

RECLAMATION AND DISTRICT INSPECTION

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For presentation to a gathering such as this, I found the subject - "Reclamation and District Inspection" a difficult one for establishment of a coherent theme. Accordingly, I have resorted to the time honored dodge of incorporating slides to illustrate specific points in a concise manner.

I presently administer inspection Area 10, but have some input and considerable experience with Area 9, which contains most of the coal measures referred to as the Northeast Coal Block. This fact, plus many years in mining, mineral exploration, petroleum and natural gas exploration and production, presumably account for my being here at this time. It should also be pointed out that opinion is my own - my confreres have not been consulted on this paper.

As we are all well aware, and for many reasons, the past decade has witnessed a considerable impetus in thought and effort devoted to ecological and environmental planning, evaluation and protection. Some seven years past the Ministry of Mines elected to create a Reclamation Section within the Engineering and Inspection Division.

Most of us presently employed as District Inspectors have had the unique opportunity to observe and participate in the evolution of the Reclamation Section, Reclamation Guidelines and covering Regulations. We have observed the struggle with terminology, reconciliation of differing standards and objectives, retroactivity and responsibility for reclamation, participation and cost in planning, practicality of proposals, bonding, enforcement, covering legislation, and many other aspects including Nature's lack of co-operation on frequent occasions. There has also been ample opportunity to observe both historic and current operational sites with respect to

environmental rehabilitation, both assisted and otherwise.

Where then, does a District Inspector stand with respect to reclamation, rehabilitation and current environmental thinking?

It is suggested that he occupies a median position, neither directly involved in the environmentally damaging processes, nor personally participating in the planned healing endeavor. Not a reclamation expert, but having sure knowledge of why the disturbance was initiated. In many ways then, an informed observer having certain powers for control and direction of effort. There is also a more on-going and closer relationship with the Operator in the field than others have occasion for. The Inspector is familiar with the limitations imposed by locale and season, access and potential, budget and factual expenditure. He must also work within rather fixed rules and guidelines, maintaining integrity and fair play.

Due to understandable limitations in staff, and to avoid costly harassment of the Operator, the Ministry quite logically feels that the Inspector, while perhaps not an expert, is certainly capable of guidance and direction in field progress of such things as reclamation in conjunction with other duties. He works closely with the Reclamation Section, and those specialists in the Section who cover wider fields at less frequent intervals, or who are available for consultation or advice on specific issues as required. To date, this practice has worked quite well, in so far as I am aware, as it pertains to Inspection and Reclamation.

As a result of such travel, observation, and experience, there are aspects of the industry-reclamation relationship on which an Inspector might comment in the interests of progress. Prior to doing so however, I would like to non-prejudiciously refer to a factual case of record in the North-east Coal Block, for which I was then Area Inspector.

\*\*\*\*\* (PHOTOS, Group 1)

In the fall of 1969 I called at an operation of considerable magnitude, encompassing stripping, a test adit of 100 feet plus, and a few thousand feet of NQ coring, which had been active on my previous visit. Activity had ceased, camp and equipment being moved out.

On the next monthly trip, enquiry disclosed that operations had been transferred to a nearby river valley where coal had been found. Since neither operation was authorized, to my knowledge, I proceeded post haste for information.

You can imagine my reaction upon finding a large winter camp, a number of access roads and exploration trenches approximating 100 miles in length, and every one on the camp with happy smiles, too busy to stop and talk.

All this in a restricted area, with no legal title and no notice of intent submitted to the District Inspector, and in a 3 month interval.

I am happy to relate that all is now legalized, funded, projected for production, and up to date in reclamation - rehabilitation.

With change in the intervening years, it is doubtful that such a situation could occur again. Legislation, regulations, and common interest would not permit such an undisclosed amount of activity without authorization.

\*\*\*\*\* (PHOTOS, GROUP 2)

However, on smaller scale, similar uncontrolled and poorly planned activity still surfaces from time to time in the mineral exploration field. Our first notice may be a complaint as to unpaid bills by a disgruntled employee or contractor, advice from the Forest Service, or other means. Coupled with individual effort on mineral claims and placer leases, the sum total of such poorly planned and often under-financed disturbance is significant, current, and growing.

In order to restrain such uncontrolled activity, usually initiated in "ignorance", and very difficult to differentiate at the onset from well planned, well financed, and more responsible effort, it would appear that a re-assessment of what is implied by "historic rights" and what constitutes a "privilege" is required. It is suggested that reclamation must be accepted as an operating cost from the outset. Industry must also assist regulatory bodies in a balanced and acceptable judgment on aspects of pre-production activities and development such as:

- (1) Has the prospector turned up an occurrence, or does potential exist?
- (2) Does the mineral have economic potential, in its locale, at this time?
- (3) What type of evaluation best suits the prospect?
- (4) How may evaluation be undertaken, with least disturbance, consistent with site and economic factors prevailing?
- (5) Some means of limiting further major disturbance at a given site, should a consensus of qualified opinion deem it impractical at that time, is desirable.
- (6) Revision of the Mineral and Placer Acts with respect to assessment work. Presently, useless physical work is often used as a means of retaining Title.
- (7) Evaluation and factual recording of seasonal work, both to ensure justification for continuance, and to have findings available in the event of future un-related effort on the prospect.
- (8) Review of funding and qualification reporting standards, to ensure adherence to the recommended work program, and to permit follow-up by the qualified report author for qualified evaluation.

- (9) Inclusion of seasonally practical reclamation as a mandatory portion of the program, and/or total reclamation as a requirement to claim release or forfeiture.

In reality, none of these nine items is new or Original. All, I am sure, have been discussed by most of us here on numerous occasions. In any event, such change is visualized as a means of limiting unnecessary environmental disturbance, and of obtaining more correct reclamation status, rather than coming from behind and plugging holes as in our present situation.

A very real danger exists in that injustice and hardship might be worked on individuals and smaller groups or organizations. This would certainly have to be guarded against if changes developed.

Other risks and hazards are inherent with early mandatory reclamation, or seasonal reclamation. In northern areas, and areas at elevation, the working season is already so short as to be extremely dependent upon weather. Accordingly, unless adopting unusual procedure and inordinate expense, reclamation on seasonal and/or continuous basis might well incur more harm than good, obtaining only poor to mediocre preparation and germination for the dollar expended.

More advanced prospects, larger prospects, and potential pit operations particularly, face inequities with rigid reclamation requirements. Because of the sheer size of the operation, and its projected active life, short term remedial effort is often an expensive and wasted one. For example, at an open pit mine in my area, attempts to conserve soil and till cover over bed rock are not practical. The mine is on side-hill terrain, as are the dumps. The only way to retain the overburden in situ when the dump is at practical size limit, is to convert it to a rock waste dump, thus loading

the toe and sides of the overburden. Practice requires rock surface cover to permit truck access.

\*\*\*\*\* (PHOTOS. GROUP 3)

In longer term view, this is not deleterious to the end result. It is a multi-staged, multi pit project. Accordingly overburden and till from the final stages of pit development will suffice to adequately prepare finished dumps and pit areas for re-vegetation or planting. End result will be extensive flat and gently sloping areas suitable for forage growth and amenable to irrigation, as well as sloping bowls which could contain small lakes tied into the pre-existing drainage system with beneficial results as to stability and continuity of the system during dry seasons.

Tailings ponds too, may present non-conformable situations. These are vitally necessary, active throughout the life of the operation and far from being standard. Generally, rehabilitation is not possible during project life, though various remedial measures such as seasonal dust control may be practical.

Thus, from the Inspector's viewpoint, reclamation, preservation and rehabilitation of ecology and environment by all means, but with flexibility, planning, and especially timing, to best fit individual situations and circumstances.

From the planning and tailoring point of view, some general considerations which might be considered in reclamation recommended for pre-production work at assured mine sites follow:

- (a) Access to some drill sites and test adits perhaps need not require critical location or reclamation if they will be covered or removed in pit preparation in a relatively short period of time in any case.
- (b) Conversely, more planning and critical research should go into dump sites. There are notorious for lack of stability, seldom withstanding critical hindsight.

- (c) Tailings ponds are similar to dumps. Perched pond sites may have obvious weaknesses. Similarly, ponds located in depressions or bowls may not be amenable to final stability and water control, though otherwise desirable.
- (d) Funds expended on planning and research in the very early days of exploration and development, even including extensive delay, are well spent, and worth many more at a later date.

To sum up then, as a District Inspector, I believe we have made great progress in the last decade, taking changes in mining technology in stride. Continued progress is certain. With on-going co-operation between all who have input, tenable guidelines and policies will evolve. This objective will require mutual appreciation with thorough awareness of the problem, knowledge of the scope of potential environmental damage, and effort within acceptable and practical parameters.