IS IT TOPSOIL OR OVERBURDEN? CASE STUDY OF A SMALL MINE IN WYOMING[1]

by

George F. Vance and Lowell K. Spackman[2]

Abstract: Recent disputes over the classification of topsoil as overburden have reached the Wyoming Supreme Court. The high court upheld an earlier decision by the Environmental Quality Council that topsoil is overburden according to Wyoming statutes. During the 1999 Wyoming legislative session, bills with amendments to the current statutes failed to reach the floor of the house and senate bodies. The statute amendments would have enhanced the importance of topsoil as a separate material that must be handled in a manner to preserve its integrity for reclamation efforts. Topsoil and subsoil materials from a small gravel mine that was the focus of concerned citizens, Wyoming Department of Environmental Quality, Environmental Quality Council, and the Wyoming Supreme Court were examined to evaluate their suitability for reclamation/revegetation efforts. Soil chemical/physical properties suggested the topsoil and subsoil were suitable as a plant growth media. A greenhouse study using a cool-season and a warm-season grass was conducted to determine the potential for revegetation using the topsoil and subsoil materials as reclamation surface cover. Except for specific materials collected from the gravel/subsoil interface in the native area, revegetation efforts using seed mixtures with the grasses studied would probably be successful.

Additional Key Words: Guidelines, Noncoal Mines, Overburden, Revegetation, Spoil, Subsoil, Topsoil, Wyoming Statutes.

Introduction

Owners of a small, gravel-mining operation were recently ordered to appear before the Wyoming Environmental Quality Council (WEQC), an official administrative committee that resolves issues involving the Wyoming Department of Environmental Quality (WDEQ), for possible violations of the state's small mining rules and regulations (EQC, 1997). The question of topsoil being part of the overburden was heard by the EQC due to the definition of overburden in the Wyoming statutes. The Wyoming Supreme Court (WSC) recently ruled in favor of the EQC, with Justice William Taylor stating that the statutory definition of overburden "could not be more clear". However, Taylor went on to say that the definition "is pivotal in the regulatory scheme governing reclamation efforts in the mining process because topsoil must be separately preserved and managed" (Laramie Boomerang, 1998). His comments suggest that while topsoil must be considered overburden, topsoil should also be dealt with separately from overburden materials.

Wyoming's noncoal small mines are defined as "surface mining operations involving not more than ten thousand (10,000) yards of overburden and ten (10) acres of affected land in any one (1) year" (W.S.§35-11-401(j)). The Wyoming Statutes define overburden as "all of the earth and other materials which lie above the mineral de-

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posit and also means such earth and other materials disturbed from their natural state in the process on mining, or mining from exposed natural deposits." The WDEQ has consistently required separating topsoil from overburden so mine operators can use the highest-quality materials in reclaiming the disturbed areas. Inclusion of topsoil as overburden may limit its use and result in minimal amounts of surface soil removal in the mining operation. Maximum overburden depths for small mines will be discussed further in the Summary and Conclusions section.

The objectives of this study were to determine the chemical and physical properties of samples collected from topsoil piles, subsoil piles and native areas at the small, gravel-mining operation that was the focus of citizen, WDEQ, WEQC, and WSC concerns. A greenhouse study was also conducted using the gravel-mine soil and subsoil materials. Both a warm-season and cool-season grass were seeded in the soil or subsoil materials to evaluate their plant-growth potential. These plant species were selected because they are often used in revegetation of disturbed environments (Munshower, 1994). In addition to field and greenhouse results, we also present changes that should be considered in modifying the Wyoming Statutes for Small Mines.

Materials and Methods

The study site is located east of Casper, WY and is classified as a small gravel mine based on the intent to mine 10 acres or less per year. The site is situated between an unimproved road and a Burlington Northern Railroad right-of-way. Site topography is classified as a floodplain bench that contains sorted gravels. Precipitation in the area averages an annual rate of 12 inches. Site use was mainly for rangeland purposes, with the area grazing conditions considered fair to good.

Boreholes of the permitted area indicated the soil profile depth was within the 0 to 60 inch range specified in a NRCS Soil Survey. An attempt was made by the operators to strip and preserve the upper soil material (A and B horizons) for future reclamation. Subsoil materials below the topsoil and above the gravel bed interface were also stripped and stockpiled separately. A thin lens (~6 inches) of calcareous precipitate existed between the bottom of the soil profile and the gravel. This material was used as a binder by mixing the segregated gravel with a portion of the calcareous material.

During the initial quarry process, topsoil from the area to be mined was stripped and placed in three stockpiles that were labeled Stockpile J, L and M. One subsoil stockpile (labeled Stockpile K) was also created from the remaining material that was removed to expose the calcareous precipitate lens and gravel seam.

Soil samples were collected from the stockpiles and a native area using a bucket auger. Two to three holes were bored on top of the stockpiles, which were spaced across the pile depending upon its size. The depth of samples ranged from 0-8, 8-16, and 16-40 inches. Three boreholes were also sampled on adjacent undisturbed lands that were expected to be mined the following year. Soil samples on these native sites were collected from depths of 0-4, 4-12, 12-36, and 36-66 inches.

Chemical and physical analyses were preformed in the University of Wyoming soil test laboratory (Table 1). Texture was determined using the feel method, coarse fragments by separating the >2mm particles using dry sieving, organic matter (OM) with dry combustion, $CaCO_3$ by titration, pH and electrical conductivity (EC) in saturated paste extracts, and P and N by standard soil fertility tests.

The greenhouse study involved the preparation of four three-inch pots containing each stockpiled and native soil material. A total of 156 pots were prepared with half planted in thickspike wheatgrass (*Agropyron dasystach-yum*), a cool-season grass, and half blue grama (*Bouteloua gracilis*), a warm-season grass.

Table 1. Physical and chemical characteristics of topsoil/subsoil stockpiles and native materials from a small, gravel-mine operation.

Sample Number	Sample ID	Depth (inches)	Texture	Coarse Frag (%)	OM (%)	Paste pH	EC (dS/m)	%$CaCO_3$	PO_4-P (mg/kg)	NO_3-N (mg/kg)
TOPSOIL PILE										
1	J1A	0-8	scl	4.0	0.6	8.0	0.4	0.7	2	1
2	J1B	8-16	scl	2.6	0.9	8.2	0.5	2.8	2	4
3	J1C	16-40	scl	3.0	0.8	8.1	0.4	2.8	4	2
4	J2A	0-8	scl	2.2	1.1	7.9	0.4	0.8	2	3
5	J2B	8-16	scl	3.7	1.6	7.9	0.8	2.1	8	17
6	J2C	16-40	scl	3.8	1.0	8.3	0.4	3.6	4	18
7	J3A	0-8	cl	0.3	1.2	8.3	0.3	0.9	2	3
8	J3B	8-16	sl	2.0	1.2	8.0	0.5	1.1	8	10
9	J3C	16-40	scl	3.3	1.2	8.1	0.4	2.4	4	4
TOPSOIL PILE										
10	L1A	0-8	ls	3.7	0.8	8.1	1.0	1.1	4	7
11	L1B	8-16	ls	1.5	0.4	8.1	0.7	1.1	4	6
12	L1C	16-40	ls	5.3	0.7	8.3	0.4	1.5	2	4
13	L2A	0-8	ls	1.2	0.6	8.1	0.5	1.7	4	1
14	L2B	8-16	sl	15.1	0.7	8.0	0.6	1.9	4	10
15	L2C	16-40	sl	25.9	0.6	8.1	0.6	24.2	4	7
TOPSOIL PILE										
16	M1A	0-8	sl	0.4	0.9	8.0	0.6	0.8	4	3
17	M1B	8-16	sl	2.2	0.9	8.0	0.6	1.2	2	6
18	M1C	16-40	sl	0.7	1.2	8.0	0.5	0.6	2	3
19	M2A	0-8	sl	2.1	1.0	8.0	0.5	1.3	2	3
20	M2B	8-16	sl	2.0	0.9	8.0	0.5	1.6	2	1
2I	M2C	16-40	sl	1.0	1.0	8.I	0.5	1.2	2	2
SUBSOIL PILE										
22	K1A	0-8	scl	10.8	0.4	8.7	0.4	10.3	2	1
23	K1B	8-16	scl	10.6	0.5	8.6	0.5	7.1	2	1
24	K1C	16-40	scl	7.3	0.4	8.7	1.0	9.3	2	0
25	K2A	0-8	scl	4.5	0.7	8.6	0.4	6.8	2	0
26	K2B	8-16	scl	6.2	0.5	8.9	0.4	9.2	2	0
27	K2C	16-40	scl	11.8	0.4	8.7	1.0	9.2	2	1
NATIVE SOILS										
28	B1A	0-4	sl	0.2	1.4	7.6	0.4	NR	6	0
29	B1B	4-12	sl	0.9	1.1	8.0	0.4	1.1	4	0
30	B1C	12-36	sl	0.6	0.6	8.2	0.4	4.1	2	0
31	B1D	36-66	sl	5.7	0.2	8.7	0.9	9.1	2	0
32	B2A	0-4	sl	<0.1	1.4	7.7	0.5	NR	6	0
33	B2B	4-12	sl	0.1	0.9	7.9	0.5	1.9	4	0
34	B2C	12-36	sl	1.4	0.5	8.4	0.5	5.1	2	0
35	B2D	36-66	sl	3.8	0.2	9.2	0.8	8.1	2	0
36	B3A	0-4	sl	0.6	1.6	7.1	0.4	NR	12	1
37	B3B	4-12	sl	0.6	1.2	7.9	0.4	NR	6	0
38	B3C	12-36	sl	3.1	0.5	8.2	3.4	8.6	2	0
39	B3D	36-66	sl	0.4	0.3	8.3	7.3	7.8	2	0

scl = sandy clay loam, cl = clay loam, sl = sandy loam, ls = loamy sand,:NR = not reactive

Results and Discussion

Topsoil and Subsoil Characterization

Results of the chemical and physical analysis of topsoil and subsoil stockpiles (Table 1) suggest the materials are suitable for use as a surface cover. Based on WDEQ-LQD Guideline No. 1 for topsoil suitability (Table 2), all stockpiled materials have pH, EC, texture and coarse fragments that are considered suitable or marginally suitable. Except for sample L2C, which has a high %coarse fragment and $\%CaCO_3$ contents, the rest of the topsoil stockpiled materials appear to be well suited as materials that can be used for reclamation purposes. Subsoil stockpiled materials had higher pH levels and generally greater contents of $CaCO_3$ than the stockpiled topsoil. The stockpiled subsoil materials were classified as marginally suitable because of their high pH, but the high $\%CaCO_3$ may also limit these materials for revegetation purposes.

Native soil samples had consistent physical and chemical characteristics based on the depth of sampling. Surface horizons (0-4 inch depth) were highest in OM and phosphorus, with the lowest values for coarse fragments, pH, EC and $\%CaCO_3$. Subsoil materials collected from the 36-66 inch depth were generally the highest in coarse fragments, pH, EC, and $\%CaCO_3$, and lowest in OM and phosphorus. The high pH and $\%CaCO_3$ may also limit the revegetation potential of these deeper subsoil materials. Although this material was not analyzed, calcareous materials from the gravel/subsoil interface would be expected to have high salt contents, high pH levels and potentially high %coarse fragments that would impede the growth of most revegetation plant species.

It would be expected that when topsoils and/or subsoils were stockpiled, that varied amounts of materials from the different depths would become mixed. Examination of samples from topsoil pile L suggests that significant amounts of gravel (%coarse fragments) were inadvertently combined with topsoil materials. For example, samples L2B and L2C have distinctively high %coarse fragment contents, and L2C has the highest $\%CaCO_3$ of all the samples evaluated in this study.

Greenhouse Study

An illustrative view of the greenhouse study is shown in Figure 1. Once the grasses germinated, the plants were watered on a biweekly basis for 3 months. Pots were randomly distributed to prevent selective growth due to light, temperature and watering conditions. Although field variables would be expected to vary from those encountered in the greenhouse, including temperature, moisture, light, and wind conditions, the study provides information on the general soil properties that could potentially impact the revegetation of the small mine using the salvaged soil and subsoil materials.

Table 2. Wyoming Department of Environmental Quality criteria for topsoil (or topsoil substitutes) and overburden suitability. From WDEQ-LQD Guideline No. 1 (1983)

Parameter	Suitable	Marginally-Suitable	Unsuitable
pH	5.5 - 8.5	5.9 - 5.5 8.5 - 9.0	<5.0 >9.0
EC (dS/m)	0 - 8	8 - 12	>12
Texture		clay, silty clay, sand	
Coarse Fragments (%)	<25%	25 - 35%	>35%

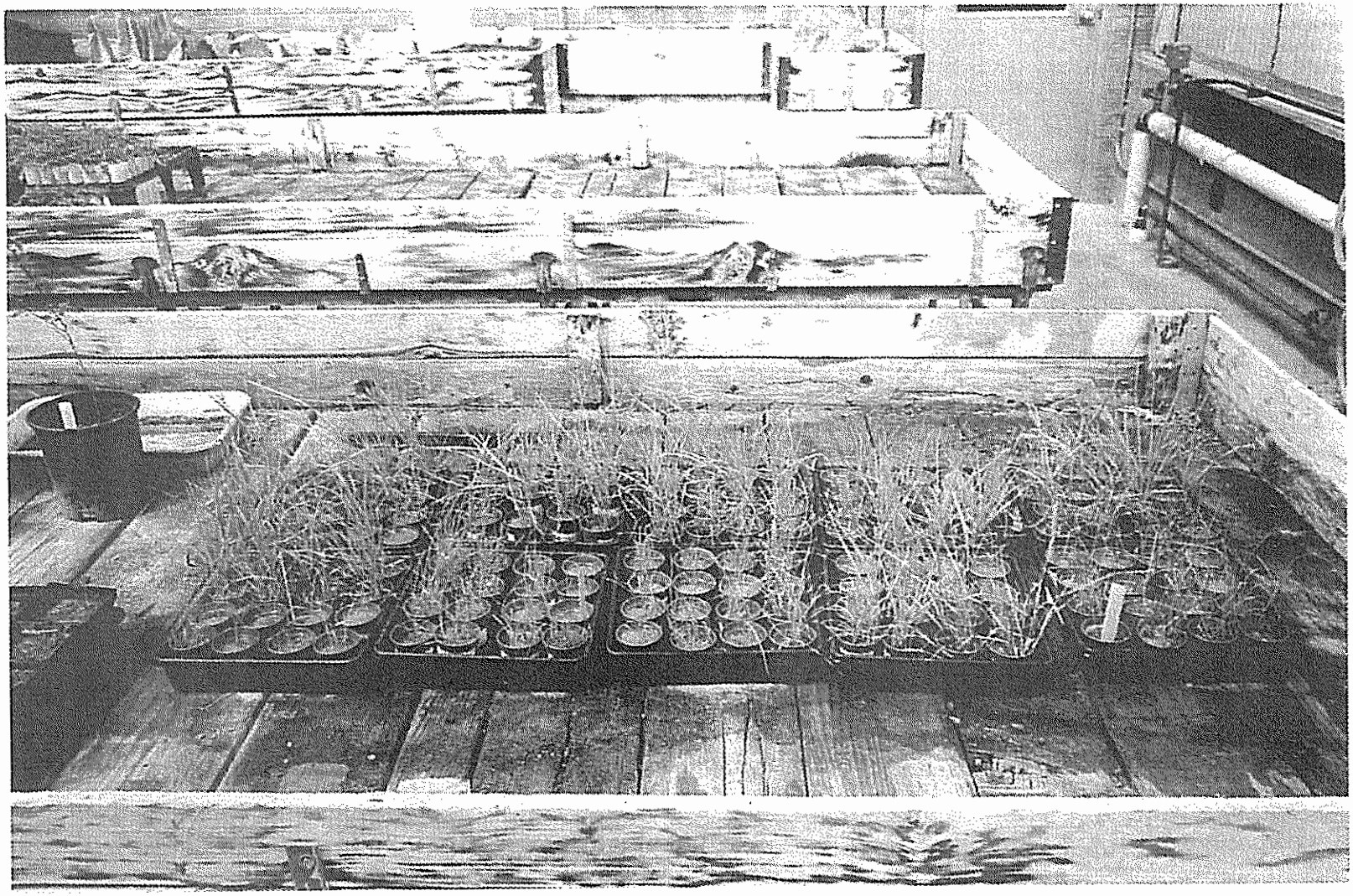

FIGURE 1. View of the Greenhouse Experiment that Examined the Growth of Thickspick Wheatgrass and Blue Grama in Stockpiled Soils and Subsoil and Native Soil Materials from a Small Gravel Mine Operation in Wyoming.

Thickspike wheatgrass, a cool-season grass, resulted in better overall growth when compared to blue grama, a warm-season grass. Figure 2 through 5 indicate the difference in biomass production between the two plant species in the different soil/subsoil materials. It should be noted, however, that both plant species did grow and would be useful for revegetation purposes.

Plant growth in soil samples collected from stockpile J is shown in Figure 2. For thickspick wheatgrass, the best growth was recorded from samples collected in borehole 2 represented by samples J2A,B,C, although good plant growth was also found in boreholes 1 and 3 (J1A,B,C and J3A,B,C) (Figure 2). Blue grama growth appeared to be impeded in samples from borehole 3, but grew well in borehole 2 and 3 samples (Figure 2).

For stockpile L samples, thickspike wheatgrass grew well in soils collected from both boreholes (L1A,B,C and L2A,B,C) (Figure 3). Blue grama, however, grew best in the surface soils collected from both boreholes, with a general decrease in biomass production with depth (Figure 3). Borehole 1 (L1A,B,C) materials resulted in better plant growth for blue grama than did borehole 2 (L2A,B,C) soils.

Thickspike wheatgrass also grew well in stockpile M soil materials (M1A,B,C and M2A,B,C) (Figure 4). As with the other topsoil stockpile materials, blue grama growth was less than that of thickspike wheatgrass and showed little variation in the overall biomass production for the different soils tested (Figure 4).

Stockpile K was the only stored subsoil material sampled. With thickspick wheatgrass there was an evident trend in better plant growth with increasing depth of the subsoil material collected (Figure 5). A different trend was noted with blue grama - better growth was found with subsoil samples collected from borehole 2 (K2A,B,C) (Figure 5).

Native soils were also better growth media for thickspick wheat grass than for blue grama (Figure 6). While little difference was noted with plant productivity for blue grama from topsoil and subsoil samples B1A,B,C, B2A,B,C, and B3A,B,C, samples collected from the bottom of the profile containing materials from the calcareous gravel/subsoil interface reduced blue grama germination and growth. From the three borehole samples collected in the native area it was evident that topsoil samples resulted in the greatest thickspike wheatgrass production. Interesting among the latter results is that samples from the deepest sample depth (samples B1D, B2D and B3D) resulted in relatively good growth of thickspick wheatgrass in two of the three materials.

Summary and Conclusions

Results of this study suggest that soil materials collected from the gravel mine topsoil and subsoil stockpiles are capable of supporting the growth of the two plant species tested, and that plants generally grew best in the topsoil material. The study also demonstrates that lower biomass production resulted from blue grama as compared to thickspick wheatgrass. Inferences from this study suggest the Wyoming statutes should be changed to accommodate and differentiate the distinct properties of topsoils, subsoils and overburden (e.g., spoil) and their relationship to reclamation efforts to restore the environmental quality of disturbed landscapes.

Wyoming Statutes state that "Overburden means all of the earth and other materials which lie above the mineral deposit and also means such earth and other materials disturbed from their natural state in the process of mining, or mining from exposed natural deposits." A major problem associated with this definition is based on the original description of a small mine. For example, in a 10 acre area, 10,000 yards of overburden is the amount of material collect from the surface to a depth of approximately 7½

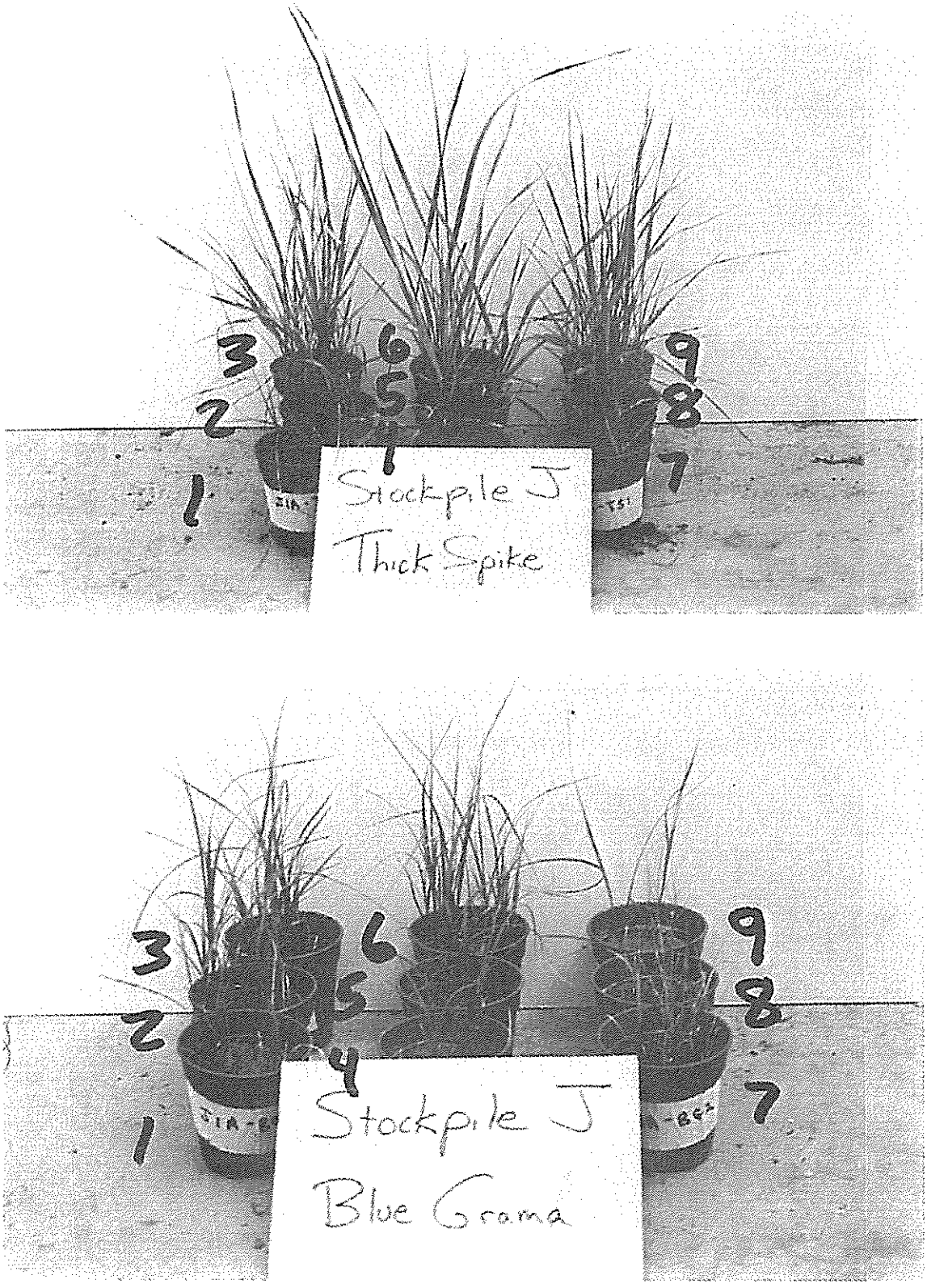

FIGURE 2. Growth of Thickspick Wheatgrass and Blue Grama in Stockpile J Soil Materials. Refer to Table 1 for information on soil characteristics.

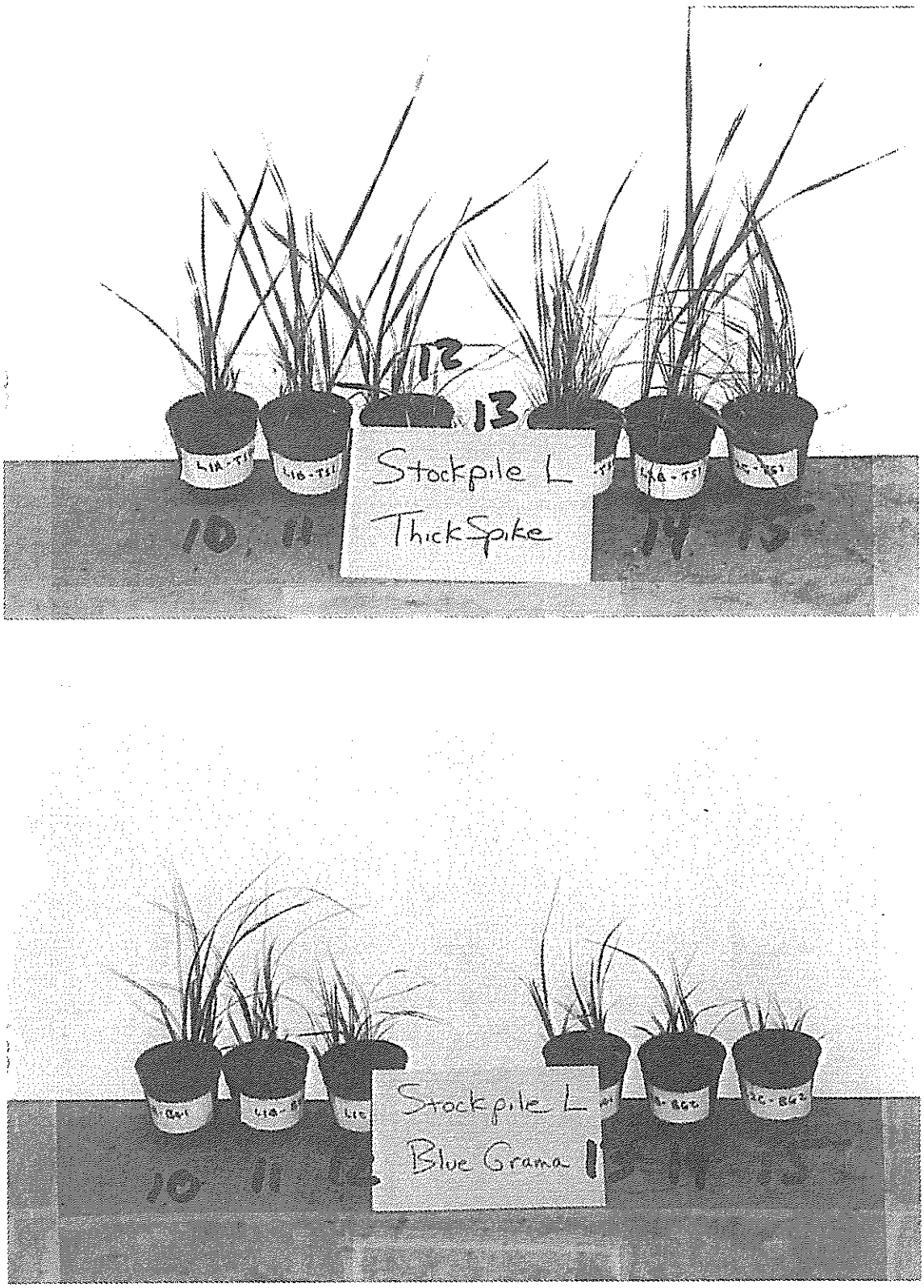

FIGURE 3. Growth of Thickspick Wheatgrass and Blue Grama in Stockpile L Soil Materials. Refer to Table 1 for information on soil characteristics.

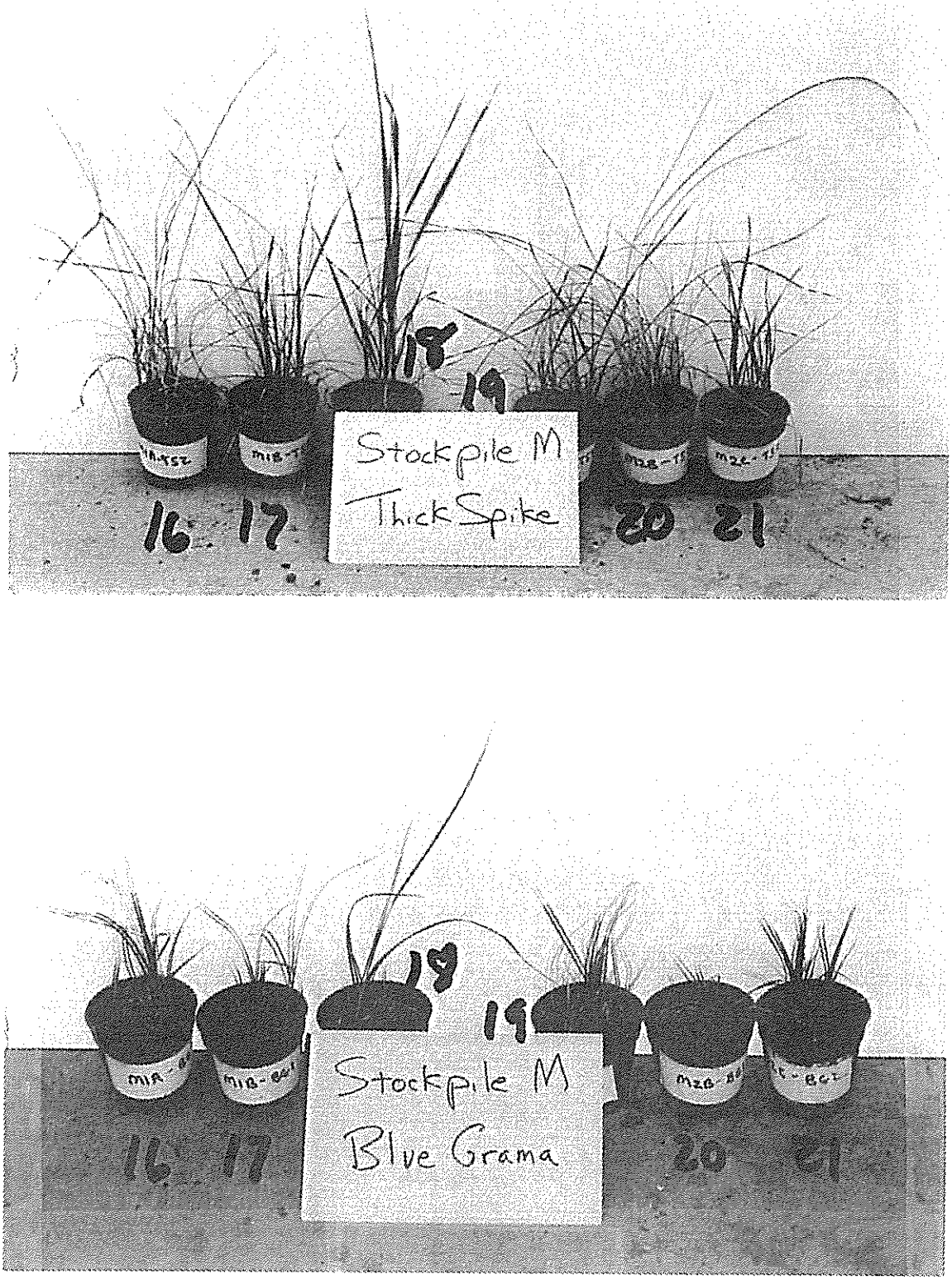

FIGURE 4. Growth of Thickspick Wheatgrass and Blue Grama in Stockpile M Soil Materials. Refer to Table 1 for information on soil characteristics.

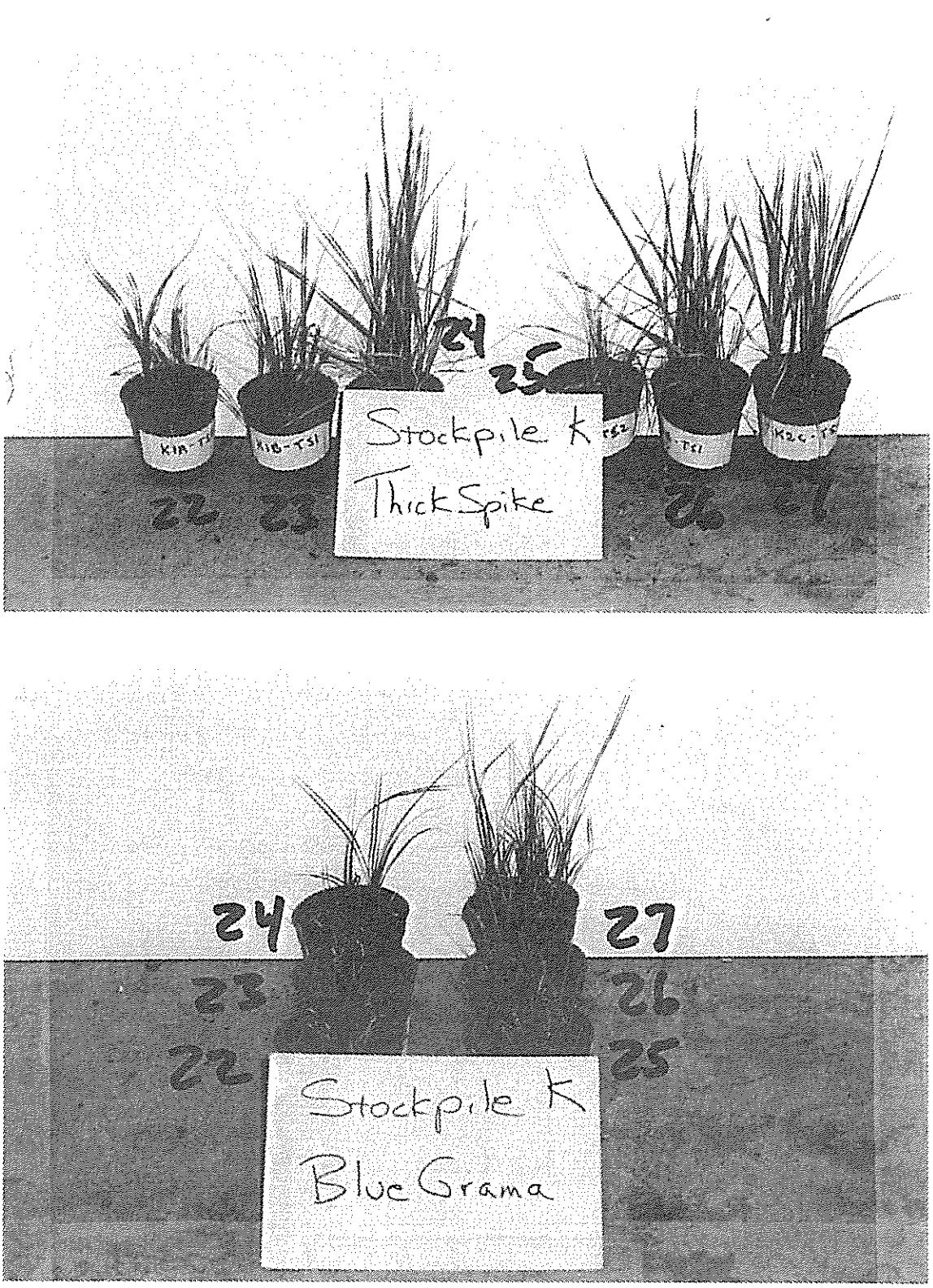

FIGURE 5. Growth of Thickspick Wheatgrass and Blue Grama in Stockpile K Subsoil Materials. Refer to Table 1 for information on soil characteristics.

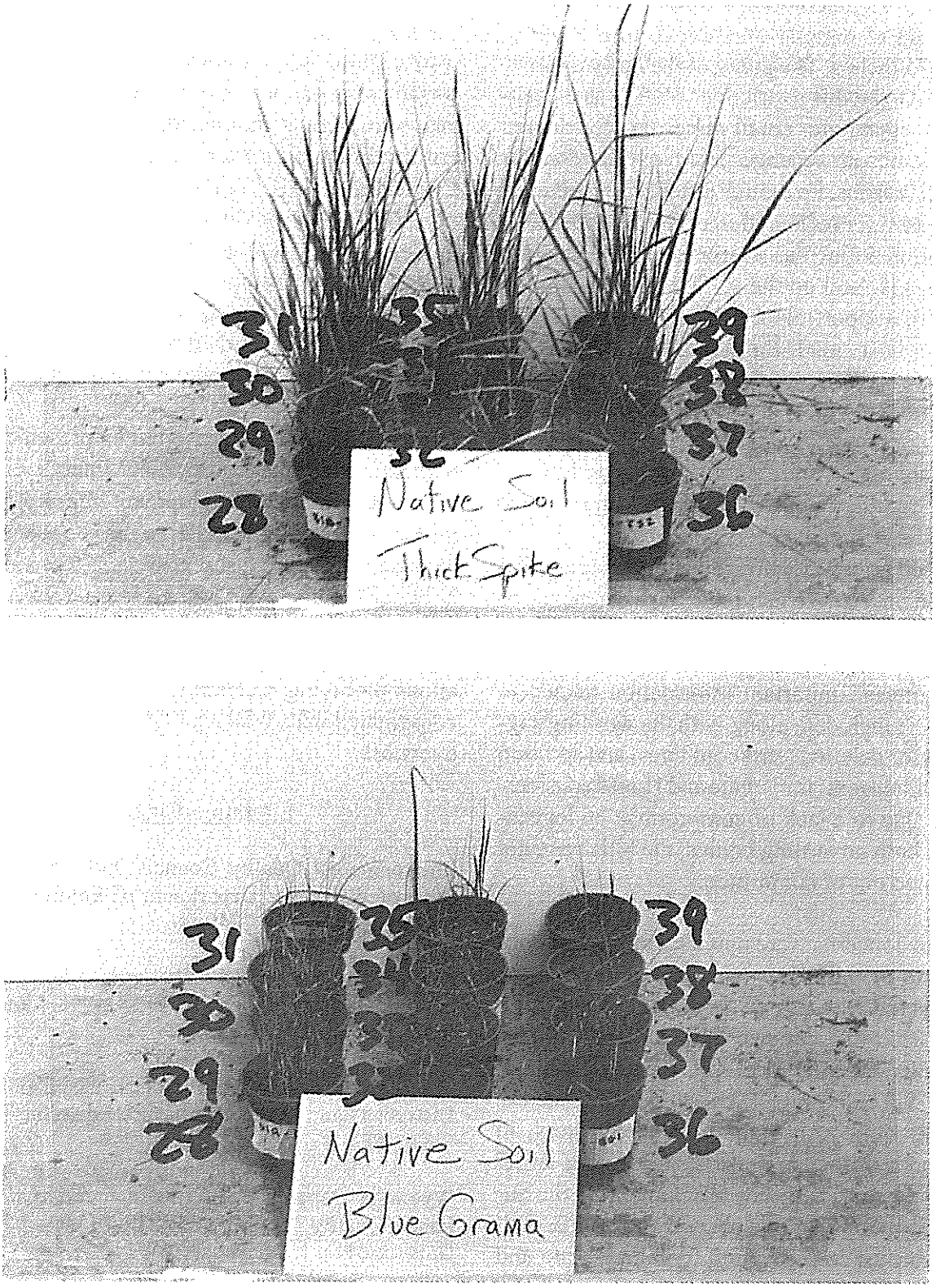

FIGURE 6. Growth of Thickspick Wheatgrass and Blue Grama in Native Soil Materials. Refer to Table 1 for information on soil characteristics.

inches. Even if only 1 acre is considered for a small mining operation, the law still only allows operators to remove overburden to a depth of about 75 inches. The intent of the law was probably not to be this restrictive. WDEQ as the regulatory agency for small mines has considered topsoil/subsoil separate from overburden for several reasons, including: 1) topsoil is salvaged and reused for reclamation of the disturbed site, 2) spoil is defined as overburden, whereas topsoil means "soil on the surface prior to mining that will support plant life", and 3) distinctive references are made throughout the statutes that refer to overburden, topsoil and subsoil as separate entities.

Suggested Modifications to Wyoming Statutes Governing Small Mines

Attached is the Wyoming Senate and House Bill that did not receive favorable recommendations in the respective legislative Joint Minerals, Business and Economic Development Interim Committees. Important information related to the bill is included, along with the wording suggested for deletion (strikeout lines) and addition (underlined text) for Senate and House consideration. Due to a lack of compromise by legislators in both governing bodies, the bills were not advanced out of committee.

Several concerns were noted by individuals opposed to the bills, however, one of the primary reasons the bills failed was due to the inclusion of a forty (40) acre size limit for small mines. Currently, ten (10) acre limits are used for small mines, but enlarging the area to be designated as a small mine concerned some legislators, in part, because of the need for regulating larger mines by more rigorous standards. It is the author's opinion that this change doomed the bill from further consideration by both Senate and House bodies. These issues are separate concerns and should be addressed independently.

Separating topsoil from overburden needs to be addressed in the Wyoming Statutes for Small Mines. As noted in the previous section, an area the size of current small mining designation would allow only the removal of 7½ inches of surface material per year. Clearly this does not take into account the fact that topsoils will be utilized in the future for reclamation purposes. Currently, WDEQ Guidelines prevent small mine operators from handling topsoil and overburden as one material. Operators are required to present plans on how topsoil/subsoil will be salvaged and utilized in revegetation efforts. Bond release is dependent on completing reclamation of the small mine disturbance area.

In conclusion, we suggest a bill be presented to both the Senate and House Joint Minerals, Business and Economic Development Interim Committees in the 2000 legislative session that only considers topsoil/subsoil criteria. There should be adequate protection of this material for use in successful reclamation programs proposed for each small mine. Future legislative considerations involving reclamation efforts should be coordinated with WDEQ, EQC, and small mine operators.

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1999 State of Wyoming
SENATE FILE NO. SF0074 and
HOUSE BILL NO. HB0099

Sponsored by: Joint Minerals, Business and Economic Development Interim Committee

A BILL
for

AN ACT relating to public health and safety; modifying restrictions and other provisions relating to ten acre exempted mining operations; modifying restrictions on other small mine permits; modifying definition of overburden for land quality purposes; providing for comment and informal meeting on noncoal permits; clarifying provisions; making conforming amendments; reorganizing provisions; specifying legislative intent; and providing for an effective date.

Be It Enacted by the Legislature of the State of Wyoming:

Section 1. W.S. 35-11-438 is created to read:

35-11-438. Public comment on noncoal permits.

The department shall promulgate rules to provide for public notice and opportunity for comment on noncoal permits. The rules shall establish a procedure by which the director may hold an informal meeting regarding a permit if requested by an affected person. The procedures established for an informal meeting shall not conflict with any provision of this act.

Section 2. W.S. 24-9-101, 35-11-103(e)(iv), (vi), (viii), (x), (xv), (xvi), (xx)(B) and (f)(iv), 35-11-401(j) and by creating new subsections (o) and (p) and 35-11-411(a)(ii)(C) are amended to read:

24-9-101. Petition; hearing; appointment of viewers and appraisers.

Except as limited by W.S. 35-11-401(o)(vi), any person whose land has no outlet to, nor connection with a public road, may apply in writing to the board of county commissioners of his county for a private road leading from his premises to some convenient public road. At least sixty (60) days prior to applying to the board, the applicant shall give notice in writing to the owner, resident agent or occupant of all lands over which the private road is applied for, of his intent to apply for a private road. If the owner of the land is a nonresident, and there is no resident agent upon which personal service can be had, then the notice may be published once a week for three (3) weeks in a newspaper published in the county. The last publication shall be at least thirty (30) days before the hearing of the application. At the hearing, all parties interested may appear and be heard by the board as to the necessity of the road and all matters pertaining thereto. Upon the hearing of the application, whether the owner or others interested appear or not, if the board finds that the applicant has complied with the law and that the private road is necessary, the board shall appoint three (3) disinterested freeholders and electors of the county, as viewers and appraisers, and shall cause an order to be issued directing them to meet on a day named in the order on the proposed road, and view and locate a private road according to the application therefor, and to assess damages to be sustained thereby. If for any reason the viewers and appraisers are unable to meet at the time set by the board to view the proposed road, they may fix some other date, but shall give notice in writing to the owner, resident agent or occupant of the lands over which the road is proposed to be laid of the time and place where the viewers will meet, at least ten (10) days before viewing the road, at which time and place all persons interested may appear and be heard by the viewers. Before entering upon their duties the viewers shall take and subscribe to an oath that they will faithfully and impartially perform their duties under their appointment as viewers and appraisers. The viewers shall then proceed to

locate and mark out a private road in accordance with the application or in such other manner and location they deem appropriate, provided the location of the road shall not be marked out to cross the lands of any person whose lands were not described in the application and who was not given notice of the application. The proposed road shall not exceed thirty (30) feet in width from a certain point on the premises of the applicant to some certain point on the public road, and shall be located so as to do the least possible damage to the lands through which the private road is located. The viewers shall also at the same time assess the damages sustained by the owner over which the road is to be established and make full and true returns, with a plat of the road to the board of county commissioners.

35-11-103. Definitions.

(e) Specific definitions for land quality:

(iv) "Overburden" means ~~all of the earth and other materials which lie above the mineral deposit and also means such earth and other materials disturbed from their natural state in the process of mining, or mining from exposed natural deposits~~ material of any nature, consolidated or unconsolidated, that overlies a mineral deposit, excluding topsoil;

(vi) "Pit" means a tract of land from which overburden or topsoil has been or is being removed for the purpose of surface mining or mining from an exposed natural deposit;

(viii) "Operation" means all of the activities, equipment, premises, facilities, structures, roads, rights-of-way, waste and refuse areas excluding uranium mill tailings and mill facilities, within the Nuclear Regulatory Commission license area, storage and processing areas, and shipping areas used in the process of excavating or removing overburden, topsoil and minerals from the affected land or for removing overburden or topsoil for the purpose of determining the location, quality or quantity of a natural mineral deposit or for the reclamation of affected lands;

(x) "Surface mining" means the mining of minerals by removing the overburden or topsoil lying above natural deposits thereof and mining directly from the natural deposits thereby exposed, including strip, open pit, dredging, quarrying, surface leaching, and related activities;

(xv) "Exploration by dozing" means the removal of overburden or topsoil by trenching with a bulldozer or other earth moving equipment to expose possible indications of mineralization;

(xvi) "Affected land" means the area of land from which overburden or topsoil is removed, or upon which overburden, topsoil, development waste rock or refuse is deposited, or both, including access roads, haul roads, mineral stockpiles, mill tailings excluding uranium mill tailings, and mill facilities, within the Nuclear Regulatory Commission license area, impoundment basins excluding uranium mill tailings impoundments, and all other lands whose natural state has been or will be disturbed as a result of the operations;

(xx) "Surface coal mining operation" means:

(B) The areas upon which these activities occur or where these activities disturb the land surface. These areas shall also include any adjacent land the use of which is incidental to any of these activities, all lands affected by the construction of new roads or the improvement or use of existing roads to gain access to the site of these activities and for haulage, and excavations, workings, impoundments, dams, ventilation shafts, entry ways, refuse banks, dumps, stockpiles, overburden piles, topsoil piles, spoil banks, culm banks, tailings, holes or depressions, repair areas, storage areas, processing areas,

shipping areas and other areas upon which are sited structures, facilities or other property or materials on the surface, resulting from or incident to these activities.

(f) Specific definitions applying to in situ mining are:

(iv) "In situ mining" means a method of in-place surface mining in which limited quantities of overburden or topsoil are disturbed to install a conduit or well and the mineral is mined by injecting or recovering a liquid, solid, sludge or gas that causes the leaching, dissolution, gasification, liquefaction or extraction of the mineral. In situ mining does not include the primary or enhanced recovery of naturally occurring oil and gas or any related process regulated by the Wyoming oil and gas conservation commission;

35-11-401. Compliance generally; exceptions.

(j) The council, upon recommendation from the advisory board through the administrator and director, may modify or suspend certain requirements of W.S. 35-11-406(a), (b), (d), (f) and (g) by rules and regulations, for surface mining operations involving not more than ~~ten thousand (10,000)~~ thirty thousand (30,000) cubic yards of overburden and ~~ten (10)~~ forty (40) acres of ~~affected~~ land from which mined minerals are removed in any one (1) year, if the application requirements insure reclamation in accordance with the purposes of this act.

(o) After July 1, 1999, surface mining operations for the removal of nonmetallic materials except coal from an area of ten (10) acres or less from which mined minerals are removed shall be exempted from the provisions of this article other than the provisions of this subsection. Prior to commencing operations pursuant to an exemption under this subsection the operator shall notify the administrator and receive confirmation from the administrator that the operation qualifies for the exemption. The exemption and operations pursuant to the exemption shall be subject to the following:

(i) Notification to the administrator shall be made in writing on forms supplied by the administrator and shall include:

(A) Written permission for the mining operations, access haul road and reclamation from the owner of the surface;

(B) A legal description and United States geological survey map of the location of the land affected;

(C) A bond to insure reclamation in accordance with the purposes of this act, in the amount of one thousand dollars ($1,000.00) per acre of affected land;

(D) Proof of compliance with any applicable county land use plan or zoning resolution.

(ii) Upon submission of a complete notification, the administrator shall within thirty (30) days advise the applicant in writing as to whether the operation meets the requirements for an exemption. The exemption shall be denied if the operation fails to meet the requirements of this subsection;

(iii) Within ninety (90) days after mining operations commence, the administrator may require the operator to post an additional bond of one hundred dollars ($100.00) per acre of affected land if he determines that such amount is necessary to insure reclamation. The operator shall post the additional bond not later than thirty (30) days after receipt of such notification;

(iv) An operator conducting operations pursuant to this subsection shall file an annual report with the administrator on or within thirty (30) days prior to the anniversary date of the commencement date of initial operation. The report shall contain:

(A) The name and address of the operator;

(B) The location of the mining operations;

(C) The number of acres of affected lands and acres of land from which mined minerals have been removed at the conclusion of the past year's operation;

(D) The number of acres of land that have been reclaimed during the past year;

(E) The number of cubic yards of overburden, topsoil or mined mineral removed;

(F) The expected remaining life of the mining operation.

(v) After the mining operations have ceased or within thirty (30) days after abandonment of the mining operation, the operator shall notify the administrator of such fact and commence reclamation and restoration in compliance with the rules and regulations of the land quality division of the department of environmental quality. Immediate reclamation will not be required if the landowner advises the department in writing of his intent to further utilize the product of the mine, and if he assumes the obligation of reclamation;

(vi) No operator shall establish a private road pursuant to W.S. 24-9-101 for any purpose related to mining operations under this subsection;

(vii) The administrator and director may promulgate rules to implement this subsection in accordance with the provisions of subsection (f) of this section. The rules for reclamation shall at all times be reasonable;

(viii) Mine operations shall be subject to the provisions of any applicable county land use plan or zoning resolution to the extent authorized under W.S. 18-5-201 through 18-5-207.

(p) Surface mining operations in existence prior to July 1, 1999, for the removal of sand, gravel, scoria, limestone, dolomite, shale, ballast or feldspar from an area of ten (10) acres or less of affected land, which were exempted from the provisions of this article pursuant to paragraph (e)(vi) of this section prior to its repeal, shall not be subject to the provisions of subsection (o) of this section other than (o) (i), (iii), (iv), (v), (vii) and (viii).

35-11-411. Annual report.

(a) An operator shall file an annual report with the administrator on or within thirty (30) days prior to the anniversary date of each permit. The report shall include:

(ii) A report in such detail as the administrator shall require supplemented with maps, cross sections, aerial photographs, photographs, or other material indicating:

(C) The extent to which expectations and predictions made in the original or any previous reports have been fulfilled, and any deviation therefrom, including but not limited to the quantity of overburden removed, the quantity of topsoil removed, the quantity of minerals removed, the number of acres of land from which mined minerals have been removed and the number of acres affected.

Section 3. W.S. 35-11-401(e)(vi) through (ix) and (k) is repealed.

Section 4. It is the intent of the legislature to maintain county land use planning and zoning authority under W.S. 18-5-201 through 18-5-207, as interpreted by the Wyoming Supreme Court in the cases of River Springs Limited Liability Company v. Board of County Commissioners of the County of Teton, 899 P.2d 1329 (1995) and Becho, Inc. v. Board of County Commissioners of Teton County, 899 P.2d 1329 (1995), and the provisions of this act shall be construed to that end.

Section 5. This act is effective July 1, 1999.

SF0074 AND HB0099 Were Not Approved By Either Senate Or House Committees!