West Virginia Surface Mining & Reclamation Association's

Green Lands

QUARTERLY
FALL 1978

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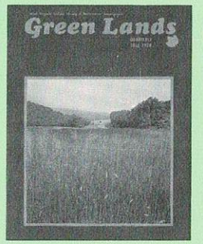

OUR COVER

The Davis Trucking Company is well known in northeastern West Virginia for responsible reclamation. This issue's cover exemplifies that work. For a fuller account of Davis's work, see the article on page 8.

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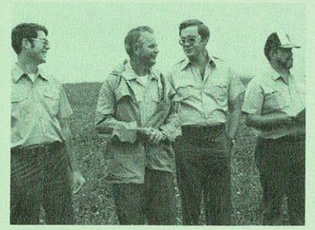

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EDITORIAL

The Missionary Complex

Much has been made of West Virginia's "hostile" attitude toward "outsiders". Spokesmen on every point of the political spectrum have outlined, in very specific and adamant terms, just what and how West Virginians think. The surface mining controversy of the last decade may be taken as a fair representative example of this practice. Advocates on every side of this multi-faceted issue have railed against outside influence, whether it comes from land holding companies, environmentalists, or from federal government.

We hold that West Virginians, generally, are not anti-outsider. What fosters resentment, we believe, is missionary thinking. Like natives everywhere, West Virginians dislike being told how to conduct their lives, whether that direction comes from outside, or within the State's borders.

It would seem to follow naturally that a West Virginian would resent being told what he thinks by reading it in a newspaper. We should think it obvious that the people of this State do not speak with one voice. Therefore, we cannot understand how a petition with 500 or even 1000 signatures can presume to speak for nearly 2 million citizens.

The coal industry, whatever its real or imagined transgressions, has shown the forthrightness to identify itself when it speaks to an issue. Industry spokesmen are designated as such. No pretense is made to speak for some vague body of West Virginia citizenry.

Anti-industry elements, on the other hand, have cloaked themselves in popular catch phrases. Most, through their various titles, assume the spokes position for citizens, or environmentalism, or else proclaim themselves to be the saviors of some particular or general entity. Though their motives may be pure, this is not an honest approach.

The coal industry does not speak for the people of this State and neither do missionary pressure groups.

Industry spokesmen, throughout the tedious process of federal regulatory implementation, have stood up and said, in effect, "We support the West Virginia regulatory program as it exists today, and believe that further regulation would place an unfair and unnecessary burden upon our livelihood."

Can West Virginia's missionaries muster the courage to stand at the podium of a federal public hearing and state categorically what they have admitted privately? If so, we suggest the following phraseology. "Having failed repeatedly in attempts to have this industry abolished outright, we now seek and support any efforts which will have the effect of regulating it out of existence."

In keeping with its stated purpose to allow a healthy coal industry to operate within a healthy environment, we would suggest to the federal government that it turn a deaf ear to any faction of the coal industry which advocates no regulation, and likewise ignore those who would abolish the industry altogether.

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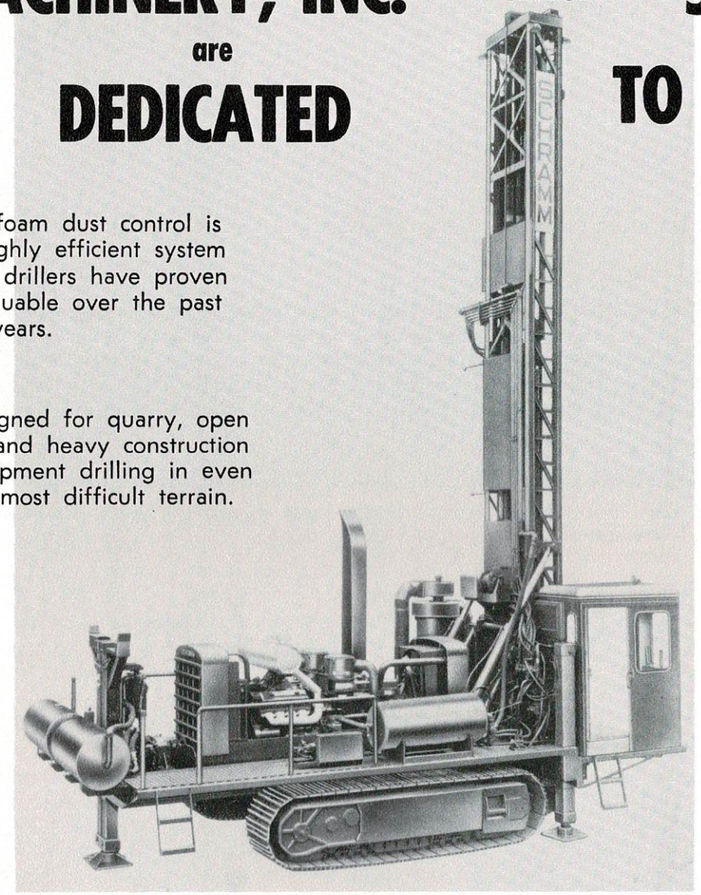

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This is how 200 acres of Tucker County looked before Davis Trucking began operations. Scenes like this are now minimal and soon will be totally eradicated.

The Pressure Was On

The surface mining industry in West Virginia has long since learned to cope with pressure.

Operating in an environmentally conscious state, under an ever thickening blanket of government regulation, has taught Mountain State surface miners how to perform in the spotlight. For some however, that spotlight comes with hot seat attached.

Davis Trucking Company is a case in point. Davis holds six active permits in the Pendleton Run watershed, totaling 236 acres, and most of them lie adjacent to Blackwater Falls State Park, one of West Virginia's most prominent tourist attractions.

There wasn't too much controversy over the prospect of mining this area, since most of it had been previously mined and poorly reclaimed. However, state parks in West Virginia are cared for by the same agency (Department of Natural Resources) which oversees surface mining. So it's a safe bet that anyone who mines and reclaims such an area had better do it right.

Carl Del Signore and his Davis Trucking Company have been equal to the task. The first permit, obtained by the company in 1972, has been mined, reclaimed, and released. Superintendent John Geroski and Reclamation Manager Steve Shaffer practice concurrent reclamation on the other five permits, so it isn't difficult to see the amazing progress which has been made.

Pendleton Run has a history of mining coal which dates back to the mid 1880's, when the mineral was first discovered there. Within 20 years, deep mining was in full swing, and by the 1940's, surface mining had been introduced.

By the time Davis Trucking became involved in the early 1970's, the area was honeycombed with abandoned deep mines, and about 200 acres has been surface mined without, by today's stringent standards, proper reclamation.

"The results of this project have exceeded our expectations," said Property Manager Don Cussins. "We're very proud of the work we've done here." Superintendent Geroski agrees. "From the air or from the highway, our finished product can't be distinguished from farm land," he stated.

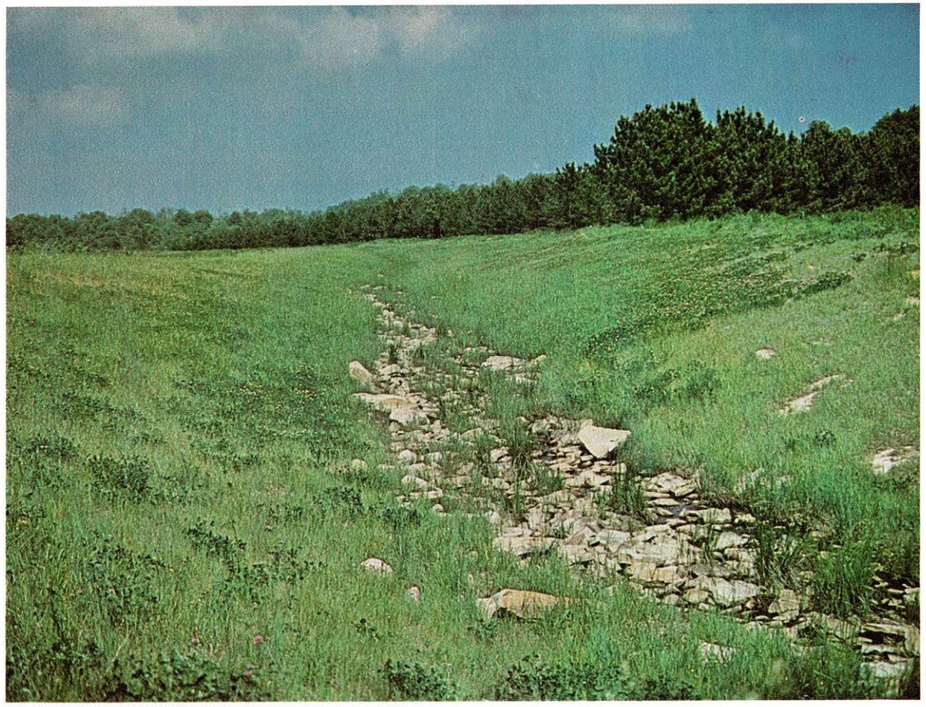
Blackwater Falls has, of course, drawn its own benefits. The area adjacent to the park has been converted from a "moonscape" to a gently rolling landscape. The water quality of Pendleton Run has been greatly improved. In the near future, a high wall presently visible from the park's swimming facility will be eliminated.

Fortunately for Blackwater Falls State Park, these permits were issued to Davis Trucking before the promulgation of federal and state regulations which state in part; "no surface mining operations shall be approved within three hundred feet of any public building, school, church, community or institutional building or public park. ."

The work of Carl DelSignore and Davis Trucking Co., Inc. serves as an outstanding example of the potential harmful effects of over regulation. Under regulations currently in effect, these permits would not have been issued and the area adjacent to the park would still be a moonscape.

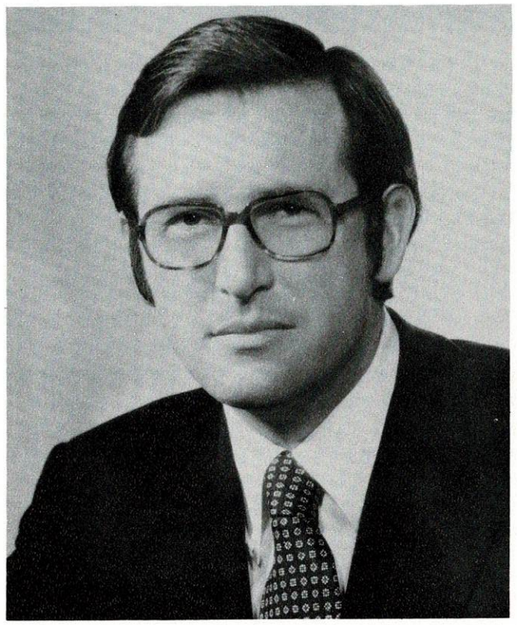
Supervisor John Geroski shows where his operation is headed as Association Vice-President Bill Raney looks on. This area has been revegetated by Davis Trucking. In the background is Blackwater Falls State Park.

These shots were taken in the area immediately adjacent to Blackwater Falls State Park. When the operation is completed, the area may be donated to the park as a recreational annex.



Davis Trucking did extensive drainage work to clean up Pendleton Run. This scene illustrates the best points of rock channeling and revegetation.

The Davis Trucking touch is apparent on surface operations throughout the area. This operation is not adjacent to the park, but the same care has been taken to provide complete reclamation.



Governor Rockefeller

Excerpts

West Virginia's Governor John D. Rockefeller IV spoke before the 1st Annual Meeting of the Mining and Reclamation Council, just after he was named to chair the President's Commission on the Coal Industry. Following are excerpts from those remarks.

Coal is 26 per cent of our state economy in West Virginia, so we naturally have a vested interest in the strength, profitability and stability of the coal industry.

It means jobs for our people, in a state where our unemployment level is below the national average; revenue to help us provide needed government services; and a solid base upon which we can build much in the way of long-term economic and community development.

As you know, President Carter has placed emphasis on coal playing a major role in meeting the nation's energy needs by 1985. I have difficulty finding anyone with any knowledge at all about the energy situation who can disagree with the President's conclusion on that count. There are those, to be sure, who question whether the administration's increased production goals can be reached. I'm optimistic we can at least come close.

But whatever the level, increased production, of course, will have a substantial impact upon the coal-producing regions of the country. More production means more jobs. More jobs means more workers. More workers means more families, more homes to be built, more recreational facilities, more teachers and doctors, more schools, better roads, more public services . . . a real challenge for anyone in government who must plan well into the future. But quite frankly, if one has to have a problem, that's the kind of problem this governor likes to have.

This increased reliance on coal, however, is not something we can carry out blindly, without careful planning, or — quite frankly — without addressing many of the problems that exist. Problems that are real. Problems which face not only government, but most especially management and the miners themselves.

It was with this in mind, I'm sure, that the President on May 26th in Charleston, announced establishment of the President's Commission on the Coal Industry, which I will be privileged to chair.

The Commission itself will consist of five voting members: a representative from management, a representative from labor, and three members from the general public; and eight non-voting members — three from the House of Representatives, three from the U.S. Senate, plus the Secretary of Labor and the Secretary of Energy.

We will take a close look at labor-management relations, at collective bargaining and at grievance procedures. It's no news to you that the recent coal strike had a serious effect on the industry and on the economy. The worst thing we could do at this point is say, "Well,

the coal strike's over," . . . and not to think about the problems that caused it in the first place.

But we cannot afford to put this problem on the back burner until the next contract comes up for renewal three years from now. What the coal industry needs right now is a sustained period of profitable operation. That's absolutely necessary if we're to generate the enormous amounts of investment capital needed to finance the new industrial capacity that is now on the drawing boards.

"over-regulation can be as damaging to our livelihoods as under-regulation can be to our lives."

For that to come about, we need stability. This may well be our most difficult area to deal with, but it offers us an unparalleled opportunity to take a fresh look at the historic pattern of national bargaining, and to see where improvements can be made.

We also will be looking at the general subject of regulatory policy. That's a problem government simply has to address. No one will argue with the statement that government regulation is necessary to protect the health and safety of our workers, and the integrity of our land, water and air.

But we need to make certain that the increased costs caused by regulation do, indeed, yield the benefits for which the regulatory programs are designed. Because it's my belief, based on experience, that over-regulation can be as damaging to our livelihoods as under-regulation can be to our lives.

In 1977, for instance, the Federal Register published 65,000 pages of rules and regulations — 65,000 pages! And the coal industry is one that's getting special attention in this maze of regulations, with practically every agency having even the remotest responsibility in the energy or environmental area seemingly grasping for additional power and money for coal-related programs.

In order for a new coal mine to be opened today, an operator must be prepared to obtain approval from as many as fifteen various government agencies, and deal with permits which, when piled one on top of the other, stand about three feet tall.

I think we can do better than that. We certainly should at least try. And we should address the problem of duplication between state, federal and local governments at the same time.

And here's another aspect of law-making and rule-making that's becoming increasingly important, and that's the matter of whether state and federal agencies are acting in accordance with mandates they should be enforcing. The Federal Surface Mining Act was a long time coming. It was the product of great effort by both government and the private sector. Yet it is disappointing and discouraging to find that some flagrant violations of this act are being allowed to continue. The downslope placement of overburden materials on steep slopes is a point in question, something that's going on in some states at this very moment.

In West Virginia, we're enforcing this provision, because we're enforcing the law. And as a consequence, we're paying for it, about $5 more a ton than some of our neighboring states.

Why? Because some states are not acting, and the federal government is not acting, to enforce the law. The result is a gross inequity to those states, and those companies, which **are** complying with the law. Enforcing reclamation requirements equally among all the states must become a reality, and I call upon the states, the industry, and the Office of Surface Mining to get on the ball and see that this law is applied fairly, across-the-board.

"In order for a new coal mine to be opened today, an operator must be prepared to obtain approval from as many as fifteen various government agencies, and deal with permits which, when piled one on top of the other, stand about three feet tall."

Let me say at the outset that I go into this year of work with the Coal Commission with my eyes wide open. I am not naive enough to suggest that we're going to solve all the problems of the coal industry. Nor do I want to raise the level of expectation so high that everyone says, "This is the answer." It isn't. It's a complex industry, with complex problems. And a single presidential commission can only help focus attention on the problems and suggest steps to be taken that will benefit management and labor, that will strengthen this rapidly-growing industry, that will play a part in helping this country meet an energy crisis.

"we need to look beyond the immediate issue in each individual dispute, and seek instead the advantages that will come from a willingness to work together, as we're doing now in West Virginia with a mountaintop removal program."

But for any progress to be made, we need stability. We also need a National Energy Plan. And now that the principles have been agreed upon in the Congress, and the four major parts of a national energy program have been clearly defined, I hope Congress can proceed in an expeditious manner on this issue.

But above all else, we are at a point where the basic improvements which come in the coal industry, both in terms of stability and production, have to come from initiatives not within government, but from within the private sector. From corporation management. From mine supervisors. From labor.

Labor and management simply must reach out for a more modern and more mature understanding of their mutual dependence on one another. After all, both want the same thing, to get the coal out of the ground. Everyone — government, management, labor — has a direct stake in the issues. If we fail to come to grips with the issues, we face lost opportunity. Lost profit. And lost gain — to our communities, to the industry, to the country, to ourselves.

So we need to look beyond the immediate issue in each individual dispute. And seek instead the advantages that will come from a willingness to work together, as we're doing now in West Virginia with a mountaintop removal program. Management, labor and government are all working on this program, because we all have something to gain from it — an improvement in the quality of life in the southern West Virginia coalfields, where land for housing is practically non-existent because of the steep terrain.

So the state has bought land. And labor and management in the coal industry are working with us. And the construction industry will be working with us to clear off mountaintops, and free up level land above the flood plain, so we'll have homes and communities for those who produce coal, and for those who, indirectly, grow as the coal industry grows.

This is a case where the program put together by government, labor and industry is our ticket to new housing. This is a case, unprecedented to be sure, where we're all in it together for mutual purposes and mutual benefit: government, doing its duty to provide a better quality of life; management, doing its duty to provide energy for the country; labor, doing its duty to provide housing for its workers.

We're all in this together. And it's only when we start working together, when we put everything else behind us and start from this point, right now, that we'll have the capability to pull off one of the great success stories of modern time.

WEST VIRGINIA SURFACE MINING RECLAMATION REGULATIONS
DEPARTMENT OF NATURAL RESOURCES

CHAPTER 20-6
SERIES VII
(1978)

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WEST VIRGINIA SURFACE MINING RECLAMATION REGULATIONS
DEPARTMENT OF NATURAL RESOURCES

CHAPTER 20-6
SERIES VII
(1978)

Subject: Rules and regulations pertaining to areas disturbed by prospecting, surface mining operations, and surface effects of underground mining operations, particularly with regards to requirements for permit requirements, performance bonds, haulageways or access roads, blasting, protection of the hydrologic system, drainage system, method of operation, backfilling and regrading, post-mining use of land, prime farmlands, revegetation, other mining operations on disturbed surface mined areas, surface mining other than coal, surface mining of limestone, sandstone and sand, modifications, and state and federal compliance and validity of regulations.

SECTION 1. GENERAL

1.01. **Scope** — These regulations establish general and specific rules for permits, for haulageways or access roads, for blasting, for protection of the hydrologic system, for drainage systems, for methods of operation, for post-mining use of lands, for prime farmlands, for revegetation of lands disturbed by prospecting and surface mining operations, for other mining operations on surface mined areas, for surface mining other than coal, for bonds and permits, for quarries, for surface mining of limestone, sandstone and sand, for modifications, for state and federal compliance and for validity of regulations.

1.02. **Authority** — These regulations are issued under the authority of Article 6, Chapter 20, Code of West Virginia, as amended.

1.03. **Effective Date** — These regulations were promulgated on the 14th day of August, 1978 and become effective on the 14th day of August, 1978.

1.04. **Filing Date** — These regulations were filed in the Office of the Secretary of State on the 14th day of August, 1978.

SECTION 2. DEFINITIONS: UNLESS THE CONTEXT IN WHICH USED CLEARLY REQUIRES A DIFFERENT MEANING, AS USED IN THESE REGULATIONS OR AS REFERRED TO IN ARTICLE 6, CHAPTER 20, CODE OF WEST VIRGINIA, AS AMENDED:

2.01. **Acidity** shall mean the capacity of water to donate protons. The symbol pH referring to the degrees of acidity or alkalinity. On this scale, pH 1 is the strongest acid, pH of 14 is the strongest alkali, pH of 7 is neutral.

2.02. **Acid mine drainage** shall mean water with a pH of less than 6.0 discharged from active or abandoned mines and from areas affected by surface mining operations.

2.03. **Acid-forming materials** shall mean earth materials that contain sulfide mineral or other materials which may create acid drainage.

2.04. **Acid-producing overburden** shall mean material that may cause spoil which upon chemical analysis, show a pH of 4.0 or less. Seams commonly associated with such material may include, but not be limited to Waynesburg, Washington, Freeport, Sewickely, Redstone, Pittsburgh, Kittanning, Elk Lick, Peerless, No. 2 Gas, Upper Eagle, No. 5 Block, Sewell, Beckley, and Stockton-Lewiston.

2.05. **Active surface mining operation** shall mean an operation where land is being disturbed or mineral is being removed and where grade release has not been approved.

2.06. **Approximate original contour** shall mean that surface configuration achieved by backfilling and grading of the mined area so that the reclaimed area, including any terracing or access roads, closely resembles the general surface configuration of the land prior to mining and blends into and compliments the drainage pattern of the surrounding terrain.

2.07. **Aquifer** shall mean a zone, stratum or group of strata that can store and transmit water in sufficient quantities for a specific use.

2.08. **Auger mining** shall mean mining of coal from an exposed vertical coal face by means of a power-driven boring machine which employs an auger to cut and remove the coal.

2.09. **Backfill** shall mean to place material back into an excavation and return the area to a predetermined slope.

2.10. **Bench** shall mean the result of surface mining operations where there is created a leveled surface of an excavated area measured horizontally at any point in the overburden, spoil, or mineral between the base of the highwall and outer point of original fill bench; or a working base extending from the base of a highwall on which excavating equipment can set and operate.

2.11. **Buffer zone** shall mean an undisturbed border along or around an intermittent or perennial stream, public road, cemetery or other such area designated for other public or private use.

2.12. **Coal refuse** means any waste coal, rock, shale, slurry, culm, gob, boney, slate, clay, and related materials associated with or near a coal seam, which are either brought above ground or otherwise removed from a mine in the process of mining coal, or which are separated from coal during the cleaning or preparation operations.

2.13. **Completion of mining** shall mean an operation where no mineral has been removed or overburden removed for a period of two consecutive months, unless the operator, within thirty (30) days of receipt of the director's notification declaring completion, submits sufficient evidence that the operation is in fact not completed.

2.14. **Controlled placement** shall mean the method of surface mining by which the site is prepared, and the overburden is removed, manipulated, and replaced by mechanical means in such a manner as to achieve and maintain stabilization in accordance with the approved pre-plan.

2.15. **Critical stream** shall mean any stream or its tributaries that contain less than 15 ppm methyl orange alkalinity (to pH 4.5) and a conductivity of less than 50 micromho. Streams commonly associated with this characteristic, but not limited to include: North Branch of Potomac System—Stony River and Abrams Creek; Cheat River System—Muddy Creek, Roaring Creek, Daugherty Creek, Elsey Run, Blackwater River, Red Run, Otter Creek Elklick Run, Shavers Fork, and Red Creek; Monongahela River System—Whiteday Creek; Tygart River System—Three Forks, Sandy Creek, Teter Creek, Buckhannon River, Middle Fork River, Roaring Creek tributaries, and Mill Creek; Little Kanawha River System—Little Kanawha itself above Burnsville and all tributaries; Elk River System—Holly River, Laurel Creek, Sugar Creek of the Back Fork, Back Fork, Bergoo Creek, Leatherwood Creek, and Crooked Fork of Old Field Fork; Gauley River System—Middle Fork and Tea Creek of Williams River, Cranberry River, and Cherry River; and, Greenbrier River System—Hills Creek.

2.16. **Cut** shall mean an excavation made by excavating equipment to remove overburden in a single progressive line.

2.17. **Cut-fill** shall mean overburden or other material removed from an elevated portion of a road or bench and deposited in a depression in order to maintain a desired grade.

2.18. **Design storm** shall mean predicted rainfall of given intensity, frequency, and duration based on National Weather Service.

2.19. **Director and/or his authorized agent** shall mean the director of the Department of Natural Resources, deputy directors, the Chief of the Division of Reclamation, the Assistant Chiefs of the Division of Reclamation and all duly authorized surface mining reclamation supervisors, or inspectors and inspectors-in-training.

2:20. **Disturbed areas** shall mean those lands that have been affected by surface mining operations.

2.21. **Diversion ditch** shall mean a designed channel constructed for the purpose of collecting and transmitting surface runoff.

2.22. **Downslope** shall mean the land surface between the projected outcrop of the lowest coal seam being mined and the valley floor.

2.23. **Drill bench** shall mean the construction of a bench created for the purpose of setting up and operating drilling equipment and all roads and other disturbed areas incidental to such construction.

2.24. **Ephemeral stream** shall mean a stream which flows less than one month per year in direct response to precipitation.

2.25. **Face-up** shall mean the result of an excavation where a vertical or near vertical highwall is created that exposes the overburden and/or the mineral face.

2.26. **Groundwater** shall mean subsurface water at or below the water table occupying the saturation zone from which wells or springs are fed.

2.27. **Haulageway or access road** shall mean any road constructed, improved, maintained or used by the operator with the exception of state owned roads.

2.28. **Hydrologic balance** shall mean the relationship between the quality and quantity of inflow storage and outflow in a hydrologic unit such as a drainage basin, aquifer, soilzone, lake, or reservoir. It encompasses the quantity and quality relationships between precipitation, runoff, evaporation, and the change in ground and surface water storage.

2.29. **Intermittent stream** shall mean a stream or portion of a stream that flows continuously for at least one month of the calendar year as a result of ground water discharge or surface runoff.

2.30. **Inspection** shall mean a visual review of prospecting, surface, or other mining operations to insure compliance with any applicable law or rules and regulations under jurisdiction of the director.

2.31. **Leachate** shall mean a liquid that has percolated through soil, rock, or waste and has extracted dissolved or suspended materials.

2.32. **Mine** shall mean the shaft, slopes, drifts or inclines connected with excavations penetrating coal seams or strata and the surface structures or equipment connected therewith which contributes directly or indirectly to the mining, preparation or handling of coal.

2.33. **Mineral face** shall mean the exposed vertical cross-section of the natural coal seam or mineral deposit.

2.34. **Mountaintop removal** shall mean surface mining operations that remove entire coal seams running through the upper fraction of a mountain, ridge, or hill by removing all of the overburden and creating a level plateau or gently rolling contour with no highways remaining and where equal, higher and/or better land use is proposed.

2.35. **Natural drainway** shall mean any water course or channel which may carry water to the tributaries and rivers of the watershed.

2.36. **Operation** shall mean the permit area indicated on the approved map submitted by the operator, or an area where land is being disturbed or mineral is being removed.

2.37. **Outer spoil or outer slope** shall mean the disturbed area extending from the outer point of the bench to the extreme lower limit of the disturbed land.

2.38. **Overburden or spoil** shall mean the earth, rock and other materials lying in the natural state above a mineral deposit before or after excavation.

2.39. **Peak runoff** shall mean the maximum flow at a specified location resulting from a design storm.

2.40. **Perennial stream** shall mean a stream or portion of a stream that flows continuously.

2.41. **Pit** shall mean that part of the surface mining operation from which the mineral is being actively removed or where the mineral has been removed and not backfilled.

2.42. **Pre-inspection** shall mean a preliminary survey and a field review by the director or his authorized agent of a pre-plan and the proposed area to be disturbed.

2.43. **Pre-plan** shall mean the total application submitted to the director including the application form, mining and reclamation plan, drainage plan, blasting plan, planting plan, maps, drawings, data, cross-sections, bonds, and other information as may be required.

2.44. **Prospecting** shall mean the use of drilling or exacating equipment in an area not covered by a surface mining permit for the purpose of determining the location, quantity or quality of a natural coal deposit, or to make feasibility studies or for any other purpose.

2.45. **Recharge capacity** shall mean the ability of the soils and underlying materials to allow precipitation to infiltrate and reach the zone of saturation.

2.46. **Reclamation** shall mean the process of converting disturbed land to a stable form for productive use.

2.47. **Reference area** shall mean land units of varying size for the purpose of measuring ground cover, productivity and species diversity.

2.48. **Sand** shall mean individual rock or mineral fragments having a diameter less than 2.00 mm but greater than .02 mm.

2.49. **Sediment** shall mean solid material, both mineral and organic that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface.

2.50. **Sediment control structure** shall mean a barrier, dam, ditch, excavation or other structure placed in a suitable location to form a silt or sediment basin.

2.51. **Sizeable quantity of water** shall mean an accumulation of storm or any other water in excess of 5,000 cubic feet not provided for in the pre-plan.

2.52. **Stoniness** shall mean a characteristic of earth, overburden or spoil reflecting its relative proportion of sizeable aggregate content as opposed to its sand, silt, clay or rock fragment content.

2.53. **Storm water** shall mean any water flowing over or through the surface of the ground caused by precipitation; generally, surface runoff.

2.54. **Structure** shall mean but not be limited to gas lines, water lines, utility lines, bridges, tunnels, active underground mines, public roads, towers, airports and dams. This shall not include operational facilities of the surface mining operation.

2.55. **Subsidence** shall mean a sinking of a portion of the earth's surface resulting from underground removal of a mineral seam subsequent to failure of support structures.

2.56. **Surface effect of underground mining operations** shall mean surface mining operations where lands are disturbed including but not limited to roads, drainage systems, mine entry excavation, above-ground-work areas, such as tipples, coal processing facilities and other operating facilities, also waste work and spoil disposal areas and mine waste impoundments or embankments which are incident to mine openings or reopenings.

2.57. **Surface mining operations** shall mean surface disturbances and all activities necessary and incident to the removal of mineral and the reclamation of such operations.

2.58. **Surface water** shall mean water on the surface of the earth.

2.59. **Toxic-forming materials** shall mean earth materials or wastes which, if acted upon by air, water, weathering, or microbiological processes, are likely to produce chemical or physical conditions in soils, air or water that are detrimental to the environment.

2.60. **Toxic mine drainage** shall mean water that is discharged from active, abandoned and other areas affected by surface mining operations and which contains a substance which through chemical action or physical effects, is likely to kill, injure, or impair biota commonly present in the area that might be exposed to it.

2.61. **Valley or head-of-hollow fills** shall mean a controlled earth and rock fill across or through the head of a valley or hollow to form a stable, permanent storage space for excess surface mine overburden.

SECTION 3. PROSPECTING

3.01. **Performance Bond Coverage** — The amount of performance bond or its equivalent as provided in Section 7, Article 6, Chapter 20 of the Code of West Virginia, as amended, shall be five hundred dollars ($500) per acre or any fraction thereof. Performance bond or its equivalent shall not be transferable as a credit to surface mining.

3.02. **Notification of Approval or Disapproval** — After review of the prospecting permit application and the reclamation plan for the area to be disturbed by prospecting, the director shall inform the applicant if they are approved or disapproved. If the application and plan are not acceptable, he shall set forth the reasons why they are not acceptable, and he may propose modifications, delete areas, or reject the permit on the basis of the reclamation plan or for other justifiable reasons set forth in the Code of West Virginia, as amended, and/or rules and regulations.

3.03. **Reclamation Tax** — No special reclamation tax, as outlined in Section 17 of Article 6, Chapter 20, Code of West Virginia, as amended, is required for a prospecting permit. However, if said permit is to be converted to a surface mining permit, the acreage disturbed by prospecting shall be included as a part of the total area to be assessed the special reclamation tax, as set forth in Section 17, Article 6, Chapter 20 of the Code of West Virginia, as amended.

3.04. **Validity of Permit** — A prospecting permit shall be valid for one year from its date of issue.

3.05. **Governing Regulations** — Prospecting and reclamation procedures may be governed by the following regulations of the Reclamation Commission.

a. Section 5 — Haulageways or access roads;
b. Section 6 — Blasting;
c. Section 7 — Protection of the Hydrologic Balance;

d. Section 8 — Drainage Systems;
e. Section 9 — Method of Operation; and
f. Section 12 — Revegetation.

3.06. **Removal of Minerals** — Minerals may be removed during prospecting operations for testing purposes only, and shall be limited to a maximum of two hundred fifty (250) tons for each permit area. Request for permission to remove greater amounts than two hundred fifty (250) tons of minerals shall be submitted to the director and may be approved at his discretion.

3.07. **Bond Release** — The performance bond on other securities accompanying a prospecting permit shall be released in the same manner as surface mining permit bonds.

SECTION 4. PERMIT REQUIREMENTS

4.01. **Class III Legal Advertisement Requirements** — Prior to the publication of the Class III Legal Advertisement for a surface mining permit, excluding underground opening approval, the following requirements shall be met:

a. Upon filing of a surface mining permit application, proposal maps, reclamation plan and filing fee, a surface mining application (SMA) file number may be assigned. Surface mining application (SMA) file number assignments shall be valid for a period of time not to exceed 120 days from date of assignment.
b. A clear and accurate location map shall be made a part of the legal advertisement. The map of a scale and detail found in the West Virginia General County Highway Map or the equivalent will be acceptable. Any significant landmarks, roads or streams shall be indicated on the location map. Longitude and latitude coordinates on the map shall cross at a perimeter marker.

4.02. **Operator Reassignment** — Should the applicant or operator designate, contract or otherwise assign the surface mining operation to others, prior written notification of the assignment and additional information as provided in Section 8, Article 6, Chapter 20 of the Code of West Virginia, as amended, shall be submitted and approved.

4.03. **Approval of Person to Prepare a Reclamation and Mining Plan** — Any person preparing a reclamation and mining plan and drainage system for the area of land to be disturbed as required by the provisions of Article 6, Chapter 20, Section 9 and 9A, Code of West Virginia, as amended, or by the regulations, shall first submit to the director a written resume of his past experience and training. A written test shall also be administered. On the basis of the resume and written test, he shall be adjudged qualified or not as the case may be, and so notified by the director in writing. Should experience warrant, an approved person may be adjudged disqualified and so notified by the director in writing.

4.04. **Scale for Reclamation Pre-plan Map** — The scale required for all maps prepared for submission with an application for a surface mining permit or underground opening reclamation plan approval shall be as follows:

a. Scale on a U. S. geological survey topographic 7.5-minute quadrangle shall be enlarged to 500 feet or less to the inch; and
b. Scale on aerial photograph shall be 660 feet or less to the inch.

4.05. **Scale for Drainage, Progress and Final Maps** — The scale on the drainage, progress and final maps shall be of the same scale as the approved pre-plan map.

4.06. **Scale Approval** — Written permission from the director shall be required prior to the submission of maps drawn to any scale other than set forth by regulations.

4.07. **Map Size** — All maps and plans shall be submitted on standard print paper, 24 inches by 36 inches or less. If supplementary maps or plans are attached, match lines shall be used.

4.08. **Color Code** — A color code shall be used in preparing all maps to indicate critical features of the permit area as follows:

a. Red shall indicate mineral to be removed;
b. Yellow shall indicate the total disturbed land;
c. Blue shall indicate water and drainage;
d. Brown shall indicate special uses;
e. Green shall indicate regrading; and
f. Purple for adjacent mining permits.

4.09. **Permanent Monument** — A permanent monument shall be posted at all points of access from public roads and highways and at other suitable locations. The monument shall consist of a sign constructed of wood, metal, or other suitable material 2' x 3' mounted on a two-inch pipe driven three feet into the ground with four feet exposed. The sign shall clearly indicate the company name, permit numbers, business address and telephone number. Any suitable equivalent substitute may be approved.

4.10. **Perimeter Marker** — A two-inch (2") pipe shall be driven into the earth with a minimum of three feet (3') exposed to permanently mark the beginning and ending points of the area under permit. It shall be identified by painting and exposed portion of the pipe red. Any suitable substitute may be approved. The assigned permit number shall be permanently affixed to the perimeter marker.

4.11. **Buffer Zone Markers** — Appropriate markers will be established along a buffer zone. Markers shall consist of metal or wooden stakes or other suitable devices or methods.

4.12. **Topsoil Markers** — When topsoil or other vegetation supporting material is segregated and stockpiled, the stockpiled material shall be marked. Markers shall remain in place until the materials are removed.

4.13. **Slope Measurements** — The operator shall show on the map filed with the application for a permit the percent of slope of the original surface within each 200 foot interval along the contour of the operation. The first measure is to be taken at the starting point of the operation. The flagged field measurements shall be made from the estimated cropline or proposed coal seams extending 100 lineal feet above and below or beyond the coal outcrop on the area to be disturbed. Where the original slope has been previously altered, slope measurements shall be taken above or below the disturbance; whichever is more representative of the original slopes.

SECTION 5. HAULAGEWAYS OR ACCESS ROADS

5.01. **Location** — The centerline location of the proposed haulageways or access roads shall be identified on the site by visible markings at one hundred (100) foot intervals, at the time the reclamation and mining plan is pre-inspected and prior to commencement of construction. Pre-existing haulageways or access roads shall be exempted from this requirement.

5.02. **Haulageway or Access Road Construction** — All construction of haulageways or access roads shall conform to "controlled placement" as defined in 2.14. and described in Section 9B.02, Method of Operation. The grading of a haulageway or access road shall be such that:

a. No sustained grade shall exceed 10%;
b. The maximum pitch grade shall not exceed 15% for 300 feet;
c. There shall not be more than 300 feet of maximum pitch grade for each 1,000 feet of road constructed; and
d. The surface shall pitch toward the ditchline at the minimum rate of ½ inch per foot of surface width or crowned at the minimum rate of ½ inch per foot of surface width as measured from the centerline of the haulageway or access road.

5.03. **Curves** — The grade on switchback curves shall be reduced to less than the approach grade and should not be greater than ten percent (10%).

5.04. **Cut Slopes** — Cut slopes should not be more than 1:1 in soils or ¼:1 in rock.

5.05. **Ditches** — A ditch shall be provided on both sides of a throughcut and on the inside shoulder of a cut-fill section, with ditch relief culverts being spaced according to grade. Water shall be intercepted before reaching a switchback or fill and led off. All ditchlines shall be designed to pass a peak discharge capacity of a one-year, 24-hour precipitation event.

5.06 **Culverts** — Ditch relief culverts shall be installed wherever necessary to insure proper drainage of surface water beneath or through the haulageway or access road, according to the following provisions:

a.

Road Grade in Percent	Spacing of Culverts in Feet
0- 5	300-800
6-10	200-300
11-15	100-200

b. The culvert shall cross the haulageway or access road at a 3 degree angle downgrade with a minimum grade of 3% from inlet to outlet, except in intermittent or perennial streams where the pipe shall be straight and coincident with the normal flow;
c. The inlet end shall be protected by a headwall of suitable material and the slope at the outlet end shall be protected with an apron of suitable material;

d. The culvert shall be covered by compacted fill to a depth of one foot or half the culvert diameter, whichever is greater; and

e. Design of culverts may be submitted where the aforementioned design criteria is not practical or necessary.

5.07. **Culvert Openings** — Culvert openings installed on haulageways or access roads shall not be less than one hundred (100) square inches in area, but, in any event, all culvert openings shall be adequate to carry storm runoff of a peak discharge capacity of a one-year, 24-hour precipitation event from the contributing watershed, and shall receive necessary maintenance to function properly at all times.

5.08. **Stream Crossings** — Culverts, bridges or other drainage structures shall be used to cross intermittent or perennial streams. Consideration shall be given to such factors as weather conditions, season of the year, time period for construction, etc. with regard to using measures to minimize adverse effects to the water quality and stream channel. In no event shall the sediment load of the stream be significantly increased or the water quality be significantly decreased during the construction period. Water control structures shall be designed with a minimum discharge capacity capable of passing the runoff for a 10-year, 24-hour precipitation event from the contributing watershed.

5.09. **Removal of Drainage Structures** — No bridges, culverts, stream crossings, etc., necessary to provide access to the operation, may be removed until reclamation is completed and approved by the director. The same precautions as to water quality are to be taken during removal of drainage structures as those taken during construction and use.

5.10. **Seeding of Slopes** — All disturbed area including fill and cut slopes, shall be seeded and mulched immediately after the construction of a haulageway or access road and maintained thereafter in accordance with Section 12 of these regulations.

5.11. **Haulageway or Access Road Surface** — Haulageways or access roads shall not be surfaced with any acid-producing or toxic material or with any material which will produce a concentration of suspended solids in surface drainage.

5.12. **Tolerance** — All grades referred to in this section shall be subject to a tolerance of two percent (2%) grade. All linear measurements referred to in this section shall be subject to a tolerance of ten percent (10%) of measurement. All angles referred to in this section shall be measured from the horizontal and shall be subject to a tolerance of five percent (5%).

5.13. **Dust Control** — All reasonable means shall be employed to control dust from the surface of haulageways or access roads.

5.14. **Abandonment of Haulageways or Access Roads** — Haulageways or access roads shall be abandoned in accordance with Section 9 of these regulations in addition to the following requirements:

a. Upon abandonment of haulageways or access roads, every effort shall be made to prevent erosion by the use of culverts, water bars or other devices. Water bars of the ditch, earth bern or log type shall be installed according to the following table of spacings in terms of percent of haulageway or access road grade, prior to the abandonment.

Percent of Haulageway	Spacing of Water Bars in Feet
2	250
5	135
10	80
15	60
20	45
Above 20	25

b. Upon abandonment of haulageways or access roads, they shall be seeded and mulched in accordance with Section 12 of these regulations.

5.15. **Sediment Control** — A sediment storage volume must be provided equal to 0.125 Ac/ft. for each acre of disturbed area or a lesser value as approved by the director.

5.16. **Existing Haulageways or Access Roads** — Where existing roads are to be used for access or haulage and it can be demonstrated that reconstruction to meet the above requirements would result in greater envioronmental harm and the drainage and sediment control requirements of this section can otherwise be met, the above requirements may be waived.

SECTION 6. BLASTING

6.01. **Blasting Signs** — If blasting is necessary to conduct surface mining operations, signs reading "Blasting Area" shall be displayed conspiculously at all approaches to the blasting site and along haulageways and access roads to the mining operation. The sign shall be two feet by three feet (2' x 3') reading "Blasting Area" and explaining the blasting warning and the all clear signals shall be posted at all entrances to the permit area.

6.02. **Certified Blasting Personnel** — All blasting operatings shall be conducted by certified, trained and competent persons who possess the knowledge of hazards involved and have full knowledge of all local, state, and federal laws and regulations pertaining to explosives and use thereof. Certification by the Fire Marshall of the State of West Virginia shall be accepted as being valid.

6.03. **Pre-blasting Survey** — Requirements for a pre-blasting survey shall be governed by the following:

a. On a request to the director by a resident or owner of a man-made dwelling or structure that is located within one-half mile of the permit area, the operator shall conduct a pre-blasting survey of the dwelling or structure and submit a report of the survey to the director.

b. Personnel approved by the director shall conduct the survey to determine the condition of the dwelling or structure, and to document any pre-blasting damage and to document other physical factors that could reasonably be affected by the blasting. Assessments of structures such as pipes, cables, transmission lines, wells and other water systems shall be limited to surface conditions and other readily available data. Special attention shall be given to the pre-blasting condition of wells and other water systems used for human, animal, or agricultural purposes and to the quantity and quality of the water.

c. A written report of the survey shall be prepared and signed by the person or persons who conducted the survey. The report shall include recommendations of any special conditions or proposed adjustments to the blasting procedures which should be incorporated into the blasting plan to prevent damage. Copies of the report shall be provided to the person requesting the survey and to the director.

6.04. **Public Notice of Blasting Operations** — At least 10 days, but not more than 20 days before beginning blasting operations, the operator shall publish on a form supplied by the director, a schedule in a newspaper of general circulation in the county of the proposed site. Copies of the schedule shall be distributed by mail to local governments and public utilities and to each resident within one-half mile of the blasting sites described in the advertisement. The operator shall republish and redistribute the schedule by mail at least every three (3) months. Schedules shall not be so general as to cover all working hours but shall identify as accurately as possible the location of the blasting sites and the time periods when blasting will occur. The schedule shall contain at a minimum:

a. Identification of the specific areas in which blasting will take place. The specific blasting areas described shall not be larger than 300 acres with a generally contiguous border;

b. Dates and times when explosives are to be detonated shall be expressed in not more than 4-hour increments;

c. Methods to be used to control access to the blasting area;

d. Types of audible warnings and all clear signals to be used before and after blasting; and

e. A description of possible emergency situations (defined in Section 6.05.).

6.05. **Blasting Procedures** — All blasting shall be conducted only during the daytime hours, defined as sunrise until sunset. (Based on public requests or other consideration, including the proximity to residential areas, the director may specify more restrictive time periods.) No blasting shall be conducted on Sunday.

Blasting may not be conducted at times different from those announced in the blasting schedule except in emergency situations where rain, lightning, other atmospheric conditions, or operator or public safety requires unscheduled detonations.

6.06. **Audible Blast Warning** — Three (3) minutes prior to blasting, an airhorn warning

signal audible to within a range of ½ mile from blast site will be given. This pre-blast warning shall consist of three (3) short blasts of five (5) seconds duration with five (5) seconds between each blast. One (1) long audible airhorn warning signal of twenty (20) seconds duration shall be the "all clear" signal.

6.07. **Approaches to Area** — All approaches to the blast area shall be guarded against unauthorized entry ten (10) minutes prior to and immediately after blasting.

6.08. **Charged Holes** — All charged holes awaiting firing for any reason shall be guarded and posted against unauthorized entry.

6.09. **Air Blast Level Standard** — A maximum air blast level of 128 decibel linear peak shall not be exceeded at any residence, building or occupied structure within ½ mile of the blasting site other than operational facilities of the mine.

6.10. **Blasting Prohibited** — Except where lesser distances are approved by the director, blasting shall not be conducted within:

a. 1,000 feet of any building used as a dwelling, school, church, hospital or nursing facility;
b. 500 feet of facilities including, but not limited to, disposal wells, petroleum, or gas-storage facilities, municipal water-storage facilities, fluid-transmission pipelines, gas or oil-collection lines, or water and sewage lines;
c. 500 feet of an underground mine not totally abandoned except with the concurrence of the Mining Safety and Health Administration; and
d. The director may prohibit blasting on specific areas where it is deemed necessary for the protection of public or private property and general safety of the area.

6.11. **Particle Velocity** — A particle velocity of one (1) inch per second in any one of the three mutually perpendicular directions shall not be exceeded at the nearest residence, building, or structure, other than operational facilities of the mine. The mutually perpendicular directions are identified as transverse, vertical and longitudinal.

6.12. **Maximum Weight of Explosive** — The maximum weight of explosive to be detonated within any 8 millisecond period shall be determined by the formula $W = (D/60)^2$ where W represents the maximum weight of explosives, in pounds, that can be detonated in any 8 millisecond period, and D represents the distance, in feet, from the nearest point of blast to nearest residence, building or structure, other than operational facilities of the mine.

6.13. Seismograph Measurements — Where a seismograph is used to monitor the velocity of ground motion and the peak particle velocity limit of one (1) inch per second is not exceeded, the equation in Section 6.12. need not be used. However, if the equation is not being used, a seismograph record at the nearest structure to the blast site shall be obtained for every blast. The director may require a seismograph recording of any or all blasts.

6.14. **Blast Record** — All blasts other than secondary blasts will be located on working proposal maps and the corresponding blast numbers entered into the official blasting log record book. The blasting log record book shall be kept current daily and is to be made available at the operation for inspection by the director or upon request by the public. These blasting log records are to include seismograph reports, certificate of publication of schedule and shall be retained for three (3) years and should include as a minimum the following data:

a. Name of permittee, operator, or other person conducting the blast;
b. Location, date, and time of blast;
c. Name, signature and certification number of blaster-in-charge;
d. Direction and distance, in feet, to nearest dwelling, school, church or commercial or institutional building neither owned nor leased by the operator;
e. Weather conditions;
f. Type of material blasted;
g. Number of holes, burden, and spacing;
h. Diameter and depth of holes;
i. Types of explosives used;
j. Total weight of explosives used;
k. Maximum weight of explosives detonated within any 8 millisecond period;
l. Maximum number of holes detonated within any 8 millisecond period;
m. Method of firing and type of circuit;
n. Type and length of stemming;
o. If mats or other protections were used;
p. Type of delay detonator used and delay periods used;
q. Seismograph records, where required including but not limited to;
    1. Seismograph reading, including exact location of seismograph and its distance from the blast,
    2. Name of person taking the seismograph reading,
    3. Name of person and firm analyzing the seismograph record, and
r. Shot location.

The format for the arrangement and the recording of items in the blasting log record book is to be on forms prescribed by the director.

6.15. **Assessment** — Any assessment as set forth in Section 11a, Article 6, Chapter 20 of the Code of West Virginia, as amended, shall be paid within ten (10) days after receipt of said assessment notice.

SECTION 7. PROTECTION OF THE HYDROLOGIC SYSTEM

7.01. **Applicability** — The operator shall plan and conduct surface mining operations to minimize disturbance to the prevailing hydrologic balance in order to prevent long-term adverse changes in the hydrologic balance, both on and off site, that could result from surface mining operations. Changes in water quality and quantity, in the depth to ground water, and in the location of surface water drainage channels shall be minimized such that the postmining land use of the disturbed land is not adversely affected and applicable federal and state statutes and regulations are not violated. The operator shall conduct operations so as to minimize water pollution and shall, where necessary, use treatment methods to control water pollution. The operator shall emphasize surface mining and reclamation practices that will prevent or minimize water pollution and changes in flows in preference to the use of water treatment facilities. Practices to control and minimize pollution include, but are not limited to, stabilizing disturbed areas through grading, diverting runoff, achieving quick growing stands of temporary vegetation, lining drainage channels with rock or vegetation, mulching, sealing acid-forming and toxic-forming materials, and selectively placing waste materials in backfill areas. If pollution can be controlled only by treatment, the permittee shall operate and maintain the necessary water treatment facilities for as long as treatment is required.

7A. **Permit Requirements**

7A.01. **Site Analysis** — Each application for a permit shall include cross-sections of the land to be affected with respect to the hydrologic balance including the actual area to be mined. These cross-sections may be derived from core boring or other approved sources. These cross-sections are to be prepared and certified by a registered professional engineer or other approved person showing pertinent elevation and location of test borings or core samplings and depicting the following information:

a. The nature and depth of the various strata of overburden;
b. The location of subsurface water, if encountered, and its quality;
c. The nature and thickness of any coal or rider seam;
d. The nature of the stratum immediately beneath the coal seam to be mined;
e. Mine openings to the surface;
f. The location of aquifers;
g. The estimated elevation of the water table;
h. Where surface mining operations are to be conducted on critical streams, pre-mining overburden sampling and analysis shall be required. Sampling points shall be located on the drainage plan map. Where overburden analysis reflects toxic strata, a plan for handling and final placement for said strata shall be submitted. On critical streams where it can be documented or past mining experience has shown that surface mining will not result in significant acid production, pre-mining overburden analysis may not be required. Overburden and minesoil analysis shall be in accordance with standard procedures outlined in Environmental Protection Agency manual # 600/2-78-054 (Field and Laboratory Methods Applicable to Overburdens Minesoils) or other approved methods; and
i. Such other information as the director may require.

7A.02. **Surface Water Monitoring** — The operator shall submit as part of the complete mining and reclamation pre-plan a surface water monitoring program which meets the following requirements:

a. Provides adequate data to describe the likely daily and seasonal variation in dis-

charges from the disturbed area in terms of water flow, pH, total iron, total suspended solids and, if requested by the director, any other parameters characteristic of the discharge;

b. Provides daily monitoring by rain gauges to measure normal and abnormal variations in precipitation;

c. All water discharged from the permit area is to be monitored daily by the operator for total iron, pH and water flow and if required by the director, any other parameter. A written record of the testing dates and analytical data shall be kept current and made availble for inspection at the operation;

d. Provides a monthly report of all measurements to the director;

e. In the event violations of permit conditions occur, the director shall be notified immediately after receipt of analytical results by the operator; and

f. After disturbed areas have been regraded and seeded in accordance with these regulations, the operator shall monitor surface water flow and quality. Data from this monitoring shall be used to demonstrate that the quality and quantity of runoff without treatment will be consistent with the requirement of this section to minimize disturbance to the prevailing hydrologic balance and with the requirements of these regulations to attain the approved postmining land use. This data shall provide a basis for approval by the director for removal of water quality or flow control systems and for determining when the requirements of this section are met. A one (1) year history of meeting effluent limitations shall be adequate for demonstrating that the water has stabilized to an acceptable level. The nature of data, frequency of collection and reporting requirements will be the same as that during the mining operation.

7A.03. **Ground Water Monitoring** — The operator shall submit as part of the complete mining and reclamation pre-plan a procedure for monitoring ground-water levels, infiltration rates, subsurface flow and storage characteristics, and the quality of ground water to determine the effect of surface mining operations on the recharge capacity of reclaimed lands and on the quantity and quality of water in ground water systems at the mine area and in associated off-site areas. When operations are conducted in such a manner that may affect the ground water system, ground water levels and ground water quality shall be periodically monitored using wells that can adequately reflect changes in ground water quantity and quality resulting from such operations. The director may require drilling and development of additional wells if needed to adequately monitor the ground water system.

7A.04. **Water Sampling** — Water tests for total iron, total hot acidity, total mineral acidity, total alkalinity, total aluminum, total manganese, total sulfate, dissolved solids, pH and suspended solids shall be taken before surface mining operations begin and the results of these tests will be shown in the pre-plan. The location for these preliminiary tests will be:

a. On natural drainways above proposed surface mining operations;

b. On natural drainways below proposed surface mining operation at or near the affected drainage area boundary; and

c. On natural drainways upstream from the mouth of natural drainways affected by surface mining.

7B. Water Quality

7B.01. **Acid and Toxic Materials** — Drainage from acid-forming and toxic-forming materials into ground and surface water shall be avoided by:

a. Identifying, burying, blending, and treating where necessary, spoil or other materials that will be toxic to vegetation or that will adversely affect water quality. Such materials shall be disposed of in accordance with the provisions of Section 9.03;

b. Preventing or removing water from contact with acid-forming or toxic-forming materials;

c. Burying or otherwise treating toxic-forming materials from coal preparation plants no later than 90 days after the cessation of the filling of the disposal area. Burial or treatment shall be in accordance with Section 9.03.;

d. Casing, sealing or otherwise managing boreholes, shafts, wells, and auger holes to prevent pollution of surface or ground water and to prevent mixing of ground waters of significantly different quality. All boreholes that are within the permit area but are outside the surface coal mining area or which extend beneath the coal to be mined and into water bearing strata shall be plugged permanently unless the boreholes have been approved for use in monitoring; and

e. Taking such other actions as required by the director.

7B.02. **Water Quality Control** — All reasonable measures shall be taken to intercept all surface water by the use of diversions, culverts and drainage ditches or other methods to prevent water from entering the pit area. All water accumulation into the pit shall be removed at least once in a 24-hour period unless otherwise approved by the director.

The water leaving the permit area will not lower the water quality of the river, stream or drainway into which it is discharged below the water quality standards established for such river, stream or drainway.

7B.03. **Water Quality Standards**—Discharges from areas disturbed by surface mining operations must meet all applicable federal and state laws and regulations. The monitoring frequency and minimum effluent limitations shall be governed by the standards set forth in the NPDES Program under the Federal Water Pollution Control Act as amended, 33 U.S.C. 466 et. seq. and the rules and regulations promulgated thereunder. In no event shall the discharge from the permit area have a pH of less than 6.0 or greater than 9.0 and the iron shall not exceed 7 parts/million.

7B.04. **Treatment Facilities for Drainage from Surface Mine Operations** — The Chief of the Division of Reclamation or his duly authorized agent shall conduct such investigation as it is deemed necessary and proper in order to determine whether or not any such permit should be granted or denied. In making such investigation and determination as to any such application, the Chief of the Division of Reclamation shall consult with the Chief of the Division of Water Resources. The Chief of the Division of Water Resources shall cooperate with and assist him in carrying out the duties imposed on him by the provisions of Article 5A, Section 5 (3) and Article 6, Chapter 20 of the Code of West Virginia, as amended, and the rules and regulations of the Reclamation Commission and the Water Resources Board. Such cooperation shall include, but not be limited to a written recommendation for the approval or disapproval of the permit and the reason or reasons for such recommendation.

7B.05. **Treatment of Acid Water Surface Breakthrough** — Treatment of acid water surface breakthrough shall be as follows:

a. Any surface breakthrough of water caused by the operator during the course of his operations shall be sampled immediately and analyzed for total iron, total suspended solids and pH and if requested by the director, any other parameter characteristics of the discharge. Such analysis shall be made by a competent water analyst or chemist. The original and at least one copy of such analysis shall be retained by the operator, two copies shall be submitted to the Chief of the Division of Reclamation;

b. Should said analysis indicate the water to be acid with a pH of less than 6.0 and/or contains more than 7mg/1 of iron, seals shall be immediately constructed. These seals shall either:

1. prevent any air from entering the underground mine by way of the breakthrough; or
2. prevent any air from entering the breakthrough while allowing the water to flow from the breakthrough; or
3. seal the breakthrough of acid water so that it cannot flow.

Such seals shall be constructed of stone, brick, block, earth or similar impervious materials which are acid resistant. Any cement or concrete employed in the construction of these seals shall also be of an acid resistant, impervious type; and

c. Alternate methods of sealing and/or treating acid water may be employed as they are developed and approved.

7C. Water Rights and Replacement

7C.01. **Applicability** — The operator shall replace the water supply of an owner of interest in real property who obtains all or part of his supply of water for domestic, agricultural, industrial, or other legitimate use from an underground or surface source where the owner of interest has established that such supply has been affected by contamination, diminution or interruption resulting from the surface mining operation.

SECTION 8. DRAINAGE SYSTEM

8.01. **Drainage Plan** — There shall be submitted as part of the complete application and pre-plan for surface mining operations, a drainage plan which will show the proposed method of drainage on and away from the area of land to be disturbed. Said plan shall indicate the directional flow of water, constructed drainways, natural waterways used for drainage, streams or tributaries receiving or to receive this discharge, location and design of sediment control structures, location of all water test sites, treatment facilities and other data as may be required.

8.02. **Sediment Control** — Sediment control structures shall be constructed in appropriate locations in order to control sedimentation. All such structures shall meet the following requirements:

a. All structures shall have the capacity to store 0.125 acre/ft. of sediment for each acre of disturbed area in the structures watershed; provided, however, that consideration may be given for reduced storage volume where the pre-plan reflects controlled placement, concurrent reclamation practices, use of on-site sediment control measures and access and availability of all structures for maintenance;

b. This disturbed area will include all land affected by previous surface mining operations that are not presently stabilized and all land that will be disturbed throughout the life of the permit; and

c. The structures shall be cleaned out when the sediment accumulation reaches 60% of the design capacity, or as specified by the director. If required by the director, based upon an onsite inspection, the structure shall be cleaned out to 100% pool prior to grading release.

8.03. **Natural Drainways** — Natural drainways in the area of land disturbed by surface mining and prospecting operations shall be kept free of overburden except where overburden placement has been approved. Overburden placment and haulageways across natural drainways shall be constructed so as not to affect the flow of the stream, or materially increase the sediment load and concentrations of toxic materials in the stream.

8.04. **Intermittent or Perennial Stream** — No land within 100 feet of an intermittent or perennial stream shall be disturbed by surface mining operations unless specifically authorized by the director. The area not to be disturbed shall be designated a buffer zone and marked accordingly.

8A. Constructed Drainways and Diversions

8A.01. **Diversions Above Highwalls** — All surface water which drains toward the pit shall be effectively intercepted on the uphill side of the highwall by diversion ditches and conveyed by approved channels or other approved means of discharged to natural drainways outside the disturbed area. The director may, in the exercise of his sound discretion, when not in conflict with Article 6, Chapter 20, Code of West Virginia, as amended, waive this regulation.

8A.02. **Diversions on Benches** — Diversions will be constructed on the excavated solid bench in order to carry off storm, surface or seepage water. The breaking point for diversions on the bench will fall at or near the midpoint between natural or constructed drainways. In no case shall water be discharged over a spoil slope without adequate safeguards to prevent erosion. Removal of water from the bench shall be accomplished by use of adequate pipe, a rock riprap flume, asphalt or concrete chutes, by grading a channel to nonerosive rock, or by other approved methods.

8A.03. **Diversions Below Spoil Slopes** — All surface water draining off the spoil slopes, unless otherwise controlled, will be intercepted by suitable and adequate diversion ditches which will carry the water to an approved sediment control structure before discharge into a natural drainway. These diversions will be located within twenty-five (25) feet of the anticipated toe of the spoil slope. If, at any time, spoil material interferes with the flow of water in these diversions, that material shall be removed immediately. The director may, in the exercise of his sound discretion, when not in conflict with Article 6, Chapter 20, Code of West Virginia, as amended, waive this regulations.

8A.04. **Temporary Diversions** — Temporary diversion structures are those used during mining and reclamation. When no longer needed, these structures shall be removed and the area reclaimed. Temporary diversion structures shall be constructed to safely pass the peak runoff from a 1-year, 24-hour precipitation event, or larger event as specified by the director.

8A.05. **Permanent Diversions** — Permanent diversion structures are those approved diversion structures to be retained after mining and reclamation. Permanent diversion structures shall be constructed to safely pass the peak runoff from a 100-year, 24-hour precipitation event.

8A.06. **Stream Channel Diversions** — Flow from perennial and intermittent streams within the permit area may be diverted only when the diversions are approved by the director. When streamflow is to be diverted, the new stream channel shall be designed and constructed to meet the following requirements:

a. The average stream gradient shall be maintained and the channel designed, constructed, and maintained to remain stable and to minimize additional contributions of suspended solids to streamflow;

b. Channel bank, and flood plain configurations shall be adequate to safely pass the peak runoff of a 1-year, 24-hour precipitation event for temporary diversions and 100-year, 24-hour precipitation event for permanent diversions, or larger events if specified by the director; and

c. When the stream affected supports a fishery habitat, measures to maintain or enhance the water quality and habitat shall be reflected in the approved stream channel diversion design.

8B. Seeding

8B.01. **Seeding of Drainage System** — All area disturbed in the installation of the drainage system shall be seeded and mulched immediately after construction in accordance with Section 12 of these regulations.

8C. Handbook

8C.01. **Drainage Handbook for Surface Mining** — The guidelines for plans, design criteria and construction specifications for drainage systems are to be found in the "Drainage Handbook for Surface Mining" published by the West Virginia Department of Natural Resources. This handbook is hereby incorporated by reference in its entirety; provided, however, that other plans, design criteria and construction specifications if approved by the director, may be used in place of those specified in the handbook.

8D. Drainage Certification

8D.01. **Certification Responsibility** — Certification that the drainage system was constructed and installed in accordance with the approved pre-plan shall be submitted by an approved Registered Professional Engineer or other approved person.

8D.02. **Filing Certification** — Prior to the beginning of surface mining operations in the affected watershed, the certification of the drainage system shall be filed on forms prescribed by the director.

8G. Abandonment Procedures

8G.01. **Abandonment Procedures** — The pre-plan shall reflect a procedure for abandoning sediment control structures prior to final bond release. These abandonment procedures may be waived if the structures are to be immediately utilized under another permit or the landowner agrees in writing that he will assume future responsibility for said structures.

SECTION 9. METHOD OF OPERATION

9.01. **Operator Responsibility** — In planning and executing surface mining operations, the operator shall have, at all time, proper regard for all backfilling and regrading requirements, imposed by Article 6, Chapter 20, Code of West Virginia, as amended, and all rules and regulations adopted pursuant thereto, and all provisions of the approved pre-plan.

9.02. **Topsoiling or Other Material Suitable for the Post Mining Land Use** — These materials shall be removed in a separate layer and distributed over the backfilled area, or if not utilized immediately, segregated and stockpiled in a separate location as specified in the pre-plan. Topsoil not immediately utilized shall be protected from wind and water erosion. Any material used for topsoiling must be capable of supporting and maintaining the approved post mining land use.

9.03. **Treatment of Toxic Material** — All exposed coal seams remaining after mining and any acid-forming, toxic-forming, combustible materials, or any other waste materials that are exposed, shall be covered with a minimum of four (4) feet of nontoxic and noncombustible material; or test, treat and blend material to provide materials suitable to prevent water pollution. If necessary, this material shall be treated to neutralize toxicity in order to prevent water pollution and sustained combustion and/-

or to minimize adverse effects on plant growth and land uses. Where necessary to protect against upward migration of salts, exposure by erosion, to provide an adequate depth for plant growth, or to otherwise meet local conditions, the director shall specify thicker amounts of cover using nontoxic material. Acid-forming or toxic-forming material shall not be buried or stored in proximity to a drainage course so as to cause or post a threat of water pollution.

9.04. **Small Depressions** — The requirement of this section to achieve approximate original contour does not prohibit construction of small depressions if they are approved by the director to minimize erosion, conserve soil moisture or promote revegetation. These depressions shall be compatible with the approved post-mining land use.

9.05. **Bench Surface** — The surface of the regraded bench shall be graded so as to permit the use of farm implements and machinery.

9.06. **Auger Operations** — Any augering operations shall be conducted in a manner to maximize recoverability and to seal all auger holes with an impervious and noncombustible material. The director may prohibit augering as proposed, if necessary, to maximize the utilization, recoverability or conservation of coal or to protect against adverse water quality impacts.

9.07. **Final Graded Slopes** — Final graded slopes shall mean slopes backfilled and graded to eliminate the highwall which does not exceed the angle of repose or such lesser slope as is necessary to assure stability.

9.08. **Grading Outer Spoil** — All outer spoil shall be graded so as to blend into the adjoining undisturbed lands.

9.09. **Final Surface Deviation** — Any deviations formed by natural flow of surface water which results in rills or gullies which exceed nine (9) inches in depth, will be deemed not acceptable under this section and must be regraded and revegetated or otherwise corrected.

9.10. **Inactive Status** — Inactive operation status will be considered for a period not to exceed one (1) year from date of approval providing that prior written approval is obtained from the director.

9.11. **Keeping Operation Current** — Grading, backfilling and water management practices as approved in the plans shall be kept current as follows:

a. Should the operation include only stripping (no augering or highwall mining), the grading and backfilling shall follow the mineral removal by a period not to exceed thirty (30) days or 1,500 linear feet.

b. Should the operation include stripping and augering, the augering shall follow the stripping by a period not to exceed thirty (30) days, and the grading and backfilling shall follow the augering by not more than thirty (30) days or 1,000 linear feet, but in no event shall more than 2,000 linear feet of pit be exposed at any time;

c. Should the operation include stripping and highwall mining, the highwall mining shall follow the stripping within (30) days, or a reasonable time as prescribed by the director. Grading and backfilling shall follow the highwall mining by not more than thirty (30) days or 1,000 linear feet, but in no event shall more than 2,000 linear feet of pit be exposed at any time;

d. Should the operation include only augering or highwall mining, the grading and backfilling shall follow the augering or highwall mining by a period not to exceed fifteen (15) days or 1,000 linear feet;

e. Should the operation include area surface mining or mountain top removal, the grading and backfilling shall not be more than two spoil ridges behind the pit being worked, the spoil from the pit being considered the first ridge, or 300 feet perpendicular to the highwall. All backfilling and grading shall be completed within sixty (60) days after completion of an operation or a prolonged suspension of work in the area. Maximum linear feet of open pit shall not exceed 3,000 feet; and

f. Should particular site conditions or weather conditions make adherence to these guidelines impractical, the period of time required to be current may be reasonably extended.

9A. **Requirements for Special Land Use Purposes**

9A.01. **Alternative Plans** — Alternative plans for restoration of the disturbed area may be submitted to the director. If such restoration will be consistent with the purpose of Article 6, Chapter 20, Code of West Virginia, as amended, and if such plans are approved by the director and complied with within such time limits as may be determined by him as being reasonable for carrying out such plans, the backfilling and grading requirements heretofore contained, may be modified.

9A.02. **Water Impoundments** — Prior to the construction of an impounding area for the storage of water after mining, approval must be obtained from the director for such impoundment. The Division of Water Resources will cooperate with the Division of Reclamation in reviewing all portions of any plan for water impoundments as they relate to water quality and will give its recommendations therefore, to the Division of Reclamation. This plan will include but not be limited to the following:

a. Location of the impounding area;

b. Dimensions of the area as to capacity and depth (average, maximum and minimum);

c. Plot plan for impoundment area;

d. Source of water entering the impoundment;

e. Quality of water entering the impoundment;

f. Quality of water leaving the impoundment and mechanism of discharge;

g. Coal seam or seams mined or involved with impoundment;

h. Chemical characteristics of the soils and underlying strata in the impoundment area as they relate to acid production;

i. Safety aspects considered such as spillway overflow, emergency spillway, access to area; and

j. Consent of the landowner for such impoundment with submission on specified forms.

9A.03. **Sanitary Landfills** — Where waste materials from a coal preparation or conversion facility or from other activities conducted outside the permit area such as municipal wastes, garbage, etc., are used for fill material, plans for such use shall be approved by the director. Such plans for sanitary landfills and/or solid waste disposal areas shall be accompanied by the written approval of the Division of Water Resources and where appropriate, the State Department of Health.

9B. **Steep Slope Mining**

9B.01. **Applicability** — On surface mining operations where the natural slope exceeds twenty degrees (20°), the provisions of this section in addition to other applicable provisions of these regulations, shall apply. On lesser slopes that require measures to protect the area from disturbance as determined by the director based on consideration of soils, climate, method of operation, geology, and other regional characteristics, the provisions of this section, in addition to other applicable provisions of these regulations, shall also apply. These provisions do not apply where mining is done on a flat or gently rolling terrain with an occasional steep slope through which the mining proceeds and leaves a plain or predominatly flat area.

9B.02. **Downslope Placement** — Spoil or debris including that from clearning and grubbing, shall not be placed on the downslope except as provided for in Section 9D. or 9E. of these regulations.

9B.03. **Highwall Elimination** — The highwall shall be eliminated and the disturbed area graded. Land above the highwall shall not be disturbed unless the director finds that the disturbance will facilitate compliance with the requirements of this section.

9B.04. **Stabilization** — The material used to backfill and eliminate the highwall shall be sufficiently compacted or otherwise mechanically stabilized so as to insure stability of the backfill. Woody materials may be buried in the backfilled area only when the burial does not cause or add to instability.

9C. **Mountain Top Removal**

9C.01. **Applicability** — Where the mountain top removal technique is applied, the provisions of this section in addition to other applicable provisions of these regulations, shall apply.

9C.02. **Outcrop Barrier** — An outcrop barrier of sufficient width consisting of the toe of the lowest coal seam and its associated overburden shall be retained where necessary to prevent slides and erosion. Where no outcrop exists due to previous mining, this requirement will be waived.

9C.03. **The Final Graded Slopes** — The final graded top plateau slopes on the mined area shall be less than 5 horizontal to 1 vertical so as to create a level plateau or gently rolling

configuration and the outslopes of the plateau shall not exceed 2 horizontal to 1 vertical except where approved by the director, but in no case shall the minimum static safety factor be less than 1.5.

9C.04. **Drainage** — The resulting level or gently rolling contour shall be graded to drain inward from the outslope except at specific points where it drains over the outslope in protected channels.

9C.05. **Post Mining Land Use** — Where the mountain top removal method is applied, the lands must be returned to industrial, commercial, agricultural, or public use and the requirements of Section 10.04. must be met.

9D. **Disposal of Spoil or Toxic Forming Materials by Methods Other Than Valley or Head-Of-Hollow Fills**

9D.01. **Applicability** — Spoil or toxic forming materials not required to achieve the approximate original contour shall be transported to and placed in a controlled manner in disposal areas other than the mine workings or excavation only if all the provisions of this section are met.

9D.02. **Location of Disposal Sites** — The disposal areas shall be within the permit area and they must be approved by the director as suitable for construction of fills. The disposal area shall be located on the most moderate slopes and naturally stable areas available. Where possible, fill materials suitable for disposal shall be placed upon or above a natural terrace, bench, or berm, if such placement provides additional stability and prevents mass movement.

9D.03. **Certification** — Certification of the fill shall be as follows:

a. The fill shall be designed using recognized professional standards and certified by an approved registered professional engineer or other approved professional specialist;

b. The fill shall be inspected for stability by an approved registered professional engineer or other approved professional specialist after completion of the first 50-foot lift, to assure removal of all organic material and topsoil, placement of underdrainage systems, and proper construction in accordance with the approved pre-plan. The approved registered professional engineer or other approved professional specialist, shall also provide a certified report upon completion of the fill that the fill has been constructed as designed in the approved pre-plan; and

c. Where fills are placed on slopes less than twenty degrees (20°) a certification shall not be required.

9D.04. **Stabilization** — Where the slope in the disposal area exceeds 2.8 horizontal to 1 vertical (36 percent) or where necessary to achieve a static safety factor of 1.5, measures such keyway cuts, rock toe buttresses or other techniques shall be used. All organic material shall be removed from the disposal area and the topsoil must be removed and segregated before the overburden is placed in the disposal area. Suitable organic material may be used as mulch or may be included in the topsoil. The spoil or toxic forming materials shall be transported and placed in a controlled manner, concurrently compacted as necessary to insure long-term mass stability and prevent mass movement. The fill shall be drained and graded to allow surface and subsurface drainage to be compatible with the natural surroundings.

9D.05. **Drainage** — The disposal area shall not contain springs, natural water courses or wet weather seeps unless lateral drains are constructed from the wet areas to the under drains in such a manner that infiltration of the water into the fill shall be prevented. The drains shall be designed and constructed of coarse rock. If no filter is designed for the under drain, sufficient capacity shall be provided to allow for partial plugging of the drain. No rock shall be used in under drains if it tends to disintegrate or if it is acid forming or toxic forming.

9D.06. **Construction** — Construction of the fill shall be as follows:

a. All areas upon which the fill is to be placed shall first be progressively cleared of all trees, brush, shrubs, and other organic material. This material shall be removed from the fill area;

b. Depositing and compacting the fill in layers shall begin at the toe of the hill. The layers shall be constructed approximately parallel with proposed finish grade. All material shall be deposited in uniform horizontal layers and compacted with haulage equipment.

c. The thickness of the layers shall not exceed four feet;

d. The outer slope shall be no steeper than 2 horizontal to 1 vertical. A 20-foot wide bench shall be installed at a maximum of every 50 feet in vertical height of the fill with a 3% to 5% slope toward the fill area, normal to such, and a 1% slope toward a rock rip-rap channel or natural drainway; and

e. When construction of each lift (maximum of every 50 feet in vertical height) of the fill is completed, topsoil or other suitable material which will support vegetation shall be spread over the completed slope and bench. The slopes and benches shall then be seeded and mulched immediately in accordance with the approved revegetation plans.

9E. **Disposal of Spoil Materials in Valley or Head-of-Hollow Fills**

9E.01. **Applicability** — Spoil not required to achieve the approximate original contour shall be transported to and placed in a controlled manner; spoil to be disposed of in natural valleys must be placed in accordance with the following requirements.

9E.02. **Location of Spoil Areas** — The disposal areas shall be within the permit area and they must be approved by the director as suitable for construction of fills. The disposal area shall be located on the most moderate slopes and naturally stable areas available. Where possible, fill materials suitable for disposal shall be plced upon or above a natural terrace, bench, or berm, if such placement provides additional stability and prevents mass movement.

9E.03. **Certification** — Certification of the fill shall be as follows:

a. The fill shall be designed using recognized professional standards and certified by an approved registered professional engineer or other approved professional specialist; and

b. The fill shall be inspected for stability by an approved registered professional engineer or other approved professional specialist after completion of the first 50-foot lift, to assure removal of all organic material and topsoil, placement of under-drainage systems, and proper construction in accordance with the approved pre-plan. The approved registered professional engineer or other approved professional specialist, shall also provide a certified report upon completion of the fill that the fill has been constructed as designed in the approved pre-plan.

9E.04. **Stabilization** — Where the slope in the disposal area exceeds 2.8 horizontal to 1 vertical (36 percent) or where necessary to achieve a static safety factor of 1.5, measures such as keyway cuts, rock toe buttresses or other techniques shall be used. All organic material shall be removed from the disposal area and the topsoil must be removed and segregated before the material is placed in the disposal area. Suitable organic material may be used as mulch or may be included in the topsoil. The spoil shall be transported and placed in a controlled manner, concurrently compacted as necessary to insure long-term mass stability and prevent mass movement. The fill shall be drained and graded to allow surface and subsurface drainage to be compatible with the natural surroundings.

9E.05. **Drainage** — The disposal area shall not contain springs, natural water courses or wet weather seeps unless lateral drains are constructed from the wet areas to the rock core in such a manner that infiltration of the water into the fill will be presented. If springs, natural water courses or wet weather seeps are encountered, a system of under drains shall be constructed from each spring or seepage area as lateral drains to the rock core. If no filter is designed for the under drain sufficient capacity shall be provided to allow for partial plugging of the drain. No rock shall be used in under drains if it tends to disintegrate or if it is acid forming or toxic forming.

9E.06. **Construction** — Construction of the fill shall be as follows:

a. All areas upon which a valley fill is to be placed shall first be cleared progressively of all trees, brush, shrubs, and other organic material. This material shall be removed from the fill area. No more than 3.0 acres, excluding roadway for construction of fill, shall be cleared in the valley fill site until the first lift is completed;

b. A rock core shall be progressively constructed as the layers are brought up through the valley fill. The rock core shall be a minimum of 16 feet in width and composed of rock with a minimum dimension of 12 inches. The rock core shall consist of no more than 10% fines

as determined by visual inspection (fines being a material with a dimension of less than 12 inches);

c. Depositing and compacting valley fill in layers shall begin at the toe of the fill. The layers shall be constructed approximately parallel with proposed finish grade. All material shall be deposited in uniform horizontal layers and compacted with haulage equipment;
d. The thickness of the layers shall not exceed four feet;
e. During and after construction, the top of the fill shall be graded to drain back to the head of the fill on a slope no greater than 3%. A drainage pocket shall be maintained at the head of the fill at all times to intercept surface runoff. Maximum size of the drainage pocket shall be 10,000 cubic feet;
f. The outer slope shall be no steeper than 2 horizontal to 1 vertical. A minimum 20-foot wide bench shall be installed at a maximum of every 50 feet in vertical height of the fill with a 3% to 5% slope toward the fill area, normal to such, and a 1% slope toward the rock core; and
g. When construction of each lift (maximum of every 50 feet in vertical height) of the valley fill is completed, topsoil or other suitable material which will support vegetation shall be spread over the completed slope and bench excluding the rock core. The completed slope and bench shall then be seeded and mulched immediately in accordance with the approved revegtation plan.

9E.07. **Variance** — Where it can be demonstrated that other design criteria are justified, certain requirements of this section may be waived. The basis for justification are, but not limited to, land use potential, inavailability of durable rock, and site stability.

SECTION 10. POSTMINING USE OF LAND

10.01. **General** — All disturbed areas shall be restored in a timely manner to conditions that are capable of supporting the uses which they were capable of supporting before any mining, or to a higher or better use achievable under criteria and procedures set forth in Section 10.04 of these regulations.

10.02. **Determining Premining Use of Land** — The premining uses of land to which the postmining land use is compared shall be those uses which the land previously supported if the land had not been previously mined and had been properly managed.

a. The postmining land use for land that has been previously mined and not reclaimed, shall be judged on the basis of the highest and best use that can be achieved and is compatible with surrounding areas.
b. The postmining land use for land that has received improper management shall be judged on the basis of the premining use of surrounding lands that have received proper management.
c. If the premining use of the land was changed within five (5) years of the beginning of mining, the comparison of postmining use to premining use shall include a comparison with the historic use of the land as well as its use immediately preceding mining.

10.03. **Land Use Categories** — Land use is categorized in the following groups. Change from one to another land use category in premining to postmining constituted an alternate land use and the operator shall meet the requirements of Section 10.04 of the section and all other applicable sections of these rules and regulations.

a. Heavy Industry — Manufacturing facilities, powerplants, airports or similar facilities.
b. Light Industry and Commercial Services — Office buildings, stores, parking facilities, apartment houses, motels, hotels, or similar facilities.
c. Public Services — Schools, hospitals, churches, libraries, water-treatment facilities, solid waste disposal facilities, public parks and recreation facilities, major transmission lines, major pipelines, highways, underground and surface utilities, and other servicing structures and appurtenances.
d. Residential — Single - and multiple-family housing (other than apartment houses) with necessary support facilities. Support facilities may include commercial services incorporated in and comprising less than 5 percent of the total land area of housing capacity, associated open space, and minor vehicle parking and recreation facilities supporting the housing.
e. Cropland — Land used primarily for the production of cultivated and close-growing crops for harvest alone or in association with sod crops. Land used for facilities in support of farming operations are included.
f. Rangeland — Includes rangelands and forestlands which support a cover of herbaceous or scrubby vegetation suitable for grazing or browsing use.
g. Hayland or pasture — Land used primarily for the long-term production of adapted, domesticated forage plants to be grazed by livestock or cut and cured for livestock feed.
h. Forestland — Land with at least a 25 percent tree canopy or land at least 10 percent stocked by forest trees of any size, including land formerly having had such tree cover and that will be naturally or artificially reforested.
i. impoundments of water — Land used for storing water for beneficial uses such as stock ponds, irrigation, fire protection, recreation, or water supply.
j. Fish and wildlife habitat, and areas managed primarily for fish and wildlife or recreation.
k. Combined uses — Any appropriate combination of land uses where one land use is designated as the primary land use and one or more other land uses are designated as secondary land uses.

10.04. **Criteria for Approving Alternative Postmining Use of Land** — An alternative postmining land use shall be approved by the director after consultation with the landowner or the land-management agency having jurisdiction over state or federal lands. Proposals to remove an entire coal seam running through the supper fraction of a mountain, ridge, or hill by removing all of the overburden and creating a level plateau or gently rolling contour with no highwalls remaining, must also meet these criteria.

a. The proposed land use is compatible with adjacent land use and, where applicable, with existing local, state or federal land use policies and plans. A written statement of the views of the authorities with statutory responsibilities for land use policies and plans shall accompany the request for approval. The permittee shall obtain any required approval of local, state or federal land management agencies, including any necessary zoning or other changes necessarily required for the final land use.
b. Specific plans have been prepared which show the feasibility of the proposed land use as related to needs, projected land use trends, and markets and that include a schedule showing how the proposed use will be developed and achieved within a reasonable time after mining and be sustained. The director may require appropriate demonstrations to show that the planned procedures are feasible, reasonable, and integrated with mining and reclamation, and that the plans will result in successful reclamation.
c. Provision of any necessary public facilities is assured as evidenced by letters of commitment from parties other than the permittee, as appropriate, to provide them in a manner compatible with the permittee's plans.
d. Specific and feasible plans for financing attainment and maintenance of the postmining land use including letters of commitment from parties other than the permittee as appropriate, if the postmining land use is to be developed by such parties.
e. The plans are designed under the general supervision of a registered professional engineer, or other appropriate professional, who will ensure that the plans conform to applicable accepted standards for adequate land stability, drainage, and vegetative cover, and aesthetic design appropriate for the postmining use of the site.
f. The proposed use or uses will neither present actual or probable hazard to public health or safety nor will they post any actual or probable threat of water flow diminution or pollution.
g. The use or uses will not involve unreasonable delays in reclamation.
h. Necessary approval of measures to prevent or mitigate adverse effects on fish and wildlife has been obtained from the director and appropriate state and federal fish and wildlife management agencies.
i. Proposals to change premining land uses of range, fish and wildlife habitat, forestland, hayland, or pasture to a postmining cropland use, where the cropland would require continuous maintenance such as seeding, plowing, cultivation, fertilization, or other similar practices to be practicable or to comply with applicable federal, state and local laws, shall be reviewed by the director to assure that:
    1. There is a firm written commitment by the operator or by the landowner or land manager to provide sufficient crop management after release of applicable performance bonds to assure that the proposed postmining cropland use remains practical and reasonable;

2. There is sufficient water available and committed, to maintain crop production; and
3. Topsoil quality and depth are shown to be sufficient to support the proposed use.

j. The director has provided by public notice not less than 45 days nor more than 60 days for interested citizens and local, state and federal agencies to review and comment on the proposed land use.

SECTION 11. PRIME FARMLANDS

11.01. **Applicability** — Surface operations conducted on prime farmlands shall comply with all requirements set forth in Article 6, Chapter 20, Code of West Virginia, as amended, and all rules and regulations promulgated by the Reclamation Commission and in addition, must meet the special requirements of this section.

11.02. **Identification of Prime Farmland** — Prime Farmland shall be identified on the basis of soil surveys submitted by the applicant. The director also may require data on drainage, flood control, and subsurface water management.

The requirement for submission of soil surveys may be waived by the director if the applicant can demonstrate according to its procedure outlined in 11.03 of this section that no prime farmlands are involved. Soil surveys shall be conducted according to standards of the National Cooperative Soil Survey, which includes the procedures set forth in the U. S. Department of Agriculture Handbooks 436 (Soil Taxonomy) and 18 (Soil Survey).

11.03. **Negative Determination of Prime Farmland** — The land shall not be considered as prime farmland where the applicant can demonstrate one or more of the following situations:

a. Lands within the proposed permit boundaries have been used for production of cultivated crops for less than 5 years out of 20 years preceding the date of the permit application;
b. The slope of all land within the permit area is 10 percent or greater.
c. Land within the permit area is not irrigated or naturally subirrigated, has no developed water supply that is dependable and of adequate quality, and the average annual precipitation is 14 inches or less;
d. Other factors exist, such as a very rocky surface, or the land is frequently flooded, which clearly places all land within the area outside the purview of prime farmland;
e. A written notification based on scientific findings and soil surveys that land within the proposed mining area roes not meet the applicability requirements for prime farmlands and is submitted to the director by a qualified person other than the applicant, and is approved by the director.

11.04. **Plan for Restoration of Prime Farmland** — The applicant shall submit to the director a plan for the mining and restoration of any prime farmland within the proposed permit boundaries. This plan shall be used by the director in judging the technological capability of the applicant to restore prime farmlands. This plan shall include:

a. A description of the original undisturbed soil profile, as determined from a soil survey, showing the depth and thickness of each of the soil horizons that collectively constitute the root zone of the locally adapted crops and are to be removed, stored, and replaced;
b. The proposed method and type of equipment to be used for removal, storage, and replacement of the soil in accordance with Section 11.05 of these regulations;
c. The location of areas to be used for the separate stockpiling of the soil and plans for soil stabilization before redistribution;
d. If applicable, documentation, such as agricultural school studies or other scientific data from comparable areas that supports the use of other suitable material, instead of the A, B, or C soil horizon, to obtain on the restored area equivalent or higher levels of yield as non-mined prime farmlands in the surrounding area under equivalent levels of management;
e. Plans for seeding or cropping the final graded mine land and the conservation practices to control erosion and sedimentation during the first 12 months after regrading is completed. Proper adjustments for seasons must be made so that final graded land is not exposed to erosion during seasons when vegetation or conservation practices cannot be established due to weather conditions; and
f. Available agricultural school studies, company data, or other scientific data for comparable areas that demonstrate that the applicant using his proposed method of reclamation will achieve, within a reasonable time, equivalent or higher levels of yield after mining as existed before mining.

11.05. **Special Requirements** — For all prime farmlands to be mined and reclaimed, the applicant shall meet the following special requirements.

a. All soil horizons to be used in the reconstruction of the soil shall be removed before drilling, blasting, or mining to prevent contaminating the soil horizons with undesirable materials. Where removal of soil horizons result in erosion that may cause air and water pollution, the director shall specify methods of treatment to control erosion of exposed overburden. The operator shall:
   1. Remove separately the entire A horizon or other suitable soil materials which will create a final soil having an equal or greater productive capacity than that which existed prior to mining in a manner that prevents mixing or contamination with other material before replacement;
   2. Remove separately the B horizon of the natural soil or a combination of B horizon and underlying C horizon or other suitable soil material that will create a reconstructed root zone of equal or greater productive capacity than that which existed prior to mining in a manner that prevents mixing or contamination with other material; and
   3. Remove separately the underlying C horizons or other strata, or a combination of such horizons or other strata to be used instead of the B horizon that are equal or greater thickness and that can be shown to be equal or more favorable for plant growth than the B horizon, and that when replaced will create in the reconstructed soil a final root zone of comparable depth and quality to that which existed in the natural soil.
b. If stockpiling of soil horizons is allowed by the director in lieu of immediate replacement, the A horizon and B horizon must be stored separately from each other. The stockpiles must be placed within the permit area and where they will not be disturbed or exposed to excessive erosion by water or wind before the stockpiled horizons can be redistributed on terrain graded to final contour. Stockpiles in place for more than 30 days shall be protected from erosion.
c. Scarify the final graded land before the soil horizons are replaced.
d. Replace the material from the B horizon, or other suitable material specified in Section 11.04 (2) or 11.05 (3) of these regulations in such a manner as to avoid excessive compaction of overburden and to a thickness comparable to the root zone that existed in the soil before mining.
e. Replace the A horizon or other suitable soil materials, which will create a final soil having an equal or greater productive capacity than existed prior to mining, as the final surface soil layer to the thickness of the original soil as determined in Section 11.05 (1) of these regulations in a manner that:
   1. Prevents excess compaction of both the surface layer and underlying material and reduction of permeability to less than 0.06 inch per hour in the upper 20 inches of the reconstructed soil profile; and
   2. Protects the surface layer from wind and water erosion before it is seeded or planted.
f. Apply nutrients and soil amendments as neede to establish quick vegetative growth.

SECTION 12. REVEGETATION

12.01. **Approval of Private Revegetation Contractor**—In the event the operator contracts with a private contractor to carry out the planting, the private revegetation contractor shall first submit to the director a written resume of his past experience and training. On the basis of such resume, he shall be adjudged qualified or not, as the case may be, and so notified by the director in writing. Should experience warrant, a private revegetation contractor may be adjudged disqualified and so notified by the director in writing.

12.02. **Objective in Revegetation** — The objective in revegetation is to quickly establish a vegetative cover on all disturbed areas to minimize erosion, provide economic benefits, and restore aesthetic appeal. Plants that will give a quick permanent cover and enrich the soil shall be given priority. A temporary or permanent cover should be established by the end of the first growing season and a permanent cover by the end of the second growing season. All plants shall be considered a tool in achieving stabilization and an appropriate land use objective.

12.03. **Reference Areas** — Success of re-

vegetation shall be measured on the basis of reference areas approved by the director.

12A. **Seeding and Planting**

12A.01. **Seasonal Feasibility** — Appropriate vegetation shall be planted, seeded, aerial-seeded, or hydro-seeded in accordance with accepted agricultural and reforestation practices when the season is favorable for seed germination and plant survival except as otherwise specified in these regulations.

12A.02. **Minesoil Characteristics** — Surface mining of minerals and removal of overburden results in minesoil which varies greatly in fertility, acidity, and stoniness. These three characteristics, together with steepness of slope, shall be used in determining characterization for the purpose of establishing vegetation. Premining overburden sampling and analysis or previous experience and correlation data, shall be submitted with the pre-plan for all acid-producing seams. The plan shall identify toxic strata and provide planned handling and final placement for acid strata. Overburden analysis to be in accordance with standard procedures outlined in Environmental Protection Agency Manual No. 600/2-78-054 (Field & Laboratory Methods Applicable to Overburdens and Minesoils) or other approved methods by the Department of Natural Resources. Minesoil classification shall be in accordance with Table 6.

12A.03. **Minesoil Analysis** — Tests for minesoil acidity, expressed as pH, shall be made after final grading and before seeding or planting. As a guide, until experience is achieved, a minimum of ten (10) random samples shall be taken at points distributed uniformly over the disturbed area. Minesoil tests may be made with accepted field indicators or other approved techniques. Minesoils with chemical characteristics that could restrict vegetation establishment and growth shall be analyzed by an approved soils laboratory. The results of these tests shall be filed with the final planting plan.

12A.04. **Function of Annual and Biennial Cover Crops** — On areas where excessive erosion is likely to occur, rapid establishment of vegetative cover shall be required. Seeding of annuals and biennials on such areas shall be considered as a means for achieving temporary vegetative cover only and not acceptable in the achievement of permanent cover. See Table 5.

12A.05. **Development of Planting Plan** — Planting plans will be a part of the premining and reclamation plan. The mining plan and the projected configuration after mining will be the basis for classifying the area as follows:

a. A prediction of the minesoil class and the basis for the same;
b. Treatment to neutralize acidity;
c. Mechanical seed bed preparation;
d. Rate and analysis of fertilization;
e. Rates and types of mulch;
f. Perennial vegetation including herbaceous and woody plants where appropriate, rate and species;
g. Areas to be planted or seeded to trees and shrubs;
h. Land use objective;
i. Maintenance schedule if appropriate; and
j. Identify who will complete revegetation treatments.

Seeding will be concurrent with the operation as mining and backfilling progresses.

12A.06. **Development of Final Planting Plan** — A final planting plan shall be prepared and submitted to the director for his approval within thirty (30) days after the grading and backfilling of the operation have been approved.

12B. **Plant Material Selection and Treatment**

12B.01. **Specifications** — All planting plans for woody vegetation will include provisions for herbaceous cover using a suitable mixture from Table One. The following specifications should govern the selection and establishment of seeds and plants used in the revegetation of surface minesoil and based upon the following capability class:

a. On favorable minesoil material, prepared for perennial cover crop use, non-stony and with pH 5.5 or higher, one of the following mixtures should be used:
   1. Seed mixtures #1, 2, 3, 4, or 5 from Table One, of these regulations should be applied where annual maintenance treatment is assured. Mixture #4 should be applied where the graded portion of minesoil is to be used as a firebreak or occasionally as a haulageway.
   2. Establishment of grass, legume or perennial grass cover crop should require the following treatment:
      (i) Innoculation of legume seed with proper strain;
      (ii) Triple innoculation rate if hydroseeded;
      (iii) Protection of seeded minesoil area from grazing livestock;
      (iv) Application of lime to pH 6.0 for mixture #4, to pH 6.5 to 7.0 for all other mixtures;
      (v) Application of fertilizer will be based on a minesoil test for lime, phosphorus, and potash from a soils lab or will be a minimum of 200 lbs. ammonium nitrate and 200 lbs. triple super phosphate;
      (vi) Preparation of seed bed by harrowing, discing or other approved methods; and
      (vii) completion of fall seeding for legumes should be completed by September first.
   3. Maintenance of cover crop should be carried out by the operator or his assignee until the cover crop is adjudged by the director to be satisfacorily established and may require the following treatment:
      (i) Maintain pH 6.5 - 7.0 for Mixture 1;
      (ii) Maintain pH 6.0 - 6.5 for Mixture 2, 3, 4 and 6;
      (iii) Maintain pH 5.5 - 6.0 for Mixture 4;
      (iv) Topdress every two years with 400 lbs. per acre 0-20-20 for Mixture 5.

b. On favorable minesoil material prepared for woodland and wildlife use, any one mixture from Table Two of this regulation, along with proportions and treatment prescribed for it, should be selected for use in the direct seeding of herbaceous species and planting of trees and seedlings.
   1. Establishment of plant growth for woodland cover should require:
      (i) Spring planting of seedlings not later than May 1st and preferably before April 15th; and
      (ii) Spacing of shrubs and all trees in a pattern eight feet by eight feet apart of 680 trees per acre.
   2. Establishment of crown vetch-rye grass or Serecia-tall Fescue mixtures for wildlife cover may be done in accordance with 12B.01, a, (2), of this regulation.

c. On moderately favorable minesoil material, prepared for woodland and wildlife use, with pH 5.5 and above, graded but stony, on moderate to steep slopes, non-stony and stony, one of the mixtures with specified proportion and treatment from Table Three, of this regulation should be used.
   1. Overseeding on moderate to steep slopes on tree planting sites shall be carried out on minesoil in order to prevent siltation, establish ground cover and minimize erosion. Seed one of the mixtures from Table One.
   2. Establishment of plant growth shall require innoculation of legume seed with proper strain, and shall be protected from grazing by livestock. Triple innoculation rate if hydroseeding.

d. On favorable minesoil material prepared for woodland and wildlife use, which includes all extremely steep and/or stony minesoil, one of the mixtures with specified proportions and treatment from Table Three of this regulation should be used.
   1. Establishment of plant growth should require:
      (i) Broadcasting Mixture 1 and 3 before May 1st and frost seeding mixture 2 by early March.
      (ii) Black Locust seed must be seventy percent (70%) or more viable. All legumes must be innoculated and must be protected from grazing by livestock. Triple innoculation rate if hydroseeding.
      (iii) Mixture No. 1 of Table Three, should be used for extremely stony areas when tested acidity indicates a pH of 4.0 or better.

e. Other species of trees, shrubs, grasses, legumes or vines may be approved by the director.

12C. **Mulch**

12C.01. **Mulch specifications** — Mulch shall be used on all disturbed areas. Annual grains such as oats, rye, wheat, etc. may be used instead of mulch when it is shown to the satisfaction of the director that the substituted grains will provide adequate stability and that they will be replaced by species approved for the postmining use.

Approved materials and minimum rates to be applied are as follows:

Material	**Rate/Acre**
Straw or Hay	1 - 2 tons—material may be anchored with asphalt emulsion or other techniques approved by the director
Wood fiber or wood cullulose products	1,000 lbs.
Shredded bark	50 cublic yards

The following materials may be used with wood fiber or wood cellulose on a limited basis upon approval by the director or his duly authorized agent.

Material	Rate/Acre	Minimum Rate/Acre for Wood Fiber or Wood Cellulose
Genaqua 743	25 gallons	500 lbs.
Curasol AK or HA	25 gallons	500 lbs.
Aerospray 70	25 gallons	500 lbs.

Any other suitable materials including latex or plastic compounds may be approved by the director.

12D. **Standards for Evaluating Vegetative Cover**

12D.01. **Final Planting Report** — A planting report shall be prepared by the operator and filed with the director on the prescribed form when the planting of a permit area is completed. All planting reports shall be certified by the operator or by the party with which the operator contracted for planting.

12D.02. **Time for Inspection** — The operator shall review all areas he has under bond prior to the recognized spring and fall planting seasons. The operator shall cause those areas deficient of vegetative cover to be retreated, graded, seeded, planted, mulched, limed, or whatever, to establish a satisfactory stand of vegetation.

12D.03. **Standards for Perennials** — Standards for legumes and perennial grasses shall require at least an eighty percent (80%) ground cover. Substandard areas shall not exceed one-fourth (¼) acre (100' x 100') in size nor total more than twenty percent (20%) of the area seeded. The ground cover of living plants on the revegetated area shall be equal to the ground cover of living plants of the approved reference area for a minimum of two growing seasons. The ground cover shall not be considered equal if it is less than ninety percent (90%) of the ground cover of the reference area for any significant portion of the mined area.

12D.04. **Standards for Woody Plants with Perennials** — Standards for woody plants with legumes and perennial grasses overseeded shall require a sixty percent (60%) establishment of ground cover of legumes and perennial grasses, and 400 trees (included volunteer tree species) and/or planted shrubs per acre, comprising a satisfactory vegetative ground cover as determined by the director. Substandard areas shall not exceed one-fourth (¼) acre (100' x 100') in size nor total more than twenty percent (20%) of the area seeded or planted. The ground cover of living plants on the revegetated area shall be equal to the ground cover of living plants of the approved reference area for a minimum of two growing seasons. The ground cover shall not be considered equal if it is less than ninety percent (90%) of the ground cover of the reference area for any significant portion of the mined area.

12D.05. **Final Inspection Report** — In no instance shall the official vegetative cover evaluation be carried out until the planting and seeding concerned has survived two growing seasons or a minimum of 18 months. A final inspection report shall be prepared and filed following inspection to determine that the above evaluative standards have been complied with. If acceptable, the director may then cause the remainder of the bonds to be released.

SECTION 12

TABLE ONE

USE: HAY, PASTURE OR OTHER WHERE HERBACEOUS COVER IS DESIRED

1.	Alfalfa Orchardgrass	20 lbs. 10 lbs.	5.	Crown Vetch Tall Fescue **Weeping Lovegrass	15 lbs. 20 lbs. 3 lbs.
2.	Birdsfoot Trefoil Tall Fescue	10 lbs. 15 lbs.	6.	Crown Vetch Rye Grass **Weeping Lovegrass	15 lbs. 15 lbs. 3 lbs.
3.	Birdsfoot Trefoil Orchardgrass	10 lbs. 10 lbs.			
4.	Sericea (Hulled) Red Top Tall Rescue	20 lbs. 3 lbs. 15 lbs.			

***APPROVED SEED MIXTURES FOR OVERSEEDING TREE AND SHRUB SEEDLINGS**

7.	Tall Fescue Sericea	30 lbs. 15 lbs.	**FOR ELEVATIONS ABOVE 2500**		
8.	Tall Fescue Rye Grass Sericea	20 lbs. 10 lbs. 15 lbs.	10.	Tall Fesue Red Top	20 lbs. 4 lbs.
9.	Tall Fescue Weeping Lovegrass Sericea	20 lbs. 3 lbs. 15 lbs.	11.	Tall Fescue Weeping Lovegrass	20 lbs. 3 lbs.
			12.	Tall Fescue Sweet Clover	20 lbs. 10 lbs.

* Establishment of vegetation includes liming to pH range 5.5 - 7.0. Application of fertilizer shall be based on soil test results from a soils laboratory. Without a soil test, apply 600 lbs. 10-20-10 or equivalent, and protection from grazing during the seedling state.

** Red Top may be substituted for Weeping Lovegrass for late summer and fall seedings at a rate of 3 lbs. per acre.

TABLE TWO

APPROVED WOODLAND PLANT MIXTURES
(Nursery Grown Seedlings)

1.	Black Locust (3000') White Pine	Plant in bands 6 rows or more in width Black Locust not to exceed 50%
2.	Black Locust (3000') Virginia Pine	Plant in bands 6 rows or more wide Black Locust not to exceed more than 50%
3.	Scotch Pine White Pine Red Pine (above 2000') Virginia Pine (below 2500')	Use mixture of two or more if available Plant in bands 6 rows or more
4.	Black Locust (below 3000') Tulip Poplar (below 3000') Sycamore (below 2500') Red Oak	Use up to one-half locust with one or more of hardwood species. Plant in bands 6 or more rows in each species
5.	Autumn Olive and adapted pines or hardwoods	Where owner's interest is wildlife improvement, plant in bands of 3 to 6 rows preferable with pines or in blocks of one-fourth acre spaced 600' apart
6.	European Black Alder (below 2500') Sycamore Indigo Bush Autumn Olive	Use these plants where protected from grazing is impractical or protection will not be maintained. For wildlife habitat improvement use 3 to 6 row bands where two or more species are planted.
7.	European Black Alder	Use European Black Alder where pH is near 5.5.
8.	Black Locust	Use only on steep erodible outslopes.
9.	Sweet Crab Apple* Washington Hawthorne*	On bench of areas where owners primary interest is wildlife habitat improvement, plant in clumps of 12 spaces 10' to 12' apart. Clumps should be spaced 200' to 300' apart, planted in between with pine, Indigo Bush or Autumn Olive.
10.	Blackberry*	Plant on bench spaced 6 X 6 in blocks 100 plants per block.
11.	Grey Dogwood* Silky Cornell*	On bench near water impoundsments spaced 8 X 8.

* Should be planted only on the more favorable sites. Preferably a north or northeastern aspect with a pH of 5.5 or above.

TABLE THREE

***APPROVED MIXTURES**
HERBACEOUS AND WOODY SPECIES FOR DIRECT SEEDING

1.	Tall Fescue Sericea Black Locust**	30 lbs. 15 lbs. 3 lbs.	
2.	Tall Fescue Rye Grass Sericea Black Locust**	20 lbs. 10 lbs. 15 lbs. 3 lbs.	
3.	Tall Fescue Weeping Lovegrass Sericea Black Locust**	20 lbs. 3 lbs. 15 lbs. 3 lbs.	
4.	Tall Fescue Birdsfoot Trefoil Black Locust**	30 lbs. 10 lbs. 3 lbs.	Better suited to higher elevations above 2500'
5.	Tall Fescue Red Top Birdsfoot Trefoil Black Locust**	20 lbs. 3 lbs. 10 lbs. 3 lbs.	Better suited to higher elevations above 2500'

* Application of fertilizer shall be based on soil test results from a soils laboratory. Without a soil test, apply a minimum of 200 lbs. ammonium nitrate and 200 lbs. triple super phosphate. Equivalent amounts of nitrogen and phosphorus fertilizer is acceptable.

** Black Locust seed may be omitted on the bench areas or where erosion is not a serious problem, or at elevations above 2000', ¼ lb/acre Virginia Pine; ¼ lb/acre White Pine; and 3 lbs/acre Japonica Intermedia may be substituted for Black Locust.

TABLE FOUR

***APPROVED MIXTURES FOR WATERWAYS, DIVERSIONS DRAINAGE STRUCTURES, HAULAGEWAYS, HIGHWALL ACCESS, ETC.**

1.	Tall Fescue Birdfood Trefoil Red Top	50 lbs. 10 lbs. 3 lbs.	4.	Tall Fescue Crown Vetch	50 lbs. 15 lbs.
2.	Perennial Rye Grass Tall Fescue Birdsfoot Trefoil Red Top	20 lbs. 30 lbs. 10 lbs. 3 lbs.	5.	Tall Fescue Reed Canarygrass Red Top	30 lbs. 20 lbs. 3 lbs.
3.	Tall Fescue Crown Vetch Red Top	40 lbs. 15 lbs. 3 lbs.			

NOTE: Weeping lovegrass at 3 lbs. per acre may be substituted for Rep Top for spring and early summer seedings on well drained areas.

* Application of fertilizer shall be based on soil test results from a soils laboratory. Without a soil test, apply a minimum of 200 lbs. ammonium nitrate and 200 lbs. triple super phosphate. Equivalent amounts of nitrogen and phosphorus fertilizer is acceptable.

TABLE FIVE

***ANNUAL AND BIENNIAL COVER CROPS FOR TEMPORARY COVER**

	Suggested Rates of Application — Pounds in Acres	Seeding Season
— Grasses —		
Babo Rye	30 - 60	Fall
Abruzzi Rye	30 - 60	Fall
Wheat	30 - 60	Fall
Oats	30 - 60	Fall
Japanese Millet	10 - 15	Summer
Millets - German, Foxtail	10 - 15	Summer
Sudan Grass - Sorghum Hybrid	10 - 20	Summer
Pearl Millet	10 - 20	Summer
Sudan Grass	10 - 20	Summer
Annual Rye Grass	10 - 15	Spring or Fall
— Legumes —		
Kobe Lespedeza	5 - 10	Summer
Korean Lespedeza	5 - 10	Summer
Hairy Vetch	20 - 40	Fall
Sweet Clover	10 - 20	Spring
— Forbs —		
Buckwheat	30 - 60	Summer

* Application of fertilizer shall be based on soil test results from a soils laboratory. Without a soil test, apply a minimum of 200 lbs. ammonium nitrate and 200 lbs. triple super phosphate. Equivalent amounts of nitrogen and phosphorus fertilizer is acceptable.

TABLE SIX

CLASSIFICATION OF MINESOILS WITHIN SOIL TAXONOMY

Minesoils of all ages are now being grouped under the category called spolents. This means recognition that these highly disturbed or manmade soils deserve the same attention, classification and management as other soils.

1. **Fieldcrest** is a family of minesoils containing a mixture of rock types. It has an acid but not extremely acid profile. Texture is loamy; mineralogy is mixed and fertility is medium. These are probably the most widespread minesoils in West Virginia.
2. **Postoak** is a minesoil family containing a dominance of mudstone material. It is near neutral in profile reaction; fine loamy textures and relatively fertile.
3. **Widen** minesoils are dominated by carbon rich coarse fragments or mine waste. They are acid in reaction but respond well to liming and revegetation.
4. **Brandonville** minesoils are dominated by shaly (fissile) coarse fragments. They are loamy in texture, have mixed mineralogy, are moderately acid and moderately fertile.
5. ***Valley Point** minesoils are dominated by sandstone coarse fragments. They are coarse loamy in texture, have siliceous mineralogy, low fertility and are extremely acid. These minesoils provide stable roadways and building sites.
6. ***Birdcreek** minesoils are similar to Valley Point soils but are acid instead of extremely acid.
7. **Killarm** minesoils contain a mixture of rock types. The profile is neutral in reaction. Texture is medium loamy. Mineralogy is mixed and fertility (except nitrogen) is relatively high.
8. **Overfield** minesoils contain a mixture of rock types. The profile is extremely acid (pH is below 4 at 10 inches). Texture is medium loamy. Mineralogy is mixed. Fertility is medium but acid related toxicity must be remedied by topsoiling or massive liming in order to get desirable plant growth.
9. **Shawneetown** minesoils have less than 10% rock fragments in the profile. The reaction is neutral; texture is fine loamy; mineralogy is mixed and fertility is relatively high except for nitrogen. These minesoils are suitable for cultivated cropping, but may not be present in mappable units in West Virginia.
10. **Pursglove** minesoils are like Widen except that they are extremely acid and require covering with favorable material or massive liming for satisfactory revegetation.

* Soils 5 and 6 frequently occur together in complex patterns.

These ten spolents cover most but not all minesoils in West Virginia. Other named minesoils have been identified and described and can be classified on request.

SECTION 13. OTHER MINING OPERATIONS ON SURFACE MINED AREAS

13.01. **Director's Approval** — Reclamation plans for other mining operations to be carried out on a surface mined area on which the regrading, backfilling or revegetation have not been completed, shall require prior approval by the director.

13.02. **Application Requirements** — Application for approval of such reclamation plans shall be accompanied by the following:

a. Application form to be prescribed by the director;

b. A map of the surface mining permit area, showing the portion of land to be disturbed by the other mining operations, including haulageways or access roads;

c. A performance bond or equivalent, as provided in Section 16, Article 6, Chapter 20, Code of West Virginia, as amended, the requirement for the first acre or fraction thereof of disturbed lands being one thousand dollars ($1,000) and for each additional acre or fraction thereof disturbed land an additional one thousand dollars ($1,000);

d. Written permission for other mining operations from the owner of the surface rights and/or the owner of the mineral rights or the controlling parties of the same.

13.03. **Applicability of Code and Regulations** — All requirements for haulageways or access roads, drainage, blasting, backfilling regrading, revegetation, and bond release procedures as set forth in Article 6, Chapter 20, Code of West Virginia, as amended, and all regulations of the Reclamation Commission shall apply with equal force to the reclamation of disturbed areas from other mining operations.

SECTION 14. SURFACE MINING OTHER THAN COAL

All requirements as set forth in Article 6, Chapter 20 of the Code of West Virginia, as amended, and all rules and regulations of the Reclamation Commission shall apply with equal force for the surface mining of clay, flagstone, gravel, manganese, shale, iron ore and any other metal or metallurgical ore.

SECTION 15. SURFACE MINING OF LIMESTONE, SANDSTONE AND SAND

All requirements as set forth in Article 6, Chapter 20, Code of West Virginia, as amended, excepting those covering bonding and reclamation and all rules and regulations of the Reclamation Commission with the exception noted, shall apply with equal force for the surface mining of limestone, sandstone and sand.

SECTION 16. SURFACE EFFECTS OF UNDERGROUND MINING OPERATIONS

16.01. **Applicability** — Where surface mining operations are incident to a mine as defined in Chapter 22, Article 1, Code of West Virginia, as amended, all applicable requirements set forth in Chapter 22, Article 2, Section 63 and Article 6, Chapter 20, Code of West Virginia, as amended, and all rules and regulations of the Reclamation Commission shall apply with the exception of Sections 4.01., 6. and 10.

16.02. **Director's Approval** — A reclamation plan for the surface effects of underground mining operations shall require written approval of the director prior to any surface disturbance.

16.03. **Certification** — The certification that the access roads or haulageways and the drainage systems were constructed and installed in accordance with the approved underground opening reclamation plan, shall be submitted to the director of the Department of Natural Resources by an approved registered professional engineer or other approved person prior to mine opening or reopening.

16.04. **Notification** —The director, Department of Natural Resources, shall notify the director, Department of Mines, of the satisfactory installation of all haulageways or access roads, drainage systems, and site preparations incident to the mine opening or reopening.

16.05. **Bonding** — Each operator who shall make application for an underground Opening Approval under Chapter 22, Article 2, Section 63, Code of West Virginia, as amended, shall at the time the approval plan is submitted furnish bonds in accordance with provisions of Chapter 20, Article 6, Section 16, Code of West Virginia, as amended.

16.06. **Mine Closure** — Upon completion of mining, the director, Department of Mines shall certify to the director, Department of Natural Resources, approval for mine closure. The director, Department of Natural Resources, shall have jurisdiction and control of final restoration and reclamation of the surface effects of underground mining operations.

16.07. **Surface Effects of Existing Underground Mining Operations** — The surface effects of all active underground mining operations in existence prior to the effectvie date of these rules and regulations shall comply with all applicable requirements set forth in Chapter 22, Article 2, Section 63, and Article 6, Chapter 20, Code of West Virginia, as amended, and all rules and regulations of the Reclamation Commission shall apply with the exception of Sections 4.01., 6. and 10.

SECTION 17. MODIFICATIONS

Should the director determine that modifications are necessary because of geologic structure, topography, particular watershed or permit conditions, the director may at his discretion with the approval of the Reclamation Commission, make such modifications if the same are in conformity with Article 6, Chapter 20, Code of West Virginia, as amended.

SECTION 18. STATE AND FEDERAL COMPLIANCE

The issuance of a prospecting or surface mining permit pursuant to Article 6, Chapter 20, Code of West Virginia, as amended, and any rules and regulations promulgated thereunder authorizes the operations covered by said permit, but does not release the permit holder from any other legal duties imposed by the laws of this state or these United States.

SECTION 19. VALIDITY OF REGULATIONS

The various sections of these rules and regulations shall be construed as seperable and severable and should any of the sections, sentences, clauses or parts thereof be construed and held unconstitutional or for any reason be invalid, the remaining sections of these rules and regulations shall not be thereby affected.

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18 IN STOCK—MACK RD686 SX. 55,000 lb. bogie. 18,000 lb. front axle. 11x22 tires. J-Brake. 227" wheel base.

26 IN STOCK—MACK RD686 S. 44,000 lb. bogie. 18,000 lb. front axle. 11x22 tires. J-Brake. 227" wheel base.

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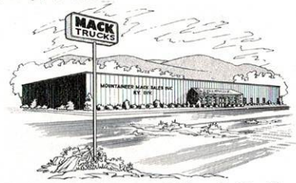

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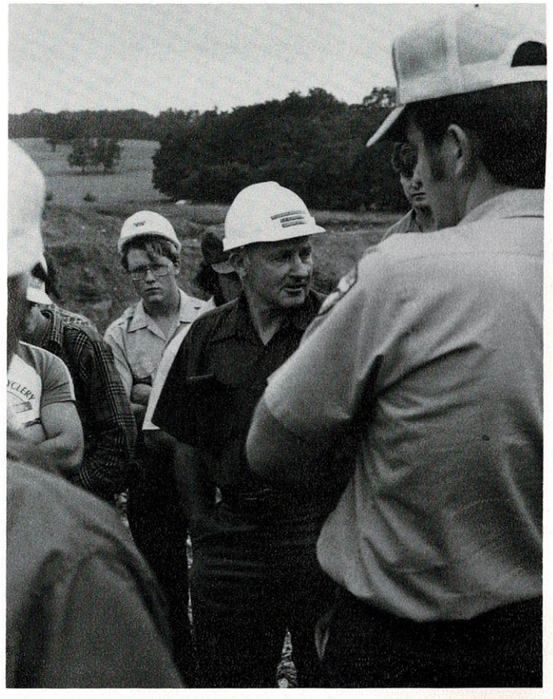


Lawrence Streets (center) acquaints tour participants with his Allegheny Mining operation in Grant County.

Lawson W. Hamilton Jr. (foreground) discusses valley fill construction on his Pratt Mining job.

DNR Tour Attracts International Attention

The Department of Natural Resources Interagency Evaluation Tour took an international turn this year with the presence of Bernard Lucien-Brun, Charges de Mission of the Ministery de L'Industrie in France. Accompanied by translator Edith Alexandre, the French official spent two weeks in this country, touring mining facilities in several states.

His visit was culminated by the week long tour of West Virginia, where he joined more than 150 other individuals in observing, evaluating, and discussing the Mountain State's surface mining and reclamation industries.

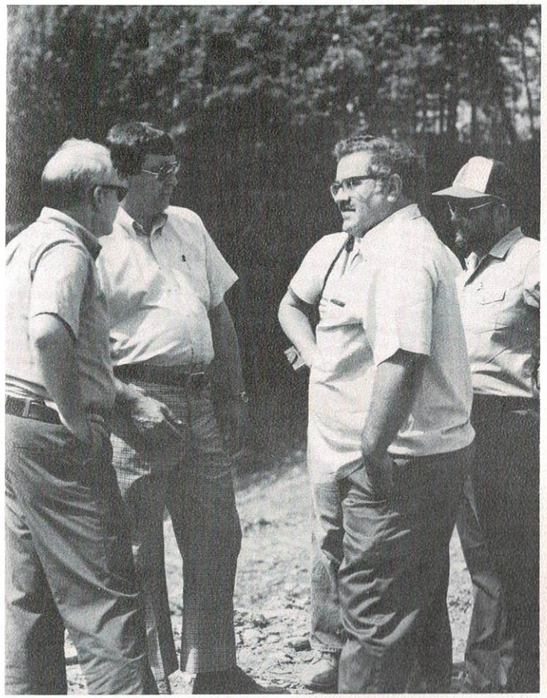
With a near record crowd in tow, DNR conducted its 11th annual tour with the usual detailed planning, and, for a change, near perfect weather. Traveling by caravan, which reached as many as 50 vehicles, the tour rolled through 11 counties, with overnight stops in Davis, Kingwood, Bridgeport, Charleston, and Logan. In their 800 mile trek, tour participants visited mining operations of 21 different companies, including two deep mines, an added feature this year.

Originated in 1968 as a means of evaluating the state of reclamation in West Virginia, the tour included only 15

Northern Assistant Chief Joe Beymer (left) hands the tour over to his southern counterpart, Joe Parker, as the caravan stops in Nicholas County.

DNR officials organize reporting committees at the outset of the tour. From left to right— Reclamation Supervisor Rocky Parsons, Northern Asst. Chief Joe Beymer, Deputy Director for Environmental Affairs Pat Boggs, Reclamation Chief Pete Pitsenbarger.

DNR's Division of Wildlife Resources was represented this year. Shown here from left to right are Division Chief Dan Cantner, Association President Ben Greene, Assistant Chief for Game Management Jim Ruckel, and Division of Reclamation Chief Pete Pitsenbarger.



Joe Buckberry (left) of Rebel Coal, discusses revegetation with French reclamation expert Bernard Lucien-Brun and translator Edith Alexandre.

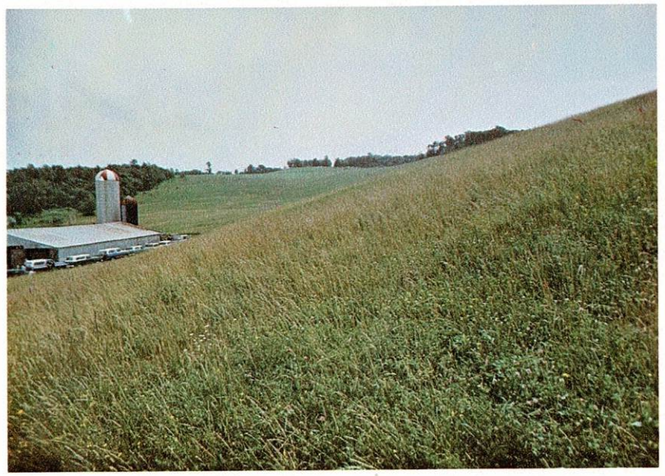
the first year. Although that group was a good cross section of government agencies, the number of participants has multiplied, and the number of groups represented has increased proportionately.

This year's tour included people from DNR s Divisions of Reclamation, Wildlife Resources, and Water Resources, as well as the U.S. Forest Service, the Agricultural Research Service, the U.S. Bureau of Mines, U.S. Fish and Wildlife, West Virginia University, the Office of Surface Mining, the U.S. Army Corps of Engineers, the Soil Conservation Service, the West Virginia Geological Survey, the Environmental Protection Agency, the Appalachian Regional Commission and others, in addition to industry officials, environmental group representatives, and members of the media. The tour also included government and industry people from Virginia, Kentucky, Ohio, Pennsylvania, and Maryland.

Commenting on the success of this year's tour, DNR Reclamation Chief Pete Pitsenbarger stated, "I think this was one of our best tours in terms of the exchange between government industry officials. Both sides obviously benefit when they can stand and get a first hand look at what it is they're talking about. Also, the great number of participants offers us an expansion of the real purpose of the tour, and that is to observe theory and technology as it is applied in the field, and to find ways to improve upon them."

Allegheny Mining's reclamation has provided complete revegetation on this Grant County area.

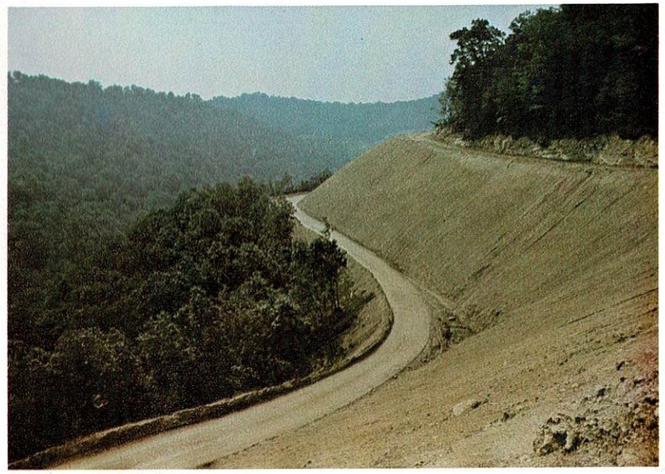
D&L Coal "returned to contour" on this Mineral County operation and now it looks like just another farm.



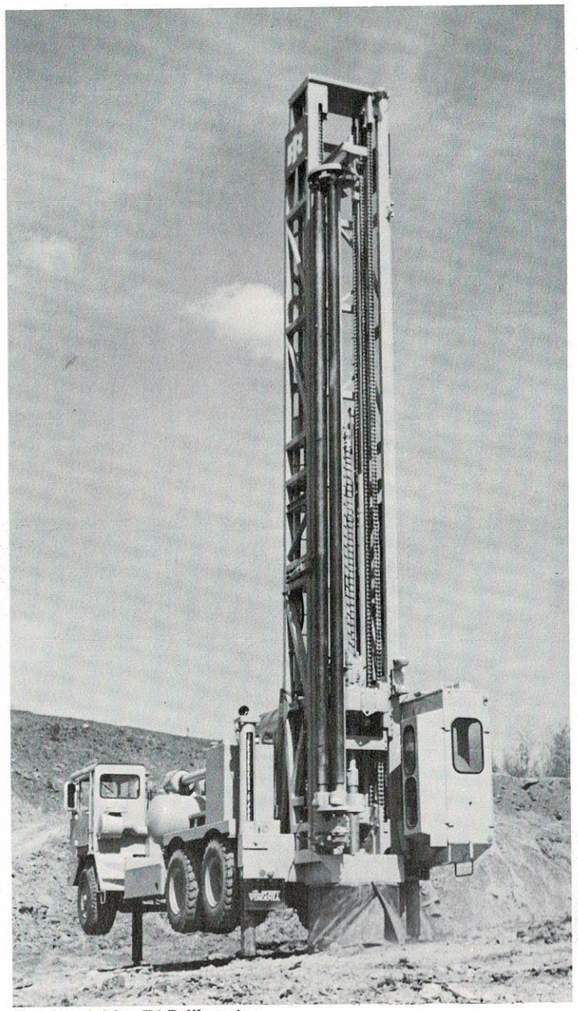
When they do it right in the north, you usually can't tell it's been done. Rockville Mining does it right, as this Preston County scene illustrates.

Peach Creek Processing demonstrated proper steep slope haul road construction on this Logan County job.

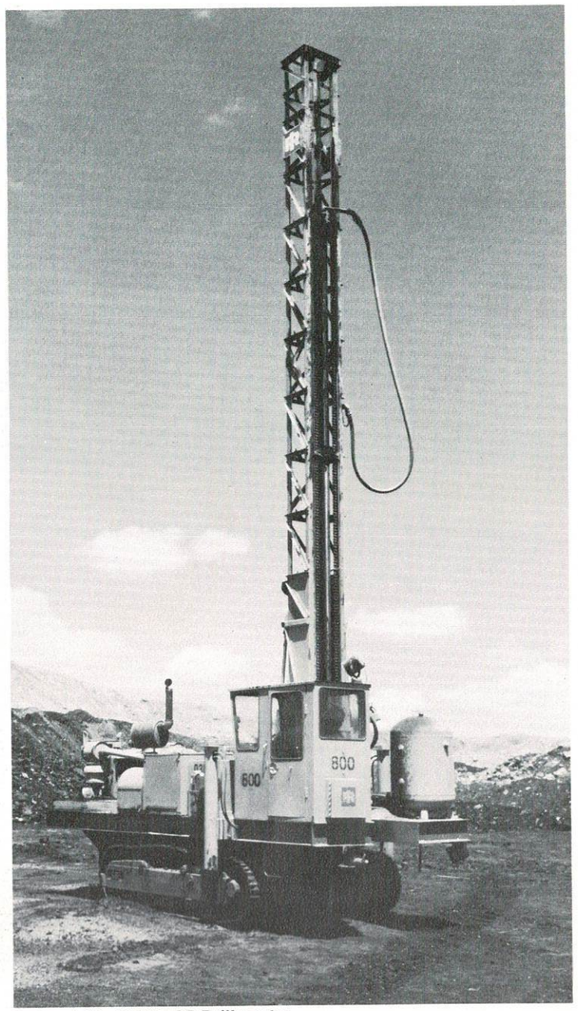
Joe Buckberry's Rebel Coal operation, in Logan County, deals successfully with some of the state's steepest slopes.



Pratt Mining, in Kanawha County, offered an impressive example of West Virginia's valley fill technique.



Top-head drive T4 Drillmaster



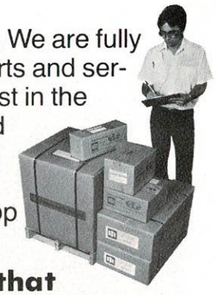
Rotary table DM25-SP Drillmaster

Top-head or rotary table drive, you get a little more than you asked for.

With an I-R Drillmaster rig on the job, there are a lot of things you can be sure of. Higher productivity, greater service-proved dependability, more safety, better parts service, and the industry's best financing.

T4 and DM-50 Drillmasters. For deep blastholes to 9⅞″ in diameter, these top-head rigs will take on all contenders in total cost per foot of hole. Rugged tower withstands high torque loads. Massive, powerful rotary head provides infinitely variable speeds to 200 rpm, with torque to 50,000 in-lb. Truck-mounted T4 has 37,000 lb. of pulldown; Crawler-mounted DM-50 has 50,000 lb. pulldown. Hydraulic system cooling permits operation at high temperatures without overheating. And their 60-second rod changer is the safest on the market!

DM25-SP Drillmaster. A top-performer that makes short work of single-pass holes to 50′ deep and 6¾″ in diameter. Pulldown of 26,000 lb., rotary table speeds of 60-375 rpm, and compressor options to 600 cfm at 125 psig make this rig hard to beat. Features include strong, lightweight welded steel tower, simple mechanical-drive table, and hydraulic propulsion with spring-applied brakes. Other Drillmaster sizes also available.



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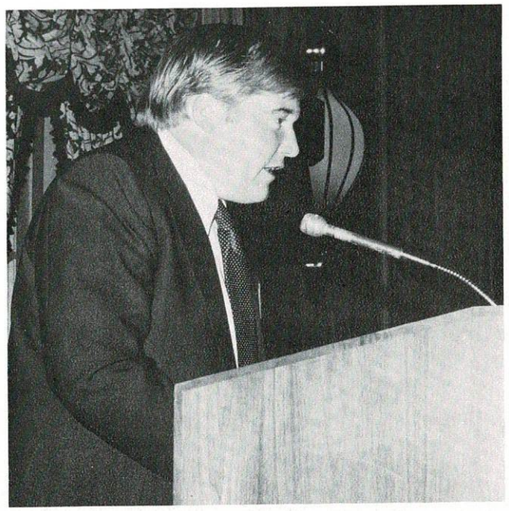


The transition of leadership was smooth and quick on Saturday night as James H. "Buck" Harless (left) completed a successful term as Chairman of the Board, and turned the reins over to John J. Faltis.

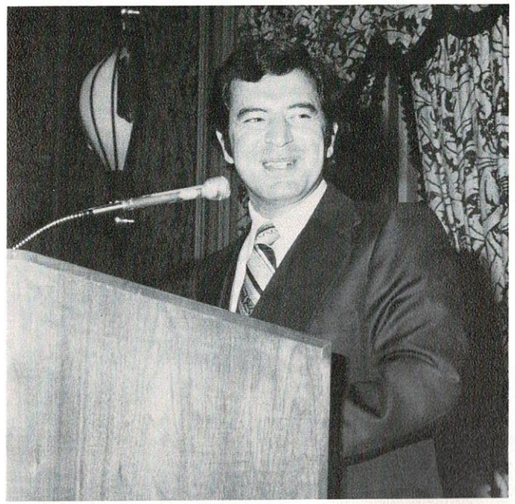
John Faltis Elected Chairman

John J. Faltis of Anker Mining & Development Co., Inc., was elected as Chairman of the Board of Directors at the Association's 12th Annual Meeting August 10-13, at the Greenbrier Hotel in White Sulphur Springs, W. Va. Faltis becomes the fifth Chairman of the Board since the Association was reorganized in 1974.

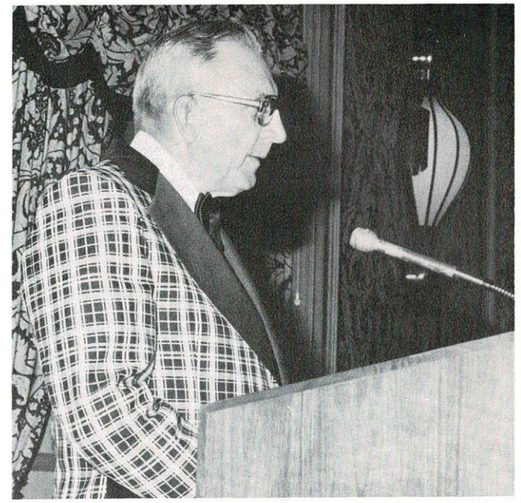
Other officers elected at that time included Charles T. Jones of Amherst Coal Co., 1st Vice-Chairman, Lawrence A. Streets of Allegheny Mining Corp., as 2nd Vice-Chairman, Garnie R. Stidham, of Energy Enterprises, as Secretary, William C. M. Butler III of Princess Susan Coal Co., as Treasurer, and Bernard J. Folio of Explosives, Inc., as Chairman-Associate Division.

Four members were newly elected to the Board of Directors including James W. Anderson of Anderson & Anderson Contractors, Inc., Tracy W. Hylton of Whitesville A&S Coal Co., Inc., James R. White of Pioneer Fuel Corp., and Donald R. Donell of Starvaggi Industries, Inc. Re-elected to terms on the Board were C. E. Compton of Grafton Coal Co., Lawson W. Hamilton, Jr. of X-Cello Corp., R. C. Long of Hawks Nest Mining Co., John W. Sturm of Barbour Coal Co., William J. Tattersall of Bethlehem Steel Corp., C. I. Johnston of Rish Equipment Co., and Richard N. Welch of Beckwith Machinery Co.

The meeting was culminated by a Saturday night banquet at which West Virginia Congressman Nick Rahall was the featured speaker. Rahall addressed the problem of over restrictive implementation of the Surface Mining Control and Reclamation Act of 1977, expressing his conviction that the Office of Surface Mining has far exceeded the intent of Congress in promulgating regulations.



West Virginia Congressman Nick Rahall offered the main address at Saturday night's banquet.



Leo Vecellio, Sr. was honored as West Virginia's "Coal Man of the Year." The presentation was made by WVU President Dr. Gene Budig.

Working compadres Dick Vande Linde (left) and Flick Goldsmith both come up with golf awards. Dick's the boss at Vande Linde Inc., but Flick walked off with a better prize.

For the second consecutive year, a husband/wife combination made the tennis finals—on opposite sides. This year the better half won as Dottie Williams (left) teamed with Greg Gorrell for first place, while husband Lloyd, playing with Florence Jones, settled for runner-up.

ASSOCIATION NOTEBOOK

SEMI-ANNUAL MEETING

Plans are going forward for the Association's Semi-Annual Meeting, scheduled for January 24-31, 1979 in Hawaii. Over 350 members and guests have preregistered for the trip.

This year's event will be a "moveable feast," with the first half of the week long stay at the Kona Surf Hotel on the Island of Hawaii. The convention will then shift to the city of Honolulu, on the island of Oahu, for a stay at the Hyatt Regency Hotel.

Scheduled events already include a luau and a Polynesian show, along with the standard golf and tennis tournaments.

Because of the obvious logistical problems involved in transporting 400 people 7000 miles, the Association staff requests that all letters and questionaires be responded to promptly. This will aid immensely in planning a successful meeting.

SYMPOSIUM

The WVSMRA Sixth Annual Symposium is scheduled for January 10-11, 1979 in Charleston. This year's event has been moved to the Charleston House Holiday Inn which offers larger facilities. Last year's record turnout of 500 plus prompted the move. As the date nears for the Symposium, the membership will be informed of registration procedure. Watch the Green Lands Newsletter for details.

BACK ISSUES

Members are reminded that back issues of **Green Lands Quarterly** are available in limited quantities for use in schools, libraries, civic groups, or other educational outlets. Also available in great supply are two brochures featuring surface mining and reclamation in West Virginia.

These are titled "The Role of Surface Mining," and "Nobody Does it Better." For further information contact any of the staff at Association headquarters (304) 346-5318.