LONGHORN ARMY AMMUNITION PLANT

KARNACK, TEXAS

ADMINISTRATIVE RECORD

VOLUME 1 of 1

1978

Bate Stamp Numbers
000033 - 000077

Prepared for:

Department of the Army
Longhorn Army Ammunition Plant
Marshall, Texas 75671-1059

1995

VOLUME 1 of 1

1978

A. **Title:** Final Report - AEHA Air And Water Pollution Survey
Group(s): All
Site(s): LHAAP-3 Building 72 - Paint Shop
LHAAP-8 Sewage Treatment Plant
LHAAP-12 Active Landfill
LHAAP-18 & LHAAP-24 Burning Ground / Washout Pond & Evaporation Pond
LHAAP-46 Plant 2 / Pyrotechnic Operation
LHAAP-47 Plant 3 / Produces Motor Assemblies
LHAAP-48 Y Area / Produces Hand Signal Assemblies
LHAAP-51 Photographic Laboratory / Building 60B
LHAAP-53 Static Test Area
LHAAP-58 Maintenance Complex
LHAAP-Main Power Plant & Water Supply
LHAAP-Storage of Solvents and Chemicals
LHAAP-Salvage Yard for Cardboard & Paper
LHAAP-Heating Plant and Sanitary Sewage for Administration Area
Location: Longhorn Army Ammunition Plant, Marshall, Texas
Company: Horacek, Smith, Painter & Spitz, Incorporated
Author(s): Horacek, Smith, Painter & Spitz, Incorporated
Recipient: U.S. Army Corps Of Engineer, Fort Worth Division
Date: April 20, 1978
Bate Stamp: 000033 - 000077

000033

LONGHORN ARMY AMMUNITION PLANT

MARSHALL, TEXAS

[illegible] AGREEMENT [illegible]

CONTRACT [illegible]

PHASE [illegible]

Prepared for the

U.S. ARMY CORPS OF ENGINEERS

Fort Worth, Texas

[illegible] 197[illegible]

[illegible] INCORPORATED

[illegible] Oklahoma [illegible]

FOREWORD

Due to the very limited time allotted for this survey, it has been necessary to make an overall evaluation of the installation observed. The individual recommendations are primarily concerned with studies and programs upon which to base an intelligent and valid judgement of where, if at all, the Longhorn Army Ammunition Plant is violating any applicable state or federal rules and regulations concerning air and/or water pollution.

The survey is intended to give basic recommendations for action upon which to base proper judgements to produce PDB-1 and DD 1391 forms for future requests and presentations requesting desirable construction projects.

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POLLUTION SURVEY:

LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

1.0 General Information.

1.1 Description of Facility.

1.1.1 The Longhorn Army Ammunition Plant is located on an area of approximately 8,000 acres. The plant is situated on the shores of Caddo Lake some 15 miles east of the city of Marshall, Harrison County, Texas.

1.1.2 The present charter for the plant covers the loading and storage of:

(a) Large rifle munitions.

(b) Pyrotechnics, both flares and signal devices.

(c) Loading of small and intermediate sized solid propellant missiles.

1.2 Layout of Longhorn Army Ammunition Plant.

1.2.1 The Longhorn Army Ammunition Plant (LAAP) is divided into the basic areas listed below.

(a) Administration.

(b) Maintenance and shop areas, water plant, power plant, and central power area.

(c) Plant 2 production area for pyrotechnics, flares, etc.

(d) Plant 3 production area for munitions loading operations and limited solid propellant work.

(e) Igniter area.

(f) Peripheral operations including:

(1) Magazines.

(2) Warehouse area.

(3) Sanitary land fill.

(4) Test service areas.

(5) Burning grounds.

(6) Ground signal test area.

(7) QC and QC lab.

1.2.2 Status of Operation.

The peacetime operation of the plant involves limited work in the areas listed in Paragraph 1.1.2. Many of the buildings are, at the present time, inactive, although all general areas included in the following description are maintained and currently have limited activity going on in some buildings.

In the event of mobilization, much hurried work would be necessitated; however, most buildings could be made functional in a relatively short time, considering their age of almost 35 years. A number of newer construction sites, designed to handle the changing charter of the plant, seemed to be in shape to handle the increased work load almost immediately.

1.3 Plant Survey.

1.3.1 Personnel Involved in Survey.

The Contractor was represented by Dr. E. Frank Stinson.

The survey was conducted and ably assisted by Mr. Don Maley, Chief Engineer, and Mr. Dave Rainer, Thiokol Environmental Officer.

Cognizant of and cooperating in the endeavor were both civil management members of Thiokol Chemical Corporation and Colonel Greenberg, the Army Representative in command of the Longhorn Army Ammunition Plant.

1.3.2 Route of Progress of the Survey.

Coordinates of locations are taken from the Master Map of Utilities and Facilities of LAAP.

The survey began by tracing a route from the Administration Complex to the:

(a) Central Power Plant & Waterworks, S170-180/R100-110.

(b) Shop and Maintenance Area, S180-200/R80-100.

(c) Plant 2 complex, S180-220/R80-120.

(d) Plant 3 Complex, S150-200/$120-180.

(e) Sewage Disposal Area, S180/R150.

(f) Warehouse Area, S130-150/R120-170.

(g) Igniter Area, S170/R120.

(h) Test Services Area, S140-160/R190-210.

(i) Laboratories and QC, S160/R120.

(j) Various miscellaneous areas including:

(1) Burning/Decontamination Grounds.

(2) Land Fill.

(3) Experimental/Development Area.

(4) Magazine Area (pass through).

The Contractor Representative and the two LAAP employees listed in Paragraph 1.3.1 made a tour of the facility observing, commenting upon, and exchanging opinions upon the multitude of points observed concerning potential air and water pollution.

1.3.3 Governing Rules and Regulations used as a basis of opinions concerning specific points will be found in 40 CFR Part 60 and others, as well as those regulations spelled out in the Texas Clean Air Act and the Water Pollution Board Regulations (Clean Water Act).

1.3.4 Permits and Approvals.

The basic NPDES Industrial Waste Permit: TX-0000035.

Basic NPDES Permit for Sewage Plant: TX-0061069.

Each individual 'septic' tank effluent released to open water has an NPDES permit; included in these are:

TX-0060917	TX-0060828
TX-0060836	TX-0060895
TX-0060844	TX-0060810
TX-0060879	TX-0060852
TX-0060887	TX-0060861

The above 10 septic tanks, basic waste lagoon, and sewage treatment have all apparently been observed and probably been tested, although the only information available was for two tests in TX-0000035 and were for TSS and dissolved aluminum.

EPA representatives have checked the sanitation system twice within recent times and have found it acceptable.

An outside laboratory (AnaLab of Kilgore, Texas) takes selected samples of water and effluents on a regular but limited basis.

The Federal laboratories at Ada, Oklahoma have various samples since January 1978. The results have not, at the time of this report, been returned to LAAP.

1.3.5 See Appendix C for new construction in progress. Appendix A, Project 101, is a recommended test program for the new installations.

2.0 Main Power Plant and Water Supply.

2.1 Power Plant - Building 401.

2.1.1 Four units (boilers and burners).

2.1.2 3,000 HP unit, C.E.

2.1.3 Fuel: natural gas with limited fuel oil stand-by capabilities.

2.1.4 Blowdown: to sanitary sewer.

2.1.5 Boiler water: D.I. water with slightly alkaline additives ('Betz')

Corrosion inhibition: A-Gel and polyphosphate

2.1.5 Boiler water (contd.)

Raw water (incoming) is tested on a daily basis for pH and total hardness.

Other tests run periodically by AnaLab on recycled water include:

Alkalinity in ppm

PO_4 in ppm

Na_2SO_4 in ppm

Chlorine in ppm

NOTE: There are no automatic samplers or controls used throughout the plant. All sampling is done by the 'grab' method.

2.1.6 Disposal.

Release of blowdown is to the sanitary sewer where all effluents are lightly chlorinated before release to public waters. The pH of release water runs consistently around 6.7 to 7.1. There are no liming facilities for raising pH but the results of all tests examined run above the minimum pH of 6.0.

2.2 Water Supply.

2.2.1 Source: Caddo Lake.

2.2.2 Plant: The water plant located in Building 413-A was recently inspected by TSDH and EPA. The Army Laboratory in Ada, Oklahoma has recently taken both water influent and effluent samples but results and recommendations have not yet been received by Longhorn AAP.

Previous tests upon influent have been acceptable.

3.0 Waste Treatment (sanitary and contained waste water effluents).

3.1 Present System.

The present typical system is as follows:

Treat (chlorine only) ⟶ Clarification Settling Pond ⟶ Release through creek to Caddo Lake in the Goose Bay area.

The two settling ponds in use are used alternately. Influents are bottom entries.

3.2 A modern waste treatment plant constructed at a cost of approximately $400K is still in final test stages. The TSS limits, as determined by AnaLab, are still outside EPA limits. A solution is out for bids at the present time. Other contaminants were reportedly within acceptable limits.

(See Appendix A, Project 102.)

3.3 Present Sewage Treatment Area.

3.3.1 Of 4 filter beds in the present sewage treatment system, only 2 seemed to be operating.

3.3.2 There is little to no odor in the present treatment system.

3.3.3 The stand-by emergency power for the sewage area is a 45 KW generator made by Stewart & Stevens. It seems to be well maintained.

3.3.4 The only chemical treatment given the sewage effluent at this time before release is a light chlorination. It was reported that the pH runs 6.7 to 7.1.

3.3.5 Monthly test reports on released sewage effluent are represented by the averages from a report prepared by Analab of Kilgore, Texas.*

* See Table I, Appendix B.

4.0 Plant Maintenance Area.

4.1 Carpenter Shop.

The carpenter shop has a central centrifugal type cyclone air exhaust system.

Each machine (lathes, drills, planes, etc.) has vacuum type hooded ducts leading to a central system.

NOTE: The central vacuum duct opens to the outside air. There is no baghouse, scrubber or other device for collecting wood dust. At the time of inspection (7 April 1978) there was no visible dust coming from the outside stack as air pollutant. The cyclone separator was apparently sufficient.

In case of complete activation, a study should be made to determine whether or not a baghouse might be needed. On limited use basis, there is apparently a minor amount of wood particulates and no problem has been experienced.

4.2 Automotive Shop - Fuel Storage - Repair and Maintenance.

4.2.1 Fuel Storage.

Auto fuels are stored underground in Pads 724-A, B, C, D-1 and D-2 according to present safety standards.

4.2.2 Paint Shop - Building 722-D.

The paint shop has a water/screen exhaust collecting sludge and residue. Sludge is drummed and trucked to a dry land fill. No problem.

4.2.3 Auto Shop - Wash Rack.

1,1,1 trichlorethane is used in very limited amounts for parts cleaning. The solvent in use is in small steel tanks with lids. No noticeable obnoxious odors were detected. Maximum use will run to a possible 10 gallons per week. Waste solvent is allowed to evaporate in open air; with small quantities this is permissible. Larger quantities will be an entirely different problem.

The wash rack effluent goes through an oil trap. The oil is picked up by a vacuum truck and carried to the burning ground for burning.

The residual water is run directly to the sanitary sewer.

No records were available as to the amount of emulsified or soluble hydrocarbons in the effluent from the wash rack sump.

4.3 Machine Shop.

4.3.1 The machine shop uses small dip tanks of trichlorethane (about 2-2½ gallon capacity) in the same manner as the auto shop described above in Paragraph 4.2.3. There should be no problem in the well ventilated shop.

4.3.2 General Comments.

Cooling oil is used in the limited metal finishing done in this area.

Reportedly, only some 10 gal/yr is used. The water mix is normally a 30/1 mix. Waste in very small quantities is released to the sanitary drains.

No cutting oil residue has ever been identified at the sewage treatment plant.

In the case of increased plant activity, these coolant wastes will increase dramatically and will of necessity need to be disposed of according to the affected state's rules, e.g., injected into an approved deep well, condensed and incinerated, or placed in total retention ponds for bacterial or chemical disintegration.

5.0 Plant 2.

5.1 Plant 2 is a renovation of an original installation operated during World War II by Universal Match Corporation. The charter calls for load, assembly, and packing of various pyrotechnics and large rifle ammunition.

5.2 The pyrotechnics area collects all clean-up wastes, places the effluent and other wastes in sumps, thence to a total retention pond where they are eventually burned in open air.

At the present time, there are no controls over the burning.

5.3 Projected Plans.

An explosive waste incinerator is still in the concept stage.* It will probably be similar to an APE-36 Rotary Incinerator.

The incinerator concepts, designs and procedures are based upon observations of those in use at Edwards AFB, Calif., and Crane NAD in Crane, Indiana.

The modernized version of Plant 2 will have collection sumps and wastes will be treated and handled in a manner similar to those now in effect.

* See Appendix C and Appendix A, Project 101.

5.4 Comments.

No air pollution was noted in Plant 2 per se. There may be an unrecognized problem with the collection sumps and subsequent treating and handling.

6.0 Storage of Solvents and Chemicals.

An outdoor concrete pad back of Building B-12 is used for drummed solvents, bakelite powders, and various other chemicals. There were limited quantities in storage.

There were no signs of catastrophic spills; however, there were no retainer ditches to assure retention!

7.0 Plant 3, Production.

This area has a number of inactive buildings but is used in the production of simulators, pyrotechnic development, and production of various solid component rocket motors.

7.1 Building 68F.

A large building complex on the north side of Plant 3 is inactive but on mobilization would need testing of two types: (a) paint booths and (b) vapor degreasers.

The degreasers are of the water-cooled type. In this particular climate, it is very doubtful that anything less than refrigerated coils will be satisfactory under present regulations.

7.2 Building 68G - is active; used for producing simulators.

7.2.1 The building houses potentially explosive materials; there is a sump provided for waste and cleaning water. The waste is hauled to the retainer pond for disposal by later burning; it appears to be acceptable.

7.2.2 Toxic dust could be a problem, but a wet scrubber is used for air cleaning and the waste water passed to a sump for collection by truck and subsequent disposal; the process appears acceptable.

7.3 Building 75 - inactive; is used as an example for other inactive buildings along with 68F above. Maintenance was acceptable and the building could be mobilized in a few days.

7.4 Building 611 - houses a large central air compressor.

The coolant is potable water running into an open ditch after use. The temperature in the ditch was less than 120°F and the flow very small.

There were some small evidences of traces of oil, probably from the compressor, but visibly there was very little. Near the outlet there were some 4 or 5 fingerling catfish dead from some cause.

An examination of the largest (some 5 inches long) showed the white gills of oxygen starvation. Since the water was only a few inches deep, this oxygen deficiency seemed to be the best logical cause. No other dead water life was found up or down the ditch. Possibly little or no rainfall for over a month had caught the baby fish in backwater with no exit flow.

(See Appendix A, Project 104.)

7.5 Building 54H - used for pyrotechnic development. There is little chance for air pollution that cannot be taken care of by hoods. Waste water is collected in a sump and hauled to a retention lagoon.

8.0 Sanitary Land Fill.

8.1 The land fill in use is an erosion ravine with the unfilled end draining into a creek some few hundred yards distant from the land fill.

8.2 Materials going into the land fill consist of inert scraps of wood, paper, plastics, metals, paint sludge and other dry waste inert materials.

(See Appendix A, Project 105.)

9.0 Salvage Yard.

9.1 Near Building 40W and in a cleared, fenced area, is the reclamation area where cardboard and paper are baled for sale and various scrap is recovered for sale or recycle.

10.0 'Flash Pit' and Burning Grounds.

10.1 Located in the southeast part of the complex and probably 1 to 2 miles from the nearest habitation, the open burning grounds have apparently caused no serious problems, to this date.

10.2 In the observer's opinion, this operation is potentially a source for both air and water pollution.

10.3 Two incinerators are planned for the burning process.

One permit has been issued and funds allocated.

One permit is being requested and an application for funds is being prepared.

(See Appendix C-1 and C-4.)

10.4 No evaluation can be made upon the incinerators at this time. They are both needed and should eliminate much of the pollution potential in this area.

10.4 (contd.)

There is presently a retention, evaporative lagoon of some 1.5 to 2.0 acres for control of the Controlled Industrial Waste.

An AEHA examination and report on the site indicates no soil leachate to the water system could be found.

11.0 "Y" Area (Igniter Area).

11.1 The activities center around packing small hand signals.

11.2 The area contains a mixer (40Y) and two pyrotechnic presses.

11.3 'Septic' tanks are used to catch and treat liquid wastes before release. A new septic tank has not yet been accepted.

11.4 A permit for release of water from septic tank has been issued by NPDES; the waste is checked on a 3-months basis in the older existing septic tank(s).

12.0 Photo Lab.

12.1 Located on Tyler Avenue between "Y" and "T" areas, the photo lab uses an approved septic type tank for effluents.

12.2 No evidences of water pollution could be visually detected.

13.0 Test Area (solid propellant devices).

13.1 Containing test pits, equipment for static testing, conditioning building, etc., the area could use some housekeeping but is, at the present, seeing only limited use.

13.2 There is a large baghouse dust collector/water scrubber that is apparently working efficiently to reduce air pollution to acceptable levels; this is according to AEHA reports.

14.0 Heating Plant and Sanitary Sewage for Administration Area.

14.1 Two boilers on the south side of the administration area are used for heat.

14.2 AEHA has examined and approved these units and federal EPA has made two examinations of the sanitary sewage system.

Both groups, AEHA and EPA, have given approval.

The Ada, Oklahoma laboratories have recently taken sanitary sewage effluent samples but have as yet returned no results for evaluation.

14.3 No stack test data is available and it must be presumed that none have ever been made in the plant.

(See Appendix A, Project 106.)

APPENDIX A

Recommendations for Projects

RECOMMENDATIONS

The attached recommendations involve, to a great extent, test programs in a number of areas. The recommended procedures are of such a nature that one recommendation may cover a number of like points located in different areas. Primarily, the results will be for information to use in valid and detailed plans for enabling LAAP to more readily meet and maintain the regulations and ordinances listed in the Texas Clean Air Act and the Texas Clean Water Act.

No gross areas of negligence were found and some four building projects have been started or are near completion. Two projects are in the planning stage. Details are attached.

Although relatively well equipped, the in-plant laboratory is short of personnel to keep a continuous laboratory testing program going. Plant officials need to study the situation to determine the cost break point between contracting lab test programs outside or in plant.

Project 101 - Test Program for New Installations.

General:

With the limited laboratory personnel now in the facility, there is insufficient manpower to run special or extensive routine tests. Whether it is more economical to employ some outside laboratory such as AnaLabs of Kilgore, Texas or to employ manpower for in-house testing is a matter for the local plant officials.

The laboratory is 90-95% physically equipped to do the testing in Building 29A.

Recommendation:

A program of monthly tests performed on the new installations (Appendix C) should include:

1. Monthly tests on grab samples from the 6 new monitoring stations:

   Estimated cost per year - $2,500.

2. At 3-month intervals for one year, take stack samples from the incinerator(s) stacks looking for particulate, NO_x, SO_2 and hydrocarbons:

   Estimated yearly cost= $2,000/test x 4 = $8,000.

3. Make quarterly tests on ash produced by incineration:

   Estimated cost/year = $800.

4. After about 9 months of operation, test soils around the incinerator for Nitro or high energy compositions:

   Estimated cost - $800.

ENVIRONMENTAL POLLUTION CONTROL
Proposed Project Report

000056

AGENCY:
Media:

Project No.: 101
Date Prepared: 16 Apr 78
Date Revised:
GSA Inventory Control No.:

1. Facility:

Name: Longhorn Army Ammunition Plant
Address: (city, county, state) Marshall, Harrison County, Texas
Agency Contact: (name, title, telephone) Mr. Don Maley, Chief Engineer (214) 679-2613

2. Specific Type of Pollution: Air and Water.

3. Amount of Pollution: To be determined.

4. Pollution Source, and Discharge, Emission, or Deposit Point: Incinerators.

5. Existing Treatment and Other Control Measures: None

6. Effectiveness of Existing Treatment and Control: N/A; study to determine.

7. Remedial Measures Proposed and Estimated Effect in Correcting Problem: None at this time.

8. Applicable Standards: (Cite the specific State, interstate, local, or Federal regulation and specific requirement for which the project is needed.) 40 CFR Part 60; Texas Clean Air Act Texas Clean Water Act; Texas Water Pollution Board.

9. Project Schedule:

	Agency Schedule Mo/Year	Regulation Schedule Mo/Year
Design (Completion)	N/A	
Construction (Start)	None	
Construction (Completion)	N/A	
Operation (Start)	1978	
Final Compliance		

10. Other Relevant Information:

11. Funding Schedule:

Estimated total cost: $15,700

Project 101 (contd.)

000057

5. Take weekly samples from the treated waste in the new treatment plant for 8 weeks and monthly samples thereafter, testing for Texas state prohibited or limited metals, TDS, BOD and turbidity (or TSS) and potentially hazardous materials:

   Estimated Cost/yr - a total of 18 series

   at an estimated $200/series = $3,600/yr.

Total Estimated cost - $15,700.

ENVIRONMENTAL POLLUTION CONTROL
Proposed Project Report

AGENCY:
Media:

Project No.: 101
Date Prepared: 16 Apr 78
Date Revised:
GSA Inventory Control No.:

1. Facility:

   Name: Longhorn Army Ammunition Plant
   Address: (city, county, state) Marshall, Harrison County, Texas
   Agency Contact: (name, title, telephone) Mr. Don Maley, Chief Engineer (214) 679-2613

2. Specific Type of Pollution: Air and Water.

3. Amount of Pollution: To be determined.

4. Pollution Source, and Discharge, Emission, or Deposit Point: Incinerators.

5. Existing Treatment and Other Control Measures: None

6. Effectiveness of Existing Treatment and Control: N/A; study to determine.

7. Remedial Measures Proposed and Estimated Effect in Correcting Problem: None at this time.

8. Applicable Standards: (Cite the specific State, interstate, local, or Federal regulation and specific requirement for which the project is needed.) 40 CFR Part 60; Texas Clean Air Act Texas Clean Water Act; Texas Water Pollution Board.

9. Project Schedule:

	Agency Schedule Mo/Year	Regulation Schedule Mo/Year
Design (Completion)	N/A	
Construction (Start)	None	
Construction (Completion)	N/A	
Operation (Start)	1978	
Final Compliance		

10. Other Relevant Information:

11. Funding Schedule:

Estimated total cost: $15,700

Project 102 - Solids in Waste Water; New Industrial Waste Treatment Installation (Ref. Section 3.2).

Permit TX 0000035, by report, requires only testing for dissolved aluminum and TSS. The writer does not understand why only these two tests are required unless there is a waiver, and time has not been available to check this. Normally, there are requirements for many parameters and there may be only a very limited time allowed for only the two parameters to be checked.

Recommendation:

Make a check or mini-study as to exactly what will be allowed in the industrial waste effluent by Texas Water Pollution Control Board authorities.

The cost will be negligible to determine requirements. When, and if, requirements for tests are increased, monthly testing will cost an estimated $2,400/yr.

ENVIRONMENTAL POLLUTION CONTROL

000060

Proposed Project Report

AGENCY:
Media:

Project No.: 102
Date Prepared: 16 April 1978
Date Revised:
GSA Inventory Control No.:

1. Facility:

   Name: Longhorn Army Ammunition Plant
   Address: (city, county, state) Marshall, Harrison County, Texas
   Agency Contact: (name, title, telephone)

2. Specific Type of Pollution: Study to determine needs, and allowable limits under current regulations.

3. Amount of Pollution: To be determined.

4. Pollution Source, and Discharge, Emission, or Deposit Point:

5. Existing Treatment and Other Control Measures:

6. Effectiveness of Existing Treatment and Control:

7. Remedial Measures Proposed and Estimated Effect in Correcting Problem:

8. Applicable Standards: (Cite the specific State, interstate, local, or Federal regulation and specific requirement for which the project is needed.)

9. Project Schedule:

	Agency Schedule Mo/Year	Regulation Schedule Mo/Year
Design (Completion)		
Construction (Start)		
Construction (Completion)		
Operation (Start)		
Final Compliance		

10. Other Relevant Information:

11. Funding Schedule:

Estimated cost = $2,400

Project 103 - Test Program (see Section 5.3).

General:

Sufficient laboratory test results were not available to determine degree of contamination of individual sumps, such as those used on lines where washdown of potentially explosive materials occurs during process.

Recommendations:

A 'one time' series of tests should be run in the effluent from each industrial waste sump to determine:

1. The degree of contamination of potentially hazardous materials such as oxidizers, device fuels, etc., that might be present.
2. Check the sludge composition for above contaminants.

There are an estimated 20 sumps; testing of sumps and sludge will cost an estimated $5,000.

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ENVIRONMENTAL POLLUTION CONTROL
Proposed Project Report

AGENCY:
Media:

Project No.: 103
Date Prepared: 16 Apr 78
Date Revised:
GSA Inventory Control No.:

1. Facility:

   Name: Longhorn Army Ammunition Plant
   Address: (city, county, state)
   Agency Contact: (name, title, telephone)

2. Specific Type of Pollution: Contaminated sump effluents and sludges.

3. Amount of Pollution: To be determined.

4. Pollution Source, and Discharge, Emission, or Deposit Point:

5. Existing Treatment and Other Control Measures:

6. Effectiveness of Existing Treatment and Control:

7. Remedial Measures Proposed and Estimated Effect in Correcting Problem:

8. Applicable Standards: (Cite the specific State, interstate, local, or Federal regulation and specific requirement for which the project is needed.)

9. Project Schedule:

	Agency Schedule Mo/Year	Regulation Schedule Mo/Year
Design (Completion)		
Construction (Start)		
Construction (Completion)		
Operation (Start)	1978	
Final Compliance		

10. Other Relevant Information:

11. Funding Schedule:

Estimated cost: $5,000

Project 104 - Study of Effluent from Compressor Station (see Section 7.4).

The small dead catfish described in Section 7.4 may have been killed by an anomaly of low water flow and low DO from compressor water. The compressor effluent may be checked by use of a DO meter for some 5 consecutive days to determine whether or not the condition is transient or constant. The results of this and other testing for oils or other water contaminants will determine future actions such as the advisability of constructing a small aeration pond for the compressor; building or placing a screen in front of outflow to prevent aquatic life from entering the area; placing treatment sump in place to catch effluent if it is contaminated; or simply observing the area to see whether or not the event will repeat itself and declare the incident a one-time accident.

Estimated cost of DO measurement by the local plant lab -	$100
DO work done by outside lab -	200
Analytical work -	300
Total cost:	$600

ENVIRONMENTAL POLLUTION CONTROL

000064

Proposed Project Report

AGENCY:
Media:

Project No.: 104
Date Prepared: 16 April 78
Date Revised:
GSA Inventory Control No.:

1. Facility:

   Name: Longhorn Army Ammunition Plant
   Address: (city, county, state) Marshall, Harrison County, Texas
   Agency Contact: (name, title, telephone)

2. Specific Type of Pollution: Unknown.

3. Amount of Pollution: Unknown.

4. Pollution Source, and Discharge, Emission, or Deposit Point: Compressor cooling water outlet.

5. Existing Treatment and Other Control Measures:

6. Effectiveness of Existing Treatment and Control:

7. Remedial Measures Proposed and Estimated Effect in Correcting Problem: Mini-study.

8. Applicable Standards: (Cite the specific State, interstate, local, or Federal regulation and specific requirement for which the project is needed.) Texas Water Pollution Board
   Clean Water Act

9. Project Schedule:

	Agency Schedule Mo./Year	Regulation Schedule Mo./Year
Design (Completion)		
Construction (Start)		
Construction (Completion)		
Operation (Start)		
Final Compliance		

10. Other Relevant Information:

11. Funding Schedule:

Estimated cost: $600

Project 105 - Land Fill Leachant (see Section 8.2).

Make a feasibility study for potential need of a gated coffer dam or other means of preventing inadvertent dumps of toxic or potentially harmful material from being washed by rains or leaching into Harrison Creek and thence to Caddo Lake.

Recommend:

Take soil samples below fill in the drainage area and analyze for any potentially toxic materials from the land fill such as organics, toxic metals, or any materials radically affecting pH.

Estimated cost: $1,000.

NOTE: Should dangerous or potentially dangerous materials be found as leachants, the most economical way to solve the problem will be to abandon the land fill for a spot on level ground surrounded by a dike.

ENVIRONMENTAL POLLUTION CONTROL
Proposed Project Report

AGENCY:
Media:

Project No.: 105
Date Prepared: 16 Apr 78
Date Revised:
GSA Inventory Control No.:

1. Facility:

   Name: Longhorn Army Ammunition Plant
   Address: (city, county, state) Marshall, Harrison County, Texas
   Agency Contact: (name, title, telephone) Mr. Don Maley, Chief Engineer, (214)679-2613

2. Specific Type of Pollution: Leachant to water.

3. Amount of Pollution: To be determined.

4. Pollution Source, and Discharge, Emission, or Deposit Point:

5. Existing Treatment and Other Control Measures:

6. Effectiveness of Existing Treatment and Control:

7. Remedial Measures Proposed and Estimated Effect in Correcting Problem:

8. Applicable Standards: (Cite the specific State, interstate, local, or Federal regulation and specific requirement for which the project is needed.)

9. Project Schedule:

	Agency Schedule Mo/Year	Regulation Schedule Mo/Year
Design (Completion)		
Construction (Start)		
Construction (Completion)		
Operation (Start)		
Final Compliance		

10. Other Relevant Information:

11. Funding Schedule:

Estimated cost: $1,000

Project 106--Stack Testing (see Section 2.1.2).

Observations:

(a) Apparently, no stack tests to EPA specifications have ever been made on the four-boiler central complex. Since natural gas is used, the logical contaminants are only CO, CO_2, unburned hydrocarbons, and possibly SO_2. The Sulfur (H_2S) contamination for the gas source is approximately 0.4 $lbs/10^6 ft^3$. This should give no problem.

Therefore, stack test results from 1 of 4 stacks in full operation should be representative; however, an EPA waiver must be obtained to test only representative stacks. Counting the cost of building OSHA-approved test platform and ports and taking a series of 3 complete tests using EPA Methods 1, 2, 3, 4, 5 and 6 will be approximately $10,000.

(b) Periodic tests or continuous CO_2/CO ratio monitors under various conditions of operation, although not necessary by present Texas standards, would enable air/fuel controls for most efficient fuel use. Other plants with controls of this type have effected up to 40% savings in energy fuels.

A study on the possibility of the above is recommended. The data obtained while stack testing is under way will be valuable in such a study.

Project 106 (contd.)

(c) In case of emergency need, there should be more adequate fuel oil facilities and controls.

Estimated cost - elaborateness of oil storage and controls could raise the cost to the $125,000 range.

Recommendation:

Obtain an opinion from the Texas Air Pollution Control Board as to whether or not:

(1) Tests of one stack of four on the central power boilers will be accepted.

(2) Tests on one of two boiler stacks in the Administration area will be accepted.

Estimated cost of testing 6 (all) stacks - $15,000.

Estimated cost of testing 2 stacks - $5,000.

Possible Alternative:

Waivers for testing these stacks may be possibly obtained from the Texas Air Pollution Control Board on the grounds that natural gas fuel would offer no objectionable pollution.

000069

ENVIRONMENTAL POLLUTION CONTROL
Proposed Project Report

AGENCY:
Media:

Project No.: 106
Date Prepared: 15 Apr 78
Date Revised:
GSA Inventory Control No.:

1. Facility:

Name: Longhorn Army Ammunition Plant
Address: (city, county, state) Marshall, Harrison County, Texas
Agency Contact: (name, title, telephone) Don Maley, Chief Engineer, 214/679-2613

2. Specific Type of Pollution: Air

3. Amount of Pollution: Undetermined; need project to determine degree of pollution.

4. Pollution Source, and Discharge, Emission, or Deposit Point: Furnaces; exhaust stacks.

5. Existing Treatment and Other Control Measures:

6. Effectiveness of Existing Treatment and Control:

7. Remedial Measures Proposed and Estimated Effect in Correcting Problem: Test Program.

8. Applicable Standards: (Cite the specific State, interstate, local, or Federal regulation and specific requirement for which the project is needed.) 40 CFR Part 60 and Texas Clean Air Act.

9. Project Schedule:

	Agency Schedule Mo/Year	Regulation Schedule Mo/Year
Design (Completion)	N/A	
Construction (Start)	N/A	
Construction (Completion)	N/A	
Operation (Start)	1978	
Final Compliance		

10. Other Relevant Information:

11. Funding Schedule:

Estimated cost: Outside testing of 6 central boiler stacks @ $2,000 each = $12,000

Testing exhausts and, where applicable, stacks for exhausts, approx. 10 @ $1,500 = $15,000

Total cost: $27,000

NOTE: Plant must provide OSHA-approved platforms and test ports.

APPENDIX B

Representative Available Test Results on Water and Liquid Effluents

Appendix B

Table 1

Released Effluent from Sanitation Ponds
Operating Under NPDES Permit No. TX-0060810

BOD	Average 0.3 lb/day
TSS	Average 0.3 lb/day, 20 mg/liter
pH	Min 6, Max 9 3-month avg 6.8
*Chlorine Residue	Average 20 mg/liter
Fecal Coliform	Average 200 N°/100 ml
Soluble Aluminum	0.05 lb/day, 3 mg/liter

* Plans have been made to install a new chlorination set-up for all septic tank effluent after release from sand filters and before entering open water.

Comments:

Tests on the new industrial treatment pond indicate 1.4 ppm aluminum and 40-50 ppm TSS, according to the Chief Engineer.

APPENDIX C

New Construction
in Progress or Anticipated

Appendix C

New Construction in Progress and Anticipated

New Construction Status

Longhorn Army Ammunition Pland is well along in a program for improving contaminated and explosive waste disposal as well as a nearly complete and operational industrial waste effluent treatment system. Six strategically located water quality monitoring stations have been very nearly completed.

All new treatment, disposal, and sampling stations are to receive final tests before acceptance. Routine laboratory testing will need to be accomplished to determine the efficiency of each separate operation.

Contaminated Waste Incinerator:

TACB construction permit application was made 21 March 1978 and is in evaluation at this time.

This incinerator will be used to dispose of waste contaminated with the various chemicals and scrap mixes produced in LAAP.

The exact total anticipated cost was not available.

Water Quality Monitoring Stations:

Installation of 6 different strategically located water quality monitoring stations is very nearly (90%) completed at a total cost of approximately $153,000.

The project was approved by A/E in November 1975.

Industrial Waste Treatment Facilities:

Authorization for this construction was received 29 March 1976. The project is 99% completed.

The estimated total cost will be near $400,000. This is an overrun of $75,000 above the first bid of $336,000.

(See Appendix A, Project 102.)

Explosive Waste Incinerator:

Studies have been made of the explosive waste incinerators in both Crane NAD, Crane, Indiana and Edwards AFB in California.

It is now believed that the best type of incinerator to install is an APE-36 Rotary Incinerator.

Soil Samples were taken in February 1977.

The total cost estimate has not been completed.