

Chapter 3

Potential Impacts Evaluation, 2002–2006

3.1 Facilities, Infrastructure, and Visual Resources

3.1.1 Facilities

The SWEIS projected that additional facilities would be constructed for proposed projects, only one of which (the HWTPF) was constructed during the period 1996–2001. Facilities proposed in the SWEIS that are currently projected to be constructed or initiated during the period 2002–2006 would add 4,500 m² (48,000 ft²) of new floor space, or about a 2 percent increase over the amount of floor space existing in 2001. Other projects that have been proposed since the SWEIS was issued could add about 3,600 m² (38,000 ft²) more floor space, an increase of about another 2 percent. Thus, during the period 2002–2006, if everything that has been proposed were to be built, floor space would be expanded by a total of about 4 percent.

The SWEIS evaluated 213,200 m² (2,295,000 ft²) of floor space in existing facilities used specifically for mission purposes, plus an additional 13,253 m² (142,600 ft²) in proposed facilities. As discussed in Section 2.2.1.1 of this SA, only 2,650 m² (28,500 ft²) of these proposed facilities have been built to date. Facilities currently proposed to be built during the period 2002–2006 would add 8,000 m² (86,000 ft²) of floor space. This would result in a total of 224,000 m² (2,410,000 ft²), about 2 percent less floor space than analyzed in the SWEIS. Planned demolition of excess facilities during the period 2002–2006 could result in the loss of another 16,400 m² (177,000 ft²), or about 8 percent, of floor space existing in 2001 (BWXT Pantex 2002b).

3.1.2 Infrastructure

None of the projects to be constructed or initiated during the period 2002–2006 are expected to result in major changes in the amount of roads or use of the railroad at the Pantex Plant. Additional parking areas would be provided as needed for new facilities. Some change in onsite traffic patterns may result from use of the new facilities.

During the period 2002–2006, it is expected that there would be some increase in steam use due to the operation of the facilities proposed in the SWEIS and other new facilities. However, there may be some offsetting reduction in steam use from the relocation of some facilities into more efficient buildings, as a result of ongoing energy conservation initiatives, and from the shutdown of other facilities. There is no projected change in electric, natural gas, water, or wastewater treatment usage from the proposed SWEIS projects that would be constructed or initiated during the period 2002–2006. The increase in electric, natural gas, water, or wastewater treatment usage from other new projects is expected to be minor and should be offset by ongoing conservation initiatives. It is expected that utility usage during this period would remain within the range evaluated in the SWEIS and within the capacities of the current utility systems (Nava 2002a).

3.1.3 Visual Resources

Some of the projects proposed for the period 2002–2006 would include new structures. These facilities are expected to be of similar size and appearance to existing structures and would be located within areas that have multiple existing structures. Several facilities would have new stacks of similar height to

existing stacks and structures. Therefore, the new structures would be consistent with the existing visual character of the facilities.

3.2 Land Resources

Construction associated with new projects is scheduled to be initiated or completed during the period 2002–2006. As proposed, construction and operation of these facilities would impact only about 0.1 percent, or about 3.6 hectares (9 acres), including 3.2 hectares (8 acres) for the WWTF, of the available DOE-owned land at the site. Most new facility construction would occur in or near previously developed areas of the site, including Zones 11 and 12. Consequently, the construction and operation of these new facilities would have a negligible impact on site land use and development. Ground-disturbing activities associated with the ongoing ER program would be negligible and would have a net, positive impact on land resources as SWMUs are remediated and closed over time. Proposed decontamination and decommissioning (D&D) activities would also be expected to have a negligible impact on land resources.

3.3 Geology and Soils

Impacts to geology and soils from the construction and operation of proposed new facilities and planned D&D activities would be negligible. New facility construction would be preceded by appropriate site investigations to confirm geologic and other characteristics for facility engineering purposes. Ground-disturbing activities associated with the ER program would be negligible and would have a net, positive impact on land resources and on soil quality in particular. The potential for regional geologic hazards to affect site structures is generally low.

3.4 Water Resources

Implementation of the proposed projects during the period 2002–2006 is not expected to have an appreciable negative impact on water resources at or near the Pantex Plant. No new facilities are proposed for construction within the delineated floodplains of the onsite playas; thus, there would be no direct impacts to surface water features at the Pantex Plant or vicinity. Facility construction could generate storm water runoff, but all construction activities would be conducted in accordance with best management practices for soil erosion and sediment control, and in accordance with applicable permit requirements. Although the new facilities would increase site storm water runoff due to the creation of additional impervious surface area, the increase in developed area would constitute less than 0.1 percent of the DOE-owned land at the site. The new facilities would be located primarily in previously developed areas of the site. Storm water runoff from the facilities would be routed to existing storm water discharge outfalls that are monitored and regulated in accordance with permit requirements. During the period 2002–2006, site characterization and remediation activities associated with identified groundwater contamination would continue and should not be affected by or impact other project activities.

The WWTF upgrade, evaluated in an environmental assessment (DOE 1999b), should result in positive effects for site water resources overall. This upgrade involves construction of a new treatment facility south of the current WWTF, outside the 100-year floodplain of Playa 1. Treated effluent from the upgraded WWTF will initially be discharged to Playa 1 under the existing TPDES permit. An application is pending with the TCEQ to allow the WWTF effluent to be disposed of by land application (drip irrigation) on approximately 121 hectares (300 acres) of crop land on the eastern portion of the Pantex Plant site. Elimination of this discharge to Playa 1 would restore the playa hydrology to a more natural,

ephemeral condition. Although Playa 1 would continue to receive permitted storm water runoff, overall playa water quality would be expected to improve.

Wastewater generation and groundwater use for construction/modification and subsequent operation of new facilities should not have an appreciable impact on site operating conditions. Site wastewater discharges from the WWTF to Playa 1 and groundwater use have declined since 1995. Upgrading the WWTF will further help to ensure that the Pantex Plant has sufficient wastewater treatment capacity for future expansion. Currently, none of the proposed projects is expected to require large volumes of water; water demands are primarily those needed to meet the sanitary and domestic needs of facility personnel. As a result, wastewater generation volumes and water use should continue to be bounded by the 2,000-weapons-activity-level forecasts in the SWEIS.

3.5 Air Quality

Some change in emissions due to the construction and operation of facilities proposed in the SWEIS and other new and relocated facilities is expected during the period 2002–2006. Projects initiated during this period would result in some temporary air pollutant emissions from construction and minimal changes in emissions from operation. There may be some offsetting reduction in operation emissions from the relocation of facilities into more efficient buildings and from the shutdown of other facilities. Emissions from operations during the period 2002–2006 are expected to be within the range of emissions evaluated in the SWEIS and to not result in the ambient air quality standards or ESLs for toxic pollutants being exceeded (Nava 2002a).

As discussed in Section 2.2.4 of this SA, construction emissions for the peak construction year for the facilities proposed in the SWEIS were estimated to increase Pantex Plant emissions by 8 to 13 percent. The peak construction year was estimated to result in annual emissions of 66 metric tons (73 tons) of carbon monoxide, 37 metric tons (40 tons) of nitrogen dioxide, 9 metric tons (10 tons) of VOCs, 2 metric tons (2 tons) of sulfur dioxide, and 3 metric tons (3 tons) of particulate matter with an aerodynamic diameter of less than or equal to 10 microns. It was concluded that the effect of these emissions on air quality would be negligible (DOE 1996a:4-51, 4-152). Emissions from construction of the remaining facilities proposed in the SWEIS and the other proposed facilities would similarly generate fugitive dust from clearing, grading, and other earth-moving operations and exhaust emissions from construction equipment, worker vehicles, and delivery vehicles. Since the total square footage of floor space currently proposed during the period 2002–2006 is less than the new facilities proposed in the SWEIS, it is expected that the emissions from construction of these facilities would be somewhat less than estimated in the SWEIS. Actual emissions for any construction year would be dependent on scheduling of the various facilities. It is not expected that these emissions would result in ambient air quality standards being exceeded.

Planned demolition of 16,400 m² (177,000 ft²) during the period 2002–2006 (BWXT Pantex 2002b) would result in some fugitive dust emissions and equipment exhaust emissions. These emissions would be temporary and of short duration.

3.6 Acoustics (Noise)

There would be some temporary increase in noise levels from construction activities and traffic from construction of the proposed facilities during the period 2002–2006. These construction activities would be similar to other construction activities at Pantex and would not be expected to cause sufficient change in noise levels to result in annoyance to the public. Operation of these new or modified facilities is expected to result in minimal change in offsite noise impacts (DOE 1996a:4-168, 4-169).

3.7 Biotic Resources

Biological resources are not expected to be appreciably impacted by activities associated with implementation of any of the proposed projects. Facility construction would impact a total of about 3.6 hectares (9 acres) of DOE-owned land at the Pantex Plant site, and would occur primarily in or near previously developed areas, including Zones 11 and 12. The WWTF upgrade, which was completed in 2002, would disturb up to about 3.2 hectares (8 acres) of previously disturbed grazing land south of Playa 1. Although construction could reduce or alter existing terrestrial wildlife habitat within the impact area, like habitat would be available in adjacent areas, and disturbed areas would be revegetated. More importantly, the permanent water areas in Playa 1 maintained by current effluent discharge and used by local and migratory waterfowl would be lost upon cessation of direct discharges by the upgraded WWTF. This loss of habitat would be partially mitigated by the like habitat provided by the new facultative lagoon and storage pond and by the existing WWTF lagoon that would be retained for irrigation water storage (DOE 1999b). In addition, it is anticipated that restored ephemeral conditions in the playa will lead to the establishment of natural annual plant and invertebrate communities, which make playas among the most productive wetlands in the world (BWXT Pantex 2002e:5, 7). During wet periods, resulting seed and invertebrate production will be available to foraging shorebirds and waterfowl.

3.8 Cultural Resources

It is not expected that any of the construction activities listed in Table 1–1 for the years 2002–2006 would impact cultural resources. However, several projects could impact buildings eligible for inclusion in the National Register of Historic Places. For the construction activities listed in any Table 1–1 and for any future projects, National Register-eligible buildings and previously unknown prehistoric cultural resources discovered during excavation would be protected pursuant to the measures identified in the Programmatic Agreement and the Cultural Resources Management Plan, when finalized. Existing compliance procedures, including consultation with the Texas SHPO, would be completed prior to construction in any sensitive areas.

3.9 Socioeconomic Resources

It is estimated that both Pantex funding and workload, and therefore workforce, will be stable through fiscal year 2007, but will increase and peak from fiscal years 2008 through 2010. Directed stockpile work is the priority work for the Pantex Plant over the next 10 years and is the driver for workforce projections (BWXT Pantex 2001b:1-1). It is currently assumed that the management and operating contractor population will range from 2,500 to 3,200. This number will vary relative to the mission and workload levels of the Pantex Plant (BWXT Pantex 2002c:8-12).

Future projects could include the construction of new facilities. Any employment and revenue generated by construction and operation would be expected to have negligible impacts. Increases in site employment during construction would be temporary, most likely using local workers. Operations of the facilities would most likely not add appreciably to the socioeconomic effects for continued operations at the Pantex Plant.

3.10 Waste Management

The Secretary of Energy has established goals for the reduction of routine wastes by 2005, using the quantity generated in 1993 as a baseline. Pantex goals include a reduction in HW generation by 90 percent, LLW by 80 percent, and LLMW by 80 percent (BWXT Pantex 2002c:14-3). The Waste Minimization and Pollution Prevention Program evaluates each proposed project at the design stage to ensure that materials and practices that would result in generation of hazardous and other regulated wastes are minimized. In addition, use of hazardous materials, and consideration of waste minimization and pollution prevention practices are evaluated as part of the NEPA review process for each project. Waste treatment, disposal, and shipments to offsite facilities would continue as currently managed, in accordance with applicable regulatory requirements. ER activities will also continue under existing laws and regulations and as planned by the Office of Environmental Management's *Accelerating Cleanup: Paths to Closure Plan* (BWXT Pantex 2001b:5-3).

A number of facility modifications and maintenance and repair projects are planned for construction during 2002–2006. It is anticipated that any waste generated as a result of these projects would have negligible impacts on the waste management system at the Pantex Plant. Demolition of some existing facilities is also planned for this time period (BWXT Pantex 2001b, 2002b). The Pantex Plant's program to D&D excess facilities to prevent the expenditure of resources on obsolete structures not needed to support the Plant's missions could result in generation of several types of waste. Approximately 80 to 90 percent (by volume) of the materials generated from D&D activities would be recycled. Recyclable D&D materials include asphalt, concrete, metal, and wooden beams. Materials that cannot be recycled are managed as waste. D&D waste generated from Pantex Plant structures would generally be classified as nonhazardous.⁶ The largest waste volumes requiring disposal would be roofing, asbestos, and wallboard (with attached structural material). Asbestos waste would be disposed of off the site by a licensed, commercial facility. Rubble would be sent to the onsite construction landfill or a permitted offsite facility for disposal (Maxie 2002).

The WWTF upgrade, scheduled for completion in fiscal year 2003, would generate excess soils from lagoon excavation. Both the excess soils and the sludge removed from the existing lagoon would be managed appropriately. Relocation of the Weapons Evaluation Test Laboratory (WETL) Facility (fiscal years 2002–2004) would generate construction debris, general office waste, and waste from removal of equipment for reinstallation. This NHW would be recycled or transported to a municipal landfill for disposal.

The Pit Reuse Facility evaluated in the SWEIS has been replaced with the SNMCRF, which is scheduled to be completed in 2005. Because new facility space will not be constructed as analyzed in the SWEIS, and only modifications made to an existing building, only minimal construction waste would be generated. The SWEIS estimated that the Pit Reuse Facility would generate 1.5 m³ (1.9 yd³) of LLW, 0.5 m³ (0.6 yd³) of LLMW, 0.6 m³ (0.8 yd³) of HW, and 6.0 m³ (7.8 yd³) of NHW annually. No new waste streams or contaminants beyond those already addressed in the SWEIS and SSM PEIS would result from SNMCRF operations (M&H 1998:2).

⁶ Exceptions include lead-based paint and possibly wastewater treatment plant sludge. Asbestos and PCBs are considered class 1 nonhazardous wastes, but are managed under heavier restrictions than other class 1 wastes.

3.11 Human Health

The weapons workload was relatively stable throughout the late 1990s and into fiscal year 2001. Section 4 of the *Pantex Plant 10-Year Comprehensive Site Plan* (BWXT Pantex 2001b:4-2) provides estimates of weapons workload in number of weapons, standard equivalent work hours, number of SNM operations, and several other measures. Workload estimates for fiscal year 2002 were considerably higher, but still within the range of impacts analyzed in the SWEIS. As shown in Section 2.1.7, worker doses during the late 1990s were less than half the SWEIS estimate. The *Safety Information Document* indicates that collective radiation dose has fluctuated from year to year, due to varying worker population levels and the intrinsic radiation levels of certain weapons programs (BWXT Pantex 2001e:6-3). The worker dose from weapons operations in 2002, the year in which the workload is highest, would be expected to be higher than those experienced in the late 1990s, but still much less than those predicted in the SWEIS. Since the projected weapons workload decreases from 2002 to 2006, it is likely that the worker dose would also decrease, and therefore remain well within the estimates in the SWEIS.

As discussed in Section 2.1.7, radiological doses to the average person living in the vicinity of the Pantex Plant are very low, and have been less than that estimated in the SWEIS each year since the SWEIS was issued. These doses to the average person from Pantex Plant operations represent less than 0.00001 percent of the 398 mrem/yr annual dose in the vicinity of the Pantex Plant, from all sources of radiation (DOE 1996a:4-250). Based on ongoing operations and new activities proposed for 2002–2006, and the history of low offsite doses, continued operation of the Pantex Plant would not be expected to result in doses exceeding those estimated in the SWEIS.

The chemical environment is determined by the predicted long-term rate of release to the atmosphere of each of the toxic chemicals that is used at a site. The magnitudes of these releases are summarized in the SWEIS. As discussed in Section 2.1.7.2 of this SA, there has been very little change in chemical usage or inventory since the SWEIS was issued, and none of the projects and activities proposed to be implemented from 2002 to 2006 would be expected to result in a substantial change in chemical usage. Additionally, procedures are in place to consider use of less hazardous chemicals when placing orders for new chemicals or to replace existing chemicals. Therefore, it is not expected that chemical usage during this time period would result in an increased risk of adverse health effects related to chemical exposure to either workers or offsite individuals.

3.12 Facility Risks

This section qualitatively examines the projects and activities in Table 1–1 that are proposed to be initiated during the period 2002–2006 to determine whether they have the potential to increase the accident risks associated with operations at the Pantex Plant.

The SNMCRF is the successor to the Pit Reuse Facility described in the SWEIS. As discussed in Section 1.3.3 of this SA, the SNMCRF will recertify and requalify up to 350 pits for reuse annually. A small fraction of those pits may be non-intrusively modified before being returned to the stockpile for reuse. Part of a building in Zone 12 will be reconfigured to meet DOE Order 6430.1A requirements for a Hazard Category II Non-reactor Nuclear Facility to house the SNMCRF. Most of the technology that would be used for SNMCRF activities already exists at the Pantex Plant, and the SNMCRF will incorporate systems to preclude external releases by use of engineered controls including glove box workstations and negative pressure ventilation inside containment boundaries. The Pit Reuse Facility evaluated in the SWEIS includes a process that would breach the pit tube as part of normal operation, a new activity that was not previously undertaken at the Pantex Plant (DOE 1996a:4-291, H-12–H-16). The SWEIS indicates that the Pit Reuse Facility's contribution to risk would be small

(DOE 1996a:4-291). A Preliminary Hazards Assessment has identified the controls required to be included in the conceptual design of the facility and in the design of process equipment (BWXT Pantex 2002f). It is expected that both preliminary and final safety analysis reports will be prepared during the course of design and construction of this project (BWXT Pantex 2001c:2, 4, 14, 15). It is expected that the analyses will be consistent with the SWEIS assertion that facility contribution to risk would be small, and that the SNMCRF remains within the bounds of the SWEIS accident analysis.

Other projects scheduled for 2002–2006 include the Environmental, Safety and Health Analytical Laboratory, WETL, Stockpile Management and Restructuring Initiative, relocations of existing activities to upgraded and remodeled or new facilities; and cell and production bay upgrades. Construction to relocate WETL is scheduled for fiscal years 2002–2004. Environmental documentation prepared in 1999 indicates that while a new facility would be built to replace the 1965- and 1970-vintage buildings, operational impacts would not change substantially after facility relocation (DOE 1999c). Cell and bay upgrades would improve facilities, which could tend to reduce the risk or consequences of potential accidents.

The Pantex Plant is also being considered in an environmental assessment being prepared by DOE as an alternative for relocation of Heat Source/Radioisotope Power System operations from the Mound Site (DOE 2002). This project involves manufacturing heat sources/radioisotope power systems that contain plutonium-238. Accidents considered in the draft environmental assessment consist of welding accidents, a catastrophic failure of one or more of the general purpose heat source fuel elements, and the potential for a wind-driven missile impact through a facility wall into a glove box causing a breach of a general purpose heat source. The environmental assessment indicates that postulated accidents could result in unmitigated release of plutonium that could potentially result in fatalities of operators working in the facility, and that some unmitigated accidents have the potential for offsite exposures of greater than 5 rem, which would be in excess of public evaluation guidelines at the site boundary. The environmental assessment continues that the facility would be built to Hazard Category III standards, so that it would be equipped with engineering and administrative controls that, were an accident to occur, would result in negligible consequences. The environmental assessment also indicates that the facility would be vulnerable to a large aircraft crash, however, given the encapsulated nature of the material, would likely not result in a large release. The draft environmental assessment has identified INEEL as the preferred alternative, so it is likely that this project will not be implemented at the Pantex Plant.

3.13 Transportation

Transportation impacts would be directly proportional to the weapons work shown in Table 4–1 of the *Pantex Plant 10-Year Comprehensive Site Plan*. The projected workload is less than that described in the SWEIS for the 1,000-weapons-activity level; the SWEIS analyzed up to 2,000-weapons-activity level. Other programs identified in Table 1–1 were reviewed, and none require significant transportation activities when compared to the weapons transportation activities modeled in the SWEIS.

3.14 Environmental Justice

The effects of new proposals and projects and continuing operations at the Pantex Plant would be either minor, confined to the site, or within historical operational effects of the site. Construction and operations activities listed in Table 1–1 for the period 2002–2006 are not expected to result in any disproportionately high or adverse human health, social, economic, or environmental effects on the minority and low-income populations in the Pantex Plant ROI.

3.15 Cumulative Impacts

The CEQ regulations (40 CFR 1508.7) define cumulative impacts as “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or nonfederal) undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.” This section reviews the cumulative impact analysis presented in the SWEIS within the context of subsequent programmatic decisions and the updated impacts identified in this SA.

3.15.1 Cumulative Impacts Identified in the SWEIS

The cumulative impacts analysis in the SWEIS considers impacts of continued Pantex Plant operations at the 2,000-weapons-activity level and storage of 20,000 pits, in association with the most adverse potential impacts at the Pantex Plant from the activities proposed in the SSM PEIS, the *Storage and Disposition PEIS*, and the *Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste (Waste Management PEIS)*. Each of these programmatic documents addresses activities that were planned for, or under way at, the Pantex Plant at the time the SWEIS was issued. As the following discussion indicates, the cumulative impacts from these activities are expected to remain within the bounds of the cumulative impacts analysis presented in the SWEIS.

SSM PEIS. The SWEIS considers the potential impacts associated with three SSM PEIS alternatives involving the Pantex Plant: the No Action, Downsize Existing Capability, and Relocate Capability alternatives. Both the SWEIS and SSM PEIS discuss operations involving the entire Pantex Plant, but over different time periods. The SWEIS indicates that there would be no significant cumulative impacts at the Pantex Plant associated with the alternative to Downsize Existing Capabilities (DOE 1996a:4-355), the alternative that DOE subsequently selected in the SSM PEIS ROD (61 FR 68014).

Storage and Disposition PEIS. The SWEIS considers the potential siting, construction, and operation of new collocated fissile material (plutonium and highly-enriched uranium) storage and plutonium disposition facilities at the Pantex Plant as bounding alternatives associated with potential *Storage and Disposition PEIS* activities. The analysis assumes impacts from construction of plutonium disposition facilities would take place during the same 10-year period evaluated in the SWEIS, with operation of the disposition facilities likely to occur later. For the collocated storage of plutonium and highly enriched uranium, the SWEIS analysis accounts for the possibility that associated impacts could occur either during the same 10-year period evaluated in the SWEIS, or at a later time. For either, the impacts analysis includes the transportation and storage of pits. The SWEIS identifies potential cumulative impacts to site utilities, land resources, water resources, air quality, biotic resources, cultural resources, socioeconomic resources, and waste management.

The *Storage and Disposition PEIS* ROD (62 FR 3014) selected the Pantex Plant as the consolidated storage site for plutonium pits, but did not select the site for any other facilities or activities. Likewise, the ROD for the tiered *Surplus Plutonium Disposition EIS* (65 FR 1608) did not select the site for any other surplus plutonium disposition facilities or activities. Therefore, the level of potential cumulative impacts associated with *Storage and Disposition PEIS* activities at the Pantex Plant would be expected to be less than that presented in the bounding SWEIS analysis.

Waste Management PEIS. The SWEIS cumulative impacts analysis assumes impacts associated with the *Waste Management PEIS* would also occur during the same 10-year period considered in the SWEIS. The SWEIS identified that the most adverse impact at the Pantex Plant from proposed *Waste*

Management PEIS activities would occur in association with the Decentralized Alternative for treatment and disposal of LLW and LLMW, and analyzed the impacts of this bounding case (DOE 1996a:4-356). A combination of decentralized and regionalized alternatives was ultimately selected by DOE in the *Waste Management PEIS* ROD (65 FR 10061). The potential impacts of this decision fall within the conditions evaluated in the SWEIS.

3.15.2 Cumulative Impacts Evaluation

This SA evaluates potential impacts associated with new information, new and proposed projects, and modifications to existing projects since the SWEIS was issued. The initial screening described in Section 1.6 of this SA evaluated the level of activity, amount of new information, or potential for impact to each resource area to determine which would require a more detailed analysis. This initial review clearly indicated that the associated impacts, including cumulative impacts, for visual resources, land resources, geology and soils, acoustics (noise), biotic resources, socioeconomic resources, human health, transportation, and environmental justice would not exceed those identified in the SWEIS.

More detailed analyses were performed for facilities and infrastructure, cultural resources, water resources, air quality, waste management, and facility accidents, either to update these resource areas to include new information; or to determine whether their impacts remain within the baseline established in the SWEIS. These analyses demonstrate that little or no additional impacts are expected for these resource areas, and that the cumulative impact analysis presented in the SWEIS effectively bounds the cumulative impacts associated with continued Pantex Plant operations.

No new missions have been identified for the Pantex Plant. Fewer and/or smaller facilities than evaluated in the SWEIS have been constructed, or are proposed to be constructed between 2002 and 2006, and a number of excess facilities have been slated for demolition. Several projects will be relocated to existing facilities that will be remodeled to accommodate the activities. Overall, this has reduced the amount of construction and new floor space from that identified in the SWEIS. This would tend to reduce the amount of additional site runoff by creating less impervious surface area, reduce temporary fugitive and vehicular emissions from construction, and reduce the amount of resources needed for both construction and operation. In addition, deactivation and demolition of excess facilities will reduce or eliminate the expenditure of resources on obsolete structures, allow the redirection of funds to active facilities and infrastructure, and improve the safety and security of the site.

Regional groundwater withdrawals and long-term pumping continue to exceed the natural recharge rate of the Ogallala Aquifer. In particular, the large water demands of the Amarillo area, including irrigation, are responsible for the drop in the water table. However, groundwater withdrawals by the Pantex Plant have been reduced over time, and were 29 percent less in 2000 than in 1995.

Since issuance of the SWEIS, all industrial wastewaters have been routed to the WWTF for treatment and site wastewater discharges from the WWTF to Playa 1 have decreased. An upgrade to the WWTF provides a number of benefits to the environment at and in the vicinity of the Pantex Plant, including ensuring that the Pantex Plant has sufficient wastewater treatment capacity for future expansion.

Treated effluent is planned to be used to irrigate DOE-owned agricultural land rather than being discharged to the playa. Although the permanent water areas in Playa 1 maintained by current effluent discharge and used by local and migratory waterfowl will be lost upon cessation of direct discharges by the upgraded WWTF, this loss of habitat would be partially mitigated by the like habitat provided by the new facultative lagoon and storage pond and by the existing WWTF lagoon that would be retained for irrigation water storage. In addition, it is anticipated that restored ephemeral conditions in the playa

would lead to the establishment of natural annual plant and invertebrate communities, which make playas among the most productive wetlands in the world. (The playas are isolated and not directly adjacent to navigable waters of the United States). During wet periods, resulting seed and invertebrate production would be available to foraging shorebirds and waterfowl.

Although information on perched groundwater indicates a higher level of contamination and faster plume migration than identified in the SWEIS, the contamination is a result of historic, not current, activities and practices. This characterization information is being used to determine the appropriate type and location of remedial activities, which over time should improve the quality of perched groundwater in the vicinity of the Pantex Plant. The goal of the ER program is to have all identified release sites remediated or undergoing remediation by 2008.

Criteria air pollutant emissions from continued operations at the Pantex Plant would contribute about 1 percent or less to the overall pollution burden in Carson and Potter counties, the two closest counties, and can be expected to have negligible impact on the regional air quality. In May 2000, the Pantex Plant notified the TCEQ that it had completed actions to reduce its potential to emit pollutants to levels below the major source criteria specified at 40 CFR 70.2. As a result of these actions, plant emissions are presently, and would be expected in the future to remain substantially below levels that would cause ambient air quality standards or ESLs for toxic pollutants to be exceeded. For example, emissions data for 2001 reflect substantial reductions in the emissions of nitrogen oxides and carbon monoxide from levels shown in the SWEIS.

Since issuance of the SWEIS, wastes being stored at the Pantex Plant have decreased by at least 46 percent for each waste type in inventory. Generation of most types of waste has declined since the SWEIS was issued, although generation of both hazardous and nonhazardous waste has exceeded SWEIS estimates, and nonhazardous waste generation has increased appreciably during this time. Increases in waste generation can be attributed primarily to ER activities. While ER activities have generated more of certain types of waste than projected in the SWEIS, existing storage and disposal practices have adequately managed this waste. Waste generated in association with future projects, including the scheduled demolition of excess plant facilities, would have negligible impact on the waste management system at the Pantex Plant, or on commercial facilities. Most D&D waste would be classified as nonhazardous. These wastes would be sent to the onsite construction landfill or to permitted offsite commercial disposal facilities. Approximately 80 to 90 percent of the materials generated from D&D activities would be recycled.

Offsite radiological doses continue to be substantially less than estimated in the SWEIS, and contribute only minimally to the background dose in the vicinity of the plant. Doses to the maximally exposed individual are a very small fraction of the 10 mrem/yr dose limit specified in 40 CFR 61. Doses to the maximally exposed individual as well as to the average person residing in the vicinity of the Pantex Plant have been lower than the SWEIS estimate each year since the SWEIS was issued. New and remodeled facilities, increased use of insensitive HE, and a reduction in the limits of HE and plutonium in many facilities, bays and cells have contributed to at least a qualitative reduction in the overall risk of accidents at the Pantex Plant, although there are potential offsetting increases in limits of HE and plutonium in other facilities, and increases in pit handling activities. However, the accident analysis has indicated that the accident scenarios in the SWEIS continue to bound the risks associated with Pantex Plant operations.

Operation of the SNMCRF would allow for reuse of existing pits, which would reduce the number of new pits that would need to be produced. This would in turn reduce both the quantity and level of radioactive waste generated by the DOE complex. In addition, fewer resources, facilities and processes would be required, and radiological doses to workers would be expected to be lower than it would be for manufacturing new pits.