ENVIRONMENTAL PERMITTING STRATEGIES FOR THE TWENTY-FIRST CENTURY[1]

by

Brian E. Munson and C. Mark Wallis[2]

Abstract: Recent trends in economic markets have caused mining companies to look harder at reducing costs for collecting information, performing studies, and conducting other necessary activities to complete environmental permitting. In some cases, it may be in the operator's best interest to delay permitting and related expenditures to the extent possible. In most cases, however, agency mandates and the need to continue operations require that permits be obtained and maintained in the most expedient and economical way possible. This paper explores some basic approaches to environmental permitting which are intended to strategically guide the permitting process through the maze of requirements in a relatively straightforward manner. Through application of common sense and KISS (keep it simple, stupid) the authors have found that permitting can be conducted in a quicker fashion than most applicants experience. The authors explore and explain some of these basic principles by drawing on their own experiences in the Arizona Aquifer Protection Permit and other environmental permit programs.

Additional Key Words: Permit Negotiations, Permit Maintenance, Environmental Audits, Data Interpretation, Data Analysis

Introduction

While the U. S. economy has been experiencing somewhat of a boom in recent years, it has not looked particularly favorably on the mining industry. Copper prices have been depressed for well over a year now, and the coal market has been soft for over a decade. This situation has resulted in a curtailing of mining and exploration activities and the necessity for economy with respect to any non-production-related activities (i.e., permitting). Most permitting activities, therefore, are more a function of mandate than economic necessity.

This situation creates a proverbial double-edged sword. On the one hand, the economics dictate that any permitting activity be approached in as economical a fashion as possible. On the other hand, regulatory agencies are more concerned with potential lapses in attention to environmental protection as a result of the economics, as cost-cutting becomes more prevalent and the level of effort in protective programs may be threatened.

At the same time, many of the regulatory programs have matured over time. During this maturation process, the interpretation of regulatory requirements by agency staff becomes more sophisticated and refined. Regulatory programs seem to go through a period of learning where the early formative years are somewhat chaotic as agencies and the regulated community are developing a workable translation of the lawmaker's intent into an implementation program. Toward the latter years of this maturation, after much trial and error, the requirements and their application and interpretation become more clearly defined and increasingly relevant.

The combined effect of both the economics and the regulatory program maturation process is to place a premium on the efficient conduct of the necessary work involved in permitting. It is critical to keep the permitting process and supporting investigations as focused as possible to satisfy regulatory requirements efficiently and at the least possible cost. In the remainder of this paper, following a short discussion on the major environmental permit programs applicable to mining, some basic principles are discussed to achieve this goal.

Environmental Regulation/Permitting

There are a number of permitting programs that can impact mining. These include federal programs that apply across every state, and state and local programs with more limited jurisdiction. This paper summarizes

---

[1]Paper presented at the 16th Annual National Conference of the American Society for Surface Mining and Reclamation, Scottsdale, Arizona, August 13-19, 1999.

[2]Brian E. Munson is Phoenix Office Manager, and C. Mark Wallis is Science Manager, Hydrometrics, Inc., Phoenix, AZ 85258 and Tucson, AZ 85741.

Proceedings America Society of Mining and Reclamation, 1999 pp 60-65
DOI: 10.21000/JASMR99010060

https://doi.org/10.21000/JASMR99010060

some of the federal requirements that impact mining operations, and presents Arizona programs as representative of local environmental programs. The authors draw examples from experiences with the Arizona Aquifer Protection Permit Program, although the principles discussed apply to all permit programs.

The federal Clean Water Act (CWA) prescribes several programs that impact mining activities. These include the National Pollutant Discharge Elimination System (NPDES), or point source control program; the Section 404 Dredge and Fill program; and the Section 401 State Water Quality Certification program. These CWA permit requirements may act individually or in combination for many aspects of a particular mine.

A NPDES permit is required whenever there is a point source (i.e., end of pipe) discharge into waters of the United States. An applicant is required to apply for a NPDES permit by projecting the anticipated water quality of the discharge and evaluating the potential impact to receiving waters. In more arid environments, which are found in Arizona and the arid west, the discharge often occurs in ephemeral drainages, or dry washes. In many states, the stormwater control program is linked to the NPDES permits.

Dredge and Fill permits are necessary for any activity that creates a physical impact to jurisdictional waters, which are also waters of the United States. The permit process often includes the survey of impacted waters to identify whether they are jurisdictional or not. The intent of the program is to protect jurisdictional waters (including wetlands) from physical disturbance and pollutants that are typically related to construction activities (i.e., increased sediment loads). In many cases, the planned activity may fall into one of the many nationwide permit categories which require a minimum level of permitting activities. In other larger scale cases, an applicant will have to address more stringent requirements and may also have to comply with the National Environmental Policy Act.

Section 401 of the CWA requires State certification that a proposed action is designed, or will be conducted, to ensure that the surface water quality standards of receiving waters will be met. Section 401 certification is required for both NPDES permits and Dredge and Fill permits.

The Surface Mining Control and Reclamation Act (SMCRA) is a very comprehensive environmental permit program that has application only to coal mining and exploration. SMCRA includes provisions for protection of surface water and groundwater, as well as re-creation of habitat through requirements for approximating original land contours during backfilling operations, and establishing habitat to approach pre-mining conditions. There are also requirements in SMCRA that relate to the protection of threatened and endangered species and their habitats, as well as cultural and historic resources.

The National Environmental Protection Act (NEPA) is another very comprehensive federal requirement that is more of an approval process for a proposed action than a specific permit program. It applies to any activity that impacts federal lands or that creates environmental impacts as a result of a federal action. The program requires that any entity proposing an action that has a potential environmental impact undergo a rather intensive process of identifying and quantifying the impact of various alternatives, and providing mitigation where appropriate. The focus is on impacts to all aspects of the environment including cultural and historic resources, threatened and endangered species and habitats, surface water and groundwater quality, and even economic impacts. An entity is also required to evaluate identifiable alternatives to the proposed action as a means of selecting a preferred action.

The federal Clean Air Act (CAA) contains some permit provisions that may impact mines. Title V of the CAA amendments require permitting of stationary point sources at mining operations. Point source emissions could include emissions from; conveyor transfer points, thermal dryers, fine ore bins, generators, kettles, and plants with stack emissions. Permit applications must contain process and product descriptions with flow diagrams, emission characterization, and alternative operating scenarios to mitigate emissions. Best management practices are also expected to be applied to fugitive emissions (e.g., dust blowing from exposed areas).

Arizona adopted an Aquifer Protection Permit (APP) program into law with the passage of its Environmental Quality Act (EQA) in 1986. The APP program is designed specifically to regulate facilities that have the potential to discharge to groundwater. The goal of the program is to protect any groundwater in Arizona as a potential drinking water supply. Nearly all mining operations contain discharging facilities that are regulated by the APP program. An applicant for an APP is required to evaluate discharges from existing facilities (i.e., existing prior to 1986) and new facilities to identify the potential for discharge and impacts to receiving groundwater. Discharge control technologies, known as

Best Available Demonstrated Control Technology (BADCT) for new facilities, are required to be applied to these facilities as a means of minimizing discharges to groundwater. The applicant is also required to evaluate discharge control technology alternatives for a particular facility as a means of selecting the final proposed BADCT or control technology.

Arizona has also adopted a mined land reclamation program, which is administered by the State Mine Inspector's Office. The program requires that a mine reclamation plan be submitted for mining and exploration operations in Arizona. The reclamation plan must include the identification of the post mining land use for the acreage disturbed; proposed measures to address public safety, erosion control and stability, and revegetation; and a schedule and estimated costs for completing the reclamation.

To a certain extent, all permit programs are prescriptive in nature. In other words, there is normally a prescribed set of activities to be accomplished or information to be submitted to meet the application requirements. In some cases, investigations are assessed according to the level of effort to accomplish the activity. In other cases, the investigation is conducted to learn what is needed about a potentially impacted resource to answer basic regulatory questions. The level of effort type studies are typically the most prescriptive.

Examples of level of effort activities are most evident in the NEPA requirements. Surveys for biological and cultural resources require a certain level of detail (i.e., specifically located transects, etc.) that is defined by guidelines. If a resource of concern is encountered during the survey activity, more definition of the resource is required. However, if no such resources are encountered, an applicant must go through a certain level of effort to demonstrate that no resources of concern are present.

The most striking example of an investigative activity is the characterization of groundwater beneath an impacted site. Although some states identify specific spacing requirements for groundwater observation wells for some programs, there is often a great deal of room for negotiation of groundwater characterization approaches. It only takes three wells to contour the surface of an aquifer, however the ultimate configuration of well locations will depend on the size of the area in question and the complexity of the stratigraphy across and downgradient of the site.

There is room for negotiation in any permit program. Some more prescriptive programs may have less opportunity than others (e.g., level of effort versus investigative), but there are aspects of all permit programs that are negotiable. Some examples of opportunities for negotiation include number of observation wells, number of samples to be taken, number of observations along a transect, acceptable mitigation efforts, nature of analyses, chemical suites, etc. There are also plenty of opportunities for discussion about regulatory interpretation and applicability to different situations throughout the course of a permitting effort.

The principles that are presented in this paper borrow from some of the tenets of negotiation and translate them into a permitting context. These are principles that have proven to be very successful for the authors in keeping the permitting activity on track and making sure everyone is on the same page. The following section presents these principles.

Strategic Tools

There are at least four principles to apply to a successful permitting campaign. There are probably more that could be listed, but the following are the most important from the authors' points of view. The first three principles are specific to obtaining the permit, while the last is applicable after the permit has issued:

- Get to the point
- Make the point
- Communicate
- Maintain the permit

These principles are discussed below.

Get to the Point

The most important aspect of this principle is focus. Most regulations, even in the investigative permitting area, are fairly specific about what needs to be known. For example, in Arizona's APP program, it is a requirement that the ambient groundwater beneath the site be characterized and that potential impacts to the aquifer be identified. A work plan is very helpful in designing a study to answer the basic regulatory question.

It is important to get buy-in from the agency before you begin an expensive investigation. It is always interesting and helpful to get the perspective of the regulator at the formative stage of a project. Sometimes an important issue may be raised that would otherwise be

missed. Again, a work plan is very helpful in this regard. It is always a good idea at this stage, however, to approach the agency with a proposal in hand. Always carry a proposal to a regulatory agency, never a blank sheet of paper.

When formulating the work plan, keep the approach as simple as possible (KISS). Do only what is necessary to answer the regulatory question. Try not to turn the study into a career research project. If the reviewing agency thinks you should do more, they will tell you.

During the course of the investigation, you will receive results as the work progresses. For example, during a drilling and sampling groundwater investigation you will receive driller's logs and analytical results. It is very important to review these results early and often during the program. This will help in both verifying that the intent of the work plan is being met, and that the original assumptions are verified. This exercise will also help in identifying potential permit issues that need to be on your radar screen.

An example here may be at an existing mine where high nitrates are detected beneath a site. It is advisable at this point to make sure that your discharges are properly characterized and determine whether nitrates are or are not expected to be in the discharge from the operation. It would also be advisable, if nitrates are not expected in the discharge, to survey surrounding land uses to see if there are any potential offsite sources of nitrates.

Make the Point

There is great danger in merely presenting data to a regulatory agency. The conclusions drawn from data can vary greatly depending on the perspective of the reviewer. It may be tempting to overwhelm a reviewer with data so much that they have to wade through the information to understand the project and draw conclusions. While this approach may appear to have some short-term advantages, it can lead to problems in the long run.

A better approach is to use data to make a specific case about the operation. If the data show that there may be a problem, then it is best to deal with it as quickly as possible by identifying a course of action. In any case, always try to provide a summary of the data with whatever interpretation may be appropriate. Do not leave it up the agency to interpret data, let them instead decide whether they agree with your interpretation and whether the data support the interpretation.

Communicate

It is our belief that this area is probably the most overlooked with respect to the development of working relationships with agency staff. For some reason, the prevalent attitude seems to be that the less you tell the agency the better. However, the authors believe that it is better to keep permit reviewers informed about the progress of the investigation and any issues that come up than to let them discover it themselves and perhaps to conclude that critical data was intentionally hidden.

We do not wish to give the impression that the agency should be immediately informed of any glitch that comes along. To the contrary, if efforts are made to identify critical issues in the early stages of the project, it should be part of the focus of the project to address these issues with the goal of offering some sort of solution when presented to the agency. This approach then becomes a proactive exercise that could ultimately result in better, and more trusting, working relationships with agency staff.

Communication with the agency should happen often in the course of the preparation of an application, and it should be planned strategically. It is very helpful to schedule a meeting whenever making a submittal of a substantial nature, such as a work plan or the permit application. When making such a submittal, it is very important to present, in person, a summary of the content of the submittal with a reiteration of any major points that you want to impress upon the reviewers. Failure to present information in this manner could lead to a misunderstanding about the intent of the document, which will take much more work to clear up in the long run.

Meetings should also be scheduled during critical points of the permit application preparation. These meetings can serve to review important aspects of the work to be performed or about the preliminary findings of some of the investigations. Agency staff should be kept informed of the schedule for field activities in the event that they would like to observe.

If you are in any particular hurry to receive a permit, as you would perhaps for a new mine or a new facility at an existing mine, meetings can help expedite the review process. There is no such thing as a waiver of minimum time frames for certain aspects of the review under most permit programs. However, a lot of time can be saved by setting regular meetings; discussing the status

of the review; identifying issues to be addressed; and following up with a record of the meeting, the issues, and responses to the issues. This approach can save a great deal of time for the agency in the preparation of review correspondence and the iterative process of negotiating an issue through the mail. Scheduling regular meetings also provides additional incentive for the agency to keep up on the review.

Effective communications can be summed up in similar fashion to the adage about how to write a paper: "tell them what you are going to tell them, tell them, then tell them what you told them." In the permitting sense this would be: "tell them what you are going to do, tell them when you are doing it, then tell them what you did."

Maintain the Permit

Many times the relief of advancing the permitting process to the point of permit issuance is so great that one can forget there is still work to do. Permitting is a hurdle, and a major one, but it is not the end game. Mining operations must develop a permit maintenance program to ensure that the operation remains in compliance with the provisions of the permit.

Some regulatory programs, such as SMCRA, have provisions for regularly scheduled inspections of mines to assess compliance with permit and regulatory performance provisions. This type of reminder is very effective in emphasizing the importance of complying with the permit. Other programs, such as the Arizona APP program, allow for inspections of a facility but do not specify a required frequency for inspections. Some facilities, then, may not be visited for quite a long period of time.

Without the luxury of a regular inspection regime, an operation can go quite a long time before being impressed with the importance of compliance with the permit. If the permit is just filed away after receipt, with no implementation plan for compliance with the provisions of the permit, liability could be accruing for the operation. There is no obligation on the part of the agency to remind an operation of the importance of monitoring, inspection, and reporting requirements. There is only an obligation on the part of the permittee to comply with the permit. It is possible for a facility to be operating under a permit for several years, amassing penalties for failure to monitor and report, before the situation comes to the attention of an agency and enforcement ensues.

There are a few basic ways to avoid these permit implementation problems. First, it is important to understand what is required by the permit. This can often be learned, sometimes painfully, during the negotiations on the permit. However, because legal and/or environmental staff often carry out the negotiations, and the implementation is the responsibility of operations staff, the obligations are not always so apparent to the ones responsible for implementation. Someone should be given the responsibility to read and understand the permit, identify responsible parties for carrying out activities required by the permit, and ensuring that obligations are ultimately met. Implementation responsibilities should be outlined for each department or group, who then should be notified of their duties.

It is helpful to produce a compliance calendar or schedule for activities required by the permit. The calendar or schedule can identify the individual, department, or group responsible for the activity and the time at which the activity should be accomplished. Deadlines can also be identified for the submittal of any required reports, etc. A calendar or schedule is also a convenient format for attaching to a wall in an obvious place in a cubicle or office.

Other activities can also help to ensure that an operation is not blind-sided with compliance issues. Particularly for operations that are subject to requirements under multiple programs, such as RCRA, SMCRA, APP, etc., a program of regular audits can go a long way toward ensuring compliance with regulatory provisions and eliminating enforcement "surprises." Regulatory responsibilities for even compulsory requirements (i.e., requirements that are imposed by law or regulation rather than permit) can be identified through the use of checklists and internal guidance. A regular program of internal inspection, recording of exceptions, and identification of required actions with deadlines and responsibilities can help to ensure continuous compliance with these requirements.

Some companies with multiple operations subject to individual permits and compulsory requirements have found it useful to identify teams that visit other operations on semi-annual, annual, or biennial bases for compliance assessment. This helps to maintain objectivity in conducting the inspections, but can lead to bad relations between operating personnel. Another approach is to secure an outside entity (i.e., contractor) to perform these inspections.

Summary and Conclusions

This paper has presented some basic principles that, when implemented, can help to streamline and keep permitting activities focussed. There is nothing magical about the principles, and they work just as well in the twentieth century as they will in the twenty-first. They are drawn from some basic tenets of negotiation, communication and common sense.

The effective application of these principles is highly dependent on the maturity of the regulatory program in question. As the program matures, and as the requirements become refined, it becomes easier to provide focus for required investigations. Investigations should proceed in as focused a manner as possible, and investigative programs should be defined in a work plan and kept as straightforward and simple as necessary to address concerns as expeditiously as possible. If there is a need to expand an investigation, the agency will be certain to advise you during the review.

Issues should be identified as early in the process as possible. This will give both the applicant and the regulatory agency (if necessary) sufficient time to agree on acceptable approaches to the issues.

Communication with the agency is very important. Many difficult issues can suffer from misunderstanding that otherwise could be avoided with frequent and strategic communication. It is also important during the agency review of the permit to document meetings with the agency with any commitments to follow-up on issues or agreements between the agency and the applicant.

Finally, once the permit has issued, the most important next step is to ensure that the provisions of the permit are followed and potential enforcement situations are avoided. This can be accomplished through a review of permit provisions and identification of necessary actions and responsibilities. A regular program of internal inspection and compliance evaluation is also encouraged.