EPA Flexible Permit Implementation Review:
Imation Permit Review Report

Source: Imation Corp. - Weatherford, Oklahoma

Permitting Authority: Oklahoma Department of Environmental Quality (Oklahoma DEQ)

Flexible Permit: Title V Air Operating Permit No. 97-380-TV; the permit was issued on June 12, 1998, and it expires on June 12, 2003. Imation and Oklahoma DEQ initiated the flexible permit development process in November 1995 as part of EPA's Pollution Prevention Performance Partnership (P4) Program.

1. BACKGROUND

General Questions for Permitting Authority

1.1 Agency name

Oklahoma Dept. of Environmental Quality (Oklahoma DEQ)

1.2 Number of major sources (title V)

Oklahoma DEQ reports that there are 403 title V major sources in the State of Oklahoma, as of November 2001. Of this total, 206 sources are compressor stations.

1.3 Number of permit actions per year

1.3.a Minor NSR

1.3.b Major NSR

1.3.c Operating permits

- **Title V issuance**
- **Title V revisions**

1.3.d Other permits

Oklahoma DEQ representatives indicated that in 2000, 251 minor NSR permit applications were received and 237 minor NSR permits were issued. DEQ received 5 major NSR applications, and issued 5 major NSR permits in 2000. In 2000, DEQ received 26 new title V permit applications and issued 77 title V permits. Since the title V program inception, DEQ has issued approximately 360 title V permits and is currently working on writing the remaining 40 title V permits. In 2000, DEQ also received 31 relocation permit applications and issued 101 relocation permits. Relocation permits address asphalt plants and rock crushers that periodically move from location to location within the state.

1.4 Number of permit writers

1.4.a Workload (permit actions per year per permit writer)

In 1999, Oklahoma DEQ lost approximately 50 percent of its workforce. Many of the replacement permit writers are younger with less experience. Oklahoma DEQ estimated about 30 permit actions per year per permit writer. As of November 2001, DEQ has 21 permit writers.

1.5 Minor NSR provisions (summary of requirements, citation(s))

Applicability: (as written at time of Imation title V permit development)

An Oklahoma DEQ-issued air quality construction permit is required for the construction or modification of any minor or major source. Under construction permits, the permitee is to comply with all applicable air pollution rules and to not exceed ambient air quality standards. Oklahoma toxics regulation requires (OAC 252:100-41) a permit for construction or modification of existing stationary sources which emit or may emit any State regulated toxic air contaminant if emissions exceed the following *de minimis* rates:

- State Category A toxics (highly toxic, suspect and confirmed human carcinogens): 1,200 lbs/year;
- State Category B toxics (substances of moderate toxicity): 1.2 tons/year;
- State Category C toxics (substances of low toxicity): 6 tons/year.

Oklahoma DEQ representatives indicated that work groups are currently (as of November 2001) working to revise the 15 year old air toxics rule and to change the *de minimis* emissions threshold to 5 tons/year. BACT is to be incorporated for the introduction of a new Category A level toxic, and new modified, or replaced equipment. Demonstration of compliance with Maximum Acceptable Ambient Concentration (MAAC) for each air toxic is also required.

Application: Applications for construction permits require process descriptions, emissions data, and, when necessary, BACT determination, modeling, and sampling point data.

Special Permit Conditions: Permits must include conditions necessary for the permittee to achieve compliance with all applicable Oklahoma or federal statutes or rules, and any conditions that the agency determines to be necessary to protect human health and the environment.

1.6 Public participation provisions (summary of requirements, citation(s))

Permit applications are classified as either Tier I, Tier II, or Tier III.

- *Tier I*: Minor facility construction and modification permits; minor operating permit renewal; minor construction at existing Part 70 sources; new operating permit for a construction permit that was processed under Tier II or Tier III and has conditions that do not differ from the construction permit's operating conditions in any way considered significant. Significant is defined in Oklahoma's rules, and it basically means that the change cannot increase emissions or relax a recordkeeping or monitoring requirement nor be subject to a NESHAP or New Source Performance Standard (NSPS) without being considered significant. No public review is necessary.
- *Tier II*: Any minor facility seeking a permit for a modification that would turn it into a Part 70 source; new construction permits for a new Part 70 sources not classified under Tier III; new construction permit for an existing Part 70 source for any change considered significant and not classified under Tier III; new operating permit for a Part 70 source that did not have an underlying construction permit processed under Tier II or Tier III; new operating permit with one or more conditions that differ from the underlying Tier III or III construction permit's operating conditions in a way considered significant; new temporary source permit. Opportunity for public review of application; public review and comment for permit

modification actions; a formal public meeting is required if the Department receives written timely request for such meeting, and determines there is a significant degree of public interest in the draft denial or draft permit. Notice of the meeting shall be given to the public at least thirty (30) days prior to the meeting date.

- *Tier III*: Any construction permit for a new major stationary source. All Tier II requirements apply. In addition, the applicant is to include a 30-day opportunity to request a process meeting in the published notice of filing. Once a proposed permit is prepared, the applicant is also to publish notice of the proposed permit and of the opportunity to request an administrative permit hearing.

1.7 Reporting and feedback mechanisms (summary of requirements)

The permit must incorporate all applicable recordkeeping requirements and require, where applicable, records of required monitoring information that include date, place, and time of sampling or measurements; date analysis performed; and company/entity performing the analysis; the technique used; results of the analysis; and operating conditions existing at the time of sampling or measurement. Records are to be retained for at least 5 years from the date of the sample. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation.

In addition to an annual compliance certification, the permittee is required to submit a report of any required monitoring at least every six months. Each report is to identify any exceedances from permit requirements since the previous report, and any exceedances from the monitoring, recordkeeping and reporting requirements under the permit. Title V permit holders are also required to submit information on:

- any exceedance resulting from emergency or upset conditions within 24 hours of the date the permittee first becomes aware of the exceedance;
- any exceedance that poses an imminent and substantial danger to public health, safety, or the environment no more than 24 hours after the exceedance; and
- all reports of exceedances shall identify the probably cause and any corrective actions or preventative measures taken.

Oklahoma requires sources to submit annual air emissions inventory reports.

1.8 Requirements and/or ability to be more stringent than EPA rules

Oklahoma DEQ representatives indicated that the Department has the ability to issue rules that are more stringent than those promulgated by EPA. For example, the State of Oklahoma currently has a 15 year old air toxics rule (Subchapter 41-Toxics). The State is currently in the process of revising this rule (as of November 2001).

1.9 Status of initial title V issuance (i.e., number issued, renewed, in process)

As of November 2001, Oklahoma DEQ has issued approximately 360 title V permits and is currently working on writing the remaining 40 title V permits.

1.10 Number of flexible permits written and public reaction to them

Imation's Weatherford facility is the only source under Oklahoma DEQ's jurisdiction to obtain a flexible permit as of November 2001. DEQ representative did not indicate having explored flexible permitting techniques with other sources in the State.

1.11 Air quality status of area where flexible pilot permit was issued

Imation's Weatherford facility is located in an attainment area for all criteria pollutants that is a PSD Class II area.

1.12 Number of inspections that have occurred re: flexible permit

Oklahoma DEQ representatives indicated that two inspections of Imation's Weatherford facility have been conducted during the permit term by Oklahoma DEQ inspectors. This includes inspections conducted on March 24, 2000 and June 20, 2000. An inspection was also conducted on August 5, 1997, prior to issuance of the flexible permit. Oklahoma DEQ representatives reported that not all major facilities are inspected each year, although facilities with histories of compliance issues typically are inspected at least annually.

1.13 Authority to impose P2 requirements and/or additional safeguards suggested by WPN3 (e.g., monitoring, notices, up-front magnitude limits)

Oklahoma DEQ representatives indicated that they believe that the Department does have authority to impose pollution prevention requirements and to require the safeguards identified by draft EPA White Paper Number Three.

1.14 Agency's overall orientation to P2 (e.g., how is P2 considered in permit writing?)

Oklahoma DEQ indicated that the Imation permit was the first permit in which the agency has incorporated P2 provisions. Oklahoma DEQ representatives reported that they are very interested in incorporating P2 provisions into other permits issued by the State, although this has not been done outside of the Weatherford facility's permit.

1.15 Time required to issue flexible permit

The development of Imation's flexible title V permit took approximately 2 years, from initiation to issuance. DEQ representatives indicated that due to some delays resulting from change in management assignments at EPA Region 6, the permit development effort was stalled for approximately 5 months. Imation representatives estimated the flexible permit development effort spanned approximately 18 months, in which active work on the permit occurred.

1.16 Time required to issue conventional title V permits (on average)

DEQ representatives reported that the actual time to issue a conventional title V permit ranges from six months to as much as four years, from submission of the title V permit application to issuance of the permit. The length of this process has resulted from staff shortages at DEQ, as well as delays associated with incomplete applications from some sources. Oklahoma DEQ representatives indicated that it takes approximately 20 to 35 FTE days of staff time to develop and issue a permit once the review begins, and that the process has become more efficient over time. Oklahoma DEQ indicated that the time to issue a title V permit to a compressor station was much less due to the relative simplicity of these facilities from an air permitting standpoint, and due to the existence of a template permit for compressor stations.

1.17 History of any deviations, violations and/or enforcement actions over the period before the effective date of the flexible permit

Oklahoma DEQ representatives indicated that Imation Weatherford facility has an excellent historic record of compliance with environmental regulations, and that there have been no reported excursions of air or water permit limits in the history of the facility.

1.18 Compare characteristics of flexible permits vs. conventional permits.

1.18.a Considering all the different types of sources for which you issue title V permits, what are some examples of good candidates for flexible permits?

1.18.b What are some examples of sources that are not good candidates?

1.18.c Keeping in mind these two different groups of sources (one that contains good P4 candidates and the other that contains sources that are not good P4 candidates) consider the following characteristics. Which characteristics are similar between the two groups of sources? Which are different?

1.18.d Have you ever turned down a facility that asked for a flexible permit? If so, what reasons did you have for making this decision? What facility characteristics were important in making this decision? Could we get a copy of applications that were turned down?

Oklahoma DEQ representatives indicated that they believe several factors are important to consider to appropriately match candidate sources with flexible permitting provisions. First, sources interested in flexibility provisions will typically need to be willing and capable of assuming increased recordkeeping and monitoring responsibilities and requirements. This implies that the sources have the technical capacity to effectively implement these additional monitoring, recordkeeping, and reporting requirements. Indicators of technical capacity could include: the presence of trained environmental staff, well organized and complete monitoring and recordkeeping systems, and a good historic compliance record. Second, sources should demonstrate openness with regard to communications with the permitting authority. For example, Imation has been willing to share confidential business information regarding product recipes (i.e., chemical formulations) with Oklahoma DEQ. Third, source should be "committed to compliance". This commitment could also be demonstrated by a good compliance record. DEQ representatives stated, however, that compliance history should not be used as a "litmus test" and that DEQ would not expect that all appropriate flexible permitting candidates have a perfect historic compliance record. Fourth, it is desired that sources be committed to pollution prevention.

They added that a source's need for flexibility should also be considered before investing DEQ staff time in developing advance approval provisions. For example, sources that need to make quick changes in equipment or product recipes could be good candidates for flexible permitting techniques. They also indicated that well controlled sources (e.g., sources with good and comprehensive emissions control equipment) can make for good candidates. Oklahoma DEQ indicated that Conoco Research (minor source) and Tinker Air Force Base would be potentially good candidates for flexible permits in Oklahoma.

Oklahoma DEQ representatives reported that the agency has turned down at least one facility, due to a poor compliance record (past and present), that asked for a flexible permit. DEQ representatives also stated that the oil and gas industry (e.g., oil refineries, compressor stations) in

Oklahoma would probably not make good candidates for flexible permitting since they have not embraced pollution prevention.

Questions Specific to the Pilot Source

1.19 Source description, types of operations, and applicable requirements

Description/operations: The Imation facility was originally constructed in 1967 and is located in Weatherford, Oklahoma, approximately 75 miles outside of Oklahoma City. The Imation facility is in a rural area, separated from the town of 10,000 people by Interstate 40. Imation Corp. creates system, product, and service solutions for the handling, storage, transmission and use of information.

Imation's Weatherford, Oklahoma facility is considered one source for title V permitting purposes, but contains two separate buildings and Standard Industrial Classification (SIC) codes: Printing and Publishing - North Building (3861) and Data Storage - South Building (3695). The Printing and Publishing Systems Division (PPSD) manufactures products for the graphic arts and printing industries, including digital and conventional proofing systems, by coating thin films with colored, solvent-borne solids. No printing or publishing is conducted at the facility. At the time of the EPA site visit in November 2001, Kodak Polychrome Graphics, Ltd. (KPG) was in the process of purchasing the Printing and Publishing Systems Division of Imation Weatherford. On January 1, 2002, the PPSD Weatherford plant officially became a KPG facility. The Data Storage Division (DSD) manufactures data storage products including 1.44 megabyte diskettes, and Super Disk, the 120 megabyte diskette. The Weatherford plant produces the storage media or "cookies" and sends the media to Imation's Wahpeton, North Dakota plant to be assembled and packaged into the 1.44 megabyte diskettes.

Printing and Publishing Systems Division (PPSD)/Color Technologies:

The general production process involves applying multiple coating layers to clear polyester film (substrate) referred to as a "web". The film comes from either 3M or Dupont in "jumbo" rolls that are 52 inches wide and 17,000 linear feet long. The coating process is made up of a web transport line containing a film unwinder, three coating/drying sections and a winder. Up to four consecutive coating layers are applied to the web using die coaters (also called extrusion coaters). Coating solution is pumped using a magnetic drive pump from a closed vessel to the extrusion die in the coating station and applied to the moving web. Solution flow is measured with a mass flow meter. Typical line speeds are 150 feet per minute. Imation uses both waterborne and solvent-borne coatings. [Imation has switched many of its coatings to waterborne formulations to eliminate use of chlorinated solvents.] After the coaters, the color film is dried/cured in a series of curing ovens with five heating zones. The maximum oven temperature for the waterborne formulations is 240EF and the solvent-borne coatings are cured between 180 and 200EF. After final curing, the finished film is rewound onto a roll and put into inventory. The Weatherford facility currently has approximately 2,200 rolls stored as inventory. When a customer places an order, the product is cut to the proper size, bagged, and boxed for shipment.

Much of the coating lines (i.e., coaters and ovens) within the manufacturing area are contained within a partial enclosure comprised of permanent walls. The VOC emissions from the coaters and the curing ovens are manifolded to the control devices (i.e., catalytic oxidizer and/or carbon adsorber). The coating rooms are designed to be maintained under negative pressure. The room enclosure also provides improved cleanliness and quality control.

Other coating-related equipment is housed in the coating mix and pump room areas (which are vented to the atmosphere). The color technologies products have very stringent quality assurance requirements and most of the coatings are supplied "ready to use." Material usage of all coatings, solvents, and coating materials (e.g., resins and binders) is tracked on an individual "coating batch" basis. All solvent/coating materials are handled and stored in stainless steel mix containers or 55-gallon drums.

Data Storage Division (DSD):
The general production process involves manufacturing magnetic tape in a web coating process. Metal oxides (magnetic particles) are mixed with binders and solvents to produce a magnetic coating which is then applied to clear polyester film (substrate). The film comes from Dupont in rolls that are 14.25 inches wide. Describing a typical process, the film (web) is coated single-sided using an extrusion coater, then inverted through a series of rollers to back-coat the other side. Linespeeds range from 300 to 600 feet per minute. Imation uses only solvent-borne coatings for their data storage products. After the coater, the coated web is dried/cured in an indirect steam heated oven (for solvent removal) through a series of five heating zones. The oven temperature range is 100 to 225EF . After curing, the coated web is slit into four strips, each 3.5 inches wide. Each part of the slit film is rewound onto a separate roll and brought into the final packaging room where the diskette media is stamped out into 3.5 inch diameter circles (called "cookies") and put into a final cure room for up to five days at 120 to 160EF. The final cure aids crosslinking of the magnetic material on the film and sets dimensional stability. The cookies are stacked in bundles of 1000, and then 12 stacks are placed in a shipping suitcase. The packaged media is then sent to a sister plant in North Dakota where the diskettes are assembled into a final product (i.e., 1.44 megabyte diskettes).

All of the data storage manufacturing (coating) activities are considered to be operating in a permanent total enclosure. The coater and curing oven are located inside an enclosure within an enclosure. The coating line enclosure is fixed-wall construction with walls that the operators can see-through and monitor the process equipment. The enclosed coater and curing oven are maintained under negative air pressure conditions. The VOC emissions from the coaters, curing ovens, and mix/pump rooms are manifolded to the control device (i.e., thermal oxidizer).

Other coating-related equipment is housed in the coating mix and pump room areas. The data storage coatings are all made on-site using precise formulation recipes. The coating material is run through a series of three high-shear, high-energy mills to create the proper particle size in the coating. After the milling process, the coating has approximately 45 percent solids content and solvent is added to the material to achieve a final coating with 27 percent solids. Then the material is filtered

through a 0.3 micron filter and transferred to a storage drum. Methyl ethyl ketone (MEK) is used for most equipment cleaning applications. Material usage of all coatings, solvents, and coating materials (e.g., resins and binders) is tracked on an individual "coating batch" basis. All solvent/coating materials are handled and stored in 100-gallon stainless steel mix containers or 55-gallon drums.

Boilers and Storage Tanks:
In addition to the coating operations, there are two boilers used for producing steam for heating all of the buildings and some process applications. Each boiler has a maximum rated heat capacity of 30.4 MMBTUH and can use either natural gas or No. 2 fuel oil as the fuel. There are seven organic materials storage tanks used to store organic solvents, gasoline, and No. 2 fuel oil. The storage tanks range in capacity from 325 to 10,000 gallons.

Facility Emissions Sources and Control Equipment:
The primary VOC emissions streams come from the three coaters (including the cure ovens exhaust) and the data storage coating mix/pump rooms. Most of the facility's emissions occur in the PPSD. Within the PPSD, Imation currently operates two manufacturing lines known as 12W (two station coater) and 15W (one station coater). Prior to the title V permit, the 15W line operated under a permit issued by Oklahoma DEQ, while the 12W line was a grandfathered source. The color technologies operations utilize a catalytic oxidizer to control VOC emissions from the 12W and 15W coaters. The color technologies operations also have a carbon adsorption unit as an additional and/or backup system to control a portion of the VOC emissions from the 12W and 15W coaters. Imation prefers to use the catalytic oxidizer rather than the carbon adsorber because the catalytic oxidizer has lower operational and maintenance costs. One regenerative thermal oxidizer (RTO) is used to control VOC emissions from the Data Storage coating operations.

The other significant VOC emissions source is the bulk material storage tanks. Emissions from the bulk solvent (e.g., toluene and methyl ethyl ketone) tanks are captured and routed to the control device. There are a few other VOC emissions sources, such as the hazardous waste and hazardous materials drum staging area, exhaust systems for storage rooms or cabinets, and soil vapor extraction wells, including venting, pumping, and collecting activities, that involve low-level VOC emissions. However, these processes were evaluated during the permit application process and determined to be insignificant in terms of plant-wide VOC emissions. In the early 1990s, Imation estimated that the actual VOC emissions for the Weatherford facility were approximately 500 tons per year. The current title V permit VOC limits are 249 tons/year and 836 pounds/hour (PPH) [maximum hourly emission rate based on modeled maximum VOC emissions to comply with the National Ambient Air Quality Standards (NAAQS) for ozone].

In addition to the Weatherford manufacturing facilty, Imation has other data storage manufacturing facilities in Tuscon, Arizona and Camarillo, California. They also have a facility in Wahpeton, North Dakota where computer diskettes are assembled and CD-RWs are manufactured. Imation's corporate headquarters are located in Oakdale, Minnesota.

Applicable Requirements (at time of permit issuance):

- *Title V*: Imation Weatherford is a title V major source because its potential-to-emit (PTE) is above 100 tons/year of volatile organic compounds (VOCs) and above 25 tons/year for Hazardous Air Pollutants (HAPs). Primary HAPs (which are also VOCs) emitted by the facility include: MEK, 1-methoxy-2propanol, toluene, and methanol. Criteria pollutants emitted at the Weatherford facility (other than VOCs) include NO_x, CO, and SO_2 from combustion sources such as boilers. In most cases, actual emissions are significantly lower than source PTE.

- *Title III*: Because potential HAP emissions are above 25 tons/year, the facility is also a major source under title III of the Clean Air Act.

- *Prevention Of Significant Deterioration (PSD)*: In the absence of the flexible permit, the Weatherford plant would be considered a major source under the PSD program because potential VOC emissions exceed 250 tons/year.

- *New Source Performance Standards (NSPS)*: Subpart Dc., Subpart SSS (Magnetic Tape and Coating Facilities), and Subparts K, Ka, and Kb (Volatile Organic Liquid Storage Vessels).

- *Maximum Achievable Control Technology (MACT):* Because Imation is a major source under Section 112 of the Clean Air Act, which is the case of the Weatherford plant, MACT standards apply for modifications and reconstruction. If no MACT standard has been promulgated for the source category that applies to the equipment being modified or reconstructed, the agency is required to determine MACT on a case-by-case basis. Section 112 (g) applies to existing sources if an emissions unit that is large enough to be considered a major source is added or rebuilt. A change is considered a "reconstruction" if it costs 50 percent (or more) of the cost of constructing a new unit like the one being rebuilt.
  - **S** The Publishing and Printing facility will be subject to the future MACT to be promulgated under the source category Paper and Other Web Coating, if applicable construction/reconstruction is made.
  - **S** The Diskette Storage facility is subject to Subpart EE (for Magnetic Tape Manufacturing) and has installed MACT.

- *Excess Emissions and Malfunction Reporting Requirements*: All excess emissions shall be reported as provided in this chapter. In the event of a malfunction of air pollution control or process equipment, the owner or operator of such facility shall notify the Air Quality Division as soon as practical during normal office hours and no later than the next working day following the malfunction or release. Within ten (10) business days further notice shall be tendered in writing.

- *Air Toxics Rule*: Oklahoma has a State air toxics rule that includes limits on emissions of substances based on State assessment of their toxicity. As of November 2001, more than 4,000 substances have been evaluated by Oklahoma, and assigned Maximum Allowable Ambient Concentration (MAAC) limits.

1.20 Actual and allowable source emissions (tpy) for every year since flexible permit issuance

During any consecutive 12-month period, Imation has a plant-wide emissions cap on volatile organic compounds (VOCs) of 249 tons/year. A short-term VOC emissions limit of 836 pounds/hour is also established by the title V permit. Annual emissions of criteria pollutants from specific units are limited by the permit as follows in Table 1.20a.

Table 1.20a: **Emissions Limits for Criteria Pollutants**

	PM		**SO_2**		**NO_X**		**CO**	
	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY
DSD Thermal Oxidizer	-------	-------	-------	-------	2.31	10.12	7.02	30.75
PPSD Catalytic Oxidizer	0.25 pph	1.10 tpy	6.5 pph	28.47 tpy	2.54 pph	11.13 tpy	0.64 pph	2.8 tpy

Annual actual emissions during the title V permit term for Imation's Weatherford facility are listed below in Table 1.20b.

Table 1.20b: **Imation Actual Emissions Inventory (tons/year)**

Year	**VOC**	**PM**	**SO_2**	**NOx**	**CO**
1997	79.128	1.842	.0555	18.322	10.834
1998	76.348	0.923	0.057	20.53	14.17
1999	86.739	1.099	0.067	25.27	20.171
2000	90.059	1.424	0.058	23.22	21.526

Actual annual emissions of VOC increased from 1997 to 2000, by approximately 10 tons/year. Imation indicated this increase in actual emission was due to production growth and emissions from new product testing. However, Imation indicated that VOC emissions per unit of production decreased by 11.09% in 2000 from the base year (1997).

1.21 Amount and nature of fugitive emissions

Fugitive VOC emissions primarily result from the solvent-borne coating operations. While most VOC emissions are captured and routed to collection and control equipment, some VOC emissions escape capture and destruction. However, all VOC emissions (including fugitive emissions) are measured

by the mass balance monitoring approach. See section 4.2 for discussion of how fugitive emissions are addressed under the title V permit monitoring approach.

1.22 Source flexibility needs

1.22.a Characterization of pre-flexible permit regulatory concerns

1.22.b Type and number of source changes potentially subject to air permitting

1.22.c Which changes incur an opportunity cost of being 'late to market' due to permitting "delays," and the potential extent of that cost

1.22.d Why conventional permitting process may not be sufficient for certain types of changes

At the time of permit development, Imation representatives identified the following source needs for flexibility associated with air permitting.

General regulatory predictability:

Imation representatives indicated that they wanted to achieve greater certainty regarding air pollution control equipment requirements, particularly for Best Available Control Technology (BACT) and future applicable MACT standards. In addition, Imation wanted to achieve greater regulatory program certainty and predictability with regards to future minor NSR and PSD applicability.

Facility experimentation:

Imation representatives indicated that Imation desired to utilize the Weatherford facility to experiment with and pilot new coating technologies and product recipes to quickly respond to changes in customer demand, as well as new production innovation opportunities. Some of these activities would entail short-term, experimental uses of manufacturing equipment to support development of new products or to determine if changes to existing products are viable. This could involve short term emissions in excess of previously permitted levels, or the temporary emissions of a new substance.

Rapid process/equipment modifications:

Imation wanted to be able to make rapid process changes, as are frequently needed within the competitive product markets serviced by the Weatherford plant. Some anticipated changes include, but are not limited to:

(1) substituting raw materials and/or introducing new raw materials;
(2) relocating equipment, adding new equipment, reconstructing existing equipment, or modifying existing equipment; and/or
(3) interchanging pollution control devices.

Product input expense/waste reductions and pollution prevention (P2):

Imation representatives also wanted a permit that facilitated further enhancement of its overall environmental performance and environmental reputation. As such, Imation wanted latitude to perform factory experiments and/or production modifications that might reduce the cost and/or the polluting potential of existing raw materials.

Administrative streamlining/economizing:
Imation representatives reported that they wanted to find ways to meet all applicable Clean Air Act requirements through less costly and more efficient means, in part, by seeking to reduce the complexity of the facility's permits.

1.23 What has been the frequency of required NSR permits over the period before the effective date of the flexible permit?

Oklahoma DEQ representatives indicated that Imation applied for very few NSR permits before the issuance of the flexible permit. Imation representatives indicated that, in the past, there had been occasional uncertainty about the regulatory applicability associated with certain changes which precipitated discussions between Imation and DEQ. In addition, DEQ representatives reported that Imation had a history of making raw material changes that often necessitated discussions and/or other actions between Imation and DEQ to assure compliance with the State Air Toxics Rule.

1.24 Flexible permit's inspection history

The Oklahoma DEQ inspection reports for the August 5, 1997, March 24, 2000, and June 20, 2000 inspections indicate that the Imation facility demonstrated compliance with the requirements of the applicable air pollution control rules and regulations. No compliance deviations or violations are cited in the Oklahoma DEQ inspection reports. See section 1.12.

1.25 Source's history of P2 commitment

Imation has a 15 to 20 year history of commitment to pollution prevention (P2) due to its association with 3M, a company with a very active pollution prevention culture and program. Imation representatives reported that the Weatherford plant has reduced air emissions by over 87% since 1988, and the amount of solid waste generated by the facility has declined by more than 75% since 1990. Imation's Weatherford facility was one of the first three plants in the United States to participate in EPA's Pollution Prevention in Permitting Program (P4) initiative. Several P2 accomplishments and environment-related initiatives associated with the Imation Weatherford facility are described below.

(1) The Imation facility was selected by the Oklahoma City Earth Day 2000 Committee as one of nine individuals or organizations recognized to receive an Environmental Excellence Award for its pollution prevention efforts in air and waste management.

(2) Over the last ten years, the facility has reduced both its air emissions and solid waste output by more than seventy-five percent.

(3) Imation has programs in place to reduce its use of solvents and related air emissions, while identifying opportunities to replace them with water-based coatings. The facility also has in place programs to recycle cardboard, wood, paper, metal, and plastic. Additional waste reductions have been achieved through systems redesign efforts and the reuse of packaging materials.

(4) Each year, Weatherford is host to community programs to teach environmental stewardship to 350 4^{h} grade students. Volunteers for the Deer Creek Conservation District and Oklahoma Department of Agriculture perform this training. The training is held on Imation

property and the agenda includes water and forest conservation, weather, wildlife, and soil. A total of 3500 students have attended the training since its inception.

2. FLEXIBLE PERMIT DESIGN

2.1 What flexible permit tools contained within this permit accomplish advance approvals (ROPs, PTE limits, PALs, clean buildings, category of changes, etc.)?

Imation's Weatherford, Oklahoma, title V permit contains the following flexibility provisions:

Plant-wide Emissions Cap:

The permit contains a federally enforceable limitation on plant-wide potential to emit (PTE), set at 249 tons of volatile organic compounds (VOC) emissions per consecutive 12-month period. The cap is designed to make Imation a "synthetic minor" source for Prevention of Significant Deterioration (PSD) applicability purposes. It should be noted that Imation voluntarily agreed to a single PTE cap (249 tons/year for VOC emissions), instead of two 249 tons/year PTE caps, for the two separate sources (two buildings with distinct SIC codes) that comprise the Imation Weatherford facility.

Minor NSR Advanced Approved Specific Changes:

The permit provides advanced minor NSR approval for specific changes Imation anticipates making at the facility during the five-year permit term. These specific changes include:

- the installation/construction of volatile organic liquid (VOL) storage tanks, equal or greater than $40m^3$ and which store VOLs with vapor pressure of 1.5 psia or greater; and
- replacement of one or more of the existing boilers, with a boiler having a maximum rated heat input capacity of greater than 10 MMBTUH and less than 100 MMBTUH.

Minor NSR requirements for these specific changes are met in the following manner:

- Advance-approved activities are subject to the 249 TPY VOC emissions limit, as well as NAAQS-protective emissions limit for PM_{10}, SO_2, NOx, and CO, specified in the permit.
- NSPS requirements (Subpart Kb for VOL storage tanks, and Subpart Dc for Industrial boilers) are identified and met up-front in the title V permit.

Minor NSR Advance-Approved Classes of Modifications/Constructions/Reconstructions:

The permit advance approves certain classes of modifications that trigger minor NSR for criteria pollutants and air toxics. Advance-approved *classes* of changes are subject to state BACT and/or the other requirements of minor NSR. The change class descriptions are somewhat general, since all changes are subject to the most stringent applicable requirements that could apply (i.e., clean building). The change classes include:

- modification or reconstruction of Emissions Unit Group 5 (Data Storage Division operations, or EUG-5);
- installation/construction of coating line(s) to EUG-5;
- 12W and/or 15W coater reconstruction(s);

- 12W and/or 15W coater modification(s); and
- new coating lines subject to the source category Paper and Other Web Coatings.

Applicable requirements for these classes of changes are met in the following manner:

- *BACT*: BACT specifications are listed up-front in the title V permit, and apply to all advance-approved categories of changes for which BACT is applicable. BACT includes:
  - Routing VOC emissions and/or new Category A toxics through a thermal oxidizer, catalytic oxidizer, or equivalent control device that maintains a minimum overall control efficiency of 80% capture efficiency and 95% destruction/recovery efficiency, or their combined equivalent; and
  - Implementation of a Pollution Prevention (P2) program.

- *NAAQS (criteria)*: An ambient impact analysis was conducted as part of the permit development process. A short-term cap on VOC emissions of 836 pounds/hour was set to be protective of the ozone National Ambient Air Quality Standards (NAAQS). For all other criteria pollutants, it was determined that none of the advance-approved changes contained in the permit could conceivably adversely impact the corresponding NAAQS.

- *MAAC (toxics) demonstration*: Air toxic emissions that will or may exceed *de minimis* levels during the permit term were modeled to determine State Maximum Ambient Air Concentration (MAAC) compliance. The maximum hourly emissions of each toxic allowed from a single stack was then calculated and listed as toxic-specific emissions limits in a table in the title V permit. The MAAC for new toxics not listed in the permit are to be modeled by Imation using protocols advance-approved in the permit (e.g., required model(s), critical assumptions).

- *Public Notice and Review Requirements*: Public notice and review requirements were addressed during the public comment process associated with the title V permit development, since project specifications and compliance information are identified in the permit application and permit. Notices of changes made using this advance approval provision are available for public review at Oklahoma DEQ (see section 2.1.b for a description of notice requirements and content).

Applicable Requirement Streamlining:

As a result of streamlining analyses conducted pursuant to EPA's White Paper Number Two during permit development, the permitting authority determined that the permit could subsume EPA's future Maximum Achievable Control Technology (MACT) standard for Paper and Other Web Coating under the existing MACT for magnetic tape manufacturing, assuming that the requirements for the two standards would be redundant. The streamlining analysis would be reopened if this assumption about the requirements and stringency of the future MACT standard are not true. The streamlining analysis also determined that Magnetic Tape New Source Performance Standards (NSPS Subpart SSS) compliance requirements and state BACT control efficiency requirements could be subsumed

under the Magnetic Tape MACT. In both instances, the overlapping requirements were subsumed under a single "umbrella" of the most strict requirements.

Control Device Flexibility:
The permit also authorizes the use of several alternative control devices for EUG-5 (i.e., the DSD coater). These alternatives are consistent with the Magnetic Tape MACT compliance requirements. Alternatives include:

- using lower HAP density coating solutions;
- in lieu of controlling emissions from each solvent storage tank, applying an overall (higher level) control efficiency from all coating operations;
- controlling the vent of any HAP storage tank through the use of the thermal oxidizer, solvent recovery unit, or other VOC control device;
- establishing alternative emission limits for EUG-5 other than the incinerator and Coater 51;
- controlling bypass vents through alternative means specified in the permit.

Raw Material Change Advance Approvals:
The permit authorizes the use of alternative raw materials in production processes without the need to obtain case-by-case advance approval from Oklahoma DEQ at the time of the change, provided certain procedures are followed. Requirements for making raw material changes vary, depending on the specific change that is made:

- If the change will result in lesser or equal VOC emissions, and lesser or equal emissions of each toxic emitted above *de minimis* levels, and the toxic(s) is already authorized by the permit; then records of the composition of the alternative raw material must be maintained on-site.
- If the change will result in lesser or equal VOC emissions, and a *de minimis* addition of any toxic air pollutant not previously emitted; then sufficient records of usage, retention, and capture and control efficiency must be maintained.
- If the change will result in lesser or equal VOC emissions, and either an increase above *de minimis* levels of a toxic air pollutant not previously emitted, or any increase of a toxic air pollutant previously emitted; then the following analyses must be submitted to Oklahoma DEQ at least 10 working days prior to making the change, and provided sufficient records of usage, retention, and capture and control efficiency are maintained:
- An air toxic that has not previously been evaluated by Oklahoma DEQ must be categorized and have a MAAC developed, upon request by Imation. DEQ agrees to attempt to complete such evaluations within 72 hours of receiving the request;
    - any new Category A toxic must meet BACT as described in the permit; and
    - modeling (as specified in the permit) shall be used to demonstrate compliance with the MAAC.

Pollution Prevention (P2) Program:

The permit incorporates the option of a pollution prevention program for Imation. Although the program is, in general, voluntary, there is an explicit link between the adoption of an approved pollution prevention program and the BACT determination for the relatively insignificant advance-approved changes not routed to the central control device(s) approved for BACT under the streamlining analysis. Therefore, to access advance approvals that trigger BACT, Imation must have an approved P2 program in place. P2 program requirements include:

- A statement of Corporate and Site commitment to P2;
- An employee P2 awareness, education, and training program;
- A P2 performance measurement calculation that will quantify the effectiveness of the program; and
- P2 reporting and documentation, which includes a description of P2 performance goals and submission of an Executive Summary of P2 program performance to Oklahoma DEQ every 18-months.

Imation's P2 goal is to prevent air emissions by a net 10 percent over the life of the permit, as compared to its baseline of 1997. P2 is measured as the change of volume dependent air emissions, based upon production volume shipped, yields, and the emission factor. Calculations are done on all products manufactured on the site, and are combined into an overall composite measure.

2.1.a Describe the information and level of detail provided in the application to support these flexible permit provisions.

Imation, Oklahoma DEQ, and EPA representatives indicated that Imation's title V permit application did not contain significant information regarding the potential changes that were later addressed by the advance-approved change provisions in the permit. Since the Imation's title V permit was developed through EPA's Pollution Prevention Performance Partnership (P4) Program as a pilot effort, much of the information needed to support the flexibility provisions was produced during working meetings between Imation, Oklahoma DEQ, and EPA and later incorporated into the title V permit and the permit technical evaluation memorandum (prepared by Dawson Lasseter, Oklahoma DEQ Air Quality Division, June 9, 1998).

2.1.b Describe the types of information needed in or required by the permit to support the ongoing implementation of the flexible permit provisions.

Imation is required to prepare and/or maintain the following information to support the ongoing implementation of the flexible permit provisions. This list does not include standard title V and emissions monitoring, reporting, and recordkeeping requirements, such as annual compliance certifications or records of insignificant activities.

Plant-wide Total VOC Emissions:

To document compliance with the 12-month rolling and daily PTE caps for VOC, Imation is required to calculate and record facility-wide total emissions of VOC by the last day of each month for the previous calendar month. The records must include copies of all calculations made to generate these emissions totals (see permit condition Section E, Specific Condition #13).

Log of Operating Scenarios:
Contemporaneously with making a change from one operating scenario to another and notifying DEQ of that change, Imation is to record in a log at the facility a record of the scenario under which it is operating (see permit condition Section H, Subsection 5, Specific Condition #13).

Notification of Advance-Approved Changes:
Imation is to submit a written notice to Oklahoma DEQ no later than 30 days after completion of a construction, reconstruction, or modification made under the advance approval permit provisions. The notification letter must include the following information (see permit condition Section H, Subsection 5, Specific Condition #6).

- facility name and address;
- type of construction, reconstruction, or modification;
- location of affected source;
- identification of all relevant standards, applicable requirements, and state only requirements that are the basis of the application/letter and a description of or reference to any applicable test method for determining compliance with each applicable requirement and state only requirement;
- commencement and completion date of construction/modification/reconstruction;
- date of start-up of the affected source;
- type and quality of HAPs or state toxics emitted by the affected source in tons/year, pounds/hour, and be CAS number and name bother before and after the modification;
- emission rates in tons/year and pounds/hour of any regulated air pollutants other than the HAPs and state toxics;
- fuels, fuel usage, raw materials, production rates, and/or operating schedules, as needed to determine or regulate emissions;
- identification and description of air pollution control equipment and compliance monitoring devices or activities; and
- calculations on which the information in this specific condition is based; identification of any increase in potential to emit for any other EU.

Notification of new equipment or equipment changes or alterations where BACT is acceptable as no add-on controls is to be made as soon as possible but no later than 30 days after the installation.

Notification of emissions of new toxic substances along with demonstration of any required BACT or MAAC compliance is to be made as soon as possible but no later than 30 days after first-use of such substance. (See permit pages 35-38 for detailed information regarding reporting requirements associated with advance approvals.)

P2 Program Executive Summary:
Every 18 months from the date of permit issuance, a P2 Program Executive Summary is to be prepared by Imation, which is sufficient to show progress of the P2 Program at the site (see permit condition Section G, Specific Condition #1).

2.1.c How were any18-month "commencement of construction" requirements met?

Oklahoma DEQ representatives indicated that there were no 18-month commencement of construction requirements that needed to be met under the Imation title V permit.

2.1.d What were the processes, if any, for extending any BACT determinations (i.e., keeping them contemporaneous)?

During the term of the permit, the BACT determination is required to be reviewed by the permittee (with the pollution prevention program review) every eighteen (18) months following the date of the permit. DEQ representatives reported that the 18 month review was a negotiated time frame. It was not anticipated that BACT would change during this period. DEQ indicated that a 5-year BACT determination time frame would likely be more appropriate for the next permit.

2.2 If the flexible permit contains a PAL, how was the PAL baseline set?

The Imation title V permit does not contain plant-wide applicability limits (PALs); it contains a potential-to-emit (PTE) cap for VOCs. The PTE cap was set at 249 tons/year to make the entire plant-site a "synthetic minor" source with regard to major PSD applicability.

2.3 How was the PAL monitoring, recordkeeping, and reporting approach justified?

2.3.a What is the rationale for the monitoring approach and averaging time?

2.3.b What data conversions are required?

2.3.c What is the averaging time for each emissions cap and/or the duration of the cap?

2.3.d What is the rationale supporting the use of any longer (e.g., longer than one month) duration?

The emissions caps in Imation's current title V permit are VOC limits which are not PALs. They are a PTE cap set at 249 tons/year and a NAAQS-protective cap set at 836 pounds/hour (PPH) [maximum hourly emissions rate based on modeled maximum VOC emissions to comply with the National Ambient Air Quality Standards (NAAQS) for ozone]. Daily emissions are calculated and then prorated to hourly emissions based on product types and volumes. Annual emissions are based on a 365-day rolling average emissions and reported in an annual compliance report. The VOC monitoring approach is based on a mass balance approach combined with parameter monitoring for all capture and control devices. The approach assumes all VOC contained in raw materials used is emitted to the control device or the environment. The VOC emissions from the coaters and the curing ovens are routed to either a regenerative thermal oxidizer (RTO), catalytic oxidizer, or carbon adsorber.

The EPA Review Team agreed with Oklahoma DEQ's belief that monitoring the quantity of each VOC containing material (e.g., coatings, solvents, and cleaning materials) at Imation provides an accurate accounting of VOC usage. Monitoring chemical usage and production volumes on a daily basis provides the information necessary for calculating the daily (and the subsequent prorated hourly), and annual VOC emissions. Monitoring and reporting the daily and 365-day rolling average

annual usage of VOC compounds provides the appropriate monitoring of trends in emissions increases or decreases as a result of process changes.

The daily emissions (which are based on production data [i.e., type and amount of products coated] and the capture/control efficiency values) provide the information necessary to calculate an overall daily and hourly VOC emission rate for the Weatherford facility. Capture and control efficiency values are based on the most recent performance test data. Monitoring daily emissions also allows on-going tracking of performance with respect to the annual limit. The daily VOC emissions are then aggregated for the previous 364 days to determine the annual VOC emissions and compliance with the annual PTE limit (249 tons per year). The periodic monitoring of capture and control system parameters provides the necessary data to assure the systems continue to operate with at least the efficiency documented by the most recent performance test.

This facility also has emissions caps (hourly and annual limits) for NO_x, CO, SO_2, and PM_{10} emissions from the two boilers and the control devices (oxidizers). Both boilers can use either No. 2 fuel oil (diesel) or natural gas as the auxiliary fuel. The emissions limits for these pollutants were based on operating hours, fuel types, maximum throughput capabilities, capture efficiencies, control device efficiencies, and fuel oil and natural gas criteria pollutant emission factors from EPA's Compilation of Air Pollutant Emission Factors, AP-42 [January 1995] Tables 1.3-1 and 1.4-1, 2, 3. The title V permit includes three scenarios, each with separate emission limits. Scenario 1 uses natural gas as the fuel for the two boilers and Scenario 2 assumes diesel as the fuel for the two boilers. Scenario 3 has emissions limits based on the advance-approved addition of materials or equipment using natural gas or diesel as fuel. Compliance with the emissions limits is determined by monitoring the fuel type and monthly fuel usage to the boilers and oxidizers and multiplying the fuel usage rate by the appropriate AP-42 emission factors. The type and amount of fuel are the only varying parameters used in determining compliance with the emissions limits.

Several data conversions are required to support the monitoring approach outlined in the title V permit. The basic values measured are the weight (lbs) or (gallons) of VOC-containing materials used (e.g. coatings, solvents, and cleaning materials). The material usage must be converted to the mass (lbs) of VOC introduced into the system. This requires the concentration (percent) of VOC in each raw material and the density (lb/gal) of the raw material, which is provided by the suppliers in the Certification of Analysis for each batch of coating, solvent, or other VOC-containing material.

The VOC emissions cap has two durations: hourly (based on a daily VOC emissions rate calculation, prorated to hourly production rates) and annual (based on 365-days rolling). The NO_x, CO, SO_2, and PM_{10} emission caps also have two durations: hourly (based on a daily emissions of the boilers and oxidizers) and annual (based on 365-days rolling). The permit addresses both short- and long-term concerns for VOC, NO_x, CO, SO_2, and PM_{10} emissions since the permit has both hourly and annual limits.

2.4 Where applicable, describe the following aspects of the permit that are used for purposes of tracking emissions under a PAL or an emissions cap:

2.4.a Details regarding source emission factors and processes for changing emission factor

2.4.b Tracking emissions from startups, shutdowns, and malfunctions of monitoring, control, and/or process equipment

2.4.c Requirements for tracking emissions from insignificant emissions units

2.4.d Requirements for quantifying fugitive emissions

See section 4.2 for a detailed discussion of the emissions tracking requirements in the permit related to emission factors; startup, shutdown, and malfunction emissions tracking; tracking emissions from insignificant activities; and quantifying fugitive emissions.

The following records of hours, quantity, or capacity, as appropriate, are to be kept to verify insignificant emissions activities: welding and soldering operations utilizing less than 100 lbs. of solder and 53 tons per year of electrodes (total annual); storage tanks with less than 10,000 gallons capacity that store volatile organic liquids with a true vapor pressure less than or equal to 1.0 psia at maximum storage temperature (total annual throughput); throughput from fuel storage/dispensing equipment operated solely for facility owned vehicles (gallons/month averaged over a 30 day period); date, hours of operation, boiler ID, and fuel oil consumed for any short term firing (less than 3 days) of a fuel oil burner of any boiler performed for the purpose of maintaining the fuel oil burner in working condition.

State opacity rules apply to all emissions points whether they are permitted or not.

Additional Permitting Authority Inquiries

2.5 How did the source articulate its need for flexibility?

In 1995, Oklahoma DEQ approached Imation as a possible source to apply for a flexible permit due to their previous record of good performance, including an excellent compliance history, and their expected future flexibility needs. The flexible permit approach interested Imation initially because the permit would allow the facility to make changes, with increased certainty regarding regulatory applicability and process, to their product recipes without going through a lengthy permit modification process. This approach was in exchange for implementing an emissions control strategy for all changes that would be the most stringent one which could apply to any individual change. See section 1.22 for more discussion on the sources articulated need for flexibility.

2.6 What were your key rule interpretations?

Oklahoma DEQ representatives indicated that they could interpret Oklahoma's State Toxics Rule to ensure that the streamlined approach used in the permit would work under the existing rule. They also interpreted the advance approval provisions to be acceptable under the State's construction permit requirements, approved under the State Implementation Plan (SIP).

2.7 Was there a need for follow-up rulemaking?

Oklahoma DEQ indicated that while no follow-up rulemaking was required to issue Imation's flexible permit, the flexible permit development process did help them identify areas in their regulations that should be changed. For example, DEQ representatives reported that the Imation flexible permit "crystallized the need" for a change in the emissions threshold for triggering the need for a permitting action. Oklahoma State rules (the major permit subchapter, "subchapter 8") were subsequently modified to include a *de minimis* emissions level of 5 tons/year.

2.8 Might you include additional flexible approaches for this source in the future?

Oklahoma DEQ indicated that they plan to include the existing flexibility approaches in the next version of Imation's title V permit. Imation recently announced that Kodak Polychrome Graphics, Ltd. (a joint venture between Eastman Kodak and Sun Chemical Corporation) completed the purchase of the Imation Printing and Publishing section of the Weatherford facility (North Building) on December 12, 2002. KPG will obtain its own and separate title V permit. Until that time, Oklahoma DEQ has granted Imation permission to allow KPG to operate under Imation's current title V operating permit. Imation will submit their title V permit renewal by December 12, 2002 and expects to retain the flexibility provisions. It is expected that KPG will be submitting an application for a title V permit as well. KPG expressed strong interest in obtaining flexibility provisions in their new permit.

Oklahoma DEQ representatives also reported that they are working to develop advance approved and replicable testing procedures for the oil and gas industry. They also reported that future flexibility provisions used by DEQ could include additional types of advance notices for changes, as well as the 5-year BACT.

3. PUBLIC PARTICIPATION AND PUBLIC PERCEPTION

3.1 Were comments received from the public? Please provide a summary of any comments and of your response(s) to them.

3.1.a In what venues/times were public comments received? (formal permit process, public information sessions not required by the permit process, permit implementation, etc.)

3.1.b How many public meetings/information sessions were requested and subsequently held?

Imation's permit went through the standard title V public review and comment process. The applicant published a "Notice of Filing" of a Tier II application in the *Weatherford Daily News*, a newspaper in Custer County, on November 22, 1996. The notice indicated that this was an innovative permit being developed under EPS's Pollution Prevention in Permitting Program (P4), and it outlined the P4 Program's relationship to title V of the Clean Air Act. The permit was projected to provide maximum operating flexibility allowed under current regulations and to incorporate direct incentives for performing pollution prevention. After the draft permit was completed, Oklahoma DEQ provided thirty days for public review of the draft permit. A notice of the public review period was

posted in the *Weatherford Daily News* newspaper on March 29, 1998. Copies of the Imation draft permit were made available to the public at the local library and state DEQ offices.

Oklahoma DEQ representatives reported that no public comments were received during the permit development process. A public hearing was not requested. Imation and Oklahoma DEQ representatives, however, deemed a public meeting at the end of the public review period helpful to properly explain the innovative nature of the flexible permit. There were no comments from the public during this meeting.

3.2 Was there a discussion in notices, meetings and/or public comments of the source's need for flexibility, possible environmental benefit, and/or administrative burden from getting additional permit(s) or permit revisions?

According to Oklahoma DEQ representatives, the source's need for flexibility, and possible environmental benefits were discussed in the public notices. Additionally, Oklahoma DEQ and Imation facilitated a discussion of the innovative nature of the Imation permit at a public meeting.

3.3 Were there any environmental justice issues? If so, how were they addressed?

Oklahoma DEQ representatives indicated that there have been no environmental justice issues associated with the Imation facility.

3.4 Were there any CBI issues? If so, how where they addressed?

Imation submitted two applications to Oklahoma DEQ; one with and one without confidential business information (CBI). The non-confidential application contains the types of chemical used in product recipes, whereas the confidential application contains specific information regarding the amount of chemicals used for product recipes.

3.5 What was the ongoing level/adequacy of information flow to the public?

3.5.a What was the amount and type of information available during the title V permit development and public notice/comment period?

3.5.b What input was obtained back from the public beyond initial comments?

3.5.c What level of detail of source activity was provided to the permitting authority, and/or the public for flexible permit changes that took place during the permit term (e.g., logs and other records)?

- **What required information was submitted directly to the permitting authority?**
- **What and how much information submitted by the source was claimed as CBI?**
- **What additional information was available to the public only through FOIA requests?**

3.5.d What was the timing of the availability of relevant information to the public during permit implementation and development?

3.5.e What was the level of interest in annual P2 reports provided?

3.5.f Were advance notices circulated or made publicly available?

Oklahoma DEQ representatives indicated that they believe that the level and adequacy of information flow to the public during the permit development and implementation was at least comparable to that associated with conventional title V permitting. As with conventional title V permits, information is submitted to Oklahoma DEQ and is available to the public in the department files upon request.

The flexible permit went through exactly the same public review and comment procedures as a conventional title V permit except for the voluntary public meeting held at the end of the permit development process. See section 3.1 for additional discussion on information flow to the public during permit development.

Oklahoma DEQ representatives indicated that, the flexible permit provided more information to the public up front regarding the types of changes expected during the permit term than with a conventional title V permit. The Imation permit outlined both specific advance-approved changes and the categories of changes that the facility planned to implement during the permit term. Information in the notices associated with advance-approved changes received from Imation are comparable to those required under a conventional minor NSR permit application process. Oklahoma DEQ indicated that Imation submitted more information about the facility changes than other facilities regulated by a conventional permit. Since most of Imation's facility changes are advance-approved and there is no need for minor NSR applicability of determination (provided the desired change fits the advance approval criteria), Imation indicated that they have an incentive to notify Oklahoma DEQ about changes that may not trigger minor NSR under a conventional permitting scenario. Oklahoma DEQ representatives stated that the level of compliance detail for the advance-approved changes is the same as what would be required under case-by-case review. The only difference is that the activities are approved ahead of time, so Imation does not have to wait for the approval to occur during the permit term.

Timing of submission of information regarding facility changes to Oklahoma DEQ is one difference between the flexible permit and a conventional permit. Imation is required to submit a notice of completion 30 days after the completion of construction of some advance-approved changes. Under conventional minor NSR permitting, Oklahoma DEQ would receive a Notice of Construction permit application in advance of the change implementation. All documentation surrounding the advance-approved changes made at the source (e.g., construction notification, analyses of raw material changes involving new toxics or an increase in air toxics, and notification of emissions of new toxics) can be viewed by the public at DEQ by request, with the exception of changes involving proprietary business information. For additional CBI information, see section 3.4

The flexible permit requires the same annual reporting as a conventional title V, including an annual compliance certification and an annual emissions inventory. Oklahoma DEQ indicated that the flexible permit incorporates a previously grandfathered source (12W) that might not have been included in compliance reporting under a conventional title V permit.

The flexible permit required Imation to submit an annual P2 executive summary describing the P2 activities and programs adopted on site. Oklahoma DEQ indicated that the P2 report was available to the public upon request to Oklahoma DEQ.

3.6 Based on document/record review, compare conventional regulatory permitting versus flexible permits in terms of:

3.6.a How provisions are described to the public

3.6.b Number of comments received

3.6.c Number of complaints received

3.6.d Level of ongoing public interest

3.6.e Amount of information (if any) not available to the public (e.g., logs) and how this may or may not contribute to the public's understanding of the permit

3.6.f Amount of P2 information made available

Imation and Oklahoma DEQ representatives stated that information details regarding changes made using the advance approval permit provisions are no different than would otherwise be provided for a conventional title V permit, other than the timing and organization of the information. See sections 3.1 and 3.5 for discussion on permit development process and on-going information flow, and additional comparisons to conventional permitting processes.

Oklahoma DEQ and Imation reported that no complaints were received for the Imation facility. Since Imation has good relations with the surrounding community, the minimal level of ongoing public interest in facility air issues was similar to that experience by comparable sources in the state. Typically, Oklahoma DEQ indicated that there is no public interest in emissions unless the source is a new power plant or the source is a major NSR facility located in the Tulsa area. Oklahoma DEQ representatives indicated that, generally, the Weatherford community has exhibited little or no interest in the Imation facility. Any interest has been typically limited to understanding the level of gross emissions of the facility.

4. IMPLEMENTATION OF FLEXIBLE PERMIT PROVISIONS (ON-SITE VERIFICATION)

Utilization

4.1 What was the source's overall flexibility provision utilization throughout the permit term?

4.1.a How often were the flexible approaches used?

- **Describe the nature of the changes that occurred at the facility under the flexibility provisions.**
- **Identify which changes took advantage of which flexibility provisions (e.g., new unit A was added pursuant to advance approval and within a PAL emissions limit).**

Representatives from Imation and Oklahoma DEQ indicated that Imation's Weatherford facility has utilized several of the flexibility provisions included in the title V permit during the first three and a half years of the flexible permit term (as of November 2001). DEQ representatives stated that at

least five of these changes involved equipment or raw material changes that would have triggered permitting actions (i.e., construction permitting approvals, permit modifications) in the absence of the flexibility provisions. For each of these advance-approved changes, DEQ reported that their implementation required written notice by Imation, replacing the need for case-by-case agency review and approval that typically takes at least 45 days per permit action.

Imation and Oklahoma DEQ representatives reported that the Weatherford facility has made frequent use of the flexibility provisions associated with the use of alternative raw materials (e.g., chemicals used in coating operations). They reported that these provisions have allowed the facility to rapidly respond to Imation's need to pilot or transfer coating operations that utilize materials that are new to the Weatherford facility, reducing or eliminating the need for case-by-case approval from Oklahoma DEQ provided established procedures are followed. Imation representatives indicated that the Weatherford facility's ability to quickly test and adopt new production techniques and materials has enabled the company to rapidly adjust to changing market demands, and helped the company weather periods of economic downturn.

At least four new materials introduced during the permit term contained constituent chemicals that had not previously been evaluated by the State, or had Maximum Acceptable Ambient Concentrations (MAACs) established for them under Oklahoma's air toxics program. In these cases, Imation utilized the streamlined classification and approval process established in the permit (see permit condition Section H, Subsection 5, Specific Condition #2) to receive Oklahoma DEQ's toxicity categorizations and MAAC determinations for these materials in a timely manner (e.g., typically in less than a week). This streamlined toxicity analysis process was initiated in September 1998, February 1999, July 2000, and October 2000. Oklahoma DEQ reported that Imation made other advance-approved raw material changes, in accordance with the permit conditions and established procedures, that involved materials that had previously been evaluated for toxicity by the state.

Oklahoma DEQ representatives also indicated that Imation's Weatherford facility has utilized the Advance-Approved Alternative Operating Scenarios for control devices and methods (see permit condition Section H, Subsection 2, Specific Condition #1 (d)). For example, in July 1999 a bed fire in the solvent recovery unit servicing the Printing & Publishing Systems Division building led Imation personnel to invoke an alternative operating scenario and send VOC emissions from EUG-3 to the plant's catalytic oxidizer control device. In February 2001, a failed fan on the solvent recovery unit emissions control device led Imation personnel to utilize an alternative operating scenario and send solvent-laden air from EUG-3 to the catalytic oxidizer emissions control device.

As of December 2001, the Weatherford facility has not implemented either of the changes that were specifically described in the advance-approved minor NSR change provisions (see permit condition Section H, Subsection 2, Specific Conditions #1 (b) installation of volatile organic liquid storage tanks, and (c) replacement of one or more existing boilers). Imation representatives indicated that these

changes are not currently planned for 2002, but that they may be implemented prior to the title V permit expiration date.

Imation representatives further indicated that they anticipate the continued use of selected flexibility provisions contained in their title V permit, with particular emphasis on utilizing the alternative raw material provisions. Additionally, Imation representatives indicated that the advance approval conditions in the Imation title V permit make the Weatherford facility a strong contender if any new coater were to be sited.

4.1.b How many minor NSR permits and/or title V permit revisions were necessary (i.e., not covered under the advance approval)?

Imation representatives reported that, as of November 2001, the flexibility provisions contained in the title V permit have fully address the Weatherford facility's change needs. No minor NSR permits or title V permit modifications have been necessary.

4.1.c Contrast these results with implementation under a conventional permit design for the same source.

- **What approach would the source have taken for each change that utilized a flexible permit provision, absent that provision?**
  - **not made the change**
  - **taken steps to address requirements (e.g., netted out of major NSR)**
  - **complied with full major/minor NSR permitting**
- **Were any other conditions taken to address applicable requirements other than NSR? If so, which ones?**
- **How much time & resources were saved by utilizing the flexible permit provision(s), compared to the option you would have chosen above?**

Oklahoma DEQ representative reported that, at the time of permit issuance, the State of Oklahoma's minor NSR rules required review and approval by permit of any manufacturing change which would increase actual or potential emissions.

BACT (including T-BACT where required by the state's air toxics rule) is required for all such projects, although in cases of nominal increases of actual or potential emissions, BACT can be no additional air pollution controls. Changes to the manufacturing operations cannot begin until the construction permit is actually issued. Following construction, the title V permit must be revised. In some cases the newly-constructed source cannot be operated until a significant modification of the title V permit is complete, a process which in of itself can add six to twelve months.

The application for a construction permit that is submitted by the source must describe the proposed project, identify the applicable rules, and explain how the rules will be met. State rules require that the permit be issued within 180 days, although a permit can sometimes be issued within only 60 to 90 days for projects which involve no federal standards (typically being those under NSPS or MACT) and which otherwise involve no complicating factors. The 180-day clock, however, does not start

until the permit application has been determined to be complete by the agency, with multiple iterations of additional information provided by the source sometimes being needed to reach the designation of "complete". Once started, the 180-day clock can also be suspended while additional information is gathered from the permittee for permitting factors which could not be reasonably anticipated by the State at the time that the permit application was designated as being complete. For projects which do involve federal standards, or which otherwise involve complicating factors, the type and detail of information required by the agency for its assessment can therefore sometimes evolve during the course of review of the permit, presenting potentially multiple occurrences of the clock having to be stopped. But even in the case of "simple permits," rapid turnaround surely cannot be counted on, being sensitive to the vagaries of workload of the agency's permit engineers.

Under the State's air toxics program, effectively every substance emitted by a source is subject to review and is potentially subject to control requirements specific to that substance. A new raw material which results in the emission of a substance not previously emitted by the plant therefore cannot be used until the attending emissions are reviewed and approved by the state. The vehicle for approvals typically involves revision of the plant's operating or other relevant air permit, a process which sometimes can be done in less than 60 days, but depending in part on the agency's work load frequently extends to 90 to 180 days. The State's air toxics program also provides no exception for temporary, including very short-term emissions, such as those which may occur with manufacturing experiments (including experiments that might be designed to examine pollution prevention opportunities, such as examining more efficient usage of raw materials or usage of less toxic substances).

For projects involving design-and-build or other fast-track approaches, certain design details of the manufacturing equipment that are at the heart of generating the air emissions, or design details of pollution control devices, simply may not exist at early stages of the project. The permitting authority's need for detailed project information is thus not synchronized with the availability of such information, and the permitting process and project design are forced into being consecutive steps.

Air permitting can also complicate ongoing manufacturing and underlying business planning. Direct and indirect regulatory compliance costs can be difficult to quantify, even on an order-of-magnitude basis, in light of the sometimes uncertain applicability of air rules to a particular manufacturing project and the uncertain exercise of agency discretionary authority. Uncertainties over the rules and agency discretion are often magnified where innovative, pollution preventing approaches are being contemplated, creating a P2 disincentive and impediment to step-wise improvement.

Documentation

4.2 What problems, if any, did you encounter regarding the following:

4.2.a Tracking of fugitive emissions

4.2.b Inclusion of emissions from startups, shutdowns, and malfunctions

4.2.c Inclusion of emissions from insignificant emissions activities

4.2.d Missing data

4.2.e Use of/updates to emission factors

4.2.f Application of ROPs (amount of errors noted) and missing critical assumptions

4.2.g Required content of logs

4.2.h Use of advance notices

No problems were encountered by Oklahoma DEQ or the EPA Review Team related to the tracking of fugitive emissions. Because the monitoring approach is based on the amount of VOC input to and generated by the coating operations, any fugitive VOC emissions from the coaters, curing ovens, or control devices, are accounted for in the mass balance monitoring approach [TOTAL IN = TOTAL OUT]. Initial performance testing was conducted in 1996 to determine baseline capture efficiency for the enclosures around the coaters and cure ovens. The baseline (1996) capture efficiency testing showed an average capture efficiency of 90 percent for coater 12W and 80 percent for coater 15W. The capture measurement is validated periodically by taking actual production and test data for the solutions metered to the web coaters. Mass flow of solvent for each coater is calculated based on measured percent solids and mass flow. A theoretical solvent concentration (100 percent) based on total hydrocarbon concentration (THC) is calculated based on total mass flow of solvent to the coaters and the air flow rate exhausted from the coaters and ovens. The actual organic solvent (THC) concentration going to the catalytic oxidizer is measured from a sample line near the inlet of the oxidizer using a Rosemount Model 400 flame ionization detector (FID) analyzer. The capture efficiency is calculated by dividing the measured concentration by the theoretical concentration. As part of Imation's on-going monitoring program, monthly work orders are generated/issued from the Plant Engineering Department to measure/calculate the solvent capture efficiency for the solvents associated with each of the four primary products run on coater 15W. The work order states " if the calculated capture efficiency is less than 82 percent, generate work order to repair 15W oven duct work leaks." Examples of solvent capture efficiency work orders were provided to the EPA Review Team and recent calculated capture efficiency data were reviewed "on-line" in the database.

Imation's Data Storage operations are required to have a permanent total enclosure for the manufacturing operations to comply with the Magnetic Tape NESHAP (Subpart EE). Air flow monitoring of the total enclosure is done via differential gauge pressure to show the enclosure is at a negative pressure with respect to the immediate surrounding environment. All 18 doors to the data storage manufacturing area also have contact switches with electronic interlocks that automatically close the door after 15 seconds; the actual "open" time is monitored and tracked. An operator alarm goes off if a door is open longer than 3 minutes. Recent data indicate that the doors are open less than five percent of the time in any given time period. A monthly inspection of the bypass vents is done to ensure that all valves are in the correct position.

No problems were encountered related to tracking of emissions associated with startups, shutdowns, and malfunctions. Because the monitoring approach is based on the total amount of VOC input to the system (e.g., coating operations), any VOC emissions from the coaters or the mix/pump rooms during startups, shutdowns, and malfunctions are accounted for in the mass balance approach.

No problems were identified regarding inclusion of emissions from insignificant emissions activities. Imation's title V permit includes several activities identified as insignificant for air toxics emissions. These activities include analysis/laboratory equipment that emits below *de minimis* levels; a hazardous waste and hazardous materials drum staging area; exhaust systems for storage rooms or cabinets; and groundwater remediation wells, including venting, pumping, and collecting activities, that emit below *de minimis* limits for air toxics. None of these activities require recordkeeping to confirm continuing insignificance.

Records are required to confirm continuing insignificance of two welding stations, two 180-gallon diesel tanks, two 250-gallon gasoline tanks, and infrequent test firing of boilers with fuel oil to keep the burners in working condition.

No problems were encountered regarding missing data. Monitoring is based on the amount (weight) of material (e.g., coatings, solvents, and cleaning materials) delivered to the coating lines, production rates, and the capture/destruction efficiencies associated with the control devices. The amount of material used and production rates are always known by the facility and available in documentation; the capture and control device efficiencies are based on State-approved results of the most recent performance tests; missing data was not identified as an issue by Oklahoma DEQ or the EPA Review Team.

No problems were encountered regarding the use of or updates to emissions factors. Emission factors are not used for determining annual VOC emissions; the daily and annual VOC emissions are based on the actual measurement (calculation) of VOC usage and capture/control device efficiencies. However, a daily VOC emission rate is calculated and used (in conjunction with daily production data) for determination of the prorated hourly VOC emissions for compliance with the hourly limit. Documentation is available for calculation of the hourly emission rate (batch-by-batch and daily VOC usage, calculated VOC emissions, and production rates). No problems were noted during the review. Emission factors are used for calculating NO_x, CO, SO_2, and PM_{10} emissions from the boilers and the oxidizers. No emission factor updates have been used during the permit period. No problems were encountered with the use of the EPA AP-42 emission factors.

No replicable operating procedures (ROPs) were utilized in the Imation permit. While the permit requires capture and control efficiencies used in the mass balance calculations to be based on the most recent performance testing, there is no permit requirement that specifies periodic air pollution control device (APCD) performance testing. The EPA Review Team recommends that the approach for performance testing of the capture/control equipment be replicably identified in the permit and be conducted at least once during the life of the permit (i.e., once every 5 years).

No problems were encountered by Oklahoma DEQ or the EPA Review Team related to the content of logs required by the title V permit. Key information included in various permit-related logs is summarized below. VOC usage records; performance test data for capture efficiency and destruction efficiencies; incoming material analysis; and production records necessary for conducting

the material balance and determining the daily and annual VOC emissions for the PTE cap compliance are available and were reviewed by the EPA Review Team.

For the permanent total enclosure in the Data Storage Operations area, the amount of time any of the 18 doors in the coating operations is open is tracked by the computer system. Mass flow of solvent for each coater is calculated based on measured percent solids and mass flow. Theoretical (calculated) and measured organic solvent (total hydrocarbon) concentrations of the inlet and outlet streams of the catalytic oxidizer, as well as air flow rates, are logged via automated computer system for calculating capture/destruction efficiencies. The combustion temperature of the thermal oxidizer and the catalytic oxidizer are monitored and logged automatically (via computer system) and were reviewed. The solvent adsorption and desorption cycle times and the solvent mass balance records for the carbon adsorption unit are also tracked by the automated computer system.

Advance notices are not required for implementing changes that are advance-approved by the permit (see sections 2.1.a and 2.1.c for a description of the change notice requirements). A notice of completion, however, is required to be submitted to DEQ within 30 days of implementing any advance-approved change. No problems were identified by Oklahoma DEQ or the EPA Review Team related to submission and content of change notices.

Quality/Quantity of Information

4.3 What was the quality and the quantity of monitoring data received?

4.3.a. Are CEMS in place? If yes, were data provided?

4.3.b. Were stack tests performed? If yes, were results provided?

4.3.c. Was parametric monitoring performed? If yes, were results provided?

4.3.d. Were any other monitoring approaches used? If yes, were data provided?

Oklahoma DEQ representatives stated that they believe that the quality and quantity of monitoring data made available by Imation is "excellent", and is sufficient to determine compliance with the permit conditions and applicable requirements.

The Imation facility has monitoring equipment in place to measure VOC emissions on a continuous basis, but the monitoring is not a permit requirement. The organic solvent concentration entering and exiting the catalytic oxidizer and exiting the carbon adsorption unit is monitored as total hydrocarbon concentration (THC) using a Rosemount Model 400 flame ionization detection (FID) analyzer. The resulting data is used for periodic capture efficiency evaluations and determining solvent loading of the carbon beds, respectively.

Stack tests have been performed at the Imation facility. Performance testing to verify destruction efficiency of the 51W regenerative thermal oxidizer (RTO) was conducted in August 1996. The test results documented an average 97 percent destruction efficiency based on an average of three 1-hour tests at 1400EF. Performance testing on the thermal oxidizer for controlling emissions from coater 15W were initially conducted in March 1994, and again in May 1996 when the unit was converted

to a catalytic oxidizer. The test data showed an average 95 percent destruction efficiency. No significant changes were identified relative to the oxidizers since the testing conducted in 1996.

Parametric monitoring is being performed at the Imation facility. Combustion temperature is the parameter monitored for the oxidizers. Five Type K thermocouples are used to monitor the incineration temperature as part of the continuous parameter monitoring system. The thermocouples are calibrated quarterly. The average combustion temperature is calculated automatically for all five thermocouples in each of the oxidizers. During the EPA Review Team site visit, the actual combustion temperature was above 1600EF for the catalytic oxidizer with no auxiliary fuel being used. The parametric monitoring records were reviewed and no problems or issues were noted.

Imation also utilizes monitoring equipment to measure VOC emissions and solvent laden air flow on a continuous basis at the inlet duct to the catalytic oxidizer. The organic solvent concentration (ppmv using FID) and air flow (scfm using pitot tube array) entering the catalytic oxidizer is used for periodic capture efficiency evaluations for the 15W coater. The THC exiting the carbon adsorption unit is also monitored using FID to determine solvent loading of the carbon bed. For the permanent total enclosure associated with coater 51W in the Data Storage coating operations, differential pressure gauges are used to monitor the pressure gradient inside/outside the enclosure on a continuous basis to ensure that negative pressure is maintained within the permanent total enclosure.

A material balance of VOC usage is the primary monitoring approach. All November 13, 2001 data necessary for conducting the material balance were provided and reviewed by the EPA Review Team. Daily and annual production records from the "Weatherford Plant Site Daily Mass Balance Report" were reviewed. The type and amount of fuel used in the boilers and the oxidizers is monitored. Fuel usage information is then used in conjunction with AP-42 emission factors to calculate daily (prorated to hourly) and annual NO_x, CO, SO_2, and PM_{10} emissions.

4.4 What was the percentage/amount of site-wide emissions subject to enhanced monitoring, recordkeeping, reporting and/or controls that were greater than required by applicable requirements under a traditional permitting approach?

No additional enhanced monitoring is required. The applicable requirements for this source under a "traditional" permit would be comparable in terms of level of detail and the amount of effort (labor) required to maintain and provide the required records. The requirements for daily and annual (365-day rolling totals) involved some up-front recordkeeping planning and design, but are not a significant burden compared to average title V recordkeeping and reporting requirements.

4.5 Did actual changes made match their up-front descriptions? If not, why not and how were the discrepancies addressed?

Oklahoma DEQ representatives stated that the actual changes made by Imation using the advance approval provisions in the title V permit fully fit within the descriptions included in the permit. The EPA Review Team did not find evidence of any confusion over what changes were covered by the advance approval provisions, or of changes made that did not fully fit within their descriptions in the

permit. See section 2.1 for a summary of the advance-approved changes that are described in the Imation title V permit.

4.6 How many changes (e.g., potential NSR triggering events) are identified in the logs?

Imation recorded a total of 10 changes in their on-site log, as of time of EPA's review. For three of the changes, Imation redirected emissions from the SRU to the catalatic oxidizer due to equipment malfunctions. Imation indicated that the other seven changes were associated with changes in raw materials.

4.7 What types of information and level of documentation detail are included in the logs?

Imation indicated that the following types of information are maintained in the log mentioned in section 4.6.

- Project/change scope and timing
- Relevant advance-approval provisions
- Regulatory analysis information
- Key communications
- Demonstration of requirements

With each entry, Imation describes the change and lists applicable requirements in a table. The log information is maintained in a change management information system tool at the plant.

4.8 Was there any confusion over the location of new emissions units and what requirements are applicable to them? If so, please describe the confusion and how it was resolved.

Neither Oklahoma DEQ nor EPA Review Team representatives encountered any confusion over the location of new emissions units at the Imation facility or the requirements applicable to them. They indicated that the change completion notices provided sufficient clarity of information regarding changes made at the Imation facility under the advance approval provisions in the title V permit.

4.9 What types of information and level of documentation detail are included in the notices?

Oklahoma DEQ representatives stated that the notices of advance-approved changes completed by Imation during the title V permit term have fully met the information requirements (e.g., information type and level of detail) that are required by the permit and necessary to verify compliance with applicable requirements. See section 2.1.b for a list of information required in the advance-approved change notices.

The EPA Review Team reviewed selected notices to ensure that they included information required by the permit. The Review Team found that the notices typically included the required information as well as additional detail that was not required (e.g., reason for introducing a new material). For two of the streamlined raw material categorizations and MAAC determinations requested by Imation, DEQ requested additional information regarding the potential emission rates of the materials to enable them to establish MAACs for the substances (see section 2.1 for a discussion of the Air Toxics Rule requirements).

4.10 Were the calculations required by the permit included in or attached to the on-site log?

All calculations required by the permit for tracking emissions were available for inspection and review at the Imation facility. The EPA Review Team verified that the emissions monitoring data and calculations were available during the EPA site visit to Imation. Data was maintained by Imation in hard copy and electronic formats (i.e., database and spreadsheets).

5. DESIGN ADEQUACY OF THE FLEXIBLE PERMITS

General inquiries based on subsequent implementation of the flexibility provisions

5.1 Were any applicable requirements omitted?

Oklahoma DEQ and EPA Review Team representatives did not find any evidence of applicable requirements that had been omitted from the permit.

5.2 Was monitoring sufficient?

5.2.a Does the permit utilize appropriate monitoring methodologies based on the types of emissions units involved?

Oklahoma DEQ representatives stated that they believe the monitoring required by the permit and performed by Imation to be appropriate given the types of emissions units at the facility. Overall, the EPA Permit Review Team found the monitoring approaches, and Imation's implementation of them, to be appropriate and effective for determining facility emissions and complying with the permit conditions and applicable requirements. Imation's Weatherford facility relies on a material balance methodology to determine the VOC emissions rate. Parametric monitoring requirements for combustion temperature associated with the oxidizers and the periodic validation of the catalyst performance via periodic catalyst activity checks or inlet/outlet THC measurements are used and are consistent with similar emissions sources. For the carbon adsorber, the outlet THC monitoring and measurement of recovered solvent, and the material balance measurements are used and are also consistent with similar emissions sources. The emission factor/fuel usage approach used for calculating NO_x, CO, SO_2, and PM_{10} emissions is suitable.

For capture efficiency, the monitoring of differential pressure for the PTE associated with coater 51W is appropriate. Continuous measurement of the air flowrate from coaters 12W and 15W and going to the catalytic oxidizer is appropriate parametric monitoring for this device. However, the permit did not identify any indicator range for this parameter (i.e., an operating range outside of which a deviation would require corrective action and reporting was not identified). Current monitoring guidance would require establishing such an indicator range. The periodic monitoring of capture efficiency and control device performance using inlet and outlet THC measurements is an appropriate technique for periodically evaluating capture efficiency.

5.3 Were there any problems translating the advance approval concepts into actual permit provisions?

No problems were identified by Imation or Oklahoma DEQ is translating the advance approval concepts into actual permit provisions.

5.4 Were the advance approved categories of changes sufficiently well defined to cover the actual changes made? If not, how were these changes made?

Oklahoma DEQ representatives indicated that the categories and descriptions of advance-approved changes contained in the permit were sufficiently well-defined to cover the actual changes made as of November 2001 under the permit.

The EPA Review Team did find a letter in Oklahoma DEQ's Imation file in which the Weatherford facility indicated their intention to make a change made that was not described in the permit, but was deemed by Oklahoma DEQ to constitute an insignificant emissions activity. This change involved the temporary use of a skid-mounted soil vapor extraction system at on-site wells as part of groundwater remedial activities. The letter, dated April 19, 1999, indicates that even though agency notification is not required for the change, Imation desired to keep Oklahoma DEQ informed of activities at the Weatherford plant. Imation representatives indicated that they "view the flexible permit as an asset". They went on to state that their desire to protect this asset often prompts them to communicate with Oklahoma DEQ about their intention to make facility changes, even when these modifications would be considered insignificant activities and/or not require notification.

5.5 Did the permit contain all calculation procedures/ROPs needed by the source to determine applicability and assure practical enforceability? If not, how did the source determine applicability and assure practical enforceability?

Oklahoma DEQ representatives and the EPA Review Team concluded that all calculation procedures necessary to determine compliance with the permit conditions and applicable requirements were included in the permit.

5.6 Were all critical assumptions for ROPs use and/or emissions tracking also included in the permit? If not, how were these gaps addressed?

The EPA Review Team found that all critical assumptions for emissions tracking were included in the title V permit. Replicable operating procedures (ROPs) were not used in the permit. A ROP for periodic testing of the capture/control efficiencies for the control devices is recommended for the next version of the permit.

Tool Specific Inquiries

5.7 Clean Buildings

5.7.a What safeguards were imposed to prevent the overloading of the control equipment?

5.7.b Were any emissions excluded from the central control device? Were they subject to any applicable requirements, and, if so, how were they accounted for in the permit?

The Imation Weatherford facility's emissions control equipment can be considered to create a "clean building". Various monitoring safeguards have been imposed to prevent the overloading of control equipment, including combustion temperature for the RTO. The overall mass balance emissions measurement approach ensures that emissions not sent to the control devices are monitored. See

sections 4.2, 4.3, and 5.2 for additional discussion of the facility emissions monitoring activities and control equipment.

5.8 Replacement Conditions

5.8.a Were the mass balance based formulae adequate to limit actual emissions? If not, what were the inadequacies and how were they corrected by the source and permitting authority?

5.8.b Were all critical assumptions for using the formulae contained in the permit? If not, what were the inadequacies and how were they corrected by the source and permitting authority?

See sections 2.3, 2.4, 4.2, and 4.3 for a discussion of the mass balance emissions monitoring approach used in the permit.

5.9 P2 Provisions

5.9.a Was P2 adequately recognized and encouraged by the design of the permit? If not, why not and what changes could be made to better recognize and encourage P2?

As a permit developed under EPA's Pollution Prevention in Permitting Program (P4), P2 was explicitly recognized in the permit. For example, there is an explicit link between the adoption of an approved pollution prevention program and the BACT determination for advance-approved changes. Therefore, to access advance approvals that trigger BACT, Imation must have an approved P2 program in place. See section 2.1 for information on other P2 requirements contained in the title V permit.

In addition, Imation and Oklahoma DEQ representatives indicated that the design of the permit encourages P2, since the source has an incentive to keep emissions low under the PTE caps. Emissions reductions resulting from P2 create additional compliance margin under the VOC PTE caps that can be used to allow for increased production or to further reduce risk of exceeding the emissions limits. The advance-approved change provisions also reduce the regulatory friction (e.g., uncertainty, time delay) associated with making changes that result in P2 gains. For example, advance-approved raw material changes can reduce the time and cost associated with switching to coating recipes with lower HAP and VOC content.

5.10 Fugitive Emissions

5.10.a How dependent on changes in fugitive emissions was the ability of the source to comply with any cap?

Imation was not very dependent on the level of fugitive emissions to remain below the VOC PTE caps. First, the source has maintained a relatively large margin of compliance under the 249 tons/year VOC emissions cap (i.e., annual VOC emissions were approximately 90 tons/year in 2000). Second, fugitive emissions do not fluctuate significantly when coating lines are in operation. Fugitive emissions are included in facility emissions calculations due to the mass balance monitoring approach which accounts for all VOCs present in materials used by the facility.

6. PRACTICAL ENFORCEABILITY OF THE FLEXIBILITY PROVISIONS

6.1 Assess the overall practical enforceability of the permit's flexibility provisions.

6.1a Does the permit require monitoring, recordkeeping and reporting in appropriate time intervals (e.g., daily records for daily limits)?

6.1b Can an inspector visiting the site determine historical and contemporaneous compliance with the flexible permit from records maintained on site?

6.1c Does the permit contain a legal obligation for the source to adhere to the terms and conditions of the limitation?

6.1d Does the permit rely on the efficiency of an air pollution control device for compliance with an emissions limit? If so, how is that efficiency determined and shown to be accurate?

Oklahoma DEQ representatives indicated that they believe that the Imation Weatherford facility's flexible title V permit is enforceable on a practical basis. They further indicated that DEQ inspectors were able to determine historical and contemporaneous compliance with the permits during on-site inspections. DEQ representatives remarked that initially more time was required for the inspectors to fully understand the flexible permit, primarily because selected provisions were unfamiliar and not contained in other flexible permits issued by the State. After the initial training period, the inspectors indicated that they found the flexible permit to be relatively easy and straightforward to understand and to inspect against. They indicated that the requirements are clearly "spelled out" in the permit, and that the facility-wide emissions tracking makes intuitive sense. DEQ inspectors indicated that they were able to determine Imation's compliance with the title V permit conditions and applicable requirements during one-day on-site inspections instead of the usual two days needed for a conventional title V permit inspection.

The EPA Review Team also found that the conditions contained in the permits are enforceable on a practical basis. As mentioned, the EPA Review Team was able to exactly reproduce Imation's emissions calculations from a selected time period using the data maintained in records and logs. Records are maintained on site for all time periods covered by the current permit. See sections 4.2, 4.3, and 4.4 for discussion of the appropriateness of required monitoring and recordkeeping information to support the practical enforceability of the permit conditions. The EPA Review Team found that daily VOC usage and emissions rates determined from material usage and production data provides monitoring and recordkeeping sufficient for practical enforceability of the annual (365-day rolling average) limit. They also determined that the daily VOC emission rate determination records in conjunction with the daily production records provide monitoring and recordkeeping sufficient for determining hourly emissions; and the daily fuel usage records provide information sufficient for determining compliance with the daily and annual NO_x, CO, SO_2, and PM_{10} limits. Additionally, the permit contains a legal obligation for the source to adhere to the terms and conditions contained in the permit, including the PTE caps.

Imation's emissions limit compliance relies, in part, on the efficiency of an air pollution control device. The current coating operations at Imation's Weatherford facility include the capture and destruction of VOC emissions from the coaters and the drying ovens. The capture and destruction efficiencies associated with the control devices (RTO and catalytic oxidizer) are two of many factors included in the VOC emission calculations. Per the permit conditions specified in Section B (Source Specific Conditions), the destruction efficiency (95 percent) is included in the VOC calculations. A VOC capture efficiency of 80 percent for the 15W coater is also included in the mass balance daily calculation. Coater 51W is operated within an enclosure which has a capture efficiency of 100 percent. The permit specifies that performance testing must be done on the control equipment in accordance with EPA-approved test methods and the test results must be approved by the State. Only then can the approved capture and destruction efficiency numbers be used in the emission rate calculations. There is also an annual requirement for Imation to review the process and control equipment and to certify that no significant changes have occurred.

6.2 Does the permit require the correct type and amount of information (in logs, notices, monitoring data, etc.) to determine the number and duration of any deviations?

The EPA Review Team found that the correct type of information for conducting and documenting the material balance and for reporting the results of any deviations.

However, the EPA Review Team believes a few improvements to the permit are warranted. The monitoring specifications referenced in the title V permit for the performance testing of control devices does not specify any required test frequency. The Team recommends that a required frequency of actual capture and destruction efficiency testing be changed to a minimum of once per permit period (e.g., five years).

For the 51W permanent total enclosure, differential pressure across the enclosure is monitored continuously. While differential pressure is an appropriate parameter, the permit does not specify any operating range, outside of which a deviation occurs. The Team recommends that the permit clearly identify the acceptable operating range. Similarly, for the 12W/15W coaters, the air flow from the enclosure (measured at the inlet to the catalytic oxidizer) is monitored continuously using a pitot tube array, but the acceptable operating range is not specified in the permit. Again, the Team recommends that the permit clearly identify the acceptable operating range.

6.3 What was the nature and duration of any deviations?

Oklahoma DEQ representatives stated that there have been no emissions cap violations for the Imation Weatherford facility. No compliance violations or deviations are identified in the Imation compliance certification reporting or in the Oklahoma DEQ inspection reports. Oklahoma DEQ representatives stated that they are not aware of any compliance violations associated with the Weatherford facility's title V permit.

6.4 Can all calculations required by the permit, including ROPs, be duplicated? Can anybody understand and apply them consistently?

Oklahoma DEQ representatives stated that they believe that all calculations required by the permit can be duplicated using information that the source is required to maintain on-site in records and logs. During the November 2001 site visit, the EPA Review Team tested Imation's emissions calculations for a selected period of time and was able to fully replicate the source's emissions calculations using data maintained by the facility. The calculations are contained in a spreadsheet format and are sufficiently documented to enable inspectors to duplicate emissions calculations. The title V permit includes the default capture and destruction efficiency values (factors) to be used for each coating line. Once one has all the variables (or inputs) from the daily reporting such as mass flow of solvent for each product/coater based on measured percent solids and mass flow, the data can be plugged into the spreadsheet which performs the simple emissions calculations to demonstrate compliance with the PTE caps.

6.5 Does the permit clearly set forth the applicable requirements for every change made by the source? If not, what additional information is necessary?

The EPA Review Team found that Imation's title V permit clearly set forth the applicable requirements for all changes covered by the advance approval provisions in the permit.

6.6 Were there any issues associated with off-permit notices (e.g., adequacy of descriptions)?

DEQ representatives indicated that there have not been any issues associated with off-permit notices at the Weatherford facility during the title V permit term.

6.7 Compare the "ease" of inspecting sources with flexible provisions to that of inspecting similar sources with conventional permits. For the units affected by flexibility provisions, what worked well and what posed difficulties?

Oklahoma DEQ inspectors indicated that once an inspector becomes familiar with the flexibility provisions contained in the permit (e.g., through training), the inspector has found inspection of the Imation facility to be easier than the inspection of comparable sources subject to conventional title V purposes. See section 6.1 for additional discussion.

6.8 Compare the compliance rate (to date) of flexible provisions within the permit with compliance rates of conventional regulatory permits governing the same types of changes at similar sources, and for similar types of changes with the same source under previous conventional permits.

Oklahoma DEQ representatives stated that the Imation Weatherford facility's records related to emissions and modifications are "as good or better" when compared with other high VOC emitting sources in Oklahoma (e.g., facilities with painting or printing operations). They indicated that the title V permit provides clear information regarding the types of changes advance-approved by the permit, and that the notices and logs prepared and maintained by Imation provide thorough documentation of changes made under these provisions. They further stated that the facility-wide emissions data prepared in logs and routine reports to DEQ are thorough and well organized, providing DEQ with a clear picture of facility emissions. They added that the Weatherford facility has an "excellent" compliance rate, and that the source is considered to be a top compliance performer in Oklahoma.

7. PERMIT COSTS, BENEFITS & VALUE ADDED

7.1 Did the flexible permits provide you with benefits in terms of: practical enforceability; information flow; environmental/emissions results; economic results; etc.?

Representatives from Oklahoma DEQ and Imation both reported that they were pleased with the benefits derived from the flexibility provisions in the Weatherford facility's title V permit during the first three and a half years of the permit term. The following benefits were identified by DEQ and Imation.

Oklahoma DEQ representatives identified the following benefits associated with the Imation permit:

- *Lower Allowable Emissions*: The flexible title V permit enabled DEQ to extend emissions limits and other requirements to an emissions unit, the 12W coating line, that was previously "grandfathered" under the Clean Air Act. Without the voluntary emissions controls that Imation installed (prior to the flexible permit), the 12W coating line had a potential-to-emit (PTE) of approximately 4,000 tons/year. Actual annual VOC emissions were approximately 500 tons/year in the early 1990s. The permit created a framework in which VOC emissions were enforceably limited to 249 tons/year, to create "synthetic minor" status for purposes of PSD applicability. In addition, the two Imation buildings, which operated under separate SIC codes, were treated as one source for purposes of the PTE caps. DEQ representatives indicated that under a conventional permitting approach, these building would likely have been treated as separate facilities with a higher combined level of allowable VOC emissions.

- *Encouragement of Pollution Prevention*: Oklahoma DEQ representatives indicated that they believe that the flexible permit established a permitting environment that facilitates pollution prevention (P2). Although Imation already had a relatively mature P2 program, the flexible permit contains requirements that led Imation to formalize the program, and prepare periodic reports on P2 activities and results. Imation also committed to a P2 goal of reducing per unit air emissions by at least 10 percent over the title V permit term. As of December 31, 2000, the facility reported achieving an 11.09 percent reduction in emissions. DEQ representatives also indicated that they believe that the design of the permit encourages P2, since the source has an incentive to keep emissions low under the PTE caps. Per unit emissions reductions resulting from P2 create additional compliance margin under the VOC PTE caps that can be used to allow for increased production or to further reduce risk of exceeding the emissions limits. The advance-approved change provisions also reduce the regulatory friction (e.g., uncertainty, time delay) associated with making changes that result in P2 gains. For example, advance-approved raw material changes can reduce the time and cost associated with switching to coating recipes with lower HAP and VOC content.

- *Enhanced Information Flow*: Oklahoma DEQ representatives indicated that they believe that the flexible permit established a permitting environment that enhanced the flow of information between Imation and DEQ. First, the permit includes information on the changes that the facility anticipated making over the permit term. They indicated that this advance

information, when combined with the required notices and log entries of actual changes made, provides DEQ with a clearer picture of the facility's anticipated and actual change program. Under a conventional permitting process, this information would only have been available in a piecemeal manner, as Imation filed case-by-case construction permitting applications throughout the permit term. Second, DEQ representatives indicated that they found the facility-wide emissions requirements and data to be easier to communicate to the public than conventional emissions and production requirements that focus on individual process lines or pieces of equipment. Third, DEQ representatives indicated that the monitoring and reporting requirements in the permit have made it straightforward for the Department to conduct inspections, determine compliance, and practicably enforce the permit conditions. Fourth, the P2 reporting required by the title V permit provides DEQ with information on the Weatherford facility's P2 activities. DEQ representatives indicated that this information enables DEQ to follow the P2 results facilitated by the flexible permit. This information is not typically required by conventional permits in Oklahoma.

- *Resource Savings*: DEQ representatives stated that the permit has saved time for DEQ personnel, enabling them to "operate more effectively" with their limited staff. They indicated that most of the time savings result from the reduced need for administrative processing of case-by-case construction permitting actions and air toxics approvals. DEQ representatives stated that they have identified at least five changes made under the advance approval provisions that would have required a permitting action under a conventional permitting scenario, but that only required written notices under the flexible title V permit. They indicated that, absent the flexibility provisions, each of these permitting actions would have required a 45-day review and approval process that could have extended well beyond that in some cases. They further indicated that this resource savings enables DEQ to focus scarce resources on inspections and other environmental and permitting priorities.

- *Lessons for Streamlining of Conventional Permitting Practices*: DEQ representatives indicated that, based on their experience with the Imation flexible permit, the Department has identified ways in which conventional permitting activities can be streamlined without sacrificing environmental standards or requirements. For example, DEQ personnel learned that they could effectively oversee and manage the State Air Toxics Program without necessarily requiring a permit modification for each new material used by a facility.

Imation representatives identified the following benefits associated with the flexible permit:

- *Streamlined Product Development and Scale-Up*: Imation representatives reported that the flexibility provisions in the title V permit enabled the facility to experiment with new materials and to introduce the production of new products at the Weatherford facility with minimal delay associated with air permitting and material toxicity assessments. Under the flexibility provisions, Imation is authorized to use alternative raw materials without receiving case-by-case approval or permit modifications that typically can take up 2 to 3 months, provided that they follow established procedures and ensure emissions remain below specified limits. Even for materials for which Oklahoma had not previously reviewed, DEQ

agreed to attempt to complete toxicity evaluations and establish MAAC limits within 72 hours of receiving a request from Imation. Imation representatives stated that these streamlined administrative procedures for addressing Oklahoma's air toxics requirements have eliminated air permitting delay associated with raw material changes. Among other product transitions, the flexibility provisions in the title V permit have facilitated Imation's development of digital proofing films for graphic design applications. In addition to various product quality benefits, digital proofing films also require fewer coating layers during manufacturing than conventional proofing films. This results in fewer VOC emissions from solvents per unit. While customer demand for digital proofing materials is increasing, it is likely to take several years before digital proofing technology is in widespread use due to the cost of converting to digital proofing hardware.

- *Increased Market Responsiveness*: From Imation's perspective, the flexible permit has allowed the Weatherford facility to proceed with operational change in a manner that has rapidly responded to customer needs and market demand. Since Imation ships much of its finished product directly to customers from the plant, the company pursues "just-in-time" production strategies to keep inventory (and associated overhead costs) low. Imation representatives indicated that the permit's flexibility provisions supported such market responsiveness by allowing the plant to quickly shift between alternative operating scenarios (e.g., raw material usage, control device usage configuration, equipment modifications).

- *Regulatory Predictability*: Imation indicated that the flexible permit eliminated almost entirely the uncertainty associated with the applicability of construction permitting requirements to changes that exists under a conventional permit. Under the title V permit, Imation received advanced approval for its planned changes and the monitoring, recordkeeping, and reporting requirements where established to cover these situations. Imation representatives found that they no longer had to dwell on whether or not a proposed change triggered minor NSR construction permitting or air toxics approval, so long as the desired change fit within the advance approval provisions of the permit. Imation representatives further stated that the flexible permit eliminated any incentive to "push the interpretation of permitting requirements" in a direction that does not require DEQ notification or approval. Alternatively, the flexible permit encouraged Imation staff to communicate with DEQ staff both because they had an "asset to protect" (their flexible permit) and because the consequences of discussions with DEQ were known in advance and unlikely to produce operational delay for the source. Imation representatives indicated that this change in the incentives associated with the flexible permit led to an increase in communication between Imation and DEQ during the permit term.

- *Facilitated Pollution Prevention*: With respect to pollution prevention, Imation representatives indicated that the flexible permit, by creating a more operational change friendly environment, lowered the administrative time and uncertainty associated with undertaking iterative operational change, such as changing raw materials used, needed to increase the resource productivity of its operations and reduce VOC emissions. The

requirements for Imation to establish a formal P2 program and to periodically report to DEQ on P2 program performance also enabled Imation's environmental personnel to bolster internal organizational support for P2 efforts.

- *Increased Focus on Permit Compliance and P2*: Imation representatives indicated that the flexible permit has enabled Imation environmental staff to shift their focus from conducting regulatory applicability determinations and "clarifying permit requirements" to monitoring emissions, ensuring compliance with the permit requirements, and promoting P2 activities. They indicated that this shift in time allocation and focus has been facilitated by the reduced staff time necessary to conduct regulatory applicability determinations and prepare case-by-case permit applications for changes made during the permit term.

7.2 Did the flexible permit allow you (the source) to better plan your operations (e.g., longer planning horizon)? If so, how? Please give examples of activities that could be planned better with flexible permit, with details as to how typical permits do not allow similar planning.

Imation representatives stated that the advance approval provisions in the title V permit improved the predictability associated with air permitting requirements and time frames around specific types of changes. They indicated that this enabled corporate research and development staff to better plan pilot testing of new materials at the Weatherford facility, since the permit streamlined and clarified the administrative process for switching between alternative raw materials.

7.3 What P2 activities did you undertake during the term of the flexible permit?

7.3.a Which P2 activities, if any, would you have performed even without the flexible permit?

7.3.b Did having the flexible permit change the timing or extent of your P2 efforts?

7.3.c What emissions reductions were achieved as a result?

7.3.d How much environmental benefit do you perceive in P2 provisions?

7.3.e Have P2 provisions helped enhance permit flexibility and/or efficiency?

Imation representatives reported that the Weatherford facility has undertaken numerous P2 activities during the permit term (see partial list below). While it is likely that many of the P2 activities might have been undertaken by Imation in the absence of the flexible permit (due to the strong P2 culture that existed at Imation prior to the title V permit), Imation representatives stated that the title V permit created strong incentives for P2 and reduced the administrative "friction" (e.g., time, uncertainty) associated with making equipment and raw material changes that had P2 benefits.

Among other accomplishments, equipment and raw material changes enabled the facility to achieve a 11.09 percent improvement of the pounds of VOC emissions per unit prevented in Y2000 over the 1997 base year. This reduction exceeds the 5-year target of 10 percent net reduction in the January 1997 baseline emissions. The Imation Weatherford facility identified the following P2 accomplishments in their May 2001 P2 Program Executive Summary report to Oklahoma DEQ.

- Established the format for the Environmental Site Reviews and conducted nine P2 meetings.

- Set-up and maintained a file for recordkeeping of the P2 meetings, including overheads from the meeting presentations and copies of the minutes from each meeting.
- Reduction of the spacing between punched "cookies" implemented.
- Implemented recycling of scrap drives.
- Recycling film cores has been instituted.
- Reduced the number of parts cleaner tanks from eleven to three in Printing.
- Developed contents for P2 training and provided training to all Data Storage and Printing & Publishing Plants' employees, and key R&D lab personnel.
- Samples of PET film scrap sent to Agmet for evaluation. Sample of plastic shells and diskettes, as well as PET film scrap sent to Arrotin Plastics for evaluation.
- Completed evaluations of solvent for distillation purposes.
- Implemented wider film rolls in Data Storage to reduce PET film scrap.
- Estimated 1,400,000 pounds of waste materials recycled in Y2000.
- Improvements in Coating and Converting yields have been realized over the last 18 months.

7.4 How useful is the annual P2 report?

7.4.a How useful was it to have the source track P2 activities and their results?

Oklahoma DEQ representatives stated that they found the periodic (every 18 months) P2 Executive Summary Report prepared by the Imation Weatherford facility to be "very helpful" to the DEQ Air Quality Division staff. They indicated that it enables DEQ personnel and the public to be aware of actual P2 accomplishments that have been achieved under the permit term. The P2 Executive Summary Reports also include brief synopses of the quarterly P2 meetings held by selected Imation staff. Imation representatives indicated that the reports have been useful in ensuring that the facility's P2 accomplishments are documented. In addition, they indicated that formal tracking of progress towards the facility's 10 percent emissions reduction goal has increased facility personnel's awareness of and attentiveness to P2 activities.

7.5 Describe the type and amount of emissions reductions made to comply specifically with emissions caps/PALs (e.g., when you added or expanded units, or increased use of units, how did you ensure that emissions would stay below the PAL or emissions cap?).

7.5a Did your emissions per unit of production (e.g., lbs/widget or lbs/mmBTU) go down, stay the same or go up during the term of the flexible permit?

7.5.b In the absence of a PAL or emissions cap, please explain how you would have accommodated those same expansions or increases in use.

- **Would emissions may have differed?**
- **Would you have been able to net out of NSR/PSD review?**
- **Would you still have triggered title V permit modification tracks?**
- **Would you not have made the change?**

Imation representatives reported that per unit VOC emissions (normalized by production) during the permit term decreased by 11.09 percent as of the end of Y2000. With actual annual VOC emissions at about 90 tons/year in 2000, the facility remained significantly below the 249 tons/year PTE cap. Therefore, emissions reductions were not directly necessary for Imation to remain below the cap, although the facility does strive to maintain a sizable margin of compliance to minimize the risk of

non-compliance and to provide room for production expansion needs. Imation has also been driven to reduce per unit emissions to meet its 10 percent VOC emissions reduction goal.

In the absence of the flexible permit and PTE cap, Imation representatives indicated that they would likely have made many of the same changes made under the flexible permit, but that many would have been delayed by case-by-case air permitting review and approval processes. Without the advance approval provisions, corporate managers may have directed some new product experimentation and production projects to another Imation facility that was more conducive to accommodating change.

7.6 Did the timing and/or design of the PAL influence the timing of additional control equipment and/or pollution prevention? If so, how and why?

Oklahoma DEQ representatives stated that they do not believe that the timing or design of the flexible permit influenced the timing of additional control equipment, since the source had installed all its emissions control devices prior to discussions regarding the flexible permit. Prior to the issuance of the flexible permit, the Imation facility had installed the pollution control equipment, voluntarily controlling approximately 75 percent of facility emissions.

7.7 Do you believe any of the flexible approaches are transferable to other jurisdictions/sources? If so, which ones? For what sources? Why are these approaches transferable?

Oklahoma DEQ representatives indicated that they believe that the flexibility provisions contained in the Imation permit are potentially transferable to other sources in Oklahoma. In particular, they indicated that the advance approval provisions and streamlining associated with the air toxics program, as well as the advance-approved construction/modification of selected equipment, are approaches that could be applied to other sources. They added that these approaches would be most appropriate for sources that require quick recipe changes, and sources that know specifically what new construction may take place within the next five years. See section 1.18 for a discussion of the source selection considerations identified by DEQ representatives.

Imation representatives indicated that they believe that PTE cap, pre-approved NSR, pollution prevention and compliance demonstration through the PTE cap are transferable to other sources and jurisdictions. Imation representatives reported that their Camarillo, California facility has been issued a flexible air permit through EPA's Project XL initiative. They reported that the Camarillo facility permit contains several provisions that are similar in design to those contained in the Weatherford facility's permit.

7.8 Compare a conventional permitting approach to that taken under the flexible permits in terms of:

7.8.a Environmental performance, including emissions trends, emissions increases/reductions, emissions gaps between actual and allowable emissions, and other notable environmental results;

7.8.b Overall development effort and ongoing maintenance costs (what were/ have been the investments of both the permitting authority and the source?)

- **Which type of permit has more up-front costs (uses more resources)?**
- **What is the difference in up-front transaction costs?**
- **Which type of permit has fewer implementation costs?**
- **What is the difference in the implementation costs?**

7.8.c Number of permit actions/modifications required, as well as associated transaction costs or costs avoided (e.g., source reductions in opportunity cost, permitting authority value added for advance notice, of MRR, control devices, etc.)

See section 7.1 for a more detailed discussion of environmental performance and benefits associated with the flexible title V permit, and how these factors compare with conventional permitting scenarios.

Oklahoma DEQ representatives stated that they believe that the facility's VOC emissions performance was likely better under the flexible permit than it would have been under a conventional permit since the 249 tons/year PTE cap kept facility attention focused on emissions reduction and the permit required and facilitated P2 activity at the source.

Oklahoma DEQ representatives indicated that the flexible permit required more time to develop than a conventional title V permit. While some of this additional time was resulted from this being a pilot effort under which new permitting approaches were being pioneered (e.g., streamlined and advance-approved raw materials changes under the State Air Toxics Rule), some of the additional time resulted from the need to identify anticipated future changes and to address them up front in the permit development process. DEQ representatives indicated that some of the additional time resulting from development of the advance approval provisions will likely be unavoidable, although it should require less time at permit renewal since many aspects of Imation's likely change program are anticipated to continue into the future. DEQ representatives added that overall, they believe that "the flexible permit is much less expensive in time and manpower to implement" than a conventional title V permit. They attribute this to the savings associated with a reduced number of case-by-case permitting actions and permit modifications required during the permit term (see section 4.1 for additional discussion).

8. OTHER ISSUES

Future Flexible Permit Development

8.1 Do you anticipate any changes in the next version of the flexible permit?

8.1.a If so, what changes would you request/make (e.g., additions and subtractions) and why?

8.1.b Do you believe the existing regulations already provide for such changes? If so, how? If not, why not?

Both DEQ and Imation representatives reported that they have been very pleased with the implementation and performance of the flexibility provisions contained in Imation's title V permit. The Imation title V permit is set to expire in June of 2003. Imation will submit a permit renewal application by December 12, 2002 and expects to retain the flexibility provisions. KPG will submit its own individual title V permit application to cover their operations (color technologies, North Building). Oklahoma DEQ has granted Imation permission to allow KPG to operate under Imation's air permit until KPG obtains their own. KPG has indicated that they are also interested in obtaining the flexibility provisions contained in Imation's title V permit in their future permit. No additional desired modifications to the flexibility provisions were identified.

8.2 Do you believe there be any value added by EPA's finalizing guidance in this area? If not, why not? If so, how?

Oklahoma DEQ representatives indicated that they see significant value in EPA's finalization of guidance associated with flexible permitting techniques. They indicated that industries and regulating authorities must be encouraged to continue to develop innovative ideas that will improve air quality. They believe that " guidance will help speed the permit development process" associated with flexible permits. Imation representatives stated that they are highly supportive of EPA finalizing guidance that would ensure that the types of flexibility provisions utilized in the Weatherford plant permit could be applied to other sources. Imation has facilities in Tucson, Arizona; Nekoosa, Wisconsin; and Oakdale, Minnesota that could potentially benefit from flexible permits.

8.3 Will you have any flexible permit writing/implementation training needs?

Oklahoma DEQ representatives indicated that basic training on flexible permit writing for permit engineers would be useful. DEQ engineers are interested in being exposed to innovative flexible permitting approaches that have been developed in other jurisdictions.

8.4 Do you have recommendations for web-site materials?

Oklahoma DEQ indicated that web-site materials on flexible permitting techniques, similar to the EPA RACT/BACT/LAER Clearinghouse would be beneficial. DEQ representatives indicated that case study information regarding flexible permitting approaches developed in other jurisdictions would be useful, particularly if they focused on permits covering a variety of source types (e.g., sources in different industries), a variety of flexibility techniques, as well as approaches that worked well and not so well. Information on lessons learned from other flexible permitting projects would also be beneficial.

8.5 What else could EPA do to limit the up-front design costs?

Oklahoma DEQ expressed the need to raise awareness among EPA Regional Offices about flexible permitting approaches, and to ensure that there is common understanding throughout EPA with regard to expectations associated with flexible permitting techniques and requirements. DEQ representatives indicated that clear guidance and consistent EPA Regional understanding of flexible permitting techniques would decrease the time needed for permitting authorities to interact with EPA Regions during the development of flexible permits, and in turn would decrease up-front design costs.

8.6 How do you predict your up-front transactions costs would have compared if you had undertaken the same flexible permit for the same source with EPA guidance and the mentioned support structure already in place?

With a support structure already in place and EPA guidance, Oklahoma DEQ representatives indicated that the time needed to write the initial flexible permit would by as much as 50 percent, decreasing DEQ's permit development costs (e.g., staff time) by similar percentages.

8.7 How much time do you believe must pass before the reduced costs of overseeing the flexible permit would compensate for the higher up-front design cost?

Oklahoma DEQ representatives suggested that approximately one year would have to pass before the higher up-front design costs would compensate for the reduced cost of overseeing the flexible permit (e.g., processing case-by-case construction permitting actions and other changes that could be advance-approved under the flexible permit). They added that the length of the "payback "period will vary depending on the source's utilization of advance approval provisions, as well as the amount of time necessary to develop the permit (e.g., which could be affected by the availability of EPA guidance).

Source Screening Criteria

8.8 What criteria should be used to reject inappropriate flexibility proposals from sources (e.g., relevance of compliance history, P2 commitment, potential for environmental benefit, sustainable compliance over the long term)?

See section 1.18 for a discussion of criteria for determining the appropriateness of flexible permitting techniques for a source candidate.

Public Outreach

8.9 How can these permits be better communicated to the public (e.g., consistency with air program goals; potential improvements to monitoring, recordkeeping, reporting, etc.)?

To enhance the public communication around flexible permits, Oklahoma DEQ representatives suggested that adding a member of the public or local government to the permit and P2 negotiations in preparation of a draft permit could help ensure that local concerns (if any) are adequately addressed during permit development. They also suggested that pre-application public meetings be organized by the source to attain public input prior to permit application. Oklahoma DEQ indicated that the permit applicant should be the one communicating their needs to the public rather than the permitting authority. They added that partnerships and dialogue between applicants and the local community should occur in any permitting process.

8.10 What fact sheets would be useful to the permitting authority, source and the public?

See section 8.4 for a discussion of information that DEQ representatives believe would be helpful to sources and permitting authorities interested in flexible permitting approaches.

8.11 When and how should up-front meetings (i.e., before the public comment period) be used to address potential public concerns? How should concerns from those meetings be addressed?

See section 8.9.