPBH29027P153	11/10/2025	UP29027P153	Umwelt	290	0.010	0.03	3.00	N/A	NAG
UPBH29027P156	11/10/2025	UP29027P156	Umwelt	290	-	0.03	3.50	N/A	NAG
UPBH29027P109	11/10/2025	UP29027P109	Umwelt	290	0.300	8.57	10.71	1.25	PAG
UPBH29027P124	11/10/2025	UP29027P124	Umwelt	290	0.030	0.83	5.75	6.94	NAG
UPBH29027P25	11/10/2025	UP29027P25	Umwelt	290	0.230	7.28	2.51	0.34	PAG
UPBH29027P58	11/10/2025	UP29027P58	Umwelt	290	0.090	1.80	5.74	3.20	NAG
UPBH29027P6	11/10/2025	UP29027P6	Umwelt	290	0.050	1.67	3.12	1.87	NAG
UPBH29027P65	11/10/2025	UP29027P65	Umwelt	290	0.080	2.08	5.49	2.64	NAG
UPBH29027P81	11/10/2025	UP29027P81	Umwelt	290	0.040	1.19	3.26	2.72	NAG
UPBH29027P90	11/10/2025	UP29027P90	Umwelt	290	0.030	0.73	4.24	5.84	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29027P97	11/10/2025	UP29027P97	Umwelt	290	-	0.03	3.01	N/A	NAG
UPBH28021P177	11/11/2025	UP28021P177	Umwelt	280	0.130	4.07	9.47	2.33	NAG
UPBH28021P181	11/11/2025	UP28021P181	Umwelt	280	0.130	3.89	11.99	3.08	NAG
UPBH28021P204	11/11/2025	UP28021P204	Umwelt	280	0.190	4.34	5.48	1.26	PAG
UPBH28021P209	11/11/2025	UP28021P209	Umwelt	280	0.150	3.89	5.00	1.28	NAG
UPBH28021P104	11/12/2025	UP28021P104	Umwelt	280	0.820	25.51	9.97	0.39	PAG
UPBH28021P109	11/12/2025	UP28021P109	Umwelt	280	0.150	4.76	11.78	2.47	NAG
UPBH28021P134	11/12/2025	UP28021P134	Umwelt	280	0.700	21.38	18.48	0.86	PAG
UPBH28021P145	11/12/2025	UP28021P145	Umwelt	280	0.080	2.51	3.23	1.29	NAG
UPBH28021P149	11/12/2025	UP28021P149	Umwelt	280	0.320	9.89	1.26	0.13	PAG
UPBH29033P389	11/15/2025	UP29033P389	Umwelt	290	0.880	24.19	11.40	0.47	PAG
UPBH29033P411	11/15/2025	UP29033P411	Umwelt	290	0.100	2.53	1.90	0.75	NAG
UPBH29033P415	11/15/2025	UP29033P415	Umwelt	290	0.020	0.46	2.50	5.47	NAG
UPBH29033P442	11/15/2025	UP29033P442	Umwelt	290	0.010	0.03	1.25	N/A	NAG
UPBH29033P463	11/15/2025	UP29033P463	Umwelt	290	0.540	12.20	11.38	0.93	PAG
UPBH29033P487	11/15/2025	UP29033P487	Umwelt	290	0.400	11.95	2.91	0.24	PAG
UPBH29033P174	11/15/2025	UP29033P174	Umwelt	290	0.120	3.50	3.62	1.03	NAG
UPBH29033P202	11/15/2025	UP29033P202	Umwelt	290	0.110	2.51	1.39	0.56	NAG
UPBH29033P221	11/15/2025	UP29033P221	Umwelt	290	0.150	3.73	5.79	1.55	NAG
UPBH29033P247	11/15/2025	UP29033P247	Umwelt	290	0.230	4.99	1.75	0.35	PAG
UPBH29033P250	11/15/2025	UP29033P250	Umwelt	290	0.210	6.10	1.52	0.25	PAG
UPBH29033P338	11/15/2025	UP29033P338	Umwelt	290	0.190	5.30	3.29	0.62	PAG
UPBH29033P344	11/15/2025	UP29033P344	Umwelt	290	0.340	10.52	3.23	0.31	PAG
UPBH29033P300	11/16/2025	UP29033P300	Umwelt	290	-	0.03	9.35	N/A	NAG
UPBH29033P171	11/16/2025	UP29033P171	Umwelt	290	0.130	3.84	6.13	1.59	NAG
UPBH29033P106	11/16/2025	UP29033P106	Umwelt	290	0.160	5.10	4.72	0.93	PAG
UPBH29033P128	11/16/2025	UP29033P128	Umwelt	290	-	0.03	7.59	N/A	NAG
UPBH29033P181	11/17/2025	UP29033P181	Umwelt	290	0.070	1.96	5.86	2.99	NAG
UPBH29033P229	11/17/2025	UP29033P229	Umwelt	290	0.050	0.84	5.65	6.76	NAG
UPBH29033P214	11/17/2025	UP29033P214	Umwelt	290	0.010	0.03	6.09	N/A	NAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29033P303	11/17/2025	UP29033P303	Umwelt	290	-	0.03	7.47	N/A	NAG
UPBH29033P334	11/17/2025	UP29033P334	Umwelt	290	0.040	1.17	4.74	4.06	NAG
UPBH29033P383	11/17/2025	UP29033P383	Umwelt	290	-	0.03	5.17	N/A	NAG
UPBH29033P252	11/17/2025	UP29033P252	Umwelt	290	0.150	4.57	6.22	1.36	NAG
UPBH29033P262	11/17/2025	UP29033P262	Umwelt	290	-	0.03	4.89	N/A	NAG
UPBH29033P494	11/17/2025	UP29033P494	Umwelt	290	0.160	4.69	4.89	1.04	PAG
UPBH29033P431	11/17/2025	UP29033P431	Umwelt	290	0.010	0.36	5.91	16.39	NAG
UPBH29033P74	11/18/2025	UP29033P74	Umwelt	290	0.260	6.83	7.24	1.06	PAG
UPBH29033P77	11/18/2025	UP29033P77	Umwelt	290	-	0.03	5.68	N/A	NAG
UPBH29033P184	11/18/2025	UP29033P184	Umwelt	290	0.040	0.03	6.53	N/A	NAG
UPBH29033P141	11/18/2025	UP29033P141	Umwelt	290	0.020	0.03	5.30	N/A	NAG
UPBH29033P145	11/18/2025	UP29033P145	Umwelt	290	0.050	1.08	5.62	5.18	NAG
UPBH29033P111	11/18/2025	UP29033P111	Umwelt	290	0.050	1.47	7.23	4.91	NAG
UPBH29033P120	11/18/2025	UP29033P120	Umwelt	290	0.090	1.87	9.87	5.27	NAG
UPBH28023P157	11/19/2025	UP28023P157	Umwelt	280	0.090	2.22	4.19	1.88	NAG
UPBH28023P160	11/19/2025	UP28023P160	Umwelt	280	0.420	11.33	4.22	0.37	PAG
UPBH28023P73	11/19/2025	UP28023P73	Umwelt	280	0.280	8.79	3.98	0.45	PAG
UPBH28023P77	11/19/2025	UP28023P77	Umwelt	280	0.120	3.68	3.97	1.08	NAG
UPBH28023P21	11/20/2025	UP28023P21	Umwelt	280	0.250	7.68	11.19	1.46	PAG
UPBH28023P101	11/20/2025	UP28023P101	Umwelt	280	0.390	12.06	9.84	0.82	PAG
UPBH28023P127	11/20/2025	UP28023P127	Umwelt	280	-	0.03	7.89	N/A	NAG
UPBH28023P131	11/20/2025	UP28023P131	Umwelt	280	0.630	19.62	35.60	1.81	PAG
UPBH27001P117	11/23/2025	UP27001P117	Umwelt	270	0.240	6.85	9.29	1.36	PAG
UPBH27001P140	11/23/2025	UP27001P140	Umwelt	270	0.370	11.15	26.34	2.36	PAG
UPBH27001P66	11/23/2025	UP27001P66	Umwelt	270	-	0.03	5.05	N/A	NAG
UPBH27002P556	11/28/2025	UP27002P556	Umwelt	270	1.210	37.75	10.53	0.28	PAG
UPBH27002P566	11/28/2025	UP27002P566	Umwelt	270	0.200	5.28	6.28	1.19	PAG
UPBH27002P590	11/28/2025	UP27002P590	Umwelt	270	0.220	6.16	8.49	1.38	PAG
UPBH27002P604	11/28/2025	UP27002P604	Umwelt	270	0.420	13.18	7.68	0.58	PAG
UPBH28021P32	11/28/2025	UP28021P32	Umwelt	280	0.610	19.00	17.97	0.95	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH28021P45	11/28/2025	UP28021P45	Umwelt	280	0.170	5.40	10.60	1.96	PAG
UPBH28021P54	11/28/2025	UP28021P54	Umwelt	280	0.190	5.94	12.29	2.07	PAG
UPBH28021P69	11/28/2025	UP28021P69	Umwelt	280	-	0.03	5.71	N/A	NAG
UPBH28021P81	11/28/2025	UP28021P81	Umwelt	280	0.590	18.56	17.31	0.93	PAG
UPBH28021P18	11/28/2025	UP28021P18	Umwelt	280	0.100	2.49	8.81	3.53	NAG
UPBH29028P168	12/11/2025	UP29028P168	Umwelt	290	0.110	1.73	2.63	1.52	NAG
UPBH29028P172	12/11/2025	UP29028P172	Umwelt	290	0.030	0.03	1.63	N/A	NAG
UPBH29028P184	12/11/2025	UP29028P184	Umwelt	290	0.040	0.50	0.26	0.52	NAG
UPBH29028P190	12/12/2025	UP29028P190	Umwelt	290	0.150	4.59	11.62	2.53	NAG
UPBH29028P175	12/12/2025	UP29028P175	Umwelt	290	0.340	9.77	11.54	1.18	PAG
UPBH29028P74	12/12/2025	UP29028P74	Umwelt	290	-	0.03	9.13	N/A	NAG
UPBH29028P77	12/12/2025	UP29028P77	Umwelt	290	0.040	1.12	11.43	10.19	NAG
UPBH29028P108	12/12/2025	UP29028P108	Umwelt	290	0.120	2.42	8.65	3.57	NAG
UPBH29028P120	12/12/2025	UP29028P120	Umwelt	290	0.160	4.74	6.53	1.38	PAG
UPBH29028P124	12/12/2025	UP29028P124	Umwelt	290	0.030	0.55	6.48	11.77	NAG
UPBH29028P127	12/12/2025	UP29028P127	Umwelt	290	0.460	12.95	7.68	0.59	PAG
UPBH29028P135	12/12/2025	UP29028P135	Umwelt	290	0.730	20.75	13.49	0.65	PAG
UPBH29028P139	12/12/2025	UP29028P139	Umwelt	290	0.230	6.73	14.73	2.19	PAG
UPBH29028P159	12/12/2025	UP29028P159	Umwelt	290	-	0.03	8.92	N/A	NAG
UPBH29028P166	12/12/2025	UP29028P166	Umwelt	290	0.160	4.88	10.26	2.10	PAG
UPBH29028P110	12/13/2025	UP29028P110	Umwelt	290	0.110	3.47	4.65	1.34	NAG
UPBH29028P100	12/13/2025	UP29028P100	Umwelt	290	0.100	2.72	7.92	2.91	NAG
UPBH29028P90	12/13/2025	UP29028P90	Umwelt	290	-	0.03	5.87	N/A	NAG
UPBH29028P95	12/13/2025	UP29028P95	Umwelt	290	-	0.03	11.38	N/A	NAG
UPBH29028P63	12/13/2025	UP29028P63	Umwelt	290	0.770	24.21	11.73	0.48	PAG
UPBH29029P38	12/13/2025	UP29029P38	Umwelt	290	0.100	2.98	5.20	1.75	NAG
UPBH29029P43	12/13/2025	UP29029P43	Umwelt	290	0.100	2.82	5.37	1.90	NAG
UPBH29029P51	12/13/2025	UP29029P51	Umwelt	290	0.180	5.35	4.84	0.90	PAG
UPBH29029P65	12/13/2025	UP29029P65	Umwelt	290	0.240	7.23	8.51	1.18	PAG
UPBH29029P68	12/13/2025	UP29029P68	Umwelt	290	0.180	5.28	11.34	2.15	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29029P71	12/13/2025	UP29029P71	Umwelt	290	0.330	9.65	9.32	0.97	PAG
UPBH29029P84	12/13/2025	UP29029P84	Umwelt	290	-	0.03	4.22	N/A	NAG
UPBH29029P92	12/13/2025	UP29029P92	Umwelt	290	0.130	4.11	11.13	2.71	NAG
UPBH29029P94	12/13/2025	UP29029P94	Umwelt	290	0.140	4.40	4.58	1.04	NAG
UPBH29028P18	12/14/2025	UP29028P18	Umwelt	290	0.208	6.37	5.14	0.81	PAG
UPBH29028P25	12/14/2025	UP29028P25	Umwelt	290	0.136	3.97	2.57	0.65	NAG
UPBH29028P29	12/14/2025	UP29028P29	Umwelt	290	0.151	4.06	4.94	1.22	PAG
UPBH29028P59	12/14/2025	UP29028P59	Umwelt	290	0.070	1.63	4.83	2.96	NAG
UPBH29029P12	12/14/2025	UP29029P12	Umwelt	290	0.108	2.84	3.47	1.22	NAG
UPBH29029P22	12/14/2025	UP29029P22	Umwelt	290	0.057	1.36	2.88	2.11	NAG
UPBH29029P3	12/14/2025	UP29029P3	Umwelt	290	0.108	2.55	16.71	6.54	NAG
UPBH29028P11	12/14/2025	UP29028P11	Umwelt	290	0.088	2.30	4.91	2.14	NAG
UPBH29031P178	12/14/2025	UP29031P178	Umwelt	290	0.117	3.63	2.78	0.77	NAG
UPBH29031P218	12/14/2025	UP29031P218	Umwelt	290	-	0.03	7.00	N/A	NAG
UPBH29031P227	12/14/2025	UP29031P227	Umwelt	290	0.046	0.65	8.32	12.70	NAG
UPBH29031P239	12/14/2025	UP29031P239	Umwelt	290	-	0.03	8.70	N/A	NAG
UPBH29031P190	12/14/2025	UP29031P190	Umwelt	290	0.068	1.72	4.02	2.34	NAG
UPBH29031P360	12/15/2025	UP29031P360	Umwelt	290	0.061	1.52	6.67	4.38	NAG
UPBH29031P386	12/15/2025	UP29031P386	Umwelt	290	0.104	2.33	6.91	2.96	NAG
UPBH29031P445	12/15/2025	UP29031P445	Umwelt	290	0.163	4.31	6.03	1.40	PAG
UPBH29031P453	12/15/2025	UP29031P453	Umwelt	290	0.384	11.83	9.09	0.77	PAG
UPBH29031P490	12/15/2025	UP29031P490	Umwelt	290	0.035	0.69	9.02	13.00	NAG
UPBH29031P250	12/15/2025	UP29031P250	Umwelt	290	0.001	0.03	6.45	N/A	NAG
UPBH29031P265	12/15/2025	UP29031P265	Umwelt	290	0.250	7.81	6.90	0.88	PAG
UPBH29031P278	12/15/2025	UP29031P278	Umwelt	290	0.013	0.03	6.01	N/A	NAG
UPBH29031P283	12/15/2025	UP29031P283	Umwelt	290	0.219	6.85	6.23	0.91	PAG
UPBH29031P321	12/15/2025	UP29031P321	Umwelt	290	0.631	17.64	3.08	0.17	PAG
UPBH29031P403	12/15/2025	UP29031P403	Umwelt	290	0.132	3.91	7.36	1.88	NAG
UPBH29031P416	12/15/2025	UP29031P416	Umwelt	290	0.332	9.61	7.79	0.81	PAG
UPBH29031P517	12/15/2025	UP29031P517	Umwelt	290	0.077	2.41	9.23	3.82	NAG

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UPBH29031P536	12/15/2025	UP29031P536	Umwelt	290	0.023	0.63	15.69	25.09	NAG
UPBH29031P60	12/16/2025	UP29031P60	Umwelt	290	0.097	1.55	3.85	2.48	NAG
UPBH29031P76	12/16/2025	UP29031P76	Umwelt	290	0.070	2.05	7.69	3.75	NAG
UPBH29031P85	12/16/2025	UP29031P85	Umwelt	290	0.084	2.57	4.13	1.60	NAG
UPBH29031P53	12/16/2025	UP29031P53	Umwelt	290	0.021	0.65	4.50	6.96	NAG
UPBH29031P175	12/16/2025	UP29031P175	Umwelt	290	0.148	3.98	4.65	1.17	NAG
UPBH29031P21	12/16/2025	UP29031P21	Umwelt	290	0.078	1.80	3.34	1.86	NAG
UPBH29031P185	12/16/2025	UP29031P185	Umwelt	290	0.115	3.59	3.45	0.96	NAG
UPBH29031P114	12/16/2025	UP29031P114	Umwelt	290	0.068	2.03	3.16	1.56	NAG
UPBH29031P139	12/16/2025	UP29031P139	Umwelt	290	1.832	54.74	9.40	0.17	PAG
UPBH29031P169	12/16/2025	UP29031P169	Umwelt	290	-	0.03	3.86	N/A	NAG
UPBH29031P171	12/17/2025	UP29031P171	Umwelt	290	0.278	8.70	7.38	0.85	PAG
UPBH29031P214	12/17/2025	UP29031P214	Umwelt	290	0.777	24.29	16.65	0.69	PAG
UPBH29031P326	12/17/2025	UP29031P326	Umwelt	290	0.545	15.86	8.61	0.54	PAG
UPBH29031P247	12/17/2025	UP29031P247	Umwelt	290	0.052	1.63	10.66	6.53	NAG
UPBH29031P348	12/18/2025	UP29031P348	Umwelt	290	0.709	20.75	12.07	0.58	PAG
UPBH29031P390	12/18/2025	UP29031P390	Umwelt	290	0.255	7.47	6.84	0.92	PAG
UPBH29031P494	12/18/2025	UP29031P494	Umwelt	290	0.233	6.76	8.47	1.25	PAG
UPBH29031P513	12/18/2025	UP29031P513	Umwelt	290	0.218	6.43	12.41	1.93	PAG
UPBH29031P435	12/18/2025	UP29031P435	Umwelt	290	0.262	7.83	6.83	0.87	PAG
UPBH29032P124	12/19/2025	UP29032P124	Umwelt	290	0.134	3.84	13.18	3.44	NAG
UPBH29032P155	12/19/2025	UP29032P155	Umwelt	290	0.204	5.59	7.48	1.34	PAG
UPBH29032P158	12/19/2025	UP29032P158	Umwelt	290	0.161	4.14	9.89	2.39	PAG
UPBH29032P185	12/19/2025	UP29032P185	Umwelt	290	0.007	0.03	8.29	N/A	NAG
UPBH29032P193	12/19/2025	UP29032P193	Umwelt	290	0.242	6.61	6.79	1.03	PAG
UPBH29032P216	12/19/2025	UP29032P216	Umwelt	290	0.043	0.88	7.14	8.12	NAG
UPBH29032P228	12/19/2025	UP29032P228	Umwelt	290	0.051	1.03	6.21	6.05	NAG
UPBH29032P244	12/20/2025	UP29032P244	Umwelt	290	0.132	3.41	8.29	2.43	NAG
UPBH29032P280	12/20/2025	UP29032P280	Umwelt	290	0.348	9.41	8.43	0.90	PAG
UPBH29032P293	12/20/2025	UP29032P293	Umwelt	290	0.347	9.57	16.91	1.77	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29032P314	12/20/2025	UP29032P314	Umwelt	290	0.236	6.28	7.30	1.16	PAG
UPBH29032P66	12/20/2025	UP29032P66	Umwelt	290	0.087	2.23	6.83	3.06	NAG
UPBH29032P81	12/20/2025	UP29032P81	Umwelt	290	0.110	2.55	6.64	2.60	NAG
UPBH29032P19	12/20/2025	UP29032P19	Umwelt	290	0.520	13.87	6.81	0.49	PAG
UPBH29032P99	12/20/2025	UP29032P99	Umwelt	290	0.255	6.65	10.14	1.53	PAG
UPBH29032P96	12/21/2025	UP29032P96	Umwelt	290	0.044	1.38	7.43	5.37	NAG
UPBH29032P59	12/22/2025	UP29032P59	Umwelt	290	0.125	3.84	7.19	1.87	NAG
UPBH29032P242	12/22/2025	UP29032P242	Umwelt	290	0.239	7.47	7.06	0.94	PAG
UPBH29032P176	12/22/2025	UP29032P176	Umwelt	290	-	0.03	6.08	N/A	NAG
UPBH29032P221	12/22/2025	UP29032P221	Umwelt	290	0.154	4.69	6.22	1.33	PAG
UPBH29032P197	12/22/2025	UP29032P197	Umwelt	290	0.213	5.66	10.76	1.90	PAG
UPBH29032P127	12/22/2025	UP29032P127	Umwelt	290	0.204	5.70	6.23	1.09	PAG
UP29032P290	12/23/2025	UP29032P290	Umwelt	290	0.310	9.69	7.50	0.77	PAG
UP29032P322	12/23/2025	UP29032P322	Umwelt	290	0.120	3.13	7.27	2.33	NAG
UP29032P346	12/23/2025	UP29032P346	Umwelt	290	0.040	0.94	3.97	4.24	NAG
UP29032P353	12/23/2025	UP29032P353	Umwelt	290	0.120	3.44	5.25	1.53	NAG
UPBH29036P107	12/24/2025	UP29036P107	Umwelt	290	-	0.03	4.35	N/A	NAG
UPBH29036P120	12/24/2025	UP29036P120	Umwelt	290	0.219	6.43	4.64	0.72	PAG
UPBH29036P128	12/24/2025	UP29036P128	Umwelt	290	0.008	0.03	4.75	N/A	NAG
UPBH29036P147	12/24/2025	UP29036P147	Umwelt	290	0.104	3.25	5.15	1.58	NAG
UPBH29036P70	12/24/2025	UP29036P70	Umwelt	290	0.010	0.03	3.77	N/A	NAG
UPBH29036P96	12/24/2025	UP29036P96	Umwelt	290	0.414	11.76	9.50	0.81	PAG
UPBH29036X16	12/24/2025	UP29036X16	Umwelt	290	0.016	0.50	3.14	6.29	NAG
UPBH29036P163	12/24/2025	UP29036P163	Umwelt	290	0.344	10.74	5.66	0.53	PAG
UPBH29036X34	12/24/2025	UP29036X34	Umwelt	290	0.022	0.03	6.81	N/A	NAG
UPBH29036X38	12/24/2025	UP29036X38	Umwelt	290	0.003	0.03	4.77	N/A	NAG
UPBH29036P76	12/24/2025	UP29036P76	Umwelt	290	0.286	8.93	3.23	0.36	PAG
UPBH29036P79	12/24/2025	UP29036P79	Umwelt	290	1.612	50.38	4.90	0.10	PAG
UPBH29036X83	12/25/2025	UP29036X83	Umwelt	290	0.106	3.31	2.89	0.87	NAG
UPBH29036X86	12/25/2025	UP29036X86	Umwelt	290	0.157	4.90	4.23	0.86	PAG

Sample ID	Date	Blast Hole #	Location	Depth (m)	Total sulphur (wt%)	Acid-Generation Potential (AP)	Neutralization Potential (NP)	Neutralization Potential Ratio (NPR)	Classification
UPBH29036X50	12/25/2025	UP29036X50	Umwelt	290	0.084	2.61	2.95	1.13	NAG
UPBH29036X54	12/25/2025	UP29036X54	Umwelt	290	0.145	3.83	3.86	1.01	NAG
UPBH29036X66	12/25/2025	UP29036X66	Umwelt	290	0.220	6.86	3.47	0.51	PAG
UPBH29036X70	12/25/2025	UP29036X70	Umwelt	290	0.118	3.68	2.78	0.75	NAG
UPBH29036P158	12/25/2025	UP29036P158	Umwelt	290	0.099	2.77	3.63	1.31	NAG
UPBH270RampV1R39	12/28/2025	UP270RAMPV1R39	Umwelt	270	0.111	2.49	6.73	2.71	NAG
UPBH29037P153	12/30/2025	UP29037P153	Umwelt	290	0.063	1.37	6.73	4.91	NAG
UPBH29037P21	12/30/2025	UP29037P21	Umwelt	290	0.126	3.21	8.11	2.53	NAG
UPBH29037P231	12/30/2025	UP29037P231	Umwelt	290	0.109	2.96	6.91	2.34	NAG
UPBH29037P85	12/30/2025	UP29037P85	Umwelt	290	0.946	28.34	7.60	0.27	PAG

Notes:

*Analysis of Acid Generating Potential based on total sulphur concentrations; analysis of Neutralization Potential based on Modified Sobek Method.