Memorandum:

Subject: 05B .0103 (d), cap on the maximum limit for an individual reclamation factor per acre.

Prepared by David Miller.

Date:

***Note**: After internal discussion, the staff recommends that this technical correction should be held off until the Phase 2 portion of the rule adoption process. Increasing the amount listed in 05B .0103 (d) from $5,000.00 to $15,000 would represent an increase in the financial burden on the permittee, and a financial impact study will have to be performed. Since all the reclamation factors should be reviewed by the Mining Commission, the more appropriate time to make the adjustment to 05B .0103 (d) is during the complete review of the reclamation factors.*

Per NCGS 74-54 (b), the Commission established the reclamation factors.

At the October 16, 1996, Mining Commission meeting, the Commission approved the reclamation factors for Brick Clay Mines. In addition to the reclamation factors for Brick Clay mines the paperwork in the Commission files for this meeting show all other reclamation factors used by the Program. The list of reclamation factors from this meeting is the same as the list of reclamation factors the Program is currently using today. It is assumed that by approving the reclamation factor for Brick Clay Mines, the Commission acknowledged the other factors were acceptable.

Also, in the paperwork from the October 16, 1996, meeting is a copy of the "Mine Reclamation Bond Calculation Worksheet." This "Mine Reclamation Bond Calculation Worksheet" shows that a 2% per year adjustment factor for inflation is to be applied to the sum of the reclamation cost to account for reclamation costs at the end of the life of the mine. The "Mine Reclamation Bond Calculation Worksheet" currently uses simple interest, though compounding interest would be more accurate.

If the Commission were to adjust the reclamation factors today for the 27 years that the reclamation factors were not adjusted using simple interest, the increase to the reclamation factors would be 154% (1+(0.02*27)). If the Commission were to adjust the reclamation factors today for the 27 years the reclamation factors were not adjusted using compound interest (compounding annually), the increase to the reclamation factors would be 170.7%. (See attached table).

Increasing the highest reclamation factor, $5,000, by 170.7% will exceed the maximum as stated in 05B .0103 (d).

The Mining Commission has not approved an increase in the mine reclamation factors for the past 27 years.

SL2017-209 removed renewals from the NC Mining Act of 1971 and stated that all existing and newly issued mining permits are to be issued for the life of the site or for the duration of the lease term. Therefore, review of the reclamation bond is not occurring on a periodic renewal period. During the calculation of the reclamation bond at new issuance or modification, the Mining Program is applying the 2% inflation factor to the cost of reclamation for the entire life of the site, as provided by the applicant, rather than the previously allowed maximum 10-year renewal period.

On the existing list of reclamation factors in use by the Mining Program, the largest reclamation factor i, is $5000.00 / acre. This is for: waste piles (without a liner) and processing areas at phosphate operations and at clay/shale operation; and mine excavation at phosphate, peat, gold, titanium, other undefined operations.

To bring the maximum $5000.00 / acre from 1996 to today:

Using Simple Interest: $5,000*(1+(0.02*27)) = $7,700

Using Compound Interest (annual compounding): $5,000*(1.7069) = $8,534.50

In either case, the maximum $/acre in 05B .0103 (d), is exceeded.

The Mining Program understands there is a wide range of life expectancies on mining operations across industries. However, to stress the importance of updating the reclamation factors, the example below is given for a 25 year operation. The reclamation factors would need to be increased for a total of 52 years. (27 years to current and 25 years expected life.)

Using Simple Interest: $5,000*(1+(0.02*52)) = $10,200

Using Compound Interest (annual compounding): $5,000*(2.8003) = $14,001.64

Year after base	2% adjustment	result		Year after base	2% adjustment	result
1	0.02	1.0200		27	0.02	1.7069
2	0.02	1.0404		28	0.02	1.7410
3	0.02	1.0612		29	0.02	1.7758
4	0.02	1.0824		30	0.02	1.8114
5	0.02	1.1041		31	0.02	1.8476
6	0.02	1.1262		32	0.02	1.8845
7	0.02	1.1487		33	0.02	1.9222
8	0.02	1.1717		34	0.02	1.9607
9	0.02	1.1951		35	0.02	1.9999
10	0.02	1.2190		36	0.02	2.0399
11	0.02	1.2434		37	0.02	2.0807
12	0.02	1.2682		38	0.02	2.1223
13	0.02	1.2936		39	0.02	2.1647
14	0.02	1.3195		40	0.02	2.2080
15	0.02	1.3459		41	0.02	2.2522
16	0.02	1.3728		42	0.02	2.2972
17	0.02	1.4002		43	0.02	2.3432
18	0.02	1.4282		44	0.02	2.3901
19	0.02	1.4568		45	0.02	2.4379
20	0.02	1.4859		46	0.02	2.4866
21	0.02	1.5157		47	0.02	2.5363
22	0.02	1.5460		48	0.02	2.5871
23	0.02	1.5769		49	0.02	2.6388
24	0.02	1.6084		50	0.02	2.6916
25	0.02	1.6406		51	0.02	2.7454
26	0.02	1.6734		52	0.02	2.8003
				53	0.02	2.8563