Data Validation – Topographical, Geological and Technical Determinations

A **topographical survey** of the site was conducted by the specialized firm **KSA Land Surv**. Additionally, a detailed **geological investigation** was carried out in 2007 by **expert geologist Gagyi Peter,** whose specialization in the Târnava Valley region facilitated the delineation of the mineral resource. Furthermore, a rigorous **technical and economic assessment** was performed by the internationally recognized consultancy firms **SMinPro (**Austria **-** www.sminpro.com**)** in collaboration with **Rock Options (**United Kingdom **-** www.rockoptions.co.uk**),** ensuring a thorough evaluation of the project's economic and financial feasibility and resource potential – with the objective to quantitatively assess the Neaua quarry deposit, to determine the extractable maximum quantity of silica sand and clay, to build the 3D models of maximum potential final voids, and a benched maximum final void model based upon reasonable geotechnical assumptions. Further, raw materials composition analysis review, to determine the relevant quarry life-cycle based on maximum capacity of the products output, to determine the necessary investment amounts and yearly operational costs as closely to the market realities as possible. The conclusions of the assessments performed are the following (***every relevant finding being already built into the presented business plan core data***):

1. The relevant technical, financial and economical assessment of the collected underlying data (geological surveys, physical and chemical analyses, extraction and processing equipment data, financial calculations based on market realities etc.) was performed by an international expert team lead by eng. Stefan Hunger (***STEFAN HUNGER*** *has more than 15 years of experience as a manager and analyst in the field of mineral resource extraction and processing in Europe, Africa and Latin America. He is a Fellow of the Institute of Materials, Minerals, and Mining (FIMMM), CEng accredited with the Engineering Council UK, and registered as a European Engineer (EUR ING) by the European Federation of National Engineering Associations (FEANI). Currently, as Managing Director of SMinPro GmbH, he aims to provide objective and independent support to companies in the implementation of projects for the processing of various raw materials with regard to their sustainability. Most recently, he was responsible for autonomously developing the regional presence of an equipment manufacturer by recruiting and building a team and customer relations to effectively manage the entire sales cycle first in Latin America and then in Europe. With his team, he built installations in more than 20 countries, most notably arguably the most complex and challenging construction materials recycling plant in Europe. Prior to that, as Chief Financial Officer, he was jointly responsible for the successful restructuring and development of 3 cement plants in North Africa. He was responsible for the preparation of several feasibility studies for the production of building materials products and for the development of the building materials business line. Stefan Hunger studied at the University of Vienna and at Euromed Marseille, Ecole de Management. As part of his master's degree in International Business Administration, he specialized in Industrial Management and International Management.*)

   The purpose of this maximum final void model is to determine the maximum extent of extractable sand and clay volumes/tonnages. The resulting information can be input into a schedule for life-of-mine planning & optimizing relevantly necessary and actual market conditions based, detailed and updated initial investment and yearly operational costs categories and to provide the relevant theoretical guidance for the excavation of the pit to be detailed and laid out by the short – and long-term design engineers and as such, it focuses on the operational efficiency (trucking and digging), cost minimization & value maximization (less waste, more product), schedule flexibility (practicality of scheduling and maintaining productivity) and safety (to not to build hazards and risks into the design). This is a preliminary maximum model, the design will need several further iterations, after a full geotechnical appraisal has been undertaken during the permitting phase and true design parameters can be established for the deposit. Then detailed quarry designs for the deposit and throughout the life of the operation can be prepared, ensuring safe excavation and optimization of the resource.

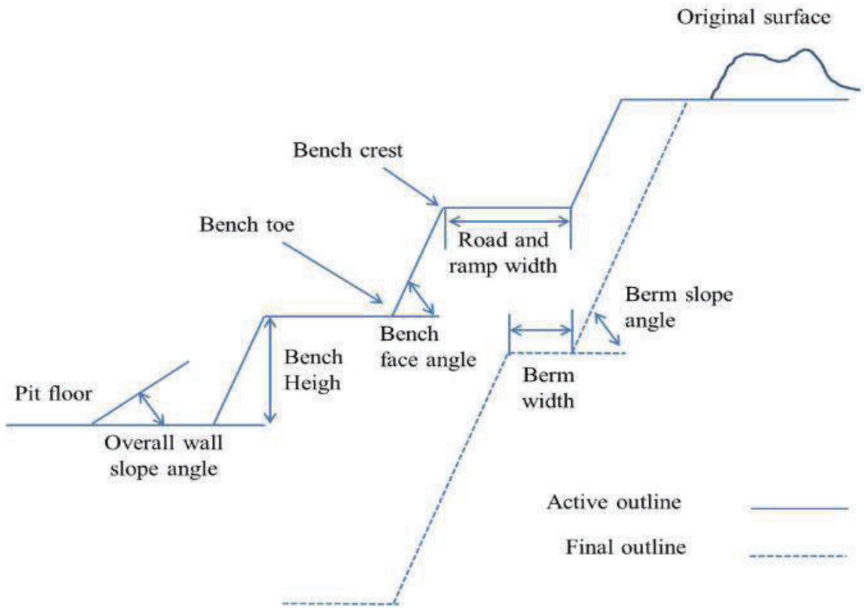
   Surface mining is characterized as a capital-intensive mining method with higher productivities and lower costs compared to underground methods. The material extraction is usually carried out in stages called phases or pushbacks. Each pushback contains waste and ore that are extracted from the mine through layers called *benches*.

   Pushback design and the ***loading equipment selection*** are two major activities of the planning activity. Pushback design involves the determination of the size and shape of each pushback and the characteristics of its benches and access routes. On the other hand, the loading equipment selection considers the definition of the type and number of shovels or front-end loaders that will be used for the loading activity.

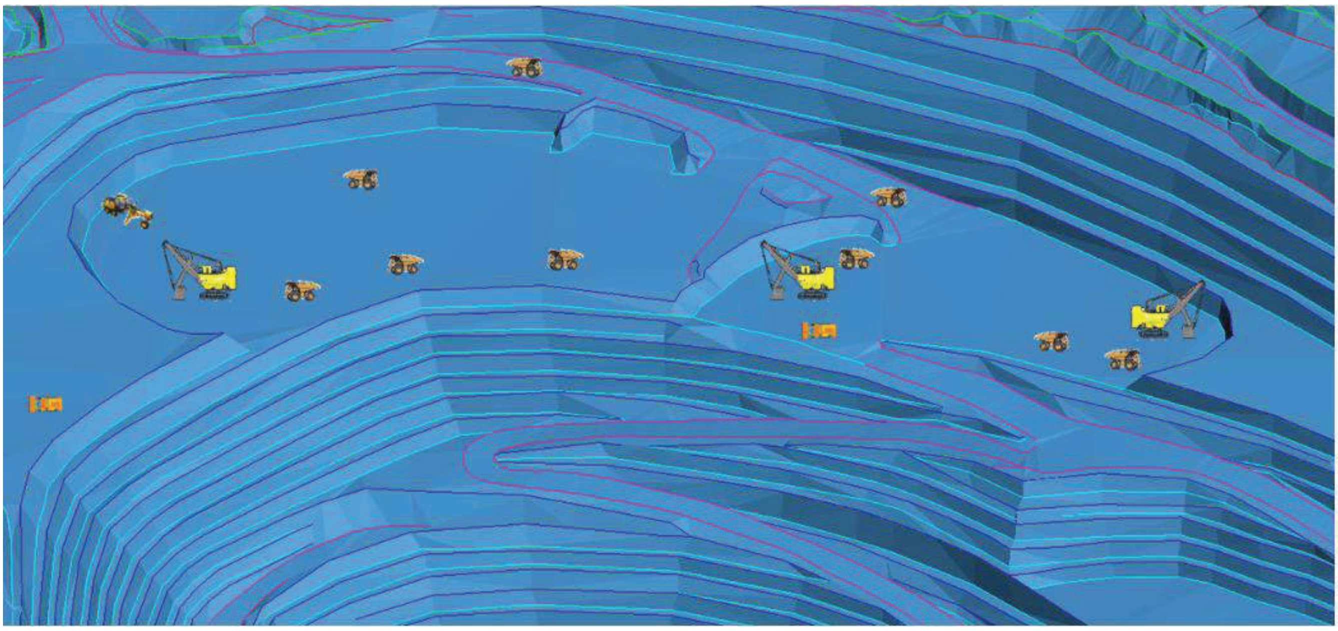
   During the ***mine design stage***, the location and sequence that the loading equipment must follow to deplete the benches is determined. The deployment of loading equipment in the different benches of each pushback is known as a scheme of exploitation. This concept is widely used in the mining industry however it has been addressed to a lesser extent in the literature.

   The exploitation by open pit methods has particular challenges that are faced during the planning and design stage but also during the operation itself. The key drivers at the Neaua quarry open pit design are the following: *sand grade and tonnage, topography, physical size and structure of the deposit, capital expenditures (initial & follow-up investments), economic factor of operating costs, profitability, pit limits, cut-off grade and stripping ratio, mining equipment needed, rate of production, access roads, mine design (bench heights, OSA, road grades etc.), geotechnical aspects, hydrogeological conditions, key energy supplies, environmental conditions, taxes, royalties, regulations and laws.*

The following figure shows the ***typical terminology used in surface mining***. Each *pushback* is depleted in *layers called benches* that have a particular height and slope angle. Each layer is separated by the following one by a space called *berm*. This is designed to keep the stability of the pit wall. The *road ramp* corresponds to the access to the different levels of the *pushback*. The height of the *benches*, the *bench slope angle* and the *width of berms* and *ramp* will define the *overall wall slope angle*.

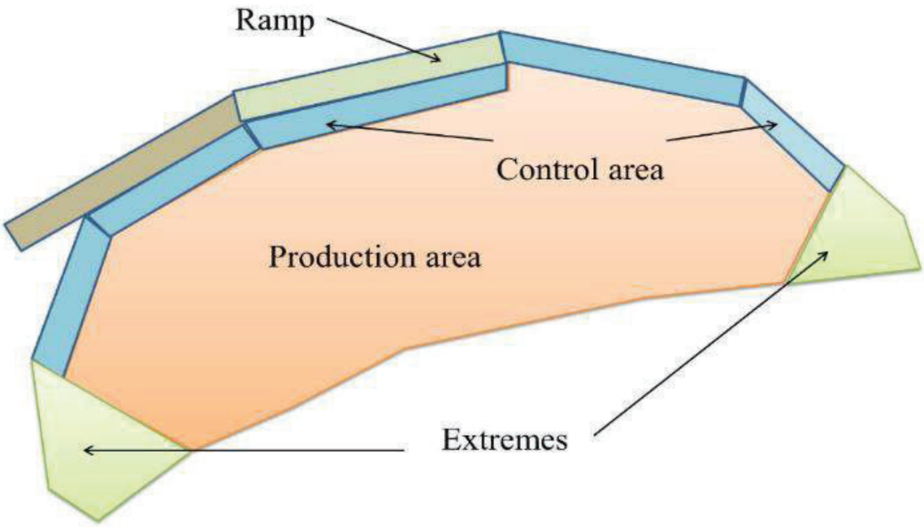


A *bench* is a section of a *pushback* whose dimensions are set during the mining design stage. The following figure illustrates a ***typical pushback in an open pit mine***. In this case, two benches are being depleted simultaneously and the access to both benches is through the principal ramp that is placed close to the pit wall, similar to the specific situation at the future Neaua quarry consecutive pushbacks. Other configurations could include auxiliary ramps between benches to facilitate the access of loading, hauling and auxiliary equipment between the different benches in operation. The number of shovels to exploit a pushback is variable and depends on the strategy designed later by the mine planner in real-time.



The benches have a typical half-moon shape with one area close to the wall of the pit and another area called free face because it is oriented to the space left by the previous pushback. Five types of benches are identified: The hillside expansion benches are characterized by a large free face. The deep hillside expansion is similar to the benches shown above but the extension of the free face is smaller in comparison to the area close to the wall. The sunken cut and the expansion of the sunken cut benches do not include a free face and are characteristic of the first pushback of an open pit mine. Finally, the cut top benches have only free face and correspond to the benches that can be placed at the top of a hill.

The following figure shows a top view representation of a ***hillside expansion bench***. In general, it is possible to distinguish four regions using a geometric point of view: the ramp, the control area, the production area and the extremes of the bench:



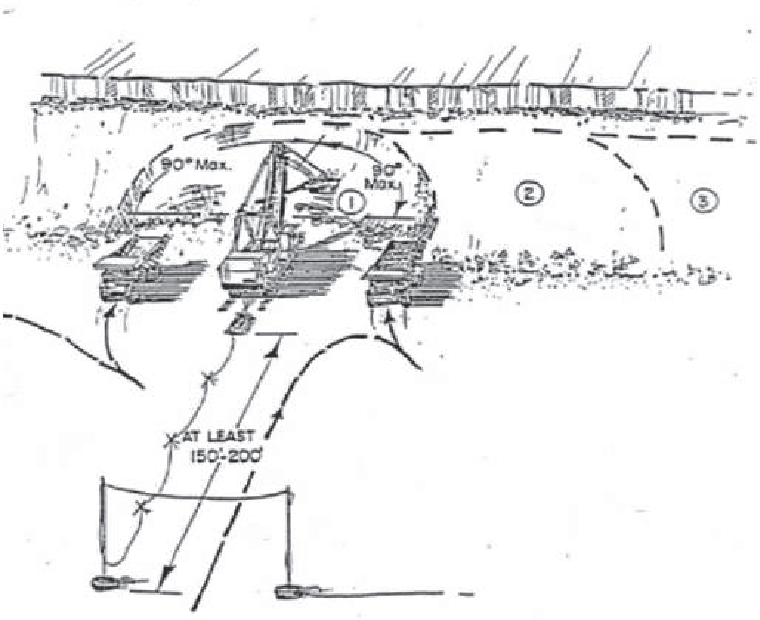
The ramp is built to connect two different levels. There are different kinds of ramps. The final ramp or design ramp is the one that allow access to all the benches of the pushback. Therefore it remains until the exploitation of the next pushback. The auxiliary ramps can be developed as a temporary access to an inferior level. It can be designed for access of trucks or auxiliary equipment such as drill machines and bulldozers.

The control area is extended along the pit wall. Drilling and blasting design of this area is developed to keep the stability of the pit wall. Loading material in this area is a challenging activity because the program line must be reached with precision to continue with the extraction of the inferior benches without affecting their shape and size of the pushback.

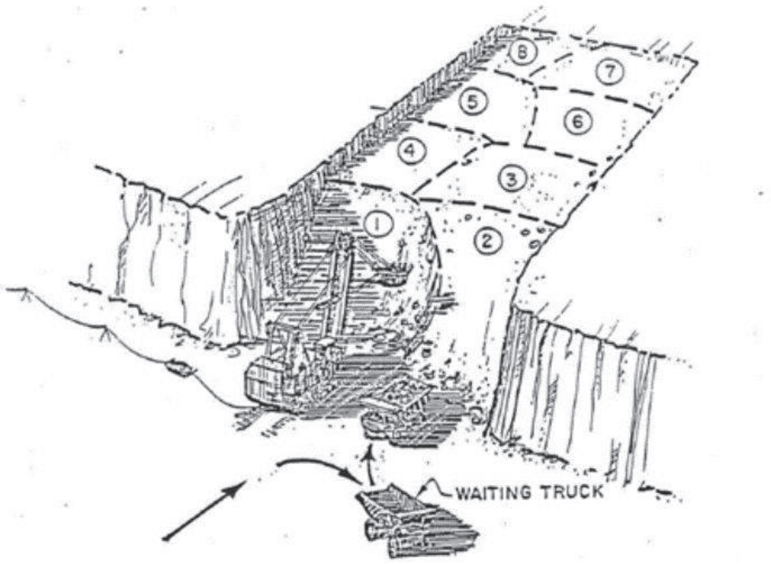
The extreme areas are smaller than the others and are considered areas with a restrictive space for the loading activity. In general the swing angles of shovels increase considerably and therefore, their productivity decrease.

The production area in the central region of the bench is the sector with no restrictions to load trucks from a geometric point of view. Shovels can reach their highest level of productivity in this area.

The shovel mining methods defines the way in which the material will be extracted from each bench of the mine. There are four major methods and they are defined considering the shovel set-up with respect to the benches face and the trucks set-up during loading. These four shovel mining methods are: Double back-up methods, single back-up methods, drive-by methods and modified drive-by methods. The back-up methods consider to the shovel and the cable oriented perpendicular to the muck-pile face. ***In the double back-up*** the shovel can load from both sides following the configuration shown in following figure:

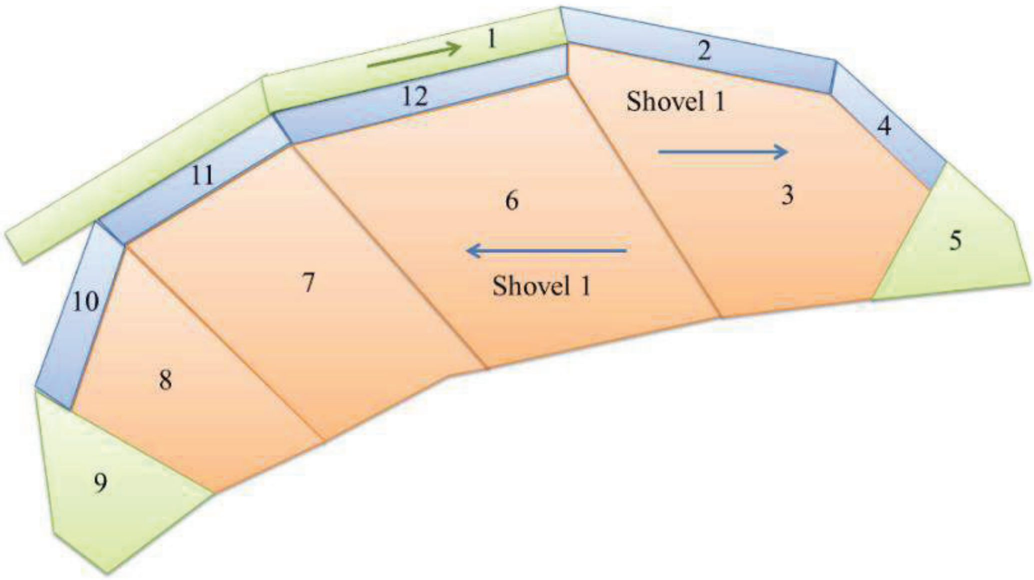


In the single back-up, the shovel can load from one side and it is designed for reduced loading areas:



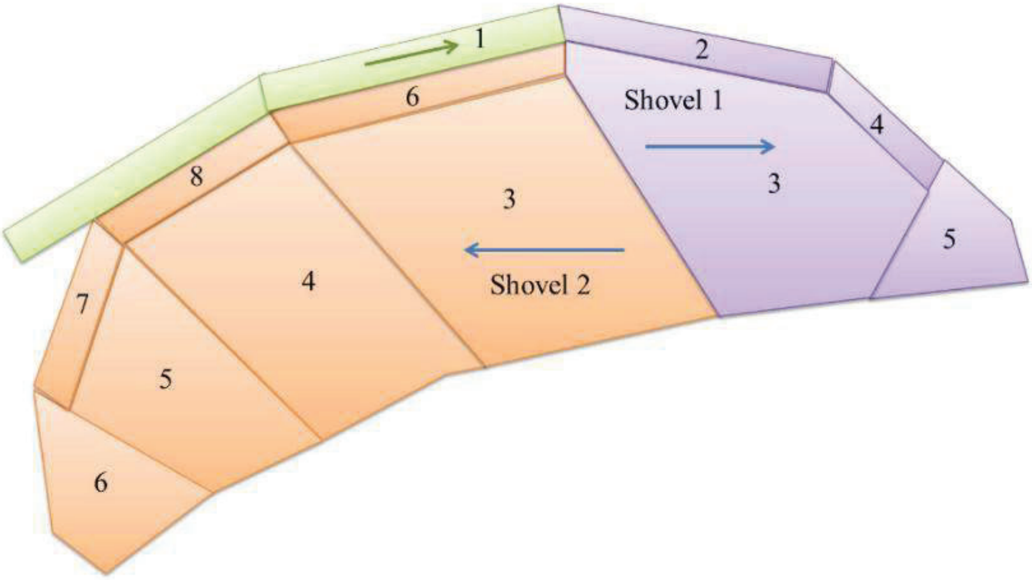
In the drive by methods, the shovel is placed parallel to the muckpile. The cable is also parallel to the muckpile and can only load from one side. ***The drives by methods*** have lower productivities than the back-up methods because larger swing angles. Moreover, drive-by methods are not selective and shovel and cable are constantly in risk of falling rocks from the bench face.

Schemes of exploitation with One Bench and One Shovel correspond to the deployment of loading equipment in the mine pushbacks. If only one shovel is positioned to extract the bench, it could follow a sequence as illustrated in the following figure, where the numbers represents the regions to be extracted. The exploitation of the bench begins with the ramp that is associated with the number 1. This is followed by the control region 2, then production region 3 and so on.



The mine design including more than one shovel per bench (in particular case a One Bench and Two Shovels scenario) could have a scheme of exploitation as the one shown in the following figure. In this case both shovels will follow the sequence illustrated with the arrows that indicate that both shovels will extract the bench in opposite directions at the beginning of region 3. An alternative scheme of exploitation could consider both shovels working in the same direction. This configuration would give rise to different schemes of exploitation although the number of shovels is the same.

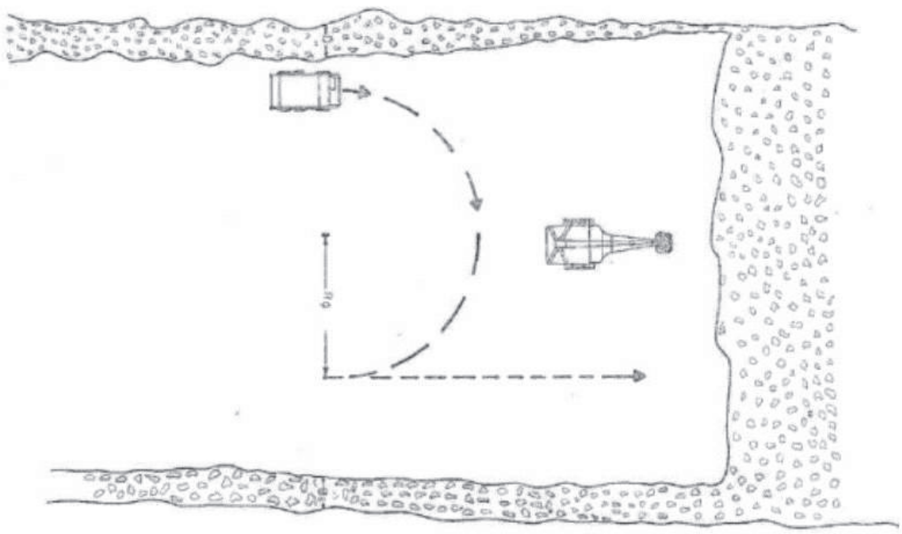
In schemes with more than one shovel, two or more benches may be extracted simultaneously. The figure shown at the beginning shows a hillside expansion bench with two benches in exploitation. The width of a hillside expansion bench is generally smaller that the width of sunken cut benches. The displacement between equipment in different levels is necessary to avoid safety problems associated with falling rocks from higher levels.



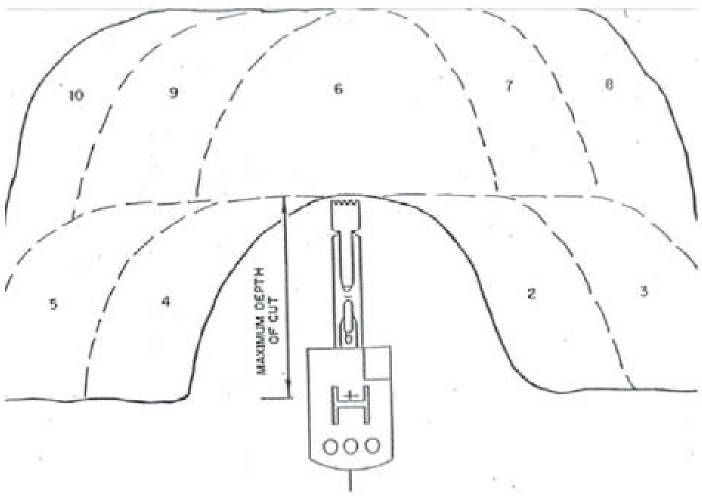
The scheme of exploitation represented in the above figure uses two shovels. Shovel 1 has to create the access to the bench through the extraction of the ramp and then section 2 and 3. Shovel 2 can enter in operation on the same bench once there is enough space for the operation of both shovels. The primary element to consider in the pushback design is, therefore, the area available for mining. A different scheme may consider the extraction of the left side of the bench first and then go to the right side.

At the beginning we highlighted the relevance of the space available for mining in the scheme of exploitation design.. Firstly, the pushback design defines the size and shape of the benches. The number of shovels and their size limits the space inside the area defined by the bench design. Finally, the shovel mining method may limit the access to certain areas depending of the space restriction of each shovel mining method.

The following figure shows the representation of the minimum available space for loading. The diagram represents a section of a pushback where the only shovel in the area is prepared to load under the double back-up method. The available space is also restricted by an additional variable: the mechanical behavior of the consecutive sand and clay layers.



The interaction between shovels is a challenge in the scheme design. Ideally, the space is sufficient for the operation of the entire shovel fleet without delays for lack of space. Schemes where equipment are not fully utilized are not considered as options in the design stage. In a configuration of shovels working in parallel in the same bench it is necessary to establish the minimum distance between shovels. Under a double back-up method the distance between shovels may be equal to the diameter of operation of each one. This limit distance could be different if the shovels are working with a certain displacement:



In configurations involving multiple operational benches, specific safety and operational challenges must be addressed. To prevent hazards related to falls of ground from upper levels, shovels should operate with adequate horizontal displacement, ensuring that one shovel does not work directly beneath another. The primary operational constraint stems from the limited available space for loading, which becomes particularly significant in complex configurations involving multiple shovels. Material type (e.g., sand, clay, or overburden) and the productivity variations across different macro zones must be factored into the design and operation of multi-shovel setups. Operational efficiency can be further affected by increased cable movement in areas with multiple shovels, especially when employing a double back-up mining method that involves frequent repositioning of shovels in the loading area.

2. ***The maximum extractable quantity of sand*** from the Neaua deposit was determined based on the assumed geological profile of the hillside (determined from the topographic assessment of the whole area and the borehole data presented in the 2007 geological report, data from which is shown in the table below)., within a benched 3D design, which from the crest of the site at c540m to the floor of the site at c.360m equated to an overall slope angles of c1:1.75 (30 degree slopes).:

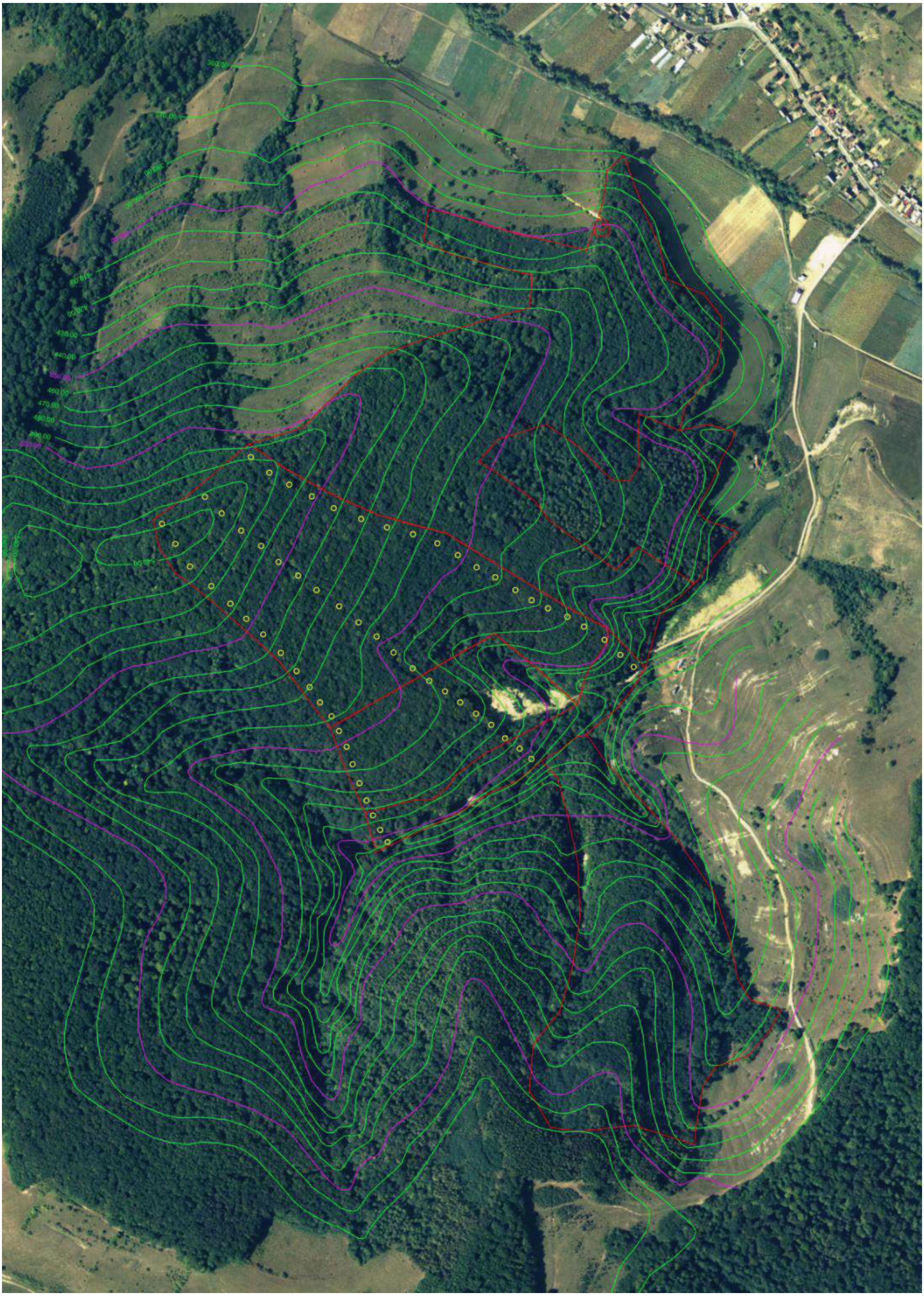
Neaua quarry – borehole data from 2007						***Hole depth/base of hole***		***(Base of) Overburden***		***(Base of) Sand***			***(Base of) Clay***			
No	***LSS Point No.***	***2007 BH No.***	***Easting***	***Northing***	***Collar Elevation (m)***	***Depth (m)***	***Elevation (m)***	***Depth (mbgl)***	***Elevation (m)***	***Depth (mbgl)***	***Elevation (m)***	***Thickness (m)***	***Depth (mbgl)***	***Elevation (m)***	***Thickness (m)***	***Base of hole***
1	221	**D1**	487255.48	550366.23	361.28	6.00	355.28	0.80	360.78	3.10	358.03	2.30	3.90	357.38	0.80	Sand to base of hole
2	219	**D2**	487237.09	550346.25	375.56	6.00	369.56	1.40	373.86	3.50	372.06	2.10	4.10	371.46	0.60	Sand to base of hole
3	217	**D3**	487214.44	550322.19	401.44	6.00	395.44	2.00	399.04	6.00	395.44	4.00	NO CLAY	-	-	Sand to base of hole
4	215	**D4**	487194.63	550291.40	411.46	6.00	405.46	2.90	408.56	6.00	405.46	3.10	NO CLAY	-	-	Sand to base of hole
5	213	**D5**	487179.77	550266.28	419.77	6.00	413.77	1.60	418.17	4.80	414.97	3.20	6.00	413.77	1.20	Base of clay not confirmed, still clay at base of hole
6	211	**D6**	487167.03	550237.26	426.86	6.00	420.86	2.20	424.66	4.00	422.86	1.80	4.70	422.16	0.70	Sand to base of hole
7	209	**D7**	487154.64	550212.49	431.94	6.00	425.94	1.20	430.74	6.00	425.94	4.80	NO CLAY	-	-	Sand to base of hole
8	207	**D8**	487139.43	550188.08	436.01	6.00	430.01	0.70	435.31	6.00	430.01	5.30	NO CLAY	-	-	Sand to base of hole
9	205	**D9**	487120.14	550157.65	441.41	6.00	435.41	0.60	440.81	6.00	435.41	5.40	NO CLAY	-	-	Sand to base of hole
10	203	**D10**	487105.10	550129.52	446.13	6.00	440.13	0.80	445.33	3.70	442.43	2.90	4.70	441.43	1.00	Sand to base of hole
11	201	**D11**	487086.88	550101.21	451.49	6.00	445.49	0.70	450.79	-	-	-	1.90	449.59	1.20	Borehole intercepted clay immediately below OB. Sand to base of hole
12	199	**D12**	487069.01	550070.42	456.50	6.00	450.50	0.80	455.70	5.40	451.10	4.60	6.00	450.50	0.60	Base of clay not confirmed, still clay at base of hole
13	197	**D13**	487055.21	550033.80	463.15	6.00	457.15	0.60	462.55	3.60	459.55	3.00	4.30	458.85	0.70	Sand to base of hole
14	194	**D14**	487044.95	549994.52	471.76	6.00	465.76	1.50	470.26	6.00	465.76	4.50	NO CLAY	-	-	Sand to base of hole
15	191	**D15**	487032.21	549955.60	481.81	6.00	475.81	0.60	481.21	2.90	478.91	2.30	3.80	478.01	0.90	Sand to base of hole
16	188	**D16**	487015.93	549914.38	492.32	6.00	486.32	1.30	491.02	5.70	486.62	4.40	6.00	486.32	0.30	Base of clay not confirmed, still clay at base of hole
17	186	**D17**	486998.14	549881.31	502.60	6.00	496.60	1.50	501.10	6.00	496.60	4.50	NO CLAY	-	-	Sand to base of hole
18	184	**D18**	486980.45	549847.34	514.40	6.00	508.40	0.70	513.70	5.00	509.40	4.30	6.00	508.40	1.00	Base of clay not confirmed, still clay at base of hole
19	182	**D19**	486962.40	549817.26	522.69	6.00	516.69	1.40	521.29	2.50	520.19	1.10	3.40	519.29	0.90	Sand to base of hole
20	180	**D20**	486938.87	549789.31	517.93	6.00	511.93	1.00	516.93	1.90	516.03	0.90	3.00	514.93	1.10	Sand to base of hole
21	232	**M1**	487394.14	550212.22	389.94	6.00	383.94	0.50	389.44	3.25	386.69	2.75	4.00	385.94	0.75	Sand to base of hole
22	234	**M2**	487378.57	550194.53	405.31	6.00	399.31	1.70	403.61	3.50	401.81	1.80	4.30	401.01	0.80	Sand to base of hole

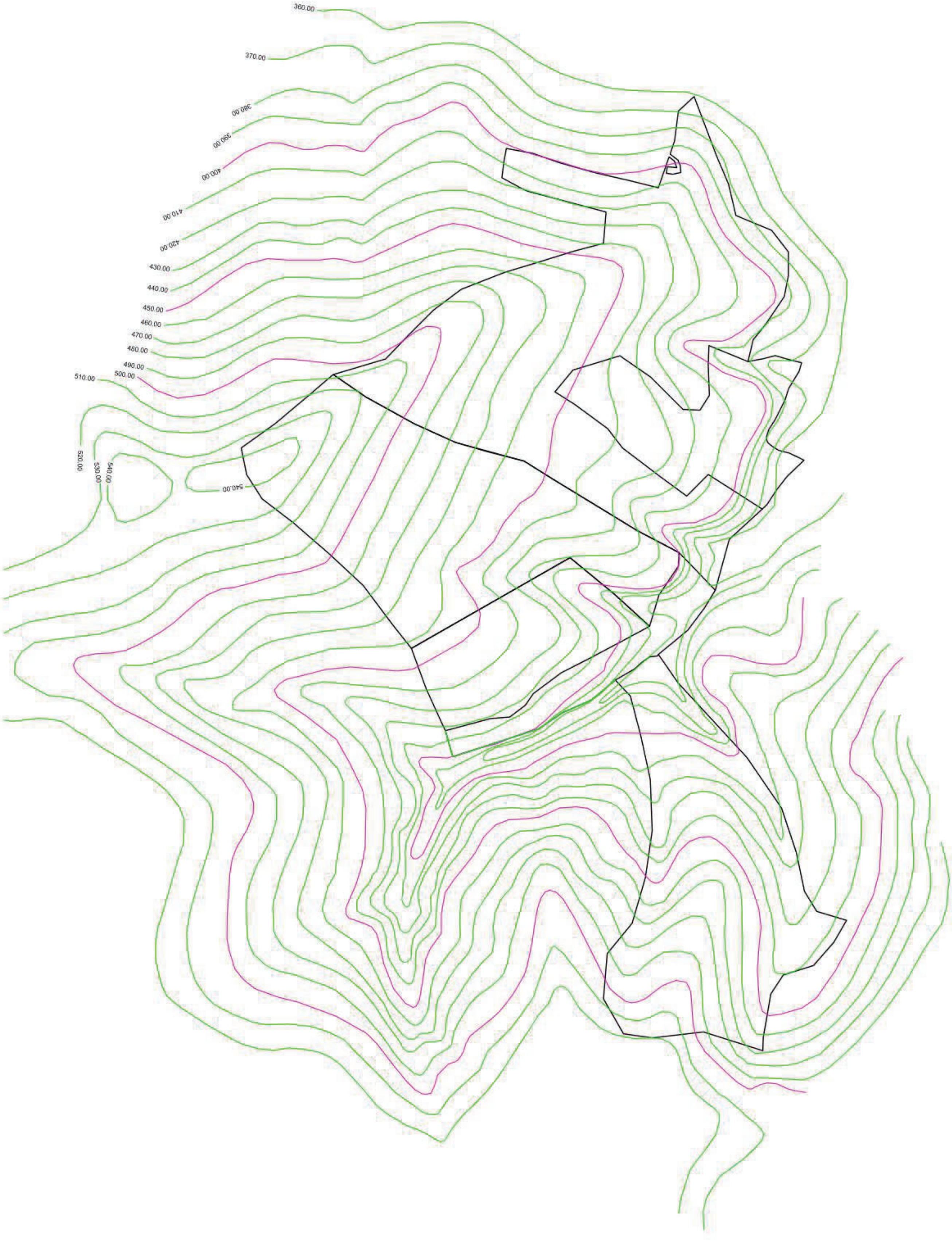
23	236	**M3**	487363.00	550172.41	414.65	6.00	408.65	2.40	412.25	6.00	408.65	3.60	NO CLAY	-	-	Sand to base of hole
24	238	**M4**	487342.66	550151.71	423.86	6.00	417.86	2.90	420.96	6.00	417.86	3.10	NO CLAY	-	-	Sand to base of hole
25	240	**M5**	487325.85	550128.71	431.78	6.00	425.78	1.80	429.98	4.80	426.98	3.00	6.00	425.78	1.20	Base of clay not confirmed, still clay at base of hole
26	242	**M6**	487308.86	550104.83	435.18	6.00	429.18	2.60	432.58	3.80	431.38	1.20	4.70	430.48	0.90	
27	244	**M7**	487292.06	550082.00	436.64	6.00	430.64	1.50	435.14	6.00	430.64	4.50	NO CLAY	-	-	Sand to base of hole
28	246	**M8**	487276.49	550058.30	440.07	6.00	434.07	0.80	439.27	6.00	434.07	5.20	NO CLAY	-	-	Sand to base of hole
29	248	**M9**	487257.38	550033.35	440.30	6.00	434.30	0.70	439.60	6.00	434.30	5.30	NO CLAY	-	-	Sand to base of hole
30	250	**M10**	487233.67	550004.51	443.92	6.00	437.92	0.90	443.02	3.70	440.22	2.80	4.50	439.42	0.80	Sand to base of hole
31	252	**M11**	487209.43	549979.04	454.13	6.00	448.13	0.60	453.53	-	-	-	1.80	452.33	1.20	Borehole intercepted clay immediately below OB. Sand to base of hole
32	254	**M12**	487188.20	549951.79	464.91	6.00	458.91	0.80	464.11	5.20	459.71	4.40	6.00	458.91	0.80	Base of clay not confirmed, still clay at base of hole
33	256	**M13**	487163.96	549922.42	474.62	6.00	468.62	0.70	473.92	3.50	471.12	2.80	4.20	470.42	0.70	Sand to base of hole
34	259	**M14**	487139.37	549888.45	484.60	6.00	478.60	1.70	482.90	6.00	478.60	4.30	NO CLAY	-	-	Sand to base of hole
35	261	**M15**	487117.79	549860.85	492.72	6.00	486.72	0.60	492.12	2.70	490.02	2.10	3.90	488.82	1.20	Sand to base of hole
36	263	**M16**	487097.09	549831.12	502.44	6.00	496.44	1.60	500.84	5.60	496.84	4.00	6.00	496.44	0.40	Base of clay not confirmed, still clay at base of hole
37	265	**M17**	487072.82	549805.00	512.22	6.00	506.22	1.60	510.62	6.00	506.22	4.40	NO CLAY	-	-	Sand to base of hole
38	267	**M18**	487049.82	549774.74	524.80	6.00	518.80	0.70	524.10	5.10	519.70	4.40	6.00	518.80	0.90	Base of clay not confirmed, still clay at base of hole
39	269	**M19**	487023.81	549745.55	537.10	6.00	531.10	1.60	535.50	2.50	534.60	0.90	3.10	534.00	0.60	Sand to base of hole
40	273	**M20**	486998.86	549720.24	532.22	6.00	526.22	1.20	531.02	2.00	530.22	0.80	2.90	529.32	0.90	Sand to base of hole
41	318	**S1**	487519.56	549995.44	391.71	6.00	385.71	0.60	391.11	3.40	388.31	2.80	4.10	387.61	0.70	Sand to base of hole
42	317	**S2**	487501.16	549984.47	404.19	6.00	398.19	1.70	402.49	3.80	400.39	2.10	4.20	399.99	0.40	Sand to base of hole
43	315	**S3**	487479.22	549973.50	414.75	6.00	408.75	2.10	412.65	6.00	408.75	3.90	NO CLAY	-	-	Sand to base of hole
44	313	**S4**	487456.75	549963.77	425.00	6.00	419.00	2.50	422.50	6.00	419.00	3.50	NO CLAY	-	-	Sand to base of hole
45	311	**S5**	487430.74	549953.15	433.96	6.00	427.96	1.50	432.46	5.10	428.86	3.60	6.00	427.96	0.90	Base of clay not confirmed, still clay at base of hole
46	309	**S6**	487402.08	549942.71	442.57	6.00	436.57	2.20	440.37	3.80	438.77	1.60	4.70	437.87	0.90	Sand to base of hole
47	307	**S7**	487375.72	549933.69	448.43	6.00	442.43	1.30	447.13	6.00	442.43	4.70	NO CLAY	-	-	Sand to base of hole
48	305	**S8**	487352.01	549922.19	454.71	6.00	448.71	0.90	453.81	6.00	448.71	5.10	NO CLAY	-	-	Sand to base of hole
49	303	**S9**	487329.72	549911.05	460.64	6.00	454.64	0.80	459.84	6.00	454.64	5.20	NO CLAY	-	-	Sand to base of hole
50	301	**S10**	487308.84	549893.71	465.33	6.00	459.33	1.20	464.13	3.50	461.83	2.30	4.50	460.83	1.00	Sand to base of hole
51	299	**S11**	487285.84	549878.14	469.95	6.00	463.95	0.60	469.35	-	-	-	1.50	468.45	0.90	Borehole intercepted clay immediately below OB. Sand to base of hole
52	297	**S12**	487261.60	549858.32	478.07	6.00	472.07	0.80	477.27	5.50	472.57	4.70	6.00	472.07	0.50	Base of clay not confirmed, still clay at base of hole
53	295	**S13**	487234.18	549834.61	486.27	6.00	480.27	0.80	485.47	3.50	482.77	2.70	4.40	481.87	0.90	Sand to base of hole
54	293	**S14**	487206.23	549808.08	494.63	6.00	488.63	1.40	493.23	6.00	488.63	4.60	NO CLAY	-	-	Sand to base of hole
55	291	**S15**	487182.87	549782.60	503.22	6.00	497.22	0.70	502.52	2.90	500.32	2.20	4.00	499.22	1.10	Sand to base of hole
56	289	**S16**	487159.87	549758.54	512.24	6.00	506.24	1.20	511.04	5.50	506.74	4.30	6.00	506.24	0.50	Base of clay not confirmed, still clay at base of hole
57	287	**S17**	487133.51	549729.88	522.18	6.00	516.18	1.30	520.88	6.00	516.18	4.70	NO CLAY	-	-	Sand to base of hole
58	284	**S18**	487103.96	549697.67	534.53	6.00	528.53	0.70	533.83	4.90	529.63	4.20	6.00	528.53	1.10	Base of clay not confirmed, still clay at base of hole
59	281	**S19**	487069.82	549675.73	540.00	6.00	534.00	1.50	538.50	2.50	537.50	1.00	3.40	536.60	0.90	Sand to base of hole
60	279	**S20**	487039.39	549655.57	538.60	6.00	532.60	1.10	537.50	2.00	536.60	0.90	2.60	536.00	0.60	Sand to base of hole

***Overall Slope Angle** – the slope from the crest to the toe of the excavation. Reported OSAs for a selection of sites considered a 30-degree angle which equate to a 1:1.73 slope angle to be reasonable and so the 3D benched, final maximum void for the deposit was prepared with an OSA of c.1:1.75. The actual OSA (and other design factors) of the specific deposit will be affected by the stability of the sand, the impact of the clay layers, the significant depth of the deposit etc. and will need to be determined, for the site after a Geotechnical Specialists assessment. The slopes designed at 1:1.75 are not all a uniform slope angle due to the starting topography and elevation, the slopes will sometimes be a little steeper or shallower, but the slopes are within the 1:1.50 – 1:2.00 range. **Total Void Volume** - the total void between the current topography and the benched slope design, it includes the estimated volumes of overburden, the sand layers and the clay layers and can be considered the maximum extractable volume from the void.* The total sand volume is estimated to be 85% of the sand and clay unit, assuming 15% is clay. The total sand volume does not include the estimated volume of overburden, clay layers or any matrix losses within the sand deposit (fines).

The total void volume is estimated to be 19.4Mm³ (37.9Mt).
The Total Sand Volume Estimate for the Neaua deposit is 16,000,000 m³ equivalent to 31,200,000 tons (this includes any fines within the sand which cannot be utilized and are considered waste). The estimated volume of the overburden and clay layers is 3.4Mm³ (6.7Mt).

Neaua Silica Sand deposit – ortho-photographic placement of the topographical assessment w. the 2007 boreholes




360.00
370.00
380.00
390.00
400.00
410.00
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460.00
470.00
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510.00
520.00
530.00
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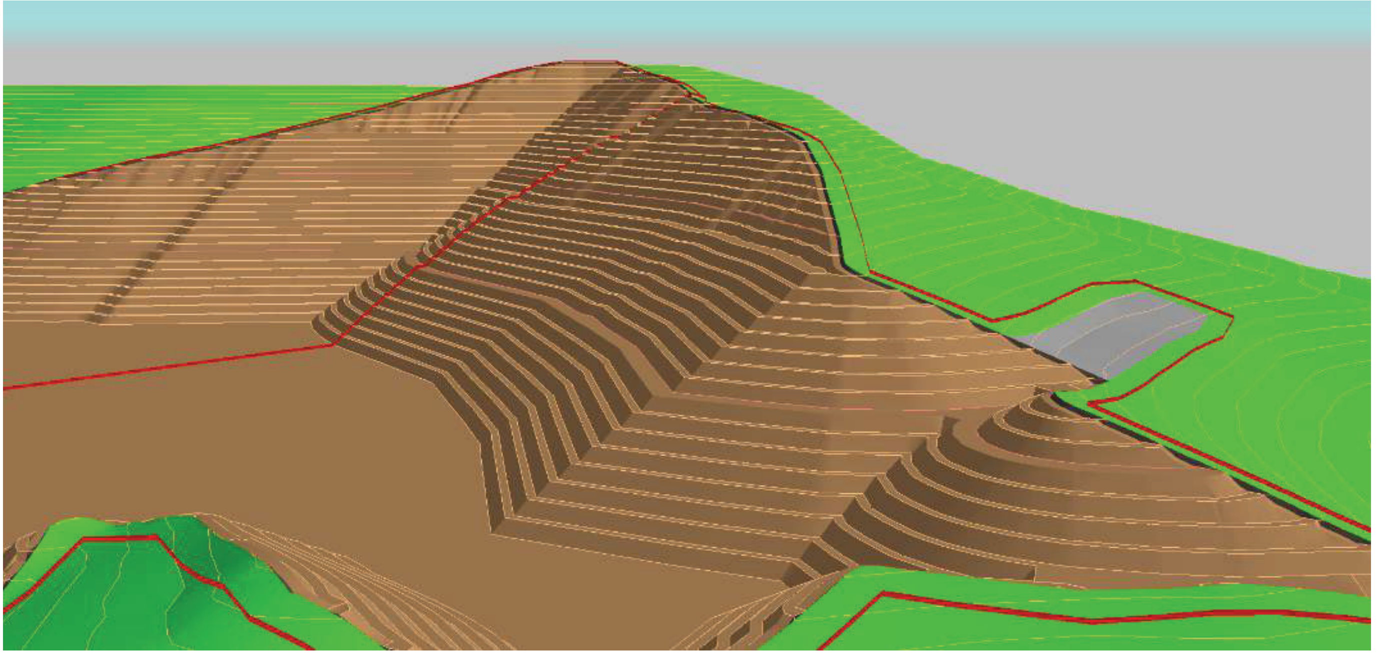
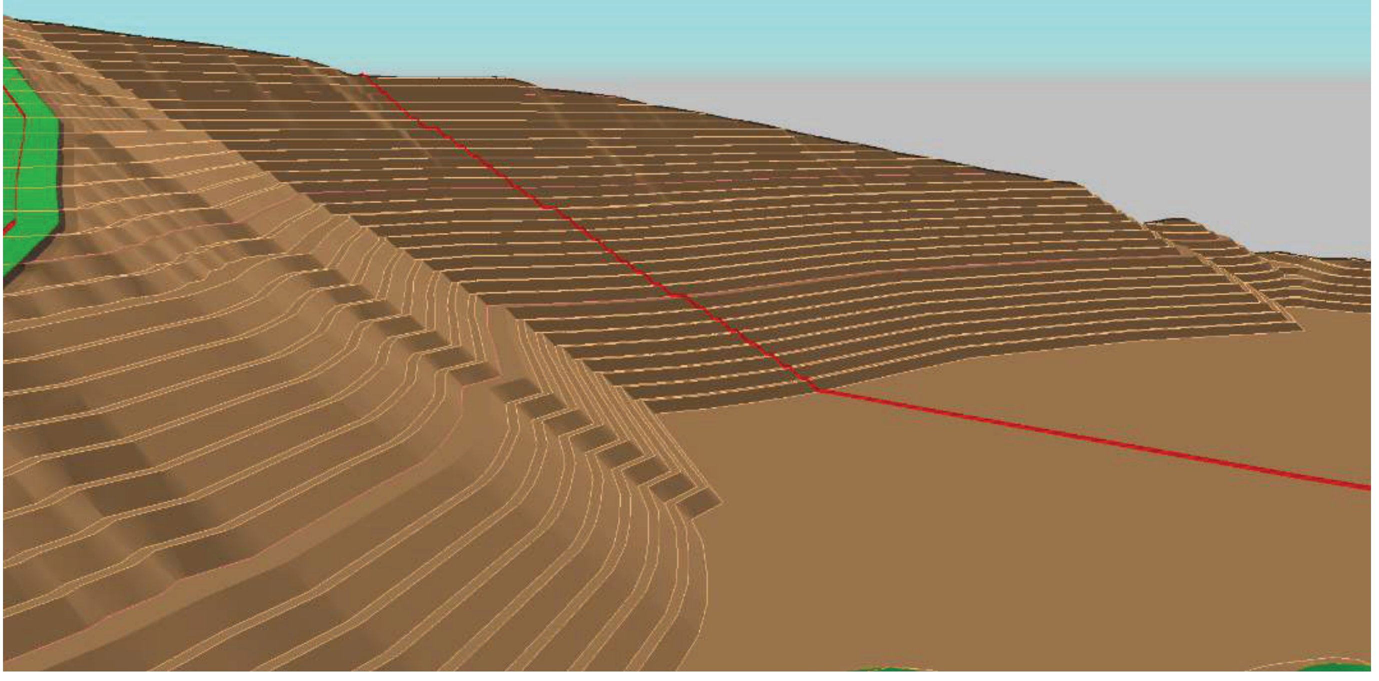
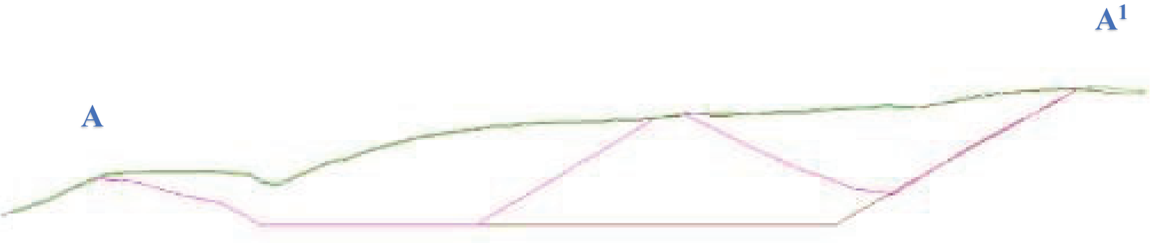
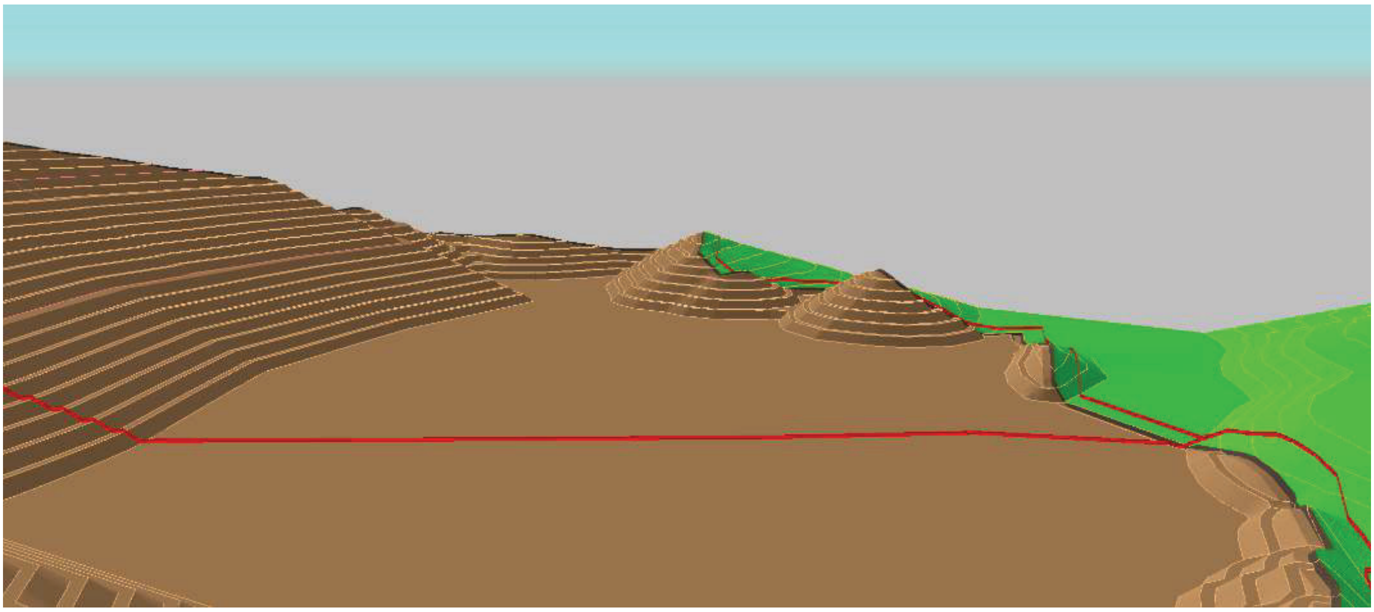
Neaua Silica Sand deposit – Site boundaries and topographic contours shown.

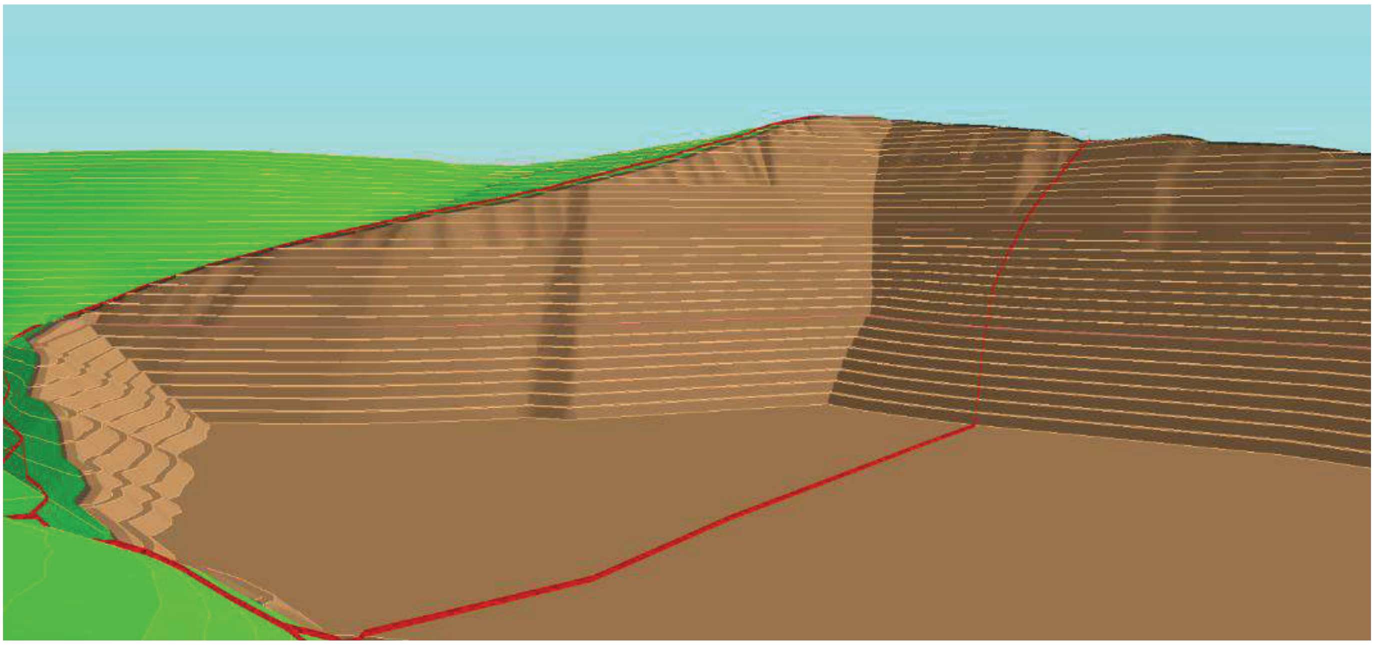






Green - Topographical profile
Brown - Limit of the combined quarry area void
Pink - Limits of the individual area voids





***Extractable Deposit Estimation** – was performed taking into consideration the Total Volume of the Void – Total Volume of the Overburden – Total Volume of Clay, between the pit floor (360m) and the pit crest (540m). <u>A significant resource of more than 5 million tons of sand (between 326m – 360m) was NOT included into the void, serving as an additional resource which could extend the life-cycle of the Neaua Sand deposit by 5 years (from 31 to 36 years) operational period.</u>*

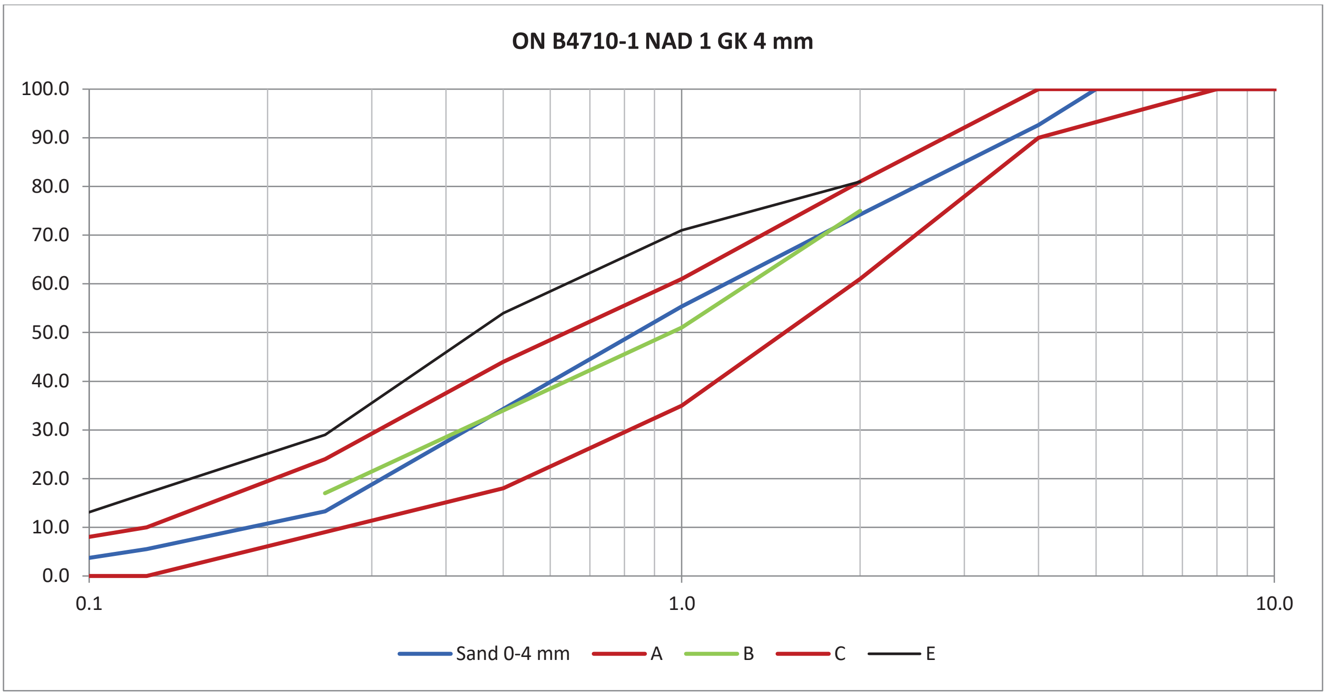
***Additional Processing Equipment** – the initial investment costs contains a Fluidized Bed Sand Dryer with a Gas Burner (instead of a Rotary Drum Dryer with a Heating Oil Burner) which is not only much more environment friendly, but costs wise it only constitutes 35% of the costs with a regular heating oil based rotary drum dryer; the initial investment costs also contain a fully automatized bagging station (for 5kg, 25kg and 1000kg sacks) and an additional flotation based separation module for the TiO_2 bubble-separation.*

***Additional Equipment Refreshing** – all the extraction & hauling equipment will be replaced every 5 years throughout the 31 years of operation life-cycle of the project; all the processing equipment will be replaced every 10 years throughout the project life-cycle*

***Operational Workforce** – the project is designed to operate with a labor workforce of 39 operational (Extraction - 6, Loading – 6, Hauling – 15, Processing – 6, Dispatching – 6, employees) and 28 administrative staff (CEO, CSO, COO, CLO, CFO, Administrative – 3, Shift Leaders – 3, Quality Control – 2, Salesmen – 3, Accounting, Security – 9, IT – 2), although in the 3 years ramp-up period the workforce will be staffed as necessary.*

***Implicit Costs Calculation Data** – ramp-up (80%, 90%, 100%), electricity (0.20 EUR/kWh), diesel (1.50 EUR/l), heating oil (0.65 EUR/l), water (0.01 EUR/m³), gas (0.065 EUR/kWh), flocculant (2.16 EUR/l), testing & compliance (0.25 EUR/ton), big bag (3.75 EUR/bag), 25kg sack (0.13 EUR/sack), moisture of sand (14%), dryer capacity (60 tons/hour), bagging capacity (2500 bags/hour).*

3. ***The preliminary quality assessment*** of the raw Cuci sand collected indicates that the sand product can be processed to obtained a near the optimal granulation curve, simplifying the use of processing equipment and technologies necessary to obtain an in-spec end-product for construction:



- *where A = lower quality limit, B = optimal quality, C = upper quality level, blue line = Thesaur Silica Sand sample*

The final quality assessment will be performed by CDE Ireland in the moment of ordering the processing equipment to fine-tune its components and modules onto the specifics of the gross raw materials sample-collected directly from the various points and elevation levels of the site and to determine the need & amount of attrition cells or other processing modules potentially necessary to obtain all the desired end-products range. Feed material (100kg) will be homogenized and washed at 0.600mm, the remaining <0.600mm material will be washed at 0.063mm and will be attritioned at 75% solids with retention times of 2, 4 and 6 minutes after which it will be washed and dewatered at 0.063mm. PSD and chemical analisys will be performed at various points during testing.

Chemical Analysis			
ICP Analysis	Limit of Detection	XRF Analysis	Limit of Detection
Al	0.01-50%	Al_2O_3	0.01%
Ba	1-10000	BaO	0.01%
Ca	0.01-50%	CaO	0.01%
Cr	0.3-10000	Cr_2O_3	0.01%
Fe	0.002-50%	Fe_2O_3	0.01%
K	0.01-10%	K_2O	0.01%
Mg	0.01-50%	MgO	0.01%
Mn	0.2-100000	MnO	0.01%
Na	0.001-10%	Na_2O	0.01%
P	0.001-1%	P_2O_5	0.01%
S	0.01-10%	SO_3	0.01%
Si	-	SiO_2	0.01%
Sr	0.02-10000	SrO	0.01%
Ti	0.001-10%	TiO_2	0.01%

PSD Analysis
Sieve Size/mm
+4.0
+2.0
+1.0
+0.500
+0.250
+0.125
+0.063
-0.063/Pan