

**COPY**

**Applicable Law: The Clean Water Act:**

No person, corporation, business, partnership, or any other entity shall discharge any dredged or fill material into the streams or navigable waters of the United States unless a permit is obtained from the Army Corp of Engineers demonstrating a beneficial purpose for such discharge.

Any person aggrieved by a decision or permit issued by the Army Corp of Engineers may file a civil action with the federal district court in any district in which the permit is applicable.

**Facts:**

Mountain Top Mining Inc., a coal company that specializes in "Mountain-Top Mining," has been provided a permit under the Clean Water Act by the Army Corp of Engineers to remove a mountain top in West Virginia and use the resulting dredged or fill material obtained in the removal to fill-in the mountain valleys, which will necessarily cover-up streams that flow into the navigable waters of the State of West Virginia and surrounding states. The permit cites a beneficial purpose of "disposal of waste." A group of citizens calling themselves "MADS" (Mountaineers Against Destroying Streams), has filed suit in federal court in The United States District Court for the Southern District of WV, in Charleston, because Mountain Top Mining Inc. is using its permit in the Southern District of WV.

**TRANSCRIPT OF TRIAL**

**BAILIFF:** All rise. This Court is now in session.

**JUDGE:** Please be seated. Ladies, and Gentlemen, this is case involving a citizen's group known as MADS, (who is the PLAINTIFF---the person or entity bringing the lawsuit) against the Mountain Top Mining Inc., a Delaware Corporation, ( who is the DEFENDANT--- the person defending the lawsuit).

In this case, MADS is alleging that Mountain Top Mining Inc., has violated the Clean Water Act by discharging dredge or fill material into the streams or navigable waters of the United States for a non-beneficial use, and alleging that the Army Corp of Engineers improperly gave a permit to Mountain Top Mining Inc., because Mountain Top Mining Inc., did not, and cannot demonstrate a beneficial purpose for such discharge.

Remember, a lawsuit is an allegation of wrongful conduct. It is not proof of wrongful conduct., and the fact that Mountain Top Mining Inc., and The Army Corp of Engineers has been sued is not to be considered by you as any evidence of wrongdoing. Do you understand?

The first part of the case is VOIR DIRE, which means to “speak the truth”. It is the process by which we pick a jury. We have to find an impartial jury that swears to make their decision not on any prejudices, or preconceived notions, but solely on the evidence as it comes in the case. Do you think you, as prospective jurors, can do that?

JURORS: Yes Judge.

JUDGE: Now, in any civil trial, the plaintiff has the burden of proving their allegations by a preponderance of the evidence, this means the greater weight of the evidence, but is not to be confused with the burden of the state in a criminal trial, which requires the state to prove its case beyond a reasonable doubt. At the end of this case, the court will issue INSTRUCTIONS OF LAW to provide you with information on all the law you are to apply to his case, and will give you a VERDICT FORM upon which the FORMAN of the jury will write your decision at the end of the trial. In a civil case as this, the plaintiff has the burden of proof, and for that reason will go first. You will first hear the OPENING STATEMENT of the attorney for AMMT. Then you will hear the opening statement of the attorney for Mountain Top Mining, Inc. Then the plaintiff will call its WITNESSES, with the defendant having the opportunity to CROSS-EXAM each witness after the DIRECT EXAMINATION of each witness. Then the defendant will call its witnesses, and the plaintiff will have the same right of cross-examination. After the witnesses are all heard, you will then hear the CLOSING ARGUMENTS from the plaintiff, and then from the defendant and only then, will the Court instruct you on the law, and you will be asked then and only then to deliberate together to determine if plaintiff has proven its case by a preponderance of the evidence.

Is the plaintiff ready to proceed?

PLAINTIFF'S  
ATTORNEY: Yes, Your Honor.

JUDGE: Is the Defense ready to proceed?

DEFENDANT'S  
ATTORNEY: Yes, Your Honor.

JUDGE: Okay, Mr./Ms.--[**name of student assigned this role**]--, you may proceed.

PLAINTIFF'S  
ATTORNEY:

Ladies and Gentlemen of the Jury, in the opening statement, it is my duty to tell you what the evidence will be. I'll tell you what we will prove. We will prove that Mountain Top Mining Inc., a large corporation, with a business address of Delaware, is in the business of mountain top mining, that it literally slices off the top of a mountain in order to get easy access to the coal seams at the base of the mountain, and that in this type of mining, tons and tons of soil is disturbed, turned into dredge, and fill material, and that the Mountain Top Mining Inc., is required to do something with the spoils of the process, so what it does is dump it in the valleys around the mountains it mines upon, filling up the ravines, and covering up natural streams that flow through those ravines—filling them up with dredge, fill dirt. Filling them up with the spoiled earth from the mining process. Ladies and Gentleman of the jury, the evidence will be that dumping all this material in the ravines, and in the streams running through the around the mountains spoils not only the natural beauty of our mountains, no, this is not just a case about natural beauty, the evidence will be that it pollutes the streams, destroys the ecosystem of the mountains, and is in violation of the Clean Water Act because it serves no beneficial purpose. The evidence will also be that the Army Corp of Engineers, is allowing Mountain Top Mining Inc., to do this, has acted arbitrarily and capriciously, and has not properly done its job to ensure that the use for which its permit was granted was for a beneficial purpose.

DEFENDANT'S  
ATTORNEY:

Now, ladies and gentlemen, the defense is simple. Using the ravines to dump the waste products of our mining is a beneficial purpose. We have to put it somewhere, and it is expensive to

move it for any distance. Where better to put it than right next to the mountain whose top was removed, right in the ravines surrounding those same mountains? Why, over many years, we might even make West Virginia the envy of other states by removing a lot of unnecessary mountains tops and using the fill to build up the surrounding ravines, making vast areas in West Virginia completely level for future development, for such things as airports, shopping malls, and golf courses, and casinos. We employ 5 employees in the State of West Virginia. Each of them operates huge earth moving machines that we buy from China. If we couldn't dump the dredged soil and other spoils of our mining operation in the ravines, we couldn't do this type of mining, and if we couldn't do this kind of mining, we would not be able to employ those five people in the state of West Virginia. Like it or not, Coal is big business in West Virginia, and Coal is necessary to our economy. And yes, waste is produced, and you need a place to put the waste, and the Army has properly given us a permit for that purpose, recognizing the beneficial nature of the purpose.

JUDGE:

Mr./Ms.—[**name of student assigned this role**] — you may call your first witness.

PLAINTIFF'S  
ATTORNEY:

Your Honor, our first witness will be an EXPERT WITNESS,  
Dr. Ben Stout.

JUDGE:

Ladies and Gentlemen of the jury, a witness usually may not give testimony in the nature of "opinions." As the old saying goes, we are interested in "just the facts." However, if scientific, technical, or other specialized knowledge will assist the jury to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion under certain conditions: if the testimony is based upon sufficient facts or data, if the testimony is the product of reliable principles and methods, and the witness has applied the principle and methods reliably to the facts of the case. Such a person is called an EXPERT WITNESS, and the jury should know that the court has made a preliminary finding that this person meets the threshold

requirements of the expert witness rule for purposes of testifying, but the jury should not take from that that the court expresses either its agreement or disagreement of the testimony to be offered. The weight and credence of any EXPERT WITNESS duly qualified to testify as such by a Judge is to be determined solely by the jury. All right counsel, you may call your witness.

PLAINTIFF'S  
ATTORNEY:

Plaintiff calls Dr. Ben Stout as its first witness.

CLERK:

Do you swear to tell the truth, the whole truth, and nothing but the truth?

ENVIRONMENTAL  
EXPERT:

I do.

*(The students may use the Plaintiff/Environmental Expert Handout or use their own research for the following section.)*

PLAINTIFF'S  
ATTORNEY:

Please state your name.

:

My name is Dr. Ben Stout..

PLAINTIFF'S  
ATTORNEY:

Dr., can you tell the jury your occupation?

ENVIRONMENTAL  
EXPERT:

I am a [**expertise to be chosen by student assigned this role**].

PLAINTIFF'S  
ATTORNEY:

Can you give us a brief description of your education, training, and experience as a [**see handout**].

ENVIRONMENTAL  
EXPERT:

(Education, Training and Experience of the participant's role character are given from handout.)

PLAINTIFF'S  
ATTORNEY:

Your honor, I would ask that this witness be qualified as an expert in [same as above], and to give opinions touching on his expertise.

JUDGE:

Before I rule on his qualifications, does counsel for the defense of any questions?

DEFENDANT'S  
ATTORNEY:

No questions at this time, your honor.

JUDGE:

I will qualify Dr. Stout as an expert, you may proceed, counsel.

PLAINTIFF'S  
ATTORNEY:

Can you tell the court and jury, Dr. Stout, what is your opinion as to whether or not filling the ravines in a mountain top mining operation is a beneficial purpose?

ENVIRONMENTAL  
EXPERT:

**[If a student is assigned this role, they may use the Plaintiff/Environmental Expert handout sheet].**

PLAINTIFF'S  
ATTORNEY:

(Here the plaintiff's attorney can ask as many questions as necessary to establish his point. The questions can be prepared in a pretrial setting, or the student attorney may use the **Plaintiff's Attorney handout.**)

No further questions, your honor.

JUDGE:

Do you have any questions, counselor?

DEFENDANT'S  
ATTORNEY:

Yes, I do, Your Honor.

## CROSS-EXAMINATION

DEFENDANT'S  
ATTORNEY:

**[Student assigned this role will prepare a cross-examination based on Plaintiff's expert's testimony, or use the Defendant/Environmental Expert Handout].**

No further questions, your honor.

JUDGE:

Call your next witness, Mr./Ms.—**[name of student assigned this role]**.

PLAINTIFF'S  
ATTORNEY:

Mr. /Ms. --- **[name of student assigned this role]**.

CLERK:

Do you swear to tell the truth, the whole truth and nothing but the truth?

MADS  
REPRESENTATIVE:

I do.

PLAINTIFF'S  
ATTORNEY:

Please state your name and address?

MADS  
REPRESENTATIVE:

Mr. /Ms. --- **[name of student assigned this role]**. I live in Wheeling, WV.

PLAINTIFF'S  
ATTORNEY:

Can you tell me a little about MADS, and your role in?

MADS  
REPRESENTATIVE:

I am the President of MADS which is a statewide organization which is organized to educate the public about the importance of our streams and water systems in West Virginia, and the dangers to those systems.

PLAINTIFF'S  
ATTORNEY:

Is this an organization that is against Mountain Top Mining?

MADS

REPRESENTATIVE: We are not against any type of business or against any particular business. Our group was set up to prevent the destruction of the streams and waters systems of West Virginia, and we believe that methods adopted by Mountain Top Mining, Inc. are not beneficial, that it should not have been granted a permit by the Army Corp of Engineers, and that citizens have a right to be heard in connection with those methods.

DEFENDANT'S  
ATTORNEY:

Objection, opinion testimony, not an expert!

JUDGE:

Overruled. I believe the witness was just explaining the views of the group, not testifying as to his [or her] own views.

PLAINTIFF'S  
ATTORNEY:

Do any of your members live in the southern district of West Virginia?

MADS

REPRESENTATIVE: Yes, most of them are from the southern part of the state, within this judicial district?

PLAINTIFF'S  
ATTORNEY:

And some of them are in the actual watersheds affected by these permits?

DEFENDANT'S  
ATTORNEY:

Objection. Speculation!

JUDGE:

[To witness] Do you know which streams are listed on the permit, and if you have members in that watershed, or are you just guessing?

MADS

REPRESENTATIVE: Oh no, your honor, I have reviewed the permits, I have matched them with our membership lists.



DEFENDANT'S  
ATTORNEY:

Those lists are hearsay! Objection to hearsay testimony.

PLAINTIFF'S  
ATTORNEY:

Your honor the permits, which I can tender into evidence, are official documents. The membership lists of MADS are business records kept in the ordinary course of the MADS business. Both are exceptions to the Hearsay Rule.

JUDGE:

Your objection counsel is overruled. You may proceed, counsel.

PLAINTIFF'S  
ATTORNEY:

I ask you again, are some of your members in the actual watersheds affected by these permits?

MADS

REPRESENTATIVE: Yes sir.

PLAINTIFF'S  
ATTORNEY:

Does your group ever consider the jobs and economic Benefits of mountain top mining?

MADS REPRESENTATIVE:

: Possibly the largest problem in accepting the mountaintop removal lies in the origin of the mining companies. Many believe that the companies should be left alone because they employ "down home boys", thus helping alleviate employment in West Virginia. In truth, nearly all of these companies originate out-of-state, usually in Pennsylvania and Maryland. Actually, only 1 percent of the state's work force works for a mining company (about 16,000, compared to 125,000 from a half-century ago)<sup>4</sup>, and the companies cripple the state's second biggest moneymaker: tourism. Also, the coal recovered from the majority of these sights go to other states and they receive the majority of the profit. A front page heading on a special report by U.S. News screams, "Environmentalists predict that in two decades half the peaks of southern West Virginia's skyline might vanish."<sup>5</sup> Not only does mountaintop mining not help the West Virginia economy, if allowed to continue, West Virginia may lose a substantial amount of money due to lack of tourism.

DEFENDANT'S  
ATTORNEY:

Mr. /Ms. --- [**name of student assigned this role**], you live in Wheeling, and so you yourself do not live in a watershed affected by these permits.

MADS  
REPRESENTATIVE:

It's all connected, Mr. /Ms. --- [**name of student assigned this role**] Like they say, we all live downstream—We are concerned that a ruling allowing valley fill to bury and degrade an ecosystem in one part of our state will set precedence for such activities in other areas as well. As environmentally-minded people, we understand that you can never do just one thing. Each action taken on natural systems has multiple repercussions, given nature's intricate interconnectedness. We support each other regardless of artificial geographical locations. What happens to one of us, happens to us all.

DEFENDANT'S  
ATTORNEY:

That was not my question. Please answer my question. Isn't it true that none of the streams specifically mentioned on any of the permits challenged today run through Wheeling, WV?

MADS  
REPRESENTATIVE:

That is correct.

DEFENDANT'S  
ATTORNEY:

No further questions!

PLAINTIFF'S  
ATTORNEY:

Plaintiff rests, your honor.

JUDGE:

Mr. /Ms. --- [**name of student assigned this role**], do you have any witnesses?

DEFENDANT'S  
ATTORNEY:

Yes we do your honor, we have our own expert witness, Dr. Donald Carbide.

JUDGE:

Dr. Carbide, will you approach the Clerk to be sworn in?

CLERK: Do you swear to tell the truth, the whole truth, and nothing but the truth?

BUSINESS EXPERT: I do.

DEFENDANT'S  
ATTORNEY: Please state your name.

BUSINESS EXPERT: My name is Dr. Donald Carbide.

PLAINTIFF'S  
ATTORNEY: Dr., can you tell the jury your occupation?

BUSINESS EXPERT: I am a consultant to the fossil fuels extraction industry. I am an expert on fossil fuels energy.

DEFENDANTS  
ATTORNEY: Can you give us a brief description of your education, training, and experience as a fossil fuels energy expert.

BUSINESS EXPERT: Yes, I received a degree in Chemistry and Earth Sciences from Harvard College in 1980. I received a Masters Degree in Business Administration from Yale University in 1982, and since then, I have worked in various jobs in the energy industry as a research analyst and consultant to business, including probably all of the Fortune 500 energy companies at one time or another.

DEFENDANT'S  
ATTORNEY: Have you received any awards for your work as a fossil fuels energy expert?

BUSINESS EXPERT: Oh yes, I have won for the last 10 years in the row the national award given by the U.S. energy consortium for innovative solutions to today's energy problems.

DEFENDANT'S  
ATTORNEY: Your honor, I would ask that this witness be qualified as an expert in the fossil fuels, energy extraction industry, and to give opinions touching on his expertise.

JUDGE: Before I rule on his qualifications, does counsel for the defense of any questions?

PLAINTIFF'S

ATTORNEY:

No your honor, we agree that he is an expert in business.

JUDGE:

I will qualify Dr. Carbide as an expert, you may proceed, counsel.

DEFENDANT'S

ATTORNEY:

Can you tell the court and jury, Dr. Carbide, what your opinion is as to whether or not filling the ravines in a mountain top mining operation is a beneficial purpose?

BUSINESS EXPERT:

**(Student assigned this role will be prepared to testify based on their own pretrial preparation, or they may use the Defendant/Business Expert handout.)**

DEFENDANT'S

ATTORNEY:

No further questions, your honor.

JUDGE:

Do you have any questions, counselor?

PLAINTIFF'S

ATTORNEY:

Yes, I do, Your Honor.

### CROSS-EXAMINATION

PLAINTIFF'S

ATTORNEY:

**[Student assigned this role will prepare a cross examination based on the testimony of defendant's expert, or they may use the Plaintiff/Business Expert Handout]**

No further questions, your honor.

PLAINTIFF'S

ATTORNEY:

Nothing further, your honor.

(At this juncture, students are free to call additional witnesses that they feel will help their case. The same trial structure format will be used for examination and cross-examination.)

JUDGE: Counsel, are there any motions at the close of the case, and before closing arguments?

DEFENDANT'S ATTORNEY: Yes, your honor. As you know, the law allows a Judge in every case to dismiss a case if it is frivolous or not well taken, and I would like to make a MOTION TO DISMISS the case because it is frivolous! The MADS representative who testified doesn't even live in the Southern District of West Virginia. That means he/she doesn't have STANDING to bring this action because he/she cannot show any harm to him/her as a result of the granting of this permit.

JUDGE: Counsel for Plaintiff, you may proceed.

PLAINTIFF'S ATTORNEY: Your honor, this case raises a meritorious issue for resolution by a jury, and as for the issue of STANDING, MADS representative -- **-[name of student assigned this role]** testified that she is only one of many members, some of whom live in the affected areas, and in addition, the testimony of our expert witness demonstrated the importance of this issue to all West Virginians, not just people who live near the streams or navigable waters directly impacted by the Corp's permits. We think the Motion to Dismiss should be denied.

JUDGE: I have considered this case as I do in every other case before me, and have decided that it does indeed present meritorious issues for resolution by a jury, so I am going to overrule the Motion to Dismiss, and you may have your objection. Is counsel ready to proceed to CLOSING ARGUMENTS?

PLAINTIFF'S ATTORNEY: Yes, your honor.

DEFENDANT'S ATTORNEY: Yes, your honor.

## CLOSING ARGUMENTS

JUDGE

Ladies and Gentlemen, now is the time for Closing Arguments, and you will hear first from counsel for the Plaintiff.

PLAINTIFF'S  
ATTORNEY:

Ladies and gentlemen of the jury, we have proven through the testimony of our expert witness, that Mountain Top Mining can show no beneficial purpose for discharging dredge and fill into the streams and navigable waters of the State of West Virginia. As our expert has shown, using our ravines and streams for waste disposal is not a beneficial use. The scientific evidence is clear-- when you balance the environmental damage caused by using our ravines and streams for waste disposal from mountain top mining to the advantages cited by the defendant ...

**[Student assigned this role will prepare some closing arguments based on expert testimony of plaintiff's environmental scientist or may use the Plaintiff's Attorney Summary handout]**

I trust you will agree that the Army Corp of Engineers, has acted arbitrarily and capriciously in granting Mountain Top Mining Inc. a permit to discharge dredge and waste into the streams and navigable waters of the State of West Virginia, by not properly determining that its permit was for a beneficial purpose. Thank you for your attention.

JUDGE:

Mr. /Ms. **[name of student assigned this role]**; you may proceed to give the closing argument for the defense.

DEFENDANT'S  
ATTORNEY:

**(Student assigned this role will prepare some closing arguments based on expert testimony of defendant's business expert, or may use the Defendant's Attorney Summary handout]**

We ask that you find for the defendants and against the plaintiff, which will uphold our permit, and be a decision in support of the great job being done by the Army Corp of Engineers, and agency of our government. Thank You for your attention.

JUDGE:

Now it's time for the Charge to the Jury: the Jury is instructed that; The Clean Water Acts provides that,

“No person, corporation, business, partnership, or any other entity shall discharge any dredged or fill material into the streams or navigable waters of the United States unless a permit is obtained from the Army Corp of Engineers demonstrating a beneficial purpose for such discharge.” It also provides that “Any person aggrieved by a decision or permit issued by the Army Corp of Engineers may file a civil action with the federal district court in any district in which the permit is applicable.”

I told you that plaintiff MADS has to prove its case by a preponderance of the evidence. What does that mean? It means the greater weight of the evidence. It does not mean who had more witnesses on one side or the other, or who had the most exhibits, but rather, the preponderances lay with the side whose evidence is more satisfying to you, which you determine is more persuasive, even if only slightly more than the other party. However, if you find that the evidence is equal, or evenly balanced, and neither side has demonstrated a preponderance of the evidence, then you shall find for the defendant and not for the plaintiff, because it is the burden of the plaintiff to prove its case by a preponderance of the evidence.

Sometimes it is said that there are different Judges in the court room. I am the Judge of the law, and that's why I had to rule on objections, and tell you what law applies to resolve this dispute. However, it is often said that the jurors are the judges of the facts. It is entirely your decision to determine the facts in issue in this case, whether supporting plaintiff's view that the facts support a violation of the Clean Water Act, and that the Army Corp of Engineers acted arbitrarily in awarding a permit to Mountain Top Mining Inc. to use its waste material, dredge and fill material, to fill in our ravines and cover our streams. In other words, you will decide the fact as to whether waste disposal is a beneficial use as allowed by the Clean Water Act. You are the sole Judge of the credibility of the witnesses, and nothing the Court has done, in ruling on objections, or in asking any questions should be

construed by you as any expression of preference for one side or the other in this case. Now, when you go back to the jury room, you will first pick a FOREMAN to assist in your deliberations, and when you have reached a VERDICT please advise the Bailiff. Bailiff, please take the jury to the jury room.

BAILIFF: Yes, Judge.

JUDGE: Will the foreman of the jury please stand. Have you reached a verdict?

FOREMAN: We have, Your Honor.

JUDGE: Will the defendant please stand. You may read the verdict.

FOREMAN: **[We find for the plaintiff and against the defendant] OR [We find for the defendant and against the plaintiff]**

JUDGE: So say you all?

JURY: Yes.

We hope you have enjoyed learning about the CIVIL JUSTICE SYSTEM, and now we'll have a short summary and question and answer period.



## Mountain-Top Mining Mock Trial Handouts

### Defendant's Attorney/~~Environmental Expert~~ Handout

Defendant's Attorney: Are you familiar with the Sturm Report, Dr. Stout?

Dr. Stout: Yes, it relates to a study conducted by the Sturm Environmental Services Company For Hobet Mining, Inc. to evaluate Mountain Top Mining and valley fill on the surface Hydrological and Benthic Systems.

Defendant's Attorney: I will read from said report:

The primary purpose of the Sturm Report was "to provide a summary of available surface water quality and benthic data to those agencies involved in regulating mining activities in West Virginia" (page 4). The second stated purpose of the Sturm Report was to "outline and verify that detailed water quality and benthic programs have been and are being conducted pre-, during, and post-mining on many West Virginia mines. The letter from David Fisher of Sturm Environmental Services has accompanying benthic data sheets describing a paucity of macroinvertebrate taxa in Pigeonroost Branch

Dr. Stout:

The stated purpose of the Sturm Report was to "outline and verify that detailed water quality and benthic programs have been and are being conducted pre-, during, and post-mining on many West Virginia mines" (p. 4). The Sturm Report fails to accomplish this purpose because of:

First: inadequate experimental design: The experiment does not include conditions before and after valley fill, and therefore, it can not be determined if statistically significant differences exist due to anything other than chance alone.

Second: lack of scientific controls: ). The best studies are those that employ an above and below, before and after experimental design. In the case of valley fill, an upstream control site is not possible because the entire upstream area is buried. To ascertain the effects downstream of the fills a suitable scientific control would be a nearby "reference" stream in a relatively undisturbed watershed. Such a control or reference was not included in the Sturm study.

Third: inadequate benthic sampling frequency: benthic macroinvertebrates were sampled only three times over an eleven year period. Three samples collected over an eleven year period is entirely inadequate. To be meaningful, benthic samples should have been collected, at the very least, at monthly intervals over an eleven-year period.

Fourth: discrepancies in the time of year when benthic sampling was conducted: For the Sturm Report the time of year when the sampling was conducted was different for each sampling event. For instance, Rockhouse Creek was sampled May 6, 1986, April 30, 1993, and July 28, 1997. The two or three month difference in the time-of-year that samples were collected may have had a greater influence on the results than the seven- or eleven-year lapse between subsequent sampling events

Fifth: differences in sampling methodology during different sampling events: the May 6, 1986 sampling was conducted using a square foot sampler.. The April 30, 1993 sampling was conducted by hand picking the stream bottom for 20 minutes. The July 28, 1997 sampling was conducted by hand picking the stream bottom for 30 minutes. The differences in sampling method and sampling effort make it impossible to interpret abundance data with any accuracy.

With no scientific control, no *a priori* experimental (including statistical) design, and inconsistent sampling methods, the results of this study have no scientific value. Additionally, the Sturm Report makes no mention of the obvious permanent impact to benthic communities in the streams that were actually buried by valley fill.

Defendant's Attorney: . According to the Sturm Report, "the proposed development of Spruce #1 mine should not pose a permanent threat to these systems" Additionally, near the bottom of the hollow, abandoned home sites and cars were found. This hardly seems to be the pristine watershed we will bury by the valley fill of mountain top removal. What do have to say regarding the Sturm report?

Dr. Stout: Because they are near the bottom of the hollow, abandoned home sites and cars affect less than 10% of the watershed area. Additionally, abandoned cars are temporary impacts that are easily removed and have little influence on water quality. In this letter the statement that "the proposed development of Spruce #1 mine should not pose a permanent threat to these systems" is incorrect. My understanding of the proposed mine is that these streams and their inherent biological communities would be buried under valley fills. I do not to see how these streams will "recover upon completion of the reclamation phase

To validate this assessment of the Sturm report, you may want to refer to the Fish and Wildlife Study, and the EPA study, as mentioned in my paper.

Defendant's Attorney: This study of stream quality and forest systems is an interesting intellectual argument. But tell me Dr. Stout, at the end of the day, why should we care about these "bugs" you have described and their indications of water and forest ecosystems. So some "bugs" are present or missing from certain streams in the mining area, What's the point?"

Dr. Stout:

In five counties of southern West Virginia alone, it has been estimated that 469.3 miles of stream in five watersheds have been buried. This figure represents only one-half of the watersheds in West Virginia where mining is occurring. This level of disturbance within a watershed is unprecedented and is potentially devastating to downstream rivers and streams. The scale of current mountaintop mining operations in southern West Virginia is enormous and the impacts to the contiguous forest ecosystem are potentially far-reaching. These mining operations displace native species, fragment forest stands, reduce the availability of hard mast producers, and availability of nesting sties for neotropical migrant songbirds, and we ultimately lose the connectivity between islands of remnant hardwood forest left in southern West Virginia.

The point of certain "Bugs" as you call them, is to establish scientifically that the streams and forests affected by mountain top mining are high quality habitats, and not wastelands to be disregarded. The point of my study is to establish that this watershed would be dramatically changed for the worse after Mountain Top mining extractions and Valley Fills. Ultimately, production by macroinvertebrates, these "bugs", serves to support organisms that are higher- level consumers such as fish and amphibians. In turn, higher-level consumers support top level predators like birds of prey, like osprey, and eagles, and such as mammals as mink, otters, an then eventually humans. So, you see, significant impacts to downstream communities will result from the loss of upstream keystone functionality. The River Continuum Concept clearly indicates that there will be significant, irreversible, and far-reaching consequences of mountaintop removal and valley fill impacts on watershed-ecosystems of the southern Appalachian Mountains.

Services provided by healthy streams, rivers, , forests, and biodiversity are not easily mimicked by reclaimed mining sites. Services such as clean drinking water, healthy and productive soil, clean air and climate control are all dependent on healthy water and forest systems. So, you, see that's why scientific studies of ecosystems matters at the end of the day.

Mountain-Top Mining Mock Trial Handouts  
**Defendant/Business-Coal Industry Expert Handout**

Defendant's Attorney: We've heard a lot about the negative impacts of mining so far.  
Dr. Carbide, could you give us some reasons to support the  
Coal mining industry in West Virginia.

Dr. Carbide: Yes, let me give you just a few facts about the coal mining industry.

The demand for coal to produce electricity has tripled during the last 20 years.

West Virginia is the 2nd largest producer in the nation.

West Virginia produces 175 million tons yearly.

That is \$3.5 billion a WEEK.

80% of the coal that is produced is used for electricity.

W.V. gets 99% of its electricity from coal.

WV coal is some of the most valued in the world because of its high BTU, Low Ash, and Low Sulfur.

\*This high quality, low sulfur coal is made possible by SURFACE MINING, such as MTM.

\*Even electric companies that burn coal from deep mines, have to mix it with surface mined coal to maintain quality.

**Local economics:**

\* MTM provides good, benefited jobs.

\* Without MTM, support industries that depend on it will be shut down

\* Lands that have been leveled by mining provide great development opportunities.

\* W/O the MTM, workers will relocate

\* When they relocate they take their children out of schools causing job loss for teachers.

\* They take their families and move out, creating ghost towns all over the state.

**. Advantages of mining?**

\* By LAW all mines must do reclamation.

\* Reclaimed land is often stocked with wildlife for hunters

\* Reclaimed land is usable. It's not the vacant wilderness it was before

\* It saves developers money from having to clear and level the land.

That makes the land more desirable. That makes it worth more  
than it was before it was mined.

\* When development begins, better infrastructure is created,  
population grows, new industry moves in and jobs are generated.

**The Environment**

\* Marshall University, in cooperation with the Governor's Task Force on Mountaintop Mining,  
investigated and found "no significant evidence of widespread  
or routine violations of state and federal water quality standards  
and other protections..."

\* Studies by West Virginia University and others show benefits of reclamation activities on  
individual species of wildlife.

**Mountain-Top Mining Mock Trial Handouts**  
**Plaintiff/Business-Coal Industry Expert Handout**

Plaintiff's Attorney: Dr. Carbide, are the advantages of coal mining you just described talking about Studies related to Mountain Top Mining, or Surface Mining in general?

Dr. Carbide: I am describing surface mining in general, and Mountain Top Mining Fits that category. A specific advantage of this type of mining is that It is safer for the miners who don't have to tunnel underground to get the coal.

Plaintiff's Attorney: How much of the profit do the West Virginia miners get in comparison to the Mining companies profits that are taken out of state?

Dr. Carbide: I know that the coal mining industry is a billion dollar business in West Virginia, but I do not have figures on what percent the local miners actually earn.

Plaintiff's Attorney: Dr. Carbide, if mining is such an economic asset to our state, why are we ranked As one of the lowest states on many economic assessments?

Dr. Carbide: I don't have that information available right now.

Plaintiff's Attorney: What is the extent of the impact on West Virginia Streams by this type of mining?

Dr. Carbide: The acreage of filled valleys measured 25,178 acres between 1985 and 2001 and the impacted upstream watershed area totaled 111,479 acres in West Virginia. This does not include the impacted acreage or mileage downstream of valley fills.

Plaintiff's Attorney: No further questions, your honor.

## **Mountain-Top Mining Mock Trial Handouts**

### **Plaintiff/Environmental Expert Handout**

Plaintiff's Attorney: Will you please state your education, training, and experience that qualify you as an expert in this case.

Dr. Ben Stout:

#### **Education**

**Bachelor of Science in Agriculture and Forestry**  
West Virginia University

**Master of Science in Biology**  
Tennessee Technological University

Thesis title "Leaf-litter Processing by Aquatic Macroinvertebrates  
in Lotic and Lentic Waters of Eastern Tennessee".

**Doctorate of Philosophy in Biology**  
Virginia Polytechnic Institute and State University

Dissertation title "Effects of Forest Disturbance on Shredder  
Production in Headwater Streams".

**Employment Assistant Professor of Biology** 1990 - current  
**Director of Environmental Studies** 1995 - current  
Wheeling Jesuit University

**Postdoctoral Associate** 1989-1990  
West Virginia University

**Academic Advisor** Spring 1989  
Virginia Polytechnic Institute and State University

**Research Assistant** 1987-1988, and 3 summers  
Virginia Polytechnic Institute and State University

**Teaching Assistant** 1985-1987, Spring 1989  
Virginia Polytechnic Institute and State University

**Instructor for the Biological Sciences** 1982-1985  
Southern West Virginia Community College

**Research Assistant** 1980-1982  
Tennessee Technological University

Plaintiff's Attorney: Can you briefly describe the purpose of your study in the Pigeonroost Branch Watershed.

Dr. Stout: The purpose of the site visit was to determine which of several reports most accurately described water quality and the benthic macroinvertebrate fauna in Pigeonroost Branch and tributaries.

Plaintiff's Attorney: What are macroinvertebrates and what do they have to do with water quality?

Dr. Stout: Macroinvertebrates are small organisms with no vertebrae that can barely be seen with the naked eye. Different types of macroinvertebrates require different types of stream conditions. Some survive quite well in polluted waters, while others are quite pollution intolerant, and will not be found in poor quality water conditions.

Plaintiff's Attorney: Tell me, Dr. Stout, what did you find any indication in your study that the Pigeonroost Branch Watershed would be positively or negatively effected by mountain top mining industries?

Dr. Stout:

My survey of the Pigeonroost Branch watershed revealed a benthic macroinvertebrate fauna typical of exceptionally high quality, undisturbed forested streams in the southern Appalachians. The presence of three year-classes of the stonefly indicates excellent water quality conditions in the Left Fork, Right Fork, and main Pigeonroost Branch over the past 2.5 years. An abundance and diversity of mayflies, stoneflies, and caddisflies, often referred to as **EPT** taxa (based on their formal species names), indicates exceptional water quality throughout the basin. Overall, the organisms present in first order Pigeonroost Branch streams were indicative of high quality, cold water streams and are typical of the benthic macroinvertebrate communities in high quality southern Appalachian headwater streams. The water quality requirements including temperature, dissolved oxygen, pH, and flow described for stoneflies are similar to those for brook trout in West Virginia streams

Plaintiff's Attorney: Can you give some specific examples of how the Watershed and the surrounding forested Area will change from its present high quality condition?

Dr. Stout:

Deforestation has well known consequences. Canopy removal results in the disruption of basic ecosystem-level functions including temperature moderation, water balance, nutrient recycling, and energy flow. Mountaintop removal is not as benign as deforestation. Before mountaintop removal begins the tree roots are "grubbed" and the topsoil is removed and dumped into valley fills. The landscape is permanently altered with steep slopes buried under hundreds of feet of fill material. The impact of mountaintop removal and valley fill on forest ecosystems is devastating. Ecological succession is an orderly and predictable recolonization of species following a disturbance. After timbering a typical mature northern hardwood forest it is expected that forest succession will

proceed at a rate that would yield replacement of the mature forest species (e.g. beech, sugar maple) within a century

If succession fails to proceed as expected forest edge species such as the gray catbird and the American robin may prosper. However, forest interior species such as the ovenbird and worm-eating warbler will disappear, and the ancestral forests of the region will be reduced to mere islands of their original form

One concern of large-scale disturbance by mountaintop mining in southern West Virginia is the ability of “area sensitive” species, such as neotropical migrant forest birds, to survive in fragmented forests. These species require large expanses of unbroken forest to survive. Grasslands will not support forest interior species. As described in the Fish and Wildlife Report, “*this portion of West Virginia has been recognized as one of the largest areas of contiguous forest remaining in the Northeast, and*” southwestern West Virginia is described as a “*hot spot for forest interior bird species of special concern in the Northeastern United States.*”

Invasion of ecosystems by exotic species is an urgent concern in the United . In many cases, introduced exotic species have “*outcompeted native community members and altered community structure*”.. Given the fate of multiflora rose, autumn olive, and Japanese knotweed in West Virginia, it is not surprising that management recommendations for increasing habitat value on reclaimed mining sites include controlling Kentucky-31, and exotic species from Asia.