REVISIONS TO THE STATE IMPLEMENTATION PLAN (SIP)

FOR THE CONTROL OF LEAD AIR POLLUTION

1993 LEAD SIP FOR COLLIN COUNTY

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E. LEAD (Revised.)

1. 1980 STATE IMPLEMENTATION PLAN (SIP) FOR THE CONTROL OF LEAD AIR POLLUTION (No change.)

I. - X. (No change.)

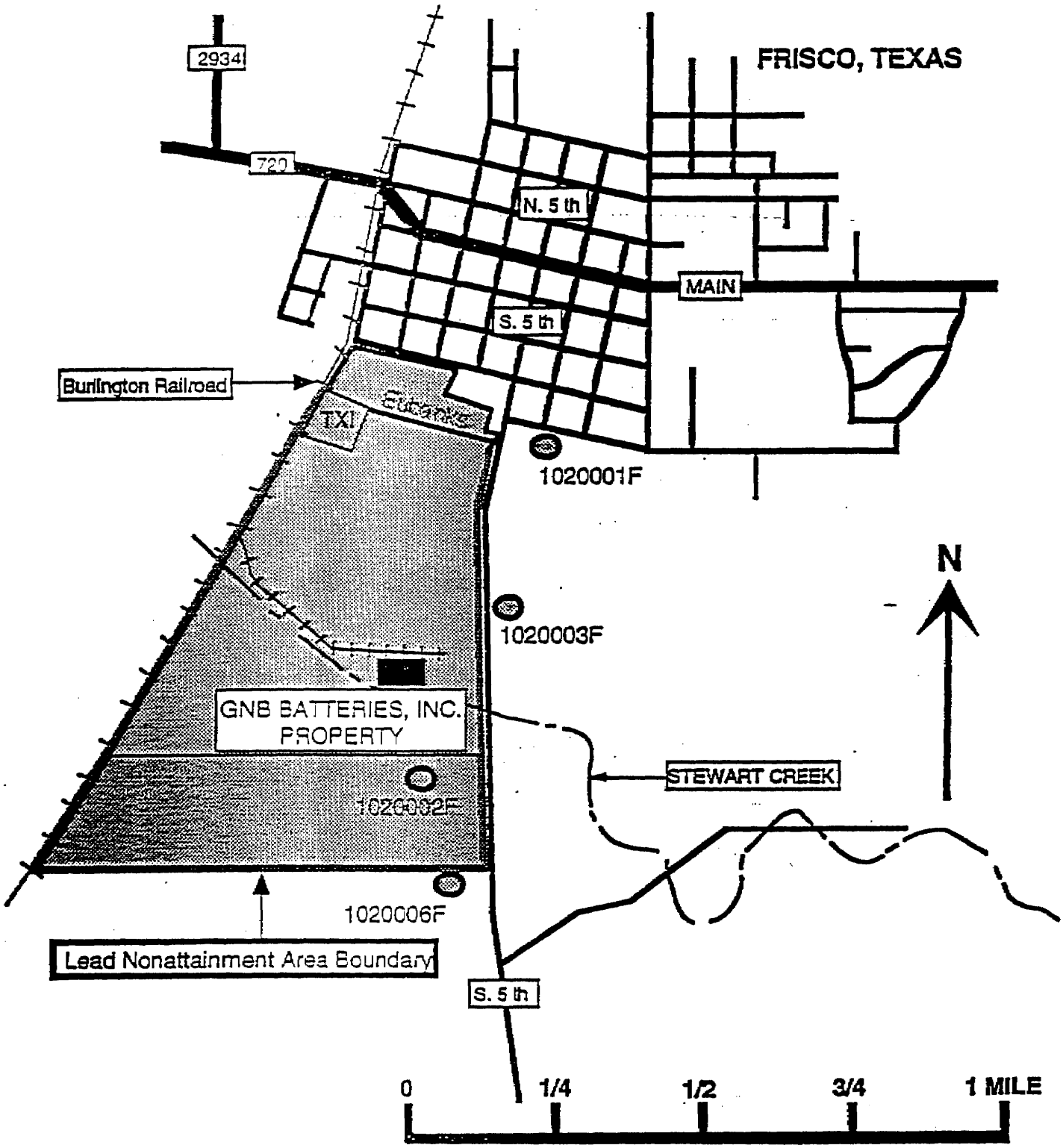
2. 1993 LEAD SIP REVISIONS FOR COLLIN COUNTY (New.)

a. General

On November 15, 1990, Congress passed the Federal Clean Air Act (FCAA) Amendments of 1990. Title I of the FCAA Amendments revised the requirements for areas that have been designated nonattainment for lead. The FCAA, Subparts 1 and 5 of Part D of Title I, requires areas which are designated as nonattainment for the lead National Ambient Air Quality Standard (NAAQS) to submit an attainment demonstration within 18 months of the designation, and to reach attainment within five years from the date of nonattainment designation. The U.S. Environmental Protection Agency (EPA) published the notice of nonattainment designation in the November 6, 1991 issue of the Federal Register, page 56694, for the portion of Collin County (see FIGURE 1) which essentially encompasses the plant boundaries of the Gould National Battery, Incorporated (GNB) facility. The effective date of the

FIGURE 1

LEAD NONATTAINMENT AREA BOUNDARY
FRISCO, COLLIN COUNTY, TEXAS



nonattainment designation was January 6, 1992. Under these guidelines, the Texas Air Control Board (TACB) must submit the SIP to EPA no later than July 6, 1993, and the Collin County nonattainment area must attain the NAAQS by January 6, 1997.

Highlights of the 1993 SIP revision include an air quality analysis current through the fourth quarter of 1992, a 1992 emissions inventory, dispersion modeling which demonstrates NAAQS attainment for the area, Board Order Number 92-09(k), contingency measures in Board Order Number 93-12, and new source review provisions for lead sources.

b. Air Quality Analysis

1) Lead Monitoring Sites

Since 1981, lead has been monitored continuously at a residential location (1020001F) in Collin County approximately 1/2 mile northeast of the GNB facility. One property line site (1020003F) has been monitored since 1984, and a second property line site (1020002F) was monitored continuously from 1984 until February 28, 1992 at which time it was deactivated because the fenceline of the GNB facility was moved approximately 1,000 feet to the south. A new property line site (1020006F) was activated at the new fenceline and has been monitored continuously since May 18, 1992. Approximate locations of the monitoring sites are

shown in FIGURE 1. The property line site (1020002F) located south of the facility recorded violations of the lead NAAQS in 1985, 1989, and 1990. The other lead monitors have consistently recorded levels well below the lead standard. FIGURE 2 shows the quarterly monitored averages for 1990-1992.

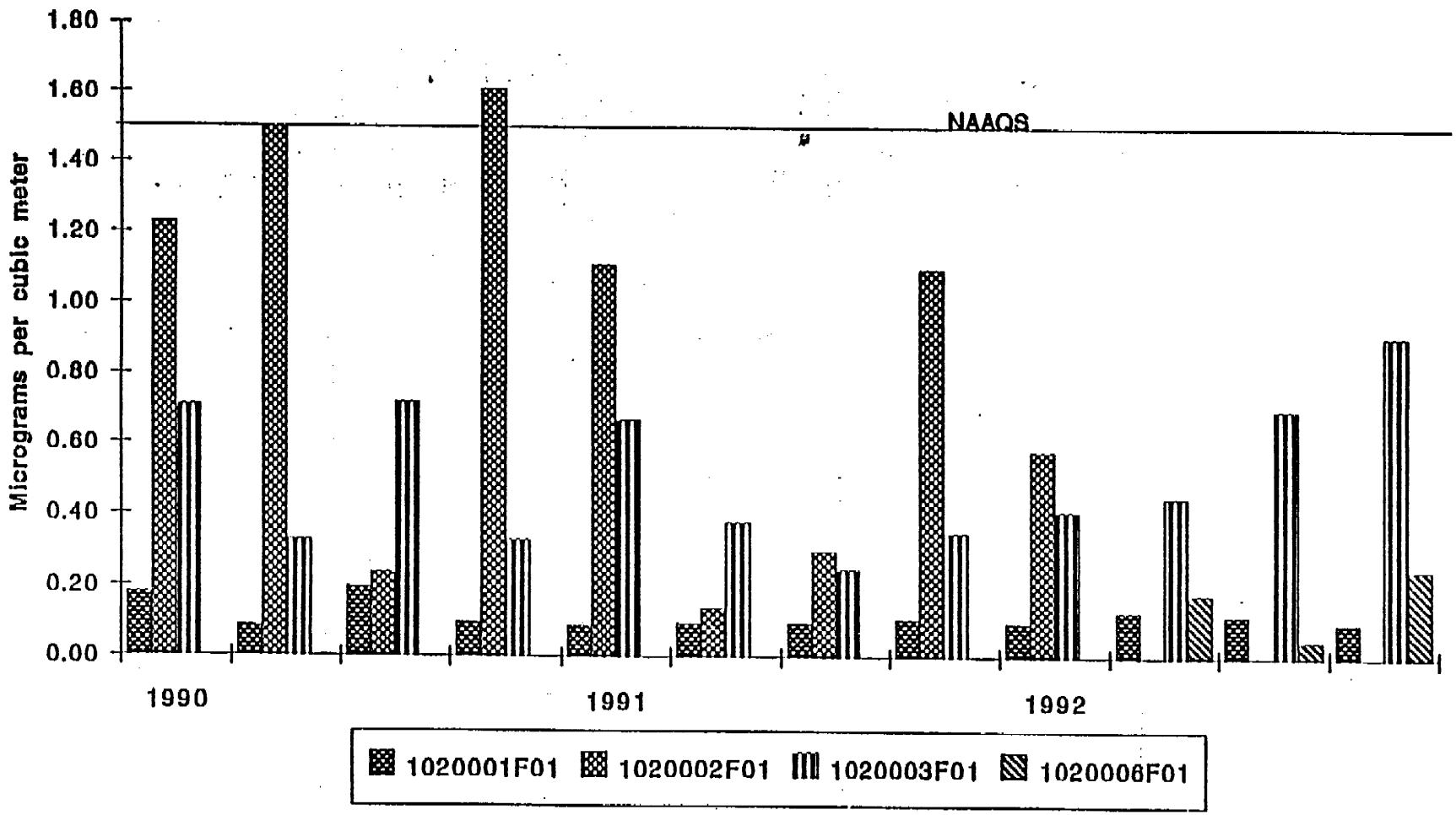
Notices of violation were issued to the facility following violation of the NAAQS in 1989 and 1990 with requirements for implementing additional controls. Special provisions were included in amendments to Permits R-1147A and R-5466D issued to the facility in 1990, and Board Order Number 92-09(k) was signed October 16, 1992 to assure maintenance of the lead NAAQS. The facility has completed the installation of additional emission controls and operating procedures specified in the special provisions and the Board Order with the exception of the baghouse for the raw material storage building scheduled for installation in 1993. These controls and operating procedures are expected to prevent future violations of the lead NAAQS.

2) Summary of Measured Lead Concentrations

The NAAQS for lead is a quarterly arithmetic average of 1.5 micrograms per cubic meter ($\mu g/m^3$). Monitors 1020001 and 1020003 have consistently recorded levels well below the lead NAAQS, and monitor 1020006 has recorded levels well below the lead NAAQS

FIGURE 2

FRISCO LEAD QUARTERLY SUMMARY



since it began operation in May 1992. FIGURE 3 lists the 1990-1992 quarterly monitored averages for each of the TACB lead monitors in Collin County.

c. Emissions Inventory

As part of the program to comply with the lead NAAQS, the TACB is required to compile emissions inventory data for the lead nonattainment area. The 1992 lead emissions inventory for the Collin County lead nonattainment area, Appendix A, consisted of a review of the lead stationary source emissions from the facilities located within the nonattainment area. The only facility which produces lead emissions within the nonattainment area is GNB. The GNB facility emits a total of 4.27 tons per year of lead.

d. Attainment Demonstration

The dispersion modeling simulation of quarterly lead impacts in Collin County, Texas, demonstrates attainment and is included in APPENDIX B. Modeling was based upon emissions data provided by GNB. Off-property emissions data was derived from a 50 kilometer radius search in the TACB Point Source Data Base. The modeling was performed using the latest version of Industrial Source Complex (ISC2) (ISCLT2-92273) for five years of meteorological data (1985-1989) to determine the maximum quarterly average lead impact.

FIGURE 3

Summary of Quarterly Lead Averages (1990 - 1992)

Monitor	Average $\mu g/m^3$	Quarter	Year
1020001F01	0.18	1	1990
	0.09	2	1990
	0.20	3	1990
	0.10	4	1990
	0.09	1	1991
	0.10	2	1991
	0.10	3	1991
	0.11	4	1991
	0.10	1	1992
	0.13	2	1992
	0.12	3	1992
	0.10	4	1992
1020002F01	1.23	1	1990
	1.50	2	1990
	0.24	3	1990
	1.61	4	1990
	1.11	1	1991
	0.14	2	1991
	0.30	3	1991
	1.10	4	1991
	0.58	1	1992
1020003F01	0.71	1	1990
	0.33	2	1990
	0.72	3	1990
	0.33	4	1990
	0.67	1	1991
	0.38	2	1991
	0.25	3	1991
	0.35	4	1991
	0.41	1	1992
	0.45	2	1992
	0.70	3	1992
	0.91	4	1992
1020006F01	0.18	2	1992
	0.05	3	1992
	0.25	4	1992

The maximum predicted quarterly arithmetic mean impact (0.48 $\mu g/m^3$) was modeled with meteorological data from the third quarter of 1986. The location of the modeled maximum was just north of the GNB facility, very near the property line. The results show that Collin County is in compliance with the lead NAAQS of 1.5 $\mu g/m^3$ (based on a quarterly arithmetic mean).

e. Control Plans

1) Board Order

During the fourth quarter of 1990, an ambient lead concentration of 1.6 $\mu g/m^3$ was monitored. Agreed Board Order 92-09(k), see APPENDIX C, required numerous control measures to be implemented at the GNB facility in order to prevent recurrence of the NAAQS exceedance. At this time, all of the control measures have been implemented with the exception of the addition of a baghouse to control emissions from the raw material storage building. The remaining measure is anticipated to be completed during calendar year 1993.

2) Available Control Measures

The FCAA as amended in 1990, §172(c)(1), requires that nonattainment area plans provide for "... such reductions in emissions from existing sources in the nonattainment area as may be

obtained through the adoption, at a minimum, of reasonable available control technology." Available control measures for fugitive dust control are found in "Control of Open Fugitive Dust Sources" (EPA-450/3-88-008 September 1988). The list is repeated below, along with the status of GNB's implementation of those control measures.

(a) Pave, vegetate, or chemically stabilize access points where unpaved traffic surfaces adjoin paved roads. All process related traffic surfaces have been paved within the confines of the GNB property.

(b) Require dust control plans for construction or land-clearing projects. GNB does not have any construction plans at this time; however, dust control plans are a reasonable method of minimizing the lead emissions during a construction project. A dust control plan is required to be submitted as part of the permit application for any construction or land-clearing projects within the confines of the GNB property.

(c) Require haul trucks to be covered. All haul trucks are required to be covered within the confines of the GNB property.

(d) Provide for traffic rerouting or rapid clean up of temporary (and not readily preventable) sources of dust on

paved roads (water erosion runoff, mud/dirt carry out areas, material spills, skid control sand). Delineate who is responsible for cleanup. In accordance with Board Order 92-09(k), vacuum sweeping of the operating plant yard is required twice daily, and yard surfaces must maintained with smooth surfaces to facilitate cleaning.

(e) Require paving, chemically stabilizing, or otherwise stabilizing permanent unpaved haul roads, and parking or staging areas at commercial, municipal, or industrial facilities. The GNB facility has paved surfaces on all haul roads, parking, and staging areas.

(f) Develop traffic reduction plans for unpaved roads. Use speed bumps, low speed limits, etc., to encourage use of other (paved) roads. The GNB facility has two road sections which are not paved. One road extends from a gate on the southeast fence of the facility to one Frisco City Municipal wastewater treatment plant. The only users of the road are city employees who must access the road through a locked GNB gate. No GNB process traffic uses this road. The other unpaved road is a short section adjacent to the on-site GNB landfill. The road is paved from the main facility over the railroad spur and almost to the landfill. The road is only accessible to and used by GNB employees to transport fixated slag to the landfill. The two road sections are stabilized with crushed stone.

(g) Limit use of recreational vehicles on open land (e.g., confine operations to specific areas, require use permits, outright ban). This control measure does not apply to the GNB facility because recreational vehicles are not allowed on open land within the confines of the GNB property.

(h) Require improved material specification for and reduction of usage of skid control sand or salt (e.g., require use of coarse, non-friable material during snow and ice season). Skid control sand or salt is not used within the confines of the GNB property.

(i) Require curbing and pave or stabilize (chemically or with vegetation) shoulders of paved roads. All paved roads within the confines of the GNB property are diked and curbed, and all runoff is collected and treated at a collection facility.

(j) Pave or chemically stabilize unpaved roads. All roads within the confines of the GNB property are paved, except as stated in paragraph 2.e.2(f).

(k) Pave, vegetate, or chemically stabilize unpaved parking. All parking within the confines of the GNB property is paved.

(l) Require dust control measures for material storage piles. In accordance with Board Order 92-09(k), the raw material storage has been enclosed and plastic strip curtains have been installed to reduce fugitive emissions. In addition, the wet broken battery storage area is covered with a roof extension from the battery breaking building.

(m) Provide for storm water drainage to prevent water erosion onto paved roads. All paved roads within the confines of the GNB property are diked and curbed, and all runoff is collected and treated at an on-site collection facility.

(n) Require revegetation, chemical stabilization, or other abatement of wind erodible soil, including lands subjected to water mining, abandoned farms, and abandoned construction sites. In accordance with Board Order 92-09(k), the public shooting range located on the south side of the plant was closed to the public and covered with vegetation. All wind erodible soil within the confines of the GNB property is covered with vegetation. The vast majority of the vegetation is a thick grass, while a portion of the property is used to grow row crops such as cotton.

(o) Rely upon the soil conservation requirements (e.g., conservation plans, conservation reserve) of the Food Security Act to reduce emissions from agricultural operations.

Agricultural operations within the confines of the GNB property use soil conservation measures by maintaining a vegetation cover on the land as much as possible.

3) Contingency Measures

The FCAA as amended in 1990, §172(c)(9), states that contingency measures must be included in the SIP for a lead nonattainment area and shall "take effect...without further action by the State or the Administrator." The TACB interprets this requirement to mean that no further rulemaking actions by the state would be needed to implement a contingency measure. However, certain actions, such as the notification of the source or modification of permits, would probably be needed before a measure could be implemented. The TACB intends to implement any contingency measure through the Board Order process upon the determination that the NAAQS has been exceeded during the monitoring period for attainment. A general list of contingency measures is stated below, although the TACB reserves the right to modify any contingency measure as appropriate during the Board Order process. Agreed Board Order 93-12, Appendix D, lists the specific contingency measures and the associated compliance schedules which will be implemented in the case of a future NAAQS exceedance.

(a) Secondary collection systems, such as baghouses, will be added to processes which only have a single collection system.

(b) Process areas, such as the furnace areas, and material storage piles, such as the wet battery breaker storage, which are not fully enclosed, will be fully enclosed and placed under negative pressure.

(c) Operating and maintenance procedures will be improved to reduce the occurrence of malfunctions, such as bag breakthrough in baghouses.

4) New Source Review

Future modifications of the existing GNB facility may affect lead emission rates. Since 1972, all new or modified stationary emission sources in Texas have been required to apply best available control technology to control emissions. As a result of the FCAA Amendments of 1990, a nonattainment new source review (NSR) program is required for all lead nonattainment areas. The lead nonattainment NSR program for Texas became effective on November 15, 1992; therefore, new major sources and major modifications to existing sources in lead nonattainment areas are required to control emissions to the lowest achievable emission rate (LAER) as defined in the FCAA. In addition, lead emissions from new

facilities emitting more than 100 tons per year (or modification of existing facilities that result in a projected increase of 0.6 tons per year) must be offset according to the requirements of TACB Regulation VI, Control of Air Pollution By Permits For New Construction or Modification. The increased emissions must be offset at a ratio greater than one to one.

5) Rules and Regulations

This plan requires no changes or additions to TACB Rules and Regulations. Legally enforceable Board Orders and permits will be used to ensure compliance with the NAAQS for lead.

6) Source Surveillance

Procedures for source surveillance of lead emissions sources are similar to those for sources of other pollutants with the exception that the provisions of the Board Orders and permits will be used as the criteria for determining compliance, rather than a regulation. This surveillance includes monitoring the compliance status of the emissions sources, periodic testing and investigation of the emissions sources, investigation and resolution of complaints, and automatic data processing of management reports. The permits state that compliance must be in accordance with 40 CFR Part 60, Appendix A, specify maximum allowable emission rates, specify production rates, and state the types of sampling

or monitoring required for each point source. In addition, the permits state the types of records to be kept, the frequency of recording, and the retention time for the records.

7) Compliance Schedules

Legally enforceable compliance schedules and source surveillance procedures have been incorporated in the appropriate Board Orders. The emissions sources will be monitored in accordance with the Board Orders to ensure achievement of the lead standard by the required compliance date and continued maintenance of the standard.

f. Reasonable Further Progress

The FCAA, §172(c)(2), states that the SIP must provide for reasonable further progress (RFP). The TACB does not consider that the requirement for linear progress to maintain RFP is appropriate for the Collin County lead nonattainment area, because the relationship between the GNB source and air quality is relatively well defined. The emission controls which have been implemented in response to the 1990 NAAQS exceedance have resulted in swift and dramatic improvement in air quality. FIGURE 2 demonstrates this improvement in ambient air quality with no exceedances since 1990. The compliance schedule

associated with Board Order 92-09(k) requires that the necessary controls be implemented in 1993.

g. Legal Authority

The State of Texas has the legal authority necessary to implement the control strategy for lead under provisions of the Texas Clean Air Act (Section 382.012, State Air Control Plan, and Section 382.017, Rules).