

**STATE OF TEXAS
AND
U.S. DEPARTMENT OF ENERGY
AGREEMENT IN PRINCIPLE**

***PANTEX FACILITY GRANT
SCOPES OF WORK
AND
COST ESTIMATES FOR
FISCAL YEAR 2002***

- **Fiscal Year 2002 Budget**
- **Fiscal Year 2001 -
Fiscal Year 2005
Budget**
- **Fiscal Year 2002
Scope of Work**
- **Appendix A
Specific Project Objectives**
- **A.I.P. Proposals**

**STATE OF TEXAS
AGREEMENT IN PRINCIPLE
ESTIMATED COSTS
FISCAL YEAR 2002**

<u>PARTICIPANT</u>	<u>DOE PROGRAM</u>		<u>TOTAL BUDGET</u>
	<u>Defense Programs</u>	<u>Environmental Management</u>	
Texas Department of Health			
Bureau of Radiation Control	237,215		237,215
Laboratories	62,000		62,000
Total	299,215		299,215
Texas Natural Resource Conservation Commission			
Remediation Division		184,651	184,651
Field Operations		175,562	175,562
Monitoring Operations		110,987	110,987
Toxicology & Risk Assessment		13,800	13,800
Environmental Law		2,000	2,000
Total		487,000	487,000
Division of Emergency Management	170,465		170,465
City of Amarillo	48,492		48,492
Armstrong County	12,360		12,360
Carson County	14,420		14,420
State Energy Conservation Office	183,898		183,898
Office of the Attorney General	15,000		15,000
Bureau of Economic Geology	92,700		92,700
TOTAL ESTIMATED COSTS	836,550	487,000	1,323,550

**FISCAL YEAR 2001 -
FISCAL YEAR 2005
BUDGET**

**STATE OF TEXAS
AGREEMENT IN PRINCIPLE
FIVE YEAR SPENDING PLAN**

	Fiscal Year 2001	Fiscal Year 2002	Fiscal Year 2003	Fiscal Year 2004	Fiscal Year 2005
Texas Department of Health, Bureau of Radiation Control	290,500	299,215	308,191	317,437	326,960
Texas Natural Resource Conservation Commission	500,000	487,000	450,000	450,000	450,000
Texas Department of Public Safety, Division of Emergency Management	165,500	170,465	175,579	180,846	186,272
City of Amarillo	47,080	48,492	49,947	51,446	52,989
Armstrong County	12,000	12,360	12,731	13,113	13,506
Carson County	14,000	14,420	14,853	15,298	15,757
State Energy Conservation Office, Pantex Program	150,920	183,898	241,475	262,668	284,497
Office of the Attorney General	15,000	15,000	15,000	15,000	15,000
Bureau of Economic Geology	90,000	92,700	95,481	98,345	101,296
TOTAL	1,285,000	1,323,550	1,363,257	1,404,153	1,446,277

**FISCAL YEAR 2002
SCOPE OF WORK**

AGREEMENT IN PRINCIPLE

SCOPE OF WORK FOR STATE OF TEXAS

FISCAL YEAR 2002

Generic

The State Energy Conservation Office, all cognizant state agencies, and local political subdivisions within the designated Pantex Emergency Planning Zone will participate in quarterly status meetings with the Department of Energy; prepare a scope of work and cost estimate for activities to be conducted in Fiscal Years 2002 through 2005; prepare quarterly reports; participate in public meetings to discuss state oversight activities at the Pantex Plant; propose modifications to the Agreement in Principle as appropriate; provide, as appropriate, reports and brochures for public education on Pantex; provide technical assistance to the Pantex Plant Citizens' Advisory Board; participate in environmental compliance or emergency management meetings relating to the Pantex programs; and participate in tours, meetings, and symposia.

State Energy Conservation Office

The State Energy Conservation Office will provide overall project integration services for the State of Texas. Specific activities will include:

1. Management of sub-grants to State Agencies and local governments.
2. Preparation and distribution of all required reports.
3. Coordination of meetings with the Department of Energy and its contractors.

Division of Emergency Management

The Division of Emergency Management of the Texas Department of Public Safety will participate in activities under Tasks III of the grant. Specific activities will include:

Task III: Emergency Management

1. Review and provide comments on updated hazard assessments conducted by the Pantex Plant, as appropriate. Proposed protective action recommendations will be reviewed and comments provided to the DOE.
2. Update appropriate state-level plans, annexes, and procedures pertaining to a radiological and/or hazardous material incident at the Pantex Plant. Prior to completion of the updating process, comments will be solicited from Pantex officials.
3. Review and comment, as appropriate, on Pantex emergency plans and procedures related to radiological or hazardous materials incidents; maintain current copies of such plans and procedures.
4. In coordination with Pantex officials, design, schedule, conduct and evaluate periodic joint emergency exercises and drills. Participate in such exercises and drills to the extent possible.
5. Meet periodically with DOE and Pantex Plant emergency management staff to review and resolve emergency management issues and coordinate emergency management activities.
6. Review current information to assess the effect of the maximum credible accident.
7. Participate in periodic notification exercises and communications drills.
8. In the event of an incident at Pantex potentially affecting the offsite population, assist the local authorities to the extent and in the manner identified in respective state and local emergency management plans.
9. In coordination with DOE and other state and local AIP participants, develop and present Pantex-related emergency preparedness training for local governments, other state agencies, volunteer groups, industry and the general public.
10. Assist local governments in updating plans and procedures, and provide multi-jurisdictional integration of such plans and procedures related to Pantex operational emergencies.

11. Review and provide comments regarding local emergency plans developed to prepare for a radiological and/or hazardous material incident at the Pantex Plant.
12. Assist local governments in developing public information materials and programs.
13. Assist the local governments in developing procedures and maintaining the Reception Center located at the Tri-State Fair Grounds.
14. Provide review comments on Pantex documents (Environmental Assessments and Environmental Impact Statements) within the published timeframes.
15. Provide representatives, as appropriate, to attend Pantex public meetings.

Bureau of Radiation Control

The Bureau of Radiation Control of the Texas Department of Health will participate in a variety of activities under Tasks I-III of the grant. Specific activities will include:

Task I: Chemical and Radiological Contaminant Inventory and Assessment

1. Assist the Texas Natural Resource Conservation Commission (TNRCC) in reviewing inventories of any new significant radiological and chemical toxic emission sources from the Plant, such as stacks, vents, ponds, and waste sites.
2. Assist the TNRCC in reviewing inventories of all hazardous, regulated waste (chemical, radiological and mixed) identified onsite.
3. Assist the TNRCC in reviewing updates of the plant waste and residue characterization plan.
4. Assist the TNRCC in reviewing updates of the facility-wide waste minimization plans.

Task II: Environmental Monitoring

5. Assist the TNRCC in reviewing the current surface water monitoring system plans, and updates, as appropriate.

6. Review reports characterizing the background radioactivity in soil and water in and around the site, and updates, as appropriate.
7. Assist the TNRCC in reviewing the current groundwater monitoring system plans, including the sampling of any public drinking water supplies for review, and updates, as appropriate.
8. Review current radioactivity surveillance system plans and updates, as appropriate.
9. Assist the TNRCC in reviewing current air monitoring system plans and updates, as appropriate.
10. Review quarterly compilations of environmental data.
11. Sample any public drinking water systems in the vicinity of the Plant. For any systems that are determined to be potentially affected by plant operations, the State, in cooperation with local governments, will develop a program for increased frequency of system sampling and analysis. Analyses will include chemicals and radionuclides.
12. Collect and analyze soil, water, vegetation, crops, and other appropriate environmental media from the plant environs for selected radionuclides and/or chemicals. Samples will be analyzed on a priority basis and results provided in an annual report to the DOE. Any samples that exceed regulatory limits will be reported to the DOE within 24 hours of analysis.
13. Monitor the site boundary with dosimeters to determine ambient gamma radiation levels.
14. Perform chemical and radiological analyses of air samples.
15. Review and provide recommendations on updates of dispersion modeling of air emissions, as appropriate.
16. Review environmental monitoring and modeling results for potential public health impacts.
17. Provide the results of all air monitoring efforts to DOE on a quarterly/annual basis, as appropriate. Upon completion of the DOE review, results will be disseminated to the Pantex DOE Public Reading Rooms.

18. Prepare environmental monitoring and analysis plans and updates as appropriate, for the monitoring and analysis of chemical and radiological materials, which may be present in the environment in and around the Plant. Provide DOE with the opportunity to review and comment on such plans prior to publication.
19. Allow the DOE to take split samples, whenever possible, in all routine environmental monitoring activities.

Task III: Emergency Management

20. Review and provide comments on updated hazard assessments conducted by the Pantex Plant, as appropriate. Proposed protective action recommendations will be reviewed and comments provided to the DOE.
21. Update appropriate state-level plans, annexes, and procedures pertaining to a radiological and/or hazardous material incident at the Pantex Plant. Prior to completion of the updating process, comments will be solicited from Pantex officials.
22. Review and comment, as appropriate, on Pantex emergency plans and procedures related to radiological or hazardous materials incidents.
23. In coordination with Pantex officials, design, schedule, conduct and evaluate periodic joint emergency exercises and drills. Participate in such exercises and drills to the extent possible.
24. Meet periodically with DOE and Pantex Plant emergency management staff to review and resolve emergency management issues and coordinate emergency management activities.
25. Review current information to assess the effect of the maximum credible accident.
26. In the event of an incident at Pantex potentially affecting the offsite population, assist the local authorities to the extent and in the manner identified in respective state and local emergency management plans.
27. In conjunction with DOE, coordinate radiological training for potentially affected state and local response organizations.
28. Assist local governments in updating plans and procedures, and provide multijurisdictional integration of such plans and procedures related to Pantex operational emergencies.

29. Review and provide comments regarding local emergency plans developed to prepare for a radiological and/or hazardous material incident at the Pantex Plant.
30. Assist local governments in developing public information materials and programs.
31. Provide guidance relating to radiological aspects of public information materials and programs. Review and comment as requested.
32. Assist local governments in developing procedures and maintaining the Reception Center located at the Tri-State Fair Grounds.
33. Provide review comments on Pantex documents (Environmental Assessments and Environmental Impact Statements) within published timeframes.
34. Provide representatives, as appropriate, to attend Pantex public meetings.
35. Coordinate with the DOE to provide Q-cleared State personnel with need-to-know information and escorted access to Pantex facilities on an “as needed” basis, as agreed upon by both parties.

Texas Natural Resource Conservation Commission

The Texas Natural Resource Conservation Commission will participate in activities under Tasks I-III of the grant. Specific activities will include:

Task I: Chemical and Radiological Contaminant Inventory and Assessment

1. Review inventories of any new significant radiological and chemical toxic emission sources from the Plant, such as stacks, vents, ponds, and waste sites.
2. Review inventories of all hazardous, regulated waste (chemical, radiological and mixed) identified onsite.
3. Review updates of the plant waste and residue characterization plan.
4. Review updates of the facility-wide waste minimization plans.

Task II: Environmental Monitoring

5. Review the current surface water monitoring system plans, and updates, as appropriate.
6. Review the current groundwater monitoring system plans, including the sampling of any public drinking water supplies for review, and updates, as appropriate.
7. Review current air monitoring system plans and updates, as appropriate.
8. Review reports and/or plans on the biomonitoring of surface water discharges, if required.
9. Review quarterly compilations of environmental data.
10. Expedite review of Pantex Environmental Restoration workplans, reports, and data compilations. Within 90 working days of transmittal to the State, the TNRCC will provide written comments to DOE.
11. Sample any public drinking water systems in the vicinity of the Plant. For any systems that are determined to be potentially affected by plant operations, the State, in cooperation with local governments, will develop a program for increased frequency of system sampling and analysis. Analyses will include chemicals and radionuclides.
12. Collect and analyze soil, water, vegetation, crops, and other appropriate environmental media from the plant environs for selected radionuclides and/or chemicals. Samples will be analyzed on a priority basis and results provided in an annual report to the DOE. Any samples that exceed regulatory limits will be reported to the DOE within 24 hours of analysis.
13. Maintain air monitoring systems for VOCs, particulate matter and particulate radionuclides, and provide enhancements as appropriate.
14. Perform chemical and radiological analyses of air samples.
15. Review and provide recommendations on updates of dispersion modeling of air emissions, as appropriate.
16. Review and provide recommendations on groundwater modeling results, and updates, as appropriate.

17. Review environmental monitoring and modeling results for potential public health impacts.
18. Provide the results of all air monitoring efforts to DOE on a quarterly/annual basis, as appropriate. Upon completion of the DOE review, results will be disseminated to the Pantex DOE Public Reading Rooms.
19. Prepare environmental monitoring and analysis plans and updates as appropriate, for the monitoring and analysis of chemical and radiological materials, which may be present in the environment in and around the Plant. Provide DOE with the opportunity to review and comment on such plans prior to publication.
20. Allow the DOE to take split samples, whenever possible, in all routine environmental monitoring activities.

Task III: Emergency Management

21. In the event of an incident at Pantex potentially affecting the offsite population, assist the local authorities to the extent and in the manner identified in respective state and local emergency management plans.
22. Provide review comments on Pantex documents (Environmental Assessments and Environmental Impact Statements) within published timeframes.
23. Provide representatives, as appropriate, to attend Pantex public meetings.
24. Coordinate with the DOE to provide Q-cleared State personnel with need-to-know information and escorted access to Pantex facilities on an “as needed” basis, as agreed upon by both parties.

Bureau of Economic Geology

The Bureau of Economic Geology will participate in activities under Task II of the grant. Specific activities will include:

Task II: Environmental Monitoring

1. Review and provide recommendations on groundwater modeling results, and update, as appropriate.
2. Provide review comments on Pantex documents (Environmental Assessments and Environmental Impact Statements) within published timeframes.

3. Provide representatives, as appropriate, to attend Pantex public meetings.

Office of the Attorney General

The Office of the Attorney General will provide advice, representation, analysis, and reports on issues relating to the Pantex Plant. Specific activities will include:

1. Provide review comments on Pantex documents (Environmental Assessments and Environmental Impact Statements) within published timeframes.
2. Provide representatives, as appropriate, to attend Pantex public meetings.

Other Agencies and Parties

In addition to the State Energy Conservation Office and State agencies, other parties will conduct activities through sub-grants from the State Energy Conservation Office. These entities include Carson County, Armstrong County and the City of Amarillo.

Activities of Carson County, Armstrong County and the City of Amarillo will focus on Task III of the grant. Specific activities will include:

Task III: Emergency Management

1. Review and provide comments on updated hazard assessments conducted by the Pantex plant, as appropriate. Proposed protective action recommendations will be reviewed and comments provided to the DOE.
2. Review and comment, as appropriate, on Pantex emergency plans and procedures related to radiological or hazardous materials incidents; maintain current copies of such plans and procedures.
3. In coordination with Pantex officials, design, schedule, conduct and evaluate periodic joint emergency exercises and drills. Participate in such exercises and drills to the extent possible.
4. Meet periodically with DOE and Pantex Plant emergency management staff to review and resolve emergency management issues and coordinate emergency management activities.
5. Review current information to assess the effect of the maximum credible accident.
6. Participate in periodic notification exercises and communications drills.

7. Develop public information materials and programs.
8. Develop procedures and maintain the Reception Center located at the Tri-State Fair Grounds.
9. Provide review comments on Pantex documents (Environmental Assessments and Environmental Impact Statements) within published timeframes.
10. Provide representatives, as appropriate, to attend Pantex public meetings.

APPENDIX A
SPECIFIC PROJECT OBJECTIVES

ARTICLE III - SPECIFIC PROJECT OBJECTIVES

This Article sets out the specific tasks to be performed under this Grant. These tasks are grouped into three general categories:

Task One	Chemical and radiological contaminant inventory and assessment
Task Two	Environmental monitoring
Task Three	Emergency management

The SECO, all cognizant State agencies, and local political subdivisions within the designated Pantex Emergency Planning Zone will participate in quarterly status meetings with the DOE, prepare a scope of work and cost estimate for activities to be conducted in FYs 2001 through 2005, prepare quarterly reports, propose modifications to the AIP as appropriate, and participate in tours, meetings, and symposia.

The SECO will provide overall project integration for the State. Specific activities will include:

1. Management of sub-grants to state agencies and local governments
2. Preparation of all required reports
3. Coordination of meetings with the DOE and its contractors

The cognizant State agencies, acting through the SECO, will:

1. Participate in quarterly status meetings organized by the SECO and the DOE
2. Provide quarterly status reports
3. Participate in public meetings to discuss state activities at the Pantex Plant
4. Provide, as appropriate, reports and brochures for public education on Pantex
5. Provide technical assistance to the Pantex Plant Citizens' Advisory Board

In addition to the SECO and cognizant State agencies, other parties will conduct activities through sub-grants from the SECO. These entities include local political subdivisions within the designated Pantex Emergency Planning Zone.

Each specific work objective is discussed more thoroughly in the sections below, detailing Tasks One through Three of this Agreement.

TASK ONE: CHEMICAL AND RADIOLOGICAL ASSESSMENT

The cognizant State agencies, acting through the SECO, will:

1. Provide qualified personnel for Q-clearances to conduct independent verification of chemical and radiological inventory
2. Validate and review industrial contaminants and inventories

TASK TWO: ENVIRONMENTAL MONITORING

The cognizant State agencies, acting through the SECO, will:

1. Review the environmental monitoring data.
2. Review the current groundwater monitoring system plans, including the sampling of any public drinking water supplies for review and updates, as appropriate.
3. Review current radioactivity surveillance system plans and updates, as appropriate.
4. Review current air monitoring system plans and updates, as appropriate.
5. Review reports and/or plans on the biomonitoring of surface water discharges, if required.
6. Review quarterly compilations of environmental data and conduct independent verification of compliance data.
7. Sample any public drinking water systems in the vicinity of the Plant. For any systems that are determined to be potentially affected by Plant operations, the State, in cooperation with local governments, will develop a program for increased frequency of system sampling and analysis. Analyses will include chemicals and radionuclides.
8. Collect and analyze soil, water, vegetation, crops, and other appropriate environmental media from the Plant environs for selected radionuclides and/or chemicals. Samples will be analyzed on a priority basis and results provided in an annual report to the DOE. Any samples that exceed regulatory limits will be reported to the DOE within 24 hours of analysis.
9. Monitor the site boundary with dosimeters to determine ambient gamma radiation levels.

10. Maintain air monitoring systems for Volatile Organic Compounds, particulate matter and particulate radionuclides, and provide enhancements, as appropriate.
11. Perform chemical and radiological analyses of air samples.
12. Review and provide recommendations on updates of dispersion modeling of air emissions, as appropriate.
13. Review and provide recommendations on groundwater modeling results, and updates, as appropriate.
14. Review environmental monitoring and modeling results for potential public health impacts.
15. Provide the results of all air monitoring efforts to DOE on a quarterly/annual basis, as appropriate. Upon completion of the DOE review, results will be disseminated to the Pantex DOE Public Reading Rooms.
16. Prepare environmental monitoring and analysis plans and updates as appropriate, for the monitoring and analysis of chemical and radiological materials, which may be present in the environment in and around the Plant. Provide DOE with the opportunity to review and comment on such plans prior to publication.
17. Allow the DOE to take split samples, whenever possible, in all routine environmental monitoring activities.

TASK THREE: EMERGENCY MANAGEMENT

In accordance with the Texas Disaster Act of 1975, and consistent with the Executive Order of the Governor Relating to Emergency Management, local governments, the SECO, and cognizant State agencies have specific responsibilities for emergency planning and response. Joint emergency planning under this Agreement and associated Grant should be consistent with the Texas Disaster Act and the Executive Order of the Governor and should meet State of Texas Division of Emergency Management (DEM) and Federal Emergency Management Agency (FEMA) planning standards and criteria.

The cognizant State agencies, and local political subdivisions, acting through the SECO, will:

1. Review and provide comments on updated hazard assessments conducted by the Pantex Plant, as appropriate. Proposed protective action recommendations will be reviewed and comments provided to the DOE.
2. Update appropriate state-level plans, annexes, and procedures pertaining to a radiological and/or hazardous material incident at the Pantex Plant. Prior to completion of the updating process, comments will be solicited from Pantex

officials.

3. Review and comment, as appropriate, on Pantex emergency plans and procedures related to radiological or hazardous materials incidents; maintain current copies of such plans and procedures.
4. In coordination with Pantex officials, design, schedule, conduct, and evaluate periodic joint emergency exercises and drills. Participate in such exercises and drills to the extent possible.
5. Meet periodically with DOE and Pantex Plant emergency management staff to review and resolve emergency management issues and coordinate emergency management activities.
6. Review current information to assess the effect of the maximum credible accident.
7. Participate in periodic notification exercises and communications drills.
8. In the event of an incident at Pantex potentially affecting the offsite population, assist the local authorities to the extent and in the manner identified in respective state and local emergency management plans.
9. In conjunction with DOE, coordinate radiological training for potentially affected state and local response organizations.
10. Assist local government in updating plans and procedures, and provide multi-jurisdictional integration of such plans and procedures related to Pantex operational emergencies.
11. Review and provide comments regarding local emergency plans developed to prepare for a radiological and/or hazardous material incident at the Pantex Plant.
12. Assist local governments in developing public information materials and programs.
13. Provide guidance relating to radiological aspects of public information materials and programs. Review and comment as requested.
14. Develop procedures and maintain the Reception Center located at the Tri-State Fair Grounds.

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***PANTEX FACILITY GRANT
SCOPES OF WORK
AND
COST ESTIMATES FOR
FISCAL YEAR 2002***

**STATE ENERGY
CONSERVATION OFFICE**

**TEXAS NATURAL RESOURCE
CONSERVATION COMMISSION**

**TEXAS DEPARTMENT
OF HEALTH**

**TEXAS DEPARTMENT
OF PUBLIC SAFETY**

CITY OF AMARILLO

ARMSTRONG COUNTY

CARSON COUNTY

**THE UNIVERSITY OF
TEXAS AT AUSTIN**

**OFFICE OF THE
ATTORNEY GENERAL**



**STATE OF TEXAS
AND
U.S. DEPARTMENT OF ENERGY**

AGREEMENT IN PRINCIPLE

**Fiscal Year 2002
Scope of Work
and
Budget**

State Energy Conservation Office

**STATE OF TEXAS
AGREEMENT IN PRINCIPLE
ESTIMATED COSTS
FISCAL YEAR 2002**

<u>PARTICIPANT</u>	<u>DOE PROGRAM</u>		<u>TOTAL BUDGET</u>
	<u>Defense Programs</u>	<u>Environmental Management</u>	
Texas Department of Health			
Bureau of Radiation Control	237,215		237,215
Laboratories	62,000		62,000
Total	299,215		299,215
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Remediation Division		184,651	184,651
Field Operations		175,562	175,562
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STATE ENERGY CONSERVATION OFFICE

SCOPE OF WORK

FISCAL YEAR 2002

The State Energy Conservation Office will continue its work of coordinating the activities of the various state agencies and local governments under the Agreement in Principle. The State Energy Conservation Office will also continue to serve as the liaison between the agencies and the U.S. Department of Energy, and as a central source of information for members of the public interested in environmental conditions and emergency preparedness at Pantex.

The State Energy Conservation Office will work with DOE in keeping the agencies current with their tasks and milestones, as described in the responsibility matrix that is part of the management plan for this project. The State Energy Conservation Office will also help prepare comments on the various DOE environmental impact statements, recommendations, proposals, and remediation strategies. In addition, the State Energy Conservation Office will continue to perform its accounting functions for the agencies under the grant to enable them to be reimbursed for their appropriate expenses.

The following is a cost estimate for the activities just described in the amount of \$183,898.

STATE ENERGY CONSERVATION OFFICE
COST ESTIMATE
FISCAL YEAR 2002

SALARIES

Director	11 man-months	\$55,129	
Program Administrator	11 man-months	\$45,569	
Administrative Assistant	11 man-months	\$29,644	
	TOTAL SALARIES		\$130,342

BENEFITS (@ 22%of salaries) \$28,675

TRAVEL

Amarillo

Three Quarterly Meetings, tow days each, two people attending	\$3,200
Six trips, two days each, tow people	\$6,300

Washington, D.C.

Two trips, two days each, two people	\$3,600
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TOTAL TRAVEL \$13,100

EQUIPMENT \$4,000

SUPPLIES & SERVICES \$7,781

TOTAL DIRECT COSTS \$183,898



**STATE OF TEXAS
AND
U.S. DEPARTMENT OF ENERGY**

AGREEMENT IN PRINCIPLE

**Fiscal Year 2002
Scope of Work
and
Budget**

***Texas Natural Resource
Conservation Commission***

**STATE OF TEXAS
AGREEMENT IN PRINCIPLE
ESTIMATED COSTS
FISCAL YEAR 2002**

<u>PARTICIPANT</u>	<u>DOE PROGRAM</u>		<u>TOTAL BUDGET</u>
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PANTEX WEAPONS FACILITY SUBGRANT PROGRAM

DEPARTMENT OF ENERGY through the STATE ENERGY CONSERVATION OFFICE FY 2002

SUMMARY

The Pantex Subgrant Program is a five-year agreement between the Department of Energy (DOE) and the Comptroller of Public Accounts' State Energy Conservation Office. It is also a joint venture between several state agencies and local governments who have regulatory authority to monitor the Pantex Nuclear Weapons Facility located near Amarillo, Texas. These agencies include the following: Texas Department of Health; Texas Natural Resource Conservation Commission (TNRCC); Comptroller of Public Accounts; University of Texas-Bureau of Economic Geology; the City of Amarillo; and Carson County.

The objectives of this Subgrant are to implement an environmental monitoring program at the Pantex facility to provide for independent evaluation of environmental monitoring data; to coordinate environmental cleanup schedules, to enhance joint federal, state and local emergency preparedness capability; to provide a mechanism for further involvement of the State of Texas in the Department of Energy remediation and clean up of the Pantex facility; and to provide a public outreach program to allow the citizens of Texas to be involved in the ongoing activities which may affect human health and the environment.

The TNRCC has conducted wastewater and industrial solid waste inspections at the Pantex facility since the late 70's. The wastewater treatment system operates in accordance with the requirements specified in a permit issued by the TNRCC and currently under revision. Non-radiological hazardous and solid waste activities are regulated by a permit initially issued by the TNRCC in 1991 and amended in February, 1996. Mixed wastes (hazardous plus radioactive) are managed by Pantex in accordance with the Agreed Order and Compliance Plan issued by the TNRCC in October, 1995, and revised in October, 1996.

During the years, the Pantex facility has made progress in reducing the wastewater flows and minimizing the generation of industrial solid waste. The site has advanced, as most industries have, in becoming environmentally conscious. The Pantex facility has had its share of problems due to changes in technology, but is comparable to other major industries in the Panhandle area with respect and sensitivity to environmental issues.

For FY 2002, the TNRCC's Region 1 Office in Amarillo, Texas will continue to regulate the Pantex facility through the increase of oversight inspections and continued co-sampling of wastewater, groundwater, and surface water. The TNRCC's Remediation Division will provide continued oversight of Pantex's environmental restoration program.

WORK PROGRAM ORGANIZATIONAL STRUCTURE

The project tasks are divided between five TNRCC Divisions; Remediation, Field Operations Region 1, Monitoring Operations, Toxicology & Risk Assessment Section, and Environmental Law.

FEDERAL FUNDING

The total cost of the FY 2002 workplan is **\$487,000**. This amount is 100% pass-through Federal funds from the Comptroller of Public Accounts' State Energy Conservation Office and requires no State match.

DIVISION FUNDING

The requested funding of the divisions participating in the Pantex Subgrant is as follows:

<u>DIVISION</u>	<u>\$ AMOUNT</u>	<u>% OF TOTAL</u>
<u>Remediation</u>	184,651	<u>37.92%</u>
<u>Field Operations</u>	175,562	<u>36.05%</u>
<u>Monitoring Operations</u>	110,987	<u>22.79%</u>
<u>Toxicology & Risk Assessment</u>	13,800	<u>2.83%</u>
<u>Environmental Law</u>	2,000	<u>0.41%</u>
<u>TOTAL</u>	\$487,000	<u>100.00%</u>

PROJECT SCHEDULE

The TNRCC will conduct this project over a twelve (12) month period beginning October 1, 2001, and ending September 30, 2002.

DELIVERABLES

The Remediation Division will:

- Provide comments on environmental restoration initiatives submitted by the Department of Energy;
- Provide written comments on Pantex's environmental restoration final reports and data compilations including RFI's CMS, CMI, SWMU closures and other required and related reports;
- Provide comments, as necessary, on Pantex's environmental restoration interim reports, scopes of work, and work plans;
- Evaluate the soil and groundwater quarterly monitoring data that are submitted by Pantex in an electronic format. The soil and groundwater data will be evaluated to determine if interim stabilization measures are necessary to protect human health and the environment;
- Review meeting minutes and summaries developed by Pantex for all environmental related conferences, public meetings and technical meeting in which the Remediation Division is a participant;
- Provide regulatory guidance in technical meetings as part of the Expedited Review Process;
- Submit to Pantex and the State Energy Office (AIP Grant Manager) an Agreement in Principle (AIP) Quarterly Report outlining the accomplishments, and milestones achieved for each fiscal year quarter (e.g., Oct-Dec); and,
- Participate in the Pantex Modeling Committee to develop the groundwater solute transport model to be used in evaluating groundwater conditions at Pantex.

The Field Operations Division will:

- Collect groundwater samples to determine water quality;
- Prepare and update, as necessary, the Quality Assurance Project Plan (QAPP) for the monitoring and analysis of chemical constituents which may be present in the environment in and around the Plant;
- Prepare an annual report to DOE/Pantex of the State's groundwater monitoring results and status of each tasks identified in this Work Plan;

- Review and sign SWMU interference notifications and provide appropriate follow-up oversight;
- Prepare reports, as needed, to DOE/Pantex on monitoring activities conducted at the facility;
- Represent the TNRCC Ex-Officio position at the Pantex Plant Citizen's Advisory Board; and,
- Collect particulate and volatile organic compound air samples to determine air quality.

The Air Monitoring Operations Division will:

- Review and evaluate DOE monitoring and emissions data within 90 days of receipt.
- Produce summaries of air monitoring data with toxicological review and provide copies to the DOE and the State Energy Conservation Office at quarterly meetings.
- Submit results of air sampling for FY 2001 in an annual report to DOE and the State Energy Conservation Office by June 30, 2002.
- Review environmental assessments, environmental impact statements, and other documents submitted by DOE for air quality impact and provide comments within 90 days of receipt of the documents.

The Toxicology and Risk Assessment Section will:

- Submit quarterly reports to the Monitoring Operations Division within 30 days of receipt of quarterly monitoring results and summary statistics.
- Submit an annual report to the Monitoring Operations Division within 30 days of receipt of annual monitoring results and summary statistics.
- Submit to the Project Manager for distribution, any reports prepared from additional information or environmental data collected in relation to the Pantex facility.
- Accompany agency staff to all public meetings throughout the state to assist in answering human health effects questions relating to monitoring at the Pantex facility.

The Environmental Law Division will:

- Review contracts, rules, regulations, and documents for legal sufficiency and make necessary recommendations.

- Accompany agency staff to public and technical meetings to assist in providing legal and procedural counsel relating to the Pantex facility.
- Act as a liaison between TNRCC AIP members and other Office of Legal Services staff regarding permitting and enforcement.
- Provide necessary legal advice regarding TNRCC AIP staff questions and concerns.
- Represent TNRCC AIP staff in any negotiations, mediation, or other possible contested matters.

REMEDIATION DIVISION

FY 2002 PANTEX WEAPONS FACILITY SUBGRANT

PROGRAM ELEMENT 1: MONITORING AND COMPLIANCE

Under this program element, the **Remediation Division** will conduct proper agency oversight of all environmental restoration activities required under a RCRA permit/compliance plan/order, or any other agency directives including RCRA Facility Investigations, Area of Concern Investigations, Interim Stabilization Measures and Solid Waste Management Unit (SWMU) remediation and closure activities, and any agreement based on the Federal Facility Compliance Act Site Treatment Plan. This element provides the basis for ensuring that all solid, hazardous, radiological, and mixed wastes at Pantex are managed in accordance with State of Texas and federal solid waste regulations including applicable RCRA permit or order requirements. Integration with CERCLA remedial activities is also associated with this element.

OBJECTIVE: To review, evaluate, and comment on Pantex's environmental restoration activities, interim stabilization measures, and negotiate waste management and corrective action agreements, as necessary, during FY 2002 at a cost not to exceed \$184,651.

Task 1: Attend and participate in DOE, Texas Natural Resource Conservation Commission (TNRCC), Environmental Protection Agency (EPA) and Agreement-In-Principle (AIP) sponsored meetings to discuss state oversight activities at Pantex;

Task 2: Provide administrative oversight to ensure that source abatement measures, cleanup, and restoration of environmental media at Pantex are achieved in accordance with the State of Texas rules and guidance;

Task 3: Identify and communicate State of Texas solid waste requirements to Pantex, TNRCC, etc. in order that cleanup objectives and priorities are developed in accordance with appropriate and relevant site cleanup standards;

Task 4: If oversight is requested by Pantex, the TNRCC will review, evaluate, and comment on work plans, scopes of work, or interim environmental restoration reports related to Pantex's Environmental Restoration Program;

Task 5: Review, evaluate, and provide written comments on Pantex's environmental restoration final reports and data compilations including RFI's, CMS, CMI, SWMU closures and other required and related reports;

Task 6: Participate in technical meetings, as necessary, to provide regulatory guidance on environmental restoration activities at Pantex;

Task 7: Participate in TNRCC/Pantex Environmental Restoration conferences, public meetings and hearings, as necessary, to fulfill ongoing project objectives;

- Task 8:** Compile for the TNRCC an Agreement in Principle (AIP) Quarterly Report;
- Task 9:** Represent the TNRCC's Remediation Division's Ex-Officio position at the Pantex Plant Citizen's Advisory Board when environmental issues are on the agenda.
- Task 10:** Coordinate with TNRCC staff and other state and federal agencies (e.g., EPA, TBEG, TDH), as appropriate, to fulfill ongoing project objectives; and,
- Task 11:** Negotiate environmental restoration agreements based on rules and policies of the State of Texas.

Deliverables:

- Provide comments on environmental restoration initiatives submitted by the Department of Energy;
- Provide written comments on Pantex's environmental restoration final reports and data compilations including RFI's CMS, CMI, SWMU closures and other required and related reports;
- Provide comments, as necessary, on Pantex's environmental restoration interim reports, scopes of work, and work plans;
- Evaluate the soil and groundwater quarterly monitoring data that are submitted by Pantex in an electronic format. The soil and groundwater data will be evaluated to determine if interim stabilization measures are necessary to protect human health and the environment;
- Review meeting minutes and summaries developed by Pantex for all environmental related conferences, public meetings and technical meetings in which the Remediation Division is a participant;
- Provide regulatory guidance in technical meetings as part of the Expedited Review Process;
- Submit to Pantex and the State Energy Office (AIP Grant Manager) an Agreement in Principle (AIP) Quarterly Report outlining the accomplishments and milestones achieved for each fiscal year quarter (e.g., Oct-Dec); and,
- Participate in the Pantex Modeling Committee to develop the groundwater solute transport model to be used in evaluating groundwater conditions at Pantex.

FIELD OPERATIONS DIVISION

FY 2002 PANTEX WEAPONS FACILITY SUBGRANT

PROGRAM ELEMENT: MONITORING AND COMPLIANCE

Under this program element, the **Field Operations Division (FOD)** plans to conduct an environmental monitoring program and to provide independent evaluations of environmental monitoring data. Listed are the FY 2002 work tasks involving the Region 1 office in Amarillo.

OBJECTIVE: To evaluate and monitor the implementation of corrective action plans and instances of contamination into or adjacent to waters in the State at a cost not to exceed \$175,562.

- Task 1:** Review and evaluate hazardous and solid waste activities;
- Task 2:** Review and evaluate wastewater activities;
- Task 3:** Collect groundwater samples equal to or greater than 10% of DOE sampling. As time and resources allow surface water, soils, and biological parameters may be sampled;
- Task 4:** Conduct on-site monitoring and evaluation of the plant facility on a continuous basis to ensure proper handling and management of waste and wastewater;
- Task 5:** Monitor Petroleum Storage Tank (PST) activities, including removals, upgrades, installations, closures, and any remediation activities;
- Task 6:** Monitor progress of tasks dealing with Environmental Restoration and Environmental Protection Programs;
- Task 7:** Conduct on-site monitoring and oversight of proposed closure activities or disturbance of Solid Waste Management Units (SWMU);
- Task 8:** Provide administrative oversight for TNRCC Region activities for the AIP grant project. This includes attending AIP meetings as necessary;
- Task 9:** Collect particulate and selected volatile organic samples, as necessary. Operate air samplers for organic and inorganic analysis, on-site and adjacent to the Pantex plant boundary;
- Task 10:** Act as designated Project Manager for mixed waste management oversight at Pantex in accordance with the October 1995 Agreed Order and federal Compliance Plan;
- Task 11:** Attend and provide technical assistance at public meetings held regarding Pantex; and,

Task 12: Provide, as appropriate, reports, brochures, and information for public education of environmental issues at Pantex.

Deliverables:

- Collect groundwater samples to determine water quality;
- Prepare and update, as necessary, the Quality Assurance Project Plan (QAPP) for the monitoring and analysis of chemical constituents which may be present in the environment in and around the Plant;
- Prepare an annual report to DOE/Pantex of the State's groundwater monitoring results and status of each tasks identified in this Work Plan;
- Review and sign SWMU interference notifications and provide appropriate follow-up oversight;
- Prepare reports, as needed, to DOE/Pantex on monitoring activities conducted at the facility;
- Represent the TNRCC Ex-Officio position at the Pantex Plant Citizen's Advisory Board; and,
- Collect particulate and volatile organic compound air samples to determine air quality.

MONITORING OPERATIONS DIVISION

FY2002 PANTEX WEAPONS FACILITY SUBGRANT

PROGRAM ELEMENT 1: MONITORING AND COMPLIANCE

The **Monitoring Operations Division**, Office of Compliance and Enforcement, will conduct ambient air quality monitoring and independent evaluation of environmental monitoring and emissions data from Pantex Nuclear Weapons facility in Amarillo, Texas to ensure protection of human health, safety, and the environment. In order to accomplish this task, Monitoring Operations Division proposes to provide six major activities in accordance with the Agreement in Principle.

These activities include; 1) overall technical and administrative coordination for the Monitoring Operations Division, 2) operation of ambient air monitoring sites at Pantex to collect up to 60 samples total per year, including ten quality assurance samples, based on events that merit equipment operation and a continuous air monitor outside Pantex property, 3) assurance that all ambient air quality data collected are accurate and of high quality, 4) logistical support as needed for the maintenance and repair of the monitoring equipment, 5) quarterly and annual reports of the air monitoring data with discussion of potential public health impacts to be provided to the DOE and the State Energy Conservation Office, and 6) review of environmental impact documents and submission of comments as appropriate.

OBJECTIVE: To continue operation of an ambient air monitoring program at Pantex, including a continuous air monitor in the vicinity of Pantex, operation and maintenance of the monitoring equipment, analysis and reporting of air monitoring data, and to provide independent evaluation of environmental monitoring and emissions data from the Pantex facility at a cost not to exceed \$110,987.

Task 1: Review and provide independent evaluation of monitoring and/ or emissions data provided by DOE within 90 days of their submittal.

Task 2: Continue sampling and analysis for respirable particulates and selected volatile organic compounds at the Pantex air monitoring stations for up to 60 samples including ten quality assurance samples and will operate a continuous total methane and non-methane hydrocarbons analyzer with the capability to trigger a canister sampler for measuring selected volatile organic compounds. The division will also collect the same number of total suspended particulate samples on high volume filters and will be forwarded to the Bureau of Radiation Control for radionuclide analysis.

Task 3: Analyze air monitoring data and prepare quarterly and annual reports summarizing and interpreting the data and will be forwarded to the DOE and the State Energy

Conservation Office. Concentrations of concern recorded at any of the sites will be reported to the DOE, the State Energy Conservation Office and the public in a timely manner.

Task 4: Prepare updates of environmental monitoring and analysis plans, as appropriate, for the monitoring and analysis of chemical compounds that may be present in the environment in and around the plant. DOE will be provided opportunity to review and comment on such plans prior to publication.

Task 5: Review environmental assessment, environmental impact statements, and other documents submitted for review for potential air quality impacts and comment in a timely manner.

Task 6: Participate in quarterly status meetings and other ad hoc meetings organized by the State Energy Conservation Office and the DOE and provide status reports of activities.

Deliverables:

- Review and evaluate DOE monitoring and emissions data within 90 days of receipt.
- Produce summaries of air monitoring data with toxicological review and provide copies to the DOE and the State Energy Conservation Office at quarterly meetings.
- Submit results of air sampling for FY 2001 in an annual report to DOE and the State Energy Conservation Office by June 30, 2002.
- Review environmental assessments, environmental impact statements, and other documents submitted by DOE for air quality impact and provide comments within 90 days of receipt of the documents.

PROGRAM ELEMENT 2: PUBLIC OUTREACH

This program element provides for the participation in public meetings and other public outreach activities by the **Monitoring Operations Division** in order to provide information and solicit comments from the citizens of Texas regarding state environmental oversight at the Pantex facility.

OBJECTIVE: To provide technical consultation and assistance by attending public meetings and providing information to the interested citizens.

Task 2.1: Participate in the public meetings in Amarillo to discuss state environmental oversight activities at Pantex. Technical assistance will also be provided to the Pantex Plant Citizens' Advisory Board (PPCAB), if requested.

Deliverables:

- PPCAB and/or other interested citizens will be provided copies of annual air quality report for Pantex.

TOXICOLOGY AND RISK ASSESSMENT SECTION

FY 2002 PANTEX WEAPONS FACILITY SUBGRANT

PROGRAM ELEMENT 1: MONITORING AND COMPLIANCE

Under this program element, the **Toxicology and Risk Assessment (TARA) Section**, Office of Permitting, Remediation & Registration is responsible for reviewing the results of all environmental monitoring and air dispersion modeling, and determining the impact of exposure to environmental contaminants emitted from the DOE Pantex facility.

OBJECTIVE: To review all environmental monitoring, air dispersion modeling data, and human health risk assessments and related documents to insure that emissions will not adversely impact public health and the environment at a cost not to exceed \$13,800.

Task 1: Evaluate quarterly and annual results of TNRCC ambient air monitoring at Pantex and one off-site total non-methane hydrocarbon (TNMHC) monitor to determine the potential impact on public health and the environment. A detailed evaluation will be conducted for compounds of concern to determine potential adverse effects and assess risk from exposure, and findings from these reviews will be reported to the DOE and interested members of the general public.

Task 2: Perform a toxicological evaluation of the groundwater monitoring results from the DOE Pantex facility reported on a quarterly and annual basis. A detailed evaluation will be conducted for compounds of concern to determine potential adverse effects and assess risk from exposure, and findings from these reviews will be reported to the DOE and interested members of the general public.

Task 3: At the request of TNRCC staff, the State Energy Conservation Office, DOE or the general public, review and interpret the potential public health implications of additional information or results of additional environmental sampling and human health risk assessments and related documents submitted by the Department of Energy.

Task 4: Assist in the establishment of trigger levels for use in evaluating concentrations measured with the TNMHC.

Task 5: Attend public meetings with agency staff to assist in answering questions, particularly those regarding human health effects.

Deliverables:

- Submit quarterly reports to the Monitoring Operations Division within 30 days of receipt of

- quarterly monitoring results and summary statistics.
- Submit an annual report to the Monitoring Operations Division within 30 days of receipt of annual monitoring results and summary statistics.
- Submit to the Monitoring Operations Division for distribution any reports prepared from additional information or environmental data collected in relation to the Pantex facility.
- Accompany agency staff to all public meetings throughout the state to assist in answering human health effects questions relating to monitoring at the Pantex facility.

ENVIRONMENTAL LAW DIVISION

FY 2002 PANTEX WEAPONS FACILITY SUBGRANT

PROGRAM ELEMENT 1: MONITORING AND COMPLIANCE

The **Environmental Law Division** provides support to ensure that all solid, hazardous, radiological and mixed wastes identified on-site are managed in accordance with all state and federal solid waste regulations including RCRA permit requirements. In addition, this program element provides for proper agency oversight of all corrective actions required under the RCRA permit or other agency directives including RCRA Facility Investigations, Interim Remedial Actions, Closures and other response actions. This program element also provides for review and monitoring of surface and groundwater quality in the area of the Pantex facility to evaluate compliance with the Texas Surface Water Quality Standards and Chapter 26, Texas Water Code, Subchapter J which relates to groundwater.

OBJECTIVE: To provide legal review and support of any corrective actions taken by the TNRCC Remediation Division, Field Operations Division, or Monitoring Operations Division at a cost not to exceed \$1,000.

Task 1: Provide legal services in the review of all contracts, rules, regulations and documents for legal sufficiency. Included in this task are the negotiations of the Memorandum of Agreement between the Environmental Protection Agency and the TNRCC and Mixed Waste Agreements, as well as assistance with the proposed delisting of Pantex from the National Priorities List via deferral to RCRA Corrective Action.

Deliverables:

- Provide necessary legal services to review contracts, rules, regulations and legal documents relating to corrective action activities at the Pantex facility.
- Act as a liaison between TNRCC AIP members and other Office of Legal Services staff regarding permitting and enforcement.
- Provide necessary legal advice regarding TNRCC AIP staff questions and concerns.
- Represent TNRCC AIP staff in any negotiations, mediation, or other possible contested matters.

PROGRAM ELEMENT 2: PUBLIC OUTREACH ACTIVITIES

This program element provides for setting up public meetings and other public outreach activities by the **Environmental Law Division** to provide information and solicit questions from the citizens of Texas regarding the Pantex facility.

OBJECTIVE: To provide legal services to assist in providing information at public meetings to the citizens of Texas by attending all meetings relating to public outreach activities at a cost not to exceed \$1,000.

Task 1: Attend public outreach meetings with agency staff to assist in answering questions, particularly those with legal implications.

Deliverable:

- Accompany agency staff to public and technical meetings to assist in answering legal and procedural questions relating to the Pantex facility to both TNRCC AIP staff and to the public at large.



**STATE OF TEXAS
AND
U.S. DEPARTMENT OF ENERGY**

AGREEMENT IN PRINCIPLE

**Fiscal Year 2002
Scope of Work
and
Budget**

*Bureau of Radiation Control
Texas Department of Health*

**STATE OF TEXAS
AGREEMENT IN PRINCIPLE
ESTIMATED COSTS
FISCAL YEAR 2002**

<u>PARTICIPANT</u>	<u>DOE PROGRAM</u>		<u>TOTAL BUDGET</u>
	<u>Defense Programs</u>	<u>Environmental Management</u>	
Texas Department of Health			
Bureau of Radiation Control	237,215		237,215
Laboratories	62,000		62,000
Total	299,215		299,215
Texas Natural Resource Conservation Commission			
Remediation Division		184,651	184,651
Field Operations		175,562	175,562
Monitoring Operations		110,987	110,987
Toxicology & Risk Assessment		13,800	13,800
Environmental Law		2,000	2,000
Total		487,000	487,000
Division of Emergency Management	170,465		170,465
City of Amarillo	48,492		48,492
Armstrong County	12,360		12,360
Carson County	14,420		14,420
State Energy Conservation Office	183,898		183,898
Office of the Attorney General	15,000		15,000
Bureau of Economic Geology	92,700		92,700
TOTAL ESTIMATED COSTS	836,550	487,000	1,323,550

Pantex Agreement-in-Principle

Texas Department of Health

FFY 2002 Scope of Work

The following is the proposed scope of work and cost estimate for work and services to be delivered by the Texas Department of Health, Bureau of Radiation Control and Bureau of Laboratories for the period from October 1, 2002 through September 31, 2002. This is separated by task in Appendix A, State of Texas Specific Project Objectives of the Agreement-in-principle (AIP).

TASK ONE. Contaminant Inventory and Assessment

Contaminant Inventory and Assessment activities will require approximately 0.2 FTE of the Special Project Coordinator.

1. Upon receipt, review the radiological/mixed waste inventory storage documentation and records of shipment for off-site disposal. Receipt of documents plus 45 days. (350 hrs)
2. Provide assistance to TNRCC in validating and reviewing facility-wide radiological and mixed industrial waste inventories. (50 hrs)

TASK TWO. Environmental Monitoring

Environmental Monitoring activities for the year will require one full-time Radiochemist, approximately 0.8 FTE of the Special Project Coordinator and 0.2 FTE of other Bureau staff members.

1. Review environmental data. Receipt of documentation plus 60 days. (40 hrs)
2. Assist TNRCC in reviewing groundwater monitoring system plans and updates. Receipt of program documentation plus 60 days. (100 hrs)
3. Review radioactivity surveillance system plans and updates. Receipt of program documentation plus 60 days. (120hrs)
4. Assist TNRCC in reviewing air monitoring system plans and updates. Receipt of documents plus 60 days. (30 hrs)
5. Review quarterly compilations of environmental data. Receipt of reports plus 60 days. (450 hrs)
6. Sample drinking water supplies potentially affected by the plant, to include Matheson well field, Lake Meredith surface water impoundment and the City of Panhandle Pecan Avenue well. (200 hrs)
7. Collect water, crop, soil, vegetation and playa samples on a quarterly basis and perform radiological analysis. (1,380 hrs)

8. Monitor site boundary with thermoluminescent dosimeters. (280 hrs)
9. Perform radiological analysis of air sample filters provided by TNRCC. Receipt of filter media plus 60 days. (800 hrs)
10. Assist TNRCC in reviewing air emissions dispersion modeling updates, as required. (60 hrs)
11. Review environmental monitoring and modeling results for potential public health impacts. Receipt of documentation plus 60 days. (180 hrs)
12. Update environmental monitoring and analysis plan as necessary. Submit update of plan for review. (240 hrs)
13. Allow DOE to take split samples. (20 hrs)
14. Participate in AIP public meetings, and respond to Pantex Plant Citizens' Advisory Board and to public concerns about Pantex, as necessary. (100 hrs)

TASK THREE. Emergency Preparedness

Emergency preparedness activities for the year will require full time involvement of one FTE Pantex Emergency Planner and approximately 0.6 FTE of other Emergency Response staff.

1. Review and provide comments on the revised Radiological Hazard Assessment, as necessary. (300 hrs)
2. Update Pantex Plant plans, annexes and procedures relating to radiological events based on the results of full-participation exercises. Solicit comments from state agencies and local governments, as necessary. (400 hrs)
3. Maintain current updated copies of Pantex Plant, state and local plans related to a radiological material incident. Provide comments and suggestions for improvements. (250 hrs)
4. Participate in joint periodic response exercises and drills with the Pantex Plant. BRC participation will be governed by availability of funding and level of participation requested. Participation will be determined by exercise objectives and scenario. (400 hrs)
5. Participate in periodic notification exercises and communications drills to assure timely and accurate provision of emergency information. (40 hrs)
6. Continue to train members of the Bureau of Radiation Control Emergency Response Teams in Pantex response procedures. (160 hrs)
7. In conjunction with DOE, coordinate in radiological training for access control teams, reception center operations, and for other affected response team personnel, as appropriate. (160 hrs)

8. Review and provide comments regarding local radiological emergency response plans, as requested. (300 hrs)
9. Provide guidance relating to radiological aspects of public information materials and programs. Participate in development of the Joint Information Center, as requested. (230 hrs)
10. Calibrate and maintain pre-positioned radiation monitoring and detecting equipment dedicated to a Pantex-related response. Assist local authorities to the extent and in the manner identified in respective state and local emergency management plans in the event of an incident at Pantex potentially affecting the offsite population, as necessary. (920 hrs)
12. Participate in public meetings to discuss State emergency planning activities and to respond to public concerns about Pantex, as necessary. (40 hrs)

TEXAS DEPARTMENT OF HEALTH

FFY 2002 Budget Estimate

Bureau of Radiation Control:

Salaries (with Benefit Replacement Pay)	141,616.00
Employee Benefits (22.08%)	31,269.00
Travel and Per Diem	27,486.00
Supplies and services	8,069.00
Equipment	11,000.00
Total Direct Costs	219,440.00
Indirect Costs (8.1%)	17,775.00
Bureau of Radiation Control Subtotal	237,215.00

Bureau of Laboratories:

Analytical and Services Billings (Includes Direct and Indirect Costs)	62,000.00
Bureau of Laboratories Subtotal	62,000.00

Total new funds requested for Texas Department of Health
FFY 2002 expenses:

Bureau of Radiation Control	237,215.00
Bureau of Laboratories	62,000.00
Texas Department of Health Total	299,215.00

Texas Department of Health
Bureau of Radiation Control FFY 2002 Travel

Environmental Monitoring-4 trips, Aus/Ama, 1 person (Task II)
 Per Diem @ 95.00/day 16 days 1,520.00
 Pers Mileage @ .325/mi 200 miles 65.00
 Airfare @ 280.00 4 trips 1,120.00
 4WD Van rental @ 60.00/day 16 days 960.00
 Subtotal 3,665.00

Local Emerg. Plan. Meetings-3 trips, Aus/Ama, 2 persons (Task III)
 Per Diem @ 95.00/day 12 days 1,140.00
 Pers Mileage @ .325/mi 200 miles 65.00
 Airfare @ 280.00 6 trips 1,680.00
 Car rental @ 45.00/day 6 days 270.00
 Subtotal 3,155.00

EMEX Exercise -Approx. 17 state-wide participants (Task III)
 Per Diem @ 95.00/day Estimated 4,845.00
 Pers Mileage @ .325/mi Estimated 560.00
 Airfare (Varies) Estimated 4,300.00
 Car rental @ 45.00/day Estimated 1,440.00
 Subtotal 11,145.00

Radiological Calibration Workshop - 1 participant (Task III)
 Registration 1 pers 1,195.00
 Per Diem @ 120.00/day 4 days 480.00
 Pers Mileage @ .325/mi 40 miles 13.00
 Airfare @ 350.00 1 trip 350.00
 Car rental @ 50.00/day 4 days 200.00
 Subtotal 2,238.00

Half-Body Monitor User Group Workshop - 1 participant (Task III)
 Per Diem @ 120.00/day 4 days 480.00
 Pers Mileage @ .325/mi 40 miles 13.00
 Airfare @ 280.00 1 trips 280.00
 Car rental @ 50.00/day 4 days 200.00
 Subtotal 973.00

Quarterly A.I.P. Meetings-3 trips, Aus/Ama, 2 persons (General)
 Per Diem @ 95.00/day 12 days 1,140.00
 Pers Mileage @ .325/mi 200 miles 65.00
 Airfare @ 280.00 6 trips 1,680.00
 Car rental @ 45.00/day 6 days 270.00
 Subtotal 3,155.00

Unscheduled Trips to Pantex-3 trips, Aus/Ama, 2 persons (General)
 Per Diem @ 95.00/day 12 days 1,140.00
 Pers Mileage @ .325/mi 200 miles 65.00
 Airfare @ 280.00 6 trips 1,680.00
 Car rental @ 45.00/day 6 days 270.00
 Subtotal 3,155.00

Total 27,486.00



**STATE OF TEXAS
AND
U.S. DEPARTMENT OF ENERGY**

AGREEMENT IN PRINCIPLE

**Fiscal Year 2002
Scope of Work
and
Budget**

*Division of Emergency Management
Texas Department of Public Safety*

**STATE OF TEXAS
AGREEMENT IN PRINCIPLE
ESTIMATED COSTS
FISCAL YEAR 2002**

<u>PARTICIPANT</u>	<u>DOE PROGRAM</u>		<u>TOTAL BUDGET</u>
	<u>Defense Programs</u>	<u>Environmental Management</u>	
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Carson County	14,420		14,420
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TOTAL ESTIMATED COSTS	836,550	487,000	1,323,550

**STATE OF TEXAS - US DEPARTMENT OF
ENERGY
AGREEMENT IN PRINCIPLE
(AIP)**

**PROPOSED FISCAL YEAR 2002
SCOPE OF WORK & BUDGET**

for the

**Division of Emergency Management
Texas Department of Public Safety**

May 2001

**State of Texas – US Department of Energy
Agreement in Principle**

Proposed Scope of Work & Budget
for the
Division of Emergency Management
For Fiscal Year 2002

I. Scope of Work:

The Texas Department of Public Safety (DPS) Division of Emergency Management (DEM) participation in the State of Texas - US Department of Energy (DOE) Agreement-in-Principle (AIP) will concentrate on AIP Task Three, Emergency Management. With respect to Task Three, DEM plans to carry out the following activities:

A. Review of Pantex Plant Hazard Assessments and Protective Action Guidance

DEM will review and, where appropriate, provide comments to the DOE Amarillo Area Office (AAO) on any new or updated hazard assessments prepared for the Pantex Plant and on proposed protective action recommendations relating to such hazards.

B. State Emergency Plans & Procedures

DEM will update State plans, annexes, and procedures pertaining to radiological or hazardous materials incidents at the Pantex Plant and provide review copies of changes to appropriate materials to DOE AAO for review. Specific DEM activities will include:

1. Review and, if required, update, the *State of Texas Emergency Management Plan*.
2. Review and, if required, update the *DEM Standard Operating Procedures for Pantex Plant Emergencies*.
3. Assist DPS Disaster District 5B in Amarillo in reviewing and, if required, updating its *Disaster District Committee Emergency Operations Handbook*.

C. Review of Pantex Emergency Plans and Procedures

DEM will review, comment on, and maintain copies of Pantex emergency plans and procedures pertaining to radiological or hazardous materials incidents, to include:

1. Maintain controlled copies of the Pantex Plant emergency plan and emergency preparedness procedures at the State Emergency Operating Center (EOC).
2. Review Pantex Plant emergency plans and emergency preparedness procedures and provide comments to DOE according to the schedule established by DOE.
3. Assist Disaster District 5B in maintaining controlled copies of the Pantex Plant emergency plan and emergency preparedness procedures for use in the Disaster District EOC.

D. Joint Emergency Exercise and Drills

DEM will work with Pantex officials, local governments, and other state agencies to design, schedule, conduct, and evaluate period joint emergency exercises and drills and will participate in such exercises and drills to the extent possible.

E. Emergency Management Coordination

DEM will meet periodically with the DOE AAO and Pantex Plant emergency management staff and local emergency management personnel to review and resolve emergency management issues and coordinate emergency management activities.

F. Threat Assessment

DEM will review and, where appropriate, provide comments regarding any new information provided by DOE with respect to the effects of the maximum credible accident.

G. Emergency Notification Exercise & Communications Tests

DEM will participate in periodic emergency notification exercises and drills, including periodic communications tests.

H. Incident Response

In the event of an incident at Pantex potentially affecting the off-site population, DEM will, upon request, assist local authorities with their emergency response to the extent and in the manner specified in state and local emergency management plans.

I. Hazardous Materials Training for Emergency Responders

In coordination with DOE and other state and local AIP participants, DEM will organize, schedule, conduct, or arrange training related to hazardous materials, including radiological materials, for state and local emergency response organizations.

J. Local Planning Support

DEM will assist local governments in updating emergency plans, annexes, and procedures relating to emergencies at the Pantex Plant and facilitate multi-jurisdictional integration of such plans and procedures.

K. Local Plan Review.

DEM will review and provide comments on local government emergency planning document developed to prepare for a radiological or hazardous material incident at the Pantex Plant, to include:

1. The DEM Pantex Program staff will examine local emergency plans, annexes, and procedures, and make recommendations to local governments regarding updates to these materials.
2. The DEM Region 5 Liaison Officer will review revised emergency management plans and related annexes submitted by local governments for compliance with state emergency planning standards and provide feedback to those local governments.
3. The DEM Preparedness Section will receive and review emergency management plans and plan annexes developed by local governments and maintain data on the status of emergency planning in each jurisdiction in the vicinity of the Pantex Plant.

L. Emergency Public Information Materials

DEM will assist local governments in developing emergency public information materials and programs, including:

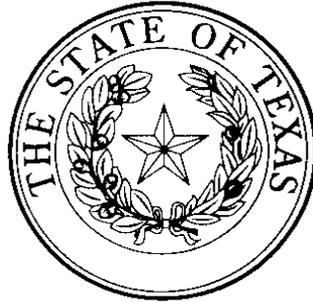
1. DEM will design, contract for production of, and distribute a Pantex Area Emergency Preparedness Calendar for the year 2002, coordinating as necessary with local governments, other state agencies, and DOE AAO.
2. DEM will design and contract for publication of a Pantex emergency information insert for the 2002 Southwestern Bell Amarillo area telephone directory, coordinating as necessary with local governments, other state agencies, and DOE AAO.

M. Reception Center Procedures.

DEM will assist the Amarillo/Potter/Randall Emergency Management Department in developing procedures for operating the Reception Center located at the Tri-State Fair Grounds.

II. Program Budget

CATEGORY	DESCRIPTION		AMOUNT
A. Salaries			
	1.0 FTE Planner I, Group B9	34,308	
	1.0 FTE Planner I, Group B9	34,308	
	1.0 FTE Admin. Tech. I, Group A8	20,652	
	Allowance for Merit Pay	3,034	
	<i>Subtotal</i>		92,302
B. Benefits			
	1.0 FTE Planner I	8,405	
	1.0 FTE Planner I	8,405	
	1.0 FTE Admin. Tech. I	5,060	
	<i>Subtotal</i>		21,870
C. Travel			9,520
D. Equipment			
	Computer/Printer Upgrades	2,900	
	Software Upgrades	500	
	<i>Subtotal</i>		3,400
E. Operating Expense			
	Supplies, Services, Minor Equipment	4,600	
	Project: 2002 Pantex Emergency Preparedness Calendar	5,478	
	Project: 2002 Telephone Book Emergency Preparedness Ad	9,244	
	Disaster District 5-B Emergency Operating Center Phones	975	
	<i>subtotal</i>		20,297
F. Indirect Costs	(based on 25% of salaries)		23,076
TOTAL			170,465



**STATE OF TEXAS
AND
U.S. DEPARTMENT OF ENERGY**

AGREEMENT IN PRINCIPLE

**Fiscal Year 2002
Scope of Work
and
Budget**

City of Amarillo

**STATE OF TEXAS
AGREEMENT IN PRINCIPLE
ESTIMATED COSTS
FISCAL YEAR 2002**

<u>PARTICIPANT</u>	<u>DOE PROGRAM</u>		<u>TOTAL BUDGET</u>
	<u>Defense Programs</u>	<u>Environmental Management</u>	
Texas Department of Health			
Bureau of Radiation Control	237,215		237,215
Laboratories	62,000		62,000
Total	299,215		299,215
Texas Natural Resource Conservation Commission			
Remediation Division		184,651	184,651
Field Operations		175,562	175,562
Monitoring Operations		110,987	110,987
Toxicology & Risk Assessment		13,800	13,800
Environmental Law		2,000	2,000
Total		487,000	487,000
Division of Emergency Management	170,465		170,465
City of Amarillo	48,492		48,492
Armstrong County	12,360		12,360
Carson County	14,420		14,420
State Energy Conservation Office	183,898		183,898
Office of the Attorney General	15,000		15,000
Bureau of Economic Geology	92,700		92,700
TOTAL ESTIMATED COSTS	836,550	487,000	1,323,550

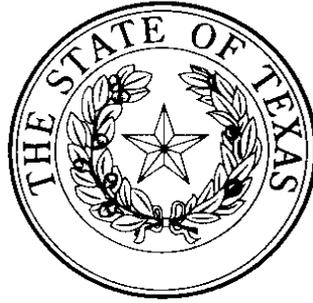
**CITY OF AMARILLO/POTTER COUNTY
FY02 SCOPE OF WORK**

1. Repair, maintain, upkeep, conduct preventive maintenance, and test all equipment provided by DOE, purchased under AIP, or provided by the City of Amarillo used for Pantex operations. This includes: all EPZ indoor warning monitors in Potter County; Warning equipment installed in the EOC; Command and Control equipment (to include computer equipment) installed in the EOC, response vehicles, reception center, and BRC staging area; various pieces of radio communications equipment; and radiological (not maintained by BRC) and decontamination equipment under the control of Amarillo or Potter County.
2. As agreed upon, continue to repair, maintain, upkeep, conduct preventive maintenance, and test all outdoor warning sirens in the EPZ to include activation devices in each local EOC or Sheriff's Office.
3. Review and provide comments on updated hazard assessments conducted by the Pantex plant, as appropriate. Proposed protective action recommendations will be reviewed and comments provided to the DOE.
4. Review and comment, as appropriate, on Pantex emergency plans and procedures related to radiological or hazardous materials incidents; maintain current copies of such plans and procedures.
5. In coordination with Pantex of final, design, schedule, conduct and evaluate periodic joint emergency exercises and drills. Participate in such exercises and drills to the extent possible.
6. Meet periodically with DOE and Pantex Plant emergency management staff to review and resolve emergency management issues and coordinate emergency management activities.
7. Review current information to assess the effect of the maximum credible accident.
8. Participate in periodic notification exercises and communications drills.
9. Develop public information materials and programs.
10. Develop procedures and maintain the Reception Center located at the Tri-State Fair Grounds.

**CITY OF AMARILLO/POTTER COUNTY
FY02 BUDGET**

Salaries	\$35,000.00
Travel	\$ 2,300.00
Equipment	\$ 2,000.00
Other	\$ 9,192.00
Total	\$48,492.00

Other expenses include: Maintenance of Amarillo EOC AIP equipment, reception center expenses and utility charges, emergency response software support, training, data entry, office expense, printing, and public information.



**STATE OF TEXAS
AND
U.S. DEPARTMENT OF ENERGY**

AGREEMENT IN PRINCIPLE

**Fiscal Year 2002
Scope of Work
and
Budget**

Armstrong County

**STATE OF TEXAS
AGREEMENT IN PRINCIPLE
ESTIMATED COSTS
FISCAL YEAR 2002**

<u>PARTICIPANT</u>	<u>DOE PROGRAM</u>		<u>TOTAL BUDGET</u>
	<u>Defense Programs</u>	<u>Environmental Management</u>	
Texas Department of Health			
Bureau of Radiation Control	237,215		237,215
Laboratories	62,000		62,000
Total	299,215		299,215
Texas Natural Resource Conservation Commission			
Remediation Division		184,651	184,651
Field Operations		175,562	175,562
Monitoring Operations		110,987	110,987
Toxicology & Risk Assessment		13,800	13,800
Environmental Law		2,000	2,000
Total		487,000	487,000
Division of Emergency Management	170,465		170,465
City of Amarillo	48,492		48,492
Armstrong County	12,360		12,360
Carson County	14,420		14,420
State Energy Conservation Office	183,898		183,898
Office of the Attorney General	15,000		15,000
Bureau of Economic Geology	92,700		92,700
TOTAL ESTIMATED COSTS	836,550	487,000	1,323,550

**Proposed FY 2002
Scope of Work & Budget
Armstrong County**

I. Scope of Work

- A. Review and provide comments on updated hazard assessments conducted by the Pantex Plant, as appropriate. Review and update plans, annexes, and procedures pertaining to an emergency at the Pantex Plant which might produce off-site effects.
- B. Review and comment, as appropriate, on Pantex emergency plans and procedures related to radiological or hazardous materials incidents; maintain current copies of such plans and procedures.
- C. In coordination with Pantex officials, design, schedule, conduct and evaluate periodic joint emergency exercises and drills. Participate in such emergency exercises and drills relating to the Pantex Plant to the extent possible.
- D. Meet periodically with DOE and Pantex Plant emergency management staff to review and resolve emergency management issues and coordinate emergency management activities. Participate in quarterly AIP meetings.
- E. Review current information to assess the effect of the maximum credible accident. Participate in joint efforts to develop Pantex-related emergency preparedness by enhancing facilities and equipment.
- F. Participate in periodic notification exercises and communications drills. Participate in Pantex-related training events.
- G. Develop public information materials and programs. Participate in AIP public meetings as required.
- H. Develop procedures for utilizing the Reception Center located at the Tri-State Fairgrounds.

I. Proposed Budget

Travel	\$1,500.00
Equipment	\$4,000.00
Supplies	\$1,500.00
Other	\$5,360.00
Total	\$12,360.00

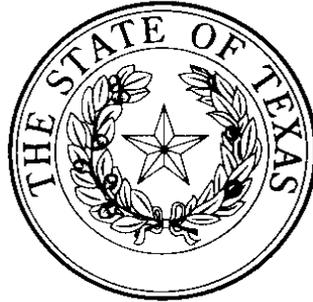
Category Definitions

Travel: All necessary AIP-related travel to include travel and fees for training.

Equipment: Single purchase or project designated for AIP need.

Supplies: Training and office supplies, etc.

Other: Elevate existing antennae, exercise expenses, and maintenance of AIP.



**STATE OF TEXAS
AND
U.S. DEPARTMENT OF ENERGY**

AGREEMENT IN PRINCIPLE

**Fiscal Year 2002
Scope of Work
and
Budget**

Carson County

**STATE OF TEXAS
AGREEMENT IN PRINCIPLE
ESTIMATED COSTS
FISCAL YEAR 2002**

<u>PARTICIPANT</u>	<u>DOE PROGRAM</u>		<u>TOTAL BUDGET</u>
	<u>Defense Programs</u>	<u>Environmental Management</u>	
Texas Department of Health			
Bureau of Radiation Control	237,215		237,215
Laboratories	62,000		62,000
Total	299,215		299,215
Texas Natural Resource Conservation Commission			
Remediation Division		184,651	184,651
Field Operations		175,562	175,562
Monitoring Operations		110,987	110,987
Toxicology & Risk Assessment		13,800	13,800
Environmental Law		2,000	2,000
Total		487,000	487,000
Division of Emergency Management	170,465		170,465
City of Amarillo	48,492		48,492
Armstrong County	12,360		12,360
Carson County	14,420		14,420
State Energy Conservation Office	183,898		183,898
Office of the Attorney General	15,000		15,000
Bureau of Economic Geology	92,700		92,700
TOTAL ESTIMATED COSTS	836,550	487,000	1,323,550

**CARSON COUNTY FY 2002
SCOPE OF WORK**

- A. Participate in Quarterly status meeting with DOE.
- B. Prepare a scope of work and budget annually.
- C. Prepare Quarterly reports.
- D. Maintain an ongoing inventory of equipment purchased with AIP funds.
- E. Participate in public meetings to discuss state oversight activities at the Pantex Plant.
- F. Propose modifications to the Agreement in Principle as appropriate; and provide, as appropriate, comments on DOE NEPA documents.
- G. Provide technical assistance to the Pantex Plant Citizens' Advisory Board.
- H. Participate in environmental compliance or emergency management meetings relating to the Pantex programs.
- I. Participate in tours, meetings and symposia.
- J. Review and provide comments on updated hazard assessments conducted by the Pantex plant, as appropriate. Proposed protective action recommendations will be reviewed and comments provided to the DOE.
- K. Review and comment, as appropriate, on Pantex emergency plans and procedures related to radiological or hazardous materials incidents; maintain current copies of such plans and procedures.
- L. In coordination with Pantex officials, design, schedule, conduct and evaluate periodic joint emergency exercises and drills. Participate in such exercises and drills to the extent possible.
- M. Meet periodically with DOE and Pantex Plant emergency management staff to review and resolve emergency management issues and coordinate emergency management activities.
- N. Review current information to assess the effect of the maximum credible accident.
- O. Participate in periodic notification exercises and communications drills.
- P. Develop public information materials and programs.
- Q. Develop procedures for utilizing the Reception Center located at the Tri-State Fair Grounds.

PROPOSED FY2002 BUDGET

1. Travel \$3,000.00
2. Equipment \$2,000.00
3. Personnel..... \$5,000.00
4. Other \$4,420.00

Travel – Costs associated with travel to participate in AIP and related meetings as well as costs to attend training.

Equipment – Costs for equipment needed to properly perform emergency management functions.

Personnel – Costs associated with personnel to fill-in when EM coordinator is out for training/meetings. It has also been discussed that part of the EM's salary might be taken from here, but no definite plans have been made by the Judge.

Other – Any other costs associated with the AIP agreement that might not be covered by above categories.



**STATE OF TEXAS
AND
U.S. DEPARTMENT OF ENERGY**

AGREEMENT IN PRINCIPLE

**Fiscal Year 2002
Scope of Work
and
Budget**

Bureau of Economic Geology

**STATE OF TEXAS
AGREEMENT IN PRINCIPLE
ESTIMATED COSTS
FISCAL YEAR 2002**

<u>PARTICIPANT</u>	<u>DOE PROGRAM</u>		<u>TOTAL BUDGET</u>
	<u>Defense Programs</u>	<u>Environmental Management</u>	
Texas Department of Health			
Bureau of Radiation Control	237,215		237,215
Laboratories	62,000		62,000
Total	299,215		299,215
Texas Natural Resource Conservation Commission			
Remediation Division		184,651	184,651
Field Operations		175,562	175,562
Monitoring Operations		110,987	110,987
Toxicology & Risk Assessment		13,800	13,800
Environmental Law		2,000	2,000
Total		487,000	487,000
Division of Emergency Management	170,465		170,465
City of Amarillo	48,492		48,492
Armstrong County	12,360		12,360
Carson County	14,420		14,420
State Energy Conservation Office	183,898		183,898
Office of the Attorney General	15,000		15,000
Bureau of Economic Geology	92,700		92,700
TOTAL ESTIMATED COSTS	836,550	487,000	1,323,550

BUREAU OF ECONOMIC GEOLOGY

SCOPE OF WORK – FY02

- A. The Bureau of Economic Geology will participate in quarterly status meetings with the Department of Energy; prepare a scope of work and cost estimate for activities to be conducted in Fiscal Years 2003 through 2005; prepare quarterly reports; participate in public meetings to discuss state oversight activities at the Pantex Plant; propose modifications to the Agreement in Principle as appropriate; provide, as appropriate, reports and brochures for public education on Pantex; provide technical assistance to the Pantex Plant Citizens' Advisory Board; participate in environmental compliance or emergency management meetings relating to the Pantex programs; and participate in tours, meetings, and symposia.
- B. The Bureau of Economic Geology shall provide the following services:
1. **PURPOSE:** The purpose of this work is to evaluate temporal variability in infiltration and evapotranspiration in the shallow subsurface active zone (upper 1 to 2 m) and the potential for upward water movement below this active zone in an interplaya setting at the Pantex Plant and adjacent to Playa 5. Results of the monitoring program will be of critical importance to DOE for any site wide environmental impact statements that will be developed. The monitoring data will also be extremely valuable in designing an engineered cover for the landfill at the Pantex site. Information from this program will be of great value to the Texas Panhandle for groundwater availability modeling as recharge is a critical parameter for modeling.
 2. **BACKGROUND:** We have adopted a multidisciplinary approach to quantifying infiltration which is much more robust and defensible than relying on one single technique. Parameters being monitored include water content, water potential, matric potential, bulk soil conductivity, and temperature. The monitoring station provides information on infiltration in response to ambient precipitation. Sediment samples collected during installation of monitoring equipment were analyzed for hydraulic parameters in the laboratory and for measurement of the distribution of environmental tracers such as chloride. The distribution of environmental tracers is being used to test hypotheses regarding flow developed from the monitoring station and to provide information on longer term net water fluxes. Findings based on previous interplaya studies conducted in the vicinity of the Pantex Plant suggest negligible water movement in this setting under natural conditions.

The Amarillo National Resource Center for Plutonium (ANRCP) originally funded the work. The original scope of work in 1997 was to monitor water potential and temperature. This was expanded in 1998 to include water content monitoring in the shallow subsurface (upper 1.5 m), and a time domain reflectometry system was purchased. Time domain reflectometry probes were installed in January 1998, and the data logging system was installed in August 1998. In addition, heat dissipation sensors were installed in October 1998 to provide an additional check on the water potential measurements with the thermocouple psychrometers. The monitoring system has been operational since October 1998.

The monitoring program evaluated upward flow at depth and infiltration and evapotranspiration in the shallow subsurface in response to precipitation events in interplaya settings. We evaluated data gathered from interplaya settings adjacent to Playa 5 and the interplaya recharge monitoring installation at the Pantex Plant. Monitoring at Playa 5 has been ongoing since 1994 whereas that from the Pantex monitoring installation has been fully operational since October 1998. Monitoring equipment at Playa 5 was restricted to thermocouple psychrometers to monitor water potential and temperature. Additional monitoring equipment at the Pantex interplaya monitoring installation includes heat dissipation sensors to monitor matric potential, and time domain reflectometry probes monitored water content and bulk conductivity.

Monitoring data at Playa 5 show that the potential for upward water movement at depth is stable over time. The shallow subsurface active zone has been getting progressively wetter for the last three years (1997-1999). Water potential data from this site show that the soil has been very wet down to 1.1 m since high precipitation in October 1998 and to 1.7 m after a precipitation event in February 1999. Small increases in water potential have been recorded to a depth of 2.9 m immediately after

precipitation events in the spring of 1999, which are attributed to preferential flow. The long term high water potentials to 1.7 m, however, indicate complete wetting to this depth.

The Pantex monitoring station has been fully operational since October 1998. The potential for upward flow at depth is also stable over time at this site. The shallow subsurface soils were wet after high rainfall in late October, 1998. Thermocouple psychrometers installed in a trench showed rapid increases in water potential in October 1998 to 0.8 m depth and more gradual increases in water potential to 1.4 m attributed to water redistribution. Water potentials remained high throughout the remainder of the monitoring period. Thermocouple psychrometers in the borehole showed increases in water potential after high rainfall in October 1998 to 1.5 m. Thermocouple psychrometers at 4.6 m and deeper did not show any response to these rainfall events. In summary, rapid infiltration occurs to at least 1 m depth and water redistribution occurs to at least 1.5 m and less than 4.6 m.

Water content and bulk conductivity data monitored with the time domain reflectometry (TDR) probes showed similar trends to matric potentials monitored with heat dissipation sensors and water potential monitored with thermocouple psychrometers. Rapid increases in water content after rainfall in October 1998 were recorded to a depth of 1.4 m. After drying in winter, the TDR responded to rainfall events in March through May and showed large increases to the maximum depth monitored (1.4 m).

The results of the monitoring program indicate that water penetrates readily to depths of 1.7 m in response to rainfall events. Rapid deeper penetration of water to 2.9 m adjacent to Playa 5 is attributed to preferential flow. Below this shallow zone (upper 3 to 5 m) water potentials increase with depth that suggests an upward driving force for water movement at depth.

3. **METHODOLOGY:** The work during FY02 will consist of continued monitoring of hydraulic parameters adjacent to Playa 5 and in the monitoring station at Pantex that was established in January 1998. Monitoring of water potential and temperature initiated in 1994 adjacent to Playa 5 will be continued in FY02. Monitoring of water content, water potential, matric potential, temperature, and bulk conductivity, which was initiated in 1998 at the Pantex monitoring station, will also be continued in FY02. The monitoring data will be compared with precipitation records to evaluate the depth of penetration of wetting fronts after precipitation. Results from different sensors will be compared to determine if a consistent conceptual model can be developed from all the data. The monitoring data also is used to examine flow processes including piston and preferential flow. The performance of the instruments will be evaluated to ensure that the monitoring data are reliable. Data from duplicate sensors will be compared. Faulty instruments will be replaced periodically. Data loggers will be downloaded monthly. Data analysis will consist of converting microvolt readings to hydraulic parameters by using previously established calibration equations. Null offset data will be checked to ensure that temperature gradients within the instruments are not affecting the instruments.

Bulk conductivity data will also be examined to determine if these data can be used as a proxy for water content in these sediments. Analysis of TDR waveforms to determine bulk conductivity is much more straightforward than that of water content because the analysis is independent of signal attenuation in high conductivity soils characteristic of the Pantex soils. This is a critical issue for the use of TDR in clay rich soils and would make a significant contribution to soil physics.

4. **PROGRAMMATIC INTEGRATION AND COORDINATION:** Estimates of subsurface moisture migration in interplaya settings will be an important component of a site wide environmental impact statement which will be required for evaluation of subsurface contamination at the Pantex Plant. Information on subsurface moisture migration rates is critical because subsurface moisture migration drives analyses of all subsurface and groundwater pathways for contaminants.
5. **MILESTONES AND DELIVERABLES:** A milestone report will be prepared every 6 months that will provide updates on the monitoring data. An annual report will be prepared at the end of 2002 that will include monitoring data for the year and analysis of flow processes and implications of the monitoring data for Pantex.

BUREAU OF ECONOMIC GEOLOGY
Budget
Pantex Monitoring FY02

Salaries and Wages	Effort (months)	TOTAL
A. Dutton	1.00	6,852
B. Scanlon	3.00	20,738
J. Paine	0.30	1,777
R. Reedy	2.00	8,487
Graphics Illustrator	0.80	2,018
Editor	0.50	1,481
Subtotal Salaries and Wages		41,353
Fringe Benefits, VSL		11,000
Materials and Services		
Expendable Supplies		1,175
Cartographic supplies		584
Matric potential sensors		2,000
Chloride analyses (20 @ \$25)		500
Subtotal Materials and Services		4,259
Computer Expenses		1,800
Travel		
7 trips to Amarillo		
Airfare @ \$214/ea.		1,498
Per diem @ \$95/day		1,330
Car rental @ \$36/day		504
Mileage (BEG to Austin meetings)		56
Subtotal Travel		3,388
Total Direct Costs		61,800
Total Indirect Costs @ 50% MTDC		30,900
Total Project		92,700



**STATE OF TEXAS
AND
U.S. DEPARTMENT OF ENERGY**

AGREEMENT IN PRINCIPLE

**Fiscal Year 2002
Scope of Work
and
Budget**

Office of the Attorney General

**STATE OF TEXAS
AGREEMENT IN PRINCIPLE
ESTIMATED COSTS
FISCAL YEAR 2002**

<u>PARTICIPANT</u>	<u>DOE PROGRAM</u>		<u>TOTAL BUDGET</u>
	<u>Defense Programs</u>	<u>Environmental Management</u>	
Texas Department of Health			
Bureau of Radiation Control	237,215		237,215
Laboratories	62,000		62,000
Total	299,215		299,215
Texas Natural Resource Conservation Commission			
Remediation Division		184,651	184,651
Field Operations		175,562	175,562
Monitoring Operations		110,987	110,987
Toxicology & Risk Assessment		13,800	13,800
Environmental Law		2,000	2,000
Total		487,000	487,000
Division of Emergency Management	170,465		170,465
City of Amarillo	48,492		48,492
Armstrong County	12,360		12,360
Carson County	14,420		14,420
State Energy Conservation Office	183,898		183,898
Office of the Attorney General	15,000		15,000
Bureau of Economic Geology	92,700		92,700
TOTAL ESTIMATED COSTS	836,550	487,000	1,323,550

Office of the Attorney General
Scope of Work
Fiscal Year 2002

Specific services to be provided by the Office of the Attorney General include, but are not limited to, the following:

The Office of the Attorney General will provide advice, representation, analysis, and reports on issues relating to the federal government's expressed intent to reconfigure the nuclear weapons complex, including any resulting change of mission at Pantex; on issues relating to disassembly of nuclear weapons and storage of weapons components, including, but not limited to, the storage of plutonium pits at Pantex; on issues relating to the preparation by the Department of Energy or any other agency of documents required by the National Environmental Policy Act that concern Pantex; and on issues relating to the placement or removal of the Pantex facility on the National Priorities List (NPL) of federal Superfund sites. Personnel of the Office of the Attorney General will also (1) consult with and provide briefings for various other agencies of the State of Texas as required, (2) attend relevant meetings at its discretion and at the request of the Office of the Governor, and (3) evaluate and provide comments on proposed policies and plans related to the reconfiguration process and any resulting change of mission at Pantex, disassembly and weapons components storage, and the federal Superfund process. In furtherance of the services it agrees to provide, the Office of the Attorney General may engage the assistance of subcontractors as appropriate.