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Assessing the Effectiveness of Title V Permitting

As a Compliance Tool in Texas

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Assessing the Effectiveness of Title V Permitting As a Compliance Tool in Texas

by

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Thesis

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Abstract

Assessing the Effectiveness of Title V Permitting As a Compliance Tool in Texas

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This paper is a study to determine whether the Title V program, as implemented in Texas, fulfills one of the goals of the Clean Air Act. That goal is to provide an effective compliance tool for particular sources (major sources of air contaminants). The study will include a description of elements that are a direct or indirect result of the Title V program including regulations, programs, permit and related documents, enforcement cases and violation data, etc. that will result in measurements or logical arguments to support the claim that the program is an effective compliance tool as compared to any system in place before it. I discuss Title V program elements that appear to detract from the compliance effectiveness, and explore the impact of these elements on compliance determination.

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BACKGROUND AND PURPOSE

Background

The Title V Permitting Program, as intended by the Clean Air Act and designed by its enabling regulations, was first and foremost meant to be a compliance tool. At the time of its inception, and throughout the development of the program in various states (and for this study: Texas) there were already a multitude of complicated and far-reaching environmental air regulations in place or soon to be promulgated. The compliance and enforcement process was, at the time prior to Title V, relegated to only what the regulatory agencies could find in reviewing inspection results, files, etc. The Title V Program was going to flip (and has flipped) the responsibility of determining compliance on its face, and now the path of determining compliance would start with the owner or operator of the sources subject to those vast and varied regulations instead of any regulatory agency[1].

On the surface, shifting the burden of locating noncompliance to the owner of the facility would almost seem non-productive, or like the fox guarding the hen-house. So part of the program that the Title V rules must address would include procedures in place to make the finding and reporting of noncompliance effective, and "covering-up" problems undesirable to the "point of pain."

A number of studies have been made on the Texas' Title V permit content, structure, and format.[2] However, I am going to focus on how an issued Title V permit is used, instead of what it looks like. So while the vast majority of these other studies look at the how the tool (the permit) was built or how much it cost, this study will review how

[1] Where used in this paper, the term "regulatory agency" is essentially an employee of either the TCEQ or the EPA with authority to investigate a site or facility for purposes of determining compliance with requirements.

[2] See Appendix G for Related Studies.

the tool has been used. As an analogy: where the permit might be a tool like a hammer; instead of these other studies trying to report whether the hammer should have a fiberglass or wood handle, and how much the hammer should cost, should it be an eight ounce or twelve ounce hammer; this study will simply see if the nail was driven and the house was built.

Purpose Statement

The purpose of my work is to assess the effectiveness of Title V permitting to determine the compliance status for an air source before and after the implementation of the Title V Program in Texas and determine whether this permitting program is an effective compliance tool under the umbrella of environmental regulations that apply under Title V on a state-wide basis. And I am not restricting the statement to only account for the permit document itself, but also how the impending program caught the attention of owner and operators who would eventually be required to obtain a permit, such that they took action prior to permit issuance to attain compliance. These pre-permit compliance motivators will be addressed in this paper.

Thesis Structure

After I provide some *fundamental concepts* for the program, I will describe the context: the *sequence of events* that took place early in the program as it was born. These activities over a timeline will assist the reader in appreciating the main arguments that follow. Then, by presenting evidence and anecdotal inferences in five categories, I will present my case showing an increased level of compliance as a result of the Title V permitting program. The five categories include:

- *Effect on existing programs or mechanisms* in place before the Title V program,
- Effects on *coincidental programs related to Title V,*

- Mechanisms that are distinctly *original to the Title V program*,
- Effects of *coincidental programs not related to Title V*, and finally,
- Mechanisms or programs in place that *potentially detract from the compliance effectiveness* of the Title V permit program.

Before we move into the body of the discussion, let's discuss some fundamentals.

PERMITTING AND COMPLIANCE FUNDAMENTALS

Title V Permitting Fundamentals

Before we talk about what the permitting program does for compliance status let's review the more fundamental picture of the effect of regulatory requirements on a source, relative to the types of sources and the nature of owner or operators who are responsible for complying with those requirements. The entity or legal person that is potentially subject to Title V permitting program we will simply refer to as "owner or operator." An owner or operator that is issued a Title V permit is called a "permit holder." The owner or operator subject to the Title V program is required to identify a Responsible Official that certifies all information submitted as required by the program be truthful, accurate, and complete upon reasonable inquiry. There are places in this paper where this term is abbreviated to "RO."

We will use the term "Title V Program" or "Title V Permitting Program" to describe that collection of activities, regulations and guides, correspondence, applications, permits, and data that make up how the agency and the regulated entities comply with the Title V rules in Texas.

Because this paper frequently refers to Texas regulations, those regulations promulgated for environmental programs are labeled under the scheme "30 Texas Administrative Code Chapter ***X***", where ***X*** represents a unique number for that regulation. The regulations cited under this scope will simply be referred to as 30 TAC Chapter ***X***.

With few exceptions, the Title V program applies to major sources of air contaminants. Obviously we could include all sources in this study so long as we have an equitable set of sources (or facilities) before and after the program's institution. To be

more accurate, we will endeavor to only include the sources that would be subject to the program before and after Title V program became effective.

Because the Title V program applies to sources with a major source definition potential to emit, there were, at the time, many sources in Texas that did not have any limit on their potential, which meant in many cases, were not permitted for New Source Review purposes. Additionally, many sources had NSR permits with very large limits. Lastly, there were a number of sources with active NSR permits that covered sites which were actually shut down, or had made permanent physical changes where they would never again reach their NSR permit levels. In those cases where the NSR permit levels would trigger a Title V permit, facility owner or operators made a concerted effort to reconcile their potential to emit with their "actuals" in order to avoid Title V. In essence, this is a move to comply with both the New Source Review permitting and Emission Inventory regulations, so we will include this in our model.

This analysis will often refer to "requirements" for which the owner or operator must comply. Often the term will include the phrase "air requirement" or "applicable requirement." This term refers to those rule citations and permit conditions that apply directly to the owner or operator's site and are listed in the Title V permit[3].

Thus we are getting a picture of a Title V permit: a compilation of all the applicable requirements that a facility must comply with, along with some enabling permit terms, such permit term and renewal, and recordkeeping, reporting, and monitoring unique to the Title V permit.

[3] "Applicable Requirement" is defined in 30 TAC Chapter 122, section 122.10.

Compliance Fundamentals

Before you have anyone reporting a noncompliance situation, the owner or operator has to (1) know what the requirement is; and, (2) detect when his operation or activity at the source has exceeded that requirement where it is applied. And even before we get to the point of detection, we need to actually have a condition of noncompliance (which may or may not have a means to be detected). (And you will hear about detecting noncompliance again: it is central to the Title V program.)

Let's start with the most basic air regulatory situation. The source has an emission point (like a stack or chimney) which by virtue of the type of industry and the activity that is emitting contaminants, is subject to an emission limitation for a specific pollutant. The form that the limit is contained is not important, but for sake of example we will say it is a New Source Performance Standard found to be applicable to the unit that is producing the contaminants. The activity is operating, and it fluctuates over time. The actual rate of the contaminant is not a concern until it exceeds the limit of the rule. When it exceeds the limit, the owner or operator has a noncompliance situation. Notice we haven't said a word about monitoring the activity (the emission point or the source feeding the stream to the point). This is similar to the age-old question: if a tree falls in a forest where no one is there to hear it, was there a sound? If you define sound to be a generated disturbance of waves of air molecules in the sonic spectrum, then yes there was a sound, just no one to hear it. Likewise, and more especially in the field of air pollution control, we know that if you have an exceedance of an emission limit against a standard, that is an occurrence of noncompliance, whether or not you have the means to detect that exceedance.

Before we move to the next step, let's mock-up the fundamental noncompliance situation. Figure 1 shows that we need to have (a regulated activity [unit, process, etc.]) + (a standard that applies to that activity) + (an exceedance of the applicable limit).

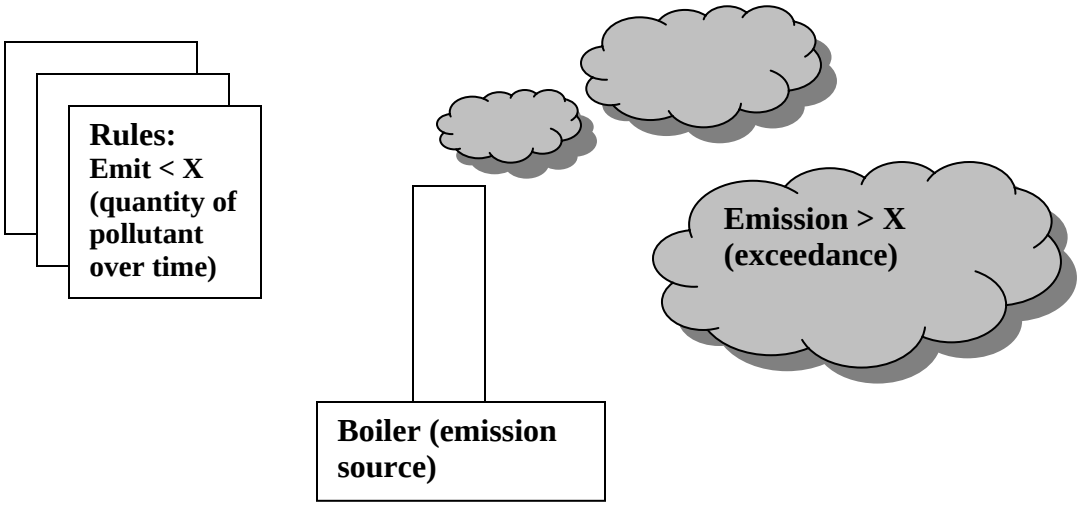

Figure 1 - Regulated activity experiencing an exceedance

The next step in this fundamental review is the detection of the exceedance (or, in the absence of an exceedance, ongoing compliance). For this we will need a means to monitor the activity.

Most air rules have been written to include the means to monitor the activity that corresponds to the type of contaminant, the rates, the engineering and science behind the process that generates the emission, and even correlation and parametric methodologies that provide a measure that reflect compliance and noncompliance.

To build on our example will use the first three components of figure 1 and say that at a point in time these three elements are indicative of noncompliance. By adding the fourth element: monitoring, we now will have a person who views the monitoring

data and knows there is a state of noncompliance (like our person in the forest who now hears the tree fall). If that is a company official, and the requirement is not a Title V permit requirement, it is possible that that knowledge does not leave the company. Figure 2 shows our discovered noncompliance to this point with the four elements.

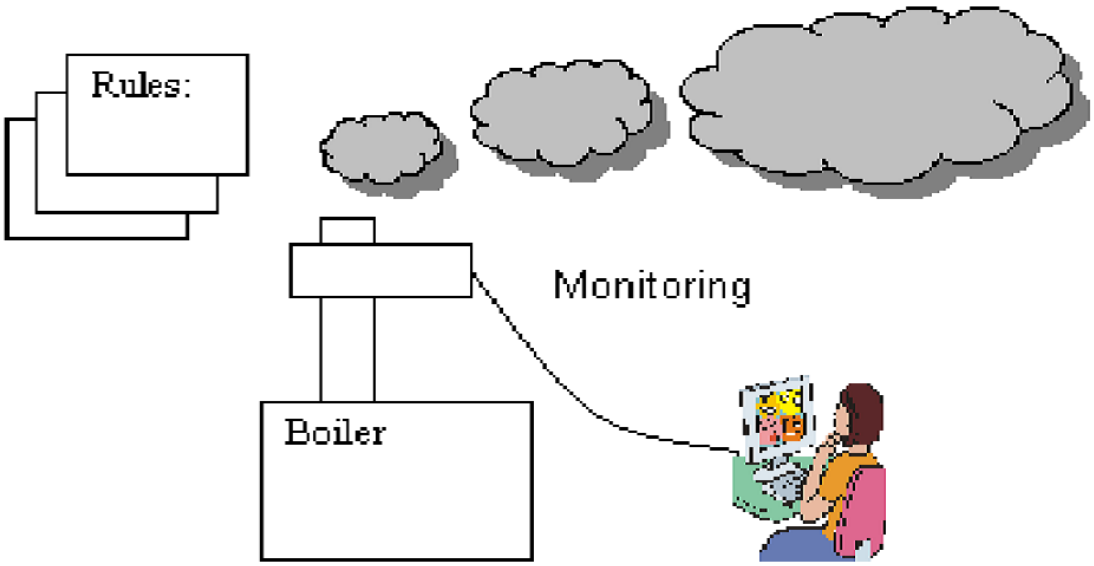

Figure 2 – Exceedance monitored by owner or operator

To complete our "compliance status" model structure, we need to add the fifth element, and that is the public reporting of that noncompliance status. This is shown in Figure 3.

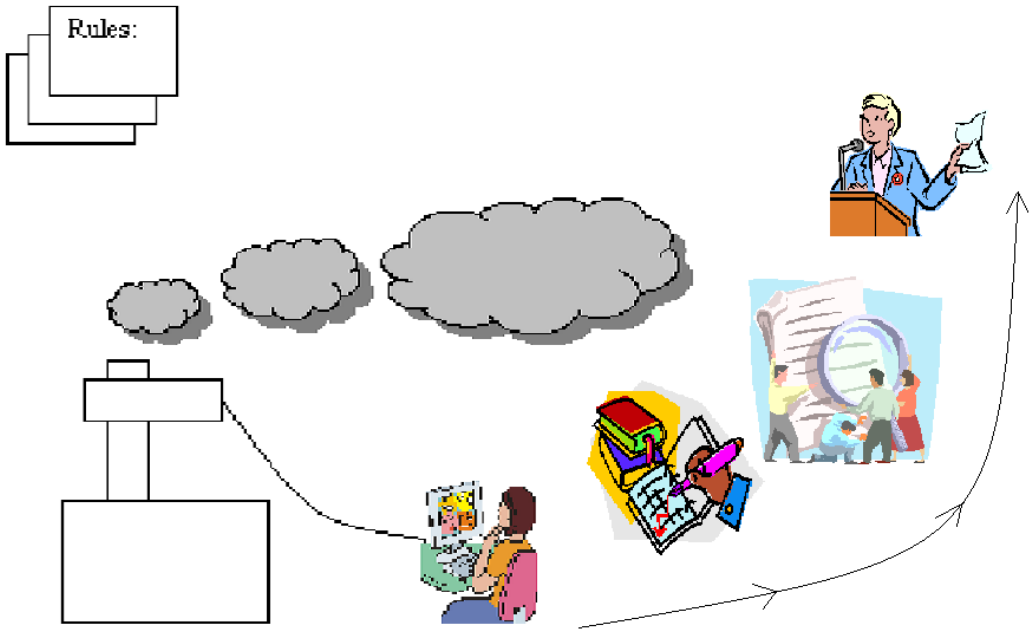

Figure 3 – Monitored exceedance reported to the public

As you can see in this figure, the status of the noncompliant situation (comprising of the first three elements) as detected by the fourth element (the monitor, to include the person who is part of that monitor), is finally placed in a public forum where action can take place. These actions may be a notice of violation or may elevate to a formal enforcement case.

There is no monitoring "chain of command" per se. However, under the Title V program, all reports required by a Title V permit must be certified by a Responsible Official, who, by regulation, is a high-ranking high-responsibility company official. And even if a facility is not subject to the Title V program, company owner or operators will

usually require a responsible official to submit reports of noncompliance, such as unauthorized emissions.

Moreover, these simple diagrams depicting compliance fundamentals should not be viewed only as plainly legal or administrative functions. While legal functions of a company and the agency occasionally come into play where regulations and compliance with them are fuzzy, the breadth and depth of day-to-day operations and compliance with the requirements are just as technically-based (if not more so) and thus deserve a scientific and engineering approach. The engineering that is used for process design and operations affect the environmental performance of the equipment subject to the regulations that apply limits or conditions on their operation. Often the difference between compliance and noncompliance is simply the operation of units at a site where operators, engineering and technical staff, and their management are constantly making technical decisions every day to balance productive, and usually based on their motives, profit-making operations, with those that are environmentally compliant. Furthermore, much has been made in the art, science, and engineering of solutions to monitoring of such operations to determine compliance. That is why we are treating the effectiveness of the Title V program as a compliance tool in light of engineering management.

What will be important for the remainder of this work is defining "effectiveness" of the permitting program as a compliance tool. One such theory may suggest that sources will experience increased compliance as a result. Certainly that is expected to happen as the finding of noncompliance (violations) typically result in some form of negative business aspect; everything from poor compliance history making future permitting work more difficult, up to and including formal enforcement actions with penalties and additional environmental project work not anticipated in the source's profit model. We will address increased (or even decreased) violations found later in this paper, and why that measure limits what this paper asserts to be a better measure of

effectiveness. Moreover, we will visit many other measures indicating increased compliance from the Title V permit program.

Means by Which Compliance Status is Publicly Revealed

If we agree that compliance status is not an effective measure until it is publicly known, then let's look at the manner in which noncompliance situations run the full five elements to become public knowledge (standard + activity + exceedance + monitor + public report):

Before Title V[4]:

- A direct reporting element of an applicable air rule (that exists before and after Title V).
- A violation discovery during an audit conducted under the Audit Privilege Act
- Direct observation by an investigator during an on-site comprehensive compliance investigation
- A violation discovered as a result of a reportable emission event.
- A violation discovered as a result of a complaint investigation.

After Title V:

- **All of the above plus:**
- Title V permits application submission – especially the Application Compliance Plan and Schedule.
- Deviation reporting from the Title V permit.
- Periodic monitoring results that are directly reported to the agency (and become public record).

[4] To this author's knowledge there are no compliance status tools discontinued after the Title V Program was implemented

We will include the above three items after Title V as part of the list of items that support Title V permits as an effective compliance tool.

It should be noted, if anyone is concerned with the potential to compromise a trade secret or confidential business information for compliance reporting: compliance with the standard, emission limits, work practices, ground level concentrations, off-property impacts, and the monitoring methods and measurement parameters to determine compliance with those requirements are required to be public knowledge. Monitoring and comparing measurements to these standards are made in a way that does not reveal these secrets. This is done by having the publicly releasable monitoring information as part of the Title V permit to begin with. Therefore, the standard, how you determine compliance, and the means by which you report noncompliance is all public information. In some infrequent cases, owner/operators may include trade secret or confidential information on their processes to aid in the determination of permit limits during permit application review. The TCEQ has in place means to protect that information as long as it is properly identified. But that will not be an issue for post permit compliance reporting.

To summarize, my work will define effectiveness in a very fundamental way: effectiveness (as a compliance tool) will be a measure of how the compliance status becomes a matter of public record (they see the light of day), and thus make the processing of noncompliance easier, and the reward for compliance more visible from the point of view of the regulated entity. Congruent with the noncompliance situations seeing the public light, the publicly-reported status of *compliance* with the balance of applicable air requirements is unique to Title V, brings about public confidence in the source's true compliance with requirements, complements the agency's limited tools for directly determining compliance, and thus deserves the title of compliance tool. After all, it is the regulated entity that has the power to comply. The Title V program creates the

obligation, and the responsibility of that source to comply and report that status to the rest of the world.

SEQUENCE OF EVENTS

It will be useful to include the time that will be considered "before" and "after" implementation of the program. The TCEQ/TNRCC[5] was the State of Texas agency responsible for applying for and receiving delegation of the Title V program from the EPA. That delegation process occurred over a number of years in which some changes were made to the program. Therefore, this study will need to determine a period in time when the program would likely have the effect of substantially altering the manner in which compliance was determined (from external regulators to internal facility officials) in order to mark on a time line the "before" and "after." The "before", "during", and "after" the program implementation will indicate the time frame most useful for this study.

This study will include measurements that best indicate similar states of compliance before and after the program. During the study period, the study will also need to address where other programs might have significant influence on the measurements not attributable to the Title V program. The Enforcement Review Process is an example of that type of program instituted independently of Title V that had an effect on compliance during the study period.

In addition to the Enforcement Review Process, the State of Texas legislature enacted the elimination the "Grandfathered Sources" (authorization for a source of air contaminants to exist and operate because they were grandfathered from the New Source Review Statutes). This forced all sources to review potentially suspect grandfathered status and obtain pre-construction authorization. But these sources can be carved-out

[5] The Texas Commission on Environmental Quality (TCEQ) and its "predecessor" agencies, namely, the Texas Natural Resource Conservation Commission (TNRCC). Because this paper points to the compliance effectiveness in Texas, the TCEQ will be the most commonly cited regulatory agency playing the primary

from the sources that were auditing their NSR authorizations and limiting emissions below Title V thresholds.

Measurements will be constrained to those types of data that are publicly available, consistent across time, and document compliance – or lack thereof – with the kind of requirements that the Title V program was designed to address. The records that can be retrieved for Notices of Violation and Notices of Enforcement issued from the TNRCC/TCEQ regional offices will be the primary indicators for the model. These documents will be reviewed for the citations and rules covered under a title V permit. In consideration of the violations found as a result of not complying with the Title V program, these are more aptly considered as program "levers" rather than indications of greater compliance with existing requirements. For example, the requirements for having a Title V permit did not exist before the program, so it is not a good "before and after" measurement.

What defines "before" and "after" the Title V program? What is a good span of time to capture the info? When will we start to look and when will the compliance picture of all the Title V permitted sites level out? This analysis will not be able to define a single point in time for all evaluations of compliance effectiveness. However, I will define three "eras" loosely bounded the activities, happenings, and events that shape potential and actual permit holders response to the Texas Title V program. I describe the eras are viewed in terms of the potential Title V permit holders in this sense: Awakening, Preparation, and Practice.

<u>From Earliest to Latest</u>

role, and because of this throughout the remainder of this paper, the word "agency" will refer to the TCEQ/TNRCC.

Awakening Era

As the responsibility of determining compliance shifts from the regulator to the regulated, the Title V program defined a person (Responsible Official or RO) who is an employee of the regulated source and who will be responsible certifying compliance and making reports of non-compliance of that source. As the program is developed in Texas, those persons who will become the RO likely go through a process we will call "Awakening." We mean the RO is coming to realize he or she will inevitably have to apply for a Title V permit, and take measures to ascertain a compliance status as part of that application. Also, that person realizes they will be personally certifying compliance with requirements after the permit is issued. In 2003 the American Bar Association described in laymen's terms what the RO was personally held to – having to do with the certification of truth, accuracy and completeness upon reasonable inquiry[6]. The Title V rules required the RO to make that reasonable inquiry and certify personally by signature to that effect. Although this was well written in 2003, it is the author's premise that the knowledge of personal liability was already understood as RO's were identified through the early years of the program and through the application process.

Here are the very public events that, through communication of the impending program requirements, would make RO's think seriously about improving the compliance record over their entire plant prior to the first application (first action required by them). So for this era that we call the "Awakening", we have:

Regulation Writing (30 TAC Chapter 122): Figure 1 describes regulatory and statutory development in terms of years. Interested parties, especially potential Title V permit holders, were very interested in how Texas was going to implement the federal rules. This became clearer as 30 TAC Chapter 122 was completed.

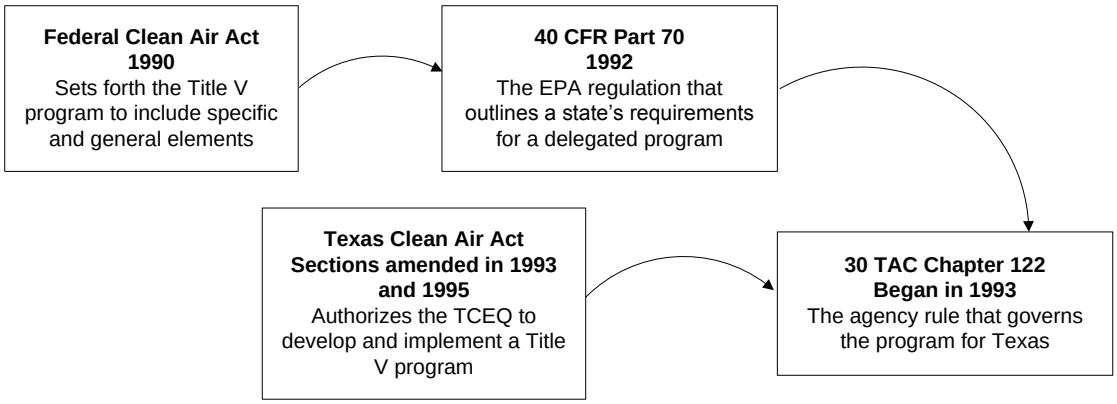

Figure 1 – Regulation and Statutory Basis Including Year of Promulgation

Program Documentation/Submittal to US EPA: The federal regulation 40 CFR Part 70 noted above required each state to submit information on how it planned to implement their Title V program as part of seeking delegation. In November 1993, the TNRCC submitted a package containing this information, with program elements addressing general program description, statutory and regulatory authority (including a written opinion from the Texas Attorney General), Permitting Program documentation, compliance tracking and enforcement Program, Fee Demonstration, statement of adequate personnel, and a slew of other permitting sub-elements. These were not only public documents, but a group of stakeholders were included in the review. The stakeholders included representatives from a host of trade organizations representing future Title V permit holders.

"Model Permits": The trade organizations who were stakeholders in the program were contacted for volunteers to work with TNRCC staff and develop model Title V permits based on real sites. The model permits would contain all of the requirements that the Title V permit as envisioned at the time, and the identification information was scrubbed to "sterilize" and make these permits anonymous. Model permits were designed

[6] Matthew O. Tanzer, "Title V Compliance Certifications: "Reasonable Inquiry" and Beyond", American

for the categories of interim program industries: an electric utility, a bulk fuel terminal, and oil and gas sites. Not only were the first industries looking at the development of these permits, but it is not too implausible to believe anyone who would be eventually brought into the program had an interest in what under development. As they began to realize what was under consideration as content of the permit and how it would be implemented, these companies would begin to look inwardly at programs to ensure compliance with all of the requirements that would appear on these Title V permits.

Because it will be hard to measure increased compliance during the early part of this awakening (since many actions that are taken prior to the application are likely internal processes, repairs, etc.), this part of the study in this paper focuses on anecdotal discussion of potential or future permit holders responses to what was happening around them as the program developed.

Preparation Era

Following these events – which provide source that will be subject to the Title V program an awareness of program requirements, the real, hard events take place on these sources that draw a line in the sand for reporting compliance status. We'll call this era the "Preparation":

Existing Source Federal Operating Permit Application

Application Compliance Plan and Schedule/ Application Compliance Certification

Upon application (and actually as the RO supervised the preparation of the application) the applicant must ascertain compliance with all requirements and report any non-compliance on a form as part of the application. Non-compliance situations that are

not resolved by the time the permit is issued become terms of the permit. See Appendix C for a copy of the relevant form. Whatever the level of motivation, the end product is a public application document.

Application Review

Interpretations

Circumstances arose where certain phrases or terminology would occasionally make a difference between what requirements would eventually apply. For example, requirements could differ between a "ground flare" and an "incinerator" even though these pieces of equipment may appear and operate the same. During this time, a "Rule Interpretation Team" was formed and the results of many of these interpretations aided in an understanding of compliance requirements that had for a long time been misunderstood.

Permit Shield/Negative Determinations

Regulations provided for the means by which the permit applicant and the permitting authority would come to agreement of what did not apply, and the applicant was provided a compliance shield in the issued permit in the form of a positive statement that certain rules did not apply, and the basis for that non-applicability decision. The added emphasis on review of "non-applicability" ensured that a review was likely carried-out in greater detail and attention than previous reviews.

Periodic Monitoring

(See the description of this program element under the section "Naming Specific Title V Requirements…")

It will be important to note that there was put in place an application schedule that spread out the application process over three years. Over the stretch of time for applications, those that were applying later in the cycle could observe what happened to

the first batch of applicants, learn, and adjust their applications, including their compliance status. This was still all part of "Preparation."

As a matter of process, it would appear that owner or operators subject to the earliest dates on the application schedule may feel penalized simply for the fact that they have to submit applications first, have their permits issued first, and thus have to report compliance first (and their noncompliance situations reported as deviations and become the subject of violations and enforcement actions before others who are not yet issued permits). Although they may have the right to feel that way, the counter-argument is all owners or operators of emission sources should be in compliance with the requirements at any time: before, during, or after their Title V permit is issued.

One external effect prior to application that could be measured would be increased environmental audits, especially those undertaken through the Audit Privilege Act, and the outcome of many violations in which enforcement discretion may be practiced under the APA, when nothing else at the source has changed (other than the completion of the audit itself).

Practice Era

Finally, well after the cross-over period, and the facility and their environmental staff have resumed day-to-day operations that incorporates the Title V permit monitoring requirements, the RO is certifying compliance and reporting deviations (compliance status) on an annual basis with public reporting forms. We'll call this era the "Practice" era and represents the state of the Title V regulatory compliance tools in effect today:

<u>Post Issuance</u>

Deviation Report and Permit Compliance Certification

Investigations on those documents

Like the application schedule described above, the permitting workload resulted in permits being issued over the years 1998 to 2006. So while there were permit holders who were now beginning the "Practice" phase and reporting deviations semi-annually with their permits, there was a large contingent of owner or operators (applicants) who were still in the Preparation phase. This latter section of applicants knew their permits were not going to be issued until much later and could adjust their applications, especially the compliance status through the Application Compliance Plan and Schedule, before the TCEQ even reviewed it.

We have identified a number of points in time that are relevant to our study. Appendix A shows where we want to start and end, and where the major milestones appear along the way. We show the era "Awakening", "Preparation", and "Practice" as they apply to the overall program. And remember, we talked about how the "Cross-over" point is not a single point in time, but differ for every source. In fact, the Preparation era overlaps the Practice era simply because the application schedule differed by industry types over time. As we mentioned earlier, some companies that were going to submit applications later in the schedule were "paying attention" to what was happening to the sources or companies that were already submitting applications. They took careful notes on how the agency actually implemented the rules (and changed their methods as they took place in reality) which altered their perception of the theory behind the regulations.

Other relevant events are also noted on the time line. Major Compliance History and CCEDS milestones are marked. The Start and End points are provided, and the reader is again reminded I am only marking an endpoint for evaluating Title V effectiveness independent of other factors: the Title V program and many other programs cited in this study continue!

EFFECT ON EXISTING PROGRAMS OR MECHANISMS

We will need to create scales, or rulers, to measure increased compliance. There could be several. But before we got too far in deciding what those scales may be, we should agree what a state of compliance is, at least to the degree that it is based on public knowledge. Simply said, the measures need to be publicly available information. Even though we are talking about commercial-based sources for which before Title V permitting, the compliance status was determined by regulators during inspections, and then after Title V, compliance status will still be determined using regulatory data, even if it is data submitted by those commercial sources and made part of the official public file.

What elements can be considered increased compliance, and then which of these elements that are considered increased compliance because of the Title V program?

Increased violations
Increased penalties
Decreased penalties due to increased compliance or lesser violations
Increased frequency or decreased frequency of violations

Increased Independent Audits
Increased NSR actions*
Increased rule interpretation work

*Applications for NSR permit amendments to existing permits, registrations for applicable PBRs.

An advice given to the regulated community: those subject to the program and getting ready for applications: conduct environmental audits.

Violations and Enforcement Cases

How will we use violations or enforcement cases as a measure of Title V compliance effectiveness? That's a very good question. Indeed it is usually the first, most obvious and most direct measure one might think of… it was the first measure considered by this author. The answer lies in what is being considered a result of being subject to the program and what are the effects the Title V Permitting Program, especially the post-permit reporting obligations.

We will use violations and enforcement cases as a measure, but we need to view these findings in light of the "big picture", and temper these findings with what might be considered the majority of sources in compliance anyway (after we have made this effort to determine compliance from Title V mechanisms).

Violations and enforcement cases are the result of noncompliance reported to the agency, verified, and constitute official agency findings. A Notice of Violation is an individual finding and a matter of public record. It may or may not turn into enforcement action, but it does become a part of the source's compliance history.

An enforcement case is a violation that rises to the level of some form of penalty or sanction applied to the facility owner or operator. The violation or combinations of violations attributed to the source constitute a matter that needs not just correction, but additional measures designed for punishment or deterrence.

Knowing how a noncompliance situation occurs, how it is detected, how it is reported to a public regulatory agency, and how that reported noncompliance situation

becomes an enforceable instrument, we should step back a moment and look at two other motivators for compliance outside this standard view of noncompliance. These two other motivators may possibly limit the usefulness of violations or enforcement cases to the total compliance picture based on the Title V program. These other two motivators will be considered internal to the owner or operator… meaning that the pressure or driver to comply with a requirement come from within the owner or operator's business model or practice exercised on himself (even if there is an appearance of external pressure).

Cost saving or stop/loss

The first internal motivator we'll discuss is cost saving or stop/loss. For some emissions, the exhaust stream – emitted to the atmosphere - may represent either loss of valuable product, or loss in valuable energy (thermal or fuel efficiency, for example) or both. So the owner or operator puts into place - within the process or emission generating unit - some controls that minimize the loss of product, burns the fuel at the most efficient air-fuel ratio, reduces thermal losses, etc. while at the same time minimizes associated contaminants released to the atmosphere. To the degree that dollars saved through control is consistent with meeting the emission limit applied through a rule, the owner or operator desires to maintain compliance with the rule. This is, and very much likely has been, the case before and after Title V permitting program was implemented.

What the public does not know in this first case, unless it is discovered through a random finding of a pre-Title V inspection that happens to locate an internal record, or coincidently occurs and witnessed by a regulatory inspector, is the rate by which that owner or operator has achieved compliance over time purely from this motivational factor. But, for sake of example, before and after the Title V program the owner or operator is satisfied with the high compliance rate based on the existing cost saving - stop/loss controls, and the only thing different after the Title V program implementation is a Title V permit that requires him to certify compliance publicly. It is conceivable, for

a high compliant source, that there literally may not be any more violations found, or enforcement cases implemented before and after. What we plainly have in this example is the public knows he is or is not in compliance (on a yearly basis) after Title V program (the permit requirements applied to this owner or operator). Indeed, this is a good example of why we will consider violations and enforcement cases as a limited measure of Title V as an effective compliance tool: public knowledge of that source's status.

Public Environmental Image

The second "internal" motivator is the source's public image. Although this may on the surface appear to be driven externally, ultimately it is an internally generated and internally managed process. The company will be using their own internally developed information on the image of "environmentally friendly" or "green" operations and activities. Usually, and in most cases, there is a direct relation to claims of a company's overall environmentally sensitive programs and actual compliance with air requirements. Then after Title V permitting, data can be gathered to "prove" the company's "green" assertion. And like the example above, for those sources (companies) that are really walking the walk, we (the public) may not necessarily realize more violations after the Title V permit, but we can say that the good compliance status is more well-founded in the public documents provided annually by the source.

Using Violations and Enforcement Cases

That is not to say we should discount increased violations and enforcement cases overall across the State. The cause of increased violations and enforcement cases after a Title V program can be linked to one of two effects: the permitting process smokes out the bad actors who have (until the permit) successfully dodged regulators who find rampant noncompliance situations, or the permitting process educates the source on their

obligations – and so these owner or operators learn the hard way of the requirements – through the enforcement process.

But the increased violations and enforcement cases are a secondary, albeit more visible, measure of increased compliance pointing out the bad actors and the environmentally naïve. It does not answer, or demonstrate, what effect the program has on the potentially large sector of the regulated community who (1) *do* know exactly what their requirements are (before and after the permitting program); and, (2) are also good environmental citizens (and play by the rules).

Because the number and quality of violations or enforcement cases may not necessarily increase (or even decrease?) before and after the Title V program under these conditions, we will have a limited set of regulated sources for which we determine effectiveness of Title V as a compliance tool. Thus we choose to use simple violation numbers or enforcement cases as only one measure of effectiveness of a compliance tool.

Table 1 below lists NOVs for "Air Operating Permit Major Sources[7]" for the selected calendar years.

Calendar Year	NOVS (ALL)	NOVS (CH122, single cite)*	Non-Chapter 122 NOVs
1992	0	0	0
1996	0	0	0
1998	0	0	0
2000	6	0	6
2004	811	157	654
2008	1147	546	601

[7] This is a classification of sources or facilities (regulated entities) that have a Title V Permit in the TCEQ database.

*The violation is based solely on a requirement of 30 TAC Chapter 122: Federal Operating Permits Program

Table 1

These facilities received NOVs increasing in number after they were issued their Title V permits. The low number in 2000 represents for the first few permits that were issued in 1997-1999, permit holders reported deviations within a six month period, followed by an investigation to confirm and allege violations by investigative staff. The NOVs grew in number as these permit holders and agency enforcement staff learned the best way to work through the process. In later years, these permit holders were also found in violation of the Title V program as well. The reason the table lists these out separately is because it show how the Title V program increased the visibility and the effectiveness of finding non-compliance. Although it does remain notable that most of the NOVs that were "30 TAC Chapter 122 only" were based on failure of the permit holder to submit deviation reports and permit compliance certifications on time.

Enforcement cases are important measure of the agency's effectiveness in policing sources of air emissions in Texas. Table 2 lists numbers of air enforcement cases made effective in their respective years. Like NOVs, it is useful to note the "non-Chapter 122" cases, since we are trying to demonstrate how the program improved the visibility of existing air rules before and after the program, not just the program itself.

Calendar Year	Effective Resolutions	Chapter 122 only	Non Chapter 122
1993	2	0	2
1994	2	0	2
1997	1	0	1
1998	129	0	129
1999	185	0	185
2000	227	0	227
2001	278	0	278
2002	296	12	284
2003	266	2	264
2004	221	0	221
2005	311	1	310
2006	328	4	324
2007	299	0	299
2008	464	10	454
2009	439	7	432
2010	338	9	329
Totals	3786	45	3741

Table 2

The result "Effective Resolutions" denotes air enforcement cases that were resolved by making it effective. Here we see a striking increase in air cases resolved at the beginning of the Title V program, and a steady increase during the subsequent years where permits were issued, deviation reports were submitted, and violations processed, resulting in these cases. Like Table 1, the real benefit for the great increase in air enforcement orders for

existing air regulations is demonstrated by deleting the orders that resulted only from violations of the Title V program rule (30 TAC Chapter 122) as shown on the far right column of this table.

Increased Audit Privilege Cases

The Texas Environmental, Health, and Safety Audit Privilege Act (as enacted by the 74th Legislature[8]) was created as a carrot to bring forth additional noncompliance corrections by providing a form of immunity from enforcement under controlled circumstances. In a like manner where bankruptcy protection from creditors is provided for troubled debtors to get out of a very bad situation, Audit Privileges were simply measures of enforcement discretion, and it does not wipe-out the record of noncompliance by the subject source owner or operator.

Under the concept of audit privilege, the violation discovery has to be surfaced as a result of voluntary admission on the part of the owner or operator (we will call the "respondent") of the noncompliance that would not otherwise be required by a regulatory requirement. As those owner or operators that were going to be subject to Title V realized that deviation reporting on their part was going to be *required*, violations found through the Title V process were not going to enjoy an audit privilege enforcement immunity or discretion. So, as the Title V program loomed in the near future, there existed a motivation to use the Audit Act process before it was "too late."

Table 3 lists Self Audit Act results for data only going back to 2000. What is especially useful is the fact that the disclosures, investigations and violations increased during a period where substantial number of full program permit had just been issued, especially for the last push of issuing permits in 2005-2006.

[8]Vernon's Civil Statutes, Title 71, Chapter 1, Article 4447cc. The Act was revised in 1997 by HB 3459 in order for audit privilege to work for sources subject to Title V – palatable for federal operating permit program.

Calendar Year	Regulated Entities	Investigations	Violations
2000	1	1	1
2002	2	2	2
2003	10	15	14
2004	11	13	14
2005	9	10	16
2006	9	10	12
2007	17	24	27
2008	16	21	40
2009	27	31	58
2010	15	20	21
2011	4	5	4

Table 3

Regardless how one feels of this motivation, it can be argued that increased audit act cases will bring an increased number of otherwise hidden violations (hard to detect by inspections but would be found as a result of Title V permit compliance reporting) to the light of day and corrective actions to bring the respondent into compliance.

Therefore, a subtle, secondary measure of compliance effectiveness that includes both public knowledge of noncompliance and the follow-up corrective action is increased audits in the years of Title V program development as those subject to the program realize the clock is ticking.

Consistent State-wide Applicability and Correcting Misunderstood Requirements

Prior to Title V permitting program, a comprehensive site investigation was usually the only tool that also looked at the question of what was the applicable requirement to each specific large industrial source of emissions. The strong consistency provided in state-wide guidance before the Title V program may be simply found in the administrative procedures (how to conduct the investigation), but for technical requirements, ended in the laundry list of requirements at the broad "rule" level. This left the determination of detailed requirements as how they applied to the site, up to the level of expertise of the region's investigative staff and management, and the individual company's level of expertise. This is not to say that the end result of that assessment from each region was wrong, or even inconsistent. But there were anecdotal results that after the application of the Title V program, and especially of the applicability tools were developed early on (such as the Decision Support System or DSS); some corrections to the "applicability" of detailed requirements were made. Immediately upon discovery of the correct requirements, there was a period of time that the owner or operator had to take in changing the way he was doing business to comply with the "new" requirements.

So for a particular source, one could look at the compliance status for a particular requirement before their Title V permit, and after their permit was issued (and maybe due to some interpretations of the underlying requirement everyone has a different concept of what compliance means). Over time, their compliance status (in terms of significance or quantity) may appear to look like that in figure 4.

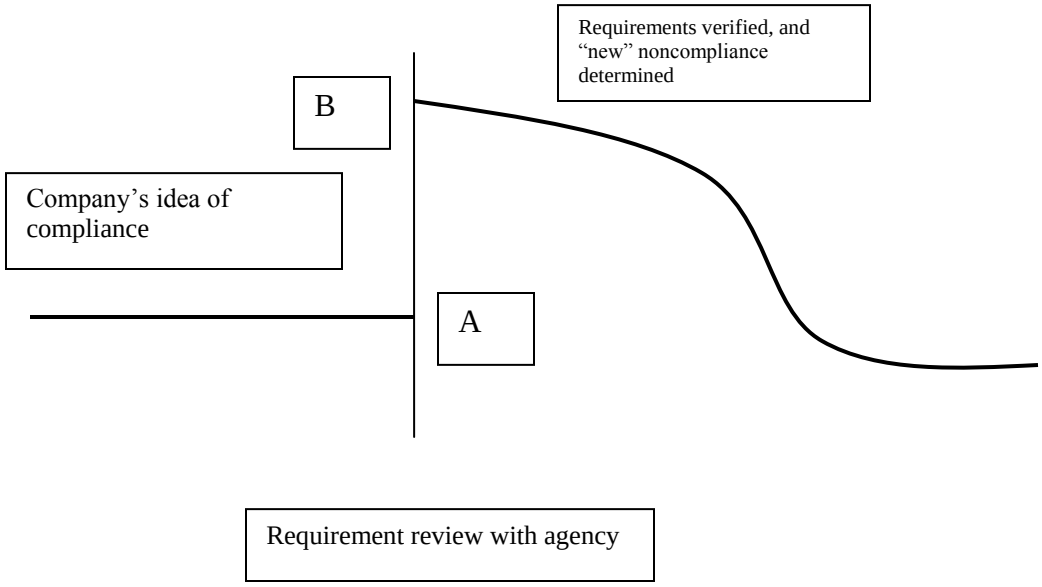

Figure 4 – Facility "educated" on true noncompliance from review

For this example, the difference between point A and B is the level of "noncompliance" simply a product of the title V process. After all this explanation, we are not going to use this apparent increase in compliance with actual requirements for these reasons:

(1) Violations resulting from these scenarios will already be a part of the total violations measured that are being used in this study. The overall violation numbers are a better measure.

(2) In certain circumstances, because the agency had not affected violation discovery prior to the Title V applicability tools, enforcement discretion may have been practiced.

EFFECTS FROM COINCIDENTAL PROGRAMS

RELATED TO TITLE V

There is some support for three unrelated effects of the Title V program that could possibly be argued as increased compliance tools. The first is a phenomenon experienced during the Awakening era, when source owner or operators were concerned about Title V applicability: an increase in the number of NSR authorizations. The second is a coincidental rule and program made effective during the Title V program: Compliance Assurance Monitoring. The final effect is a byproduct of state-wide consistency on the applicability of requirements that were earlier applied in potentially different ways across the different regional offices of the TCEQ. Although they ultimately will not be used in this analysis to support this analysis, they merit discussion due to their relationship with other measured elements that are supporting the theme. The main reason they are not being used for supporting argument is the lack of measured data that could directly support the cause.

Increased NSR Authorizations

Source of air contaminants and the effect they have on local air quality has been a subject of public interest for a long time. And in the seventies, became a matter of national and state law. In Texas, the Texas Health and Safety Code enacted air quality permitting, later called "New Source Review" that evolved into a series of pre-construction permits. These permits had two main requirements: (1) Best Available Control Technology (BACT) was applied to the source of air contaminants, and (2) the emissions from the source could not *impact* the public health and welfare. Through a review of an NSR permit application, a permit was written that consisted of textual construction and operating "provisions", and a Maximum Allowable Emissions Rate Table (MAERT). Finally, an important element in the history of this NSR permitting

program was the concept of sources built before the legislation and not modified afterward were "grandfathered" from this permitting requirement.

A lot could be written about NSR permitting, but in this paper we will confine the discussion to the relevancy of the NSR permit emission limits (as codified in the MAERT) to the Title V program. And the secondary effect of NSR to Title V was three-fold: owner or operators across the state were now faced with the line in the sand – the *trigger level* of Title V permitting was a definition of a major source – based on the "potential to emit" which was a combined total of each pollutant on all facilities at a site as listed in these NSR permit MAERTs. The second outcome was an increased general awareness and interest in the how all facilities, or emission units, were authorized. I.e., were some of the claimed "*grandfathered*" units truly still grandfathered from NSR? Thirdly, those sources that were going to be subject to Title V were spurred-on to ensure that all their sources were indeed *authorized under the NSR program*.

TRIGGER LEVEL

Already in the Texas NSR program were additional emission control and NSR permitting program requirements if the source was a major source. However, the Title V program redefined the scope of the geographical area to be a site, and had the effect of bringing in a large number of sources into the program, including those that, with some additional scrutiny of their business needs, could and did take further limits to get under the major source (Title V applicability) threshold. While the "major NSR permitting programs": Prevention of Significant Deterioration and Nonattainment permitting review had very specific goals for local areas to meet (or prevent not meeting) the National Ambient Air Quality Standards, it was possible for a company's site to be a major source for Title V and possibly not in one of those two major NSR programs. This is a key concept for those sites which, when evaluated for emission levels to determine Title V

applicability, hovered near the trigger level. Even to today, EPA has keen interest in those sources that have limited their potential to emit less than, but within 80% of a major source level for any one pollutant at a site.

PUBLIC INTEREST IN CLAIMED GRANDFATHERED STATUS

In the early development of the regulation that would implement Title V program in Texas, agency management and staff sought to include a registration type of process as additional rule language for grandfathered sources. Eventually this "subchapter" was stricken from the draft regulation since it was not required by the federal regulation for state delegation of Title V. Yet the seed of public concern and interest on the subject had been sown, and eventually the State legislature of 2001 enacted sections within the Texas Clean Air Act (§382.05181) that eliminated all sources of any grandfather status and eventually required all sources of air contaminants to obtain NSR authorization no later than September 1, 2003 (for east Texas) or September 1, 2004 (for west Texas).

We are not implying that the Title V program caused Texas legislators to eliminate grandfather status. There were several factors that played a role, especially the fact that the NSR program had not, in its original form, met the goal that was expected that eventually all sources would have to modify and thus get a permit. But the fact that Title V program applicability depended on that NSR emission limit had source owners considering control and accepting limits that would keep their site out of the program to the extent that they could.

ENSURING NSR AUTHORIZATIONS AT TITLE V SITES

This concept is very similar to the general concept of owner or operators ensuring compliance with all air requirements prior to applying for a Title V permit. Indeed,

obtaining NSR authorization is certainly one very important requirement in the laundry list of requirements codified in a Title V permit. But we will assign it its own separate importance for two reasons: (1) out of all the air requirements listed in a Title V permit, it is the most common, most frequently referenced with high public interest, and with enforceable application representations, and (2) an overall specificity to "site" potential emissions by certified registration (for PBR situations) or multiple NSR permits.

PUBLIC INTEREST AND ENFORCEABLE NSR APPLICATION REPRESENTATIONS

New Source Review permits are primarily pre-construction permits. So long as the owner or operator constructed the facility as represented in the application and does not modify without amending the permit, he need only operate the facility as represented and need not update the technology. But the Title V permit was going to require the permit holder to certify not only to the compliance of the permit, but to all of the application representations[9]. This became an interest of not only the general public, but especially the Title V permit holders because of the large volumes of application information supplied to the TCEQ as part of the application review process. During the transition period, a Stakeholder Group formed to study the issue, and resulted in the simple statement that the TV permit holder need only certify compliance with that part of the application that was used to determine the emission rates. Even though application representations were always enforceable, this brought the requirement closer to the public light.

SITE POTENTIAL TO EMIT

[9] In the NSR permit program, the application information that was relied upon to issue the permit is, by permit term, just as enforceable as the permit itself.

Several large spread-out sites had to be reviewed for Title V applicability, and were either close, or just in the program due to their potential to emit. The Title V program introduced a new definition of site which pulled-in many facilities that had been authorized and built separately over time. Many PBR facilities had no PTE other than 25 tpy of criteria pollutant. With no real limit, it artificially inflated a site's PTE to anything up to that 25 tpy, even if the actual facilities could not muster such emissions. In order to avoid Title V applicability and bring the emission rate numbers to something more real, owner or operators were afforded the opportunity to register their emissions and certify them, and bring those registrations to the public file. Many were willing to do this in order to avoid Title V and the emission inventory requirements and fees. In this way, greater specificity, or precision in estimating and declaring publicly to what a facilities real potential to emit enhanced the certainty by which the companies and the public could know what the State's overall emissions numbers were.

Compliance Assurance Monitoring

Similar to Periodic Monitoring, EPA was developing a rule and a program concurrent but independent of Title V for a heightened level of monitoring under special circumstances (applicability of CAM). The result of that rule development was 40 CFR Part 64: Compliance Assurance Monitoring. Because the applicability of that rule centered on a major source, and major sources were subject to Title V permitting, Texas followed suit and implemented CAM in the Title V regulation and program deadlines, etc. Where the CAM was applicable to a rule requirement that also lacked sufficient monitoring to assure compliance (periodic monitoring required) then use of an approved CAM scheme would suffice for the periodic monitoring requirement.

But CAM is still a separate program and rule. The fact that CAM was (is) implemented under Title V is purely coincidence, and one could take up a separate study

to determine if CAM met its own goal. But that is outside the scope of this study. We will stick to the use of periodic monitoring results to support the Title V review in this analysis, where applicable.

COMPLIANCE TOOLS ORIGINAL OR UNIQUE TO THE TITLE V PROGRAM

After Title V Program applies to our sources of interest, the owner or operators subject to the program have Title V-specific requirements to comply with, as well as those requirements codified, or listed, in their Title V permit application or in their issued permit. These Title V-specific requirements and the enforcement of them are for the most part a programmatic tool to lever the sources to comply with the program. Although much has been said and studied regarding compliance with those requirements, we are going to set most of them aside for purposes of this study, with the exception of: the application requirement for a Compliance Plan, Periodic Monitoring, and Permit Compliance Certification with Deviation Reporting.

Most of the purely Title V-specific requirements that are not being considered include the requirement to apply for a permit, renew a permit, submit compliance forms on time, and submit complete compliance forms. We are doing this for two reasons: (1) there are no Title V requirements before the program – so there are no "before" and "after" measurements to be made; and, (2) we can assess the compliance effectiveness of the program in place regardless of whether or not Texas and EPA have ever reached the ideal state of program execution.

Compliance Effectiveness by Surfacing Company Records to a Public Place

A number of environmental regulations may simply require records of indicators of control device performance, emissions monitoring measurements, work practice standards, and other operating activities related to emissions to be simply kept on site and made available upon request. The "available upon request" is not a public availability,

but only a submission requirement to a regulatory inspector – upon his or her request. In order for that the record (which may indicate noncompliance) to become a public record, a reason for the inspector to enter the property (a scheduled inspection), ask for the record, review and detect noncompliance in the inspection report, and file the report, must all take place. The most limiting factor in this scenario is sufficient inspection resources getting to all facilities that have these records in a timely manner and finding the noncompliance.

There are two examples showing how TCEQ investigations may have limited effectiveness in uncovering noncompliance situations: (1) The compliance monitoring strategy as implemented through negotiations with EPA – that determine on-site inspection frequency, and (2) the "5% Recordable Emission Event Inspection Policy." In the former, due to investigative resources of the TCEQ, on-site inspections are made at a percentage per year, roughly 17.5%. Therefore, not every Title V site will be the subject of an on-site inspection every year. But investigators will make an in-office file review of all deviation reports and permit compliance certifications, which may result in violations, and also results in a public record of the company's reports, the investigation reports, and the fate of every deviation as reviewed by the investigator. For the latter situation, it is the policy of the Office of Compliance and Enforcement to only review 5% of an owner or operator's non-reportable emission event records. But in the case of Title V, all emission events are deviations, and so made a public record for the entire world to see.

The Title V program requires the company's Responsible Official to make a reasonable inquiry and report all deviations. When these records are required by an air regulation or permit referenced in the Title V permit, the RO has essentially no choice but to file a deviation for the record results that indicate noncompliance. Subsequently, the deviation reports are submitted to a public file, independent of inspector availability, and not requiring a "request."

The most commonly experienced example of this shift of company records to a public format via Title V reporting requirements are "non-reportable" (or "recordable") emission events subject to 30 TAC Chapter 101. Chapter 101 consists of a number of very general air requirements applied in Texas which includes "emission events." The term emission event is an umbrella definition of unauthorized emissions for which most people think of as upsets. Certainly upset emissions are the bulk of what are considered emission events, but it would also include start-up, shutdown, or maintenance emissions that are not otherwise permitted under NSR. The regulation Chapter 101 defines additional concepts applied to emission events, such as demonstration criteria (how an event might be handled with enforcement discretion), and the concept that is the basis of this section: reportable quantities.

Reportable quantity is a level of emission (emission rate or total pollutant release) based on an individual pollutant during a particular event for which above that level the event must be reported to the State. "Reportable" emission events are reported electronically to the TCEQ through the State of Texas Environmental Electronic Reporting System ("STEERS"); and these reports generate separate investigations that will include details made known through the public record to include cause and corrective action. The effectiveness of reported events as a compliance tool is beyond the scope of this work. But those events that are not above the RQ, and are simply recorded on site, are prime examples of noncompliance situations that eventually move to the public record through Title V by the deviation report. In fact, the title V permit deviation report is the only general means by which these reports are made public.

Although the rules concerning emission events (Chapter 101) and deviations (Chapter 122) both apply to emission events, they apply differently to emission events under the applicable RQ. Chapter 101 says you (the owner or operator of the facility experiencing the event) do not have to report an event under the RQ. However, Title V permits require any and all indications of noncompliance to be reported as deviations that

make their way to the public file. Emission events, regardless of the quantity, are unauthorized (not authorized by NSR regulations), and thus are deviations to 30 TAC Chapter 116: a requirement of every Title V permit. The Title V permit program thus moves records of non-reportable events that were once only kept on site to the agency's public files room.

But what does this mean? Non-reportable events were evaluated, through Chapter 101 rulemaking, to not be of significance to be brought to the agency. The answer to the meaningfulness question has to do with looking at the total sum of recordable events for the agency and the public in two important respects: (1) trends; and, (2) was the RQ correctly applied. Review of records that, individually do not muster a reportable level, may, over time and frequency and other conditions, indicate a larger problem and help uncover other noncompliance situations that were hidden before the trend analysis. And every event claimed to be non-reportable can be investigated to determine if that criteria was truly met.

By making recordable events public, interested public groups or private citizens join the potential audience of reviewers of these events. No longer limited to the agency staff who have to go to the site and ask for the data, these records can serve as an effective compliance tool, resulting from Title V permit program.

Application Compliance Plan

The application compliance plan is a requirement for the owner or operator (applicant) to submit a public application form describing what requirements they are not in compliance with, and include a corrective action plan. They are required to either certify being in compliance at the time of application, or submit he noncompliant situation description and corrective action. See Appendix C for the wording on the forms and instructions. Many applicants with pending applications desired to get in a state of

compliance even before the application was required, and likely went to lengths to do so. Although there was no comparable requirement before Title V program, this application requirement acted on or affected source owner or operators publicly known compliance status with existing air requirements. The table below lists the number of plans that included noncompliance situations at the time of application and included a compliance plan; i.e., a corrective action plan.

YEAR	INITIAL
1998	27
2000	102
2004	5
2008	14
Total	148

Table 4 Initial Title V Permit Applications with OP-ACPS Part 2

The larger number of initial application OP-ACPS Part 2 in the year 2000 is a reflection of the "call-in" of existing facility permit applications during that time period. Lower number of Part 2's in later years is simply a function of fewer initial permit applications. Also not listed here are OP-ACPS Part 2's from renewal applications.

Without this unique Title V permit requirement, facilities have no requirement to report noncompliance situations, and no reason to submit these corrective action plans in a publicly available document.

Periodic Monitoring

The rules promulgated for state programs include the need for a Title V permit to contain periodic monitoring. This is need for on-going, continuous monitoring for

requirements listed in a Title V permit when the underlying requirement has insufficient monitoring to assure compliance on a continuous basis. The reason we can make an exception for periodic monitoring is because this author believes there was always a need to monitor a source's compliance with requirements, and in many situations, often there has been a partial monitoring attempt in permits and regulations before the Title V program. Finally, we can say that Periodic Monitoring can be a measured element in this study is because it is not simply a Title V program-only enforcement "lever." Appendix E lists and describes the various periodic monitoring that was used over years from the beginning of the program through 2008.

Those tables list the periodic monitoring by year and type for the protocols that applied to unit-based requirements. But what is not shown in Appendix E is the broadly applied periodic monitoring that applied (and still applies today) to "site-wide" applied opacity requirements for stationary vents under 30 TAC Chapter 111. Every site and general operating permit has this requirement because every site subject to the program will have stationary vents. The periodic monitoring protocol for this requirement is a set of procedures that outline when visible emission observations or opacity measurements made by certified opacity readers are conducted.

Permit Compliance Certification with Deviation Reporting

The key feature of post permit issuance activities related to the Title V permitting program is the requirement for the permit holder to certify compliance with requirements at least annually, and to report deviations with those requirements at least every six months. As may be understood, it can also be the most controversial, since the permit holder is asked to report on himself. See Appendix B for the three forms used to complete compliance certification and deviation reporting in Texas.

The elements of this certification and reporting include:

- An annual certification statement that the permit holder was in compliance with all the applicable requirements, except for the deviations reported during that certification period.

- The certification submission includes reference to any earlier deviation report (first six months), and should also reference to any deviation report ending in the second six months.

- The submission is accompanied by a Certification by Responsible Official (OP-CRO1) noting that the information submitted was truthful, accurate, and complete upon "reasonable inquiry."

To aid in the credibility of these submissions, two requirements are applied:

(1) The OP-CRO1 must be signed by a Responsible Official (RO) or his or her Duly Authorized Representative (DAR). The RO must be of sufficiently high enough level in the organization to not only be responsible for obtaining the information, but also to make decisions on behalf of the company as to causes of problems and their corrective actions[10].

(2) Every certification and report is "investigated" either through an on-site investigation project or through an office file review by TCEQ Field Operations staff.

[10] Regulation 30 TAC Chapter 122 defines the RO as "…for a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation… See §122.165(c)(1)

EFFECTS FROM COINCIDENTAL PROGRAMS NOT RELATED TO TITLE V

We will look at three TCEQ programs that have an effect on compliance status after the Title V program was put in place, and find that one clearly stands out as a separate compliance tool. These three are: the Enforcement Review Process, the agency's Comprehensive Compliance and Enforcement Data System (CCEDS), and Compliance History.

Enforcement Review Process

The Enforcement Review Process was a set of actions recommended and adopted by the Commission to strengthen the enforcement process at the TCEQ… making the enforcement process more effective, improve public impressions and awareness of the process and cases, and many more goals.

The ERP made numerous recommendations in these areas:

- Enforcement Initiation Criteria/Investigation Prioritization/NOVs/NOEs
- Complaint Procedures
- Enforcement Process/Agency Coordination
- Ordering Provisions
- Collections/Financial Inability to Pay
- Communication
- Supplemental Environmental Projects (SEPs)
- Penalty Policy

(Links are part of the ERP implementation web page found at:

http://www.tceq.texas.gov/agency/enf_rev/implement_recc.html at the time of this study)

One of the main concepts driving these actions was a finding during the agency's Sunset Review that there was a feeling, founded by a few examples, that it was cheaper for a source to violate an environmental regulation than to comply. Through a form of records review and interviews with agency staff, it was being asserted that many of the enforcement penalties did not measure up to the expensive solution to comply with environmental standards, especially when production downtime, construction and capital equipment costs were considered. Nevertheless, rules are rules, and the TCEQ had to come up with a means so that it would be more expensive to violate the rules than to comply.

As a result of this Process review, the agency's Penalty Policy[11] as adjusted to include "economic benefit" to violate a requirement), and assess an additional monetary penalty with a factor based on the scale of benefit. This set of steps had the greatest effect on those companies that found it profitable to violate the rules. It had a secondary effect on the level of deterrence since it would certainly be made known to a company even contemplating (making a bottom-line business analysis) a violation of an environmental regulation in order to make a profit. However, in this study we will assert that the effect on compliance as a whole in the State of Texas for source subject to Title V was not that widespread as to be considered a stopping point on our Title V compliance tool effective analysis.

Having explained what the agency did to improve the enforcement process, it is important to explain the distinctive processes between "compliance" and "enforcement." Indeed, these terms may often be used interchangeably. However, the interest in this

paper is exploring how the Title V permit is used as a compliance tool, meaning how is it used to determine if a source of air emissions is in compliance or not. That is the first question that must be asked. The enforcement process comes into play after the source has been determined to be not in compliance, what actions are levied to correct the problem and penalize the source as a deterrent to future noncompliance. The enforcement review process complemented the Title V permit by adding to the effectiveness of correcting noncompliance while the permit helped find the noncompliance situations with greater frequency and confidence.

Comprehensive Compliance and Enforcement Data Systems (CCEDS)

Early in the development of the Title V program, development for a computer database began. First started within agency's Information Resources functions, the Title V Information Management System project moved to a contracted development tool that was brought in for bottom-up relational database development. It was at this early stage that post permit compliance features were first developed within the TV IMS. A number of functions, data tables, and windows were developed for investigations of title V sources, including compliance indicators. However, shortly after the deployment of some of the first basic functionalities, the entire post-permit compliance functions were discontinued in the TV IMS project. There were a number of factors that influenced this management decision, beyond the scope of this study, but one of the main drivers to discontinue compliance data in Title V was the need for Field Operations, Compliance Support, and Enforcement functions of the TCEQ to handle all of their compliance needs, not just Title V, and not just air-related issues.

[11] Penalty Policy of the Texas Commission on Environmental Quality, RG-253, Second Revision 2002. A penalty factor was provided for "Economic benefit gained through noncompliance"

Thus was born the CCEDS project. And of all the data that CCEDS was designed to capture, included in those tables were relevant Title V compliance data. Two of those important data elements now captured electronically across the State were: violations (of air requirements that are the subject of this study) and reviews of compliance status reported through permit holders' certifications of compliance.

Review of the effect that CCEDS has on our study is not an effect on owner or operators before and after the Title V program. Rather, it has the effect of increasing consistency for every investigator who is reviewing a site and that owner or operator's compliance with requirements across all sixteen agency regions across Texas. It is possible that the final checklists and procedures required to obtain the same data in the same way within one database system affected the chances, frequency, or content of noncompliance situations unrelated to the Title V program. Because the CCEDS system affected every source subject to Title V, we cannot immediately discount its effect on compliance. The major CCEDS milestones relevant to this study have been pinpointed on the time line.

Compliance History

Most likely to be considered a point in time for measuring the effect of Title V on compliance status will be any other new program that independently has an effect of owner or operators. The effect should be widespread, and at least include all of the sources subject to Title V program. The Compliance History (CH) program is such an element. Under this program, and from the underlying state legislation, the TCEQ would begin to collect compliance-related data on all sources, and after entering this data in a complex formula, assign a CH score. That score, including a default score for really new sources that did not have much of a history with the TCEQ, one of three CH classifications would result. A Poor classification would indicate that the owner or

operator would be subject to additional permitting and investigation requirements. A High score would benefit the owner or operator with potentially fewer inspections and other programmatic rewards. The middle of the road classification, average, has no effect, and would also be the default assignment.

An entire study can be made on Compliance History, but for the purpose of this study we will limit our discussion to the effect on compliance status for Title V sources, and why that effect now has to be considered as a compliance tool separately from the Title V program. We will spend a little time in examining the evolution of CH from its humble beginnings to the point where it was automated and the users had confidence in its five year compilation of data. That is because Compliance History program started off a little slow, and the automation and inclusion of a CH report took time to develop.[12]

The Compliance History program acts on all sources including Title V permitted sources. It gathers data related to many factors that paint a picture of the sources compliance status, including violations, number of inspections, and whether the source has embraced an "environmental management system" or voluntary reductions above and beyond the regulatory requirements. As you can imagine, these factors can slide the CH rating up or down the scale.

Each of these programs are worthy in their own right to be considered compliance tools. Separate studies can be made on their effectiveness using the same type of analysis in this study. But we will make this point: while considering these three programs - during and after their implementation, the Title V permitting program has not lost any of its "teeth"; and the same elements of the Title V program are still there, driving the source to comply with its requirements.

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[12] From 30 TAC Chapter 60: (6) Beginning February 1, 2002, the executive director shall develop compliance histories with the components specified in this chapter.
(7) Beginning September 1, 2002, this chapter shall apply to the use of compliance history in agency decisions…

POSSIBLE "DETRACTORS" OF COMPLIANCE EFFECTIVENESS

Did the implementation of the Title V Program in Texas, in any way, present detractors or obstacles to using other parts of the program as a compliance tool? Well, in a manner of speaking, there are three such elements that could be considered in this way. As we describe these three, we will explore how we could even imagine how such a thing could happen in the first place. The three elements of the Texas program that have the potential to affect compliance elements include "Permit Shield", Permit Reopening for new rules applicable to established permitted source, and the use of high-level citations in permits.

Permit Shield

Remember that we established how the Title V program was designed to increase compliance with requirements as one of its several goals. Another important goal – one that takes place early in the permitting process – is the need to accurately establish the requirements that truly apply to the source, with great detail.

Indeed, this goal finds its origins in the Clean Air Act as amended in 1990. Section 7661c(f) of the Act describes a concept whereby terms may be introduced in the permit that shield a permit holder from enforcement based on an agreed interpretation of requirements during permit issuance.

This process requires the permitting authority (the TCEQ in this study) and the permit applicant to cooperate fully and agree on the requirements based on the sources' operating unit parameters, and sometimes, a little interpretation of the rules. Sometimes these "applicability determinations" are very straightforward. Sometimes they can be extremely complicated. In order to give the applicant some form of confidence that these

applicability determinations will not change arbitrarily (after the permit is issued) and then be subject to immediate enforcement, especially right after this cooperative effort between the agency and the applicant; the Texas Title V program includes a form of "permit shield" as allowed by the EPA implementing rules. The form of permit shield provided in Texas is one of "negative applicability." This means that determinations of an entire rule not applying to a specific emission unit in the permit is established, and documented in the permit itself.

What does the permit shield provide? It provides the permit holder time and relief from past noncompliance should a later finding that the rule (once thought not to apply) actually applies. So, in a way, compliance will eventually be established, since the permit holder will have 90 days to apply for an appropriate permit revision to reflect the new determination[13].

Some people may believe that this delay in compliance is an impact in effective compliance. And perhaps it would seem that a less-than-reputable permit holder could use it to sail through time until caught with the requirement that actually applied. However, a safeguard against that occurring includes the "basis of permit shield." If the basis of the shield was proven not to exist as the permit holder represented, then the shield becomes non-existent, and enforcement may be applied to the applicable requirement historically[14].

Although the above analysis would seem to be sufficient argument to minimize the detrimental effect that permit shield has on compliance effectiveness, we will nonetheless report on the number of enforcement cases that were hampered by a permit shield in place in our list of measured elements.

[13] 30 TAC Chapter 122, §122.148(e)

[14] The permit shield guidance emphasizes having the correct basis of determination included in the permit itself. Thus the basis is an enforceable permit term.

Permit Reopening Process

The permit reopening process is an agency-initiated permit action used to "force" permit holders to update their permits when a new requirement becomes applicable to their permitted area. This is different than a permit revision, initiated by the permit holder, to update their permit requirements based on changes at the site or other changes based on the permit holder's actions.

Over the course of a permit's five year term, there are new rules being promulgated that apply to a permit holder, or changes that affect the requirements in an established permit. It is incumbent on the agency to direct the permit to be "re-opened" for this reason, when there is more than three years left before the permit is renewed. (A permit renewal will capture all requirements - new and revised during the renewal process for those permits less than three years left on the five year term.)

Other than reopening permits in 2000 to incorporate New Source Review, there has only been one other permit reopening in Texas, and that action was driven by an EPA objection to the "effective" permit. According to operating permit staff, the one permit was reopened to satisfy 122.231(a)(4), "the executive director or the EPA administrator determines that the permit must be revised or terminated to assure compliance with the applicable requirements;" instead of a reason "such as the promulgation or adoption of new applicable requirements."

Rather than using the reopening process to update permits for new or revised requirements, the agency relies on the guidance for permit holders to apply for a permit revision – usually a minor revision – which is much simpler and does not require the expensive and onerous public notice process that a reopening process requires. In addition to this general guidance, the TCEQ also promotes informational outreach, especially through small business communications, to get the word out about new or changed requirements.

The reason this entire reopening concept may play as a detractor is twofold: (1) permit holders are only required to report deviations with their permit terms, and (2) it suggests that permit holders are required to keep up with changing regulations, instead of the permitting authority (not a concept that the regulation suggests).

Under the first concept: if the new requirement is not listed in their Title V permit, it could be argued they have nothing to report a deviation against. Also, by not having the requirement listed alongside all the other requirements, there could be honestly overlooked requirements to research if compliance was achieved during the reporting period. For the second concept, the agency relies on the looming threat of the difficulty and expense of a reopening process to incentivize what is usually a minor revision to accomplish the same thing: update the permit. Of course, basically, this second concept is only as effective as the agency's willingness to carry-out a reopening.

Having said this, the new requirement, if applicable, is still fully enforceable. This is true regardless of any requirement's presence in the Title V permit.

High-level citations

Since permits have been issued, the TCEQ has enjoyed a database permit generation program based on individual regulation analysis. It is beyond the scope of this paper to fully describe this unique, time-saving program; but knowing the result is a set of detailed citations that apply to the permitted units from application data allows the TCEQ to move through the permit review process rapidly, even with permits that contain hundreds of pages and thousands of regulatory citations.

The reliance on this automation tool has a drawback: sometimes the staff do not have time to develop a new rule's analysis that forms the basis of the logic engine in time

for adding to the permit under review. When this happens, one simple high-level citation is repeated throughout the permit table, including the monitoring/testing, reporting, and recordkeeping categories. This is a form of placeholder, letting people know there are some requirements of the rule cited that apply, just not sure what they are at this time.

When it comes time to report deviations, the permit holder must use the exact requirement and citation that has been deviated… they cannot use the single permit citation. So reliance on the permit holder's rule knowledge, along with the understood (and stated) requirement for the permit holder to comply with all applicable requirements regardless of presence in the permit, becomes the basis for accurate deviation reporting.

BRINGING IT ALL TOGETHER

We've put together a picture in order to analyze the effectiveness of the Title V Permitting Program as a compliance tool. We've gathered data from certain public databases from specific time periods[15]. We've compared these different sets of data before during, or after we believe the Title V program had an effect on the outcome. In this way we can establish a pattern of cause and effect. While we make this assessment, we note we have made an endpoint on the review of the data at hand. That is not to say that the Title V program stopped being an effective compliance tool. What it means is that there have been other programs introduced and implemented on the same sources we are studying, and those other programs are also effective on their own way. Then it becomes harder to discern what elements of the many regulatory programs are having the greatest effect and when.

Where insufficient data exists, we have made anecdotal inferences regarding the behavior and responses of those entities subject to the program before, during, and after implementation of the program. All of those activities, behaviors and responses can be summed up in one theme: these entities desired to clean house prior to showing it to the public, since the program was going to require a permit and a compliance demonstration with that permit to the public.

Measured Elements

The following is a list of elements, in rough chronological order, that indicate the Title V program is an effective compliance tool. The data reflects existing element

[15] See Appendix F for Public Information Request made to gather the data for this study.

measurements increase after the implementation of the Title V permit program in Texas, and the creation of new compliance tool elements that increase effectiveness simply by their presence:

- Increased audits under the Texas Audit Act. We will assume that the frequency of audits prior to the Title V program were stable, and that no other program that would motivate owner or operators to submit audit findings existed other than Title V permitting. This type of data describes an increase in the use of an existing program as a result of the Title V program most evident during the Preparation era – noticeable those preparing applications in the full program group of industries. (As seen in Table 3 for Audits over the period in this study.)

- The creation of Application Compliance Plans reflecting noncompliance situations that were not otherwise known by the agency or the public. Table 4 lists numbers of these documents as snapshots during specific years. This type of data describes all new data resulting from the Title V program most evident during the Preparation era.

- Increased monitoring through increased number of periodic monitoring methods implemented. We have discussed the proliferation of new monitoring protocols where none had existed before. The establishment of a baseline of monitoring is critical for the effectiveness and transparency of a source's compliance status. This type of data describes all new data resulting from the Title V program most evident during the Preparation era.

- Increased NOV's at a source for violating existing requirements and no other factors involved. This type of data describes an increase in the use of an existing program as a result of the Title V program most evident during the Practice era.

We saw this occurring by data in Table 1, even after we discounted violations of the title V program.

- Increased enforcement cases at a source for violating existing requirements and no other factors involved. This type of data describes an increase in the use of an existing program as a result of the Title V program most evident during the Practice era. We saw this occurring by data in Table 2, even after we discounted violations of the title V program.

- Increased public reporting of noncompliant or unauthorized emissions that are otherwise not reported. This type of data describes all new data resulting from the Title V program most evident during the Practice era.

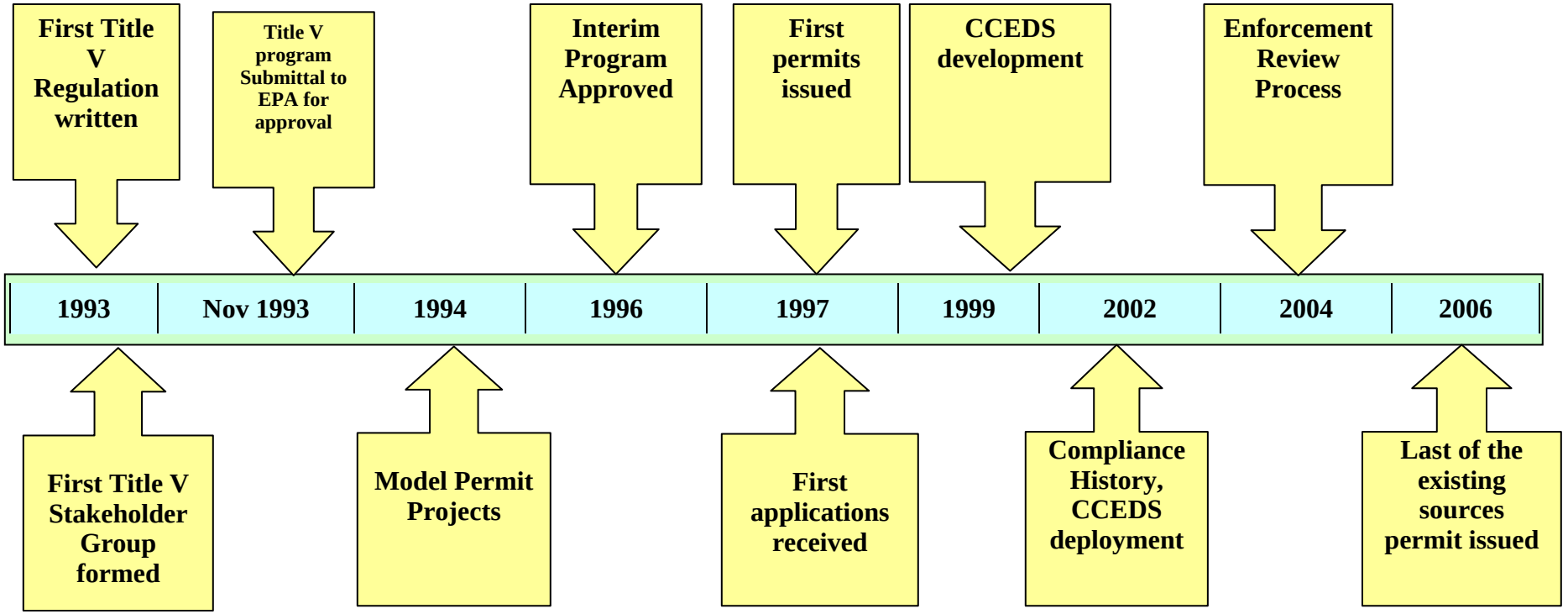
The results of these measurements and logical arguments tend to support, by the preponderance of information, that the Title V Permitting Program has been and still is an effective compliance tool in Texas.

And after all the analysis, or even aside from it, everyone wants compliance with the regulations and programs designed to make our world a little more cleaner, safer, and better place to live.

Appendices

Appendix A

Title V Compliance Effectiveness Timeline



APPENDIX B

Texas Title V Operating Permits "Post-Issuance" Forms

Deviation Report (DevRep) and Permit Compliance Certification (PCC)

Texas Commission on Environmental Quality
Federal Operating Permit Deviation Report Form
Form Dev Rep (Part 1)

Permit Holder Name						**Customer Number**	**CN**
Area Name						**Account Number**	
Report Period Start Date		**Report Period End Date**		**Operating Permit Number**	**O**	**Report Submittal Date**	

Operating Permit Requirement for Which Deviations are Being Reported

ID Number		Term & Condition No.	Pollutant	Regulatory Requirement Citation	Type of Requirement	SOP or GOP Index Number	Monitoring Method	Monitoring Frequency
Unit ID	Group ID							

Dev Item No.	STEERS Incident No.	Deviation Period				No. of Dev	Cause of Deviation	Corrective Action Taken to Remedy or Mitigate Deviation Situation
		Start		End				
		Date	Time	Date	Time			
Total Deviations:							**Is there a Part 3 Miscellaneous Monitoring/Credible Evidence form supporting this deviation report?**	☐ YES ☐ NO

Texas Commission on Environmental Quality
Federal Operating Permit Deviation Report Form
Form Dev Rep (Part 2)
30 TAC Chapter 101 Non-Reportable Emission Events

Permit Holder Name						**Customer Number**	**CN**
Area Name						**Account Number**	
Report Period Start Date		**Report Period End Date**		**Operating Permit Number**	**O**	**Report Submittal Date**	

Operating Permit Requirement for Which Deviations are Being Reported

ID Number		**Term & Condition No.**	**Pollutant**	**Regulatory Requirement Citation**	**Type of Requirement**	**SOP or GOP Index Number**	**Monitoring Method**	**Monitoring Frequency**
Unit ID	**Group ID**							

Dev Item No.	**Deviation Period**				**No. of Dev**	**Cause of Deviation**	**Corrective Action Taken to Remedy or Mitigate Deviation Situation**
	Start		**End**				
	Date	**Time**	**Date**	**Time**			
Total Deviations:						**Is there a Part 3 Miscellaneous Monitoring/Credible Evidence form supporting this deviation report?**	☐ **YES** ☐ **NO**

Texas Commission on Environmental Quality
Federal Operating Permit Deviation Report Form
Form Dev Rep (Part 3)
OPTIONAL
Miscellaneous Monitoring and Credible Evidence Submittal

Deviation Item Number	Monitoring Method/ Evidence Reference	Monitoring/Evidence Results supporting Compliance Status	Additional Materials attached? Y/N

Texas Commission on Environmental Quality
Federal Operating Permit Form
Permit Compliance Certification – PCC (Part 1)

Permit Holder Name		**Customer Number**	**CN**
Area Name		**Account Number**	
Operating Permit Number	**O -**	**Report Submittal Date**	
Certification Period Start Date		**End Date**	

I. Certification of Continuous Compliance with Permit Terms and Conditions **(Indicate response by placing a 'x' in the appropriate column for each of the following questions)**	**Response:** **Yes**	 **No**
With the possible exception of those permit terms and conditions identified in the 'Summary of Deviations' found using, at a minimum, but not limited to, the continuous or intermittent compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information, was the permit holder in continuous compliance with all the terms and conditions of the permit over the Certification Period?	☐	☐

II. Summary of Deviations **(Indicate response by placing a 'x' in the appropriate column for each of the following questions)**	**Response:** **Yes**	 **No**
A. Were there any deviations from any permit requirements during the Certification Period that have *previously* been reported to the agency? If the answer to this question is 'Yes', please complete and attach Part 2 to this submittal. *Important Note:* If previously submitted reports did not contain specific information on monitoring methods, frequency and the total number of deviations experienced over the entire certification period, then use form DevRep to provide that information.	☐	☐
B. Were there any deviations from any terms or conditions of the permit during the Certification Period that are *currently* being submitted to the agency? If the answer to this question is 'Yes', please include the relevant reports along with this page.	☐	☐

Texas Commission on Environmental Quality
Federal Operating Permit Form
PCC - Previous Deviation Reports (Part 2)

Permit Holder Name		**Customer Number**	**CN**
Area Name		**Account Number**	
Operating Permit Number	**O**	**Report Submittal Date**	
Certification Period Start Date		**End Date**	

Identification of Deviation Reports Submitted During the Certification Period
(Note: All reports must be certified to truth, accuracy, and completeness by the Responsible Official)

Report Date	Report Description (Name of unit, Name of Rule, Driver for report, etc)	Report Submitted To	Report Previously Certified? (Y/N)

Texas Commission on Environmental Quality
Federal Operating Permit Form
PCC – Monitoring Options Selected (Part 3)

Permit Holder Name		**Customer Number**	**CN**
Area Name		**Account Number**	
Operating Permit Number	**O**	**Report Submittal Date**	
Certification Period Start Date		**End Date**	

ID Number		Regulatory Requirement (Rule or Permit No. and Prov.)	Pollutant Monitored	SOP or GOP Index Number	Monitoring Option Used	Dates		Description/Comments
Unit ID	Group ID				Specific Citation	Begin	End	

APPENDIX C
Application Compliance and Schedule with highlighted text

(Instructions and Form)

Texas Commission on Environmental Quality
Form OP-ACPS—Instructions
Application Compliance Plan and Schedule

General:

Title 30 Texas Administrative Code § 122.132(e)(4) [30 TAC § 122.132(e)(4)] requires that each permit application contain a Compliance Plan, a Compliance Certification, and, if necessary, a Compliance Schedule. 30 TAC § 122.132(e)(9) requires that a Responsible Official certify all submitted application information.

- The Compliance Plan [§ 122.132(e)(4)(A)] must contain a specific statement regarding continued compliance with current requirements, and compliance with requirements that may become effective.
- The Compliance Certification [§ 122.132(e)(4)(B)] must contain an indication of the compliance status with respect to all applicable requirements, based on the compliance method specified in the applicable requirements and any other credible evidence or information.
- If required, the Compliance Schedule [§ 122.132(e)(4)(C)] must identify each emission unit and applicable requirement for which non-compliance is ongoing at the time of application. It must also contain the method for assessing compliance status, a description of how the emission units(s) will come into compliance, a compliance schedule with milestones describing steps to be taken to achieve compliance, and a schedule for submission of progress reports.

Form OP-ACPS allows the applicant to fulfill all documentation requirements related to application compliance plans, certifications, and schedules. **This form must be submitted with all initial FOP applications and renewal applications.**

A "Non-compliance Situation" is a situation in which, based on information available to the applicant and belief formed after reasonable inquiry, it *appears* that there is a unit not in compliance with a unit-specific applicable requirement, or that the application area (or site) is not in compliance with an area-wide requirement.

- If the non-compliance situation is on-going at the time of FOP application, it is required to be addressed in Part 2 of this form.
- If the non-compliance situation occurred previously, and has been remedied by the time of FOP application, then it is not required to be addressed on this form.
- Multiple instances of non-compliance for the same emission unit, applicable requirement, and pollutant, such as those documented by continuous emissions monitoring, may be considered part of the same non-compliance situation if the instances are related and have the same underlying cause.

Note that area-wide requirements are those which apply to the entire area addressed by the permit, as opposed to those that apply only to a specific unit or units. These requirements are generally addressed on Form OP-REQ1, Application Area-wide Applicability Determinations, and General Information. If there is only one permit for the site, the application area is the same as the site. (See "Application Area" on Form OP-1.)

The Company Name and Area Name (from Form OP-1, Section I and X, respectively) must appear in the header block of each page for purposes of identification. The date of submittal must also be included, and should be consistent throughout the application *(MM/DD/YYYY)*. Any subsequent submittals must show the date of revision. Also, enter the Regulated Entity Reference Number (RN*XXXXXXXXX*) and Permit Number (O*XXXX*).

Specific:

Part 1:

Part 1 must be submitted with all initial FOP applications and renewal applications.

A. **Compliance Plan — Future Activity Committal Statement**

This section commits the applicant to a statement of future compliance with existing requirements and with those that will become effective in the future. This section does not require a response.

B. **Compliance Certification — Statement for Units in Compliance**

1. **Compliance Status:** This paragraph provides a comprehensive means for the applicant to state the compliance status for

each emission unit and applicable requirement identified in the application. The assessment of compliance should be based, at minimum, on the appropriate monitoring, testing, recordkeeping, or reporting requirements of the respective regulations, and should be made at the time of application.

- If each emission unit and applicable requirement identified in the application (other than those listed in Part 2 of this form) is in compliance, check the "Yes" box.
- If there are one or more applicable requirements for which an emission unit is not in compliance, and which is not listed in Part 2 of this form, check the "No" box.

2. **Compliance Schedule Content**

- If one or more non-compliance situations (applicable requirements for which an emission unit is not in compliance) are listed in Part 2 of this form, check the "Yes" box.
- If no emission units were required to be listed in Part 2 of this form, check the "No" box.

3. **Compliance Schedule Attachments** *(For Reference Only)*

- If the response to Item B.2 is "Yes," enter the total number of Part 2 attachments included in this submittal.
- If the response to Item B.2 is "No," enter "0" (zero).

Note: If the are any non-compliance situations at a facility applying for a General Operating Permit (GOP), then the facility does not qualify for a GOP and must submit a Site Operating Permit (SOP) application.

Part 2:

A separate Part 2 form must be submitted for each non-compliance situation ongoing at the time of FOP application.

- If a non-compliance situation involves two or more distinct pollutants (e.g., SO_2, PM, NO_X, etc.), then a separate Part 2 form should be submitted for each pollutant, because each pollutant will have its own emission limitation or standard.
- If a non-compliance situation involves two or more emission units, and the non-compliance situation documentation on this form is *identical* for each unit, then multiple units may be listed in Section A.1.
- If there are no non-compliance situations ongoing at the time of application, do not submit Part 2.

A. **Compliance Schedule**

1. **Specific Non-Compliance Situation**

Unit/Group/Process ID No.:

- For non-compliance situations involving a unit-specific requirements, enter the Unit/Group/Process ID Number of the unit, group, or process (maximum 10 characters) exactly as listed on Form OP-SUM (Individual Unit Summary) or Form OP-SUMR (Individual Unit Summary for Revisions). **All units/groups/processes appearing on this form must first be identified on Form OP-SUM/SUMR.**
- For non-compliance situations involving area-wide requirements, enter "Sitewide."

SOP Index No.: Site operating permit (SOP) applicants should indicate the SOP index number for the unit or group, or process (maximum 15 characters consisting of numeric, alphanumeric characters, and/or dashes prefixed by a code for the applicable regulation [i.e., 60KB-*XXXX*]). If the unit/group/process appeared on a unit attribute form, the SOP Index Number must be the same as the one associated with the operating scenario for which the non-compliance situation is occurring. For additional information relating to SOP index numbers, please refer to the TCEQ guidance document entitled "Completing FOP Applications - Additional Guidance" www.tceq.state.tx.us/permitting/air/guidance/titlev/tv_fop_guidance.html.

Pollutant: Select one of the following options for the pollutant that is the subject of the applicable requirement. Enter the appropriate code on the form.

- For criteria pollutants:

Code	Description
CO	Carbon monoxide
NOX	Nitrogen oxides (NOX)
VOC	Volatile organic compounds
SO2	Sulfur dioxide
PB	Lead
PM10	Particulate matter less than 10 microns
PM	Particulate matter*
PM (OPACITY)	Opacity of particulate matter

**Use this pollutant code for any regulatory requirement under any Title 40 Code of Federal Regulations Part 60 [40 CFR Part 60] subpart or Title 30 Texas Administrative Code Chapter 111 [30 TAC Chapter 111], where the standard, as designated by the TCEQ Requirements Reference Tables (RRT) and flowchart, is for particulate matter.*

- For Hazardous Air Pollutants (HAPs): Provide the full name of the pollutant using standard abbreviations if necessary for length. Please avoid using trade names, if possible. (Maximum 25 characters) If multiple hazardous air pollutants are referred to in a general sense within a regulation, the code, "HAPS" may be used instead of the full name of each particular pollutant.

Applicable Requirement

Citation: Enter the citation of the applicable requirement associated with the non-compliance situation. Some examples of citation format are shown in the table below. (This table is not intended to be an exhaustive list.)

APPLICABLE REGULATORY REQUIREMENT CITATION FORMAT	
Regulation	**Citation Input Format**
30 TAC Chapters 111, 112, 113, 115, and 117	§ 111.*XXX(x)(yy)(zz)*
	§ 112.*XXX(x)(yy)(zz)*
	§ 113.*XXX(x)(yy)(zz)*
	§ 115.*XXX(x)(yy)(zz)*
	§ 117.*XXX(x)(yy)(zz)*
Subpart of 40 CFR Part 60, New Source Performance Standards (NSPS)	§ 60.*XXXX(x)(yy)(zz)*

APPLICABLE REGULATORY REQUIREMENT CITATION FORMAT	
Regulation	**Citation Input Format**
Subpart of 40 CFR Part 61 National Emission Standards for Hazardous Air Pollutants (NESHAP)	§ 61.*XX(x)(yy)(zz)*
Subpart of 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories (a.k.a. Maximum Achievable Control Technology [MACT])	§ 63.*XXX(x)(yy)(zz)*
Title I Prevention of Significant Deterioration (PSD) Permit†	PSD-TX-*XXXXX*M*XX*
Merged PSD/State Permit†	PSD-TX-*XXXXX*M*XX*/*NNNNN*
Title I Nonattainment Permit Provisions†	*NNNNN*

† *Title I PSD Permit refers to PSD permits issued before Texas received delegation of the PSD Program. The merged PSD/state permit refers to applicable requirements from permits at sites with PSD permits issued or modified after Texas received delegation of the PSD Program. Title I nonattainment permit refers to applicable requirements from permits at sites that have undergone nonattainment review.*

Text Description: Provide a brief summary of the applicable requirement associated with the non-compliance situation. Some examples are given in the table below.

EXAMPLE APPLICABLE REQUIREMENT TEXT DESCRIPTIONS	
Applicable Requirement Citation	**Example Text Description**
30 TAC § 115.211(1)	VOC emissions from the vapor control system vent at a gasoline terminal in a covered attainment county is 0.17 lb per 1000 gallons loaded.
40 CFR § 60.42Da(b)	NSPS Da 6-minute opacity limit is less than or equal to 20%
40 CFR § 60.113b(b)(4)	NSPS Kb requires seal repairs, tank emptied w/in 45 days of seal gap excess
PSD-TX-123M3/99999	Special Provision 2.A limit for SO_2 of 1.2 lb/MMBtu

2. **Compliance Status Assessment Method and Records Location**

Compliance Status Assessment Method

Citation: Provide the regulatory citation of the method used to assess compliance. *(Refer to "Applicable Requirement Citation," above, for Citation Input Formats)*

Description: Provide a brief summary of the method used to assess compliance. Some examples are given in the table below.

EXAMPLE COMPLIANCE STATUS ASSESSMENT METHOD TEXT DESCRIPTIONS	
Compliance Status Assessment Method Citation	**Example Text Description**
30 TAC § 111.111(a)(1)(F)(ii)	Test Method 9 (40 CFR 60, Appendix A)
40 CFR § 60.334(a)	Continuous monitoring of steam-to-fuel ratio
40 CFR § 60.113b(b)(1)-(3)	Seal gap measurements
PSD-TX-1234M2	Stack test required under Special Provision 6

Location of Records/Documentation: Provide the location where details of any non-compliance situation are documented. Typically, this will refer to records maintained by the applicant, or specific reports submitted on to the TCEQ a specific date.

Examples:
"CEMS records for 2/8/2006 in first quarter NSPS report"
"8/11/2005 - 8/18/2005 strip chart readings kept on site"
"Tank Battery 7/1/2005 measurement records kept on site"
"Fuel analysis dated 4/4/2006, Environmental Manager's Office, Houston"

3. **Non-Compliance Situation Description:** Provide a *brief* description of the non-compliance situation, including cause(s).

   Examples:
   "Exceeded visible emission limit due to baghouse failure"
   "Exceeded SO_2 limit due to inadvertent use of higher sulfur fuel in boiler"
   "Quarterly monitoring of valves by contractor was not completed by deadline"
   "Failed to have proper controls on storage tank"

4. **Corrective Action Plan Description:** Provide a *brief* overview description of the corrective action plan being undertaken to alleviate the non-compliance situation.

   Examples:
   "Replace bags in fabric filter"
   "Repair flue gas desulphurization device"

   "Contract for new fugitive monitoring to monitor all missed valves and components"
   "Change tank controls to internal floating roof"

   Note: If an enforcement-related compliance plan is already in place, reference it here by date of issuance of the applicable notice of violation or Agreed Order. Include Agreed Order No., if known.

5. **List of Activities/Milestones to Implement Corrective Action Plan:** Provide *specific and complete* list of steps involved in the corrective action plan to achieve compliance. *Completion dates must be included for each step/milestone.* If exact steps have not been determined, specify alternatives. Please do not exceed five steps or milestones. Consolidate steps, if necessary.

6. **Previously Submitted Compliance Plan:** If the non-compliance situation has undergone any type of TCEQ enforcement action, provide the following information:

   Type of Action:

   - Enter "NOV" if a Notice of Violation has been issued.
   - Enter "Order" if an enforcement order has been issued.
   - Otherwise, enter "N/A."

   Date Submitted: Provide the date of issuance of the NOV or enforcement order, if any. If none, enter "N/A."

7. **Progress Report Submission Schedule:** 40 CFR Part 70 requires that, beginning after the FOP is issued, progress reports on each non-compliance situation must be submitted no less frequently than every six months until the corrective actions are complete or compliance is achieved. The TCEQ reserves the right to require progress reports at more frequent intervals.

Texas Commission on Environmental Quality
Form OP-ACPS
Application Compliance Plan and Schedule

Date:	Regulated Entity No.:	Permit No.:
Company Name:		Area Name:

- Part 1 of this form must be submitted with all initial FOP applications and renewal applications.
- The Responsible Official must use Form OP-CRO1 (Certification by Responsible Official) to certify information contained in this form in accordance with 30 TAC § 122.132(e)(9).

Part 1

A.	**Compliance Plan — Future Activity Committal Statement**
	The *Responsible Official* commits, utilizing reasonable effort, to the following: As the responsible official it is my intent that all emission units shall continue to be in compliance with all applicable requirements they are currently in compliance with, and all emission units shall be in compliance by the compliance dates with any applicable requirements that become effective during the permit term.

B.	**Compliance Certification — Statement for Units in Compliance* (Indicate response by entering an "X" in the appropriate column)**	
1.	With the exception of those emission units listed in the Compliance Schedule section of this form (Part 2, below), and based, at minimum, on the compliance method specified in the associated applicable requirements, are all emission units addressed in this application in compliance with all their respective applicable requirements as identified in this application?	☐ YES ☐ NO
2.	Are there any non-compliance situations addressed in the Compliance Schedule Section of this form (Part 2)?	☐ YES ☐ NO
3.	If the response to Item B.2, above, is "Yes," indicate the total number of Part 2 attachments included in this submittal. *(For reference only)*	
*	*For Site Operating Permits (SOPs), the complete application should be consulted for applicable requirements and their corresponding emission units when assessing compliance status.* *For General Operating Permits (GOPs), the application documentation, particularly Form OP-REQ1 should be consulted as well as the requirements contained in the appropriate General Permits portion of 30 TAC Chapter 122.* *Compliance should be assessed based, at a minimum, on the required monitoring, testing, record keeping, and/or reporting requirements, as appropriate, associated with the applicable requirement in question.*	

Texas Commission on Environmental Quality
Form OP-ACPS
Application Compliance Plan and Schedule

Date:	Regulated Entity No.:	Permit No.:
Company Name:	Area Name:	

Part 2

A. Compliance Schedule

If there are non-compliance situations ongoing at time of application, then complete a separate OP-ACPS Part 2 for each separate non-compliance situation. *(See form instructions for details.)* If there are no non-compliance situations ongoing at time of application, then this section is not required to be completed.

1. Specific Non-Compliance Situation

Unit/Group/Process ID. No(s).	SOP Index No.	Pollutant	Applicable Requirement	
			Citation	Text Description

2. Compliance Status Assessment Method and Records Location

Compliance Status Assessment Method		Location of Records/Documentation
Citation	Text Description	

3. Non-compliance Situation Description

Texas Commission on Environmental Quality
Form OP-ACPS
Application Compliance Plan and Schedule

Date:	Regulated Entity No.:	Permit No.:
Company Name:	Area Name:	

Part 2 (*continued)*

4. Corrective Action Plan Description			
5. List of Activities/Milestones to Implement the Corrective Action Plan			
1			
2			
3			
4			
5			
6. Previously Submitted Compliance Plan(s)		Type of Action	Date Submitted
7. Progress Report Submission Schedule			

APPENDIX D

Permit Shield Guidance

(From http://www.tceq.state.tx.us/permitting/air/guidance/titlev/tv_site_guidance.html, Site Operating Permit (SOP) Permit Shield Guidance)

What is a "Permit Shield?"

A permit shield is documentation in the permit that a potentially applicable requirement does not apply to specific emission sources at the site. This shield is documented in the permit through a site-wide term and condition, and a table in the attachments portion of the permit. Permit Shield authority originates from 40 CFR Part 70 and 30 TAC Chapter 122 (§122.148).

Here are some other points to remember about a permit shield request:

- The permit shield must be requested for specific emission source(s).
- The potentially applicable requirement must not apply in any operating scenarios.
- The permit shield must be requested on Form OP-REQ1.
- For initial issuance and renewals, all of the claims submitted on the OP-REQ2 are reviewed and approved or disapproved. For significant revisions, a permit shield request will only apply to the unit(s) being revised.
- Permit Shields are considered during initial issuance, renewal, or significant revision.
- If the basis of determination for an existing permit shield is no longer valid, a new permit shield must be requested through a significant revision or during renewal. One exception is the removal of a permit shield may be accomplished through a minor revision.
- Permit shields may be granted down to the Division level for certain state regulations, such as 30 TAC Chapter 115 or 117.

And a final point in this general description: the lack of a permit shield request does not alleviate the requirement of the applicant to submit potentially applicable requirements that do not apply (OP-REQ2).

APPENDIX E

Periodic Monitoring Usage Summary

Current PM - Year	PM-N	PM-P	PM-S	PM-V	Line totals
1998	2	30	10	7	49
2000	7	61	12	22	102
2004	22	311	71	451	855
2008	19	477	111	842	1449

Historic PM-Year	PM1-ALL	PM1 other	PM1-C-NON	PM1-D-FUG	PM2-A-ABS	PM-JJ	Line totals
1998	0	1	0	0	0	1	1
2000	0	0	0	0	0	0	0
2004	5	5	2	4	4	3	20
2008	5	7	3	10	12	0	37

Historic PM-Year	PM2 other	PM-TMI	PM2-B	PM2-C-PCD	PM-AMYB	PMG-OG	Line totals
1998	0	0	0	0	0	2	2
2000	0	0	0	0	0	0	0
2004	35	3	0	14	0	9	61
2008	52	6	2	38	4	14	116

Year	Grand totals
1998	52
2000	102
2004	936
2008	1602

Periodic Monitoring Legend

Current PM: Periodic Monitoring currently available in guidance

PM-N: Series of periodic monitoring protocols for nitrogen oxides standards

PM-V: Series of periodic monitoring protocols for VOC standards

PM-P: Series of periodic monitoring protocols for particulate matter standards

PM-S: Series of periodic monitoring protocols for sulfur dioxide standard

Historic PM: Periodic monitoring currently in active permits but no longer available for new occurrences

PM1-ALL: A series of periodic monitoring protocols that could be applied regardless of pollutant

PM1-OTHER: Historic one-off series of periodic monitoring protocols of various types

PM1-C-NON

PM1-D-FUG: Series of periodic monitoring for VOC fugitives

PM-TMI

PM2-B

PM-AMYB and PM-JJ: Custom periodic monitoring added to library from permit writers

PM2-OTHER: Historic one-off series of periodic monitoring protocols of various types

APPENDIX F

Public Information Request
Thesis Research: Title V permit as a Compliance Tool

Master of Science in Engineering Management, UT Austin

Joseph Albert Janecka, P.E.

1. For all Title V air major sources known in the years below, request the information following for these calendar years:

   1992 (or a 12 month period as close to calendar 1992 as possible)

   1996

   1998

   2000

   2004

   2008

   a. Number of Notices of Violations (NOVs) originated (based on approved investigations)
      i. A subset number of NOVs that are violations of 30 TAC Chapter 122 only.
   b. Number of Agreed Air Enforcement Orders brought to the Commission
      i. Subset number of Agreed Air Enforcement Orders resulting from any applicable requirement missing from the respondent's Title V permit
   c. Number of Audit Privilege Act (Self-Audit) disclosures: air violation
   d. Number of initial title V permit applications with at least one compliance plan and schedule OP-ACPS (that included a corrective action plan). This request is made regardless of whether the permit was issued without a compliance plan.
   e. Request total number of permits for answers 1.a.-d.
   f. Number of periodic monitoring protocols issued or added to an issued title V permit by PM Protocol reference number and short title.

   The requestor understands that some programs may not have been in existence for the entire time periods requested above, and so the answer to some of these questions may very well be "zero."

Part 1 (a-e) Suggested Answer Table format

	Total NOVs (a.)	Total Chapter 122 NOVs (a.i.)	Total Air Enf AOs (b.)	Total Chapter 122 Enf AOs (b.i.)	Total Audit Act Disclosures (c.)	Total OP-ACPS with CAPs (d.)	Total number of TV permits (e.)
1992							
1996							
1998							
2000							
2004							
2008							

Part 1 (f) Suggested Answer Table format

	PM-x-xxx	PM-x-xxx	PM-x-xxx	PM-x-xxx	PM-x-xxx	PM-x-xxx
1992						
1996						
1998						
2000						
2004						
2008						

Where "PM-x-xxx" is a separate Periodic Monitoring Protocol used during the year. The answer in each cell of the table will be the number of those separate protocols used during the year. This is provided merely as an example of the format for the answer table for periodic monitoring… there may be more or less than six protocols used during the year.

The use of a spreadsheet for the answer tables is acceptable and encouraged.

Suggested sources of data:

1. a., a.i., b., b.i., and c. – OCE, CCEDS
1. d., e., and f. – APD, TV IMS

2. Interim Program Source Information. Request (1) the total number of approved NOVs and (2) total number of NOVs cited for 30 TAC Chapter 122 only for the following entities and calendar years:

Data	Electric Services: 4911	Electric Services: 4911	Petroleum and Natural Gas: 1311	Petroleum and Natural Gas: 1311	Petroleum Bulk Stations & Terminals: 5171
Regulated Entity	RN100223023	RN100224849	RN100226505	RN100225127	RN101062610
Operating Permit No./ Account No.	O-00001/ HV-0023-K	O-00015/ PG-0041-R	O-00098/ BE-0013-Q	O-00144/ FI-0008-M	O-00106/ HG-0565-J
Application Received Date	12/30/1996	07/08/1997	01/23/1997	01/28/1997	01/24/1997
Initial Permit Issuance Date	10/05/1999	03/01/1999	08/29/1997	08/12/1997	07/06/2001
Request No. of total & Chapter 122 NOVs for these Calendar Years	1994, 1997, 2001	1994, 1997, 2001	1994, 1997, 1999	1994, 1997, 1999	1994, 1997, 2003

Data	Petroleum Bulk Stations & Terminals: 5171	Natural Gas Liquids: 1321	Natural Gas Transmission: 4922	Natural Gas Transmission & Distribution: 4923
Regulated Entity	RN100238898	RN100209949	RN100542919	RN100217629
Operating Permit No./ Account No.	O-00357/ JE-0094-F	O-00107/CI-0005-A	O-00099/AA-0064-O	O-00100/ BL-0675-H
Application Received Date	05/19/1997	08/12/1999	01/20/1997	01/23/1997
Initial Permit Issuance Date	11/21/2000	12/07/2001	08/13/1997	01/23/1998
Request No. of total & Chapter 122 NOVs for these Calendar Years	1994, 1997, 2003	1994, 1997, 2003	1994, 1997, 1999	1994, 1997, 2000

3. Full Program Source Information. Request (1) the total number of approved NOVs and (2) total number of NOVs cited for 30 TAC Chapter 122 only for the following entities and calendar years:

Data	Refinery: SIC 2911	Refinery: SIC 2911	Chemical Plant: SIC 2869	Chemical Plant: SIC 2869
Regulated Entity	RN102579307	RN100209451	RN103919817	RN104964267
Operating Permit No./ Account No.	O-01229/ HG-0232-Q	O-01386/ JE-0095-D	O-01274/ HG-0310-V	O-01327/
Application Received Date	07/07/2000	05/23/2000	05/30/2000	05/22/2000
Initial Permit Issuance Date	11/21/2005	10/07/2004	09/02/2003	08/04/2003
Request No. of total & Chapter 122 NOVs for these Calendar Years	1994, 2001, 2007	1994, 2001, 2006	1994, 2001, 2005	1994, 2001, 2005

Data	Foundry: SIC 3312	Smelting: SIC 3331	Cement Kiln: SIC 3241	Kraft Paper: SIC 2621
Regulated Entity	RN100216472	RN101701654	RN100219286	RN100220110
Operating Permit No./ Account No.	O-02110/ ED-0011-D	O-01304/ PG-0005-V	O-01046/ ED-0099-J	O-01622/ AC-0017-B
Application Received Date	07/26/1999	07/14/1999	01/30/1998	01/27/1998
Initial Permit Issuance Date	01/25/2006	01/26/2001	07/26/2006	09/16/2003
Request No. of total & Chapter 122 NOVs for these Calendar Years	1994, 2001, 2008	1994, 2001, 2003	1994, 2001, 2008	1994, 2001, 2005

Suggested Format for Answer Tables for Part 2. The answers for each year will contain a total and a subset of the total that being violations of 30 TAC Chapter 122 only.

Operating Permit No. /RN	1994 total NOVs	1994 total Chapter 122 NOVs	1997 total NOVs	1997 total Chapter 122 NOVs	Final year* total NOVs	Final year* total Chapter 122 NOVs
O-00001 RN100223023						
Etc.						
Continue table for all nine interim program sources						

Suggested Format for Answer Tables for Part 3. The answers for each year will contain a total and a subset of the total that being violations of 30 TAC Chapter 122 only.

Operating Permit No. /RN	1994 total NOVs	1994 total Chapter 122 NOVs	2001 total NOVs	2001 total Chapter 122 NOVs	Final year* total NOVs	Final year* total Chapter 122 NOVs
O-01229 RN102579307						
Etc.						
Continue table for all eight full program sources						

*The "final year" may be different for each source because it is based on permit issuance date. See the third entry in the row "Request No. of NOVs for these Calendar Years" for each entry.

Suggested sources of data Parts 2 and 3 – OCE, CCEDS

The use of a spreadsheet for the answer tables is acceptable and encouraged.

APPENDIX G

Related Studies

A search for related studies resulted in a document describing an evaluation[16] conducted by the EPA's Office of Inspector General (OIG) on the Title V program effectiveness as a whole, and sampled several States' programs, including Texas. This study, conducted in 2005, contained a number of perspectives on the total program as implemented by EPA[17], one of which was compliance.

One of the initiatives that followed as a recommendation from this study was the Title V Task Force Clean Air Act Advisory Committee, whose actions were documented in a final report on April 2006[18]. This committee comprised of EPA and State environmental agency representatives, and formed subteams to tackle the recommendations that the EPA agreed with on the OIG Evaluation Report.

Members of the task force included national, state, and local air permitting managers. With regard to the Topic: Compliance Certification Forms, it is noteworthy that the Task Force members stated: "Compliance certifications are a core part of the Title V program. The information received by the Task Force indicates that they have increased company management awareness about compliance with air pollution control requirements and spurred more widespread implementation of compliance management systems."[19] However the "Issue/Observation Description returned the focus to the format and content of the certifications rather than further exploring the end result of the use of the forms.

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[16] Substantial Changes Needed in Implementation and Oversight of Title V Permits If Program Goals Are To Be Fully Realized (Evaluation Report)

[17] The United States Environmental Protection Agency (US EPA) has the responsibility of delegating the Title V program to Texas and oversees its implementation. For purposes of brevity, the US EPA will simply be referred to as "EPA."

[18] Final Report to the Clean Air Act Advisory Committee (CAAAC) on the Title V Implementation Experience

[19] Final Report CAAAC, section 4.7, p. 108

In a different part of the report, Task Force members discussed the content and format, and what to do with Title V applications that contained non-compliance situations and a compliance plan. However, because the members' experiences, policy, and laws were varied and there was no agreement on a consistent view of due process and unilateral plan writing by someone else other than the applicant, the section ended with no recommendations. Since we are focusing on the program in Texas; however, we will be able to show some effect where applicants have come forward with compliance plans to reveal they have these non-compliance situations, and a plan to correct them.

References

Substantial Changes Needed in Implementation and Oversight of Title V Permits If Program Goals Are To Be Fully Realized (Evaluation Report), EPA Office of the Inspector General, Report No. 2005-P-00010, March 9, 2005

Final Report to the Clean Air Act Advisory Committee (CAAAC) on the Title V Implementation Experience, Title V Task Force, April 2006

Responses to Public Information Request Number 11.03.15.17

Volume 18 Texas Register No. 36, May 1993: Title 31. NATURAL RESOURCES AND CONSERVATION, Part III Texas Air Control Board, Chapter 122 Federal Operating Permits (Proposed Rule)

Volume 18 Texas Register No. 68, September 1993: Title 31. NATURAL RESOURCES AND CONSERVATION, Part III Texas Air Control Board, Chapter 122 Federal Operating Permits (Adopted Rule)