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An Exploratory study that examines perceptions, by the regulated community, on the effectiveness of air quality permitting for Clark County, by the Department of Air Quality and Environmental Management

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Introduction

The Clean Air Act of 1970 (CAA) made the Environmental Protection Agency (EPA) responsible for establishing and maintaining federal programs that control air quality. In turn, each state was delegated responsibility for air quality within its borders, although this responsibility may be shared with Native Americans or tribal lands. In many states, jurisdiction has been delegated to regional or local agencies that are then responsible for air quality in their respective air basins. Even though terrain or water bodies define the physical boundaries of air basins, they are usually designated by County boundaries for regulatory convenience (Wooley, David R., 1997).

Air quality in the United States is controlled for six common pollutants (ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, inhalable particulate matter (PM_{10}) and lead) by measuring the concentration of these pollutants in the ambient air (i.e., air located in areas of public access). For each pollutant the health effect has been researched and the EPA has compiled their effects on individuals. The concentration of each pollutant, at which adverse health effects will occur, have been established and are known as the National Ambient Air Quality Standards (NAAQS).

Air quality issues are particularly important for Clark County, Nevada. The growth rate of Clark County has been explosive in the last ten to fifteen years. The county's general population as reported by the United States Census Bureau was 741,459 in 1990. By 2000, the general population had increased to 1,375,765, an 86 percent increase in 10

years (U.S. Census Bureau). With the increase in population comes increased infrastructure, industry and air pollution. Dry cleaners, auto body shops, hotels, print shops, power generating facilities, chemical plants, sand and gravel facilities, concrete and asphalt production are just a few of the stakeholders created in an environment of growth. Each stakeholder of a facility that emits regulated air pollutants is legally responsible to obtain permits for these activities as mandated by federal, state and local rules. Currently, Clark County has permitted approximately 1,300 minor stationary sources.

As the Las Vegas valley grows, the county's burden in properly permitting these new facilities and tracking their emissions also grows. Pollutant and industry specific rules, congressionally mandated requirements, and growth of the region all play a role in the permitting process. Additionally, proper billing of fees, correct dissemination of information to the sources, easy access to permit forms, knowledge of regulatory issues and the stakeholders ability to get clarification on permitting matters are also required in the effective permitting of facilities.

The Clark County Department of Air Quality Management (DAQEM) is responsible for regulating air emissions from all stationary sources (sources) which emit one or more pollutants and which operate within the Clark County, Nevada border. The owner/operators of these sources are the stakeholders to whom this research has been directed. The stakeholders interact with DAQEM on a regular basis for education and/or assistance with such things as permitting, compliance with applicable regulations,

updates on new regulations or guidance, Notices of Violation to sources for regulatory infractions, administrative procedures for processing infractions, billing and administrative concerns, and other general needs which industry require.

The relationship between the stakeholders and DAQEM is pivotal in improving the health of Clark County citizens and visitors. An effective service by DAQEM should ensure stakeholders of having a clear pathway to DAQEM personnel and to all applicable rules and regulations, guidance updates, compliance requirements and other areas of interest. However, DAQEM has never formally evaluated its performance and effectiveness in meeting the needs of its stakeholders. Specifically, DAQEM's knowledge and understanding of stakeholders' perception in the key area of permitting is especially necessary because this may be industries first encounter with DAQEM and air regulations. In sum, a solid working relationship between DAQEM and stakeholders should enhance compliance and control of air emissions.

Informal discussions by DAQEM management and staff with certain stakeholders have potentially identified areas that may frustrate and hinder stakeholders in the permitting process. However, these discussions have been unofficial and may not reflect the stakeholders at large. Therefore, this research is designed to evaluate how and whether stakeholders contact DAQEM for permitting assistance and how they view and evaluate their accessibility to and satisfaction with DAQEM's permitting staff and the general permitting process. Additionally, DAQEM has commenced a Small Business Assistance Program (SBAP) with the assistance of the Conservation District of Southern Nevada.

Knowledge and/or use of the SBAP throughout the stakeholder community is also examined.

Literature Review

Past literature on environmental policy has assumed that companies applicable to environmental regulations would only minimally comply with these regulations (Blinder, 1987). However, Davis and Bozeman's research demonstrated an opposite effect; companies actually overcomply with environmental regulations. In their study, which surveyed 500 companies in four states applicable to Title V air permitting, they found that companies who had more frequent personal contacts with state regulators on Title V permitting were more likely to spend more money on the application and to "overcomply with Title V permit application tasks (Dehart-Davis and Bozeman, 2001, pg. 492)."

One reason for this surprising outcome was the unstable and unclear information being disseminated by state regulators to the regulated community. Since state regulators were not clear on Title V issues themselves, they were spreading ambiguous information which "increased permit application costs by requiring companies to negotiate conflicting data" and the "confusion among state regulators over Title V requirements also contributed to overcompliance behaviors by leading complying companies to overdocument emission information (Dehart-Davis et al., pg. 493)."

Additionally, Davis and Bozeman found that “companies that used consultants for all Title V tasks had 53 percent higher permit application costs than those that did not use consultants (Dehart-Davis et al., pg. 500).” It seems the regulated community is more likely to turn to third party consultants if an application process is ambiguous and unclear. Thus, from this study it was clear that regulators should:

- disseminate clear and concise information to the regulated community in order to limit the adversarial relationship between the regulator and the regulated;
- limit unnecessary costs to stakeholders; and
- assist the regulated community in “effective compliance” not overcompliance.

Another research project conducted by New Jersey’s Department of Environmental Protection (NJDEP) examined ”adversarial relations between business and environmental agencies (Heller, Bloch and Kelly, 1999, pg. 234).” In this work, which advocated interviews with stakeholders as a source of data, NJDEP identified specific areas that frustrated stakeholders with county agencies in environmental permitting. Two frustrating factors identified by stakeholders, as issues, were the “incomplete information available to stakeholders and inefficiencies in the environmental regulatory system (Heller, et al., pg. 235).” The NJDEP worked to correct these contentious areas by implementing programs NJDEP believed would counter the factors that caused frustration for stakeholders.

One such program implemented by the NJDEP to counter this confusion was the Environmental Management Assistance Process (EMAP). “Under EMAP, NJDEP

appoints a project manager who serves as the coordinator of all the permitting activities for the project, and is the applicant's single point of contact within the department (Heller, et al., pg. 235)." To assess the effectiveness of the program, the NJDEP designed and implemented a case study of EMAP. The NJDEP interviewed both NJDEP personnel and stakeholders. The NJDEP personnel interviewed for the study were selected from those working on both existing and new major source permits. These individuals represented the following four NJDEP programs: Pollution Prevention and Permit Coordination, Bureau of Pretreatment and Residuals, Bureau of Air Quality Engineering, and Land Use Regulation (Heller, et al.).

"The permit applicant interviewees were selected based on the extensiveness of their relationship with EMAP (Heller, et al., pg. 238)." The NJDEP concluded the EMAP program was "generally more effective than the traditional program" where stakeholders were forced to obtain the permitting on their own through indirect pathways (Heller, et al., pg. 240). "EMAP's facilitation of the interactions between applicants and permit writers improves the information available to applicants and permit writers. Applicants are able to obtain the information needed to prepare administratively and technically complete applications at lower cost and in less time than under the traditional approach (Heller, et al., pg. 240)."

However, the case study only interviewed five applicants and an undisclosed number of permit writers and the universe of applicants (major sources) was not identified in the study. From a methodological standpoint it is unclear whether the NJDEP conclusions

can apply beyond their particular case. The findings may be biased because applicants might have been eager to give positive feedback because they wanted to be in good standing with agency's management. Negative feedback by the applicants would not play favorably for them in the processing of current and future applications.

In another case study that examined regulatory permitting, the Utah Division of Air Quality (DAQ), like DAQEM, also experienced unprecedented industrial growth in their jurisdiction (Menlove and Patel, 1999)." During the late 1980's, the "workload of reviewing permit applications for new and modified pollution sources became excessive. Customers perceived the permitting process as excessively time-consuming, cumbersome, inconsistent, poorly coordinated with customer needs, and unresponsive (Menlove, et al., pg. 605)." To combat these perceptions, DAQ, on the advice of an outside consultant, implemented a Quality Action Team whose goals were to:

1. break down the permitting barriers perceived by stakeholders through the implementation of quality management principles;
2. improve customer service; and
3. get stakeholders involved with the permitting process by engaging their feedback on the process.

Each new permit application was assigned to an engineer team made up of a project review engineer and a peer review engineer. The "regulated customer is counseled by the assigned review engineer" as to the requirements needed for the submittal of a complete application (Menlove, et al., pg. 606)." DAQ credited this interaction between

the engineer and the regulated customer with receiving a “better and more completed product” which then sped up the permitting process (Menlove, et al., pg. 607).

Thus, DAQ was attempting to empower their staff by including them in improving the processes, services and the culture in which they carried out their work. This process was the execution of classic total quality management principles. Customer input and satisfaction was the ultimate goal for DAQ. DAQ ensured continued progress by frequently communicating with applicants through phone conversations and with “‘how are we doing?’ survey forms (Menlove, et al., 1999, pg. 608).” However, the exact frequency of these contacts with customers and the design of the survey form were not documented in the article.

The implementation of air quality regulations on air quality sources is a complicated matter. However, this type of policy and regulatory confusion is not isolated to just air quality. The EPA’s policy on review of pesticide sources has not always been clear. In fact the EPA’s policy was characterized as ambiguous in its development and implementation by management (Wholey and Newcomer, 1989). The EPA set out to evaluate and analyze the degree to which the policy was effectively implemented; and further, their hope was that the evaluation would guide management in future implementation. The pesticide policy was evaluated by internal management as well as by outside organizations through stakeholder interviews. Process changes were either implemented or recommended for future implementation in an attempt to reduce a

major difficulty in the process: the excessive time needed to complete the process (Wholey, et al.).

In sum, government agencies are evaluating their services as a means to improve their performance. There is considerable research on organizational evaluation techniques for both public and private sectors. Much of the research advocated organizations to perform managerial research on their respective organizations through surveys and interviews. Through both techniques, companies and governmental organizations are able to examine their effectiveness to their customers. Just as companies "evaluate their performance by collecting data directly from customers for more direct measures like customer retention rates, market share, and perceived value of goods and services" the public sector must also evaluate its customers perception (Holloway, Lewis and Mallory, 1995).

Another area of evaluation thought to be effective in organizational evaluation has been benchmarking. Benchmarking identifies competitors and/or companies in industry that exemplify the best practice in some activity, function, or process and then comparing one's own performance to theirs (Holloway, et al.). This type of analysis has more often been directed toward private industry; however, the desire to evaluate performance in the public sector has grown in recent years with government agencies stepping up and taking initiative in evaluating their organizations (Rosenfeld, Edwards and Thomas, 1993). Specifically, these public sector initiatives have been "driven by changes in the political environment in terms of securing better value-for-money in public services,

encouraging greater openness and accountability, and for service improvements in dealing with the general public as customers or consumers (Holloway, et al.)."

In the New Jersey, Utah and EPA case studies, each agency understood their regulated community to be frustrated and upset with the permitting process and each agency chose to evaluate and implement a new procedure. However, it was unclear as to how the feedback from the regulated community was compiled by each agency. Did the agencies use interviews conducted with select stakeholders or were their surveys distributed to stakeholders requesting feedback on the permitting process? These questions were not answered. However, some exploratory research must have been done, or should have been done, to accurately compile the permitting issues plagued by the regulated community. In this research the stakeholders in Clark County are formally evaluated through an air quality survey, which captures current perceptions by the regulated community on the permitting process.

Methodology

To study the air quality permitting process in Clark County, Nevada, a survey was mailed out on November 25, 2003 to the regulated community. The survey was designed to give initial feedback on stakeholders' ability to complete the permitting process and their access to pertinent information supplied by DAQEM. Responses to the survey could enable DAQEM to re-evaluate current permitting procedures and policies, and eventually allow a redesign to the process. The hope was that the survey

would allow DAQEM to eliminate any confusion and wasted time for both the stakeholders and DAQEM staff. Just as NJDEP, Utah's DAQ, and the EPA were able to bolster their effectiveness through critical evaluation, DAQEM, too, was hoping to reduce difficulties in its permitting process and increase the effectiveness of the program through critical evaluation.

Informal discussion by DAQEM management and staff identified areas thought to be barriers encountered by the stakeholders during the permitting process. These identified areas of concern were:

- Access to information needed by the stakeholder to complete the permitting application;
- Ease or ability of the stakeholder to receive concise general and technical information from the agency on the permitting process, either through electronic means or by personal contact;
- How well the stakeholder is educated by DAQEM on the implications or ramifications if they fail to comply with an issued permit; and
- The stakeholders understanding of the short term and long term costs associated with the permitting process.

In conducting a survey, one must determine the best procedure to use to obtain the required information. Four basic survey designs exist for social science research. They are "mailed surveys, phone surveys, in-person surveys, and electronic surveys (Schutt, 2001, pg. 251)." Each of the four techniques in administering organizational surveys was considered for the implementation of this survey. A mailed survey was determined to be the most appropriate. It was decided that stakeholder responses needed to be

confidential. Without confidentiality, the regulated community may not answer as boldly or candidly on the survey for fear of retribution from the regulating agency. Thus confidentiality was critical and a mailed survey offered that benefit.

Additionally, confidentiality may ensure a higher response rate than non-confidentiality (Rosenfeld, et al., 1993). A high response rate is also critical to ensure that "nonresponse error " is kept to a minimum. Thus, confidentiality should ensure a higher response rate to the survey since stakeholders would not fear any retribution from the regulator. Group administered, phone, in-person and electronic surveys were not considered viable options. Each one sacrificed confidentiality for the stakeholder.

Survey Sample and Procedures: There were 1,282 stakeholder facilities included in DAQEM's database at the time the survey was generated. Of these 1,282 facilities, DAQEM management decided to randomly sample 500 stakeholders in a single mailing survey. A simple random sample design that utilized a lottery procedure was the chosen method of selection for the 500 respondents. DAQEM maintains a billing database that assigns a unique number for each facility. Each unique number was written on an individual card, the cards were then shuffled and 500 stakeholders were randomly chosen for the survey.

On November 25, 2003, a survey (Source Questionnaire) labeled as Attachment I in the Appendix, was sent to the 500 randomly sampled stakeholders. No specific cover letter was sent with the survey; however, a preamble was included which stated the survey

was “completely confidential” and that the respondent should return it by January 1, 2004. No return stamped envelope was included with the survey. The 500 randomly sampled stakeholders made up 39 percent of the universe of stakeholders (sources listed in DAQEM’s billing database). Of those sampled, 184 (or 37 percent) returned a completed survey to DAQEM.

Survey Questionnaire: The survey was divided into four main sections. The first section was general information about the owner/operator and their business:

- type of business;
- years working in this business area; and
- whether they had access to the Internet.

No identifying information about the respondent was requested (i.e., name, specific location, etc…) in order for the stakeholder to be anonymous. However, industry specific information about the company was necessary to group responses. Since certain industries require more comprehensive permitting requirements and obligations it was useful to group or identify certain types of industries. The grouping allows a more accurate evaluation of the respondents’ evaluation of DAQEM programs and better assists DAQEM in its implementation of new permitting policies, if found to be applicable.

The next section of the survey dealt directly with the area of air quality permitting. Questions related to this area were posed to stakeholders. Their answers would assist

DAQEM in understanding the ease or difficulty of stakeholders acquiring permits. Specifically, questions were raised to answer the first two areas of concern:

- Access to information needed by the stakeholder to complete the permitting application;
- Ease or ability of the stakeholder to receive concise general and technical information from DAQEM on the permitting process, either through electronic means or by personal contact.

The third section was concerned with permitting implications (how much assistance does DAQEM offer after the issuance of the permit). Again, specific questions were asked of stakeholders to which the answers would assist DAQEM in understanding the last two areas of concern:

- Education given by DAQEM on the implications or ramifications to the stakeholder if they fail to comply with an issued permit; and
- Stakeholder understanding of the short term and long term costs associated with the permitting process.

Finally, the stakeholders were asked about the SBAP. We needed to know whether stakeholders were using the program or not, and if DAQEM had made the SBAP available in the community. Additionally, an open-ended section in the survey was attached in order to receive feedback on the survey itself and for the stakeholder to address areas not covered in the study. The response to this question might give DAQEM ideas for future studies or policies which may need to be pursued.

Results

The survey requested the respondent identify their business under a predetermined heading. This was done to understand whether DAQEMs service toward certain industry types was different and to see who was responding without the respondent giving up their anonymity. Table 1 presents the percentages of the six categories in DAQEM's database versus the respondent returned surveys:

Table 1

Business Category	Universe	Respondent
Surface Coater	13%	15%
Dry Cleaner	10%	8%
Sand and Gravel	12%	7%
Printer	4%	6%
Concrete and/or Asphalt	7%	7%
Other	54%	57%
Percent	100	100
Total	N = 1,282	N = 184

From the table, we see small percentage differences between the universe and the respondent. The largest separation was five percentage points for Sand and Gravel facilities down to a separation of zero percent between Concrete and/or Asphalt facilities. Therefore, we feel comfortable that the respondents were representative of the universe of study.

Another area examined was the percentage of businesses receiving assistance from DAQEM during the permitting process and, the business type most likely to receive assistance from DAQEM during the permitting process. We found that there was a significant difference at the 0.01 level in the type of business receiving assistance. Dry Cleaners were the least likely to seek assistance from DAQEM during the permitting

process. All other business types were more likely to receive assistance from DAQEM, with printers and others being the most significant category users. Table 2 depicts the breakdown:

Table 2

		Surface Coater	Dry Cleaner	Sand and Gravel	Printer	Concrete and/or Asphalt	Other
During the permitting process, did you receive assistance from DAQEM?	Yes	54%	33%	67%	92%	67%	74%
	No	46%	67%	33%	8%	33%	26%
Percent		100	100	100	100	100	100
Total		N=28	15	12	12	12	101

Chi-Square = 15.827;
df = 5; and
$p < 0.007$

Next, the survey asked the respondents the type of assistance they received from DAQEM during the permitting process. Was the assistance received through phone contact, electronic, in person or some other type? Interestingly, we found that 93 percent of all contact made by stakeholders with DAQEM during the permitting process was either by phone (61%) or in person (33%). However, through an earlier question in the survey we did find that 82 percent of all stakeholders had Internet access; yet, only 2.5 percent of respondents made contact with DAQEM through the Internet (website or e-mail). This may demonstrate an underutilization of the Internet and e-mail during the permitting process, or that stakeholders did not consider Internet and e-mail as contact with DAQEM.

Also, the survey asked respondents to rate their ability to access permitting information as easy, moderately easy, moderately difficult and difficult. Eighty-eight percent of the respondents rated the access to permitting information as either easy or moderately easy. Thus, a sizeable majority of stakeholders found the process user friendly. This was significantly different than expected. Many of the informal conversations between staff, management and stakeholders led DAQEM to believe that the process might be something other then friendly. However, the respondents rejected this assumption. Table 3 presents these results:

Table 3

Type of Contact	Results
Easy	37%
Moderately Easy	51%
Moderately Difficult	6.5%
Difficult	5.5%
Percent	100
Total	184

Next, we looked at the third section of the survey; whether stakeholders wanted assistance from DAQEM after the permit was issued. The survey asked stakeholders whether they wanted assistance in understanding and interpreting permit conditions and whether stakeholder wanted help in understanding their monetary responsibilities after the issuance of their permit. It turned out that business owner/operators did want assistance in both areas from DAQEM after the permit was issued. Fifty-eight percent of all respondents wanted assistance with reviewing their permit conditions, and 55 percent of all respondents wanted assistance with reviewing their applicable fees. Interestingly, stakeholders who did not want assistance from DAQEM during the permitting process now wanted assistance with interpreting their fees. In fact, we found

there was a significant difference, based on whether one had initial assistance through DAQEM for permitting, at the 0.05 level in the area of fees. Table 4 represents the breakdown.

Table 4

		During the permitting Process, did you receive assistance from DAQEM?		Total
		Yes	No	
Upon issuance of an ATC/OP, would you like anyone from DAQEM staff to review with you the fees associated with your permit?	Yes	49%	65%	N = 95
	No	51%	35%	N = 81
Percent		100	100	
Total		N = 121	N = 55	

Chi-Square = 4.242;
df = 1; and
Significance = 0.039

Sixty-five percent of all stakeholders who did not receive assistance from DAQEM during the permitting process wanted to receive assistance with their associated fees. This is important because DAQEM cannot assume that stakeholders who did not receive assistance during the permitting process would also not want assistance after the permitting process has concluded. On the contrary, Table 3 depicts that many stakeholders want assistance with permit conditions and fees after the permitting process is complete.

Finally, DAQEM had instigated a SBAP with the help of the Conservation District of Southern Nevada. DAQEM needed to know whether stakeholders were aware of this service and whether they were utilizing the program for permitting assistance. We found that only 11 percent of all respondents had used the SBAP during their permitting process and 52 percent had not used the SBAP during their permitting process. More importantly, 37 percent of respondents had never heard of the SBAP. Thus, almost 90 percent of respondents were not utilizing a service designed to help them permit their business.

Conclusion

This research was designed to evaluate how and if stakeholders contacted DAQEM for permitting assistance, and how they viewed and evaluated their accessibility to and satisfaction with DAQEM's permitting staff and the general permitting process. Additionally, DAQEM had commenced a SBAP with the assistance of the Conservation District of Southern Nevada. DAQEM wanted to know how used the SBAP was throughout the stakeholder community.

Many areas of the survey results were unexpected; however, none more unexpected than the results claiming the access to information through DAQEM for stakeholders had been easy or moderately easy for 88 percent of the respondents. There are several possible reasons for this response.

One possibility is that, in a survey administered by a regulating body, it doesn't matter how many safeguards the regulator puts in place to ensure anonymity for the respondent, the respondent will take the safe route and answer pleasingly. The fear of retribution by that agency toward the respondent in even subtle ways may be an overriding factor for the respondent to answer the survey as the regulator would want him or her to answer.

Secondly, the respondents could have misunderstood the survey question. The question asked stakeholders to rate the ability to access information through DAQEM during the permitting process. The answer to this question was to relate whether the permitting process was complicated or not. However, stakeholders may find the access to information easy or moderately easy, but may actually find the permitting process moderately difficult or difficult. In other words, the process to obtain the information had been easy, but applying the information in the application had been something other than easy. Since the question was phrased with some ambiguity, this may be how the stakeholder answered.

Thirdly, stakeholders may have consolidated all their interactions with DAQEM, and not just their interaction to access information during the permitting process. When answering the question, the respondents may have combined non-permitting contacts with DAQEM (i.e., billing, enforcement, compliance matters, etc…) and found the overall access easy or moderately easy. Thus, it is possible the intended question was never answered.

Lastly, it is possible that the results indicate the process is working. DAQEM maybe doing a wonderful job and stakeholders are pleased with the access to permitting information and the permitting process overall. It was indicated that 93 percent of all contact made by stakeholders with DAQEM during the permitting process was either by phone (61%) or in person (33%). So, it could be the staff interaction with stakeholders helps simplify the process.

Staff is directed to assist stakeholders more broadly in emission calculations, Best Available Control Technology (BACT) reviews and other regulatory reviews, if they are not using consultants. Therefore, the potentially complicated permitting system DAQEM sees and hears about in informal discussions with stakeholders is remedied for the stakeholder by staff and/or management assisting the stakeholder in the permitting process. Perhaps, as DAQ in Utah implemented a quality action team, DAQEM has indirectly implemented a quality action plan of its own. DAQEM's counseling of stakeholders in the requirements needed for the submittal of a complete application, may also simplify the permitting process.

Stakeholders' access to the Internet was also a surprising result. The survey results found that 82 percent of all stakeholders had Internet access; yet, only seven percent of all stakeholders utilized the Internet for permitting assistance. The use of Internet access has probably been underutilized and underdeveloped by DAQEM. Currently, DAQEM only posts regulations, application forms and other general information on-line;

however, the Internet could be utilized for electronic application submittals, posting of technical guidelines and bulletins for permitting that are industry specific, and could offer technical assistance via e-mail with designated DAQEM staff. These services would not only give the stakeholder more specific instructions quickly it could free up staff and management time by reducing the phone and in person contacts. This would allow more time for DAQEM staff to handle other day-to-day matters.

Additionally, the survey found stakeholders who did not use DAQEM for assistance during the initial permitting process still wanted assistance from DAQEM after the permit was issued. In other words, DAQEM still needs to make an effort to assist stakeholders in permitting matters after the initial permitting process is complete. DAQEM could post technical documents on-line explaining administrative conditions, source specific conditions, fees and billing procedures. This would help most stakeholders get the information they needed after receiving their permit, and would, again, allow DAQEM staff time to carry out other needed business. However, access to staff by phone and through personal contact by the stakeholders should always be available to ensure those individuals without access to the Internet, e-mail, or even those who wish not to use the Internet, access to pre and post permitting information.

Finally, the SBAP for DAQEM administered by the Conservation District of Southern Nevada was not well known in the community. Almost 90 percent of respondents had not used or heard of the SBAP available through DAQEM. The literature review illustrated how Utah and New Jersey found that a central contact of some kind was

useful and desirable by stakeholders for air quality permitting. A central point of contact could allow applicants to obtain the information needed to prepare administratively and technically complete applications at lower costs and in less time than under the traditional permitting approach. Therefore, the use of and knowledge of the SBAP or a similar program should be made accessible to stakeholders. The services available by a program like this should be announced by staff through stakeholder meetings, through phone conversations, via bulletin board postings, on-line postings and through multiple mailers to all qualified stakeholders. For a program to be successful it needs to be utilized by the target group.

Clark County has been a top area for population growth in past decades. With the increase in population has come increased industrial infrastructure, which has contributed to deterioration in the air quality of Southern Nevada. Also, as the valley grows, DAQEM's burden to properly permit new and modifying facilities also escalates.

Pollutant and industry specific rules, congressionally mandated requirements, and growth of the region all play a role in the permitting process. Additionally, proper billing of externality fees, correct dissemination of information to stakeholders, easy access to permit forms, knowledge of compliance issues and the stakeholders' ability to get clarification on permitting matters, all play a role in effective permitting of the regulated community.

This relationship between industry and DAQEM is pivotal in improving the health of Clark County citizens and visitors. An effective service by DAQEM to stakeholders should enhance compliance and control of air emissions because industry would have a better path to comply with applicable rules and regulations.

To better understand current perceptions of stakeholders on the effectiveness of air quality permitting by DAQEM, a survey evaluating air permitting in key areas of services was distributed. Hopefully, the results will aid DAQEM in future design of policies and procedures in the area of air quality permitting. DAQEM ‘s evaluation of its performance and effectiveness in meeting the needs of industry in permitting, will allow DAQEM to better serve the regulated community and the community of Clark County.

Future research by DAQEM in the area of air quality permitting could include conducting interviews with randomly selected stakeholders in conjunction with a new iteration of this survey. Potentially, the two together may clarify areas of inconsistencies. Interviews may prove to be more probing for DAQEM because they may allow stakeholders to clearly state their point on an area of concern where the survey may fall short or be misunderstood by the stakeholder. Also, the stakeholder may bring up areas of air quality permitting not addressed in the survey that may be useful knowledge for DAQEM in their review of their program.

Additionally, contacting other air quality agencies to more clearly understand how they have examined their performance in the public sector may be a useful tool for DAQEM.

In addition to NJDEP and Utah's DAQ publications, there may be other agencies that have researched or are researching their air quality permitting process and have or are implementing changes in their process, which have not been published. The information gathered by these agencies may be useful to DAQEM management for strategic planning of future programs and resource allocation in the area of air quality permitting and in other areas where DAQEM provides service to stakeholders.

Bibliography

1. Dehart-Davis, Leisha, Bozeman, Barry, 2001. Regulatory Compliance and Air Quality Permitting: Why Do Firms Overcomply? Journal of Public Administration Research and Theory; Oct. 2001; 11,4.

2. Edwards, Jack E., Thomas, Marie D., Rosenfeld, Paul, Booth-Kewley, Stephanie, 1997. How to Conduct Organizational Surveys, A Step-by-Step Guide. Thousand Oaks, California: SAGE Publications, Inc.

3. Heller, Katherine B., Bloch, Laura J., Kelly, Sheryl J., 1999. Making Environmental Permitting Less Burdensome and More Protective: an Evaluation of New Jersey's Environmental Management Assistance Process. Air and Waste Management Association.

4. Holloway, Jacky, Lewis, Jenny, Mallory, Geoff, 1995. Performance Measurement and Evaluation. Newbury Park, California: SAGE Publications, Inc.

5. List, John A., McHone, W. Warren, Millmet, Daniel L., 2003. Effects of Air Regulation on the Destination Choice of Relocating Plants. Oxford University Press.

6. Menlove, Lynn R., Patel, Chandubahai, C. Patel, 1999. Air Quality Permit Reforms in Utah. Air and Waste Management Association.

7. Poister, Theodore. 1997. "Performance Measurement in State Departments of Transportation," National Cooperative Highway Research Program. Washington, D.C.: National Academy Press.

8. Rosen, Ellen D. 1993. Improving Public Sector Productivity. Newbury Park, California: SAGE Publications, Inc.

9. Rosenfeld, Paul, Edwards, Jack E., and Thomas, Marie D., 1993. Improving Organizational Surveys. Newbury Park, California: SAGE Publications, Inc.

10. Schutt, Russell K., 2001. Investigating the Social World, Third Edition. Thousand Oaks, California: Pine Forge Press.

11. Wholey, Joseph S., Newcomer, Kathryn E., and Associates, 1989. Improving Government Performance. San Francisco, California: Jossey-Bass Inc., Publishers.

12. Wooley, David R., 1997. Clean Air Act Handbook. Deerfield, Illinois: Clark Boardman Callaghan, a division of Thomson Legal Publishing, Inc.

13. United States Census Bureau, http://quickfacts.census.gov/qfd/states/32/32003.html, 06/16/04.

14. United States Congress. “Clean Air Act of 1970” with Amendments in 1977 and 1990;

Appendix