

REVISIONS TO THE STATE IMPLEMENTATION PLAN (SIP)
FOR THE CONTROL OF LEAD AIR POLLUTION

1999 COLLIN COUNTY REDESIGNATION AND MAINTENANCE PLAN FOR LEAD

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
12124 PARK 35 CIRCLE
AUSTIN, TEXAS 78753

RULE LOG NUMBER 98023-SIP-AI

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**1999 COLLIN COUNTY REDESIGNATION AND MAINTENANCE PLAN FOR LEAD
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CHAPTER 1 : GENERAL BACKGROUND

On November 6, 1991, the U.S. Environmental Protection Agency (EPA) published the notice of nonattainment designation in 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 facility, now known as GNB Technologies, Inc. (GNB). The effective date of the nonattainment designation was January 6, 1992. Under the Federal Guidelines, the Texas Air Control Board (TACB) responded by submitting a site-specific State Implementation Plan (SIP) to EPA on June 18, 1993. Under the Federal Clean Air Act (FCAA), the Collin County nonattainment area was required to attain the National Ambient Air Quality Standards (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 state new source review provisions for lead sources.

CHAPTER 2 : ATTAINMENT OF THE STANDARD/AIR QUALITY ANALYSIS

2.1 LEAD MONITORING SITES

Since 1981, lead has been monitored continuously at a residential location (1020001F/480850001) in Collin County approximately ½ mile northeast of the GNB facility. One property line site (1020003F/480850003) 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 on May 18, 1992 at the new fenceline and was operated until December 1996. Approximate locations of the GNB property line and location of the monitoring sites from 1993 are shown in FIGURE 1. FIGURE 1a shows the approximate location of the monitoring sites currently being operated. The property line site (1020002F) located south of the facility recorded violations of the lead NAAQS in 1985, 1989, and 1990. This monitor was operated until 1992 and recorded no violations to the lead NAAQS during the period of 1991- 1992. The north lead monitor (1020009F/480850009) has been operated since January 1995 and consistently records levels well below the lead standard.

2.2 SUMMARY OF MEASURED LEAD CONCENTRATIONS

The NAAQS for lead is a quarterly arithmetic average of 1.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Monitors 1020001, 1020003, and 1020009 have consistently recorded levels well below the lead NAAQS. FIGURE 2 lists the 1995-1998 quarterly monitored averages for each of the TACB lead monitors in Collin County.

FIGURE 1

LEAD NONATTAINMENT AREA BOUNDARY
FRISCO, COLLIN COUNTY, TEXAS

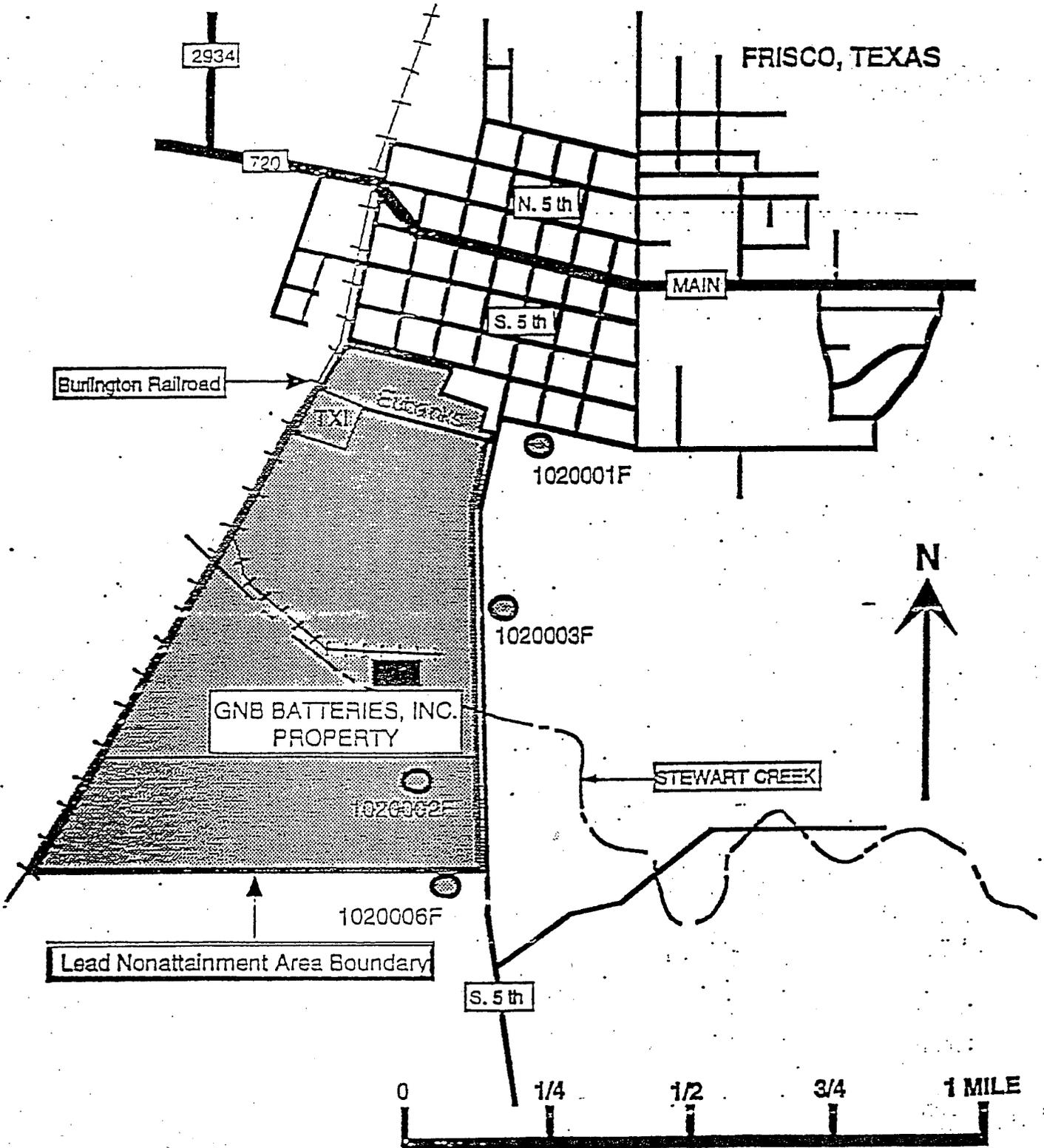


FIGURE 2

AIRS No.	Calendar Year	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
480850001	1995	0.21	0.09	0.07	0.03
	1996	0.03	0.03	0.06	0.09
	1997	0.07	0.03	0.09	0.06
	1998	0.03	0.07		
480850003	1995	0.51	0.33	0.20	0.09
	1996	0.17	0.11	0.24	0.22
	1997	0.22	0.15	0.35	0.18
	1998	0.11	0.27		
480850009	1995	0.39	0.67	0.69	0.28
	1996	0.48	0.69	0.20	0.32
	1997	0.27	0.35	0.45	0.28
	1998	0.36	0.67		

CHAPTER 3 : FULLY APPROVED §110(K) SIP FOR THE AREA

Before an area can be redesignated to attainment, the area must have a fully approved SIP under §110(k) of the FCAA and all applicable requirements must have been satisfied. The Lead SIP for Collin County was submitted to EPA for approval on June 18, 1993. On November 29, 1994, EPA published the approval of the SIP in *Federal Register* notice [TX-32-1-6057a; FRL-5093-5].

CHAPTER 4 : PERMANENT AND ENFORCEABLE IMPROVEMENT IN AIR QUALITY

As part of the redesignation request, the state must show that the improvement in air quality can be attributed to reductions which are permanent and enforceable. The 1993 Collin County Lead SIP noted that:

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 Agreed Board Order with the exception of the baghouse for the raw material storage building scheduled for installation in 1993.

The provisions contained in the agreed order, which have been incorporated into GNB's permits, and additional permit amendments, which have occurred since 1993, constitute permanent and enforceable reductions as shown in Appendix A. The state will maintain the permanence of these reductions through GNB's permits and GNB's compliance with the emissions limits and standard operating procedures for process sources, process fugitive sources, and fugitive dust sources from the National Emission Standards for Hazardous Air Pollutants From Secondary Lead Smelters (lead maximum achievable control technology (MACT)).

CHAPTER 5 : MAINTENANCE PLAN

Under §175A. Maintenance Plans of the FCAA, the state must submit a revision to the SIP to provide for the maintenance of the NAAQS.

5.1 ATTAINMENT EMISSIONS INVENTORY

As part of the program to comply with the lead NAAQS, the then TACB compiled emissions inventory data for the Collin County lead nonattainment area. The 1992 lead emissions inventory for Collin County 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 which in 1993 emitted a total of 4.27 tons per year of lead. The 1993 Lead SIP contained an attainment demonstration using dispersion modeling simulation of quarterly lead impacts in Collin County, Texas and was based on 4.27 tons per year of lead emissions. 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. Therefore, based on the 1993 attainment demonstration, the attainment inventory necessary to attain and maintain the Lead NAAQS is 4.27 tons per year.

5.2 MAINTENANCE DEMONSTRATION

EPA's 1992 guidance states, a State can generally demonstrate maintenance of the NAAQS by either showing that future emissions of a pollutant or its precursors will not exceed the level of the attainment inventory or by modeling to show that the future mix of sources and emission rates will not cause a violation of the NAAQS."

Because the Collin County lead nonattainment area is site-specific, that is, the SIP is a site-specific SIP for the GNB facility, the maintenance demonstration method will be ambient monitoring combined with GNB's existing state new source review (NSR) permits and compliance with emissions limits and standard operating procedures for process sources, process fugitive sources, and fugitive dust sources from the lead MACT. Enforceable emissions limits established in the maximum allowable emissions rate tables (MAERTs) of GNB's NSR permits will ensure that the lead NAAQS is maintained. Any changes to GNB's MAERT emissions limits must be authorized through an amendment to Permits 1147A, 3048A, or a new permit issued pursuant to 30 TAC Chapter 116, supported by air dispersion modeling that demonstrates that such an increase will not cause a violation of the lead NAAQS. Further, GNB's compliance with emissions limits and standard operating procedures for process sources, process fugitive sources, and fugitive dust sources from the lead MACT will help in maintaining the 4.27 tons per year attainment inventory.

5.3 CONTINGENCY PLAN

Section 175A of the FCAA requires each maintenance plan to contain contingency provisions that will promptly correct any violations of the NAAQS that occurs after an area has been redesignated to attainment. In accordance with EPA guidance implementing the requirements of §175A, contingency plans are not required to be fully adopted and take effect without further action by the state but, rather, should ensure that contingency measures are expeditiously adopted when triggered. The contingency plan must also be an enforceable part of the SIP and should identify the measures to be adopted, a schedule and procedure for adoption and implementation, and a specific time constraint on action to be taken by the state. Additionally, the plan should identify specific indicators or triggers which will be used to determine when the contingency measures are to be implemented. The intent of the indicators

and triggers is to allow the state to take early action to address actual or potential violations of the lead NAAQS.

The 1993 Collin County Lead SIP contained a list of contingency measures that would take effect without further action by the state. These contingency measures were included as part of Agreed Board Order 93-12, Appendix D, which contained the list of specific contingency measures and the associated compliance schedules which were to be implemented in the case of future NAAQS exceedances. The following measures were listed in Agreed Order 93-12 as contingency measures. It should be noted that since the adoption of the Lead SIP, GNB has implemented the measures contained in the agreed order as shown below:

5.3.1 “Secondary collection systems, such as baghouses, will be added to processes which only have a single collection system.” GNB has added a supplemental ventilation baghouse to its metallurgical furnace operation (e.g., the reverberatory and blast furnaces).

5.3.2 “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.” GNB covered its blast furnace bins and installed a water spray system over the bin area. GNB also installed a baghouse at the raw materials storage building. Additionally, GNB installed a feed dryer and baghouse to reduce the possibility of reverberatory furnace explosions due to wet feed.

5.3.3 “Operating and maintenance procedures will be improved to reduce the occurrence of malfunctions, such as bag breakthrough in baghouses.” GNB has written and implemented detailed site operation and maintenance plans for its baghouse operations. GNB also installed a Triboflow® System in all baghouse ducts to detect upset conditions such as broken bags.

Therefore, because the contingency measures contained in Agreed Order 93-12 have been implemented, a new set of contingency measures is included in this redesignation SIP.

5.4 CONTINGENCY INDICATORS

For the purposes of the Collin County Redesignation SIP there will be two contingency indicators. The quarterly lead averages measured at the three ambient air quality monitoring sites around GNB will serve as the primary contingency indicator. A second indicator will be based on GNB's annual emissions inventory submission to the Texas Natural Resource Conservation Commission (TNRCC or commission). The quarterly measured averages will be taken from the TNRCC ambient air monitoring database. Estimated emissions will be determined using GNB's annual emissions inventory submittal.

5.5 TRIGGER LEVELS

Contingency measure implementation will be triggered based one of the following conditions:

5.5.1 If the $1.5 \mu\text{g}/\text{m}^3$ quarterly arithmetic average lead NAAQS is exceeded at any of the ambient air quality monitoring sites.

5.5.2 If the company's annual emissions inventory for lead exceeds the 4.27 tons per year attainment inventory, unless such an increase has been authorized through: (a) an amendment to Permits 1147A and/or 3048A and/or a new permit has been issued pursuant to 30 TAC Chapter 116; and (b) air dispersion modeling that has demonstrated that such an increase will not cause a violation of the lead NAAQS.

5.6 CONTINGENCY MEASURES

If at any time during the period of the maintenance plan, should trigger level conditions (1) or (2) above occur, the following contingency measures will be evaluated:

5.6.1 A new wheel washing facility will be installed to reduce fugitive emissions by reducing tracking in the yard area. The emissions reductions estimated to occur from implementation of this measure are 27 pounds of lead per year.

5.6.2 A scale and automatic tuyere punching device will be installed at the blast furnace to increase the feed and flux control and reduce fugitive lead emissions around the blast furnace. The emissions reductions estimated to occur from implementation of this measure are expected to be in excess of 30 pounds of lead per year.

5.6.3 An alternative measure proposed by GNB. The emissions reductions which occur as the result of the implementation of an alternative measure shall be at a minimum equivalent to those in 5.6.1 or 5.6.2. Any alternative contingency measure proposed by GNB must be approved by the Executive Director of the TNRCC prior to implementation.

5.6.4 Once a contingency indicator has been triggered, the Executive Director of the TNRCC shall notify GNB within 30 days of the discovery of the condition that the contingency measures listed in 5.6.1 or 5.6.2 or 5.6.3 must be evaluated and that at least one of the measures must be implemented. Within 60 days of such notification, GNB will inform the TNRCC as to which of the specified or alternative contingency measures will be implemented by GNB. GNB will complete the implementation of the selected contingency measure within 180 days of GNB's notification to the executive director of the TNRCC or within 180 days of the executive director's approval of an equivalent alternative measure.

5.7 MONITORING NETWORK

The current monitoring network consists of three ambient air monitors, one off-site receptor monitor and two property line monitors. The Commission commits to keep the monitors in place until the end of the 10-year maintenance period. The monitors will be used to determine when an exceedance of the lead NAAQS has occurred for the purpose of triggering contingency measure notification.

5.8 VERIFICATION OF CONTINUED ATTAINMENT

The State of Texas has the legal authority necessary to implement the control strategy for lead under provisions of the Texas Clean Air Act (§382.011 General Powers and Duties, §382.012, State Air Control Plan, §382.014 Emission Inventory, §382.023 Orders, §382.024 Factors in Issuing Orders and Determinations, and §382.051. Permitting Authority of Commission; Rules).

CHAPTER 6 : PETITION FOR REDESIGNATION TO ATTAINMENT

6.1 In accordance with EPA's guidance for redesignation, the area meets the following minimum requirements:

–a minimum of eight quarters of quality-assured ambient air monitoring data with no exceedances, an established attainment year emissions inventory;

–a fully approved SIP under §110(k) of the FCAA;

–permanent and enforceable improvements in air quality; and

–submittal of a maintenance plan.

6.2 Therefore, the TNRCC requests that the EPA, upon approval of the maintenance plan, redesignate Collin County to attainment for the lead NAAQS.

CHAPTER 7 : AGREED ORDER

In order to ensure continued enforcement of the control measures implemented in accordance with Board Order Number 92-09(k) and the contingency measures contained in Board Order Number 93-12, which the company has already implemented, and to make the new contingency measures enforceable, a new Agreed Order is included in the following pages.

APPENDIX A

AIR QUALITY PERMIT NUMBERS 3048a AND 1147A

Barry R. McBee, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
John M. Baker, *Commissioner*
Dan Pearson, *Executive Director*



TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

March 20, 1996

Mr. Carlos Liscano
Assistant Plant Manager
GNB TECHNOLOGIES, INC.
P.O. Box 250
Frisco, Texas 75034

Re: Permit Alteration
Permit No. 1147A
Battery Recycling Facility
Frisco, Collin County
Account ID No. CP-0029-G

Dear Mr. Liscano:

This is in response to your letter dated January 22, 1996, requesting to consolidate Permit No. 5466E into Permit No. 1147A with the subsequent change of the conditions and maximum allowable emission rates table (MAERT) of the referenced permit.

Pursuant to the authority conferred under Section 382.0511(b) of the Texas Clean Air Act, Texas Health and Safety Code, Chapter 382, and 30 TAC Section 116.116(b) (Regulation VI), Permit No. 1147A is altered and Permit No. 5466E is voided but remains on file. The altered permit conditions and MAERT are enclosed. Please attach these to your permit.

Your cooperation in this matter is appreciated. If you have further questions, please contact Mr. Earl Jones of our Office of Air Quality, New Source Review Division at (512) 239-1351.

Sincerely,


Dan Pearson
Executive Director

DP/EJ/ss

Enclosures

cc: Mr. Jesse Macias, Air Program Manager, Arlington

SPECIAL CONDITIONS

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EMISSION STANDARDS AND FUEL SPECIFICATION

1. This permit covers only those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and these sources are restricted to the emission limits and other conditions specified in that attached table. Compliance with these permitted emission limits is based on a maximum reverberatory furnace lead scrap feed rate of 20 tons per hour and a maximum blast furnace lead scrap feed rate of 12 tons per hour for a combined feed rate maximum total of 228,000 tons per year of feed comprised of recovered battery lead, acceptable lead bearing scrap as defined by the Resource Conservation and Recovery Act Part B Permit No. HW-50206 and Title 40 Code of Federal Regulations Part 266 (40 CFR 266) including Appendix XI, limestone, iron/steel scrap, coke and coke fines, sand, small amounts of reductant material, and furnace adjustment material.

Compliance is also based on a combined maximum reverberatory and blast furnace finished lead production rates of 400 tons per day and 72,000 tons per year.

2. This facility shall comply with all requirements of Environmental Protection Agency Regulations on Standards of Performance for New Stationary Sources promulgated for Secondary Lead Smelters in 40 CFR 60, Subpart L.

Emissions from this facility shall not cause or contribute to an exceedance of the National Ambient Air Quality Standard for lead at any of the following air monitoring sites:

Monitors No. 480850009, 480850001, 480850001 (QA), 480850003, and 480850006 operated by Texas Natural Resource Conservation Commission (TNRCC).

3. Natural gas used in the smelting/refining process shall be pipeline-quality, sweet natural gas which is currently defined by industry practices as containing no more than 0.25 grain of hydrogen sulfide (H_2S) and 5 grains of total sulfur per 100 dry standard cubic feet (dscf). To the extent the industry definition changes, the TNRCC Executive Director shall modify this permit to make it consistent with such definition provided, however, that in no event shall the definition ever provide limits in excess of 1.5 grains of H_2S and 30 grains of total sulphur per 100 dscf.

Fuel used in the blast furnace processes shall be high temperature coke with a maximum (by weight) ash content of 12 percent and a maximum (by weight) sulfur content of 1.3 percent. Materials that appear in 40 CFR 266, Appendix XI, may be used in the reverberatory or blast furnace consistent with the requirements of 40 CFR 266.100(c)(3). Plastic curtains shall not be added to the reverberatory or blast furnace feed stock.

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OPACITY/VISIBLE EMISSION LIMITATIONS

4. No visible emissions that result from the permitted activities shall leave the plant property boundary. If this condition is violated, further controls shall be installed and/or implemented as required to limit visible emissions.
5. Except for those periods described in TNRCC Section 111.111(a)(1)(E) of Regulation I, the stack sources listed on the table entitled "Emission Sources - Maximum Allowable Emission Rates" shall not exceed 5 percent opacity averaged over a six-minute period when adjusted for uncombined water vapor.
6. Fabric filter baghouses or cartridge filter dust collectors, properly installed and in good working order, shall control particulate matter (PM) emissions from Emission Point Nos. (EPNs) 18, 22, 37, 39, and 45. Particulate emissions from EPNs 18, 22, 39, and 45 shall not exceed 0.01 grains/dscf. Particulate emissions from EPNs 21 and 37 shall not exceed 0.015 grains/dscf.
7. The Wet Scrubbers associated with EPNs 38 and 46 shall be properly installed and maintained in good working order. The PM emissions from EPNs 38 and 46 shall not exceed 0.015 grains/dscf.
8. Opacity of fugitive emissions from material handling activities (defined for purposes of this permit as the storage, loading and unloading, transportation, lead pouring, or conveyance of any material, fuel, intermediate product, finished product, by-product or waste product) such as moving materials (either mechanically or with a front-end loader) shall be minimized using partial covers, watering, and/or good work practice operating procedures. In addition, material handling activities shall not cause any visible emissions to leave the plant property boundary.

OPERATIONAL LIMITATIONS AND WORK PRACTICES

9. The supplemental baghouse shall capture and control the blast furnace's fugitive emissions (including, but not limited to, the upper charging area) during normal operations and as long as this control system's baghouse is operational during furnace upset conditions. The system shall be installed and operated such that:
 - A. There shall be no visible emissions from the building that houses the blast furnace.
 - B. The hooding for each fugitive emission source shall maintain a negative airflow around the source (i.e., airflow, as indicated by anemometer or smoke indicator shall be inward toward the system's hooding such that all air around the source is pulled into the system hoods).

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- C. This system shall effectively capture not less than 80 percent of the blast furnace fugitive emissions which shall ultimately be exhausted from EPN 37.
10. The blast furnace chamber shall operate at a negative pressure and the exhaust gases shall be vented to a direct-fired (natural gas) afterburner equipped with a fully modulating 10 MMBTU/hour burner to oxidize volatile organic compounds and designed for a residence time of 1.0 second. The average minimum operating temperature of the afterburner chamber shall be 1500°F as measured near the midpoint of the afterburner chamber. The exit gases from the afterburner shall be cooled in a series of heat exchangers to approximately 275°F at the intake of the blast furnace baghouse. The blast furnace baghouse shall be vented to a wet spray scrubber that is common control for both the blast furnace and the reverberatory furnace with Stack EPN 38.
11. A system shall be installed for the reverberatory furnace to capture and control the furnace's fugitive emissions (including, but not limited to, the slag and metal tap areas and the charging area) during normal operations and as long as this control system's baghouse is operational during furnace upset conditions. The system shall be installed and operated such that:
 - A. There shall be no visible emissions from the building that houses the reverberatory furnace.
 - B. The hooding for each fugitive emission point shall maintain a negative airflow around the emissions point (i.e., airflow, as indicated by anemometer, smoke bomb, or smoke generator, shall be inward toward the system's hooding such that all air around the emissions point is pulled into the system hoods).
12. The reverberatory furnace shall operate with sufficient negative draft to remove smoke and fumes but still allow retention of as much heat as possible over the hearth and the smoke and fumes shall be vented to the reverberatory baghouse which exhausts to the Wet Spray Scrubber (EPN 38) which also controls the blast furnace baghouse exhaust. Hoods that control fugitive emissions shall be not less than 80 percent effective in capturing reverberatory fugitive emissions and shall be vented to either (1) the fugitive baghouse which also controls the fugitives from the blast furnace and exhausts to Stack EPN 37 or (2) the soft lead baghouse.
13. The motors of the blowers and fans used in the capture and control systems specified for the blast and reverberatory furnaces (Special Condition Nos. 9 and 11 above) shall include a control system to automatically restart the motors following power interruptions of less than five seconds.

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14. The hard lead, soft lead, and specialty alloy refining kettles and portable drossing pots shall be fitted with hoods that shall maintain a negative airflow into the system hoods. There shall be no visible emissions from the building that houses the refining kettles, and these controls shall be operated at all times these units are in operation.
15. The raw material storage building shall be equipped with doors on the north and west sides of the building which will be kept normally closed except when necessary. This building shall be kept under negative pressure at all times and vented to a dust collector. During feed shredder downtime, pallets and associated material may be broken or otherwise appropriately sized and fed to the blast furnace.
16. The battery breaker concrete pad shall be sloped downward toward the bins in order to minimize material runoff onto plant roads. The battery breaker operation emissions shall be controlled by a wet scrubber.
17. All wet scrubbers listed in this permit shall be maintained and operated as recommended by the manufacturer but the maintenance and operation requirements shall not be less than as follows:
 - A. The scrubbing solution for removal of sulfur dioxide (SO_2) in the metallurgical scrubber shall be maintained at or above a minimum pH set-point of 5.7 to be continuously monitored and adjusted as necessary.
 - B. The spray nozzles and general condition of the scrubber shall be visually inspected a minimum of once per quarter for the metallurgical scrubber and feed drier scrubber and once per week for the battery breaker scrubber, and any malfunction shall be corrected during this maintenance check. Spray nozzles not functioning with a full spray shall be replaced and not less than 85 percent of the spray nozzles shall be functioning with a full spray at all times.
 - C. There shall be a scheduled system for sludge removal consistent with the operational requirements of the scrubber.
18. Material transfer routes between battery breaking bins, raw material storage bins, reverberatory furnace charge bins, blast furnace charge bins, charge hoppers, charge bucket, and slag fixation building plus all acid sludge and slag transfer routes shall be paved with concrete smooth enough to assure effective vacuum sweeping and shall be swept completely clean a minimum of once daily.

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19. This condition applies to storage and transport of lead containing furnace raw material, such as battery plate and paste material, of lead powder, flue dust, lead oxide powder, collected bag filter dust, and other similar materials. This condition does not apply to storage and transport of whole, unbroken batteries or to clean lead ingots, sheets, or tubes or to other similar non-powdery materials.
- A. Outside storage of this material is limited to the following:
- (1) Damp battery breaking material in the battery breaking bins and blast furnace charge bins.
 - (2) Reverberatory slag in the blast furnace slag bins and/or raw material storage building, except during final cooling of reverb slag pots.
 - (3) Covered or enclosed transport containers or vehicles.
 - (4) Sealed barrels, sealed drums, or other sealed containers except during inspection and transport.
- B. There shall be no liquid leaks or material spills from any vehicles, barrels, drums, or any container listed in 19A (3) and (4) above, outside the plant containment area. Any spills shall be cleaned up as soon as possible.
- C. There shall be no emissions from any railcar loading or unloading of any materials at this facility.
- D. The transport of this material into the plant in over-the-road vehicles shall be as follows:
- (1) All such vehicles shall transport only sealed or covered containers; or
 - (2) The cargo compartments of said vehicles shall be covered or enclosed.
- E. Broken battery material and scrap lead materials for the blast furnace charge shall be handled as follows:
- (1) There shall be no visible outdoor fugitive emissions of this material above the roofline of the blast furnace storage bins and the refining building during storage, transport, or furnace charging.
 - (2) Material for the reverberatory furnace shall be stored in the raw materials storage building.

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- (3) Material stored in the battery breaker bins or blast furnace bins or transported to and from these bins shall be kept damp at all times. Material in the blast furnace bins shall be dampened to minimize fugitive emissions.
 - (4) If, due to extended non-working periods, there is insufficient material in the battery breaker bins for the blast furnace charge, then damp material may be taken from the raw material storage building. This material shall be dampened with sufficient water to prevent visible fugitive emissions during transfer and charging.
- F. Any spill of this material shall be cleaned up immediately. There shall be no visible emissions during the cleanup process.
20. The wheels of each over-the-road vehicle leaving the material storage areas shall be washed to remove residues.
 21. All in-plant roads and in-plant vehicle routes (including the material transfer routes) shall be swept a minimum of once a day using wet sweepers, vacuum sweepers, or by dampening the area prior to sweeping. No dry sweeping shall be allowed. Further, these roads and routes shall be scraped and washed as necessary to permit effective sweeping and prevent buildup of lead containing material. There shall be no visible emissions leaving the plant boundary from these roads or routes.
 22. The floors in the areas of the blast and reverberatory furnaces shall be cleaned as necessary to prevent buildup of lead containing material. There shall be no visible emissions from the refining building during this process.
 23. Collection, storage, and transport of collected material from bag filters and flues shall be accomplished using an enclosed or covered system.
 24. No emission source shall be operated unless all associated emission control systems are in operation and in good working order.
 25. General use roads, as described on the site map filed with the appropriate TNRCC Regional Office, shall be paved and cleaned as necessary to control the emission of dust to the minimum level possible under existing conditions. All other roads and traffic areas, as described on the map, shall be oiled or sprinkled with water and/or chemicals, as necessary, to control the emission of dust to the minimum level possible under existing conditions.

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26. Any particulate and flue dust collected from baghouses or ductwork shall be collected and transferred in enclosed or covered conveyors or covered containers to the reverberatory or blast furnace. The method of disposal of material collected by air pollution abatement equipment which is not returned to the process shall be approved by the Executive Director of TNRCC, if necessary.
27. The holder of this permit shall demonstrate that all hooding, duct, and collection systems are effective in minimizing fugitive emissions to as low a level as practicable with respect to the sources which they are controlling.

CONTINUOUS DEMONSTRATION OF COMPLIANCE

28. The TNRCC Executive Director may require at a later date that additional property line monitors are required for lead and/or SO₂. The TNRCC Executive Director may also at any time require stack testing, analyses, and other testing by an independent laboratory at the company's expense. If testing is required, the TNRCC Fort Worth Regional Office shall be notified a minimum of 45 days in advance of any tests and a pre-test meeting shall be held with the TNRCC to establish test parameters and dates. All required test data, reports, etc., shall be forwarded within 45 days of stack test and/or other tests to the TNRCC Fort Worth Regional Office with copy maintained on-site which must be made available upon request to any agent or representative of the TNRCC or local air control program having jurisdiction.

RECORDKEEPING

29. The company shall maintain on-site the following records for a rolling two-year period:
 - A. The number of batteries received daily and summed monthly and annually.
 - B. The type and daily quantity (tons) of scrap and/or lead contaminated material received for recycling of the lead. This daily tonnage shall be summed monthly and annually.
 - C. The type and daily quantity (tons) of all raw materials feed to the feeder dryer, reverberatory furnace, and blast furnace. This daily tonnage shall be summed monthly and annually.
 - D. The separate and designated daily melt lead production from each furnace. This daily tonnage shall be summed monthly and annually.
 - E. The total quantity of finished soft and hard lead produced from the refining kettles shall be recorded and summed monthly and annually.

SPECIAL CONDITIONS
Permit No. 1147A
Page 8

- F. The daily quantity molten lead recycled back into the reverberatory or blast furnaces for reprocessing shall be summed monthly and annually. If the recycled molten throughput exceeds 20,000 tons per year, the TNRCC Fort Worth Regional Office shall be notified.
- G. The hourly record of the blast furnace afterburner operating temperature.
- H. Any scheduled or unscheduled maintenance on any abatement equipment including (but not limited to) baghouses, scrubbers, pumps, piping, duct, hoods, sweeper, and water sprinkler vehicle system.

These and other records shall be made immediately available upon request of a TNRCC representative or any local air control program having jurisdiction.

- 30. GNB shall complete the proposed construction items within 18 months of the date of the approval of the consolidated permit for the battery recycling operations, Permit No. 1147A. Until completion of the proposed construction items, GNB will continue to operate as currently configured.

Dated 3-20-96

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit No. 1147A

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY
18	Hard Lead Ventilation Baghouse Stack	TSP	0.98	3.38
		PM ₁₀	0.98	3.38
		Pb	0.06	0.24
		NO _x	11.28	0.60
		SO ₂	0.04	0.17
		CO	8.26	4.26
		VOC	1.65	4.85
		Trace Compounds	0.01	0.01
21	Soft Lead Refining Baghouse Stack	TSP	1.58	5.99
		PM ₁₀	1.58	5.99
		SO ₂	5.33	12.49
		NO _x	11.92	9.33
		CO	26.44	64.14
		Pb	0.17	0.38
		VOC	15.39	48.23
		HCl	0.18	0.74
		H ₂ SO ₄	0.27	1.17
Trace Compounds	0.01	0.01		
22	Specialty Alloy Baghouse Stack	TSP	1.28	4.51
		PM ₁₀	1.28	4.51
		Pb	0.02	0.08
		NO _x	11.03	0.58
		SO ₂	0.42	1.00
		CO	8.08	5.00
		VOC	1.62	4.75
		Trace Metals	0.04	0.10
23	Refining Building Vacuum Stack	TSP	0.21	0.56
		PM ₁₀	0.21	0.56
		Pb	0.03	0.11

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY
37	Reverberatory/Blast Furnaces Fugitives Baghouse Stack	TSP	8.21	30.49
		PM ₁₀	8.21	30.49
		Pb	0.16	0.39
		NO _x	0.48	2.08
		SO ₂	21.68	68.31
		CO	8.75	28.32
		VOC	15.16	45.81
		HCl	0.21	0.92
		H ₂ SO ₄	2.82	12.34
		SiO ₂	0.02	0.03
		Trace Metals	0.01	0.04
38	Reverberatory/Blast Furnaces Metallurgical Scrubber Stack	TSP	4.63	19.12
		PM ₁₀	4.63	19.12
		Pb	0.64	1.62
		NO _x	14.60	59.53
		SO ₂	445.59	1199.51
		CO	298.58	1190.35
		VOC	7.61	33.32
		Cd	0.02	0.05
		SiO ₂	0.09	0.41
		HCl	0.74	3.23
		H ₂ SO ₄	4.96	21.74
Trace Metals	0.04	0.10		
45	Raw Material Storage/Shredder Baghouse Stack	TSP	2.85	10.57
		PM ₁₀	2.85	10.57
		Pb	0.06	0.22
48	Battery Breaker Scrubber Stack	TSP	2.45	4.68
		PM ₁₀	2.45	4.68
		Pb	0.06	0.13
		H ₂ SO ₄	0.06	0.14
48FUG	Battery Breaker Scrubber	H ₂ SO ₄	0.05	0.22
51	Sodium Bicarbonate Filter Vent	TSP	0.17	0.75
		PM ₁₀	0.17	0.75

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY
54	Soft Lead Kettle Heating	TSP	0.07	0.32
		PM ₁₀	0.07	0.32
		VOC	0.02	0.10
		NO _x	0.60	2.63
		CO	0.13	0.55
		SO ₂	<0.01	0.02
55	Hard Lead Kettle Heating	TSP	0.07	0.32
		PM ₁₀	0.07	0.32
		VOC	0.02	0.10
		NO _x	0.60	2.63
		CO	0.13	0.55
		SO ₂	<0.01	0.02
44	Raw Material Storage (4)	TSP	1.43	5.72
		PM ₁₀	0.72	2.86
		Pb	0.03	0.11
10 and 35	Furnace Fugitives (4)	TSP	1.83	8.00
		PM ₁₀	1.83	8.00
		Pb	0.27	1.20
		Cd	0.01	0.04
		Trace Metals	<0.01	<0.04
36	Refining/Casting (4)	TSP	0.03	0.10
		PM ₁₀	0.03	0.10
		Pb	<0.01	<0.01
		Trace Metals	<0.01	<0.01
52	Slag Handling (4)	TSP	0.07	0.31
		PM ₁₀	0.07	0.31
		Pb	0.01	0.05
		Trace Metals	<0.01	<0.01
41, 42, and 43	Vehicle Traffic (4)	TSP	--	0.63
		PM ₁₀	--	0.31
		Pb	--	0.31
53	Material Handling (4)	TSP	4.51	1.38
		PM ₁₀	0.45	0.14
		Pb	0.32	0.10

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY
39	Slag Fixation Baghouse Stack	TSP	1.71	3.12
		PM ₁₀	1.71	3.12
		Pb	0.12	0.11
		Al	0.05	0.10
49	Reagent Silo No.1 Baghouse Stack	TSP	0.36	0.38
		PM ₁₀	0.36	0.38
50	Reagent Silo No. 2 Baghouse Stack	TSP	0.36	0.38
		PM ₁₀	0.36	0.38

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources use area name or fugitive source name.
- (3) TSP - total suspended particulate matter including PM₁₀
 PM₁₀ - particulate matter less than 10 microns in diameter
 Pb - lead and lead compounds
 NO_x - total oxides of nitrogen
 SO₂ - sulfur dioxide
 CO - carbon monoxide
 VOC - volatile organic compounds as defined in General Rule 101.1
 HCl - hydrochloric acid mist/fumes
 H₂SO₄ - sulfuric acid mist/fumes
 SiO₂ - silica
 Cd - cadmium and cadmium compounds
 Al - aluminum
 Trace Compounds
 Trace Metals
- (4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.

* Emission rates are based on and the facilities are limited by the following maximum operating schedule and maximum production rates:

24 Hrs/day 7 Days/week 52 Weeks/year or 8,760 Hrs/year

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Maximum Allowable Molten Lead Production Rates:

Reverberatory Furnace: 20 Tons/hour

Blast Furnace: 12 Tons/hour

Combined Maximum Molten Lead Production: 400 Tons/day and 72,000 Tons/year

Dated 3-20-96

Barry R. McBee, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
John M. Baker, *Commissioner*
Dan Pearson, *Executive Director*



File

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

September 24, 1996

Mr. Carlos Liscano
Assistant Plant Manager
GNB Technologies, Inc.
P.O. Box 250
Frisco, Texas 75034

Re: Permit Alteration
Permit No. 3048A
Lead Oxide Production
Frisco, Collin County
Account ID No. CP-0029-G

Dear Mr. Liscano:

This is in response to your letter dated April 4, 1996 requesting alteration of the conditions and maximum allowable emission rates table (MAERT) of the referenced permit. We understand that you are requesting to consolidate Permit Nos. 5818A and 1589A into this permit.

Pursuant to the authority conferred under Section 382.0511(b) of the Texas Clean Air Act, Texas Health and Safety Code, Chapter 382, and 30 TAC Section 116.116(c) (Regulation VI), Permit No. 3048A is altered. The altered permit conditions and MAERT are enclosed. Please attach these to your permit.

Your cooperation in this matter is appreciated. If you have further questions, please contact Mr. Earl Jones of our Office of Air Quality, New Source Review Division at (512) 239-1351.

Sincerely,


Dan Pearson
Executive Director

DP/EJ/js

Enclosures

cc: Mr. Jesse Macias, Air Program Manager, Arlington

SPECIAL CONDITIONS

Permit No. 3048A

EMISSION STANDARDS AND FUEL SPECIFICATIONS

1. Emissions from this facility shall not cause or contribute to an exceedance of the National Ambient Air Quality Standard for lead at any location including (but not limited to) the following air monitoring sites:

Monitors No. 480850009, 480850001, 480850001 (QA), 480850003, and 480850006 operated by Texas Natural Resource Conservation Commission (TNRCC).

2. The total emissions of air contaminants from any of the sources shall not exceed the annual and hourly values stated on the attached table entitled "Emission Sources - Maximum Allowable Emission Rates." The values in this table are based on a maximum hourly production of 2,300 pounds of lead oxide per reactor and a maximum annual production of 58,300 tons of lead oxide.

OPACITY/VISIBLE EMISSION LIMITATIONS

3. Except for those periods described in TNRCC 30 TAC Section 111.111(a)(1)(E) (Regulation I), the stack sources listed on the table entitled "Emission Sources Maximum Allowable Emission Rates" shall not exceed 5 percent opacity averaged over a six-minute period when adjusted for uncombined water vapor.
4. No visible emissions that result from the permitted activities shall leave the plant property boundary. If this condition is violated, further controls shall be installed and/or implemented as required to limit visible emissions.

OPERATIONAL LIMITATIONS, WORK PRACTICES, AND PLANT DESIGN

5. All lead oxide spills shall be cleaned up immediately. Cleanup of these spills shall be accomplished with no visible emissions outside the oxide plant building.
6. An adequate number of filter replacement bags shall be kept on the site at all times. Bags weighing nine ounce/yard² or more shall be used in all baghouses.
7. Storage and transport of the collected material from all baghouses, fabric filters, and cyclones shall be accomplished using a covered system. Prior to processing in the furnace, used bag filters shall be stored inside an enclosed container.

SPECIAL CONDITIONS

Permit No. 3048A

Page 2

8. Enclosed conveyors shall be used to transport lead oxide through the plant. Emissions at all drop points shall be controlled by exhaust fans pulling air to baghouses or cartridge filter dust collectors. The conveyor covers are considered abatement equipment and shall be kept in good repair. Conveyor covers with holes larger than 1/4-inch in diameter or missing sections of covers shall not be considered in good repair.
9. The holder of this permit shall keep all air pollution control equipment in good repair and operating as represented in the permit application and as required in these conditions. For this permit, the air pollution control equipment consists of the baghouses, the fabric filters, and the conveyor system. If GNB or TNRCC should determine that any air pollution control equipment is not meeting the requirements of the first sentence of this special condition, GNB shall immediately cease operations at the facilities that are controlled by such air pollution control equipment.
10. The floor in the lead oxide production building shall be paved with concrete and cleaned as necessary to prevent lead emissions leaving the building. There shall be no visible emissions from the oxide plant building during the cleanup process.

DETERMINATION OF COMPLIANCE

11. The TNRCC Executive Director may at any time require stack testing, analyses, and other testing by an independent contractor at the company's expense. If testing is required, the TNRCC Fort Worth Regional Office shall be notified a minimum of 45 days in advance of any tests and a pre-test meeting shall be held with the TNRCC to establish test parameters and dates. All required test data, reports, etc., shall be forwarded to the TNRCC Fort Worth Regional Office within seven days of the date GNB receives the final data, reports, etc. from the independent contractor. GNB shall maintain a copy of any such report on-site and make a copy available, upon request, to any agent or representative of the TNRCC or local air program that has jurisdiction.
12. Inspection and maintenance of the baghouses shall be performed on a daily, weekly, and monthly basis. Compliance with this condition may be based on the baghouse inspection records which shall be maintained by the holder of this permit and made available to the personnel of the TNRCC. These records shall be maintained for a 24-month rolling period.

Dated 9-24-96

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit No. 3048A

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY
1**	Reactor No. 3 Baghouse Stack	Pb	0.050	0.21
2**	Reactor No. 2 Baghouse Stack	Pb	0.032	0.13
3**	Reactor No. 1 Baghouse Stack	Pb	0.050	0.21
4	Ventilation System Baghouse Stack	TSP	0.320	1.34
		PM ₁₀	0.320	1.34
		Pb	0.032	0.13
5A	Hammermill Baghouse Stack	Pb	0.050	0.21
5B	Hammermill Baghouse Stack	Pb	0.050	0.21
6	Reactor No. 4 Baghouse Stack	Pb	0.016	0.07
4	Reactor No. 5 Baghouse Stack	Pb	0.006	0.03
5	Reactor No. 6 Baghouse Stack	Pb	0.004	0.02
6	Vacuum System Baghouse Stack	Pb	0.001	<0.01
7A	Truck Loading East	Pb	0.001	<0.01
7B	Truck Loading West	Pb	0.001	<0.01
8	Railcar Loading	Pb	0.001	<0.01

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Emission point identification - either specific equipment designation or emission point number from plot plan.

Specific point source name. For fugitive sources use area name or fugitive source name.

TSP - total suspended particulate including PM₁₀

PM₁₀ - particulate matter less than 10 microns in diameter

Pb - lead and lead compounds as lead

These grandfathered reactors are included in this permit for clarification only.

Emission rates are based on and the facilities are limited by the following maximum operating schedule:

24 Hrs/day 7 Days/week 52 Weeks/year or 8.400 Hrs/year

Dated 9-24-96

APPENDIX B

AGREED BOARD ORDERS 92-09(k) AND 93-12

AND BOARD ORDER 93-10

TEXAS AIR CONTROL BOARD
12124 Park 35 Circle
Austin, Texas 78753

AGREED BOARD ORDER

GNE, INCORPORATED
Account Number CP-3029-G

NO. 92-09(k)

The Texas Air Control Board (the Board) hereby resolves the matter of enforcement action regarding GNE Incorporated (the company) in the form of an Agreed Board Order pursuant to Sections 382.023(a) and (b), 382.082(c) and (d), and 382.088 of the Texas Clean Air Act (the Act), Texas Health and Safety Code, Chapter 382. The staff of the Board and the company have agreed on a settlement of the matters involved in this enforcement action, subject to the approval of the Board.

In settlement of this enforcement action and solely for the purpose of this Agreed Board Order, the parties have agreed and stipulated as follows:

1. That the company owns and operates a secondary lead smelter located at 7471 South Fifth Street, Frisco, Collin County, Texas.
2. That the above plant consists of one or more sources as defined in Section 382.003(12) of the Act.
3. That the company, as owner and operator of the above plant, is alleged to have violated Board Rule 116.4 and Section 382.085(b) of the Act by allegedly violating Special Provision No. 2(a) of TACS Permit Nos. R-1147A and R-5466 which provides that emissions from the facility shall not cause or contribute to an exceedance of the National Ambient Air Quality Standard (NAAQS) for lead at air monitors 1020001, 1020002, 1020003 or at air monitors operated by the company pursuant to Special Provision 17a. During the fourth quarter of 1990, emissions from the plant described in paragraph 1 caused or contributed to ambient lead concentrations of 1.6 micrograms per cubic meter (ug/m³) which exceeded the NAAQS of 1.5 ug/m³.
4. That notice of the apparent violations of the above rule was received by the company on or about March 18, 1991.

5. That the company and the staff agree that the allegations set forth in the Board's file regarding this enforcement action, concerning violations of Board Rule 116.4, are hereby settled and compromised. It is understood that the entry of this Agreed Board Order shall not constitute an admission by the company of any violations alleged in paragraph 3.

6. That administrative penalties in the amount of Eighty-Three Thousand Dollars (\$83,000.00) should be recovered by the Board for the violations alleged in paragraph 3.

7. That the company has placed in the possession of the Board the sum of Eighty-Three Thousand Dollars (\$83,000.00) for deposit in the General Revenue Fund of the State Treasury, as payment of administrative penalties assessed.

8. That to prevent recurrence of the violations described in paragraph 3, the company has or will institute the following measures:

a) The public shooting range located on the south side of the plant was closed to the public in April 1991 and covered with vegetation.

b) A 100,000 cubic feet per minute (cfm) baghouse ventilation system was installed March, 1991, to recover fugitives from the reverberatory and blast furnaces. Stack sampling of this system was conducted on May 9, 1991. The sampling results indicated the baghouse ventilation system was functioning properly.

c) Plastic strip curtains were installed in June 1991 on all doorways of the material storage building to reduce fugitive emissions.

d) Velocity measurements of the capture hoods and ducts of the reverberatory and blast furnaces were conducted. Based on these results, the company modified the existing capture equipment and installed new ductwork and hoods; these upgrades were completed in February 1992.

e) Smoke bomb testing required by the Special Provisions of Permit Nos. R-1147 and R-5466 will be completed by the end of October 1992.

f) During July 1991, the roof and north wall of the battery breaking building was extended to the west to reduce cross wind flow.

g) To reduce the level of fugitive emissions from the driveway between the blast furnace building and the battery breaker, the following modifications were made or will be made to enclose the north side of the area:

i) The present railroad track on the north side of the blast furnace building was removed.

ii) The north wall and north roof of the blast furnace building will be extended to the north and west to cover a storage bin area. This will allow for a wider driveway and easier maintenance of the paved surface. This work is scheduled for completion for the end of December 1992.

h) Vacuum sweeping of the operating plant yard area has been increased to twice daily. Yard surfaces will be repaired and a smooth surface maintained to facilitate cleaning.

i) The company will conduct a soil sampling program using a sampling and analytical procedure that the TACS and the company mutually agree to be acceptable. Sampling will be performed at locations indicated on Attachment 1. The company will meet with the TACS to discuss sampling program results within thirty (30) days of receiving analytical results. Within sixty (60) days of the aforementioned meeting to discuss sampling results, the company will submit a remediation plan for the sampled areas that show soil lead levels in excess of 500 parts per million, if those lead levels are in any way related to the GNE Incorporated, Frisco plant.

The company will conduct annual soil sampling at a minimum of ten (10) locations as shown on Attachment 1. The company will notify the TACS Regional Office not less than forty-five (45) days prior to sampling to schedule a pre-sampling meeting. The purpose of these pre-sampling meetings will be to review the necessary sampling and analytical procedures, to provide the proper data forms for recording pertinent data and to review the format procedures for

submitting the test reports. Soil samples will be taken on GNB Incorporated property at the boundary between the GNB Incorporated property and non-GNB Incorporated property. TACS will specify the location of steel markers and the company will take soil samples within a circle, ten (10) feet in diameter, centered on the aforementioned steel markers. The analytical results will be compared to the Bench Mark Samples taken in October 1992.

j) In order to place the raw material storage building under negative pressure by May 31, 1993, the company is authorized pursuant to the terms of this Agreed Board Order to install a baghouse to control emissions from the raw material storage building. Further, the company is authorized to install a reverbatory furnace feed drier in order to eliminate steam explosions in the furnace that cause fugitive puffs that escape the fugitive ventilation system. The Company is authorized to install a baghouse to control emissions from the feed drier. The feed drier is to be installed by May 31, 1993. After the date of entry of this Agreed Board Order, the company agrees to the following:

i) Within 60 days submit an application to amend Permit No. R-5466 requesting authorization to install the above-referenced baghouse and feed drier, as discussed in paragraph 8(j) above.

ii) The company shall submit additional information concerning the application to amend Permit No. R-5466 within thirty (30) days of the date of a written notification from the staff of the Texas Air Control Board that such information is necessary for complete review of the application.

iii) If the company operates the baghouse or feed drier before final action is taken on the application to amend Permit No. R-5466, the company shall maintain compliance with all Rules of the Board, except that the company will not be alleged or found to be in violation of TACS Regulation VI requirements for operating the baghouse or feed drier prior to final action on Permit No. R-5466.

iv) That from and after the date that the Executive Director (or the Board if the Executive Director calls a contested case hearing to consider the application to amend Permit No. R-5466) issues or denies the application to amend Permit No. R-5466, the company shall comply with Board Rule 116.4.

v) That the staff has not determined, based on the evidence presented and subject to the Board's concurrence by execution of this Order, that either the baghouse represents the Best Available Control Technology (BACT) for the purpose of placing the raw material storage building under negative pressure or that the reverberatory furnace feed drier represents BACT in the secondary lead industry for the purpose of preventing steam explosions in the furnace that cause fugitive puffs that escape the fugitive ventilation system. Supplemental or different control measures may be imposed in granting the amendment to Permit R-5466.

vi) The company shall be granted a reasonable additional amount of time to install the device(s) without further sanction(s), if the Executive Director or Board, as appropriate, grants the application to amend Permit No. R-5466 but requires control measures other than the baghouse or the feed drier.

Records sufficient to document compliance with this provision shall be kept at the plant and shall be available during normal working hours for inspection by TACS personnel or any local health official.

9. That all air pollution abatement equipment shall be maintained in good working order and operated properly during normal operations.

10. That any procedures, which might otherwise be authorized or required in this action, are waived in the interest of a more timely resolution of the matter.

For purposes of this Agreed Board Order only and based on the stipulations and agreements of the parties, the Texas Air Control Board hereby finds that the

violations described in paragraph 3 have occurred and that administrative penalties are warranted in the amount of Eighty-Three Thousand Dollars (\$83,000.00).

It is, therefore, ordered by the Texas Air Control Board that GNE, Incorporated pay administrative penalties in the amount of Eighty-Three Thousand Dollars (\$83,000.00).

It is further ordered that GNE, Incorporated shall from and after the date of entry of this agreed board order:

- (1) Implement and/or continue to implement all requirements set forth in paragraph 8;
- (2) Maintain all air pollution abatement equipment in good working order and operate said equipment properly during normal operations; and
- (3) Maintain compliance with TACS Rule 116.4 as to all units except the baghouse and feed drier described in paragraph 8(j).

The provisions of this Agreed Board Order shall apply to and be binding upon GNE, Incorporated, its successors, assigns and upon those persons in active concert or participation with them who receive actual notice of this Agreed Board Order by personal service or otherwise. GNE, Incorporated is hereby ordered to give notice of this Agreed Board Order to any successor in interest prior to transfer of ownership of all or any part of its plant, located at 7471 South Fifth Street, Frisco, Collin County and within 10 (ten) days of any such transfer, provide the Texas Air Control Board with written certification that such notice has been given.

APPROVED AS TO FORM AND SUBSTANCE:

Susan Owan
Susan Owan, Staff Attorney

September 3, 1992
Date

Richard B. Crowell
Richard B. Crowell for the company

Sept. 1, 1992
Date

PASSED AND APPROVED at the regular meeting of the Texas Air Control Board
on this the _____ day of _____, 1992.

TEXAS AIR CONTROL BOARD

By:

Kirk P. Watson, Chairman

Calvin B. Farnell, Jr., Ph.D., P.E., Member

Bob G. Bailey, Vice-Chairman

William H. Quercusip, Member

Suzanne I. Ahn, M.D., Member

C. H. Rivers, Member

Jack V. Matson, Ph.D., P.E., Member

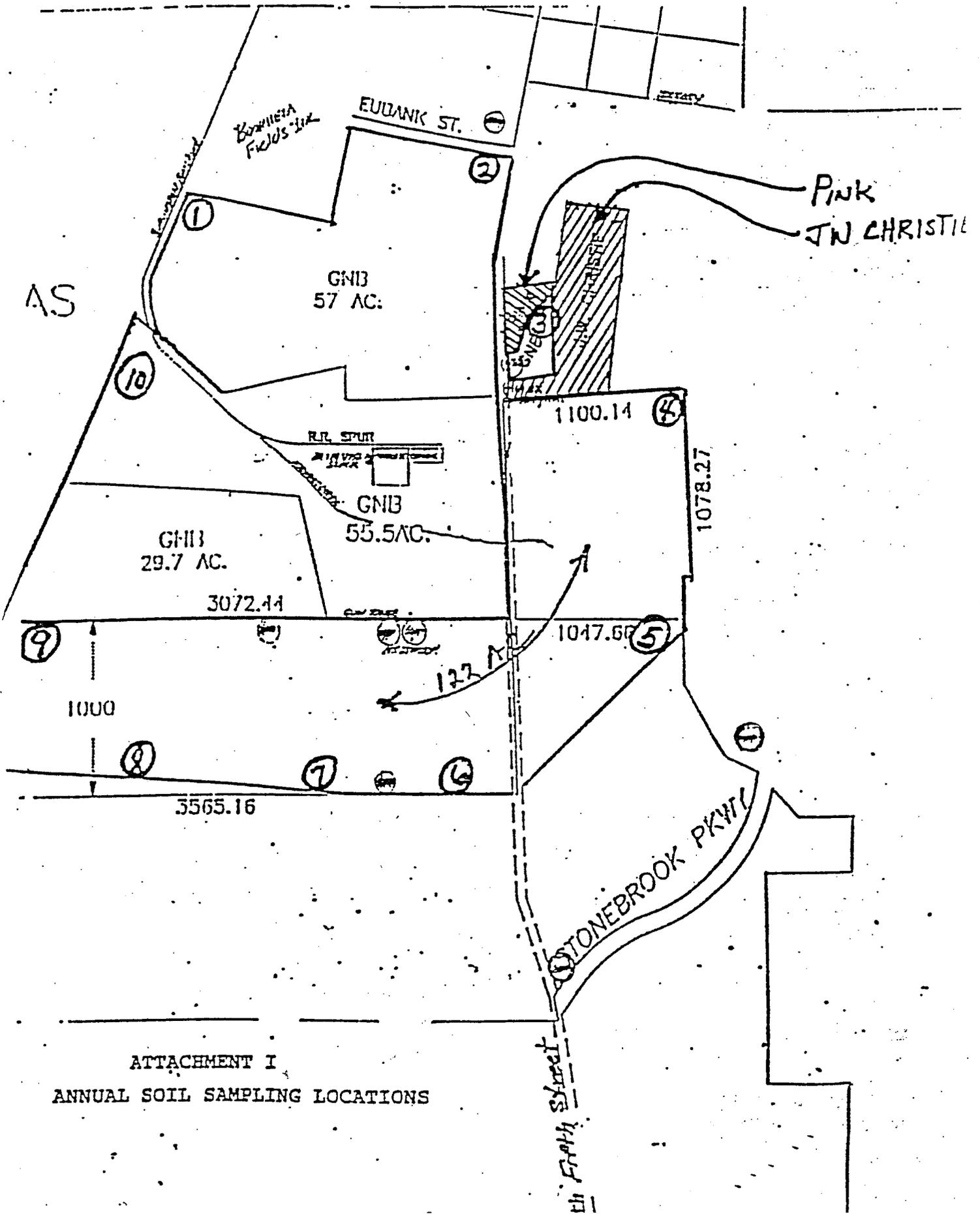
Warren E. Roberts, Member

Mary Anna Wyatt, Member

ATTEST:

Steve Spaw, P.E.
Executive Director

(Seal)



ATTACHMENT I
ANNUAL SOIL SAMPLING LOCATIONS

TEXAS AIR CONTROL BOARD
12124 Park 35 Circle
Austin, Texas 78753

AGREED BOARD ORDER

NO. 92-09

On this the 16th day of October, 1992, the Texas Air Control Board considered the matter of enforcement actions pertaining to the following persons:

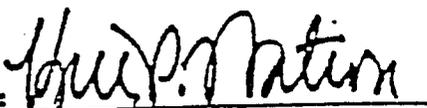
Audubon Cleaners, Dallas County
Austin Bridge and Road, Inc., Dallas County
Bill Miller Bar-B-Q Enterprises, Inc., Bexar County
Brazos Engineering, McLennan County
Duck Creek Cleaners, Dallas County
Enserch Processing Partners, Ltd., Henderson County
Exxon Chemical Co., Harris County
Forstravel, Inc., Nacogdoches County
Fountainview-Wescheimer Joint Venture, Harris County
General Dynamics Corporation, Fort Worth Division,
Tarrant County
GNS, Incorporated, Collin County
Lons Star Contracting Corporation, Tarrant County
Mazda Motor of America, Inc., Ellis County
Mika Nunnery, Williamson County
Peak Cleaners, Dallas County
Phillips Petroleum Company, Harris County
Pioneer Concrete of Texas, Inc., Harris County
Premier Lumber Products, Inc., Hidalgo County
S.T.G. Leasing Co. d/b/a Tip-O-Tex Elevator, Cameron County
Shell Oil Company, Ector County
Southwestern Bell Telephone Company, Parker County
Super Car Sales, Incorporated, Harris County
Towne Cleaners, Dallas County
Union Pacific Railroad Company, Brazos County

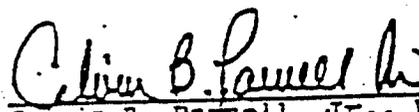
The terms and conditions under which these matters are resolved are contained in attachments 92-09(a) through 92-09(y) which are attached to this order and incorporated as is fully set forth herein.

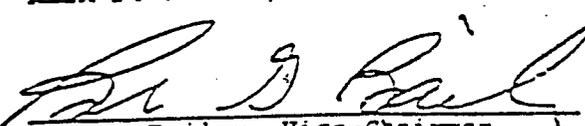
PASSED AND APPROVED at the regular meeting of the Texas Air Control Board in Austin, Texas, on this the 16th day of October, 1992.

TEXAS AIR CONTROL BOARD

By:


Kirk P. Watson, Chairman


Calvin B. Parnell, Jr., Ph.D., P.E.,
Member


Bob G. Bailey, Vice-Chairman


William F. Quartsup, Member

ABSENT

Suzanne I. Ahn, M.D., Member

ABSENT

Jack V. Maxson, Ph.D., F.E.,
Member

ATTENTION:

William R. Campbell
William R. Campbell,
Executive Director

(Seal)

C. H. Rivers
C. H. Rivers, Member

Warren H. Roberts
Warren H. Roberts, Member

Mary Anne Wyatt
Mary Anne Wyatt, Member

TEXAS AIR CONTROL BOARD
12124 Park 35 Circle
Austin, Texas 78753

AGREED BOARD ORDER

GNE INCORPORATED
(Account No. CP-0029-G)

No. 93-12

The Texas Air Control Board (the Board), in the form of an Agreed Board Order, hereby establishes Contingency Measures relating to GNE Incorporated (the company) and the 1993 Lead State Implementation Plan for Collin County, Texas, pursuant to Sections 191(a) and 172(c)(9) of the Federal Clean Air Act, 42 United States Code Sections 7401 - 7642, and Section 382.023(a) of the Texas Clean Air Act, Texas Health and Safety Code, Chapter 382.

I. STIPULATIONS

The staff of the Board and the company have agreed, for the purposes of this Agreed Board Order, to the following:

(1) Definitions:

A. For the purposes of this Agreed Board Order only, a Condition is defined as:

i) an exceedance of the national ambient air quality standard for lead for any individual monitoring quarter in the Collin County nonattainment area; or

ii) a failure to attain the national primary ambient air quality standard for lead by January 6, 1997 in the Collin County nonattainment area.

B) For the purposes of this Agreed Board Order only, the term Contingency Measures is defined to include the following actions:

i) Increase from three to four the number of baghouse calls on oxide reactors 1, 2, 3, and 4;

ii) Place a collection hood over the entire reverberatory furnace to collect any fugitive emissions escaping the collection hoods at the furnace openings and install a baghouse of sufficient size to control the collected emissions;

- iii) Install a venturi wet scrubber at the battery breaker hammer mill;
- iv) Install emission monitors on all baghouse stacks that would alarm if there were a breach in filter integrity; and
- v) Perform semi-annual blacklight leak testing of all non-product baghouses.

(2) The company agrees to implement all of the above Contingency Measures at its Lead Oxide Manufacturing Facility located at 7471 South Fifth Street, Frisco, Collin County, Texas without further action by the Board or by the U.S. Environmental Protection Agency if, after the date of this Agreed Board Order, the company is notified by the Executive Director that either of the Conditions has occurred.

The company may, pursuant to the terms of this Agreed Board Order, construct, operate, or implement, the Contingency Measures. In the event that the Contingency Measures must be implemented, the company shall submit an application for a permit or permit amendment or shall qualify for a standard exemption for the contingency measures within sixty days of notification by the Executive Director that either of the Conditions has occurred.

The company shall submit additional information concerning any permit application, application for an amendment or any standard exemption for which registration or TACB Form PI-7 is required, within thirty days of the date of written notification from the staff of the TACB that such information is necessary for complete review of the application or standard exemption documentation.

If the company operates the equipment required by the Contingency Measures before final action is taken on the permit application, application for amendment, or standard exemption, the company shall maintain compliance with all Rules of the Board, except that the company will not be alleged or found to be

in violation of TACB Regulation VI requirements for operating the equipment related to the Contingency Measures prior to final action on the application.

Except for Item 5, the company would complete the implementation of the Contingency Measures within one year of being notified by the Executive Director of the Board that either of the Conditions had occurred. The company would implement Item 5 immediately upon notification from the Executive Director of the Board that either of the Conditions had occurred.

II. FINDINGS

For purposes of this Agreed Board Order only and based on the stipulations and agreements of the parties, the Texas Air Control Board hereby finds that should either of the Conditions described in paragraph 1 occur, implementation of the Contingency Measures described in paragraph 1 is necessary.

III. ORDER

It is therefore ordered by the Texas Air Control Board that GNB Incorporated shall complete implementation of the above described Contingency Measures, with the exception of Contingency Measure No. 5, which shall be immediately implemented, within one year of notification by the Executive Director that either of the Conditions, as defined herein, have occurred.

It is further ordered that GNB Incorporated shall apply for and obtain either a permit or permit amendment or shall qualify for a standard exemption within one year of notification by the Executive Director that either of the Conditions, as defined herein, have occurred.

The provisions of this Agreed Board Order shall apply to and be binding upon the company, its successors and assigns, and upon those persons in active concert or participation with them who receive actual notice of this Agreed Board Order by personal service or otherwise. The company is hereby ordered to give notice of this Agreed Board Order to any successor in interest prior to transfer of ownership of all or any part of its plant, located at 7471 South Fifth Street,

AGREED BOARD ORDER NO.
GNB FRISCO INCORPORATED
PAGE 4

Frisco, Collin County, Texas, and within ten (10) days of any such transfer, provide the Board with written certification that such notice has been given.

APPROVED AS TO FORM AND SUBSTANCE

Susan Owen
Susan Owen, Staff Attorney

1/2/93
Date

John Tuttle, attorney
for the company

6/2/93
Date

PASSED AND APPROVED at the regular meeting of the Texas Air Control Board
on this the day of , 1993.

TEXAS AIR CONTROL BOARD

By: Kirk P. Watson, Chairman

Calvin B. Parnell, Jr., Ph.D., P.E., Member

Bob G. Bailey, Vice-Chairman

William H. Quortrup, Member

Elaine M. Barron, M.D., Member

C. H. Rivers, Member

Jack V. Matson, Ph.D., P.E., Member

Warren H. Roberts, Member

Mary Anne Wyatt, Member

ATTEST:

William R. Campbell
Executive Director

(Seal)

TEXAS AIR CONTROL BOARD
12124 PARK 35 CIRCLE
AUSTIN, TEXAS

BOARD ORDER
NO. 93-10

WHEREAS, pursuant to Section 382.017 of the Texas Clean Air Act (TCAA), Section 5 of the Administrative Procedure and Texas Register Act, and Section 51.102 of Title 40 of the Code of Federal Regulations, the Texas Air Control Board (TACB or Board), after proper notice, conducted a public hearing on April 21, 1993 to consider a proposed revision to the State Implementation Plan (SIP) for the control of lead emissions from the Gould National Battery, Incorporated facility at Frisco, Texas; and

WHEREAS, the Board duly circulated to interested persons, the Regional Administrator of the U.S. Environmental Protection Agency (EPA), and all applicable local air pollution control agencies hearing notices of its intended action; and

WHEREAS, interested persons were invited to submit data, views, and recommendations on the proposed amendment, either orally or in writing, at the hearing; and

WHEREAS, copies of the proposed amendment were available for public inspection at the Board's Central Office and Regional Office prior to the scheduled hearing; and

WHEREAS, data, views, and recommendations of interested persons were submitted to the Board at the hearing and were considered by the Board as reflected in the attached Hearing Record, which is hereby incorporated and made a part of this Order; and

WHEREAS, the Board finds that said Hearing Record includes the names of all interested groups or associations offering comment on the revision and their position concerning the proposed revision; and

WHEREAS, Section 382.017 of the TCAA gives the Board authority to make rules and regulations consistent with the policies and purposes of the TCAA; and

WHEREAS, the Board finds that the reasoned justification and factual bases for the amendment are fully set out in the section titled Evaluation in the attached Hearing Record; and

WHEREAS, the Board hereby certifies that the revision, as adopted, has been reviewed by legal counsel and found to be a valid exercise of the Board's legal authority;

NOW, THEREFORE, BE IT ORDERED BY THE TACB THAT:

1. The revisions to the SIP appended to this Order is hereby adopted and promulgated; and

2. The Executive Director is instructed to transmit a certified copy of this Order, together with the adopted revision, to the Governor of Texas for submittal to the Regional Administrator of the EPA as a proposed revision to the SIP pursuant to Section 110 of the Federal Clean Air Act, as amended.

PASSED AND APPROVED at the regular meeting of the TACB in El Paso, Texas, on this the 18th day of June, 1993.

TEXAS AIR CONTROL BOARD

BY:

Kirk P. Watson, Chairman

William H. Quortrup, Member

Bob G. Bailey, Vice Chairman

C. H. Rivers, Member

Elaine M. Barron, M.D., Member

Warren H. Roberts, Member

Jack V. Matson, Ph.D., P.E., Member

Mary Anne Wyatt, Member

Calvin B. Parnell, Jr., Ph.D., P.E.,
Member

ATTEST:

William R. Campbell
Executive Director

(SEAL)

APPENDIX C

AGREED ORDER 99-0351-SIP

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION



IN THE MATTER OF
AN AGREED ORDER
CONCERNING
GNB TECHNOLOGIES, INC.
ACCOUNT NO. CP-0029-G

§
§
§
§
§

BEFORE THE
TEXAS NATURAL
RESOURCE
CONSERVATION
COMMISSION

AGREED ORDER DOCKET NO. 99-0351-SIP

The Texas Natural Resource Conservation Commission (the Commission or TNRCC), hereby orders GNB Technologies, Inc. (GNB), formerly known as Gould National Battery, Incorporated, to comply with the requirements herein regarding control of emissions of lead from the facilities referenced below, pursuant to § 382.023 of the Texas Clean Air Act (the Act), Texas Health and Safety Code, Chapter 382, and § 110 of the Federal Clean Air Act, 42 U.S.C. § 7401 et. seq., for the purpose of revising the Texas State Implementation Plan (SIP) for control of lead. The Executive Director of the Commission and GNB have agreed on these control requirements, subject to the approval of the Commission. The Executive Director and GNB enter into this agreement for the purpose of implementing the SIP measures in the 1999 Collin County Redesignation and Maintenance Plan for Lead.

I. STIPULATIONS

For the purpose of this Agreed Order, the parties have agreed and stipulated as follows:

1. Section 110 of the Federal Clean Air Act, 42 U.S.C. 7401 et. seq., requires Texas to submit to the United States Environmental Protection Agency (EPA) for approval SIP revisions and to demonstrate that such SIP revisions provide protection of the National Ambient Air Quality Standards (NAAQS) and the Prevention of Significant Deterioration increments for lead.
2. GNB owns and operates a secondary lead smelter/lead oxide manufacturing plant, located 7471 South Fifth Street, Frisco, Collin County, Texas (the plant).
3. The plant consists of one or more sources as defined in § 382.003(12) of the Act.
4. In 1992, GNB entered into Agreed Board Order 92-09(k) (Order 92-09(k)) with the Texas Air Control Board (TACB), predecessor to the TNRCC, and special provisions were included in amendments to Air Quality Permits R-1147A and R-5466D to resolve notices of violations regarding exceedences of the NAAQS for lead. The purpose of Order 92-09(k) was to assure maintenance of the NAAQS for lead, and required GNB to continue implementation of or to implement certain measures to prevent recurrence of the violations alleged in Order 92-09(k).

5. GNB has amended TNRCC Air Quality Permit Nos. 1147A and 3048A to incorporate the provisions of Order 92-09(k) as permanent and enforceable reductions. The maximum allowable emission rate of lead in these permits will ensure that lead emissions will not exceed 4.27 tons per year (tpy), unless otherwise authorized according to the requirements in paragraph 11 below. The parties to this Order agree to terminate Order 92-09(k). However, GNB agrees to continue implementation of the requirements of paragraph 8 in Order 92-09(k) as incorporated into Permit Nos. 1147A and 3048A, or to implement additional measures or control technologies proposed by GNB that are judged by the Executive Director to be similarly effective in controlling lead emissions from the plant.

6. In 1993, GNB entered into Agreed Board Order 93-12 (Order 93-12) with the TACB to establish contingency measures related to the 1993 Lead State Implementation Plan for Collin County, Texas.

7. GNB has implemented the measures in Order 93-12 by: adding a supplemental ventilation baghouse to its metallurgical furnace operation (the reverberatory and blast furnaces); covering its blast furnace bins and installing a water spray system over the bin area; installing a baghouse at the raw materials storage building; installing a feed dryer and baghouse to reduce the possibility of reverberatory furnace explosions due to wet feed; writing and implementing detailed site operation and maintenance plans for its baghouse operations; and installing a Tri-bo Flow® System in all baghouse ducts to detect upset emissions. The parties to this Order agree to terminate Order 93-12. However, GNB agrees to continue implementation of these measures, or to implement additional measures or control technologies proposed by GNB that are judged by the Executive Director to be similarly effective in controlling lead emissions from the plant.

8. GNB agrees to comply with the emission limits and standard operating procedures for process sources, process fugitive sources, and fugitive dust sources from the National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelters (the lead MACT).

9. GNB will maintain records for the period of the Maintenance Plan (ten years from the date of redesignation to attainment by the EPA) sufficient to demonstrate compliance with the requirements in paragraphs 5, 7 and 8 above and make those records available upon request by the TNRCC or any other air pollution control agency with jurisdiction.

10. This Agreed Order does not authorize or prohibit any modification of the plant listed above, nor does it authorize or prohibit the construction of any abatement equipment that may be necessary to achieve the emission limits set in this Agreed Order, other than that which is specifically addressed in this Agreed Order.

11. The 1993 Lead SIP contained an attainment demonstration using dispersion modeling of quarterly lead impacts in Collin County, Texas. That modeling was based on 4.27 tons per year (tpy) of lead, the actual emissions of lead provided by GNB in its 1992 emissions inventory. GNB may increase actual emissions above 4.27 tpy of lead only through (a) qualification for an amendment to Permits 1147A and/or 3048A and/or a new permit issued pursuant to 30 TAC Chapter 116, and (b) an air dispersion modeling demonstration that such an increase in emissions is not expected to cause a violation of the lead NAAQS. GNB may use exemptions from permitting or permits by rule at the plant to make changes at the plant or to add new equipment, provided that use of such exemptions or permits by rule will not increase actual emissions above 4.27 tpy tons per year of lead.

12. That all air pollution abatement equipment shall be maintained in good working order and operated properly during normal operations.

13. Definitions for purposes of this Agreed Order:

A. The term "condition" is defined as (1) an exceedence of the quarterly arithmetic average lead NAAQS of 1.5 micrograms per cubic meter at any TNRCC ambient air quality monitoring site, or (2) an exceedence of 4.27 tpy as reported in GNB's annual emissions inventory for lead when that exceedence has not resulted from (a) qualification for an amendment to Permits 1147A and/or 3048A and/or a new permit issued pursuant to 30 TAC Chapter 116 and b) an air dispersion modeling demonstration that such an increase in emissions will not cause a violation of the lead NAAQS.

B. The term "contingency measure" is defined to include the following actions:

1. A new wheel washing facility will be installed at the plant to reduce fugitive emissions by reducing tracking in the yard area of the plant.
2. A scale and improved tuyere punching method will be installed and utilized at the plant's blast furnace to increase the feed and flux control and reduce fugitive lead emissions around the blast furnace.
3. An alternative measure proposed by GNB that results in emission reductions which, at a minimum, shall be equivalent to the emission reductions achievable by contingency measure 13.B.1 or 13.B.2 above. Any alternative contingency measure proposed by GNB must be approved by the Executive Director prior to implementation.

14. If at any time during the period of the maintenance plan for attainment of the lead NAAQS a condition occurs, the Executive Director of the TNRCC shall notify GNB within thirty (30) days of the discovery of the condition that the contingency measures must be evaluated and that, at a minimum, one of the measures must be implemented. Within sixty (60) days of such notification, GNB will inform the TNRCC as to which of the specified [in paragraph 13.B.(1) and (2) above] or alternative contingency measures will be implemented by GNB. GNB will complete the implementation of the selected contingency measure within 180 days of GNB's notification to the Executive Director or within 180 days of the Executive Director's approval of an alternative contingency measure.

15. The Commission and GNB agree that the Commission has jurisdiction to enter this Agreed Order, and GNB is subject to the Commission's jurisdiction.

16. To better safeguard the air resources of this state, GNB agrees to comply with the terms of this Agreed Order.

II. ORDER

It is therefore ordered by the Texas Natural Resource Conservation Commission that GNB Technologies shall, from and after the date of this Agreed Order:

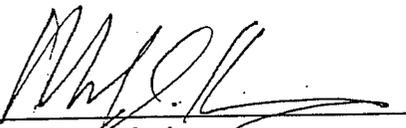
1. Implement and/or continue to implement all requirements in and maintain compliance with paragraphs 5, 7, 8 and 9 above; and

2. Comply with the requirements of paragraph 14 above if a condition occurs.

The provisions of this Agreed Order shall apply to and be binding upon GNB Technologies, Inc., its successors, assigns and upon those persons in active concert or participation with them who receive actual notice of this Agreed Order by personal service or otherwise. GNB Technologies, Inc. is hereby ordered to give notice of this Agreed Order to any successor in interest prior to transfer of ownership of all or any part of its plant, located at 7471 South Fifth Street, Frisco, Collin County, Texas and within ten days of any such transfer, provide the Texas Natural Resource Conservation Commission with written certification that such notice has been given.

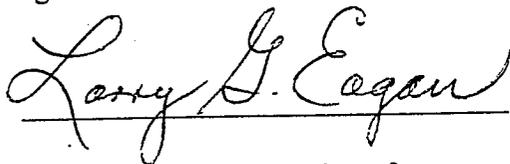
SIGNATURE PAGE

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION



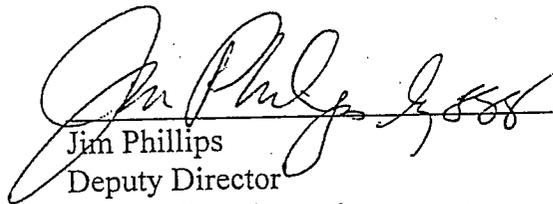
For the Commission

I, the undersigned, have read and understand the attached Agreed Order. I am authorized to agree to the attached Agreed Order on behalf of the entity, if any, indicated below my signature, and I do agree to the terms and conditions specified therein.



Authorized representative of
GNB Technologies, Inc.

7-8-99
Date



Jim Phillips
Deputy Director
Office of Legal Services
Texas Natural Resource Conservation Commission

7/7/99
Date

APPENDIX D

CONTINGENCY MEASURE REDUCTION CALCULATIONS

|G|N|B|
TECHNOLOGIES INC.
A Pacific Dunlop Company
7471 South Fifth Street
P.O. Box 250
Frisco, TX 75034
Telephone 972-335-2121
Facsimile 972-377-2707

July 8, 1999

John Gillen
Texas Natural Resource Conservation Commission
Office of Air Quality MC 205
12100 Park 35 Circle
Austin, TX 78753

Re: GNB Technologies Inc., Frisco, Texas Facility Potential Reduction in Lead Emissions

Dear Mr. Gillen:

This letter is in response to your request for quantification of the potential reduction in lead emissions from GNB Technologies Frisco, Texas facility. The attached calculations document the engineering basis and methodology for potential emissions reductions. These reductions would be achieved by installing a wheel washing system for yard traffic and an improved tuyere cleaning method with a charging scale at the blast furnace.

The wheel washing facility has an estimated reduction of approximately 27 pounds of lead per year. The attached calculations demonstrate that this reduction is based on Section 11.2.6 of AP-42 "Industrial paved roads". This reduction would effect EPN 41 and EPN 42. In addition to the potential emission reduction the system would aid in our house keeping efforts to help reduce tracking of material.

The potential reduction from the improved tuyere cleaning method and feed scale at the blast furnace is estimated to be in excess of 30 pounds of lead per year. The attached calculations demonstrate that a simple reduction in the cleaning time per tuyere should produce an estimated reduction of 28 pounds of lead per year. Given this calculation and the experience that a feed scale would allow more consistent furnace operations, the estimate that a reduction in excess of 30 pounds of lead per year is not only reasonable but also conservative. This system would not only help to provide reduced emissions but also lower our employees' exposure to lead contamination thus aiding in the protection of human health. This would effect EPA 10. In addition an improved tuyere cleaning method might incorporate filtration of some fugitive emission further reducing EPN 10.

Mr. Steve Probst of SAGE Environmental Consulting under our direction prepared the attached calculations. I believe they document the methodologies and engineering basis for the potential reductions in lead emissions.

We appreciate your time and consideration in this matter. We hope this submittal meets your needs. GNB is hopeful that we will be successful in the redesignation of the area as lead attainment soon. If you have any questions, please feel free to give me a call at 972 335-2121 extension 26.

Sincerely,



James A. Messer

Manager Environmental and Quality Control

Copy Larry Eagan - GNB

Jennifer Keane - Baker and Botts

GNB Technologies, Inc.
Wheel Hub Emissions Calculations

Vehicle Type	Industrial Augmentation Factor	Number of Traffic Lanes	Surface Material Silt Content (%)	Surface Dust Loading (lbs/mile)	Average Vehicle Weight Unloaded (W _U) tons	Average Vehicle Weight Loaded (W _L) (miles/yr)	Vacuum Sweeping Control Efficiency (%)	Emission Factor, Unloaded Vehicles (E _U) (lbs/VMT _U)	Emission Factor, Loaded Vehicles (E _L) (lbs/VMT _L)	Vehicle Miles Traveled, Unloaded (VMT _U /yr)	Vehicle Miles Traveled, Loaded (VMT _L /yr)	Annual Emissions, Unloaded Vehicles (lbs/yr)	Annual Emissions, Loaded Vehicles (lbs/yr)	Total Annual Emissions (lbs/yr)
(Units)	1	n	s	L	W _U	W _L		(lbs/VMT _U)	(lbs/VMT _L)	VMT _U	VMT _L	EU	EL	
Small Loader	1	2	12.5	437.5	6	7	80%	0.00782	0.00871	80	80	0.6254	0.6967	1.3221
Large Loader	1	2	12.5	437.5	7	10	80%	0.00871	0.01118	318	318	2.7694	3.5548	6.3242
Forklift	1	2	12.5	437.5	3	4	80%	0.00481	0.00589	1894	1894	9.1149	11.1483	20.2632

GNB Technologies, Inc.
Wheel Hub Emissions Calculations

Example Calculation for small loaders based on AP-42 Section 11.2.6 "Industrial Paved Roads" 11/88

$$E = 0.022 \frac{1}{4} \left(\frac{h}{10} \right) \left(\frac{L}{1000} \right) \left(\frac{W}{3} \right)^{0.7} (1 - \text{Control Efficiency}) = \text{lb/VMT}$$

$$E = 0.022 \frac{1}{4} (12.5/10) (437.5/1000) (6/3)^{0.7} (1 - 0.8) = 0.00782 \text{ lb/VMT}_{10}$$

$$0.0078 \text{ lb/VMTU} \times 80 \text{ VMT/yr} = 0.62543 \text{ lbs/yr}$$

The factor of L was reduced from 1750 to 875 to account for the 50% lead content and to 437.5 to account for the reduced loading as a result of the wheel hub wash.

- A = 205 lbs/yr Pb for trucks (From the Estimate of Facility Lead Emissions to be used in Computer Dispersion Modeling prepared by Lake Engineering, Inc.)
- B = 1.32 lbs/yr for small loaders
- C = 6.32 lbs/yr for large loaders
- C = 20.26 lbs/yr for forklifts

$$\text{EPN 41} = 1/3A + B + 1/2C + 1/2D = (1/3)205 + 1.32 + (1/2)6.32 + (1/2)20.26 = 82.875 \text{ lbs/yr}$$

$$\text{EPN 42} = 1/3A + 1/2C + 1/2D = (1/3)205 + (1/2)6.32 + (1/2)20.26 = 81.555 \text{ lbs/yr}$$

This represents a reduction of 1.32 lbs for the small loaders, 6.32 lbs/yr large loaders, and 20.04 lbs/yr for forklifts.

GNB Technologies, Inc.
Tuyere Emissions Calculations
Percent Reduction

Basis:

Prior tuyere opening diameter =	1	inch
Prior tuyere time open per cleaning event =	30	sec
New tuyere opening diameter =	0.75	inch
New tuyere time open per cleaning event =	10	sec

Assumptions: Pressure and velocity are dominated by furnace and atmospheric conditions and therefore remain unchanged by the change in diameter.

Calculations

$$Q_{old} = \text{Velocity} \times \text{Area} = (v_{old})(A_{old})$$

where

Q = flowrate

v = velocity

A_{old} = cross sectional area of the old opening during tuyere punching

$$M_{old} = \text{Flow Rate} \times \text{Concentration} \times \text{Time} = (Q_{old})(C_{old})(t_{old})$$

where

C = Concentration

t_{old} = time the old tuyere opening was exposed to atmospheric pressure

$$Q_{new} = \text{Velocity} \times \text{Area} = (v_{new})(A_{new})$$

where

Q = flowrate

v = velocity

A_{new} = New cross sectional area of the tuyere opening during tuyere punching

$$M_{new} = \text{Flow Rate} \times \text{Concentration} \times \text{Time} = (Q_{new})(C_{new})(t_{new})$$

where

C = Concentration

GNB Technologies, Inc.
 Tuyere Emissions Calculations
 Percent Reduction

t_{new} = time the new tuyere opening is exposed to atmospheric pressure

The percentage reduction will be the ratio of the mass lost from the old tuyere punching design to the new tuyere punching design.

$$\frac{M_{new} = \text{Flow Rate} \times \text{Concentration} \times \text{Time} = (Q_{new}) \times (C_{new}) \times (t_{new})}{M_{old} = \text{Flow Rate} \times \text{Concentration} \times \text{Time} = (Q_{old}) \times (C_{old}) \times (t_{old})} =$$

The concentration is assumed to remain constant therefore

$$\frac{M_{new}}{M_{old}} = \frac{(Q_{new}) \times (t_{new})}{(Q_{old}) \times (t_{old})}$$

Substituting

$$Q_{new} = \text{Velocity} \times \text{Area} = (v_{new})(A_{new})$$

$$Q_{old} = \text{Velocity} \times \text{Area} = (v_{old})(A_{old})$$

$$\frac{M_{new}}{M_{old}} = \frac{(v_{new}) \times (A_{new}) \times (t_{new})}{(v_{old}) \times (A_{old}) \times (t_{old})}$$

The velocity is assumed to be constant.

$$A_{new} = \pi r_{new}^2 = 3.14 (0.75)^2$$

$$A_{old} = \pi r_{old}^2 = 3.14 (1)^2$$

Substituting

$$\frac{M_{new}}{M_{old}} = \frac{\pi r_{new}^2 \times (t_{new})}{\pi r_{old}^2 \times (t_{old})}$$

$$\frac{M_{new}}{M_{old}} = \frac{\pi r_{new}^2 \times (t_{new})}{\pi r_{old}^2 \times (t_{old})}$$

GNB Technologies, Inc.
Tuyere Emissions Calculations
Percent Reduction

$$M_{old} = \frac{\pi r_{old}^2 (t_{old})}{3600}$$

$$\frac{M_{new}}{M_{old}} = \frac{(0.75 \text{ inch})^2 (10 \text{ sec})}{(1 \text{ inch})^2 (30 \text{ sec})} = \frac{5.625}{30}$$

$$\frac{M_{new}}{M_{old}} = 0.1875$$

Per the 1997 emissions inventory the lead emissions were estimated to be 0.0174 tpy.
The new emissions are estimated to be (0.0174)(0.1875) = 0.0033 tpy
The emissions were reduced by 0.0141 tpy or 28.275 lbs/yr