



**Texas Commission on
Environmental Quality Austin,
Texas**

**COMPLIANCE PLAN NO. 50284
EPA ID. NO. TX4890110527
ISWR NO. 30459**

**This Compliance Plan is issued in conjunction with
Permit No. 50284**

**COMPLIANCE PLAN FOR INDUSTRIAL
SOLID WASTE MANAGEMENT SITE
issued under provisions of TEXAS
HEALTH AND SAFETY CODE ANN.
Chapter 361 and Chapter 26 of the Texas
Water Code**

Name of Permittee:

**U.S. Department of Energy (DOE) - Pantex Plant
FM 2373 and U.S. Highway 60
P.O. Box 30030
Amarillo Texas 79120**

Site Owner:

**U.S. Department of Energy (DOE) - Pantex Plant
FM 2373 and U.S. Highway 60
P.O. Box 30030
Amarillo Texas 79120**

Registered Agent for Service:

Not Applicable

Classification of Site:

Hazardous waste closure and post-closure care.

The Permittee is required to conduct the Corrective Action and Ground-Water Monitoring Programs in accordance with limitations, requirements, and other conditions set forth herein. All references herein refer to the Compliance Plan unless the Permit is specifically referenced. This Compliance Plan is issued subject to the rules and other Orders of the Commission and laws of the State of Texas. This Compliance Plan does not exempt the Permittee from compliance with the Texas Clean Air Act.

This Compliance Plan remains in effect until amended or revoked by the Commission. This Compliance Plan will be reviewed upon expiration of the authorization to store and process industrial solid waste pursuant to Permit No. 50284 and modified as necessary to assure compliance with 30 TAC Chapters 305, 335 and 350, where applicable.

Margaret Hoffman

ISSUED: OCT 21 2003

For The Commission

TABLE OF CONTENTS

I.	GENERAL INFORMATION (AND APPLICABILITY)	3
II.	CORRECTIVE ACTION AND COMPLIANCE MONITORING SYSTEMS [Reserved]	4
III.	GENERAL DESIGN, CONSTRUCTION, AND OPERATION REQUIREMENTS	4
IV.	CORRECTIVE ACTION AND COMPLIANCE MONITORING OBJECTIVES AND THE GROUND-WATER PROTECTION STANDARD [Reserved]	6
V.	CORRECTIVE ACTION PROGRAM [Reserved]	7
VI.	GROUND-WATER MONITORING PROGRAM	7
VII.	RESPONSE AND REPORTING	10
VIII.	CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS	13
IX.	INTERIM STABILIZATION MEASURES (ISMs) PROGRAM	16
X.	COMPLIANCE SCHEDULE	19
XI.	FINANCIAL ASSURANCE [Reserved - Not applicable for federal facilities]	22
XII.	GENERAL PROVISIONS	22
XIII.	FORCE MAJEURE	23
TABLE I - Waste Management Units Subject To Groundwater Corrective Action and The Compliance Monitoring Program [Reserved]		24
TABLE II - Solid Waste Management Units And Area Of Concern (AOCs)		25
TABLE III - Corrective Action Program [Reserved]		30
TABLE IV - Compliance Monitoring Program [Reserved]		30
TABLE V - Interim Stabilization Measures (ISMs) Program		31
TABLE VI - Designation Of Wells By Function		32
TABLE VII - Compliance Period [Reserved]		33
ATTACHMENTS		
A - Facility site maps, Sheets 1 through 11		
B - Well Design and Construction specifications, Pages 1 through 5		

I. GENERAL INFORMATION AND APPLICABILITY

- A. The industrial solid waste management facility is located seventeen miles northeast of Amarillo, north of U.S. Highway 60 and contiguous to the west side of State Highway 2373, in Carson County, Texas (Attachment A, Sheet 1). The facility is within the drainage area of Segment No. 0224 of the North Fork of the Red River Basin (North Latitude 35 19'11", West Longitude 101 35'07"). However, due to area meteorological, topographic and geologic conditions, most surface water drains to playa lakes located on the site.

The "Uppermost Aquifer" as referenced in this Compliance Plan typically refers to the perched aquifer along with any hydraulically interconnected lower aquifers. Where the perched aquifer is not present, the Ogallala Aquifer and any hydraulically interconnected lower aquifers are considered the Uppermost Aquifer. Typically, the perched aquifer is a discontinuous saturated interval encountered beneath the site at a depth from approximately 200 to 300 feet below ground surface (BGS). The perched aquifer accumulates on top of a fine grain zone (FGZ) that is primarily composed of interbedded silts and clays of various thickness of up to 70 feet thick. Groundwater in the perched aquifer in the vicinity of Pantex is flowing southeasterly. The Ogallala Aquifer is typically composed of fluvial channel deposits of gravels, sands and silts and has a saturated thickness that varies greatly across the site (increases in saturation thickness from south to north below the facility). The Ogallala Aquifer ranges in depth from approximately 340 feet BGS south of the Pantex Plant to approximately 500 feet BGS at the northern Plant boundary. The Ogallala Aquifer's flow direction is typically north/northeasterly because of offsite subsurface structural geology and other offsite influences.

- B. The Compliance Plan is specific to the waste management units listed in Table I (Parts A and B) [Reserved] and depicted in Attachment A, for which the ground-water Corrective Action Program [Reserved] and the Compliance Monitoring Program [Reserved] apply, pursuant to 30 TAC, Subchapter §335.166, 30 TAC 335 Subchapter S, and 30 TAC Chapter 350, for releases from RCRA-regulated units.
- C. The Compliance Plan is specific to the solid waste management units/areas of concern (AOCs) listed in Table I (Part C) [Reserved] and depicted in Attachment A, for which the Corrective Action Program [Reserved] applies pursuant to 30 TAC Subchapter §335.167, 30 TAC 335 Subchapter S, and 30 TAC Chapter 350, for releases from the solid waste management units.
- D. The Compliance Plan is specific to the solid waste management units (SWMUs) and/or Areas of Concern (AOCs) listed in Table II for which investigation and necessary corrective action applies pursuant to 30 TAC Subchapter §335.167, 30 TAC Chapter 350, and/or 30 TAC 335, Subchapter S and Section VIII of this Compliance Plan.

[I.]

- E. The Compliance Plan applies to any SWMU and/or AOC discovered subsequent to issuance of this Compliance Plan. The Permittee shall notify the executive director within fifteen (15) days of confirmation of the discovery, but no longer than sixty-five (65) days of such discovery. Within ninety (90) days of discovering a SWMU or AOC, the Permittee shall submit an assessment for that unit which shall be based on U.S. EPA RCRA Facility Assessment Guidance, October 1986, NTIS PB 87-107769. The purpose of the assessment is to identify releases or potential releases of hazardous waste, hazardous constituents or other constituents of concern from SWMUs or AOCs that may require corrective action. If the assessment indicates that there is a release or a potential for release that warrants further investigation, the Permittee shall conduct an investigation and necessary corrective action in accordance with Section VIII of the Compliance Plan.
- F. All dates in this Compliance Plan shall be referenced to the date of issuance of this Compliance Plan by the Commission unless otherwise specified. This Compliance Plan was developed based on the Compliance Plan application dated June 7, 2001 which was re-submitted under letter dated June 13, 2002 and received by the Commission on June 17, 2002. This Compliance Plan was developed based on the Compliance Plan application and information requested by the Commission dated June 5, 2002, July 24, 2002, August 14, 2002 along with public comments on the final draft Compliance Plan dated September 9, 2002.

II. CORRECTIVE ACTION AND COMPLIANCE MONITORING SYSTEMS - Components and Functions Authorized [Reserved]

III. GENERAL DESIGN, CONSTRUCTION, AND OPERATION REQUIREMENTS

- A. All plans submitted with the Compliance Plan Application referenced in Section I.F concerning the design, construction, and operation of the authorized components of the Corrective Action, Ground-Water Monitoring and Interim Stabilization Measures (ISMs) Programs are approved. All plans must comply with this Compliance Plan and Commission Rules. Any alternate Corrective Action System or ISMs design proposed by the Permittee subsequent to issuance of this Compliance Plan that are equivalent to or exceed the performance of the Corrective Action or ISMs Systems approved herein shall become part of the Compliance Plan upon approval by the executive director.
- B. For unit(s)/AOCs specified in Section I, the following handling methods are authorized for recovered ground water:
1. Treatment through an on-site wastewater treatment system and discharge via a permitted outfall in compliance with a current industrial wastewater discharge permit.

[III.B.]

2. Treatment of recovered ground water by means of air stripping, chemical precipitation and carbon adsorption. The air stripper shall be maintained in compliance with applicable air quality regulations and/or applicable permits.
3. Disposal at permitted deep injection well facility in compliance with a current underground injection control permit..
4. Disposal at other authorized on-site facility or permitted off-site facility.
5. ReInjection of recovered ground water, after treatment, into the contaminated portion of the perched aquifer as defined in Section I.A of this Compliance Plan. The re-injection system and its operation shall be maintained in compliance with applicable rules and permitting requirements.
6. Any other treatment methods approved by the executive director.

The method(s) utilized for handling recovered ground water shall be reported in accordance with Section VII.C.2.

- C. The Permittee shall maintain a list of disposal methods and total volume of all recovered contaminated ground water pursuant to this Compliance Plan and make it available for inspection upon request.
- D. Recovered Non-Aqueous Phased Liquids (NAPLs), if found, shall be managed (treatment, storage, and disposal), or recycled in an authorized on-site unit(s) or an off-site facility.
- E. Well Construction, Installation, Certification, Plugging and Abandonment Procedures
 1. For all wells to be constructed after issuance of this Compliance Plan that do not meet the well construction specifications identified in Attachment B, the Permittee shall submit to the executive director the proposed well location and construction diagram for approval at least sixty (60) days in advance of the anticipated date of installation or in accordance with an approved schedule for installation. These requirements may be met through submittal of a work plan by the Permittee and subsequent approval by the executive director. Well installation shall commence upon written approval of the executive director.
 2. All wells shall be constructed and maintained so ground-water samples are representative of the aquifer's water quality. A record of drilling and construction details demonstrating compliance with the terms of this Section of this Compliance Plan shall be prepared in accordance with Attachment B. Wells constructed prior to issuance of this Compliance Plan may be utilized as ground-water monitoring wells if they meet the standards of Attachment B or are otherwise authorized by

[III.E.2.]

issuance of the Compliance Plan. Wells authorized in the ISMs Program may be used in the final Corrective Action Program authorized by Compliance Plan if properly located and properly screened to fulfill a needed function.

3. The Permittee shall submit certification of well installation in accordance with Attachment B in the first report to be submitted pursuant to Section VII.C.2 after well installation is completed for all wells that are to be incorporated into the Compliance Plan that are installed after issuance of the Compliance Plan. If the Permittee or the executive director determines that the well integrity or materials of construction or well placement no longer enable the well to yield samples representative of ground-water quality, then the Permittee shall replace or abandon the well in accordance with the requirements of this Compliance Plan.
4. Unless the Permittee proposes an alternate well design that will result in wells of equivalent performance and specifications, each well installed after issuance of this Compliance Plan shall follow the design specifications contained in Attachment B of this Compliance Plan.
5. Prior to installation of any replacement well listed in Table VI or illustrated on Attachment A (i.e., ISM Program Well) Sheets 1 and 2, the Permittee shall submit to the executive director for approval, the replacement well specifications and an explanation of why the well is being replaced. For any such well to be considered as a replacement well and not as a new well, the well shall have no substantive design changes from the well being replaced as determined by the executive director. The well shall be drilled within fifteen (15) feet of the well being replaced unless an alternate location is authorized by the executive director. The Permittee shall submit a replacement well certification to the executive director in accordance with Section VII.C.2 and Attachment B.
6. Plugging and abandonment of any Corrective Action System wells shall be allowed as follows: a) Background, POC, and/or POE wells in Section II shall be subject to the modification provisions in 30 TAC §305; b) plugging or abandoning of Corrective Action Observation, Corrective Action System wells in Section II.B, or Interim Stabilization Measures (ISMs) Program wells required by Section IX, Table VI or illustrated on the maps of Attachment A, Sheets 1 and 2. All wells shall be plugged and abandoned in accordance with Attachment B. The Permittee shall certify proper plugging and abandonment was properly completed in accordance with Section VII.C.2 and Attachment B.

- F. The Permittee shall follow the applicable portions of 30 TAC, Chapter 290 - Public Drinking Water; and, 16 TAC, Chapter 76 - Water Well Drillers and Pump Installers.

IV. CORRECTIVE ACTION AND COMPLIANCE MONITORING OBJECTIVES AND THE GROUND-WATER PROTECTION STANDARD [Reserved]

V. CORRECTIVE ACTION PROGRAM [Reserved]

VI. GROUND-WATER MONITORING PROGRAM

The Permittee shall install, operate and maintain a Ground-Water Monitoring System to evaluate the effectiveness of the Corrective Action [Reserved] and/or Compliance Monitoring Program [Reserved], as applicable, for those units undergoing remediation or compliance monitoring. The Permittee shall install, operate and maintain a Ground-Water Monitoring System to evaluate the effectiveness of the stabilization measures required for the Interim Stabilization Measures (ISMs) Program, as applicable. The Ground-Water Monitoring System(s) shall be composed of wells specified in Table VI, those wells designated on Attachment A maps, and any other wells as necessary which are established by the requirements of this Compliance Plan.

A. Waste Management Area Specific Background Ground-Water Quality [Reserved]

B. Sampling and Analysis Plan

1. Wells subject to this Compliance Plan shall be sampled in accordance with sampling procedures consistent with those identified in the Sampling and Analysis Plan submitted with the application dated June 2001 until an updated Sampling and Analysis Plan is submitted for executive director approval in accordance with Section X of this Compliance Plan. The Permittee or the executive director shall propose updates, as necessary, to the approved Sampling and Analysis Plan. The current approved Sampling and Analysis Plan is hereby incorporated into the Compliance Plan by reference as if set out fully herein. The Permittee or the executive director shall propose modifications as necessary to the Sampling and Analysis Plan. Any and all revisions to the plan shall become conditions of this Compliance Plan at the beginning of the first quarter following written approval by the executive director.
2. A current (up-to-date) and approved Sampling and Analysis Plan shall be maintained at the facility and made available for inspection upon request.
3. The collected samples shall be analyzed in accordance with the current edition of U.S. EPA Publication SW-846, Test Methods for Evaluating Solid Waste and American Society for Testing and Materials (ASTM) Standard Test Methods or any other methods accepted by the Commission. Groundwater analyses required by this Compliance Plan shall utilize laboratory methods which are capable of measuring the concentration of each hazardous constituent at a concentration equal to or less than the cleanup value as determined by rule except when matrix interference prevents achievement of that value;

C. Sampling and Analysis Frequencies and Parameters

1. Frequencies of sampling are defined below:
 - a. "Week" and "month" shall be based upon a calendar week and month;

[VI.]

- b. "Quarter" shall be based on divisions of the calendar year (i.e., January through March (1st Quarter), April through June (2nd Quarter), July through September (3rd Quarter), October through December (4th Quarter);
 - c. "Semiannual" shall be based on divisions of the calendar year (e.g., January through June, July through December) and consist of two consecutive quarters;
 - d. "Annual" or "Year" shall be four consecutive quarters, beginning with the first quarter. Years shall be designated consecutively, beginning with the "first year", "second year", etc; and,
 - e. "Calendar year" shall be based on divisions of the calendar (i.e. January through December).
2. Sampling of wells shall commence during the first complete quarter after issuance of this Compliance Plan. Thereafter, samples shall be collected during each sampling period such that data evaluations can be completed within 90 days from the end of the sampling period unless QA/QC procedures show that data is unacceptable and re-analyses or re-sampling must be performed. In such cases, the executive director will be notified as soon as it becomes apparent that the data evaluation will not be completed within the 90 day time limit.
3. In the first and subsequent years of ground-water monitoring, the wells shall be sampled and analyzed according to the following schedules:
- a. Corrective Action Monitoring for units specified in Table I, Parts A and C [Reserved]
 - b. Compliance Monitoring for units specified in Table I, Part B [Reserved]
 - c. Interim Stabilization Measures (ISMs) Program specified in Section IX.
 - i. The ISMs Program monitor wells identified in Table VI, D.1 shall be sampled and analyzed quarterly for the approved Constituents of Concern (COCs) for the duration of the interim stabilization measures.
 - ii. The ISM Program monitor wells identified on Attachment A maps, Sheets 1 and 2, shall be sampled and analyzed for the approved Constituents of Concern (COCs) for the duration of the interim stabilization measures. Unless otherwise specified in Section VI.C.3.c.i., the wells illustrated on Attachment A, sheets 1 and 2 shall be sampled semiannually for the duration of the ISMs.

[V.I.C.]

4. **Field Determination Requirements**

- a. **Water level measurements relative to Mean Sea Level shall be measured to within 0.01 ft and shall be performed during each sampling event effective immediately with issuance of this Compliance Plan. Measurements shall be taken in all monitor wells specified in this Compliance Plan.**
- b. **Field determinations of pH, Temperature and Specific Conductivity are required for the monitoring wells excluding wells containing NAPLs. Turbidity in nephelometric turbidity units (NTUs) is required to be sampled for during sample collection.**
- c. **Field observations including descriptions of appearance (clarity, color, etc.) shall be recorded for each sampling event, excluding samples from wells containing NAPL.**
- d. **The total depth of each well shall be measured once a year unless: 1) the well is equipped with a dedicated pump; and/or 2) the well is designed (e.g., multi-port system, manifold system) so total well depth cannot be measured. Wells that cannot be measured because of the design, etc. shall be measured when: 1) pumps are removed for maintenance; and/or 2) multi-port design is removed for maintenance; and/or 3) wells with manifolds and/or headers are disconnected for maintenance; and/or 4) maintenance, repairs, etc. create an opportunity to measure a well or well system; and/or 5) the ground-water production rate of a dedicated pump for a well or well system decreases by 25% from the initial production rate when the pump was installed.**
- e. **All wells shall be inspected during each sampling event. Repairs to a well shall be performed within ninety (90) days of the routine sampling event inspection that identified the problem unless the repairs are complex (e.g., replacement or equivalent) and cannot be performed within 90 days. Complex repairs shall be conducted based upon a schedule approved by the executive director.**

D. **Data Evaluation Procedures**

1. **For the Corrective Action Program [Reserved]**
2. **For the Compliance Monitoring Program [Reserved]**
3. **For the Interim Stabilization Measures (ISMs) Program**
 - a. **Data evaluation, which includes validation, verification and compliance with the objectives of the program, shall be performed within ninety (90) days of sample collection for all ISMs wells for the duration of the ISMs Program.**

[VI.D.3.]

- b. Within thirty (30) days from the date of completion of an initial data evaluation (data evaluation described in VI.D.3.a), the Permittee may resample and repeat the analysis to verify concentration values in the sample. The objective of the data evaluation is to determine if the objectives established in the ISMs Program are being met.

VII. RESPONSE AND REPORTING

- A. Corrective Action Monitoring for units specified in Table I, Parts A and C [Reserved]
- B. Compliance Monitoring for units specified in Table I, Part B [Reserved]
- C. Reporting Requirements for Compliance Plan Provisions
 1. Water table maps shall be prepared from the ground-water data collected pursuant to Section VI, VIII and IX and shall be evaluated by the Permittee with regard to the following parameters:
 - a. Development and maintenance of a cone of depression during operation of any corrective action or interim stabilization measures system;
 - b. Direction and gradient of ground-water flow;
 - c. Effectiveness of hydrodynamic control of the contaminated zone during operation; and,
 - d. Estimation of the rate and direction of ground-water contamination migration.
 2. The Permittee shall submit a report to each recipient listed in Section XII.C by October 21 of each year and shall include the following information determined since the previously submitted report, if those items are applicable. The report shall cover the previous semiannual period.
 - a. A narrative summary of the Corrective Action System(s) authorized under Section II.C [reserved] and the Interim Stabilization Measures (ISMs) Program authorized under Section IX in operation during the reporting period. The reporting periods shall be January 1 through June 30 and July 1 through December 31;
 - b. A current table and map of all approved monitoring, corrective action system and ISMs wells required by this Compliance Plan. The wells to be sampled shall be those wells identified in Table VI and illustrated on Attachment A, Sheets 1 and 2 of this Compliance Plan, and any changes to the well systems subsequently approved by the executive director pursuant

[VII.C.2.b.]

to Sections II, VI, IX and X of this Compliance Plan. Provide in chronological order, a list of those wells which have been added to, or deleted from, the ground-water monitoring, ISMs and remediation systems since original issuance of the Compliance Plan. Include the date of Commission approval, if applicable, for each entry;

- c. The results of the chemical analyses, submitted in a tabulated format acceptable to the executive director which clearly indicates each parameter that exceeds the GWPS (i.e., Corrective Action or Compliance Programs) or MSC values (as applicable) or background value for those constituents with an approved background value (i.e., ISMs Program). Copies of the original laboratory report for chemical analyses showing detection limits and quality control and quality assurance data shall be provided if requested by the executive director;
- d. If applicable, a notation of the presence or absence of NAPLs, both light and dense phases, in each well during each sampling event since the last event covered in the previous monitoring report and tabulation of depth and thickness of NAPLs, if detected;
- e. Tabulation of all data evaluation results and status of each well with regard to compliance with the Corrective Action and Interim Stabilization Measures (ISMs) Program objectives and if established, compliance with the GWPSs;
- f. Maps indicating the extent and thickness of the LNAPLs and DNAPLs, if detected;
- g. An updated schedule summary as required by Section X;
- h. Corrective Measures Implementation (CMI) Report to be submitted in accordance with Section VIII.F, if necessary
- i. Certification and well installation diagram for any new well installation or replacement and certification for any well plugging and abandonment;
- j. Recommendation for any changes to the Programs of the Compliance Plan
- k. Submittal of Conceptual Site Model and/or updates required by Section X showing the latest updated information;
- l. Summary of any changes made to the Programs identified by Sections IV, V, VI and IX and a summary of any well inspections, repairs, and any operational difficulties associated with these programs;

[VII.C.2.]

- m. Any other items requested by the executive director.
3. The Permittee shall submit an annual report to each recipient listed in Section XII.C by April 21 of each year and shall include the following information in the report for the annual period.
- a. Submit the information required by Section VII.C.2 for the annual reporting period;
 - b. The method(s) utilized for management of recovered/purged ground water shall be identified in accordance with Section III.B;
 - c. Quarterly tabulations of quantities of recovered ground-water and NAPLs, and graphs of monthly recorded flow rates versus time for the Recovery Wells during each reporting period. A narrative summary describing and evaluating the NAPL recovery program shall also be submitted;
 - d. Tabulation of the total contaminant mass recovered from each recovery system for each reporting period;
 - e. Potentiometric surface maps showing the elevation of the water table collected during each sampling events and during any annual assessments conducted during the reporting period. The report must delineate the radius of influence of the Corrective Action System or the Interim Stabilization Measures (ISMs) System, and the direction of ground-water flow gradients outside any radius of influence;
 - f. Tabulation of all water level elevations, depth to water measurements, and total depth of well measurements collected since the data that was submitted in the previous monitoring report;
 - g. For the Corrective Action Program of Section V, maps of the contaminated area depicting concentrations of Table IV constituents and any newly detected Table III constituents as isopleth contours or discrete concentrations if isopleth contours cannot be inferred. Areas where concentrations of constituents exceed the GWPS should be clearly delineated. For the ISMs Program of Section IX, maps of the contaminated area depicting concentrations of designated indicator parameters as approved by the executive director. The designated indicator parameters should be represented using isopleth contours or discrete concentrations if isopleth contours cannot be inferred. Areas where concentrations exceed MSC values (or applicable alternate health based value) or approved background should be clearly delineated.

[VII.C.3.]

- h. **Interim Stabilization Measures (ISMs) Program Status Report pursuant to Section IX and Section X;**
 - i. **Submittal of a table identifying each SWMU / AOC of Table II and the status of unit closure, investigations, interim stabilization measures, corrective measure study and corrective measures implementation. Also, as part of the table, please identify the Constituents of Potential Concern (COPCs) for releases to soils and groundwater from each unit/AOC or Waste Management Grouping.**
 - j. **A table of all modifications and amendments made to this Compliance Plan with their corresponding approval dates if required to be approved by the executive director or the Commission and a brief description of each action;**
 - k. **Tabulation of well casing elevations in accordance with Attachment B No. 16;**
 - l. **A summary of any activity within an area subject to institutional control under 30 TAC Chapter 335 or 30 TAC Chapter 350;**
- D. **The Permittee shall maintain documentation and records of all monitoring, testing, analytical, and inspection data obtained or prepared pursuant to the requirements of this Compliance Plan, including graphs and drawings, as part of its business records. The documents shall be made available for review by the staff of the Commission upon request. If possible, environmental documents and reports that are required to be submitted to the Commission in accordance with this Compliance Plan shall be designed to display the necessary information and minimize the need for security controls on the submitted materials.**

VIII. CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS

A. Corrective Action Obligations

The Permittee shall conduct corrective action as necessary to protect human health and the environment for all releases of hazardous waste, hazardous constituents and other constituents of concern from any Solid Waste Management Unit (SWMU), Area of Concern (AOC) or a Waste Management Grouping, (WMG) as defined in Table II. The Permittee shall fulfill this obligation by conducting Corrective Action under 30 TAC §335.167, which consists of the RCRA Facility Investigation (RFI), and if necessary, Stabilization/Interim Corrective Measures, Baseline Risk Assessment (BLRA)/Corrective Measures Study (CMS) and Corrective Measures Implementation (CMI). The Permittee shall conduct an RFI (or alternate, but equivalent investigation) to determine whether hazardous waste or hazardous constituents listed in 40 CFR Part 261, Appendix VIII and/or 40 CFR Part 264, Appendix IX and/or other constituents of concern have been released into the environment from a SWMU, AOC or WMG (if applicable). If it is determined that hazardous waste, hazardous constituents or other constituents of concern have been or are being released into the environment, then the Permittee may be required to conduct Stabilization/Interim Corrective Measures, a BLRA/CMS and/or a CMI which is protective of human health and the environment.

[VIII.A.]

Upon executive director's review of Corrective Action obligations, the Permittee may be required to perform any or all of the following:

1. Conduct investigation(s);
2. Provide additional information;
3. Investigate additional SWMU(s) and/or AOC(s); and/or,
4. Submit an application for a modification/amendment to a Compliance Plan to implement corrective measures.

Any additional requirements must be completed within the time frame(s) specified by the executive director.

- B. The Permittee shall conduct an RFI for the SWMUs and/or AOCs listed in Table II in accordance with Section I.D, and for any new SWMUs and/or AOCs discovered after the issuance of this Compliance Plan in accordance with Section I.E.

- C. Variance From Investigation

The Permittee may elect to certify that no hazardous waste or hazardous constituents listed in 40 CFR Part 261, Appendix VIII and/or 40 CFR Part 264, Appendix IX or other constituents of concern are or never have been present/managed in a SWMU and/or AOC referenced in Section VIII.B in lieu of performing the investigation required in Sections VIII.A and VIII.D, provided that confirming data is submitted for the current and past waste(s) managed in the respective unit. The Permittee shall submit such information and certification(s) on a unit-by-unit basis in the time frame required in Section VIII.D for review and approval by the executive director of the Commission. If the Permittee cannot demonstrate and certify that hazardous waste, hazardous constituents or other constituents of concern are not or were not present in a particular unit, the investigation required in Sections VIII.A and VIII.D shall be performed for the unit.

- D. RCRA Facility Investigation (RFI)

Within 120 days from the date of issuance of this Compliance Plan and/or within 120 days of approval of the Assessment Report which recommends further investigation of a SWMU and/or AOC in accordance with Section I.E, the Permittee shall submit a schedule for completion of the RFI(s) (or alternate, but equivalent investigation) for the SWMUs and/or AOCs referenced in Section VIII.B to the executive director for review and approval. The Permittee shall initiate the investigations in accordance with the approved schedule and shall address all of the items for RFI Work Plan and RFI Report contained in the U.S. EPA publication EPA/520-R-94-004, OSWER Directive 9902.3-2A, RCRA Corrective Action Plan (Final), May 1994 or other guidance acceptable to the executive director. The results

[VIII.D.]

of the RFI must be submitted to the executive director for approval in the form of an RFI Report within the time frame established in the approved schedule. The RFI Report must appropriately document results of the investigation(s). The Report shall be considered complete when the full nature and extent of the contamination, the Quality Assurance/Quality Control procedures and the Data Quality Objectives are documented in accordance with the rule. The Permittee shall propose or conduct Stabilization/Interim Corrective Measures, as necessary, to protect human health and the environment.

E. **Baseline Risk Assessment (BLRA)/Corrective Measures Study (CMS)**

Upon approval of the RFI Report, if it is determined that there has been a release of hazardous waste or hazardous constituents (listed in 40 CFR Part 261, Appendix VIII and/or 40 CFR Part 264 Appendix IX) or other constituents of concern into the environment, which poses a potential risk to human health and the environment, then the Permittee shall propose a remedy in accordance with the Risk Reduction Standard (RRS) rules (if applicable to the unit/AOC/WMG) or the Texas Risk Reduction Program (TRRP) rules or as otherwise authorized by the executive director. This may require a BLRA and/or CMS Report (or equivalent assessment and/or report) to be submitted for review and approval within the time frame(s) specified by the executive director. This Report will identify potential receptors and evaluate risk, and if necessary identify and evaluate corrective measure alternatives and recommend appropriate corrective measure(s) to protect human health and the environment. The BLRA and/or CMS Report (or equivalent assessment and/or report) shall address all of the applicable items in the RRS, TRRP or other rules acceptable to the executive director and the U.S. EPA publications EPA/520-R-94-004, OSWER Directive 9902.3-2A, RCRA Corrective Action Plan (Final), May 1994 or other guidance acceptable to the executive director.

F. **Corrective Measures Implementation (CMI)**

If on the basis of the RFI and/or BLRA/CMS it is determined that there is a risk to the human health and environment, then the Permittee shall submit for approval a CMI Work Plan(s) within one-hundred-eighty (180) days of receipt of approval of the RFI and/or BLRA/CMS Report unless otherwise extended by the executive director. The CMI Work Plan shall address all of the applicable items in the U.S. EPA publications EPA/520-R-94-004, OSWER Directive 9902.3-2A, RCRA Corrective Action Plan (Final), May 1994 or other guidance acceptable to the executive director. The CMI Work Plan shall contain detailed final proposed engineering design, monitoring plans and time frames necessary to implement the selected remedy and assurances of financial responsibility, if applicable, for completing the corrective action. Following review and approval, and upon installation of a corrective action system based upon the approved CMI Work Plan, the Permittee shall submit a CMI Report which includes as-built drawings of the corrective action system. The CMI Report shall address all the applicable items in the U.S. EPA publications EPA/520-R-94-004, OSWER Directive 9902.3-2A, RCRA Corrective Action Plan (Final), May 1994 or other guidance acceptable to the executive director. If the CMI Work Plan does not propose

[VIII.F.]

a permanent remedy, then the CMI Work Plan shall be submitted as an application to modify/amend the Compliance Plan within the timeframes specified by the executive director. All the requirements of the previous paragraph apply to the corrective measures implemented through the Compliance Plan. Implementation of the corrective measure(s) shall be addressed through issuance of a modified/amended Compliance Plan. To report the progress of the corrective measures, the Permittee shall submit periodic CMI Progress Reports to the Commission in accordance with the schedule specified in the Compliance Plan, or as otherwise directed.

IX. INTERIM STABILIZATION MEASURES (ISMs) PROGRAM

A. Applicability

The Interim Stabilization Measures (ISMs) Program applies to solid waste management units, areas of concern (AOCs) or designated WMGs under investigation for which a final Corrective Action Program has not been authorized by the Compliance Plan. Interim Stabilization Measures are implemented to stabilize impacted media and to protect human health and the environment. Interim Stabilization Measures also apply to SWMUs/AOCs that are discovered after issuance of this Compliance Plan for which the executive director or the Permittee determines Interim Stabilization Measures are necessary.

B. Interim Stabilization Measures Program Objectives

The objectives of the Interim Stabilization Measure Program are to intercept, remove, decontaminate, and/or stabilize the source (i.e., waste and waste residues) and contaminated media to minimize the further migration of contaminants to the uppermost aquifer and protect human health and the environment. The Permittee shall modify the Interim Stabilization Measures Program, as necessary, to achieve these objectives.

C. Interim Stabilization Measures Program Authorized

The Permittee is authorized to design, construct, operate and maintain an Interim Stabilization Measures Program for solid waste management units, AOCs or designated WMGs for which interim measures are necessary to protect human health and the environment. The Interim Stabilization Measures Program shall be operated until final corrective measures established in accordance with Section VIII.F are authorized in the Compliance Plan. The Interim Stabilization Measures Program may consist of source removal or source control actions which may include: excavation, engineered caps / covers; soil vapor extraction systems; groundwater extraction systems; groundwater re-injection systems; groundwater monitoring systems; surface water management procedures; or any other action, system, or procedure designed to achieve the objectives established in Section IX.B. The Permittee is authorized to install and operate the following as part of the Interim Stabilization Measures Program:

[IX.C.]

1. Monitoring wells to establish the groundwater quality and hydrogeological conditions of the aquifer (i.e., perched and Ogallala);
2. Recovery wells to contain or intercept impacted groundwater;
3. Groundwater injection wells to inject treated groundwater into the perched aquifer; Collection and conveyance system to store recovered groundwater and nonaqueous phase liquids (NAPLs), if found, prior to disposal at authorized onsite or offsite facilities;
4. Soil Vapor Extraction (SVE) Systems; and
5. Treatment systems to reduce the concentration of hazardous constituents in soil and groundwater by means of biological, physical and chemical treatment processes.

D. Interim Stabilization Measures Implementation

1. The Permittee shall implement Interim Stabilization Measures, as necessary, to protect human health and the environment. The Permittee must implement Interim Stabilization Measures within 150 days, or based on an alternate schedule, approved by the executive director, after the date that the Permittee determines that stabilization measures are necessary;
2. The Permittee must implement Interim Stabilization Measures, as necessary, within 120 days, or based on an alternate approved schedule not to exceed 180 days, after receiving written notice from the executive director that Interim Stabilization Measures are required. The executive director must determine one or more of the following using environmental data prior to requiring Interim Stabilization Measures:
 - a. Human health and the environment is not being protected;
 - b. Contamination from a SWMU, AOC or WMG has impacted soils, sediment or groundwater and must be stabilized by removal of the source to prevent further migration of contamination; and
 - c. Contaminated groundwater has migrated beyond the Permittee's property boundary and must be stabilized to minimize risk to human health and the environment.
3. The Permittee shall implement the Interim Stabilization Measures specified in IX.E.2 to protect human health and the environment. The Permittee must implement the Interim Stabilization Measures for each solid waste management area / component identified in Table V within 150 days after issuance of this Compliance Plan unless an alternate implementation date is established by Section X of this Compliance Plan or the executive director.

[IX.]

E. Interim Stabilization Measures Program Requirements

The Permittee shall maintain an Interim Stabilization Measures Program which includes the following:

1. **General Requirements for the Interim Stabilization Measures Program:**
 - a. **Implementation schedule to perform Interim Stabilization Measures;**
 - b. **Specific performance goals to protect human health and the environment;**
 - c. **A monitoring system to evaluate the Interim Stabilization Measures and determine if the objectives outline in Section IX.B are being met;**
 - d. **Constituents of Concern (COCs) to be monitored for during the Interim Stabilization Measures;**
 - e. **An Interim Stabilization Measures Report which specifies the system's design, and outlines the program requirements;**
 - f. **Status reports submitted in accordance with Section VII.C documenting that the objectives of Section IX.B are being achieved;**
 - g. **A procedure to modify the Interim Stabilization Measures design, as necessary, to achieve the objectives outlined in Section IX.B of this Compliance Plan. Changes to the Interim Stabilization Measure shall be identified as part of the semiannual reports pursuant to Section VII.C.**
2. **Specific Interim Stabilization Measure Requirements**
 - a. **The Interim Stabilization Measures Program includes the areas and components listed in Table V of this Compliance Plan;**
 - b. **The Interim Stabilization Measures Program includes those Interim Stabilization Measures monitoring wells specified in Table VI along with any ISM monitor wells illustrated on Attachment A, Sheets 1 and 2. The recovery wells, injection wells and soil vapor extraction wells referenced in the Compliance Plan Application of Section I.F and/or Table V are approved subsequent to issuance of this Compliance Plan.**

[IX.E.2.]

- c. The constituents of concern (COCs) to be monitored for during the Interim Stabilization Measures are those compounds that have been managed in the Unit/AOC, or those compounds detected or anticipated to be detected in the environmental media. As an alternate to using the complete list of COCs for the unit/AOC being monitored, the Permittee may submit, for executive director approval, a set of indicator parameters (subset of master list) to be monitored for during each sampling event for the duration of the Interim Stabilization Measures.

X. COMPLIANCE SCHEDULE

- A. Within sixty (60) days of issuance of this Compliance Plan, the Permittee shall submit to the executive director a schedule summarizing all activities required by the Compliance Plan. The schedule shall list the starting dates of all activities to accomplish the requirements of this Compliance Plan. The Permittee shall include an updated schedule in the semiannual report. The schedule shall list the activity or report, the Compliance Plan Section which requires the activity or report and the calendar date the activity or report is to be completed or submitted (if this date can be determined).
- B. Within sixty (60) days of issuance of this Compliance Plan, the Permittee shall submit to the executive director an updated Sampling and Analysis Plan which incorporates the requirements established by this Compliance Plan. As part of the Sampling and Analysis Plan, the Permittee shall propose the screened interval to be sampled during each sampling event. For multi-port wells, the Permittee must propose the sampling port(s) to be monitored for during each sampling event.
- C. Within 60 days of issuance of the Compliance Plan, the Permittee may propose the indicator parameters to be graphed and reported as required by Section VII.C.2. As an alternate to proposing indicator parameters to be graphed, the Permittee may graph all the constituents which have been managed in the unit/AOC and those detected or anticipated to have released from the unit/AOC;
- D. Within 90 days of issuance of the Compliance Plan, the Permittee shall submit conceptual site models for those waste management groupings which drain surface water to the Playa 1 Area (i.e., Zones, 4, 11, 12); Playa 2 Area (i.e., Zones 4, 5, 7, 8, 10, 11); Playa 3 Area (i.e., Burning Ground Waste Management Area and Zone 5); and Playa 4 Area. The Conceptual Site Models should identify the major sources of contamination for each area, the potential and completed known pathways and the known extent of impacted media, if applicable. Updated conceptual site models shall be submitted to the Commission in accordance with Section VII.C.2.

[X.]

- E. Within 120 days of issuance of the Compliance Plan, the Permittee shall submit a schedule, if applicable, to install any new Interim Stabilization Measure wells identified in Table VI or illustrated on the maps of Attachment A, Sheets 1 and 2 or identify necessary changes to the well or well system.
- F. Within 120 days of issuance of the Compliance Plan, the Permittee must evaluate the need for additional ISMs for groundwater to meet the objectives of the ISMs Program of Section IX;
- G. Within 150 days of issuance of the Compliance Plan, or an alternate approved date, the Permittee must initiate active remediation of groundwater using the southeast extraction well system proposed in the Compliance Plan application of Section I.F.
- H. Within 90 days of issuance of the Compliance Plan, the Permittee shall submit for executive director approval procedures that will comply with this provision. Upon determining that a newly detected historical release from a SWMU, AOC, or a grouping of SWMUs/AOCs has migrated to groundwater (i.e. perched or Ogallala), the Permittee shall provide notification to the executive director within ten (10) calendar days of the determination, both orally and in writing, of the sample results that led to the determination. The determination of a release occurs when a Permittee has verified and validated sample results identifying the presence of a hazardous constituent in the groundwater. This 10 day notification addresses historic releases from a SWMU, AOC, or a grouping of SWMUs or AOCs, that are not attributed to new releases to the environment. All spills or releases to the environment not attributed to historical releases must follow the notification and reporting requirements of the Texas Water Code.
- I. Within 30 days of determining that Interim Stabilization Measures are necessary in accordance with the requirements of Section IX.D.1, the Permittee must notify the executive director in writing. The notification to the executive director must identify the unit/area undergoing Interim Stabilization Measures, the purpose for the Interim Stabilization Measures, the extent of contamination for the subject unit/area, the identified COCs for the unit/area, the proposed monitoring lists (or indicator parameters), any immediate actions taken to remedy the concern, and the proposed schedule to implement the Interim Stabilization Measures.
- J. If the executive director determines that the lateral or vertical extent of ground-water contamination is not delineated, the Permittee must, within 60 days of the date of the executive director's notification unless otherwise directed, submit a schedule for initiating an investigation to determine the extent of the contamination in accordance with the rule.

[X.]

- K. An Interim Stabilization Measures Report required by Section IX.E must be submitted within 240 days of initiating operation of the system. If a system is not installed, but Interim Stabilization Measure procedures are implemented to manage the contaminated media, then an Interim Stabilization Measures Report must be submitted within 150 days of the implementation of the Interim Stabilization Measures.
- L. For those SWMUs and AOCs identified in Table II, the RCRA Facility Investigation must be completed in accordance with the requirements in Section VIII.D and submitted for review by May 1, 2005 unless an alternate schedule is established by the executive director. After the approved schedule period, Pantex must utilize the Texas Risk Reduction Program rules (30 TAC Chapter 350) to perform the investigation(s) and obtain closure for the SWMUs and AOCs identified in Table II.
- M. If it is determined that a Baseline Risk Assessment and Corrective Measure Study must be conducted in accordance with Section VIII.E, the final Report(s) must be submitted within 365 days after approval of the RFI or an alternate schedule approved by the executive director.
- N. Every year after issuance of the Compliance Plan, an evaluation of innovative technologies shall be performed to determine if remedies have been developed that are more cost effective to remediate and/or control contaminated sediments, soils and groundwater. The results of the evaluation should be reported in the report required by Section VII.C.3.
- O. Every 5 years after issuance of the Compliance Plan, the approved baseline risk assessment (i.e., facility-wide or for specified area) used to determine risk to human health and the environment must be evaluated and/or calibrated using updated information and data to determine if the assumptions, exposure scenarios, etc utilized in the risk assessment are correct. The results of the evaluation and Permittee's recommendation must be reported in accordance with Section VII.C.
- P. On or before September 1, 2005 or an alternate approved date, the groundwater flow and contaminant transport model for the facility must be finalized and submitted to the executive director for approval. The Commission approved model(s) will be used to establish the basis of contaminant transport for any assessment to establish risk to human health and the environment. Every 5 years, after the issuance of this Compliance Plan the groundwater flow model must be evaluated and/or calibrated using actual monitoring data from groundwater wells to determine if the assumptions or information utilized in the model are appropriate.
- Q. After approval of the CMI work plan in accordance with Section VIII, the Permittee must submit a modification to this Compliance Plan within 150 days of the approval date of the CMI work plan to develop/modify the Corrective Action Program of Section V.

[X.]

- R. Within 150 days from the date of issuance, Pantex shall evaluate the need for a community relations plan and report to the TCEQ the results of the evaluation. At a minimum, Pantex shall establish a repository for public information that would include schedules, plans and reports required by this Compliance Plan.

XI. FINANCIAL ASSURANCE [Reserved - Not applicable for federal facilities]

XII. GENERAL PROVISIONS

A. Deed Recordation Requirements

For waste and contaminated soil (including saturated soils) approved to remain in place above background concentration levels after completion of the corrective action and/or ground-water monitoring programs, the Permittee shall record an instrument in the county deed records for the facility to specifically identify the areas of contamination exceeding background values. The deed certification shall follow the requirements of 30 TAC §335.560 and §335.569 or 30 TAC §350.111, where applicable.

B. Notification Requirements

The permittee shall make oral notification or provide a written schedule of sampling to the local Texas Commission on Environmental Quality region office at least ten (10) days prior to any well installation or sampling activity required by the Compliance Plan in order to afford Region personnel the opportunity to observe these events and collect samples. The Region office may waive this ten (10) day period if circumstances warrant.

C. Distribution of Copies

The Permittee shall submit all schedules, plans, and reports required by this Compliance Plan according to the following distribution list:

1. An original and one copy to the Corrective Action Section, Mail Code MC-127, Remediation Division, Texas Commission on Environmental Quality in Austin, Texas; and,
2. One copy to the Waste Program, Texas Commission on Environmental Quality Region 1 Office in Amarillo, Texas.

D. Compliance Plan Modification or Amendment

If the Permittee determines that the Compliance Monitoring Program [Reserved], Corrective Action Program [Reserved], Compliance Schedule, or Financial Assurance [Reserved] required by this Compliance Plan no longer satisfies the requirements of, or, the Permittee must, within ninety (90) days of making this determination, submit an application for a

[XII.D.]

modification or amendment to make any appropriate changes to the Compliance Plan which will satisfy the regulations. Any application to modify or amend the Compliance Plan shall be accomplished in accordance with the provisions of 30 TAC 305 Subchapter D and submitted to the Industrial and Hazardous Waste Permits Section, Permits Division, Mail Code MC-130, Texas Commission on Environmental Quality in Austin, Texas.

- E. Any changes to the Corrective Action or Ground-Water Monitoring Systems are subject to executive director's approval.

XIII. FORCE MAJEURE

The Permittee's non-compliance with one or more of the provisions of this Compliance Plan may be justified only to the extent and for the duration that non-compliance is caused by a "Force Majeure" event. For purposes of this Compliance Plan, "Force Majeure" is defined as an event that is caused by an Act of God, labor strike, or work stoppage, or other circumstance beyond the Permittee's control that could not have been prevented by due diligence, and that makes substantial compliance with the applicable provision or provisions of this Compliance Plan impossible.

The occurrence of a "Force Majeure" event that justifies the missing of one deadline shall not automatically justify the missing of later deadlines unless there is a cumulative effect due to such an event. The Permittee shall keep a record of any delaying events.

If the Permittee anticipates or experiences an inability to comply with any of the provisions of this Compliance Plan due to a "Force Majeure" event, the Permittee shall notify the executive director of the Commission immediately (within 24 hrs) or at the earliest possible time thereafter contingent on the circumstances. A written notice must be submitted to the Commission within ten (10) days, which describes the nature, cause, and anticipated length of the delay and all steps which the Permittee has taken and will take, with a schedule for their implementation, to avoid or minimize the delay. In the event that performance of any of the activities required by this Compliance Plan is affected by a "Force Majeure" event, then the Permittee shall propose a plan for the executive director's (Commission) approval, for achieving the objectives of the Compliance Plan by alternative means in the most timely manner.

TABLE I

**Waste Management Units Subject to the Ground-water
Corrective Action Program and the Compliance Monitoring Program
[Reserved]**

The Compliance Plan is specific to the following waste management units or areas for which the ground-water Corrective Action Program and Compliance Monitoring Programs of Section IV and V apply, pursuant to 30 TAC §335.166 and 30 TAC §335.165, respectively, for releases from RCRA-regulated units. The Compliance Plan is also specific to waste management units and areas of concern listed below for which the Corrective Action Program of Section V applies pursuant to 30 TAC §335.167 for releases from the solid waste management units.

- A. RCRA-REGULATED UNITS SUBJECT TO THE CORRECTIVE ACTION PROGRAM
[Reserved]
- B. RCRA-REGULATED UNITS SUBJECT TO THE COMPLIANCE MONITORING PROGRAM
[Reserved]
- C. SOLID WASTE MANAGEMENT UNITS / AREAS OF CONCERN [Reserved]

TABLE II

Solid Waste Management Units and Areas of Concern (AOCs)

The Compliance Plan is specific to the following units for which corrective action and/or Interim Stabilization Measures (Interim Stabilization Measures) apply pursuant to the requirements of Section VIII for releases from solid waste management units (SWMUs) and Areas of Concern (AOCs). The Solid Waste Management Units (SWMUs) and Area of Concerns (AOCs) are also depicted in Attachment A, Sheets 3 through 11:

SOLID WASTE MANAGEMENT UNIT	NOR NUMBER	Location on Maps, Attachment A.
1. SWMUs 14-27 - Explosive Burn Pads*	004	Map Area 1
2. SWMUs 37-44 - Burning Grounds Landfills*	006	Map Area 1
3. SWMU 47 - Chemical Burn/Evaporation Pits*	N/A	Map Area 1
4. Unassigned (UA) SWMU - Demonstration Facilities*	N/A	Map Area 1
5. SWMU 11 - Surface Impoundment in Zone 5 (Building FS-16)*	N/A	Map Area 4
6. SWMU 13 - Former Solar Evaporation Pond (Building 11- 51)*	N/A	Map Area 7
7. SWMU 109 - Concrete Sump (Building 12- 68)*	N/A	Map Area 7
8. SWMU 136 - Subsurface Leaching Beds (Building 12- 59)*	N/A	Map Area 7
9. SWMU 139 - Photo-processing Leaching Bed (Building FS-10)*	N/A	Map Area 1
10. AOC 12- Paint Shop Area (Building 12- 5D)*	N/A	Map Area 7
11. UA SWMU - Unlined Landfill (Firing Site 1 (FS-1)*)	N/A	Map Area 1
12. UA SWMU - Equipment - Firing Site 22 (FS-22 Gun Barrel)*	N/A	Map Area 7
13. SWMU 78 - Concrete Sump - Firing Site 24 (FS-24)*	N/A	Map Area 1
14. AOC 13 - Former Cooling Tower in Zone 12*	N/A	Map Area 7
15. SWMU 140 - Old Sewage Treatment Plant/Sludge Beds*	N/A	Map Area 2
16. AOC 11 - Fire Training Area Burn Pits*	N/A	Map Area 7
17. SWMU 54 - Landfill 3*	N/A	Map Area 7
18. SWMU 55 - Landfill 4	N/A	Unknown
19. SWMU 56 - Landfill 5*	N/A	Map Area 7
20. SWMU 57 - Landfill 6*	N/A	Map Area 7
21. SWMU 58 - Landfill 7*	N/A	Map Area 7
22. SWMU 60 - Landfill 9*	N/A	Map Area 7
23. SWMU 61 - Landfill 10*	N/A	Map Area 7
24. SWMU 62 - Landfill 11*	N/A	Map Area 4
25. SWMU 63 - Landfill 12*	N/A	Map Area 4
26. SWMU 64 - Landfill 13*	N/A	Map Area 3
27. SWMU 66 - Landfill 15*	N/A	Map Area 7

SOLID WASTE MANAGEMENT UNIT	NOR NUMBER	Location on Maps, Attachment A.
28. SWMU 68a - Original Landfill*	N/A	Map Area 7
29. SWMU 68b - Landfill 1*	N/A	Map Area 5
30. SWMU 68c - Landfill 2*	N/A	Map Area 5
31. SWMU 68d - Sanitary Landfill*	002	Map Area 6
32. UA SWMU - Abandoned Zone 10 Landfill*	N/A	Map Area 6
33. SWMU 1 - Drainage Ditch(es) (Building 12-17)*	N/A	Map Area 7
34. SWMU 2 - Drainage Ditch(es) (Building 12-43)*	N/A	Map Area 7
35. SWMU 3 - Drainage Ditch(es) (Building 11-44)*	N/A	Map Area 7
36. SWMU 4 - Drainage Ditch(es) (Building 11-50)*	N/A	Map Area 7
37. SWMU 5-01 - Drainage Ditch(es) (Buildings 12-5 and 12-5B)*	N/A	Map Area 7
38. SWMU 5-02 - Drainage Ditch(es) (Buildings 12-51, 12-67, and 12-110)*	N/A	Map Area 7
39. SWMU 5-03 - Drainage Ditch(es) (Buildings 12-9, 12-10, 12-18, 12-68)*	N/A	Map Area 7
40. SWMU 5-04 - Drainage Ditch(es) (Buildings 12-19 and 12-73)*	N/A	Map Area 7
41. SWMU 5-05 - Drainage Ditch(es) (Buildings 12-21 and 12-24)*	N/A	Map Area 7
42. SWMU 5-06 - Drainage Ditch(es) (Buildings 12-44E and 12-81)*	N/A	Map Area 7
43. SWMU 5-07 - Drainage Ditch(es) (Building 12-41)*	N/A	Map Area 7
44. SWMU 5-08 - Drainage Ditch(es) (Building 11-36)*	N/A	Map Area 7
45. SWMU 5-09 - Drainage Ditch(es) (Buildings 11-17, 11-20, and 11-51)*	N/A	Map Area 7
46. SWMU 5-10 - Drainage Ditch(es) Near the Old Sewage Treatment Plant*	N/A	Map Area 2
47. SWMU 5-11 - Main Perimeter Ditch (Zone 11)*	N/A	Map Area 7
48. SWMU 5-12 - Main Perimeter Ditch (Zone 12)*	N/A	Map Area 7
49. SWMU 5-13 - Main Ditch(es) to Playa 1*	N/A	Map Area 5
50. SWMU 5-14 - Main Ditch(es) to Playa 2*	N/A	Map Area 6
51. SWMU 5-15 - Main Ditch(es) to Playa 4*	N/A	Map Area 8
52. SWMU 6 - Playa 1*	001	Map Area 5
53. SWMU 7 - Playa 2*	012	Map Area 6
54. SWMU 8 - Playa 3*	019	Map Area 1
55. SWMU 9 - Playa 4*	N/A	Map Area 8
56. SWMU 10 - Pantex Lake	N/A	Map Area 2
57. SWMU 12 - 11-14 Pond and Drainage Ditch Near Former 11-14 Pond*	013	Map Area 7

SOLID WASTE MANAGEMENT UNIT	NOR NUMBER	Location on Maps, Attachment A.
58. SWMU 70 - Firing Site 5*	N/A	Map Area 2
59. SWMU 71 - Firing Site 6*	N/A	Map Area 3
60. SWMU 73 - Firing Site 15*	N/A	Map Area 4
61. UA SWMU - Firing Site 11 Container Storage Area*	N/A	Map Area 1
62. SWMU 69 - Firing Site 4*	N/A	Map Area 2
63. SWMU 72 - Firing Site 10*	N/A	Map Area 1
64. SWMU 74 - Firing Site 21*	N/A	Map Area 4
65. SWMU 75 - Firing Site 22*	N/A	Map Area 1
66. AOC 6 - Gasoline Leaks at Buildings 12-35 and 16-1*	N/A	Map Area 6
67. SWMU 53 - Temporary High Explosives Burning Grounds*	N/A	Map Area 3
68. SWMU 82 - Nuclear Weapon Accident Residue Storage*	N/A	Map Area 5
69. SWMU 135 - Leaching Bed Building 12- 44E*	N/A	Map Area 7
70. SWMU 144 - Building 10-13, TNT Settling Pit*	N/A	Map Area 6
71. SWMU 145 - Building 10-17, TNT Settling Pit*	N/A	Map Area 6
72. SWMU 146 - Building 10-26, TNT Settling Pit*	N/A	Map Area 6
73. SWMU 147 - Building 11-13*	N/A	Map Area 7
74. SWMU 148 - Building 11-17*	N/A	Map Area 7
75. SWMU 149 - Building 11-26*	N/A	Map Area 7
76. SWMU 150 - Building 11-12*	N/A	Map Area 7
77. SWMU 117 - High Explosives Settling Tank*	010	Map Area 7
78. SWMU 118 - Equalization Basin*	016	Map Area 7
79. SWMU 119a - High Explosives Filters*	010	Map Area 7
80. SWMU 120a - Carbon Filters*	010	Map Area 7
81. SWMU 119b - High Explosives Filters*	009	Map Area 7
82. SWMU 120b - Carbon Filters*	009	Map Area 7
83. SWMU 121 - High Explosives Settling Tank*	009	Map Area 7
84. SWMU 122 - Equalization Basin*	015	Map Area 7
85. SWMU 122b - Building 12-24N & Building 12-43 Upland Soils*	N/A	Map Area 7
86. SWMU 123 - Concrete Sump*	N/A	Map Area 7
87. SWMU 84 - Scrap Salvage & Storage Yard (Building 10-9)*	N/A	Map Area 6
88. SWMU 103 - Former Battery Storage Area (Building 12-81)*	N/A	Map Area 7
89. SWMU 143 - Former Waste Drum Storage Areas (Buildings 10-9 & 10-7)*	N/A	Map Area 6
90. SWMU 113 - Overflows from Building 11-36 Collection System/Sump*	N/A	Map Area 7

SOLID WASTE MANAGEMENT UNIT	NOR NUMBER	Location on Maps, Attachment A
91. AOC 1 - Transformer Leak (Building 11- 14A)*	N/A	Map Area 7
92. AOC 2 - Main Electrical Subsystem (Igloo 4-28)*	N/A	Map Area 7
93. AOC 3a - Zone 10 Former Boiler House Areas*	N/A	Map Area 6
94. AOC 3b - Zone 11 Former Boiler House Areas*	N/A	Map Area 7
95. AOC 5 - Electrical Equipment Storage Area/Sump (Near Building 12-5)*	N/A	Map Area 7
96. AOC 7a - Building 11-36 Sulfuric Acid Spills	N/A	Map Area 7
97. AOC 7b - Building 12-4 Sulfuric Acid Spills	N/A	Map Area 7
98. AOC 7c - Building 12-64 Sulfuric Acid Spills	N/A	Map Area 7
99. AOC 8a - Pad 11-2 Solvent Leaks*	N/A	Map Area 7
100. AOC 8b - Pad 11-13 Solvent Leaks*	N/A	Map Area 7
101. AOC 8c - Building 11-17 Solvent Leaks*	N/A	Map Area 7
102. AOC 8d - Building 11-22 Solvent Leaks*	N/A	Map Area 7
103. AOC 8e - Building 11-36 Solvent Leaks*	089	Map Area 7
104. AOC 10a - Building 12-43A Pesticide Rinse Areas*	N/A	Map Area 7
105. AOC 10b - Building 12-51 Pesticide Rinse Areas*	N/A	Map Area 7
106. AOC 14 - Battery Storage Area (Building 12-18)*	N/A	Map Area 7
107. AOC 15 - DDT Release (Building 12- 35)*	N/A	Map Area 7
108. UA SWMU - Capacitor Bank Rupture*	N/A	Map Area 7
109. UA SWMU - Evaporation Pit East of Bay 3 (Building 11-20)*	N/A	Map Area 7
110. UA SWMU - Evaporation. Pit S. of Bay 11/West of Bay 6 (Bldg. 11-20)*	N/A	Map Area 7
111. UA SWMU - Former Leaching Bed N. of Bldg. 11-50 & W. of Bldg. 11-36*	N/A	Map Area 7
112. UA AOC - Concrete Sump (Near Building 12-5B)	N/A	Map Area 7
113. SVS 1 - Denuded Area near Playa 1*	N/A	Map Area 5
114. SVS 2 - Parallel Depressions near Building 11- 26*	N/A	Map Area 7
115. SVS 3 (SWMU 67) - Carbon Black Burial Area near Building 10- 7*	N/A	Map Area 6
116. SVS 4 - Old Pistol Range*	N/A	Map Area 5
117. SVS 5 (SWMU 59) - Zone 11 Landfill East of Pad 11- 13	N/A	Map Area 7
118. SVS 6 (SWMU 65) - Unnumbered Zone 7 Landfills	N/A	Map Area 3
119. SVS 7 - Igloo Demolition Debris Landfills, Zones 4 & 5	N/A	Map Area 4
120. UST #9 - Building 12-17E	N/A	Map Area 7
121. UST #7 - Building 12-5B	N/A	Map Area 7
122. UST #38 - Building 12-98	N/A	Map Area 7

SOLID WASTE MANAGEMENT UNIT	NOR NUMBER	Location on Maps, Attachment A.
123. AOC- Four Landfills located in Zone 10 at 300 ft NW of SWMU 84 (Blg 10-9 Scrap and Salvage Yard) (1)	NA	Map Area 6
124. AOC - Blg 12-1 Sump located adjacent to Plant Laundry (1)	N/A	Map Area 7
125. SWMU 133 (UST 30) - Waste Oil Tank at Building 16-1	N/A	Map Area 6/7
126. UST #39 - North of Building 12-84	N/A	Map Area 7

- * Indicate by asterisk (*) those waste management units that have received any hazardous waste constituent listed in Appendix VIII of 40 CFR Part 261.
- (1) Notified Commission in letter dated October 29, 2001 of new AOC.
- (2) WMG is defined as more than one SWMU and/or AOC that is combined by the Permittee for the purpose of the RFI, stabilization/corrective measures, CMS or CMI.

TABLE III - CORRECTIVE ACTION PROGRAM (Reserved)

**Table of Detected Hazardous and Solid Waste Constituents and
Concentration Limits for the Ground-Water Protection Standard
[Reserved]**

TABLE IV - COMPLIANCE MONITORING PROGRAM (Reserved)

**Indicator Parameters and Concentration Limits for
the Ground-Water Protection Standard
[Reserved]**

TABLE V

INTERIM STABILIZATION MEASURES (ISMs) PROGRAM

WASTE MANAGEMENT AREAS / COMPONENTS SUBJECT TO THE ISMs PROGRAM

1. Burning Grounds Waste Management Area
 - A. ISMs Soil Vapor Extraction (SVE) System
 - B. ISMs Groundwater Monitoring Program
2. Southeast Waste Management Area (Zones 11 and 12)
 - A. ISMs Recovery/ Extraction System
 - B. ISMs Perched Aquifer Injection Wells
 - C. ISMs Ex-Situ Groundwater Treatment System
3. Playa 1 Area and Zones 4/15 Area
 - A. ISMs Monitoring Wells
4. Facility Wide Monitoring
 - A. ISMs Monitor Well System

TABLE VI
 Designation of Wells by Function

WELLS BY FUNCTION	1	2
	SCREENED ZONE	SAMPLING FREQUENCY
A. <u>POINT OF COMPLIANCE WELLS</u> [Reserved]		
B. <u>POINT OF EXPOSURE WELLS</u> [Reserved]		
C. <u>BACKGROUND WELLS</u> [Reserved]		
D. <u>INTERIM STABILIZATION MEASURE (ISM)s MONITORING WELLS</u> ³		
1. <u>Northern Area of Pantex Plant -Surveillance Observation Wells</u>		
<u>Well</u>	<u>Aquifer Screened *</u>	
PTX01-1013	Ogallala	
PTX06-1066	Ogallala	
PTX06-1064	Ogallala	
PTX06-1068	Ogallala	
PTX01-1010	Ogallala	
PTX06-1062A	Ogallala	
PTX06-1065	Ogallala	
PTX06-1063A	Ogallala	

Note: The wells listed above are subject to the Permitting modification process.

* For multi-screened wells, screened interval to be monitored during each sampling event must be proposed in accordance with Provision X of this Compliance Plan.

2. Eastern and Southern Area Wells -

See Attachment A, Sheets 1 and 2 maps

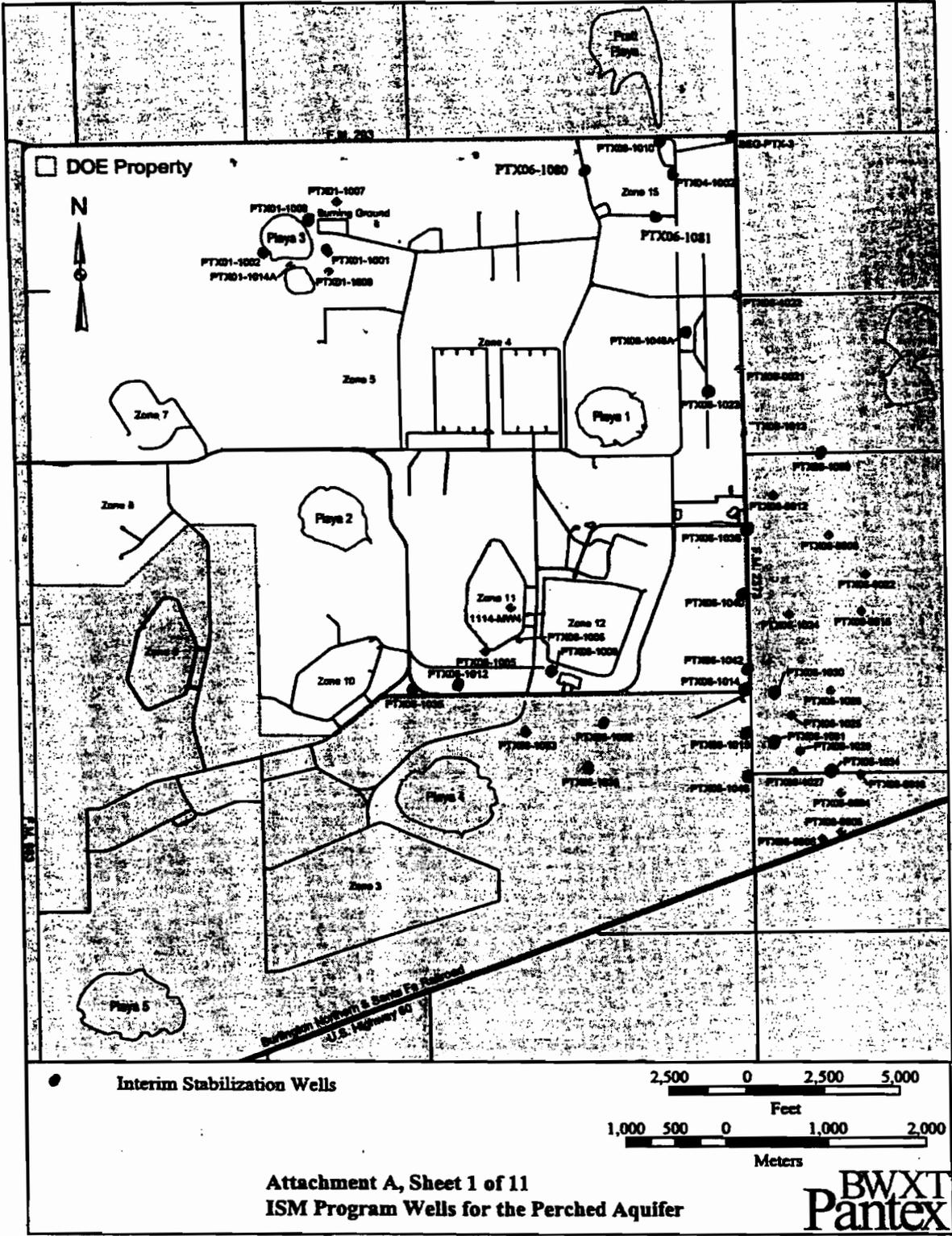
Note: Those ISMs Wells and piezometers identified on Attachment A, Sheets 1 and 2 maps which are not listed in Table VI.D.1 of this table are subject to change, upon approval by the executive director, without modification to the Compliance Plan.

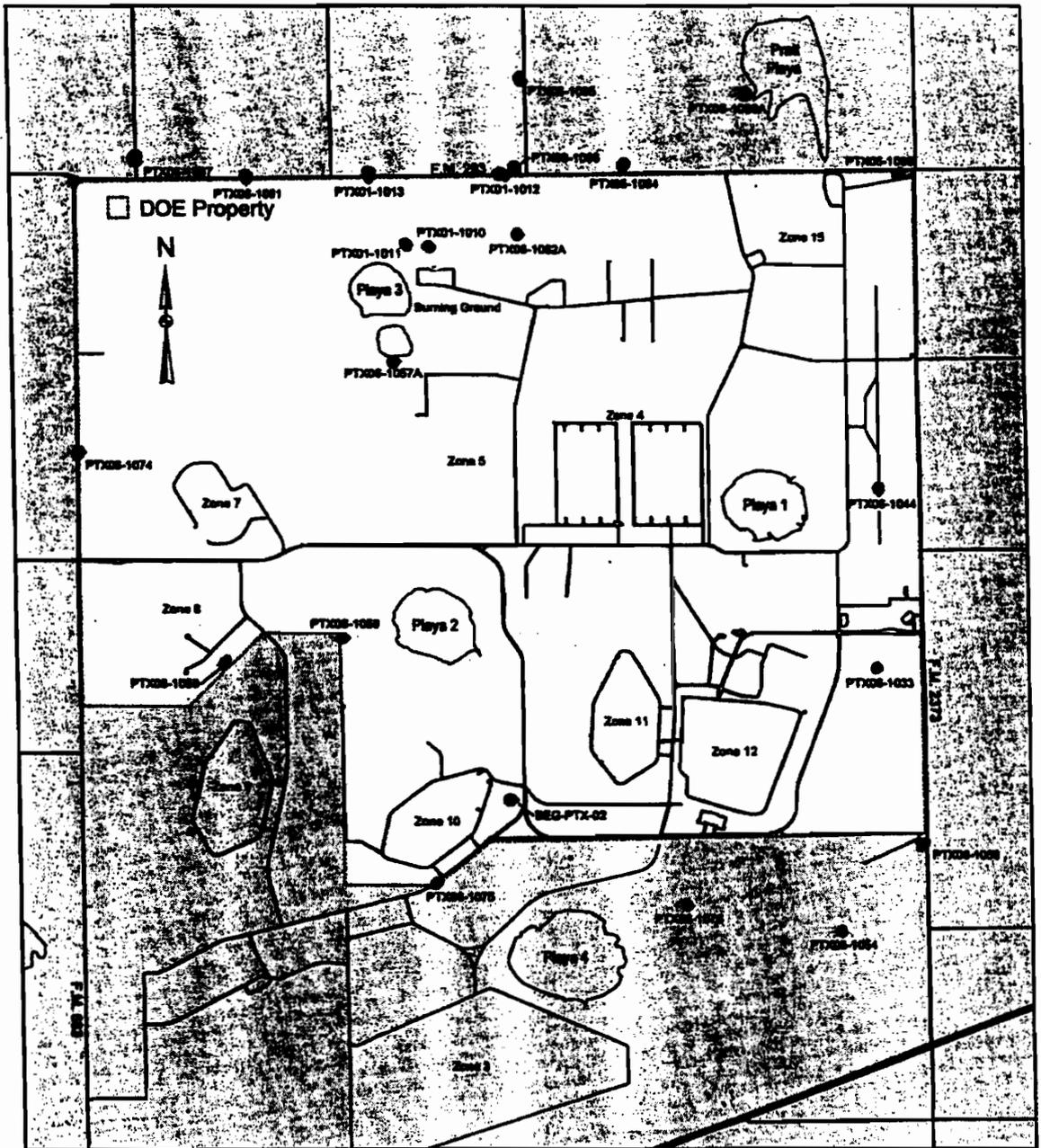
LEGEND

- 1 Aquifer as defined in Section I.A of this Compliance Plan
- 2 Sampling event initiated as defined by Section VI.C.1 of this Compliance Plan
- 3 Several wells are included in the ISMs Program which are not currently impacted by contamination. The function of these wells are for primarily included for groundwater monitoring and aquifer evaluation purposes.

TABLE VII

**Compliance Period
[Reserved]**

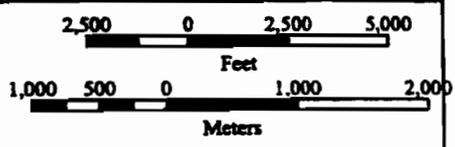




□ DOE Property



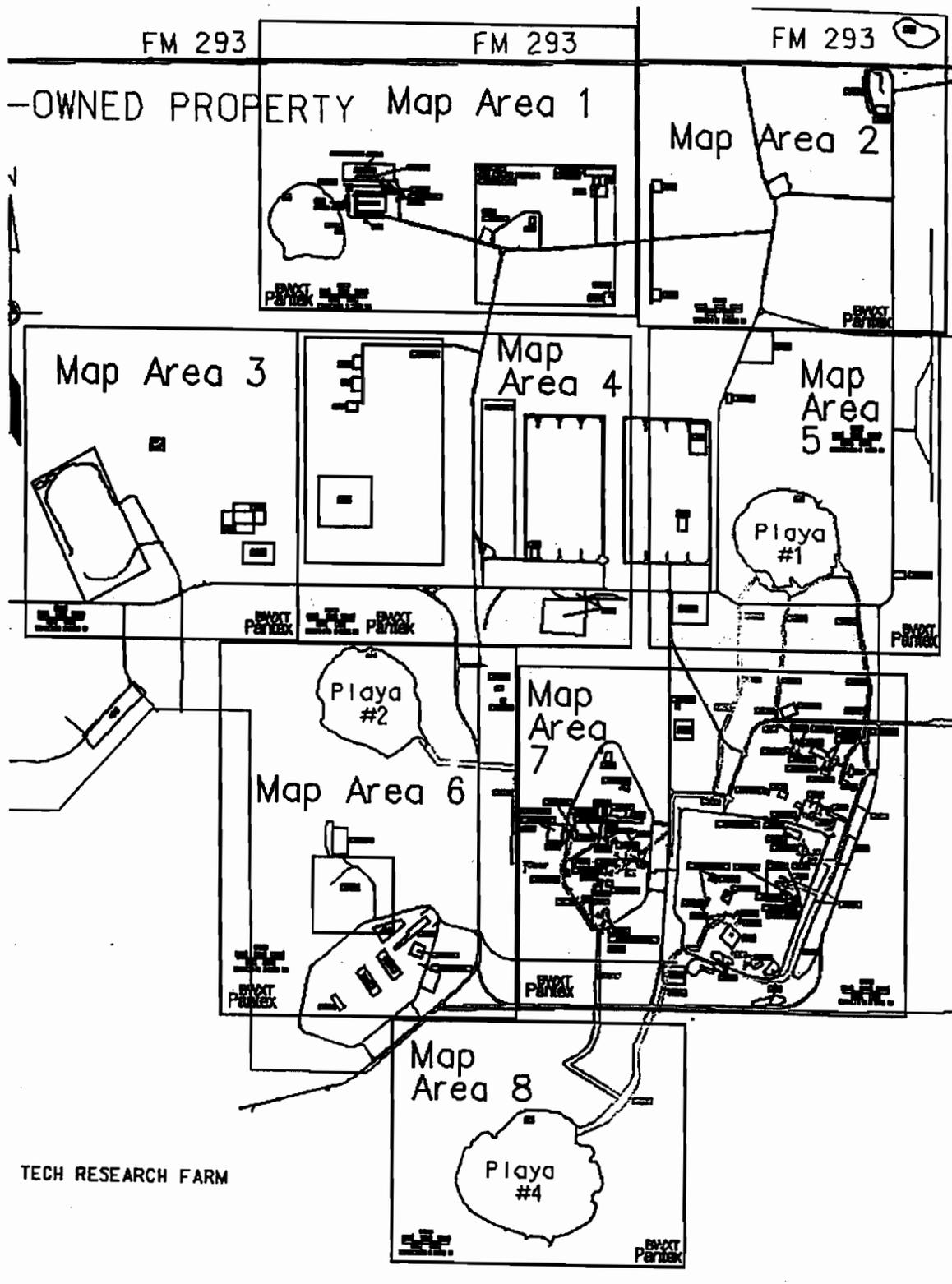
● Interim Stabilization Wells



**Attachment A, Sheet 2 of 11
ISM Program Wells for the Ogallala Aquifer**

**BWXT
Pantex**

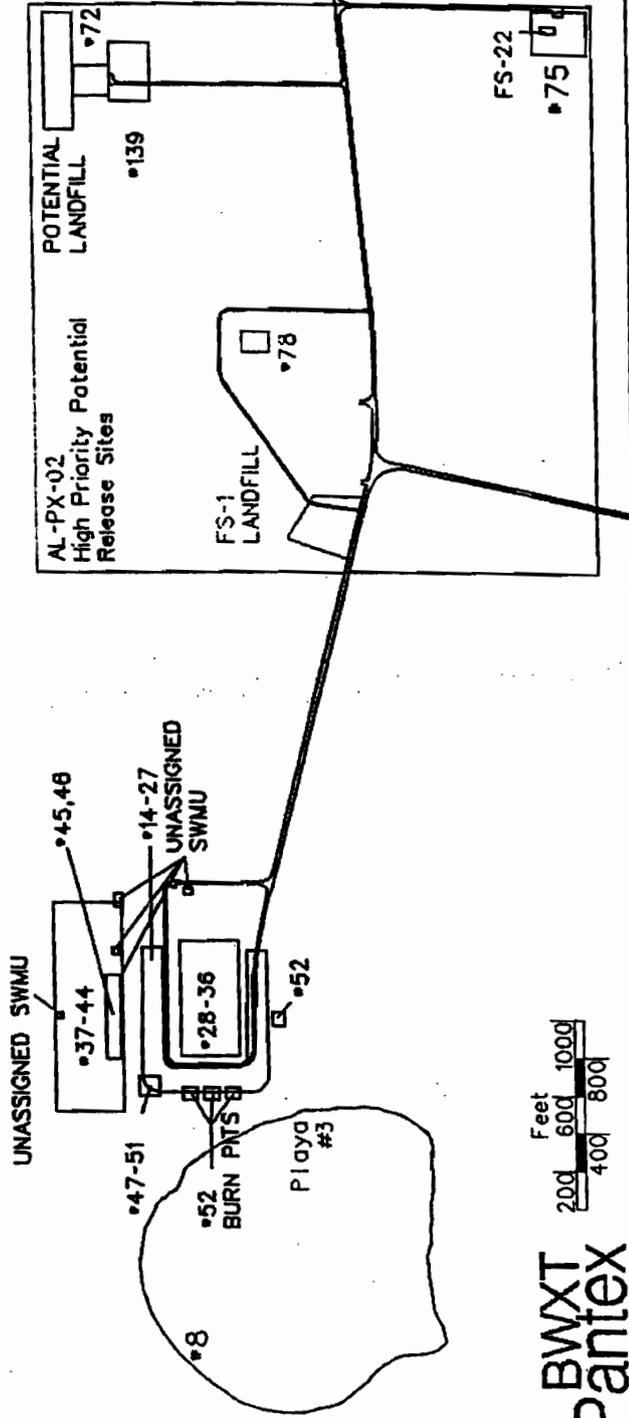
24 July 2002
compliance_wells_ogallala.mxd
Ret. JNS

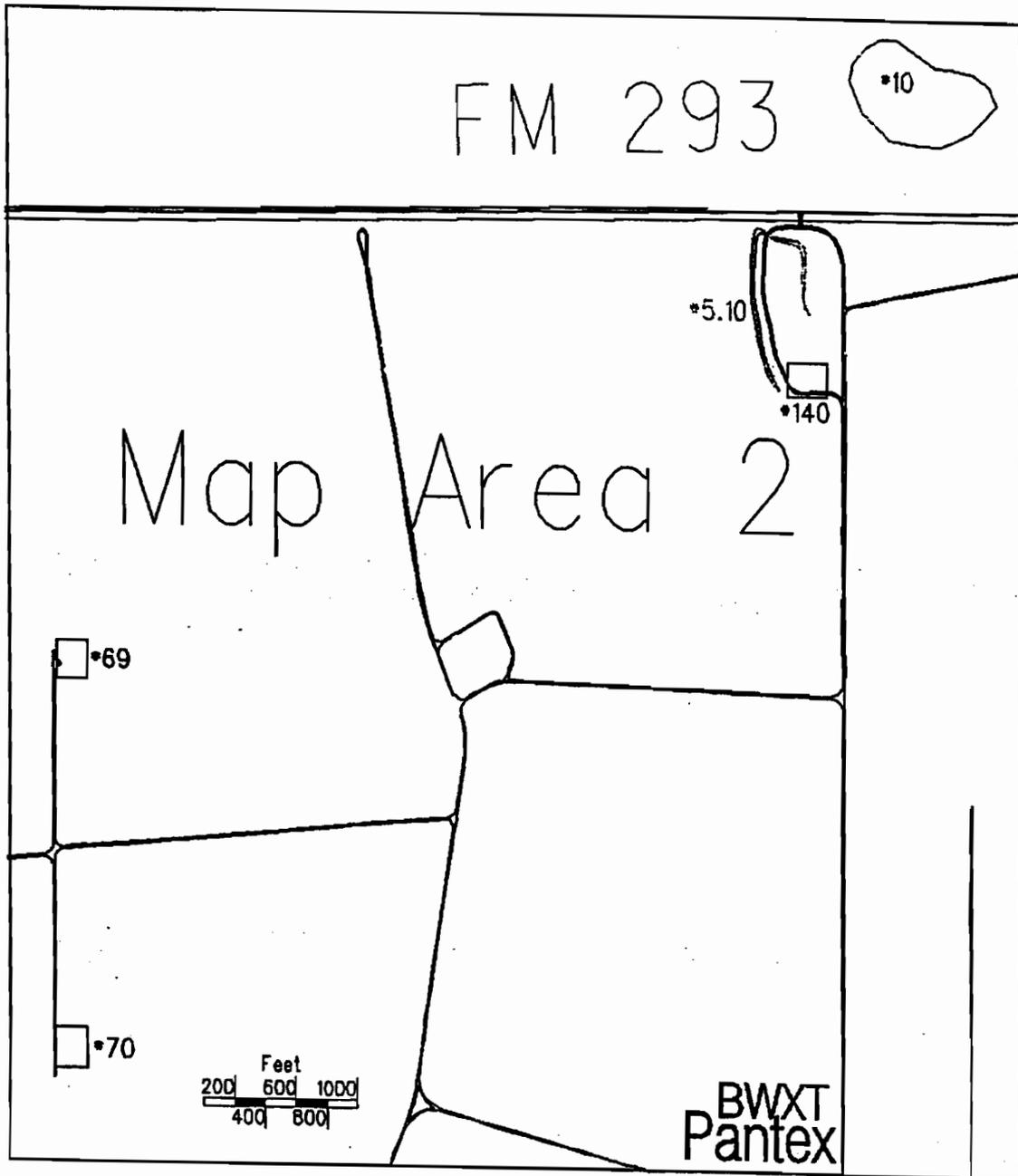


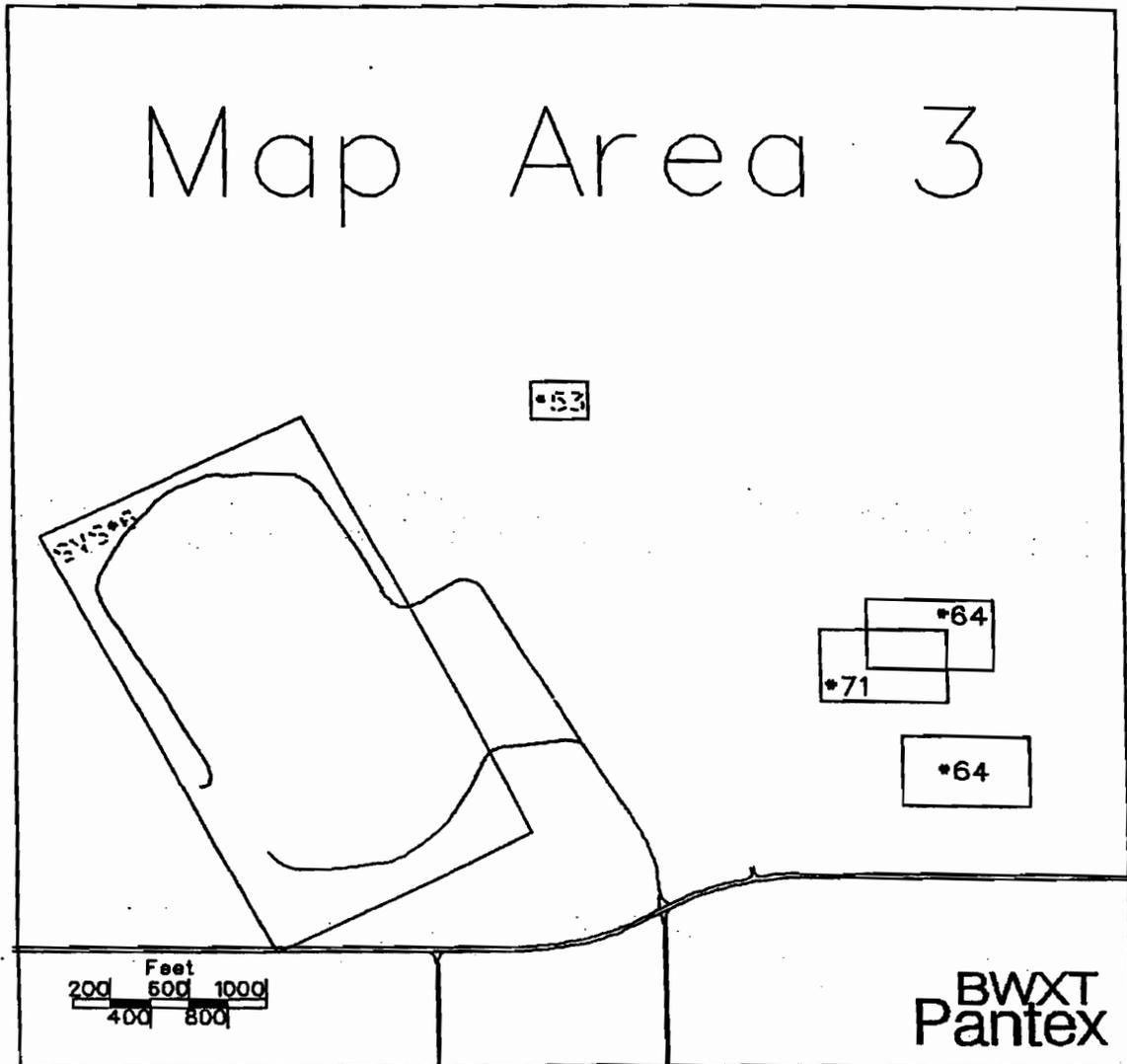
Attachment A, Sheet 3 of 11
Index Map indicating the Map Area: SWMU and AOCs for Table II

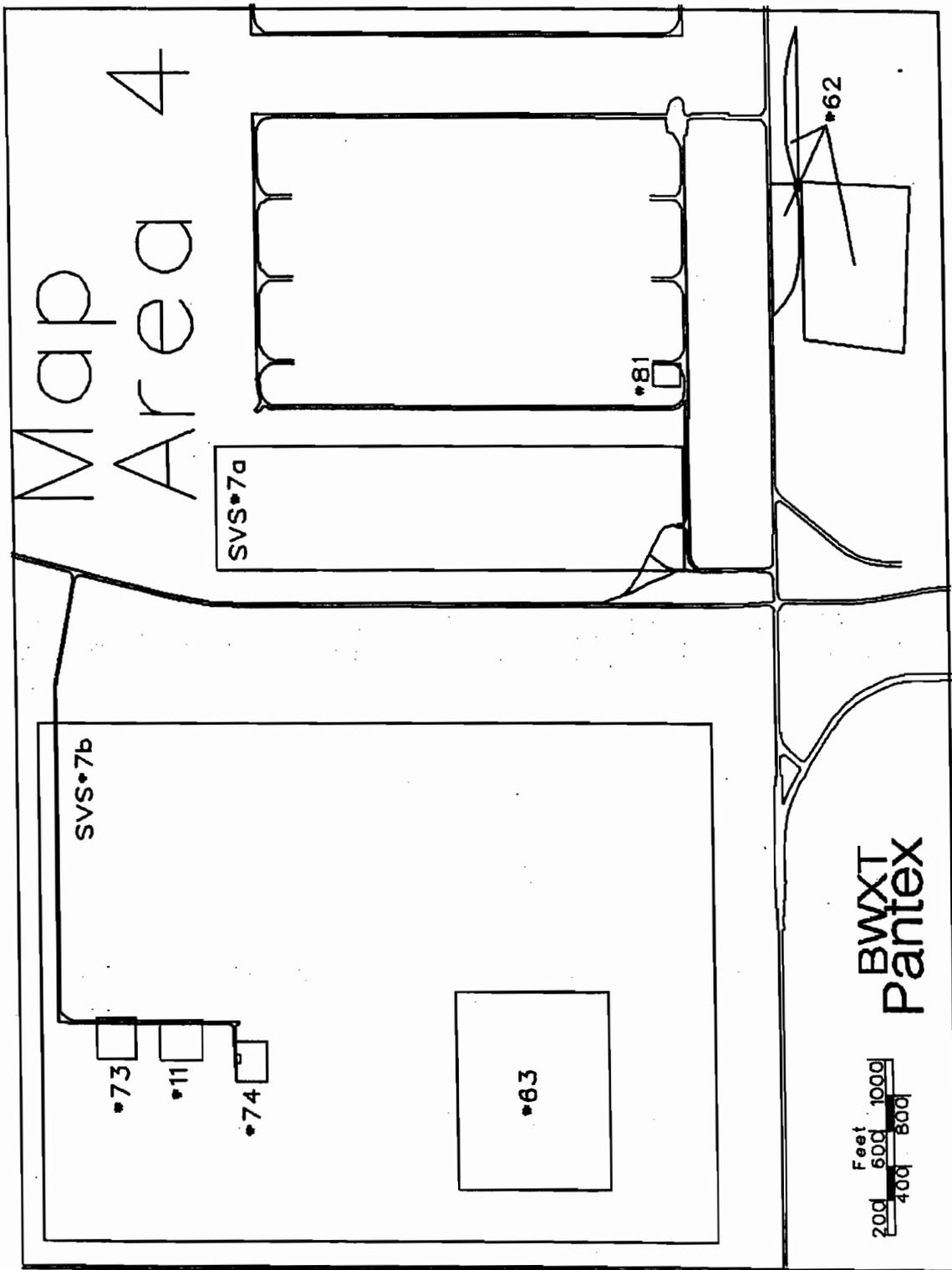
FM 293

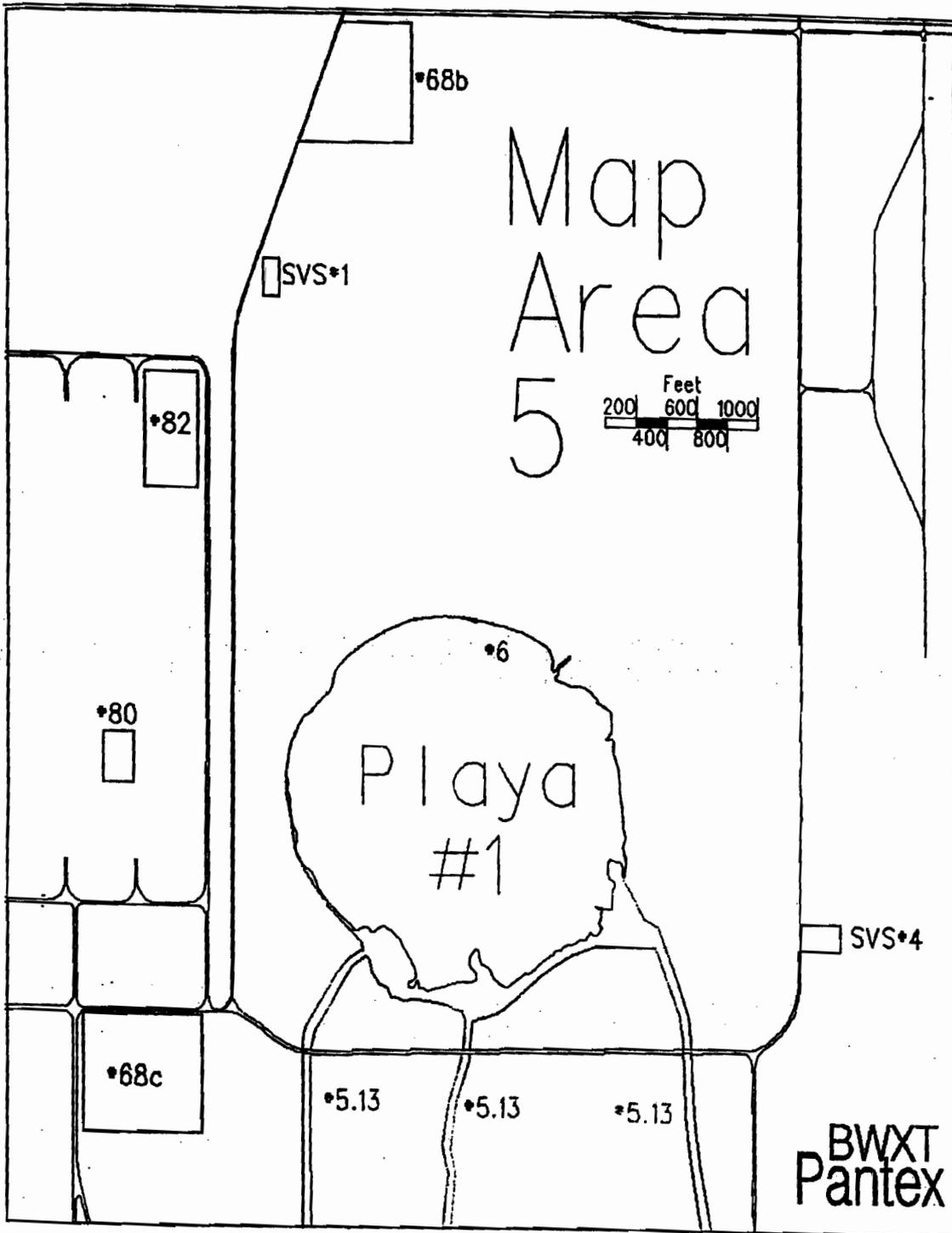
ERTY Map Area 1

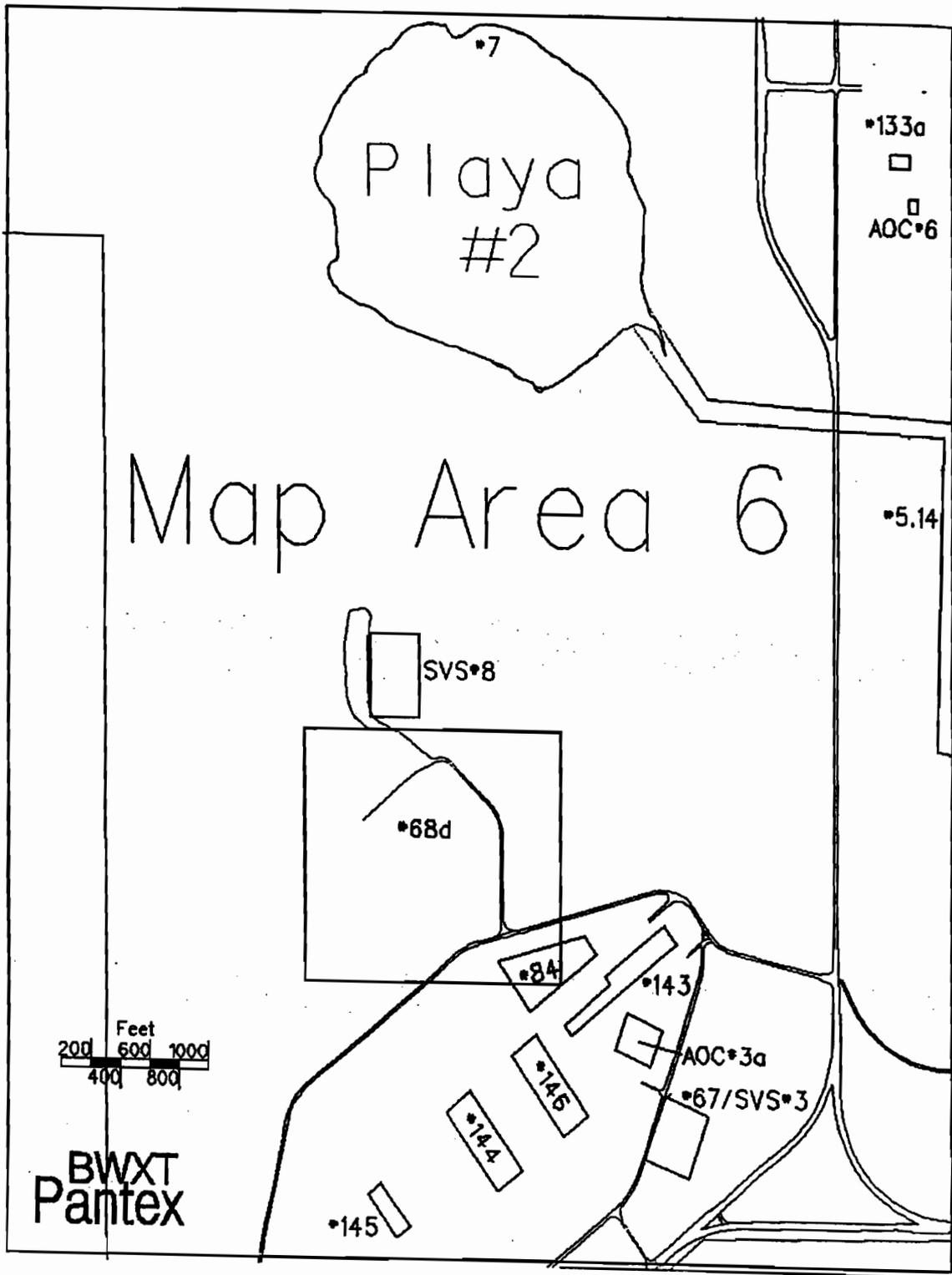


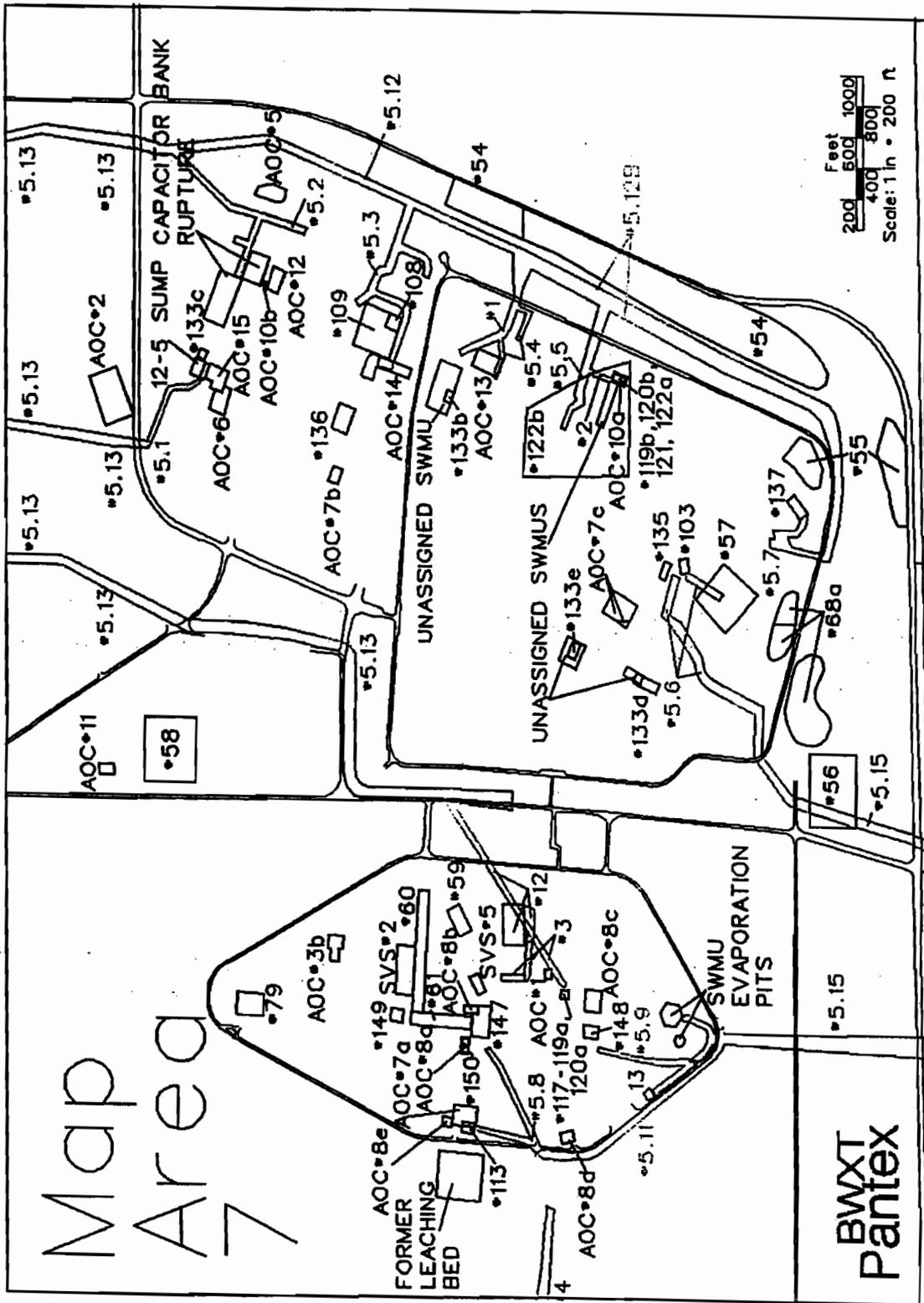




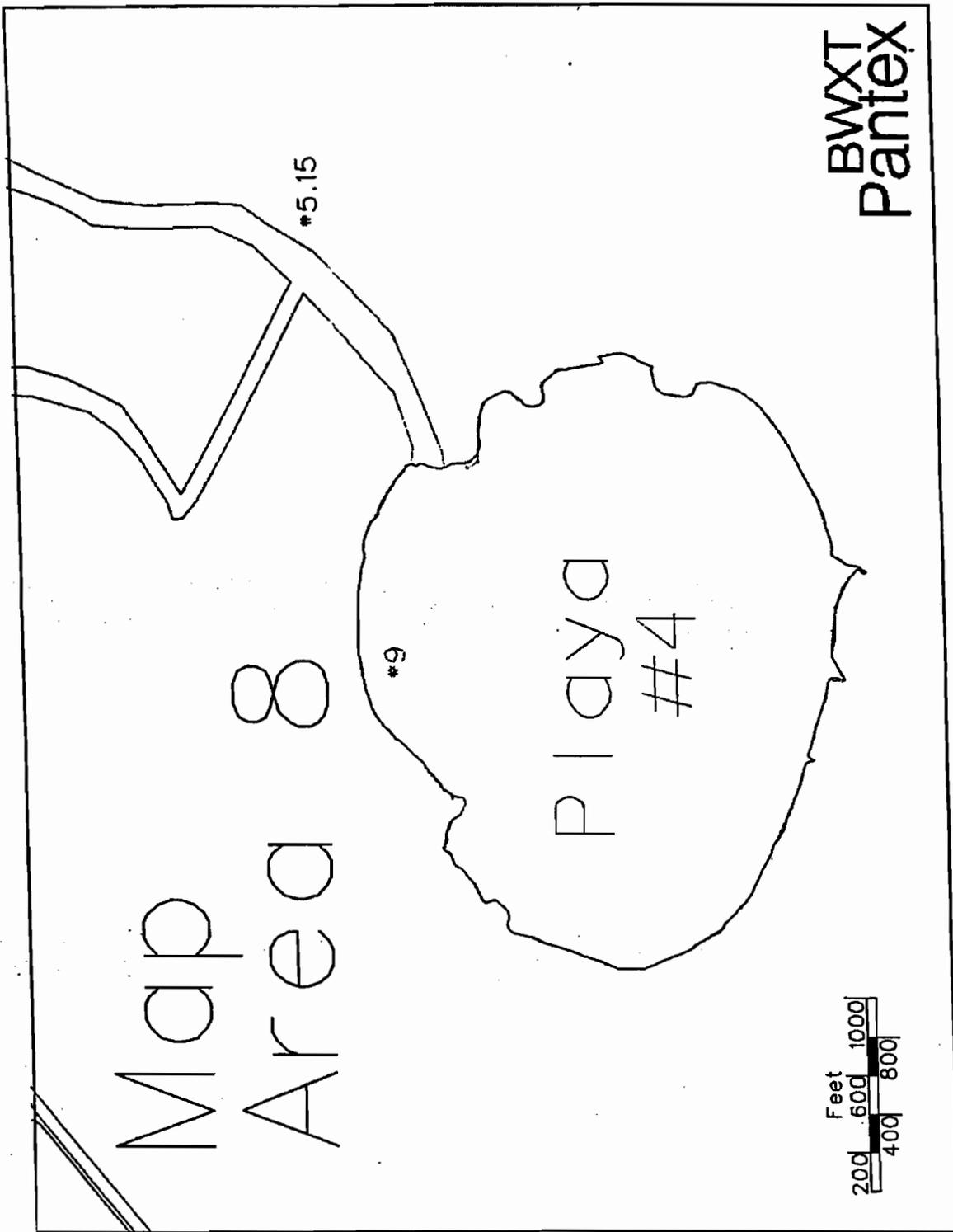








Attachment A, Sheet 10 of 11
 Map Area 7



Attachment A, Sheet 11 of 11
Map Area 8

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Attachment B - Well Design and Construction Specifications

1. The Permittee shall use well drilling methods that minimize potential adverse effects on the quality of water samples withdrawn from the well, and that minimize or eliminate the introduction of foreign fluids into the borehole.
2. All wells constructed to meet the terms of this Compliance Plan shall be constructed such that the wells can be routinely sampled with a pump, bailer, or alternate approved sampling device. Piping associated with recovery wells should be fitted with sample ports or an acceptable alternative sampling method to facilitate sampling of the recovered ground water on a well by well basis.
3. Above the saturated zone the well casing shall be four (4)-inch diameter or larger schedule 40 or 80 polyvinyl chloride (PVC) rigid pipe or stainless steel or polytetrafluoroethylene (PTFE or "teflon") or an approved alternate material. The PVC casing must bear the National Sanitation Foundation logo for potable water applications (NSF-pw). Solvent cementing compounds shall not be used to bond joints and all connections shall be flush-threaded. In and below the saturated zone, the well casing shall be stainless steel, PTFE or an approved material.

The Permittee may use PVC or fiberglass reinforced resin as an alternate well casing material in and below the saturated zone provided that it yields samples for ground-water quality analysis that are unaffected by the well casing material.

4. The Permittee shall replace any well subject to this Compliance Plan that has deteriorated to the point of not being capable of functioning as originally designed or intended. The replacement shall be completed in accordance with the requirements of this attachment and the applicable provisions of this Compliance Plan. Replacement of the well shall be completed within 90 days of determining that the well is not functioning as intended or in accordance with an alternate schedule approved by the executive director.
5. Well casings and screens shall be steam cleaned prior to installation to remove all oils, greases, and waxes. Well casings and screens made of fluorocarbon resins shall be cleaned by detergent washing.
6. For wells constructed after the date of issuance of this Compliance Plan, the screen length utilized to collect water samples shall not exceed ten (10) feet within a given transmissive zone unless otherwise approved by the executive director. Screen lengths exceeding ten (10) feet may be installed in ground-water recovery or injection wells to optimize the ground-water remediation process in accordance with standard engineering practice. For any well screened longer than 10 feet for the purpose of collecting water samples for the Programs of this Compliance Plan, low flow sampling methods must be utilized for the groundwater monitoring programs established by this Compliance Plan unless otherwise approved by the executive director.
7. The Permittee shall design and construct the intake portion of a well so as to allow sufficient water flow into the well for sampling purposes and minimize the passage of formation materials into the well during pumping. The intake portion of a well shall consist of commercially manufactured stainless steel or PTFE screen or approved alternate material. The annular space between the screen and the borehole shall be filled with clean siliceous granular material (i.e., filter pack) that has a proper size gradation to provide mechanical retention of the formation sand and silt. The well screen slot size shall be compatible with the filter pack size as determined by

Department of Energy - Pantex
Compliance Plan No. CP-50284-000
Attachment B - Well Design and Construction Specifications

sieve analysis data. The filter pack should extend no more than three (3) feet above the well screen. A silt trap, no greater than one (1) foot in length, may be added to the bottom of the well screen to collect any silt that may enter the well unless approved by the executive director. The bottom of the well casing shall be capped with PTFE or stainless steel or approved alternate material.

Ground-water recovery and injection wells shall be designed in accordance with standard engineering practice to ensure adequate well production and accommodate ancillary equipment. Silt traps exceeding one (1) foot may be utilized to accommodate ancillary equipment. Well heads shall be fitted with mechanical well seals, or equivalent, to prevent entry of surface water or debris.

8. A minimum of two (2) feet of pellet or granular bentonite shall immediately overlie the filter pack in the annular space between the well casing and borehole. Where the saturated zone extends above the filter pack, pellet or granular bentonite shall be used to seal the annulus. The bentonite shall be allowed to settle and hydrate for a sufficient amount of time prior to placement of grout in the annular space. Above the minimum two (2)-foot thick bentonite seal, the annular space shall be sealed with a cement/bentonite grout mixture. The grout shall be placed in the annular space by means of a tremie pipe or pressure grouting methods equivalent to tremie grouting standards.

The cement/bentonite grout mixture or Commission approved alternative grout mixture shall fill the annular space to within two (2) feet of the surface. A suitable amount of time shall be allowed for settling to occur. The annular space shall be sealed with concrete, blending into a cement apron at the surface that extends at least two (2) feet from the outer edge of the monitor well for above-ground completions. Alternative annular-space seal material may be proposed with justification and must be approved by the executive director prior to installation.

In cases where flush-to-ground completions are unavoidable, a protective structure such as a utility vault or meter box should be installed around the well casing and the concrete pad design should prevent infiltration of water into the vault. In addition, the Permittee must ensure that 1) the well/cap juncture is watertight; 2) the bond between the cement surface seal and the protective structure is watertight; and 3) the protective structure with a steel lid or manhole cover has a rubber seal or gasket.

9. Water added as a drilling fluid to a well shall contain no bacteriological or chemical constituents that could interfere with the formation or with the chemical constituents being monitored. For ground-water recovery and injection wells, drilling fluids containing freshwater and treatment agents may be utilized in accordance with standard engineering practice to facilitate proper well installation. In these cases, the water and agents added should be chemically analyzed to evaluate their potential impact on in-situ water quality and to assess the potential for formation damage. All such additives shall be removed to the extent practicable during well development.
10. Upon completion of installation of a well, the well must be developed to remove any fluids used during well drilling and to remove fines from the formation to provide a particulate-free discharge to the extent achievable by accepted completion methods and by commercially available well screens. Development shall be accomplished by reversing flow direction, surging the well or by air lift procedures. No fluids other than formation water shall be added during development of a well unless the aquifer to be screened is a low-yielding water-bearing aquifer. In these cases, the water to be added should be chemically analyzed to evaluate its potential impact on in-situ water quality, and to assess the potential for formation damage.

Department of Energy - Pantex
Compliance Plan No. CP-50284-000
Attachment B - Well Design and Construction Specifications

For recovery and injection wells, well development methods may be utilized in accordance with standard engineering practice to remove fines and maximize well efficiency and specific capacity. Addition of freshwater and treatment agents may be utilized during well development or re-development to remove drilling fluids, inorganic scale or bacterial slime. In these cases, the water and agents added should be chemically analyzed to evaluate their potential impact on in-situ water quality and to assess the potential for formation damage. All such additives shall be removed to the extent practicable during well development.

11. Each well shall be secured and/or designed to maintain the integrity of the well borehole and ground water.
12. The Permittee shall protect the above-ground portion of the well by bumper guards and/or metal outer casing protection when wells are located in traffic areas or outside the secured plant area.
13. Copies of drilling and construction details demonstrating compliance with the items of this provision shall be kept on site. This record shall include the following information:
 - . name/number of well (well designation);
 - . intended use of the well (sampling, recovery, etc.);
 - . date/time of construction;
 - . drilling method and drilling fluid used;
 - . well location (± 0.5 ft.);
 - . bore hole diameter and well casing diameter;
 - . well depth (± 0.1 ft.);
 - . drilling and lithologic logs;
 - . depth to first saturated zone;
 - . casing materials;
 - . screen materials and design;
 - . casing and screen joint type;
 - . screen slot size/length;
 - . filter pack material/size;
 - . filter pack volume (how many bags, buckets, etc.);
 - . filter pack placement method;
 - . sealant materials;
 - . sealant volume (how many bags, buckets, etc.);
 - . sealant placement method;
 - . surface seal design/construction;
 - . well development procedure;
 - . type of protective well cap;
 - . ground surface elevation (± 0.01 ft. MSL);
 - . top of casing elevation (± 0.01 ft. MSL); and,
 - . detailed drawing of well (include dimensions).
14. The Permittee shall complete construction or plugging and abandonment of each well in accordance with the requirements of this Compliance Plan and 16 TAC Chapter 76 and shall certify such proper construction or plugging and abandonment in the first report submitted pursuant to Section VII.C.2 following installation or plugging and abandonment. Well completion logs for each newly installed or replaced well shall be included with the report. The certification shall be prepared by a qualified geologist or geotechnical engineer. Each well certification shall be accompanied by a certification report, including an accurate log of the soil boring, which thoroughly describes and depicts the location, elevations, material specifications,

Department of Energy - Pantex
Compliance Plan No. CP-50284-000
Attachment B - Well Design and Construction Specifications

construction details, and soil conditions encountered in the boring for the well. A copy of the certification and certification report shall be kept on-site, and a second copy shall be submitted to the executive director. Required certification shall be in the following format, edited as appropriate:

"This is to certify that installation (*or plugging and abandonment*) of the following facility components authorized or required by Commission Compliance Plan No. CP-50284 has been completed, and that construction (*or plugging*) of said components has been performed in accordance with and in compliance with the design and construction specifications of Compliance Plan No. CP-50284:" (*Add description of facility components with reference to applicable Compliance Plan provisions*).

15. The Permittee shall clearly mark and maintain the well number on each well at the site.
16. The Permittee shall measure and keep a record of the elevation of the top of each well casing in feet above mean sea level to the nearest 0.01 foot and permanently mark the measuring point on the well. The Permittee shall compare old and new elevations from previously surveyed wells and determine a frequency of surveying not to exceed five (5) year intervals.
17. Wells may be replaced at any time the Permittee or executive director determines that the well integrity or materials of construction or well placement no longer enable the well to yield samples representative of ground-water quality.
18. The Permittee shall plug soil test borings and wells removed from service after issuance of the Compliance Plan with a cement/bentonite grout mixture so as to prevent the preferential migration of fluids in the area of the borehole. Certification of each plugging shall be reported in accordance with Provision 14 of Attachment B of this Compliance Plan. The plugging of wells shall be in accordance with 16 TAC Chapter 76 dealing with Well Drilling, Completion, Capping and Plugging.
19. A well's screened interval shall be appropriately designed and installed to meet the well's specific objective (i.e., either DNAPL, LNAPL, both, or other objective of the well). All wells designed to detect, monitor, or recover DNAPL must be drilled to intercept the bottom confining layer of the aquifer. The screened interval to detect DNAPL should extend from the top of the lower confining layer to above the portion of the aquifer saturated with DNAPL. The screened interval for all wells designed to detect, monitor, or recover LNAPL must extend high enough into the vadose zone to provide for fluctuations in the seasonal water table. In addition, the sandpacks for the recovery or monitoring well's screened interval shall be coarser than surrounding media to ensure the movement of NAPL to the well.

