Limited quantitative information is available to evaluate the effects of helicopter over-flights on other subspecies of pronghorn (Workman et al. 1992). However, use of this information to evaluate the effects of low-level flights on the Sonoran pronghorn is speculative at best because this information was collected for another subspecies of pronghorn in a much different environment. Workman et al. (1992) found that the greatest response (increase in heart rate) was elicited by a hovering helicopter. USPB pilots hover only when tracking a suspected UDA and then hover only momentarily. Pronghorn would be expected to move greater distances and respond for a longer period of time to helicopters than to fixed-wing aircraft. Evidence suggests that pronghorn may habituate to disturbance from moving helicopters; however, they may not habituate to low-level hovering helicopters (Workman et al. 1992).

Nevertheless, if it is assumed that Sonoran pronghorn respond in a similar manner to helicopters as other ungulates, some general statements of the possible effects can be made. In general, areas or times of year with greater use by low-level helicopters would have the potential for the greatest disturbance to pronghorn. Also, in areas where helicopters fly particularly low and thus create more noise and greater visual stimuli, disturbance to pronghorn would be expected to be greater (Weisenberger et al. 1996; Workman et al. 1992). Evidence from other subspecies of pronghorn and other ungulates suggests that disturbed Sonoran pronghorn may exhibit elevated heart rates, may flee, and could alter habitat use in response to low-level helicopter flights.

4.2.3 Effects from Drag Road Preparation and Access Road Maintenance

The Wellton Station coverage overlaps a sizable portion of the Sonoran pronghorn range (Figure 4-1), and drag/access roads traverse much of the area patrolled by the USBP. Therefore, the potential for activities along drag and access roads to coincide with the presence of Sonoran pronghorn exists. The drag roads exist more than 15 miles north and east of the known concentrations of Sonoran pronghorn during the sensitive fawning and summer dry seasons from February through August (see Appendix C). However, some pronghorn do fawn in the vicinity of drag roads, resulting in an unknown level of encounters with USBP activities along the drag roads (INS 1999).

Pronghorn appear to have an affinity for drag roads as the operation affects hydrology within microsite, which promotes forbs growth (USFWS 2001). In addition, pronghorns use drag and access roads as bedding areas apparently because the openness allows greater visibility for predator detection. Pronghorns using drag and access roads could be adversely affected by USBP activities along these roads (USFWS 2001). Drag road preparation and access road maintenance are likely to constitute a minor disturbance to the pronghorn, (b) (7)(E) Preparation activities on individual drag roads occur (b) (7)(E) . Maintenance of access roads is done on an as-needed basis, generally (b) (7)(E) . Drag road preparation and access road maintenance activities are conducted at a (b) (7)(E) (b) (7)(E) which gives any pronghorn ample opportunity to move out of harm's way. Any disturbance that causes a pronghorn to flee would constitute an effect, but these instances are likely to be infrequent and of short duration.

4.2.4 Effects from Ground Patrols, Apprehensions and Rescues

The routine patrols of the USBP have the potential to encounter and disturb Sonoran pronghorn, which may result in an effect as defined by the Endangered Species Act. Agents are instructed to maintain a (b) (7)(E) per hour speed limit on patrol roads to minimize the chance of a collision between a USBP vehicle and a Sonoran pronghorn (INS 2002). Ground patrols that occur at night may have an effect on resting pronghorn, although most patrol roads are outside prime habitat areas, (b) (7)(E) . Any disturbance that causes a pronghorn to flee should be infrequent and of short duration. Apprehensions and rescues occur primarily within the corridors illustrated in Figure 4-1. There are approximately 466 miles of documented alien foot trails in the Action Area of which approximately 98 percent are located in the (b) (7)(E) Approximately 50 percent (approximately 232 miles) of the alien foot trails in the Action Area occur within Sonoran pronghorn range. Many of these trails occur in the (b) (7)(E) which are regarded as sensitive areas by the USFWS (INS 1999). The (b) (7)(E) are a known fawning area for the Sonoran pronghorn.

Since all USBP apprehensions and rescues occur in response to sightings or sign, a previous disturbance from illegal person(s) or vehicle(s) has already occurred. Therefore, if any Sonoran pronghorn were in the area, they would likely have been frightened off prior to arrival of the USBP. This minimizes the potential for encounters between the Sonoran pronghorn and the USBP. Additionally, the presence of the USBP in the area reduces the number of such disturbances by illegal entrants, as well as reduces the impact to Sonoran pronghorn habitat from illegal foot and vehicle traffic, especially with the high percentage of alien foot trails located in with Sonoran pronghorn range..

4.2.5 Effects from Remote Sensor Installation and Maintenance

Currently, the Yuma and Wellton Stations have a total of 306 remote sensors at various locations (b) (7)(E) and north of the U.S.-Mexico. Remote sensors are typically located within (b) (7)(E) . A description of remote sensors and their installation and maintenance was provided in Section 1.5.3. These areas are selected based upon illegal entry patterns, and thus are already subject to disturbance. Operational changes may also require the removal or addition of sensors when there is a shift in the pattern of illegal entry. The USBP sensor technicians generally use a vehicle to travel to the devices; (b) (7)(E) and impacts upon the area. The potential for impacts caused by the installation and maintenance of these units, relative to their size, the area over which they are scattered, and the amount of time needed to maintain them, is minimal. There is the potential for USBP sensor technicians to encounter pronghorns that use access roads for bedding and/or foraging. This encounter could cause the pronghorn to flee which would constitute an effect under the ESA. However, any such encounter would be infrequent and of short duration.

4.2.6 Checkpoints

Checkpoints maintained by the Wellton and Yuma Stations are located outside of Sonoran pronghorn habitat along developed roads. Operation of these checkpoints would have no adverse impacts on the Sonoran pronghorn.

4.2.7 Infrastructure

All fencing, barriers, lighting, RVS sites, and facilities maintained by the Yuma Sector within the Action Area are within the Yuma Station AO which is outside of the Sonoran pronghorn habitat, therefore none of the infrastructure maintained by the USBP within the Action Area would have an affect on the Sonoran pronghorn.

The six emergency beacons located in the Wellton Station's AO are located within Sonoran pronghorn habitat. However, the beacons are located in areas void of vegetation along established roads and have a footprint of approximately 5 square feet per beacon or 54 square feet total. The potential for impacts caused by the installation and maintenance of these units, relative to their size, the area over which they are scattered, and the amount of time needed to maintain them, is minimal. There is the potential for USBP technicians to encounter pronghorns along access roads while performing maintenance on the beacons. Any such encounter would be infrequent and of short duration.

4.2.8 Conclusion

USBP activities are likely to affect Sonoran pronghorn. Depending on the specific USBP activity, many of the potential impacts upon Sonoran pronghorn, as analyzed above, could be considered minor and discountable, or in some cases beneficial. However, because of the critically low numbers of individuals that constitute the Sonoran pronghorn population, and effects of helicopter patrols, drag road activities upon pronghorn that fawn or frequent those areas, and impacts from night patrols on resting pronghorn, the USBP concludes that its activities are likely to affect, and may adversely affect the Sonoran pronghorn.

4.3 Lesser Long-nosed Bat

Disturbances that can harm the lesser long-nosed bat can be placed into two broad categories: 1) disturbance to the animals while they are in their daytime roost, and 2) disturbance to their nighttime foraging (Dalton and Dalton 1998- Appendix F). These types of disturbances could also affect lesser long-nosed bats during migration.

4.3.1 Daytime Roost Disturbance

During the day, the entire colony of bats will retreat to a dark, quiet site to rest and nurse their young. These day roosts are found in natural caves or abandoned mines. The bats residing in these mines are vulnerable to any human entry into their roost. Bats can be directly killed through acts of vandalism, or indirectly from the stress associated with panic. The bats in a roost may also be negatively impacted by human activities conducted in the vicinity of their roost, most likely from high levels of acoustic noise (e.g., aircraft, loud music, blasting).

4.3.2 Nighttime Foraging Disturbance

At night, the bats emerge from their day roost to forage. During this time, individual bats are widely dispersed throughout the foraging territory (AGFD 1998). Potential threats in this category include removal of their food source (columnar cacti and agave) or substantial human activity in their foraging territory. Examples include urban development and some mining operations. Human activity in the form of lights and sound can cause bats to avoid a particular

foraging territory. However, for such disturbance to be significant, it would have to be present over much of the colony's foraging territory and occur on a regular basis.

4.3.3 Bat Migrations

Lesser long-nosed bat migration paths, along with foraging flight patterns, are the subjects of extensive, ongoing research. Lesser long-nosed bats migrate in a general north - south direction between roost sites in Arizona and New Mexico and wintering sites in Central Mexico. Potential impacts during migration would be the same as those described above for daytime roost disturbance and for nighttime foraging disturbance, as the bats travel at night while feeding on nectar, and rest during the day in caves or mines.

4.3.4 Border Patrol Activities

The nearest known daytime roosting site to the USBP flight path is in (b) (7)(E), approximately one mile from the closest approach. This roost is not one of the three primary maternity sites in the U.S., but consists of a relatively small colony of less than one hundred individuals. The foraging habitat for the colony in this roost extends to the west only as far as (b) (7)(E) (Dalton and Dalton 1998), which is on the periphery of the Wellton Station's AO.

Potential impacts to bat roosts from helicopter patrols would not be physical but sensory (e.g., noise) in nature. The USBP helicopter flights occur within about one mile of a known roosting site. Based on studies with low-level fighter jets flying over a known roost (Dalton and Dalton 1993), this source of noise pollution at this distance is not considered significant.

Ground activities requiring the entry of abandoned mines used as day roosts by these animals would constitute a threat to the resident colony. However, there have been no instances where USBP agents have had the need to enter a cave or abandoned mine in pursuit of an illegal entrant. Due to the unlikelihood of such an event, this potential impact is discountable. USBP activities, including the installation and maintenance of remote sensors and emergency beacons, do not remove or alter columnar cacti; therefore, USBP activities do not affect potential food sources of the lesser long-nosed bat.

Nighttime ground patrols typically follow the path of drag or access roads, which do not intersect the bat's foraging range (Figure 4-1). There is the possibility of nighttime helicopter patrols occurring within the foraging territory of this colony. This could result in potential harassment of bats or a potential in-air collision between the helicopter and a bat. However, the majority of the foraging territory used by the colony that is near the Wellton Station's AO is east of the roost site. Therefore most foraging flights by these bats are to the east, away from the USBP helicopter flight path (Figure 4-1). Given this, along with the size of the colony's foraging territory and the fact that individual foraging bats are widely dispersed throughout the territory, and given that (b) (7)(E) and on the edge of their territory, this form of disturbance would be extremely unlikely to occur and is discountable. Ground activities that involve entering mines would potentially be disturbing young left in the mine while the mothers are out of the mine foraging. Again, there have been no instances where USBP agents have had the need to enter a cave or abandoned mine in pursuit of an illegal entrant. Due to the unlikelihood of such an event, this potential impact is discountable.

this form of human activity within this species' territory is not considered significant, and the potential for impacts on this species is discountable. The same line of reasoning may be applied to assessing the potential effects of nighttime activities on migrating bats. Given that it would be extremely unlikely for a night helicopter or ground-patrol unit following its normal flight path or patrol route, respectively, to encounter any bat(s) migrating south (Figure 4-1), these potential effects are also discountable.

4.3.5 Conclusion

It is determined that USBP activities may affect, but are not likely to adversely affect, the lesser long-nosed bat. Conversely, USBP activities may benefit lesser long-nosed bats by limiting other human activities, such as illegal entry in the area that could adversely affect the bats or their habitat. The USBP also provides assistance to the AGFD and USFWS to facilitate their resource protection and management missions.

4.4 Cactus Ferruginous Pygmy-Owl

4.4.1 Range Overlap and Habitat Suitability

The historic range of the cactus ferruginous pygmy-owl overlaps the eastern edge of the Wellton Station's AO (see figures 3-1 and 4-1). However, no cactus ferruginous pygmy-owls have been sighted in or near the Action Area since the single individual identified at Cabeza Prieta Tanks in 1955 (Monson 1998, Duncan 1998-Appendix E). There is some potentially suitable habitat for this species within the Wellton Station's AO (USFWS 1996), but the suitability of the habitat is marginal at best (Duncan 1998). The USBP helicopter flight path and drag/access roads traverse or intersect with numerous dry wash areas that include riparian scrub habitat, most of which is too sparse for the owl (Duncan 1998). Nevertheless, the potential exists for the owl to be present in the Action Area and to be affected by USBP activities.

The potential for any impact upon this species is very small. Most of the habitat in the subject area is unsuitable for pygmy-owls, as it is dominated by the Lower Colorado Valley subdivision of Sonoran desertscrub (Duncan 1998). All current pygmy-owl locations documented within Sonoran desertscrub have been representative of Arizona Upland associations (Duncan 1998). During a 1999 intergovernmental survey 74 to 78 cactus ferruginous pygmy-owls were observed in Altar Valley, Northwest Tucson, Pinal County, and OPCNM (Huckelberry 1999). The one pygmy-owl observed at Cabeza Prieta Tanks in 1955 is thought to have been an accidental wanderer (Duncan 1998). Surveys for cactus ferruginous pygmy-owls conducted on the BMGR in 1993, 1994, and 1997, and in the CPNWR west of OPCNM between 1994 and 1998 found no evidence of this species or its prime habitat in the area (USFWS 1996, Aigner and Koehler 1997, Duncan 1998). A one-day survey of the Action Area, including Cabeza Prieta Tanks, did not detect any cactus ferruginous pygmy-owls, and revealed only marginal pygmy-owl habitat (Duncan 1998- Appendix E).

4.4.2 U.S. Border Patrol Activities

If there were any cactus ferruginous pygmy-owls in the area patrolled by the USBP, the effects to this species would be minimal. The owls nest in riparian trees or large columnar cacti. The

USBP activities, including the installation and maintenance of remote sensors and emergency beacons, do not involve the removal or disturbance of such vegetation. All drag road preparation and access road maintenance activities are performed on pre-existing roads. There are no plans for the creation of additional roads. Although the owl is a diurnal species, and is presumably active during the same time periods as the USBP, the likelihood of an encounter is remote. The possibility of a mid-air collision between an owl and a USBP helicopter is equally remote. While there is no information available regarding the effects of noise on the cactus ferruginous pygmy-owl, if USBP helicopter over-flights or vehicular activities do coincide with the presence of this species, there is likely to be some level of disturbance to the owl caused by the noise. There would also be some level of disturbance to the owl if ground-based apprehension or rescue activities occurred within habitat that supports this species. Either of these aforementioned disturbances could result in frightening an owl away. However, any such disturbance would likely be short in duration and not result in any long-term impacts to the owl.

Any of the potential effects described above are discountable, because of the extreme unlikelihood of USBP agents encountering a cactus ferruginous pygmy-owl during the course of their activities. Any of the potential effects on pygmy-owl habitat would be insignificant, because the potential habitat in the area is of marginal quality (Duncan 1998). Conversely, USBP activities may benefit cactus ferruginous pygmy-owls by limiting other human activities, such as illegal entry in the area that could adversely affect the owls or their habitat. The USBP also provides assistance to the AGFD and USFWS to facilitate their resource protection and management missions.

4.4.3 Conclusion

Therefore, it is determined that USBP activities may affect, but are not likely to adversely affect, the cactus ferruginous pygmy-owl. However, USBP actions may have a beneficial effect by limiting other human activities, such as illegal entry that could adversely affect cactus ferruginous pygmy-owl habitat.

4.5 Southwestern Willow Flycatcher

4.5.1 Range Overlap and Habitat Suitability

The southwestern willow flycatcher is known to breed within the Action Area along the Colorado River south of the City of Yuma (AGFD 1997). Breeding habitat consists of the remnant forested riparian community along the (b) (7)(E) , which is within the Yuma Station's AO (see figures 3-1 and 4-1). This community type is characterized Fremont cottonwood, Goodding willow, common reed, and saltcedar (Brown 1994). This community represents the preferred nesting habitat of the southwestern willow flycatcher. The riparian area along the (b) (7)(E) in the Action Area has been greatly reduced by agricultural development.

4.5.2 Effects from Helicopter Patrols and other Over-flights

Threats to the southwestern willow flycatcher include riparian habitat loss and fragmentation and brood-parasitism by brown-head cowbirds. (b) (7)(E) in the Yuma Station's AO. Infrequent special operation and search and rescue flights may occur in this portion of the Action Area. Due to the (b) (7)(E)

over southwestern willow flycatcher habitat, effects to this species from helicopter operations are negligible.

4.5.3 Effects from Drag Road Preparation and Access Road Maintenance

Drag and access roads are not located with the riparian habitat along the (b) (7)(E) . (b) (7)(E) to patrol this portion of the Action Area. Therefore, drag road preparation and access road maintenance would not impact the riparian habitat utilized by the southwestern flycatcher. Effects from these operations on the southwestern flycatcher are negligible.

4.5.4 Effects from Ground Patrols, Apprehensions and Rescues

(b) (7)(E) are conducted from existing roads or trails. USBP agents would not go into the riparian area unless an UDA had been observed. Since all USBP apprehensions and rescues occur in response to sightings or sign, a previous disturbance from illegal person(s) or vehicle(s) has already occurred. Therefore, if any southwestern willow flycatcher were in the area, they would likely have been frightened off prior to arrival of the USBP. This effect would be temporary until the USBP agent(s) have left the area and the birds returned to their nests. Potential effects resulting from USBP activities would be temporal in nature and as such would be negligible. Additionally, the presence of the USBP in the area reduces the number of such disturbances by illegal entrants, as well as, degradation of habitat resulting from illegal entry and smuggling activities.

4.5.5 Effects from Remote Sensor Installation and Maintenance

Currently, the Yuma Station maintains a total of 251 remote sensors at various locations w(b) (7)(E) and north of the U.S.-Mexico border. Remote sensors are typically located within existing roadways, trails or washes. These areas are selected based upon illegal entry patterns, and thus are already subject to disturbance. The potential for impacts caused by the installation and maintenance of these units, relative to their size, the area over which they are distributed , and the amount of time needed to maintain them, is minimal.

4.5.6 Checkpoints

Checkpoints maintained by the Wellton and Yuma Stations are located outside of southwestern willow flycatcher habitat along developed roads. Operation of checkpoints would have no adverse impacts on the southwestern willow flycatcher.

4.5.7 Infrastructure

All fencing, barriers, lighting, RVS sites, rescue beacons, and facilities maintained by the Yuma Sector within the Action Area are located outside of the southwestern willow flycatcher habitat. None of the infrastructure maintained by the USBP within the Action Area would have a negative effect on the southwestern willow flycatcher. However, infrastructure does provide a beneficial effect through deterring illegal entry and affording the USBP earlier detection and apprehension of illegal entrants, thus reducing potential impacts to the southwestern willow flycatcher and suitable habitat.

4.5.8 Conclusion

It is determined that USBP activities may affect, but are not likely to adversely affect, the southwestern willow flycatcher. Conversely, USBP activities may benefit the southwestern willow flycatcher by limiting other human activities, such as illegal entry in the area that could adversely affect the flycatcher or their habitat.

4.6 Yuma Clapper Rail

4.6.1 Range Overlap and Habitat Suitability

The historic range of the Yuma clapper rail includes the Lower Colorado River from the Gulf of California in Mexico to Topock Marsh on Havasu National Wildlife Refuge at Needles, California and Arizona. Also at Salton Sea, California, and on several major river drainages in central and southwestern Arizona (AGFD 2001). The Yuma Station's AO overlaps portions of the Yuma clapper rail's historic range along the (b) (7)(E) (see figures 3-1 and 4-1). However, the Action Area does not overlap with any of the known Yuma clapper rail breeding areas. Breeding areas include Mittry Lake (Arizona), West Pond, Imperial National Wildlife Refuge, Bill Williams River, Topock Gorge and Topock Marsh on Havasu National Wildlife Refuge, Cibola National Wildlife Refuge, and Imperial Wildlife Area (AGFD 2001). The lower reaches of the (b) (7)(E) in the Action Area is channelized and does not include backwater marsh habitat preferred by the Yuma clapper rail.

4.6.2 U.S. Border Patrol Activities

The lower reaches of the (b) (7)(E) in the Action Area is channelized and does not include backwater marsh habitat preferred by the Yuma clapper rail. Any rails present in the area would likely be transient; therefore, any impacts from USBP activities would be negligible. If there were any Yuma clapper rails in the area patrolled by the USBP, the effects to this species would be minimal. The likelihood of a patrol agent encountering a Yuma clapper rail is unlikely.

(b) (7)(E) in the Action Area to disturb Yuma clapper rail along that reach of the river. The birds that would be potentially disturbed would likely be transient; therefore, any impacts associated with helicopter overflights would be negligible. Helicopter operations would not have an affect on nesting Yuma clapper rail.

Therefore, it is determined that USBP activities may affect, but are not likely to adversely affect, the Yuma clapper rail.

4.7 Flat-tailed Horned Lizard

4.7.1 Range Overlap and Habitat Suitability

The historic range of the flat-tailed horned lizard includes the Coachella Valley in extreme south California, south to head of Gulf of California, taking in extreme southwest Arizona, northeast Baja California and Extreme northwest Sonora (AGFD 1997). USBP activities in the Yuma

Station's AO overlap the historic range of this species (see Figure 3-1 and 4-1). Specifically, this area includes the (b) (7)(E) This area is under the administration of the U.S. Marine Air Station at Yuma and is designated as a flat-tailed horned lizard management area (Yuma Desert Management Area).

4.7.2 U.S. Border Patrol Activities

During preparation of drag roads there is a potential for USBP activities to harm individuals of this species that may be on the road. USBP agents who patrol this area of the Yuma Station's AO are trained to identify the flat-tailed horned lizard and would avoid an individual of this species if observed. Encounter between the USBP and the flat-tailed horned lizard are expected to be infrequent and as such adverse impacts would be minimal. (b) (7)(E)

(b) (7)(E)

4.7.3 Conclusion

USBP activities in flat-tailed horned lizard habitat would have both a beneficial and adverse affect on this species. Although adverse impacts are expected to be infrequent and minimal, there is still chance for an individual to be adversely affected.

The USBP concludes that their activities are likely to affect, and may adversely affect the flat-tailed horned lizard.

4.8 Other Listed Species

Due to the lack of suitable habitat, Nichol's turk's head cactus, brown pelican, and razorback sucker are not found within the subject area. Nichol's turk's head cactus grows on limestone slopes in soils rich in calcium carbonate. The brown pelican is typically found on coastal land and islands. Existing populations of the razorback sucker are not known to occur in the Action Area. Therefore, there is no potential for any of these species to be impacted by USBP activities. It is determined that USBP activities would have no effect on Nichol's turk's head cactus, brown pelican, and razorback sucker.

The bald eagle is an uncommon transient species through the area. The infrequent presence of these species would not likely coincide with USBP activities. However, there is the potential for a mid-air collision between the USBP and bald eagles, but the chance of such an occurrence is remote and therefore, discountable.

It is determined that USBP activities may affect, but are not likely to adversely affect, the bald eagle.

4.9 Cumulative Effects

Cumulative effects include the effects of future state, tribal, local or private actions that are reasonably certain to occur in the action area of the Federal action being analyzed. Future

Federal actions that are unrelated to the proposed action are not considered as part of the cumulative effects because they require separate consultation pursuant to Section 7 of the ESA.

The vast majority of lands in the Action Area are in Federal ownership and management. A few small parcels of private and state owned land occur within the currently occupied range of the Sonoran pronghorn and flat-tailed horned lizard. In the pronghorn range these areas are located near Ajo and Why, Arizona, north of the BMGR from Dateland to Highway 85, and from the Mohawk Mountains to Tacna, Mexico. The USAF purchased state in holdings on the BMGR.

Development, agriculture, recreation, off-road vehicle use, grazing, and other activities on private and state lands are expected to continue and likely increase in the future (USFWS 2001b). Approximately 2,884 acres of land have been converted to agriculture near Sentinel and Tacna, Arizona (USFWS 2001b). These activities have a potential to adversely affect the Sonoran pronghorn and its habitat.

Impacts to the Sonoran pronghorn and its habitat from UDAs and illegal smuggling activities, have increased in the remote desert regions of the CPNWR, BMGR, and OPCN Monument. Numerous illegal roads have been developed in Sonoran pronghorn habitat on the CPNWR in the area near the (b) (7)(E) . USBP efforts (b) (7)(E) In addition, impacts from foot and vehicle traffic, illegal activities such as discarded trash and the potential for wildfires from illegal campfires adversely impact pronghorn habitat. UDA migration traffic adversely impact the flat-tailed horned lizard in the Yuma desert by destroying vegetation and disturbing soils, thus degrading flat-tailed horned lizard habitat. In addition, illegal traffic could result in a direct taking of an individual of this species as a result of a vehicle/lizard collision or an UDA stepping on an individual.

SECTION 5.0
MEASURES TO AVOID, MINIMIZE, AND MITIGATE POTENTIAL IMPACTS

5.0 MEASURES TO AVOID, MINIMIZE, AND MITIGATE POTENTIAL IMPACTS

Measures to avoid, minimize, and mitigate impacts of the USBP activities to the species of concern were investigated and incorporated into the USBP operating procedures. These measures were organized into categories identifying management, training, helicopter noise, ground activities (drag and access road maintenance, ground patrols, apprehension and rescue procedures), remote sensor installation and maintenance, and intra-agency and inter-agency cooperation as major elements of the mitigation plan.

5.1 Management and Mitigation Responsibilities

The U.S. Marine Corps are responsible for resource and land management on BMGR – West and the USFWS is responsible for resource and land management on the CPNWR. The USBP is a member of the BMGR Executive Council. In 1987, the USFWS entered into a cooperative interagency agreement with the USBP regarding permissible activities by that agency within the CPNWR. The MOU was updated and signed on November 12, 1999. In addition, the USBP maintains a high level of cooperation and communication with the AGFD. The Yuma Sector receives weekly telemetry data for the Sonoran pronghorn. These data are used by USBP helicopter pilots to identify areas of herd concentration and to avoid the herds to the greatest extent possible.

While operating on the BMGR and CPNWR, the USBP will comply with existing and revised natural resource management guidance established by these Federal landholder to the maximum extent possible in an effort to avoid and minimize impacts to threatened and endangered species and the environment. Currently, the USAF and MCAS are preparing a Integrated Natural Resources Management Plan (INRMP) for the BMGR and the USFWS is preparing the CPNWR Comprehensive Conservation Plan for the CPNWR. Until the INRMP is completed, natural resource management on the BMGR will continue under the guidance provided by the Goldwater Amendment to the BLM's Lower Gila South Resource Management Plan (USFWS 2001a).

The Yuma Sector will designate a management representative and a single point of contact within the Yuma office with the duty to ensure compliance with mitigation measures. This representative will have the authority to redirect activities that may be in violation of such measures. This single point of contact will be designated to receive and investigate reports of unauthorized air and ground activities and address USFWS concerning overflights or other issues. Mitigation shall include formalized consultation with CPNWR as to any significant modifications to the Yuma Sector activities described in this Biological Assessment.

5.2 Endangered Species Act Compliance Training

All USBP staff, including aircrews and ground support personnel, will be trained regarding the physical characteristics and ecology of the Federally-listed threatened and endangered species that may be encountered in the Action Area during operations. After an initial session conducted by CPNWR staff for all USBP staff, training will be conducted on a semi-annual basis for new USBP staff and as a periodic refresher for all other USBP staff. Vehicle speeds within Sonoran pronghorn habitat have been established at (b) (7)(E) per hour on patrols (Appendix C). In addition, areas to be avoided will be identified in order to reduce chance encounters and possible harm to special-status species. Aircrews will be informed of the provisions of the ESA concerning harassment of threatened and endangered species. As part of the overall

operations, all personnel will be informed that intentional disturbance or harassment of threatened or endangered species is a violation of the Act and could result in prosecution.

5.3 Helicopter Patrol

Minor modifications to flight paths are made as recommended by the USFWS and AGFD as warranted by the Sonoran pronghorn population and location data. Although no critical habitat for Sonoran pronghorn has been established, the pronghorn are susceptible to stress during the fawning period (February to May), especially during the peak fawning period (April to June) and the summer dry period (June to August) which coincides with the rut during the months of July, August, and September. The daily USBP helicopter patrol route is modified during the peak fawning period to avoid known fawning areas. The route is modified as follows: "*instead of* (b) (7)(E) *and rejoin the normal flight route there*" (USFWS 2000). In addition, known concentrations of pronghorn sightings are, and will continue to be, avoided by the USBP overflights to the maximum extent feasible. The AGFD provides the Yuma Sector with weekly telemetry reports for the Sonoran pronghorn. These data are used to avoid Sonoran pronghorn concentrations to the greatest extent as possible. In addition, USBP helicopter pilots will maintain flight logs that will include observations of sightings of Sonoran pronghorn and any other species of concern, and details regarding any encounters, such as behavior. Occurrences will be documented, and the USBP will consult with the USFWS and AGFD as warranted. The Yuma Sector maintains continuous communication and cooperation with the AGFD and the USFWS personnel at the CPNWR. The ecologically sensitive area known as the (b) (7)(E) are avoided during flight operations.

USBP helicopters that leave Yuma Sector to refuel at Ajo Station in Why, Arizona fly at an altitude between (b) (7)(E), and restrict hovering activities to emergency situations or when tracking a known illegal entrant. To the maximum extent feasible, any major changes in illegal entry patterns that require a significant shift in the existing helicopter patrol route will be discussed with the USFWS prior to implementation of any new flight paths.

Apprehension or rescue situations requiring assistance at night will continue to be assessed on a case-by-case basis as to whether helicopters are needed, so that noise disturbance and potential encounters with nocturnal species are kept to a minimum. To further reduce the potential for adverse impacts to species of concern, the purchase of quieter helicopters has been proposed by the USBP. The USBP El Paso Flight Operation is currently developing specifications for the new helicopters and will solicit potential vendors. Noise levels will be one of the specifications considered during the analysis. The USBP had originally proposed to replace the existing fleet of OH-6A helicopter with the MD 600N helicopter by in FY 2000. Several MD 600N were purchased and put into service. After operating the MD 600N the USBP decided against replacing the OH-6A fleet with the MD 600N because of the cost, maintenance, and operational issues associated with the operation of the MD 600N (Appendix C).

5.4 Ground Patrols and Associated Activities

5.4.1 Drag Road Preparation and Access Road Maintenance

The USBP received an administrative determination from the (BLM) on June 29, 1992, for maintenance of drag and access roads by the within the BMGR. No further environmental analysis was determined to be required at that time. However, there is potential for disturbance

to Sonoran pronghorn or other species of concern that may use habitats near the roads. Therefore, to the maximum extent feasible, the USBP limits its activities to the existing right-of-way of the roads. Every effort is be made to maintain the current width of the roads.

Drag road preparation and road maintenance could adversely affect an individual flat-tailed horned lizard as a result of a vehicle/lizard collision should a lizard be located on a drag or access. (b) (7)(E) which reduces USBP encounters with flat-tailed horned species.

Drag road preparation and access road maintenance is restricted to the existing road right-of-way to avoid destroying vegetation and habitat. These activities would not remove or destroy columnar cacti, agave, or riparian vegetation utilized by the lesser long-nosed bat or cactus ferruginous pygmy owl.

5.4.2 24-hour Ground Patrols

Routine ground patrols, including those conducted at night, will be restricted to existing access and drag roads to the maximum extent feasible. Situations requiring off-road use of USBP vehicles are limited to apprehension and rescue activities.

5.5 Apprehensions and Rescues

To the maximum extent practicable, apprehension and rescue activities are carried out on existing drag roads with helicopter support, which minimizes potential adverse impacts to species of concern. During off-road pursuits, apprehensions, and rescue operations, every effort will be made to reduce impacts to the surrounding habitat. Such efforts will include, whenever feasible, and to the maximum extent possible, restricting off-road pursuit to the (b) (7)(E)

Every effort will be made to avoid ground activities requiring the entry of caves or abandoned mines used as day roosts by the lesser long-nosed bats. If any bats or cactus ferruginous pygmy-owls are observed during an apprehension or rescue operation, these occurrences will be documented and the information immediately forwarded to the USFWS.

5.6 Remote Sensors and Emergency Beacon Installation and Maintenance

To the maximum extent feasible, remote sensors and future emergency beacons will continue to be installed along pre-existing roads, trails, or washes that are subject to prior disturbance caused by illegal entrants, in order to avoid or limit the removal of riparian vegetation, chain fruit cholla, columnar cacti, Saguaro cactus, or agave.

5.7 Intra-Agency Assistance

USBP assistance activities conducted by Yuma Sector staff within the Tucson Sector occur infrequent, no more than once or twice per year. However with the re-implementation of Operation Skywatch in 2002 and potential for implementation the next five years, the potential for increased air support to the Tucson Sector is likely. Endangered species compliance training will make Yuma Sector staff aware of areas within the Tucson Sector that are inhabited by species of concern or areas to be avoided. Activities conducted by the Tucson Sector will be addressed in a separate BA.

5.8 Inter-Agency Assistance

The USBP will continue to provide air support to the CPNWR and AGFD on a resource available basis. This air support is critical to management efforts on the CPNWR. USBP helicopters allow CPNWR and AGFD biologists to retrieve Sonoran pronghorn radio collars within inaccessible areas and allow the biologists to rapidly retrieve deceased pronghorns to obtain critical biological data before decomposition begins or predation renders the corpse unusable.

5.9 Potential Activities

The nature of the USBP mission is such that unforeseen situations may arise at any given time that have never occurred in the past, and may never occur again in the future. Nevertheless, the USBP is required to be prepared for and respond appropriately to, any and all activities related to the prevention, detection, and apprehension of UDAs and/or persons smuggling illegal contraband into the United States. Such situations may require that the USBP engage in activities not specifically described in this BA. However, the semi-annual endangered species compliance training conducted by CPNWR staff for all USBP staff will provide USBP agents with the necessary awareness to conduct themselves with care in areas where species of concern are known to occur or in areas of potentially important wildlife habitat. The USBP would coordinate with the USFWS to determine if emergency Section 7 consultation is required for the specific action.

5.10 Conclusion

The activities of the USBP, including the use of helicopters, remote sensors, 24-hour ground patrols, and drag roads, are necessary to achieve the objectives of its mission. This mission is necessary to detect and deter illegal entries and smuggling of illegal contraband. In addition, USBP activities are an important deterrent to terrorist activities on U.S. soils. Alternatives to these activities have been investigated and incorporated where feasible. The preferred alternative includes helicopter patrols flown at (b) (7)(E), 24-hour ground patrols, installation and maintenance of approximately 306 remote sensors, maintenance of six emergency beacons, drag preparation of up to approximately 172 miles of drag and access roads, maintenance of approximately 90 miles of access roads. This action also includes the flexibility for the USBP to conduct any of these activities at night if necessary, to increase the number of remote sensors and rescue beacons installed and maintained in response to illegal immigration activity, and to leave the Yuma Sector for reasons such as refueling or to provide assistance to another USBP Sector.

Seven Federally-listed species may occur in the Action Area where USBP activities occur. The bald eagle is an uncommon transient and is not likely to coincide with USBP activities. The other species are the Sonoran pronghorn, southwestern willow flycatcher, Yuma clapper rail, lesser long-nosed bat, razorback sucker, and cactus ferruginous pygmy-owl. The USBP has determined that is activities may affect, but are not likely to adversely affect, the bald eagle, the cactus ferruginous pygmy-owl, southwestern willow flycatcher, Yuma clapper rail, and the lesser long-nosed bat. The USBP has determined that their activities may affect, and are likely to adversely affect, the Sonoran pronghorn and flat-tailed horned lizard. The latter species is not listed at present, but is proposed for listing. The USBP has determined that its activities will not affect those Federally-listed species in Yuma County that do not occur within their area of activity, specifically Nichols turk's head cactus, and brown pelican.

Mitigation efforts by the USBP will include efforts to avoid sensitive species, efforts to minimize impacts, monitoring, and coordination with the USFWS and AGFD. Helicopter flight routes have been altered to avoid sensitive habitat, and quieter helicopters will be obtained to reduce impacts caused by noise. USBP staff will be trained to identify the special status species and to recognize potential habitats. In addition, USBP staff will be educated about endangered species regulations and compliance. The USBP will continue to monitor and document encounters with Sonoran pronghorn and other protected species in the area, and continue to coordinate efforts with the USFWS and AGFD. The USBP has provided funding ($25,000) in 2002 for Sonoran pronghorn management (e.g., placement and monitoring of temporary waters for the Sonoran pronghorn on the CPNWR and adjacent Federal land) and funding ($25,000) for the quantification and monitoring of resource damage from past, current, and future UDA and drug smuggling activities, and responses to those actions by Federal law enforcement entities. This funding was provided as partial mitigation for Operation Desert Grip. In addition, the USBP has contributed $15,000 to the State of Arizona to assist in the state's Sonoran pronghorn genetic study.

SECTION 6.0
LIST OF PREPARERS

6.0 LIST OF PREPARERS

The following people were primarily responsible for preparing this Biological Assessment.

NAME	ORGANIZATION	DISCIPLINE / EXPERTISE	EXPERIENCE	ROLE IN PREPARING EIS
(b)(6)(b)(7)(C)	Gulf South Research Corporation	Biology/Ecology	25 years NEPA and related studies	BA Review
	Gulf South Research Corporation	Forestry and Wildlife	14 years NEPA and related studies	BA Preparation and Review
	Gulf South Research Corporation	GIS/Graphics	7 years GIS analysis	Graphics and GIS
	Gulf South Research Corporation	Environmental Studies	3 years natural resource and NEPA Studies	Soils, Vegetation, Water Resources, and Environmental Design Measures
	Gulf South Research Corporation	Forestry and Wildlife	14 years NEPA and related studies	GSRC Project Manager, BA preparation and Process and Review

SECTION 7.0
ACRONYMS

7.0 LIST OF ACRONYMS

AO	Area of Operation
AGFD	Arizona Game and Fish Department
BMGR	Barry M. Goldwater Air Force Range
BA	Biological Assessment
BANWR	Buenos Aires National Wildlife Refuge
BLM	Bureau of Land Management's
BO	Biological Opinion
CPNWR	Cabeza Prieta National Wildlife Refuge
DoD	Department of Defense
DoI	Department of Interior
Defenders	Defenders of Wildlife
ESA	Endangered Species Act
F	Fahrenheit
II	Illegal Immigration
INA	Immigration and Naturalization Act
INS	Immigration and Naturalization Service
MOU	Memorandum of Understanding
NOI	Notice of Intent
OPCNM	Organ Pipe Cactus National Monument
IIRIRA	Reform and Immigrant Responsibility Act
USAF	U.S. Air Force
USBP	U.S. Border Patrol
USFWS	U.S. Fish and Wildlife Service
USFS	U.S. Forest Service's
MCAS	U.S. Marine Corps Air Station Yuma
UDA	Undocumented Aliens

SECTION 8.0
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8.0 REFERENCES

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APPENDIX A
ORIGINAL BIOLOGICAL OPINION

2-21-96-F-334

SUMMARY
BIOLOGICAL AND CONFERENCE OPINION FOR
UNITED STATES BORDER PATROL ACTIVITIES IN THE YUMA SECTOR, WELLTON STATION, YUMA, ARIZONA

Date of opinion: September 5, 2000

Action agency: Department of Justice, Immigration and Naturalization Service, United States Border Patrol

Project: All Border Patrol activities currently being conducted by the Yuma Sector, Wellton Station, Yuma, Arizona.

Location: Yuma County

Listed species adversely affected: Endangered Sonoran pronghorn (*Antilocapra americana sonoriensis*).

Biological opinion: The proposed action is not likely to jeopardize the continued existence of the Sonoran pronghorn.

Incidental take statement:

Anticipated take: *Exceeding this level will require reinitiation of formal consultation.* The following take is expected to occur every ten years due to Border Patrol activities: 1) Take in the form of harassment that is likely to injure up to one Sonoran pronghorn.

Reasonable and prudent measures: *Implementation of these measures through the terms and conditions is mandatory.*

1) Measures shall be implemented by the Border Patrol to minimize injury of Sonoran pronghorn.

2) Measures shall be taken to monitor and study reactions of Sonoran pronghorn on BMGR to Border Patrol activities.

3) The Border Patrol as part of their action will provide a means to determine the level of incidental take that results from their activities.

Terms and conditions: *Terms and conditions implement reasonable and prudent measures and are mandatory requirements.*

To implement Reasonable and Prudent Measure number 1:

1) (b) (7)(E) and administrative road usage by Border patrol vehicles.

2) Reduced speed limits on all roadways in current pronghorn habitat as identified by AGFD surveys, will be implemented as appropriate to ensure that no Sonoran pronghorn are injured due to vehicles.

To implement Reasonable and Prudent measure number 2:

1) Within six months of the date of the opinion, the USBP will begin a study to determine the effects of noise, visual impacts, and night operations from helicopter overflights on Sonoran pronghorn.

2) The USBP will within one year of the completion of the BO begin a study with AGFD to determine the effects of Border Patrol activities on pronghorn during the fawning season.

3) All above studies and monitoring efforts will be coordinated with the Service.

To implement Reasonable and Prudent measure number 3:

1) A report of the results of all monitoring and study efforts, including complete and accurate records of all incidental take that occurred during the course of the actions described herein, will be submitted to the Service on a yearly basis unless otherwise directed. This report will also describe how each of the terms and conditions of all Reasonable and Prudent measures in this incidental take statement were implemented. The USBP will attach all maps, tables, a summary of meetings and contacts with agencies, and consultants reports produced during the year to the annual report.

Conservation recommendations: *Implementation of conservation recommendations is discretionary.*

1) The Border Patrol should attend the biannual meetings of the Flat-tailed Horned Lizard Management Oversight Group.

2) The Border Patrol should assign the environmental protection specialist to coordinate the effects of their activities statewide on listed species in order to reduce these impacts where possible.

3) The USBP should continue participation in ecosystem partnerships with other federal agencies in Sonoran pronghorn habitat.

4) (b) (7)(E)

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 640-2720 FAX: (602) 640-2730

In Reply Refer To:

AESO/SE
2-21-96-F-334

September 5, 2000

(b)(6)
Headquarters Facilities and Engineering Division
U.S. Department of Justice, HQENG 10/9.2.6
Immigration and Naturalization Service
425 I Street NW
Washington, DC 20536

Attn: (b)(6)

Subject: Biological Opinion on United States Border Patrol Activities in the Yuma Sector, Wellton Station, Yuma, Arizona

Dear (b)(6)

The U.S. Fish and Wildlife Service (Service) has reviewed the revised biological assessment and other supporting documents on the Border Patrol's activities in Yuma County, the Barry M. Goldwater Range (BMGR) and Cabeza Prieta National Wildlife Refuge (CPNWR). This document transmits the Service's biological opinion on the effects of the Border Patrol's actions on Sonoran pronghorn (*Antilocapra americana sonoriensis*) in accordance with section 7 of the Endangered Species Act of 1973, as amended, (16 U.S.C. 1531 et seq.). Your January 29, 1999, request for formal consultation was received on February 8, 1999.

This biological opinion is based on information provided in the February 1999 biological assessment (BA); telephone conversations between our staffs including (b)(6) (b)(6) (b)(6) field investigations; meetings; correspondence; and other sources of information. A complete administrative record of this consultation is on file in this office. The BA addressed the following endangered, threatened, and proposed listed species: Sonoran pronghorn (*Antilocapra americana sonoriensis*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), peregrine falcon *(Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), and lesser long-nosed bat *(Leptonycteris curasoae yerbabuenae*). Border Patrol/INS determined that the proposed action is likely to adversely affect the Sonoran pronghorn and is not likely to adversely affect the cactus ferruginous pygmy-owl, peregrine falcon, bald eagle, and lesser long-nosed bat. Your agency has also concluded that the proposed action will not affect the following species: Nichol's turk's head cactus *(Echinocactus horizonthalonius var. nicholii*), brown pelican

(*Pelecanus occidentalis*), Yuma clapper rail (*Rallus longirostris yumanensis*), southwestern willow flycatcher (*Empidonax traillii extremus*), and razorback sucker (*Xyrauchen texanus*) within the area of the Border Patrol, Yuma Sector jurisdiction; therefore they will not be addressed further in this consultation. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, border patrol activities and their effects, or on other subjects considered in this opinion.

During this consultation, the mountain plover (*Charadrius montanus*) was proposed to be listed as a threatened species in the Federal Register on February 18, 1999 (USFWS 1999). On April 14, 1999, we received the Border Patrol determination letter stating that the INS/ Border Patrol activities in the Yuma Sector may affect, but are not likely to adversely affect the mountain plover.

The Service concurs with the Border Patrol's determination that the proposed action is not likely to adversely affect the cactus ferruginous pygmy-owl, bald eagle, lesser long-nosed bat, and mountain plover. All concurrences will be found in Appendix A.

CONSULTATION HISTORY

The following is a brief summary of the history leading up to the issuance of this biological opinion. A complete administrative record is available in our files.

On June 23, 1997, the Service received a letter initiating informal consultation on Border Patrol/INS aircraft and vehicle activities within the range of the Sonoran pronghorn. Also enclosed was a draft activity effect assessment document which gave preliminary information on Border Patrol activities in Yuma County, Arizona, and requested concurrence on those activities. The Service responded to the draft activity document on July 16, 1997, stating that it did not agree that the effects of the Border Patrol activities were insignificant and discountable. The Service recommended that the Border Patrol gather additional information to adequately describe all the activities they are conducting and their effects on all listed and proposed listed species in the Yuma County area.

On August 7, 1997, the Border Patrol responded to the Service's July 16, 1997 letter and requested informal consultation on their activities at Wellton Station and guidance in deciding on whether formal consultation would be required. On September 9,1997, the INS consultant, USBP agents, an INS Washington Office representative, and the Service met for the initial section 7 consultation meeting. On December 1, 1998, the INS sent a letter to the Service regarding the draft BA and requesting formal consultation for the Yuma office of the Border Patrol and the initiation of informal consultation with the Tucson office of the Border Patrol. On January 29, 1999, the Service received the third draft of the BA for the Yuma Border Patrol activities, which included a letter from INS requesting the initiation of formal consultation. On March 22, 1999, we sent a letter to the INS initiating formal consultation on the Yuma Sector

and advising you of the proposed listing of the mountain plover (*Charadrius montanus*) on February 18, 1999. A letter was received on April 14, 1999, from the INS with a determination that the proposed action was not likely to adversely affect the mountain plover. On March 9, 2000, the Service transmitted the draft biological opinion on the subject action to the INS for review and comment. On May 19, 2000, the INS transmitted comments on the draft biological opinion to the Service. A complete administrative record of this consultation is on file at this office.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The Border Patrol mission is the detection and prevention of smuggling and illegal entry into the United States. The Wellton Station patrol area is the international boundary with Mexico from (b) (7)(E)

The officers of the INS/Border Patrol receive their legislatively granted authority primarily through Title 8 and 18 of the United States Code (U.S.C.), and other statutes relating to the immigration and naturalization of aliens. Secondary sources of authority are administrative regulations implementing these statutes, mostly those found in Title 8 of the Code of Federal Regulations (8 CFR§ 287), judicial decisions, and administrative decisions of the Board of Immigration Appeals. Also under Titles 19 and 21 U.S.C., INS officers can be cross-deputized by U.S. Customs and the Drug Enforcement Administration.

The Border Patrol has been conducting operations to interdict undocumented aliens and contraband, and to conduct search and rescue operations in southwestern Arizona since the 1920s. Fixed-wing aircraft supplemented ground patrols in the 1940s, and drag roads (ie.-graded dirt roads over which a trailer is pulled to erase tracks) were initiated at the same time to aid in detection of border crossings. Helicopter patrols were initiated in 1983. Both drag roads and helicopter surveillance continue today to be the primary means of detecting aliens and drugs in the patrol area covered by this consultation.

The Border Patrol, Yuma Sector- Wellton Station, the subject of this consultation, is responsible for patrolling over 3000 square miles of territory corresponding with the (b) (7)(E) of the BMGR and Cabeza Prieta NWR between (b) (7)(E) and the Mexican border. Border Patrol activities within the Yuma Sector/Wellton Station include helicopter and ground patrols; drag road preparation and assessment of road maintenance; remote sensor installation and maintenance; apprehensions and rescues; and assistance to other Sectors and agencies. The Yuma Sector rarely receives support from the Tucson Sector which operates primarily in Pima, Santa Cruz, and Cochise counties.

This consultation addresses the potential impacts of the above ongoing and future activities of the U.S. Border Patrol, Yuma Sector/Wellton Station.

Helicopter Operations

The Border Patrol maintains a fleet of three OH-6A observation helicopters with a lift capacity of four persons. Daily flights are made with these helicopters from the Marine Corps Air Station at Yuma that typically last (b) (7)(E) and follow a loop route (b) (7)(E)

(b) (7)(E)

tracks of persons or vehicles which may have illegally entered the United States, or those of possibly stranded tourists. The helicopter flies along established dirt roads and trails at an elevation of (b) (7)(E) above ground level (AGL). All Border Patrol flights are restricted by the Federal Aviation Agency to operate in a restricted airspace below a (b) (7)(E) ceiling because of the Air Force and Marine Corps Military Flights being conducted in the airspace above them over the BMGR and sometimes CPNWR. A typical flight loop is approximately (b) (7)(E) with about 90 miles (40%) within Sonoran pronghorn habitat, and of that, 60 miles (25%) are within (b) (7)(E), and the rest(130 miles), are over (b) (7)(E) and developed areas.

Periodically, helicopters stationed out of Yuma must fly to the Border Patrol Station at Why, Arizona, to refuel before returning to Yuma. When flying to Why, Border Patrol helicopters fly at (b) (7)(E) ceiling mentioned previously. Fuel flights to Why occur approximately four to five times a month. Typically the pilots follow the (b) (7)(E) (b) (7)(E) then head northeast to Why.

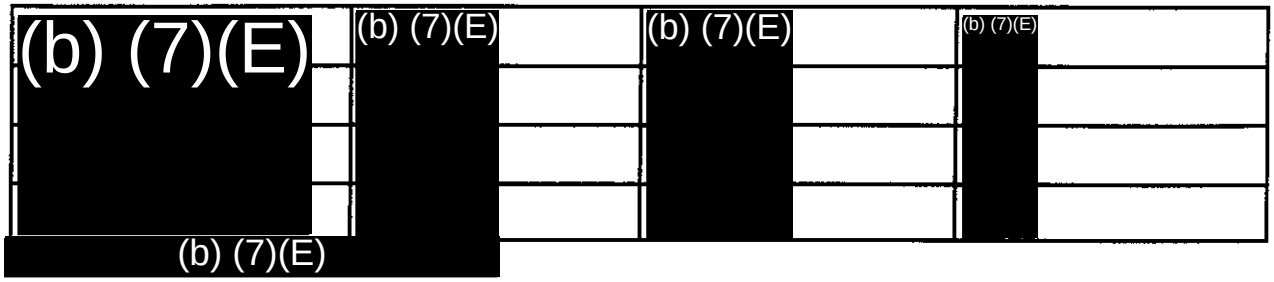
Night helicopter operations are performed on an on-call basis from ground unit requests. Night missions occur (b) (7)(E) and are usually conducted (b) (7)(E) When suspect vehicles are sighted, (b) (7)(E) before making contact.

Because the Border Patrol is conducting law enforcement operations it periodically has to modify its activities to match changes in entry pattern and trends. Helicopter operations also have to adjust to these changes. For example, in late 1998, three new entry locations resulted in a slight change in the flight patrol pattern to cover these areas. Similar changes will likely occur in the future.

Ground Activities

The Border Patrol has been preparing drag roads north and west of CPNWR since the 1940s. Typically a drag road is a road or well used trail, historically traveled or crossed by illegal aliens along a general route of travel from the international border northward. The surface of these dirt roads are prepared by dragging several bolted together tires across the surface at a speed of around (b) (7)(E) an hour (Figure 1). These drag roads are instrumental in helping Border Patrol agents detect sign or evidence of crossings by people or vehicles (Figure 2). The actual portions of roads subject to dragging change as entry patterns change. The Border Patrol currently works approximately 110 miles of roads. Total usable roads are 206 miles in length. No drag roads are within (b) (7)(E) Each drag road is prepared (b) (7)(E) on the average. Dragging activities occur somewhere in the Yuma Sector about every (b) (7)(E) Patrolling speeds on the drag roads average (b) (7)(E) miles an hour. A listing of the drag road locations and dimensions is as follows:

(b) (7)(E)			
(b) (7)(E)	(b) (7)(E)	(b) (7)(E)	(b) (7)(E)



The Border Patrol has implemented 24-hour patrols in the Wellton Station area since June 1988. However, the use of these patrols is dependent on staffing levels, equipment, and operational requirements.

Access roads used by the Border Patrol are maintained by heavy equipment in addition to the dragging. An INS road grader repairs and maintains the main access roads (b) (7)(E) usually during (b) (7)(E) Approximately 92 miles of access roads are graded to enhance entry and exit of Border Patrol vehicles.

The Border Patrol also maintains a remote sensor grid at various locations in the Wellton Sector area. These 50+ sensors are serviced (b) (7)(E) by Border Patrol technicians and consist of (b) (7)(E) Where possible they are serviced by vehicle (b) (7)(E)

(b) (7)(E)
(b) (7)(E) If it is detected, the pilot informs Wellton Station, and ground units are dispatched. Off-road pursuit by vehicles (b) (7)(E)
(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

Extreme temperatures are encountered in the Wellton Station area from May through October, and illegals contacted during this time period in the desert are usually severely dehydrated. As a result, most tracking operations during this time period are rescues. Border Patrol reports show that from 1979-1998, over 288 persons were rescued by the Border Patrol and over 60 bodies have been found. From October 1995 to December 1998, Wellton agents recorded 4559 illegal entrants, 2633 apprehensions, 137 rescues, and 2 fatalities.

(b) (7)(E)

Most of the Wellton Station activities occur within their normal patrol area. Once or twice a year they are asked to assist Tucson Sector on an as-needed basis. In addition to refueling at the Ajo Station, the Wellton helicopters are asked to assist in search and rescue in the area. Also they look for undocumented aliens on the (b) (7)(E)

The Border Patrol supplies considerable assistance to AGFD, BLM, and CPNWR to facilitate their resource protection missions. The USBP supplies helicopter support to the refuge on an as-needed basis for repair of refuge communication/repeater system and wildlife water development inventories. The Border Patrol also assists the refuge in the retrieval of radio-collars from Sonoran pronghorn mortalities, search and rescue operations with lost recreationists, and illegal off-road vehicle activity reporting.

Conservation Measures

The use of helicopters by the Border Patrol (b) (7)(E) Wellton Station patrol area. To reduce the potential impacts to Sonoran pronghorns and other noise sensitive species, the Border Patrol is proposing to replace the existing OH-6A helicopters with the new 50% quieter MD600N. This replacement is scheduled to start in FY 2002.

While the Border Patrol cannot eliminate low level helicopter flights and still conduct its mission, it can modify the routes to reduce the impacts to listed species as much as possible. On September 9, 1997, the Border Patrol met with the Service and AGFD and agreed to shift a patrol corridor west and south to avoid completely the (b) (7)(E) which are pronghorn fawning areas. Similar flight route modifications will be conducted as necessary in the future.

(b) (7)(E)

The Border Patrol will make weekly contacts with the AGFD in Yuma or CPNWR for an update on the weekend telemetry flights so that areas of pronghorn concentrations can be avoided by ground and air units where possible.

In order to continue improving interagency communication, the Border Patrol, Wellton Station, will make confidential monthly reports to the manager of CPNWR detailing the law enforcement actions in the last month and wildlife observations made under the guidelines from the refuge. Every attempt will be made to avoid contact with Sonoran pronghorns by Border Patrol helicopters and ground units.

In order to formalize the relationship between the Border Patrol and CPNWR, the draft Memorandum of Understanding between the two agencies will be finalized in year 2000. The MOU will address objectives that will minimize potential conflicts between the parties including the limiting of routine patrols and off-road use in wilderness, and provide a framework for cooperation. As part of this agreement, the Border Patrol will agree to furnish CPNWR, when available, aircraft support for game inventory, water hole and remote sensing maintenance, patrol for stranded motorists, and search and rescue.

In order to improve communication between the agencies, the Border Patrol and the Service will conduct an annual meeting during which the Border Patrol will present an annual report to the Service summarizing their activities and observations on the range and discuss ways of improving communication and minimizing impacts to listed and proposed species, and species protected by conservation agreements.

Summary of Conservation Measures

As part of the Proposed Action the Border Patrol has agreed to implement the following actions:

1) Purchase new, quieter MD600N helicopters to replace existing OH-06As.

2) Coordinate with AGFD weekly to obtain current pronghorn locations to avoid concentration and fawning areas.

3) Modify helicopter routes from April through June to avoid fawning areas.

4) Continue to make monthly reports of activities and wildlife observations to the CPNWR manager.

5) Finalize Border Patrol and CPNWR MOU.

6) Conduct an annual interagency meeting with CPNWR, FWS, and Bureau of Land Management (BLM) to present the annual report and discuss ways to improve coordination.

STATUS OF THE SPECIES

-Sonoran Pronghorn (*Antilocapra americana sonoriensis*)

The Sonoran pronghorn was listed throughout its range as endangered on March 11, 1967 (32 FR 4001), and is currently recognized as one of five subspecies of pronghorn (Nowak and Paradiso 1983). The subspecies presently inhabits southwestern Arizona in the U.S. and northwestern Sonora in Mexico. Critical habitat has not been designated for Sonoran pronghorn.

A. Distribution and Abundance

-Arizona and California:

Prior to 1945 when the species was described (Goldman 1945), many of the collected specimens had been listed as different subspecies (AGFD 1981). Historically they ranged from Arizona's Highway 15 to the east; the Altar Valley and the Tohono O'odham Nation (formerly known as the Papago) to the north; and Imperial Valley, California, to the west (Wright and deVos 1986; and Nelson 1925, Monson 1968, Paradiso and Nowak 1971). Antelope were found in every open valley along the international boundary from Nogales to Yuma (Carr 1971), but by 1907 pronghorn were described by E.A. Mearns as a rare animal in the region (CPNWR 1980). Nelson (1925) stated that in 1923, local people reported that a few antelope were still ranging in the Santa Rosa Valley in Pima County, Arizona. No definite number was given, but Nelson did estimate that there were 105 Sonoran pronghorn in Arizona in 1924. Nichol (1941) estimated 60 antelope in southwestern Arizona in 1941, not including those found on Organ Pipe Cactus National Monument. Halloran (1957) said there were probably less than 1,000 Sonoran pronghorn in 1956. Carr (1970) observed the "sighting of eight antelope near Pisinimo on the Papago Indian Reservation which most likely drifted north from Mexico," and that "there have been numerous rumors of antelope in the Papago country"; however, no recent reliable observations have been made. Carr (1970) also stated that there "is a considerable amount of good Sonoran antelope habitat on the Papago Indian Reservation and particularly in the Great Plains area. However, indian hunting and grazing practices prohibit a lasting resident antelope population."

Literature and recent telemetry show that Sonoran pronghorn occur most frequently in the following Arizona areas (Carr 1972; Hall 1981): Pinta Sands, Growler Valley, Mohawk Valley, and San Cristobal Valley. Wright and deVos (1986) stated that observations in the Growler Valley were frequent and that the Mohawk Valley, San Cristobal Valley, and Goldwater AFR support herds of 10 to 20 animals during most of the year. Also mentioned was a regularly observed herd of 7 to 10 pronghorn in the Cameron tanks area. The results of telemetry studies in 1983-1991 indicate that Sonoran pronghorns nonrandomly use their habitats (deVos 1998). On Organ Pipe Cactus NM, Sonoran pronghorn are frequently observed during spring and

summer west of Highway 85. Sonoran pronghorn have not been confirmed east of Highway 85 in Organ Pipe Cactus National Monument since 1972.

A summary of population estimates from literature and field surveys for Sonoran pronghorn in the U.S. are as follows:

1925	-	Nelson estimated 105 in Arizona (Nelson 1925)
1941	-	Nichol estimated 60 in southwestern Arizona, excluding Organ Pipe Cactus NM (Nichol 1941)
1957	-	Halloran - less than 1000 (Halloran 1957)
1968	-	Monson - 50 in Arizona (Monson 1968)
1968 to 1974	-	Carr's ground observations; he estimated 50-150 (Carr 1974)
1981	-	Estimate of 100-150 Sonoran pronghorn in Arizona (AGFD 1981)
1992	-	Line transect aerial survey estimate of 246 for the U.S. (121 observed; Snow 1994)
1994	-	Line transect aerial survey estimate of 184 for the U.S. (109 observed; Snow 1994)
1996	-	Line transect aerial survey estimate of 216 for the U.S. (82 observed; Hervert et al. 1997a)
1996	-	Using a different method of mark-recapture on the same 1996 survey, estimate of 164 (Hervert et al. 1997a)

Observations of pronghorn were supposedly not uncommon along and east of Highway 85 many years ago. A lack of recent observations east of the highway, however, indicates that this heavily used road currently poses a barrier to eastward movement. On June 12, 1996, however, an adult doe Sonoran pronghorn was observed crossing Highway 85 (east to west) on the north end of the Crater Range (R. Barry, pers. comm., Luke AFB). There also exists an unconfirmed report of four Sonoran pronghorn attempting to cross Highway 85 in August 1993 about 1.5 km north of the Organ Pipe Cactus NM visitor center. A juvenile crossed the highway (two lanes) to the east, but with the approach of a vehicle, ran back across the road to join the three pronghorn there (T. Ramon, pers. comm., Luke AFB).

The 1992 U.S. range-wide aerial survey observed 121 pronghorn in 30 to 38 groups in Arizona; after statistically analyzing the data, the population was estimated at 246 animals. Not included in the 1992 aerial surveys were two locations north of Black Gap at the north end of the Sauceda Mountains on the Goldwater AFR, immediately west of Highway 85, and the entire Lechuguilla Desert to the west and northwest side of Cabeza Prieta NWR. The March 1994 U.S. aerial survey observed 109 pronghorn with 16 groups observed; the population estimate was 184 (Snow 1994). Up to this time, only the line transect method was used for aerial surveys of pronghorns (Johnson et al. 1991). The December 1996 U.S. aerial survey observed 71 pronghorn in 12

groups; the population estimate was 216. A mark-recapture methodology, using collared pronghorn, was also used in the December 1996 survey. The sighting rate of these marked pronghorn provided an independent population estimate of 164 animals (Hervert et al. 1997a). This survey was redone in December1998 producing a population estimate of 142 animals (Bright et.al. 1999).

Johnson et al. (1991) and Hervert et al. (1997a) felt that pronghorn observed on transects provide a more statistically valid estimate for evaluation of population trends. The number of pronghorn observed on transects declined from 99 and 100 on the previous two surveys to 71 on the 1996 survey. High fawn mortality in 1995 and 1996 and a loss of 8 of 16 radio-collared adult pronghorn during the previous 13 months indicate that the decline was real. During a three year period, five consecutive six-month seasons of below normal precipitation (summer 1994 through summer 1996) throughout most of the Sonoran pronghorn range, were likely responsible (Hervert et al. 1997b).

-Mexico

Historically, Sonoran pronghorn ranged from Hermosillo south to Kino Bay. Nelson (1925) reported that a few herds in northwestern Sonora, Mexico, moved back and forth across the Arizona border. On January 4, 1925, Ben Tinker, representing the Permanent Wild Life Protection Fund along the Sonora-Arizona border, reported that he had counted 595 pronghorn in Sonora in November 1924 (Carr 1974). The herds ranged from the southern end of the Sierra Rosario, south and east to the Sierra Blanca and the Rio Sonoyta, to the eastern side of the Sierra de San Francisco. Villa (1958) estimated there were over 100 antelope in northwestern Sonora in 1957.

On the basis of sightings and confiscated specimens, Monson (1968) stated that the Sonoran pronghorn persisted in some localities along the east side of the Pinacate Lava Flow in Mexico southward to about 300 km south of Puerto Libertad in Mexico.

In Mexico, Sonoran pronghorn have been sighted just to the east of Sonoyta, directly south of Lukeville on the border; northeast, east, and southeast of Puerto Peñasco; and on all sides of the Sierra Pinacate. A number of Sonoran pronghorn were sighted east of Puerto Peñasco during the March 1993 aerial survey. Surveys to be conducted in Mexico should include regions with suitable habitat from Kino Bay, north through the historic range, to the southern extent of the recent aerial surveys. This would provide coverage of all areas with historic records for this subspecies (J. deVos, AGFD, pers. commun.). In Mexico, Sonoran pronghorn range near the Pinacate Lava flow, in the open valley between the lava flow and Caborca, and south to possibly near Kino Bay.

Population estimates from literature and field surveys for Sonoran pronghorn in Mexico are:

1925 - Nelson reported 595 in Sonora (Nelson 1925)
1957 - More than 1,000 in northwestern Sonora (Villa 1958)
1981 - Estimates in Mexico 200-350 (AGFD 1981)
1993 - Line transect survey estimate for Mexico of 313 (242 observed; Snow 1994)

In Mexico just south of the U.S. border, 242 animals were observed using the line transect method in a March 1993 aerial survey, giving a population estimate of 313 (Snow 1994). However, because no surveys have been conducted in Mexico since 1993 and the original survey was not exhaustive, no statistically valid estimate on the Sonoran pronghorn population in Mexico is currently available.

It has been six years since the last aerial survey was done in Mexico. A lack of funding, monitoring, and research on this portion of the population limits current management efforts. So statistically valid estimates on the Sonoran pronghorn population in Mexico are not available.

The estimate of the entire Sonoran pronghorn population, in the U.S.(142) and Mexico (266) is approximately 408 pronghorns.

C. Current Limits to Distribution

Highways, fences, railroads, and irrigation canals are physical deterrents to future expanding pronghorn populations. Highway 2 in Mexico runs parallel to the south boundary of Cabeza Prieta NWR in the vicinity of refuge pronghorn habitat at Pinta Sands. This highway receives a considerable amount of fast-moving vehicular traffic. In 1999, Dr. Rodrigo Medellin of Instituto de Ecologia, reported that Sonora, Mexico is planning to widen and improve Highway 2 to four lanes. Both Cabeza Prieta NWR and Organ Pipe NM have boundary fences along the border. The refuge south-boundary seven-strand livestock fence continues to be a substantial barrier.

Modifying the fences along the U.S./Mexico border to allow pronghorn passage could aid in maintaining genetic diversity if sufficient pronghorn movement did occur, but it might also lead to increased pronghorn fatalities from motorized traffic on Highway 2. Mexico has been involved in discussions regarding the fences because any fence modifications could affect pronghorn populations in both countries.

Highway 85 between Gila Bend and Lukeville, Arizona, also appears to be a barrier to Sonoran pronghorn movement eastward. Traffic volume and average speeds have increased substantially over the last 30 years as international trade and tourism have increased. This highway corridor is unfenced in Organ Pipe Cactus National Monument to allow free movement of pronghorns but

has livestock fencing on both sides for most of the remaining mileage on BLM and private lands between Interstate 8 and Organ Pipe Cactus National Monument. Interstate 8 and adjacent agriculture areas act as barriers for northward movement of Sonoran pronghorn. BLM grazing allotment interior fences also offer significant barriers to eastward movement of pronghorns from Cabeza Prieta NWR.

D. Habitat

Brown (1982) discussed seven subdivisions of the Sonoran Desert, two of which encompass the habitat of Sonoran pronghorn. These are the Lower Colorado River Valley and the Arizona Upland. Creosote (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) make up a major portion of the Lower Colorado River Valley subdivision. Species along major water courses include ironwood (*Olneya tesota*), blue palo verde (*Cercidium floridum*), and mesquite (*Prosopis* spp.). In associated microphyll woodlands, species in the Arizona Upland include foothill palo verde (*Cercidium microphyllum*), catclaw acacia (*Acacia greggii*), along with jumping cholla (*Opuntia fulgida*), teddy bear cholla (*O. bigelovii*), buckhorn cholla (*O. acanthocarpa*), and Staghorn cholla (*O. versicolor*).

Data collected from radio-collared animals and fecal pellet analysis have provided some data on habitat used by Sonoran pronghorn. Although most of the habitat is within federally protected lands, various uses of these lands may affect their suitability as habitat for Sonoran pronghorn.

-Topography

The habitat of the Sonoran pronghorn in the U.S. consists of broad alluvial valleys separated by block-faulted mountain and surface volcanics. Elevations in these valleys vary from 122 m near the Mohawk Valley in the west to 488 m in the Valley of the Ajo to the east. Major drainages run north and south. The mountains are of two major types: a sierra type, composed of metamorphic and granitic rock; and a mesa type, typically of basaltic composition. Only the Ajo Mountains exceed 1,219 m in elevation. The mountain ranges run northwest to southeast with valleys draining to the north towards the Gila River and to the south towards Rio Sonoyta in Mexico. These valleys are fairly level and are dominated by creosote and white bursage. In December 1984, 40 percent of the pronghorn observed during a telemetry flight were in the Growler Valley, from the Aguila Mountains to the International Border. AGFD (1985) reported that pronghorn used flat valleys and isolated hills to a greater degree than other topographic features.

Washes flow briefly after rains during the monsoon season and after sustained winter rains. The network created by these washes provides important thermal cover for Sonoran pronghorn during the hot summer season. Drainages and bajadas are used during spring and summer. Bajadas are used in spring as fawning areas. Pronghorn were observed using palo verde, ironwood, and mesquite in the microphyll woodlands for cover during weekly AGFD telemetry flights, which started in 1994 and have continued through 1999.

Pronghorn were observed in playas in April and May of 1988 and 1989 when forbs were abundant, later vacating these areas when desiccation of forbes occurred (Hughes and Smith 1990). In good rain years, some playas produce abundant forbs as a result of water collection through its inability to percolate through the hardpan.

Some of the sandy areas within Sonoran pronghorn habitat such as Pinta Sands, the Mohawk Dunes west of the Mohawk Mountains, and the west side of the Aguila Mountains, provide a greater variety of seasonal vegetation when precipitation events occur. The openness of these areas appears to be attractive for pronghorn as the annuals, grasses, and shrubs provide good forage, particularly in the spring. These areas have long been considered significant Sonoran pronghorn habitat in the U.S. Carr (1974) reported seeing Sonoran pronghorn frequently in the Pinta Sands area. These dunes are important in the spring when annuals are present. Due to the more arid nature of valley and dune habitats, annuals dry and cure with decreased palatability as summer approaches. Also, these habitats lack sufficient woody vegetation to satisfy pronghorn requirements for nutrition and thermal protection. These factors limit the temporal suitability of these areas and most pronghorn have moved to bajada habitat in the southeast portion of the range by early summer.

E. Life History

-Movement

Hot and dry seasonal movements of pronghorn from the lower elevations north in the winter to the high elevations south in the summer are reported by Wright and deVos (1986). Movements correlate with high temperatures and are most likely motivated by the need for moisture available in succulent cactus such as chain fruit cholla (Hervert et al. 1997b). Sonoran pronghorn tend to occupy valley floors and bajadas in their western U.S. range in winter, but tend to move south and east and up slope so that some individuals are found in foothill locations by midsummer.

-Disturbance Factors

Studies of captive pronghorn other than Sonoran, have shown that they are sensitive to disturbance such as human presence and vehicular noise. Human traffic, like a person walking past pronghorn in an enclosed pen, running past, a motorcycle driving past, a truck driving past, a truck blowing its horn and driving past, or a person entering a holding pen, cause an increased heart rate response in pronghorn. In a study in Ogden, Utah, these various types of disturbance were correlated with changes in heart rate on American pronghorn, which were in half-acre holding pens (Workman et al. 1992). Additionally, the highest heart rate responses occurred with female pronghorn when a person entered a holding pen, or a truck was driven past their pen while sounding the horn. The lowest response occurred when a motorcycle or truck was driven past their pen. Other investigators have shown that heart rate increases in response to auditory or

visual disturbance in the absence of overt behavioral changes (Thompson et al. 1968, Cherkovich and Tatoyan 1973, Moen et al. 1978).

Sonoran pronghorns are built for running. A pronghorn on good range can canter effortlessly at 40 kph, gallop without straining at 70 kph, and run flat out at speeds of 90-100 kph(Byers 1997). During an aerial reconnaissance, one herd of Sonoran pronghorn was observed 1½ hours later and 18 km away from the initial observation location (Wright and deVos 1986). Hughes and Smith (1990) found that pronghorn ran immediately from a vehicle to about 400 to 500 m distant and that military low-level flights (<500 feet) over three pronghorn caused them to move about 100 m from their original location. During times of good forage, disturbances like these would have little effect. During drought times, disturbances that cause pronghorns to startle and run distances would have a more significant energy effect.

ENVIRONMENTAL BASELINE

- Sonoran Pronghorn

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation. The environmental baseline is a snapshot of the species health at a specific point in time. It does not include the effects of the action under review in the consultation.

a. Status of the species within the action area-U.S. and Mexico

Pronghorn habitat has been recently affected by several years of Sonoran Desert drought and one El Niño year with above normal moisture. Normal annual precipitation in this area averages 127 mm in a bimodal pattern occurring from December to February and during summer monsoons, which occur any time from July until September. Summer rains occur typically as thunderstorms and are spotty in their distribution and precipitation.

As late as 1994, the estimated population of Sonoran pronghorn using distance sampling methods was more than 200 individuals. The results of an aerial survey, conducted in December 1996, suggest that the most reliable estimate (based on capture-recapture estimates using collared individuals) of the current population is 130-160 individuals (J. Hervert, pers. comm. 1997). The decrease in the population may be attributable to periods of drought in 1994 (November), 1995 (summer), and 1996 (winter). Because available food was not as abundant during this period, pronghorn may have been forced to use habitat where they are more vulnerable to predation. Lack of water may also be a factor affecting the condition of the pronghorns.

In 1995, there was abundant rainfall in the spring. Productivity of Sonoran pronghorn was between 1 and 1.4 fawns per doe. In July, the ratio of fawns to does was as high as 50/100. However, as drought conditions set in from July to December most fawns died. Recruitment for the year was 12 fawns per 100 does.

Drought conditions continued in 1996. Productivity was only 33 fawns per 100 does. The fawns that were produced died very quickly. The AGFD could not detect a single fawn surviving in the range of the Sonoran pronghorn in the United States in 1996; recruitment was zero. At a recent population viability analysis workshop conducted for the Sonoran pronghorn, recruitment at a level of 35 fawns per 100 does was deemed to be necessary for the subspecies to persist (Hervert 1996).

Adult mortality has been very high in the winter drought periods. Overall, of the 22 Sonoran pronghorn that were collared in the last few years, predation may account for 10 and possibly more of the known mortalities, which were labeled as "cause unknown" due to insufficient evidence. No collared pronghorn mortalities were documented during the height of the drought season. Capture myopathy may have played a role in up to four of the mortalities (J.Hervert 1997b). Where possible (the majority of documented mortalities) bone marrow condition was assessed. Only one specimen was determined to be in poor to fair condition while all others were determined to be in good condition. No evidence of predation of pronghorn has been documented near water sources (J. Hervert, AGFD, pers.comm. 1997).

b. Factors affecting species' environment within the action area

Factors affecting pronghorn within the action area in the U.S. include military activities, historic livestock grazing, agricultural development, and recreation. Most livestock grazing has been eliminated from the current habitat with the exception of a few BLM allotments around Ajo. However, 150 years of grazing has substantially altered the vegetation in the range of the Sonoran pronghorn and it will take many decades for this area to recover measurably from this impact. Pronghorn range continues to be limited by state and interstate highway corridors even with wildlife proof fencing, although this also limits highway mortalities. The international border with Mexico also has a substantial fence barrier which effectively prevents movement between the two populations, but it also prevents animal mortality from Mexico Highway #2. Recreation activities are highly controlled in current pronghorn habitat. Both Cabeza Prieta National Wildlife Refuge and Organ Pipe National Monument are wilderness areas with very limited roads. The BMGR has access by "permit only" areas or is closed due to the use of explosive ordnance. Military activities continue to be one of the main impacts and uses in Sonoran pronghorn habitat.

From 1986 to the present there have been 12 formal consultations which include the Sonoran pronghorn habitat, and 10 Biological Opinions which include pronghorns in their associated take statements as follows:

1) Mohawk Valley Water Tank Installation-Cons#2-21-86-F-81. This was an intra-Service consultation with CPNWR to install a guzzler for pronghorns. No take statement was included for the tank. If any take was observed as a result of the installation of the tank, it would be removed.

2) The project was a study to capture, collar, and monitor Sonoran pronghorn on CPNWR with several cooperating agencies-Cons#2-21-88-F-6. No take was authorized for this project. If any incidents occurred the study would be terminated and consultation re-initiated.

3) F-15E Beddown Project at Luke Air Force Base affecting the Goldwater Range-Cons#2-21-89-F-008. This Air Force consultation involved an aircraft replacement with a corresponding increase in night and low level operations. The take statement allowed an unquantified number of Sonoran pronghorn to be harassed.

4) Lower Gila South Resource Management Plan-Goldwater Amendment-Cons#2-21-90-F-042. This BLM planning document gave specific and general management guidance for non-military activities on the BMGR. It included directives to integrate military and non-military activities, utility corridor placement, water development, baseline soils, plants, and cultural surveys. Also three Areas of Critical Environmental Concern (ACECs), a Special Recreation Management Area, a Habitat Management Area, and a Backcountry Byway were considered. The opinion requires the BLM to consult when site-specific plans are prepared. No incidental take statement was issued because there were no specific projects listed that might result in take.

5) Lower Gila South Habitat Management Plan-Cons#2-21-89-F-213. This Phoenix BLM planning document gave management guidance for both specific and general actions in southwest Arizona. Four actions are addressed in the HMP including the exchange of 640 acres by Ajo, rehabilitation work on 2 catchments, and assessment of livestock removal from pronghorn habitat. This document advises the BLM to consult once site specific project documents are prepared. No incidental take statement was included because no specific projects were in the proposed action.

6) This project included existing and proposed activities by the MCAS- Yuma in the Arizona portion of the Yuma Training Range Complex-Cons#2-21-95-F-114. The activity uses included changes to military flights over CPNWR, ongoing flights over the BMGR, and operation of various training facilities. The anticipated take was one pronghorn in 10 years due to direct mortality and an undetermined number in the form of harassment.

7) The consultation covered the use of ground-surface and airspace for Air Force military training on the Barry M. Goldwater Range which may affect the Sonoran pronghorn-Cons#2-21-96-F-094. This project was initially covered by a five month interim Biological Opinion which expired when the final was signed. The take statement anticipated take in the form of harassment of two Sonoran pronghorn every ten years and take in the form of death of one pronghorn every ten years.

8) This project concerned the General Management Plan for Organ Pipe Cactus National Monument-Cons#2-21-89-F-078. The purpose of the document was to guide the future management of the Monument for the next 10-15 years including eight specific actions including the modification of the fences along the border of the monument to pronghorn standards. The take statement anticipated the take of one Sonoran pronghorn either by injury or death on SR-85.

9) Lower Gila Resource Area Amendment, BLM-Cons#2-21-95-F-269. This amendment addressed southwestern willow flycatcher in the plan area. The take statement was concerned only with flycatchers. However the management area boundary includes the north and south tactical ranges (TACs) which often have pronghorn, and addresses the closure of the area to recreation by permit access only.

10) This consultation with the BLM covered cattle grazing in Sonoran pronghorn habitat, specifically five allotments in the vicinity of Ajo, AZ-Cons#2-21-94-F-192. The consultation was requested because the BLM was proposing to change the use/preference (base allotment of AUMs) for the five Ajo grazing allotments. The consultation required that the BLM have a biological monitor at all maintenance activities, that the range condition be monitored within a five year period since it was last done in 1980-1981, and to do a yearly report of all monitoring and incidents. The anticipated take that was expected to occur every 15 years was one Sonoran pronghorn due to harassment and one in the form of death.

11) Yuma District Resource Management Plan and Amendments-Cons#2-21-97-F-082. This document covers seven Yuma District BLM planning documents and eight listed species. The Service concurred with the BLM that the proposed action was not likely to adversely affect 4 species, including the Sonoran pronghorn. Livestock grazing and ORV activities do not occur in pronghorn habitat in the plan area therefore impacts are not expected.

12) Lower Gila South Resource Management Plan and Amendment-Cons#2-21-85-F-069. This document covers four BLM state office planning documents for four listed species including the Sonoran pronghorn. The Service concurred that two species were not likely to be adversely affected and consulted formally on the other two, which included the Sonoran pronghorn. The anticipated take was defined in terms of degradation of habitat by fences and loss of food plants to livestock. Any decline in forage quality or increase in fencing would exceed the level of incidental take.

In summary, from the anticipated take in the ten biological opinions, the Service authorized the potential death of four pronghorns and the harassment of pronghorn in five projects if agencies complied with reasonable and prudent measures and implementing terms and conditions. To date, no action agency has documented take due to either harassment or direct mortality.

EFFECTS OF THE ACTION

Currently, no studies have been conducted in Yuma County to determine the effects of any border patrol activities on Sonoran pronghorn. There are no documented Sonoran pronghorn mortalities that have been directly linked to border patrol activity, though the causes of several mortalities have been undeterminable. The following is a discussion of the most probable types of effects that Sonoran pronghorn may experience on the BMGR and Cabeza Prieta NWR in Yuma County.

Direct injury to pronghorns could occur as a result of border patrol vehicle collision or by low level helicopter flights abruptly approaching and startling pronghorn so that they startle into

escape behavior that results in injury or abandonment of fawns. Luke Air Force Base flight operations occur down to (b) (7)(E) Border Patrol helicopters must operate below this level at (b) (7)(E) or less, which increases the chance of any encountered pronghorn being startled.

Border Patrol operations in the (b) (7)(E) and further west in Yuma County are outside the known, current range of Sonoran pronghorn based on telemetry data collected between November 1994 and September 1998. Based on these data, few pronghorn have occurred west of the (b) (7)(E) Therefore, pronghorn appear to be most at risk of death or injury from Border Patrol activities east of the (b) (7)(E) (b) (7)(E)

Sonoran pronghorn may also be affected by noise and visual impacts of aircraft overflights. Pronghorn have been exposed to aircraft overflights on BMGR since 1941. No detailed studies of the effects of aircraft overflights on Sonoran pronghorn have been completed, though apparent responses to aircraft overflights by Sonoran pronghorn have been observed by Hughes and Smith (1990), who noted that several pronghorns overflown by low flying military aircraft moved less than 100 yards from their previously noted positions. In comparison, American pronghorns have reacted to helicopter overflights with either no reaction at 1000 meter approach to running at 150 meters approach. The report suggested that behavioral changes in wild animals such as running or avoidance behavior, caused by loud or sudden noises, can increase energy expenditures that could lead to lower rates of reproduction and survival. deVos (1989) concluded that military activity sites on the BMGR did not negatively affect Sonoran pronghorn movements and in fact Sonoran pronghorn use was higher than expected around military use sites; however he recommended that further studies be conducted on the effects of military activities, including overflights, on pronghorns. Hughes and Smith (1990) had numerous observations of pronghorns reacting to vehicles and foot traffic where the pronghorns became aware and alerted to movements. They concluded that such vehicle and people disturbances occur often especially in the hottest, driest times of the year, and pronghorns could be detrimentally affected by the increased energy expenditure and water loss from this movement.

Additional studies by Workman et. al. (1992) showed American pronghorn antelope reactions to human and aircraft overflights by jets at sub-sonic and super-sonic levels, Cessna 182, and Huey helicopter overflights. Antelope appeared to partially habituate to the sound levels in the military jet and small propeller airplane overflights. However, they showed the greatest heart rate change and excitable behavior to helicopter overflights and hoverings with no apparent habituation. The antelope even began to anticipate the helicopter overflights by showing alert behavior and gradually elevating heart rates as the helicopters could be heard. Changes in heart rate and body temperature were also noted when persons walked past the antelope, drove past, or when a person entered the enclosure.

Various noise impact studies have been conducted on other species, but there is no consensus as to their applicability to Sonoran pronghorn. A recent study by Workman et. al.(1992) observed

similar flight reactions and elevated pulses and temperatures in elk and bighorn sheep in their study. The strongest reactions were with the Huey helicopter flyovers and hoverings. Both the elk and sheep in this study habituated to the military jet and small propeller aircraft after several trials but not to the helicopters.

The effects of the Border Patrol activities may be similar on Sonoran pronghorns to those mentioned above. In order to reduce these effects the Border Patrol is proposing to replace their current helicopters with 50% quieter ones. To further reduce their low level flight impacts the Border Patrol has modified their standard patrol routes in the past in coordination with AGFD and Cabeza Prieta NWR. Similar flight route modifications will be made in the future as they are indicated.

(b) (7)(E)

The Border Patrol will make weekly contacts with the AGFD in Yuma or CPNWR for an update on the weekend telemetry flights so that areas of pronghorn concentrations can be avoided by ground and air units where possible.

In order to continue improving interagency communication, the Border Patrol, Wellton Station, will make confidential monthly reports to the manager of CPNWR detailing the law enforcement actions in the last month and wildlife observations made under the guidelines from the refuge. Every attempt will be made to avoid contact with Sonoran pronghorns by Border Patrol helicopters and ground units.

In order to formalize the relationship between the Border Patrol and CPNWR, the draft Memorandum of Understanding between the two agencies will be finalized in 2000. The MOU will address objectives that will minimize potential conflicts between the parties including the limiting of routine patrols and off-road use in wilderness, and provide a framework for cooperation. As part of this agreement, the Border Patrol will agree to furnish CPNWR, when available, aircraft support for game inventory, water hole and remote sensing maintenance, patrol for stranded motorists, and search and rescue.

In addition to the above activities, in order to improve communication between the agencies, the Border Patrol and the Service will conduct an annual meeting during which the Border Patrol will present an annual report to the Service summarizing their activities and observations on the

range and discuss ways of improving communication and minimizing impacts to listed and proposed species, and species protected by conservation agreements.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The AGFD is anticipated to continue aerial surveys of the Sonoran pronghorn population, telemetry flights to track collared pronghorn, and attempts to radio-collar additional pronghorn. The latter action has had some adverse effect on Sonoran pronghorn. Since the project area occurs on the lands under Federal jurisdiction, it is not likely that other actions that might affect listed species would not be a Federal action subject to additional Section 7 consultation.

CONCLUSION

After reviewing the current status of Sonoran pronghorn, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the Sonoran pronghorn. No critical habitat has been designated for this species, therefore, none will be affected.

Our rationale is as follows:

1) Sonoran pronghorn have persisted in Yuma County over a period of 70 years while being subjected to the same types of activities on which the Border Patrol is consulting.

2) Sonoran pronghorn are expected to continue to remain in areas where Border Patrol activities occur and no additional habitat is expected to be lost to their use or degraded further because of activities anticipated in this consultation.

3) There are no documented Sonoran pronghorn mortalities that have been directly linked to Border Patrol activities.

4) Sonoran pronghorn are expected to continue to conduct all known behaviors including reproduction, feeding, resting, and rutting within areas where border patrol activities occur.

5) The Border Patrol is planning to purchase new, quieter, MD600N helicopters to replace existing OH-06As.

6) Coordination between AGFD and Border Patrol is planned to occur weekly to obtain current pronghorn locations to avoid concentration and fawning areas.

7) The Border Patrol will modify helicopter routes from April through June to avoid fawning areas identified by AGFD telemetry flights.

8) Border Patrol and CPNWR will finalize their memorandum of understanding which will formalize their contacts and cooperative efforts.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Border Patrol so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Border Patrol has a continuing duty to regulate the activity covered by this incidental take statement. If the Border patrol (1) fails to assume and implement the terms and conditions or (2) fails to require the (applicant) to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Border Patrol must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)]

AMOUNT OR EXTENT OF TAKE

We anticipate take in the form of harassment that is likely to injure up to one Sonoran pronghorn in ten years.

This biological opinion does not authorize any form of take not incidental to the actions described herein. If the incidental take authorized by this opinion is met, the Border patrol shall immediately notify the Service in writing. If, during the course of the action, the amount or extent of the incidental take anticipated is exceeded, the Border patrol must reinitiate consultation with the Service immediately to avoid violation of section 9. Operations must be stopped in the interim period between the initiation and completion of the new consultation if it is determined that the impact of the additional taking will cause an irreversible and adverse impact on the species, as required by 50 CFR§402.14(i). An explanation of the causes of the taking should be provided to the Service.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species. There is no critical habitat designated for this species.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take:

1) Measures shall be implemented by the Border Patrol to minimize injury of Sonoran pronghorn.

2) Measures shall be taken to monitor and study reactions of Sonoran pronghorn on BMGR to Border Patrol activities.

3) The Border Patrol as part of their action will provide a means to determine the level of incidental take that actually results from their activities.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of ESA, the Border Patrol must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

To implement Reasonable and Prudent Measure number 1:

1) Reduce flights into (b) (7)(E) and administrative road usage by Border Patrol vehicles during fawning.

2) Establish speed limits on all roadways in current pronghorn habitat, as identified by AGFD surveys, that are prudent for visibility so no Sonoran pronghorn are injured due to vehicles.

To implement Reasonable and Prudent measure number 2:

1) Within six months of the date of the opinion, the USBP will begin a study with AGFD to determine the effects of noise, visual impacts, and night operations from helicopter overflights on Sonoran pronghorn.

2) The USBP will within one year of the completion of the BO begin a study with AGFD to determine the effects of border patrol activities on pronghorn during fawning season.

3) All above studies and monitoring efforts will be coordinated with the Service.

To implement Reasonable and Prudent measure number 3:

1) A report of the results of all monitoring efforts, including complete and accurate records of all incidental take that occurred during the course of the actions described herein, will be submitted to the Service on a yearly basis. This report will also describe how each of the terms and conditions of all Reasonable and Prudent measures in this incidental take statement were implemented. The USBP will attach all maps, tables, a summary of meetings and contacts, and consultant's reports produced during the year to the annual report.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The Border Patrol must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

DISPOSITION OF DEAD, INJURED, OR SICK INDIVIDUALS

If a dead, injured, or sick individual of a listed species is found on the BMGR or CPNWR, initial notification must be made to Service Law Enforcement, Federal Building, Room 105, 26 North McDonald, Mesa, Arizona, 85201 (Telephone: (480)835-8289)and the Arizona Ecological Services Field Office (602-640-2720, -2730fax) immediately upon its finding. Written notification must be made within three calendar days and include the date, time, and location of the finding, a photograph of the animal, and any other pertinent information. The notification shall be sent to Law Enforcement with a copy to the Arizona Ecological Services Field Office(2321 W. Royal Palm Dr., Ste 103, Phoenix, Arizona 85021. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. If possible, the remains shall be placed with educational or research institutions holding appropriate State and Federal permits. If such institutions are not available, the information noted above shall be obtained and the carcass left in place. Arrangements regarding proper disposition of potential museum specimens shall be made with the Arizona Ecological Services office and the institution prior to implementation of the action. Injured animals should be transported to a qualified veterinarian by an authorized biologist. Should any treated animals survive, the Service must be contacted before the final disposition of any animals.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1) The Border Patrol should attend the biannual meetings of the Flat-tailed Horned Lizard Management Oversight Group.

2) The Border Patrol should assign the environmental protection specialist to coordinate the effects of their activities statewide on listed species in order to reduce these impacts where possible.

3) The USBP should continue participation in ecosystem partnerships with other federal agencies in Sonoran pronghorn habitat.

4) The Border Patrol should obliterate and block illegal roads in Sonoran pronghorn habitat created by illegal cross border traffic.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your continuing efforts to conserve listed species. If we can be of further assistance, please contact (b) (6) or (b) (6) Please refer to the consultation number 2-21-96-F-334 in future correspondence concerning this project.

Sincerely,

(b)(6)

David L. Harlow
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque NM (GARD-AZ/NM)
Refuge Manager, Cabeza Prieta National Wildlife Refuge, Ajo, AZ
Director, BIA, Phoenix, AZ
Chairman, Tohono O'odham Nation, Sells, AZ

Director, Arizona Game and Fish Department, Phoenix AZ

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Figure 1. Border Patrol Tire Drag

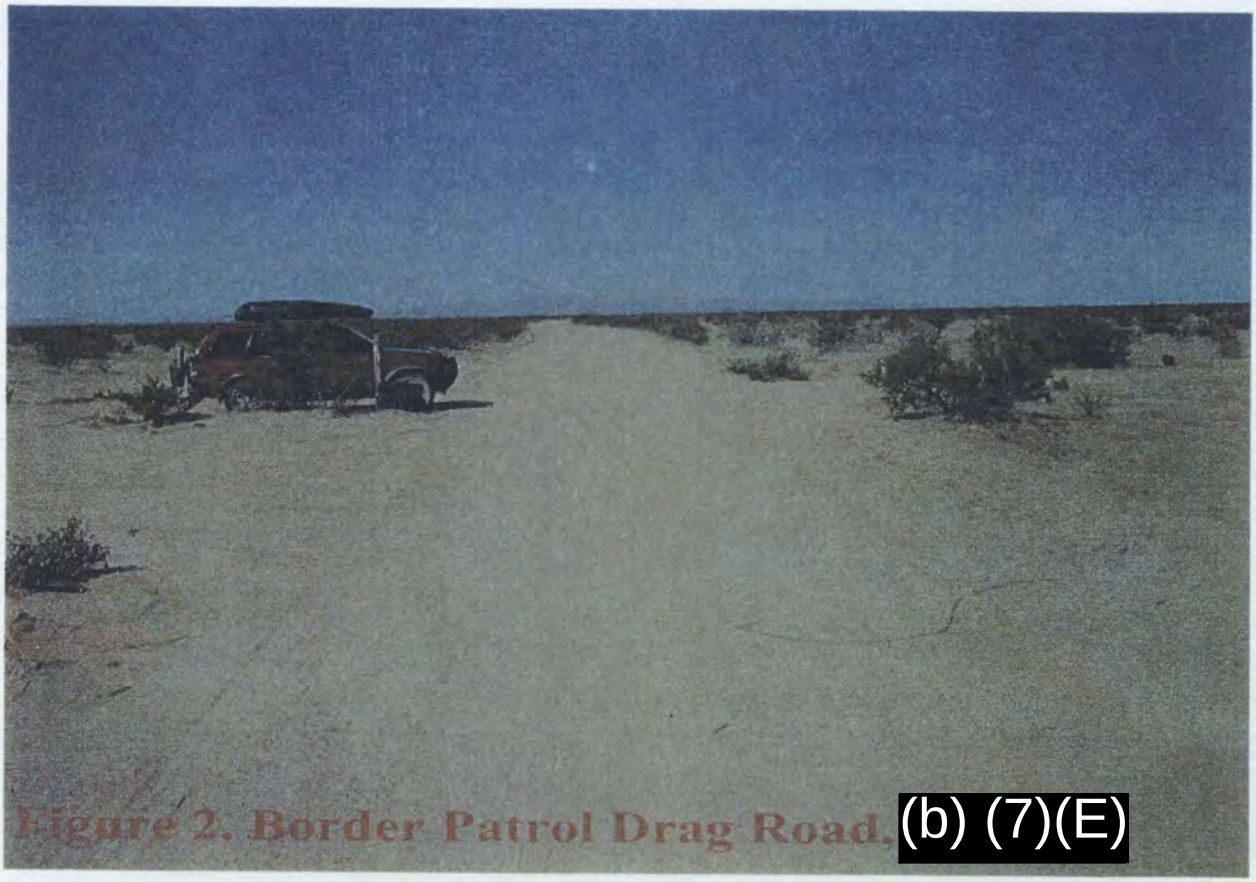


Figure 2. Border Patrol Drag Road, (b) (7)(E)

APPENDIX A. CONCURRENCES-

-This section contains all concurrences with "may affect, not likely to adversely affect determinations" made by the Border Patrol.

MOUNTAIN PLOVER (*Charadrius montanus*)

Status of the Proposed Species in the Project Area-

The mountain plover is a bird of shortgrass prairie and shrub-steppe landscapes at both breeding and wintering locales. Breeding occurs in the Rocky Mountain States from Canada south to Mexico with most breeding birds occurring in Montana and Colorado. Breeding mountain plovers are rare in Arizona, however, an adult incubating three eggs was found near Springerville, Apache County, Arizona in May 1996. Most wintering birds occur on grasslands or similar landscapes in California; fewer wintering birds occur in Arizona, Texas, and Mexico.

Mountain plover surveys are recommended for areas containing breeding habitat (Diebert et al. 1999). Such habitat is typically known to include short-grass prairie and shrub-steppe landscapes; dryland, cultivated farms; and prairie dog towns. Plovers usually nest on sites where vegetation is sparse or absent, due to disturbance by herbivores, including domestic livestock and prairie dogs. Vegetation at shortgrass prairie sites is less than 4 inches tall, while shrubs visually predominate nest sites within the shrub-steppe landscape. Usually, nest sites within the shrub-steppe are on active prairie dog towns. Nests are commonly located near a manure pile or rock. Mountain plovers are rarely found near water. Positive indicators for mountain plovers include level terrain, prairie dogs, bare ground, *Opuntia* pads, cattle, widely spaced plants, and horned larks. It would be unusual to find mountain plovers on sites characterized by irregular or rolling terrain; dense, matted vegetation; grass taller than 4 inches, wet soils, or the presence of killdeer.

In Arizona, mountain plovers occur in dormant alfalfa fields and field edges along the Colorado River during the winter. Within the Yuma Border Patrol Project area, vegetative communities consist primarily of Sonoran desert scrub (INS 1999). Since mountain plovers are normally associated with short-grass prairies, their occurrence in the project area is unlikely, and would only be a transitory event for wintering. Furthermore, the nearest known wintering area is located approximately (b) (7)(E) in alfalfa fields southwest of the Wellton Station but only (b) (7)(E) of the Yuma Sector/Wellton Station in this consultation.

Conclusion-

Based on the information presented in the BA, the Service concurs with the Border Patrol's determination that activities associated with this project may affect, but are not likely to adversely affect mountain plovers. This concurrence is based on the following:

1) Mountain plover only potentially are found in the western portion of the project area which is wintering habitat. Wintering birds in Yuma constitute only a small portion of the overall population.

2) Winter use areas are dormant alfalfa fields and field edges along the Colorado River corridor. (b) (7)(E) (b) (7)(E) so there is little likelihood of harassment or harm to plovers.

3) Mountain plover are expected to continue in their use of agricultural areas around Yuma, Arizona in the winter where Border Patrol activities occur, and no additional habitat is expected to be lost or degraded because of proposed activities.

CACTUS FERRUGINOUS PYGMY-OWL (*Glaucidium brasilianum cactorum*)

Status of the Species

The Service listed the Arizona population of the cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*) (CFPO) on March 10, 1997; the listing was effective on April 9, 1997. CFPOs are a small bird, averaging 17 cm (6.75 in) in length.

Suitable habitat for the pygmy-owl is defined as areas below 4000 ft (1,220 m) in elevation containing one or more of the following vegetative communities (USFWS 2000):

- Riparian vegetation: Broadleaf, riparian gallery forests of cottonwoods, willows, mesquites, ash, or other trees growing along watercourses and associated species.

- Sonoran desert scrub: Characterized by braided wash systems and vegetation which is dense and well structured. Key species include mesquite, foothill and blue palo verdes, ironwood, saguaro, organ pipe cactus, and various other shrubs and cacti.

- Semidesert grasslands: Containing wooded drainages with mesquite, hackberry, ash, and limited number of saguaros.

Vegetative communities listed above containing saguaro cactus or other columnar cactus that are 8 ft. or taller, or ironwood, mesquites, palo verde, or other large trees with a trunk diameter of 6 in (15 cm) or greater measured at 4.5 ft (1.37 m) above the ground may provide nesting opportunities for pygmy-owls. Urban areas and areas currently devoid of saguaros, other columnar cactus, or large trees are excluded from survey requirements.

Life History

While the majority of CFPO detections the last six years are from the northwest Tucson area, CFPOs have also been detected in southern Pinal County, at OPCNM, on the Buenos Aires National Wildlife Refuge (BANWR), and on the Coronado National Forest. CFPOs at OPCNM have been detected in Sonoran desert scrub habitat dominated by saguaro, creosotebush (*Larrea tridentata*), velvet mesquite (*P. velutina*), palo verde, cat-claw acacia, white brittlebush (*Encelia farinosa*), triangle-leaf bursage, and ironwood. Small washes in the area support salt cedar (*Tamarix pentandra*) and canyon ragweed (*A. ambrosioides*). In addition, relatively large mesquite bosques are present in some areas (Collins and Corman 1995). On the BANWR and adjacent areas in the Altar Valley, CFPOs have been located within riparian habitat in semidesert

grassland communities. Vegetation in these riparian areas included netleaf hackberry, velvet mesquite, Arizona ash (*Fraxinus velutina* var. *velutina*), acacia, and Mexican elderberry (*Sambucus caerulea*).

Critical Habitat

The Service published a final rule (USFWS 1999a) on July 12, 1999 which designated approximately 296,115 ha (731,712 ac) of riverine riparian and upland habitat in Pima, Cochise, Pinal, and Maricopa counties in Arizona.

Effects of the Action

The historic range of the CFPO minimally overlaps the area covered by the Border Patrol actions in the southeast corner of Yuma County, Arizona. No CFPOs have been identified in or near the project area since the single individual was identified at Cabeza Prieta Tanks in 1955 (Monson 1998). There is some potential suitable habitat for the CFPO within the Wellton Station action area, (USFWS 1996) but it is of low suitability (Duncan 1998). The Border Patrol helicopter flight path and vehicle roads pass over or intersect numerous sonoran desert scrub washes, most of which are too sparse to support CFPOs.

However, the potential for adverse effects to this species is very small in Yuma County. Most of the habitat in the project area is Lower Colorado River Valley Subdivision of the Sonoran desert scrub biome (Brown 1955). Current pygmy-owl locations have been documented within Sonoran desert scrub, riparian vegetation, and semidesert grassland vegetative communities (USFWS 2000). There were 78 detected CFPO, including juveniles, in surveys from 1999 (Cartron and Finch 2000), and most (39) were found in the NW Tucson/southern Pinal County area. The only record of a CFPO from Yuma County is one observed at the Cabeza Prieta Tanks on April 10, 1955, and is thought to be an incidental wanderer. Surveys for CFPOs conducted on the Goldwater Range in 1993, 1994, 1997, and in the Cabeza Prieta NWR in 1994 and 1998 found no sighting of this species; and the habitat quality was poor (USFWS 1996, Aigner and Koehler 1997, Duncan et.al.1998).

The owls nest in riparian trees and columnar cacti. The Border Patrol activities, including work on remote sensors, do not involve the removal or disturbance of these habitat features. All drag roads are pre-existing roads, and there are no plans to create additional roads. CFPOs are a diurnal species and would be active during the same time periods as the Border Patrol but the chance of an encounter is remote because of the scarcity of sightings in the project area. The possibility of a mid-air collision between a CFPO and a Border Patrol helicopter is equally remote.

Border Patrol activities may actually benefit CFPOs through the reduction of human activities in the area such as from illegal entry of undocumented aliens and drug traffickers that would adversely affect owls and their habitat.

Conclusion

After reviewing the current status of the CFPO, the environmental baseline for the action area, and the anticipated effects of the proposed action, the Service concurs with the Border Patrol determination that their activities in the project area may affect, but are unlikely to adversely affect, the cactus ferruginous pygmy-owl. There are no reports of any CFPOs in the project area and the habitat is of poor quality. Critical habitat has been designated for this species but none is located within the project area, and none will be adversely modified.

AMERICAN PEREGRINE FALCON (*Falco peregrinus anatum*)

The American peregrine falcon was removed from the Federal list of Endangered and Threatened Wildlife on August 25, 1999 (64 FR:46542). Federal agencies are no longer required to consult with the Service under section 7 of the Endangered Species Act (Act) in the event activities they authorize, fund or carry out affect peregrine falcons. However, removal of the protection of the Act will not affect the protection afforded all peregrine falcons under the Migratory Bird Treaty Act. In addition, the Act requires monitoring of the species for at least five years after delisting. This monitoring will consist, at a minimum, of annual occupancy surveys, assessing productivity, determining contaminant concentrations, and monitoring levels of take of peregrine falcons for falconry purposes (63 FR: 45446). The Service is currently developing a monitoring plan which will be available in the near future.

References:

U.S. Department of the Interior, Fish and Wildlife Service. 1998. Endangered and threatened wildlife and plants; proposed rule to remove the peregrine falcon in North America from the list of endangered and threatened wildlife. Federal Register 63:45446-45463.

U.S. Department of the Interior, Fish and Wildlife Service. 1999. Endangered and threatened wildlife and plants; final rule to remove the American peregrine falcon from the Federal list of endangered and threatened wildlife, and to remove the similarity of appearance provision for free-flying peregrines in the conterminous United States. Federal Register 64:46542-46558.

BALD EAGLE (*Haliaeetus leucocephalus*)

Status of the Species in the Project Area

In Arizona, bald eagles nest primarily on the Salt and Verde Rivers in the central part of the state where there are large cliffs and trees to provide nest sites near waters with fish. In western Arizona, they nest near Bill Williams River near Alamo Lake. Most of the state's major river systems, including the mainstem of the Colorado River, support wintering bald eagles. Important food prey items in the southwest include fish, waterfowl, rabbits, and carrion. Food availability and perch sites may limit wintering bald eagle abundance in Arizona. Other factors limiting their abundance include human disturbance and loss of aquatic habitat.

Effects of the Action

No nesting bald eagles occur on the BMGR. The entire state is considered within the range of the wintering bald eagles, but there is no suitable habitat present on the BMGR. Bald eagles would be an uncommon transient if they occurred in the area covered by the Yuma Sector/Wellton Station.

The main concern for wintering eagles in Arizona is the maintenance of roost trees. The best sites and trees may be the only ones used, and tend to have large trees surrounding the roost trees that may serve as some sort of buffer (Platt 1976, Martell 1992). The Border Patrol action as proposed should not reduce roost trees in upland areas.

Conclusion

The Service concurs with the Border Patrol's determination that the proposed action may affect, but is not likely to adversely affect the bald eagle. This concurrence is based on the following:

1. There are no known nesting or roost sites in the project area, therefore no disturbance of such sites is expected.

2. The only bald eagles using the action area would be uncommon winter transients and thus would unlikely be affected by the Border Patrol activities.

LESSER LONG-NOSED BAT (*Leptonycteris curasoae yerbabuenae*)

Status of the Species in the Project Area

The lesser long-nosed bat is a medium size, leaf-nosed bat. It has a long muzzle, a long tongue, and is capable of hover flight. These features are adaptations that allow the bat to feed on nectar from the flowers of columnar cacti such as the saguaro (*Carnegiea giganteus*) and organ pipe cactus (*Stenocereus thurberi*), and from paniculate agaves such as Palmer's agave (*Agave palmeri*) and Parry's agave (*A. parryi*)(Brown 1994)(Martin et al. 1998). Palmer's agave exhibits many characteristics indicating they are pollinated by bats, such as nocturnal pollen dehiscence and nectar production, light colored and erect flowers, strong floral order, and high levels of pollen protein with relatively low levels of nectar sugar concentrations (Slauson 1996). Parry's agave demonstrates many (although not all) of these same morphological features (Gentry 1982). Slauson (1999) demonstrated that there was a mutualistic relationship between Palmer's agave and the lesser long-nosed bat, though this relationship was asymmetric. The bat is quite dependent on the agave for food during a certain period, but the agave has other pollinator options.

The lesser long-nosed bat is migratory and found throughout its historic range, from southern Arizona and extreme southwestern New Mexico, through western Mexico, and south to El Salvador. In southern Arizona lesser long-nosed bat roosts have been found from the Picacho Mountains (Pinal County) southwest to the Agua Dulce Mountains (Pima County), southeast to the Chiricahua Mountains (Cochise County) and south to the international boundary. Individuals

have also been observed from the vicinity of the Pinaleno Mountains (Graham County) and as far north as Phoenix and Glendale (Maricopa County)(AGFD Heritage Data Management System). This bat is also known from far southwestern New Mexico in the Animas and Peloncillo Mountains (Hidalgo County). It is a seasonal resident in Arizona, arriving in early April and leaving in mid-September to late October (Cockrum and Petryszyn 1991, Sidner 1999); the bat has only rarely been recorded outside of this time period in Arizona (USFWS 1997, Hoffmeister 1986). It resides in New Mexico only from mid-July to early September (Hoyt et al. 1994).

Roosts in Arizona are occupied from April to October (Cockrum and Petryszyn 1991, Sidner 1999). In spring, adult females, most of which are pregnant, arrive in Arizona and gather into maternity colonies in southwestern Arizona. These roosts are typically at low elevations near concentrations of flowering columnar cacti. Litter size is one. After the young are weaned these colonies disperse in July and August; some females and young move to higher elevations, ranging up to more than 1,818 m (6,000 ft), primarily in the southeastern parts of Arizona near concentrations of blooming paniculate agaves. Actual dates of these seasonal movements by lesser long-nosed bats are rather variable from one year to the next (Cockrum and Petryszyn 1991, Fleming et al. 1993). Adult males typically occupy separate roosts forming bachelor colonies. Males are known mostly from the Chiricahua Mountains, but also occur with adult females and young of the year at maternity sites (USFWS 1997b). Throughout the night between foraging bouts both sexes will rest in temporary night roosts (Hoffmeister 1986).

Lesser long-nosed bats appear to be opportunistic foragers and efficient fliers, capable of flight speeds up to 23 kilometers per hour (14 mph) (Sahley et al. 1993), and often foraging in flocks. Seasonally available food resources may account for the seasonal movement patterns of the bat. The lesser long-nosed bat is known to fly long distances from roost sites to foraging sites. Night flights from maternity colonies to flowering columnar cacti have been documented in Arizona at 24 km (15 mi), and in Mexico at 40 km (25 mi) and 61 km (38 mi)(one way)(Dalton et al. 1994; V. Dalton, Tucson, pers. comm., 1997; Y. Petryszyn, University of Arizona, pers. comm., 1997). A substantial portion of the lesser long-nosed bats at the Pinacate Cave in Sonora (a maternity colony) fly 40 to 50 km (25-31 mi) each night to foraging areas in Organ Pipe Cactus National Monument (USFWS 1997b). Horner et al. (1990) found that lesser long-nosed bats commuted 48 to 58 km (30-36 mi) round trip between an island maternity roost and the mainland in Sonora; the authors suggested these bats regularly flew at least 80 to 100 km (50-62.5 mi) each night. Lesser long-nosed bats have been observed feeding at hummingbird feeders many miles from the closest potential roost site (Petryszyn, pers. comm., 1997).

The lesser long-nosed bat was listed (originally, as *Leptonycteris sanborni*; Sanborn's long-nosed bat) as endangered in 1988 (USFWS 1988a). No critical habitat has been designated for this species. The recovery plan was completed in 1997 (USFWS 1997b). Loss of roost and foraging habitat, as well as direct taking of individual bats during animal control programs, particularly in Mexico, have contributed to the current endangered status of the species. There has been a significant degree of debate and controversy regarding the actual population size and appropriate listing status of the species. The recovery plan states that the species will be considered for delisting when three major maternity roosts and two post-maternity roosts in the United States, and three maternity roosts in Mexico have remained stable or increased in size for at least five years, following the approval of the recovery plan.

Suitable day roosts and suitable concentrations of food plants are the two resources that are crucial for the lesser long-nosed bat (USFWS 1997b). Caves and mines are used as day roosts. The factors that make roost sites useable have not yet been identified. Whatever the factors are that determine selection of roost locations, the species seems sensitive to human disturbance. Instances are known where a single brief visit to an occupied roost is sufficient to cause a high proportion of lesser long-nosed bats to temporarily abandon their day roost and move to another. Perhaps most disturbed bats return to their preferred roost in a few days. However, this sensitivity also suggests that the presence of alternate roost sites may be critical when disturbance occurs. Interspecific interactions with other bat species may also influence lesser long-nosed bat roost requirements.

There are no known locations of the LLNB on the BMGR. The closest roosts are found on Cabeza Prieta NWR in the Agua Dulce Mountains. These records are for two small roosts and one larger one (Hoffmeister 1986). The nearest potential foraging habitat is also in Cabeza Prieta NWR in the Sierra Pinta Mountains which are east of the current project area.

Conclusion

The Service concurs with the Border Patrol's determination that the proposed action may affect, but is not likely to adversely affect the lesser long-nosed bat. This concurrence is based on the following:

1. The three roosts for LLNB in the Agua Dulce Mountains considered in this review are (b) (7)(E)
Why to refuel, and given the fact that Border Patrol agents do not enter caves as part of their duties, disturbances to these foraging or roosting bats would be very unlikely.

2. Border patrol activities may benefit lesser long-nosed bats by reducing other human activities in the area such as undocumented aliens hiking or driving through the area and possibly using caves as shelters.

3. Border Patrol activities are not likely to destroy agaves used as food sources by LLNBs.

APPENDIX B
AGENCY CORRESPONDENCE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arizona Ecological Services Field Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513

In Reply Refer To:
AESO/SE
2-21-96-F-334

December26, 2001

[redacted]
Headquarters Facilities and Engineering Division
U.S. Department of Justice
Immigration and Naturalization Service
425 I Street NW
Washington, D.C. 20536

Attention: [redacted]

Dear [redacted]

This letter acknowledges the Service's receipt of your letter dated October 12, 2001, requesting reinitiation of formal section 7 consultation under the Endangered Species Act (ESA). The consultation concerns the operations and activities of the U.S. Border Patrol within the Yuma Sector. The Immigration and Naturalization Service wishes to reassess the potential cumulative effects of their operations, particularly in regard to the Sonoran pronghorn (*Antilocapra americana sonoriensis*).

The Service has not received all the information necessary to reinitiate formal consultation on the U.S. Border Patrol operations in the Yuma Sector as outlined in the regulations governing interagency consultations (50 CFR§ 402.14). To complete the reinitiation package, the Service will require the following information:

1) The description of the action needs to be updated to include additional infrastructure, aircraft, and increases in personnel over what was covered in the first biological assessment.

2) The description of the action area needs to be restated. It is our understanding from the Air Force that the Border Patrol has graded new drag roads outside of the area covered in the first consultation.

3) The species list needs to be updated for the project area.

4) The descriptions of the manner in which the action may affect any listed species and an updated analysis of any cumulative effects need to be updated.

5) Any relevant reports that have been prepared from studies required in the terms and conditions in the first opinion need to be provided.

6) Any other relevant available information concerning the action or affected listed species, such as progress in implementation of the biological opinion and status of the annual report required in the first opinion, needs to be provided.

The formal consultation reinitiation will not begin until we receive all of the information, or a statement explaining why that information cannot be made available. We will notify you when we receive this information; our notification letter will also outline the dates within which formal consultation reinitiation should be completed and the revised biological opinion delivered on the proposed action.

We would like to meet with you to discuss these issues. Please have someone from your office contact us to schedule a meeting. If you have any further questions, please contact (b)(6) (b)(6)

Sincerely,

(b)(6)

Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Refuge Manager, Cabeza Prieta National Wildlife Refuge, Ajo, AZ
(b)(6) Arizona Game and Fish Department, Tucson, AZ
(b) (6); (b) (7)(C) Sector AT, USBP, Tucson, AZ
Tribal Chairman, Tohono O'odham Nation, Sells, AZ
Director, Bureau of Indian Affairs, Phoenix, AZ

Yuma-reinitiation-12-18-01:mpc

U.S. Department of Justice
Immigration and Naturalization Service

HQENG 10/9.26

425 I Street NW
Washington, DC 20536

OCT 12 2001

U.S. Fish and Wildlife Service
ATTN: (b)(6)
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951

RE: Consultation Number 2-21-96-F-334

Dear (b)(6)

The Immigration and Naturalization Service (INS) hereby requests re-initiation of formal consultation under Section 7 of the Endangered Species Act (ESA) for operations and activities within the US Border Patrol's Yuma Sector. As you are aware, INS completed formal consultation with the US Fish and Wildlife Service (USFWS) on 5 September 2000, upon issuance and acceptance of the Biological Opinion (BO) prepared by your office. INS would like to reassess the potential cumulative effects of our operations, particularly in regards to the protected Sonoran pronghorn.

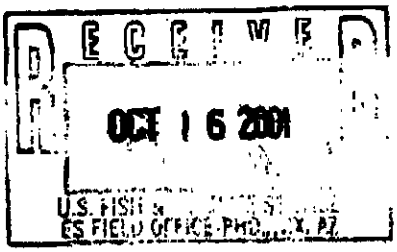
INS will update the Biological Assessment (BA), upon which your BO was formulated in light of the recent federal court decision in Defenders of Wildlife v. Babbitt, 130 F.Supp.2d 121 (D.D.C. 2001) that directed the federal defendants to "take into account cumulative effects of all federal activities in the action area affecting species." In order to aid us with this requirement, we request any additional information pertaining to the Sonoran pronghorn that may assist us in our re-evaluation.

We would like to meet with you at your earliest convenience this month to discuss these issues. We look forward to working with you on this consultation and if you have any questions, or require additional information, please contact (b)(6) Thank you for your prompt attention and cooperation.

Sincerely,

(b)(6)

Acting Director
Headquarters Facilities and
Engineering Division



YUMA SECTOR BIOLOGICAL OPINION/BIOLOGICAL ASSESSMENT MEETING
US FISH AND WILDLIFE SERVICE MEETING
ARIZONA ECOLOGICAL SERVICES FIELD OFFICE
PHOENIX, ARIZONA
26 February 2002

Attendees:

(b)(6) USFWS
Arizona Ecological Services Field Office
(b)(6) USFWS
Arizona Ecological Services Field Office
(b)(6) INS Western Region

(b)(6) USBP Yuma Sector
(b)(6) INS A/E
(b)(6) INS Legal Counsel
(b)(6) GSRC
(b)(6) GSRC

The purpose of the meeting was to discuss re-initiation of Section 7 consultation for the Yuma Sector, Wellton Station's enforcement activities. A Biological Assement (February 1999 [BA]) had been prepared and submitted by the USBP as part of the original Section 7 consultation. The USFWS issued a Biological Opinion (5 September 2000 [BO]) in response to the BA. In the interim the Defenders of Wildlife filed an Intent to Sue (15 August 2001) for violation of the Endangered Species Act (ESA). Defenders of Wildlife named INS, USBP, and USFWS in the Intent to Sue. The court found the Yuma Sector BO and five others concerning the Sonoran Proghorn deficient. The INS issued a letter on 12 October 2001 requesting re-initiation of formal consultation under Section 7 of the ESA.

(b)(6) supplied all attendees a 26 December 2001 letter issued by USFWS in response to INS 12 October 2001 letter requesting re-initiation of formal consultation. (b)(6) requested that the USBP provide USFWS with a letter stating who should receive correspondence in regards to the Yuma Sector BA/BO. GSRC will draft a letter for staffing indicating the chain of correspondence.

The USFWS was concerned the USBP has not fulfilled all conservation measures and reasonable and prudent measures (RPM) stated in the original BO. One main concern was they have not received an annual report stating what RPMs have been completed or how they were being implemented. (b)(6) indicated that (b)(6) had prepared a progress report for Fiscal Year 2001 prior to leaving the Yuma Sector. It was agreed upon that USBP would prepare and submit an annual report by 31 March 2002. The report would address terms and conditions through December 2001. A schedule for revising the existing BA will be provided in the annual report.

We reviewed the summary of conservation measures on page 8 of the BO to determine which measures have been fulfilled by the USBP. The following is the results of this review:

1) The USBP did not purchase the quieter MD600N helicopters as anticipated by the USBP. The contract has been cancelled; however, the USBP is looking at puchasing new A-Star helicopters, which should be quieter than the existing OH-06As currently used. (b)(6) will provide technical information on the new A-Star helicopters.
[During a conversation following the meeting, (b)(6) indicated the A-Star is quieter than the OH-06A and he was waiting to receive technical documents].

2) (b)(6) indicated he thought weekly coordination with AGFD was being conducted. However, USFWS was under the impression that initially coordination was being fulfilled, but has fallen off. [During a conversation following the meeting, (b)(6)(b)(7)(C) indicated that weekly coordination with AGFD was being conducted by the USBP. He indicated that the USBP has copies of correspondence and will forward to USFWS].

3) (b)(6) said helicopter routes have been modified and he can provide maps with modified helicopter routes.

4) (b)(6) said coordination with Cabeza Prieta National Wildlife Refuge (CPNWR) does occur on a monthly basis.

5) (b)(6) indicated the MOU between USBP and CPNWR has been finalized.

6) The USBP attends the SOPH recovery meetings which suffices as the annual interagency meeting with CPNWR, USFWS, and Bureau of Land Management (BLM).

We reviewed the RPMs on page 24 of the BO to determine which measures have been fulfilled by the USBP. The following is the results of this review:

RPM 1:

a) The USBP does avoid fawning areas within the CPNWR during the fawning season.

b) It was agreed that a speed limit of (b)(7)(E) miles-per-hour would be established along all roadways in current SOPH habitat, as identified by AGFD surveys, to avoid injury to SOPH.

RPM 2:

a) The USBP has not initiated a study with AGFD to determine the effects of noise impacts, visual impacts, and night operations from helicopter overflights on the SOPH.

b) The USBP will within one year of the completion of the BO begin a study with AGFD to determine the effects of border patrol activities on the SOPH during fawning season. The USFWS recommended funding the AGFD's ongoing study. They estimated this would cost the USBP approximately $24,000/year. (b)(6) indicated he would present this option to INS and USBP.

c) Because no studies or monitoring have been initiated, no coordination has been completed with the USFWS.

RPM 3:

a) An annual report presenting all monitoring efforts has not been submitted to the USFWS. The USBP agreed to submit an annual report by 31 March 2002.

(b)(6) indicated the USBP activities needed to be updated in the revised BA. This includes all additional infrastructure, aircraft, personnel, and location of actions.

The description of the action area needs to be updated in the revised BA. (b)(6) recommended using the five revised BOs as examples for updating the action area.

(b)(6) recommended updating the species lists to include the flat-tailed horned lizard in consultation. This species is proposed for listing because of a Federal lawsuit and will most likely be listed soon; therefore the USBP should include it in consultation. The addition of the flat-tailed horned lizard would require consultation for the Yuma Sector, not only the Wellton Station.

Additive and cumulative effects need to be updated in the revised BA. (b)(6) recommended using the revised BOs as examples for updating the revised BA.

(b)(6) indicated he had a SOPH GIS database and he would provide GSRC with this database. [A copy of the database was received by GSRC 28 February 2002].

(b)(6) suggested the following literature as references:
Noise Effects of Military Overflights on Sonoran Pronghorn by (b)(6)
Annual SOPH Monitoring Studies by AGFD

Portions of the Yuma Sector extend into California. It was discussed whether we could include the California portion of the Yuma Sector. All agreed we would only include the Arizona portion of the Yuma Sector since that was the focus of the litigation.

The meeting adjourned at approximately 11:15 AM Mountain Time.

United States Department of the Interior
Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
(602) 640-2720 Fax (602) 640-2730

In Reply Refer To:

AESO/SE
2-21-97-I-313

October 7, 1998

(b)(6)
Headquarters Facility and Engineering
Division Office and Administration
U.S. Department of Justice
Immigration and Naturalization Service
425 I Street NW
Washington, D.C. 20536

Dear (b)(6)

This letter is in response to your August 28, 1998, request to the Fish and Wildlife Service (Service) by Louis Berger & Associates on behalf of the Immigration and Naturalization Service (INS), U.S. Border Patrol, to initiate section 7 consultations under the Endangered Species Act concerning on-going activities of the Border Patrol at Yuma Sector, Wellton Station. Your request was received at this office on August 31, 1998. The consultation concerns the possible effects of your activities on Sonoran pronghorn antelope (*Antilocarpa americana sonoriensis*), cactus ferruginous pygmy-owl (*Glaucidium brasilianium cactorum*), and the lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*).

The Service has not received all the information necessary to initiate formal consultation on Border Patrol On-going Activities at Yuma Sector, Wellton Station as outlined in the regulations governing interagency consultations (50CFR §402.14). To complete the initiation package, we require the following information:

1. In 50 CFR §402.14(a) it states that the Federal agency must review its actions and determine whether any action may affect listed species. This determination of effect needs to be clearly stated in the Biological Assessment(BA) which is not done so in the August 1998, BA submitted by Berger and Associates. We have attached a document prepared by this office which gives recommendations for contents of BAs and BEs. Page 4 of that document covers the three choices in determining the effect. The standard wording needs to be used here so there is no chance of misunderstanding. For example on page 1-3 of the B.A., at the top, it states that "no significant adverse effects on Sonoran pronghorn are likely to occur from U.S. Border Patrol activities." This appears to say that there is a "no effect". As stated in the Service letter of July 16, 1997, to the Acting Director of the INS, the U.S. Fish and Wildlife Service does not concur with the Border Patrol's determination of effect that their actions are insignificant and discountable. In discussions

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A MEMBER OF THE BERGER GROUP

MEETING MINUTES

U. S. BORDER PATROL - YUMA SECTOR - WELLTON STATION
SECTION 7 CONSULTATION MEETING
U. S. BORDER PATROL OFFICE, YUMA AZ, OCTOBER 8, 1998

ATTENDEES

(b)(6)(b)(7)(C)

1.0 INTRODUCTION

The purpose of the meeting was to discuss the Draft Biological Assessment (BA) submitted to the U. S. Fish and Wildlife Service (USFWS) on August 28, 1998 and to solicit comments and continue the Section 7 consultation process in accordance with the Endangered Species Act (ESA) for the ongoing activities of the U. S. Border Patrol (USBP) in southwestern Arizona. The activities of the USBP were identified and described by USBP staff, and the Section 7 consultation and Section 9 incidental take permit requirements for these activities were outlined by the USFWS staff. The minutes of the meeting are presented below.

2.0 DESCRIPTION OF ACTIVITIES

USBP staff identified the limit of activities subject to this consultation process as the activities of the USBP Wellton Station covering the area typically bound by (b) (7)(E) (b) (7)(E) the U. S. / Mexican border to the south, and (b) (7)(E) The primary activities consist of the continued preparation of existing drag roads and the maintenance of existing access roads (ground operations), air patrol by helicopter (air operations), and specific apprehensions and rescues performed pursuant to the ongoing mission of the USBP. These activities were identified in the Draft BA.

Subsequent to the preparation of the August 1998 Draft BA, additional USBP activities were initiated in response to changes in illegal alien movements crossing the border. Additional USBP activities discussed at this meeting which were not previously identified in the Draft BA include:

- Twenty-four hour ground patrol.
- Assistance provided to the Tucson Sector east of the Wellton Station.
- Helicopter refueling at Why, east of the Wellton Station and associated activities.

These recently identified activities will be included in the Biological Assessment.

(b)(6) indicated that Section 7 Consultation for the Tucson Sector would be conducted separately at a later date.

3.0 U.S. Fish and Wildlife Comments on the Biological Assessment

(b)(6) (USFWS) distributed a letter dated October 7, 1998 which contained his general comments on the Draft BA (attached). The letter requested more information on the additional USBP activities and that specific Section 7 consultation be used in the determination of effect on the species of concern. He also made the following specific requests:

- Include a cover sheet for Appendix C which describes the contents of the tables contained within this appendix.
- Submit a letter from the INS on INS stationary requesting formal Section 7 consultation for the Wellton Station activities. State that the Tucson Sector will undertake Section 7 consultations separately. This letter must identify the key contact and persons to be copied.
- Sensor installation and maintenance will be discussed in the near future at a meeting between the USFWS and the USBP.
- Supply the legal mandates (Codes) for the USBP in the introduction of the BA.
- Expand on the rescue activities conducted by the USBP in section 2.2.3 of the BA.
- Follow-up on the Cooperative Agreement between the USBP and the Cabeza Prieta National Wildlife Refuge (CPNWR).
- State, as indicated by the USBP, that the new "quiet" helicopters are to be available in FY 2000.
- Mitigation shall include formalized consultations with the CPNWR as to any modifications in USBP activities, likewise the CPNWR will inform the USBP as to any changes in locations of pronghorn concentrations.
- Semi-Annual ESA/Special Status Species training can be conducted by CPNWR staff for USBP employees.

All non-routine USBP activities (Tucson Sector assistance, apprehensions east of Wellton Station, ground patrols, deviations from typical helicopter route for reasons other than apprehensions and rescues, refueling at Why, etc.) are to be identified, with a description of past history (location frequency, duration) identified to determine potential affect, and language indicating that the USBP requires flexibility to perform its mission and provide rescue services.

4.0 ACTION ITEMS

The following action items are to be conducted:

- Draft INS letter to USFWS to initiate formal consultations with a statement that the additional information requested will be forthcoming.
- Address the comments to the BA listed above.
- Prepare a revised BA for submission to the USFWS.
- Schedule a meeting at the USFWS Phoenix office to facilitate issuance of the Biological Opinion.

Prepared by:

(b)(6)

Louis Berger & Associates., Inc.

October 15, 1998
Date

ATTENDANCE LIST

U.S. BORDER PATROL YUMA SECTOR - WELLTON STATION, ARIZONA
BIOLOGICAL ASSESSMENT MEETING
350 FIRST STREET, YUMA, AZ

9:00 AM, THURSDAY, OCTOBER 8, 1997, USBP OFFICE - YUMA, AZ

Name	Affiliation	Address	Phone No.
(b)(6)			

United States Department of the Interior
Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
(602) 640-2720 Fax (602) 640-2730

In Reply Refer To:
AESO/SE
2-21-98-I-251
[980828]

April 21, 1998

(b)(6)
Principal Environmental Scientist
Louis Berger & Associates, Inc.
100 Halsted Street
East Orange, New Jersey 07019

RE: Immigration and Naturalization Service, Yuma Sector/Wellton Station, Southwest Arizona

Dear (b)(6)

This letter responds to your April 15, 1998, request for an inventory of threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973, as amended (Act), which may potentially occur in your project area (Yuma County). The enclosed list may include candidate species as well. We hope the enclosed county list of species will be helpful. In future communications regarding this project, please refer to consultation number 2-21-98-I-251.

Please be aware that you may also access limited county species lists for Arizona on our internet web site at the following:

http://ifw2es.fws.gov/endspcs/lists/

The enclosed list of the endangered, threatened, proposed, and candidate species includes all those potentially occurring anywhere in the county, or counties, where your project occurs. Please note that your project area may not necessarily include all or any of these species. The information provided includes general descriptions, habitat requirements, and other information for each species on the list. Also on the enclosed list is the Code of Federal Regulations (CFR) citation for each listed or proposed species. Additional information can be found in the CFR and is available at most public libraries. This information should assist you in determining which species may or may not occur within your project area. Site-specific surveys could also be helpful and may be needed to verify the presence or absence of a species or its habitat as required for the evaluation of proposed project-related impacts.

Endangered and threatened species are protected by Federal law and must be considered prior to project development. If the action agency determines that listed species or critical habitat may be adversely affected by a federally funded, permitted, or authorized activity, the action agency

must request formal consultation with the Service. If the action agency determines that the planned action may jeopardize a proposed species or destroy or adversely modify proposed critical habitat, the action agency must enter into a section 7 conference with the Service. Candidate species are those which are being considered for addition to the list of threatened or endangered species. Candidate species are those for which there is sufficient information to support a proposal for listing. Although candidate species have no legal protection under the Act, we recommend that they be considered in the planning process in the event that they become listed or proposed for listing prior to project completion.

If any proposed action occurs in or near areas with trees and shrubs growing along watercourses, known as riparian habitat, the Service recommends the protection of these areas. Riparian areas are critical to biological community diversity and provide linear corridors important to migratory species. In addition, if the project will result in the deposition of dredged or fill materials into waterways or excavation in waterways, we recommend you contact the Army Corps of Engineers which regulates these activities under Section 404 of the Clean Water Act.

The State of Arizona protects some plant and animal species not protected by Federal law. We recommend you contact the Arizona Game and Fish Department and the Arizona Department of Agriculture for State-listed or sensitive species in your project area.

The Service appreciates your efforts to identify and avoid impacts to listed and sensitive species in your project area. If we may be of further assistance, please contact (b) (6)

Sincerely,

(b) (6)

Acting Field Supervisor

Enclosure

cc: Director, Arizona Game and Fish Department, Phoenix, AZ

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: YUMA

4/9/98

LISTED TOTAL= 8

NAME: NICHOL'S TURK'S HEAD CACTUS *ECHINOCACTUS HORIZONTHALONIUS VAR NICHOLII*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 44 FR 61927, 10-26-1979

DESCRIPTION: BLUE-GREEN TO YELLOWISH-GREEN, COLUMNAR, 18 INCHES TALL, 8 INCHES IN DIAMETER. SPINE CLUSTERS HAVE 5 RADIAL & 3 CENTRAL SPINES; ONE DOWNWARD SHORT; 2 SPINES UPWARD AND RED OR BASALLY GRAY. FLOWER:PINK FRUIT:WOOLLY WHITE

ELEVATION RANGE: 2400-4100 FT.

COUNTIES: PINAL, PIMA, YUMA

HABITAT: SONORAN DESERTSCRUB

FOUND IN UNSHADED MICROSITES IN SONORAN DESERTSCRUB ON DISSECTED ALLUVIAL FANS AT THE FOOT OF LIMESTONE MOUNTAINS AND ON INCLINED TERRACES AND SADDLES ON LIMESTONE MOUNTAINSIDES.

NAME: SONORAN PRONGHORN *ANTILOCAPRA AMERICANA SONORIENSIS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-67

DESCRIPTION: BUFF ON BACK AND WHITE BELOW, HOOFED WITH SLIGHTLY CURVED BLACK HORNS HAVING A SINGLE PRONG. SMALLEST AND PALEST OF THE PRONGHORN SUBSPECIES.

ELEVATION RANGE: 2000-4000 FT.

COUNTIES: PIMA, YUMA, MARICOPA

HABITAT: BROAD, INTERMOUNTAIN ALLUVIAL VALLEYS WITH CREOSOTE-BURSAGE & PALO VERDE-MIXED CACTI ASSOCIATIONS

TYPICALLY, BAJADAS ARE USED AS FAWNING AREAS AND SANDY DUNE AREAS PROVIDE FOOD SEASONALLY. HISTORIC RANGE WAS PROBABLY LARGER THAN EXISTS TODAY. THIS SUBSPECIES ALSO OCCURS IN MEXICO.

NAME: RAZORBACK SUCKER *XYRAUCHEN TEXANUS*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 55 FR 21154, 05-22-1990; 59 FR 13374, 03-21-1994

DESCRIPTION: LARGE (UP TO 3 FEET AND UP TO 16 POUNDS) LONG, HIGH SHARP-EDGED KEEL-LIKE HUMP BEHIND THE HEAD. HEAD FLATTENED ON TOP. OLIVE-BROWN ABOVE TO YELLOWISH BELOW.

ELEVATION RANGE: <6000 FT.

COUNTIES: GREENLEE, MOHAVE, PINAL, YAVAPAI, YUMA, LA PAZ, MARICOPA (REFUGIA), GILA, COCONINO, GRAHAM

HABITAT: RIVERINE & LACUSTRINE AREAS, GENERALLY NOT IN FAST MOVING WATER AND MAY USE BACKWATERS

SPECIES IS ALSO FOUND IN HORSESHOE RESERVOIR (MARICOPA COUNTY).CRITICAL HABITAT INCLUDES THE 100-YEAR FLOODPLAIN OF THE RIVER THROUGH GRAND CANYON FROM CONFLUENCE WITH PARIA RIVER TO HOOVER DAM; HOOVER DAM TO DAVIS DAM; PARKER DAM TO IMPERIAL DAM. ALSO GILA RIVER FROM AZ/NM BORDER TO COOLIDGE DAM; AND SALT RIVER FROM HWY 60/SR 77 BRIDGE TO ROOSEVELT DAM; VERDE RIVER FROM FS BOUNDARY TO HORSESHOE LAKE.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: YUMA

4/9/98

NAME: SOUTHWESTERN WILLOW FLYCATCHER *EMPIDONAX TRAILLII EXTIMUS*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: No CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS, WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT. ELEVATION RANGE: <8500 FT.

COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAVAJO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM, YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS. CRITICAL HABITAT ON PORTIONS OF THE 100-YEAR FLOODPLAIN ON SAN PEDRO AND VERDE RIVERS; WET BEAVER AND WEST CLEAR CREEKS, INCLUDING TAVASCI MARSH AND ISTER FLAT; THE COLORADO RIVER, THE LITTLE COLORADO RIVER, AND THE WEST, EAST, AND SOUTH FORKS OF THE LITTLE COLORADO RIVER, REFERENCE 60 CFR:62 FR 39129, 7/22/97.

NAME: YUMA CLAPPER RAIL *RALLUS LONGIROSTRIS YUMANENSIS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-67; 48 FR 34182, 07-27-83

DESCRIPTION: WATER BIRD WITH LONG LEGS AND SHORT TAIL. LONG SLENDER DECURVED BILL. MOTTLED BROWN ON GRAY ON ITS RUMP. FLANKS AND UNDERSIDES ARE DARK GRAY WITH NARROW VERTICAL STRIPES PRODUCING A BARRING EFFECT. ELEVATION RANGE: <4500 FT.

COUNTIES: YUMA, LA PAZ, MARICOPA, PINAL, MOHAVE

HABITAT: FRESH WATER AND BRACKISH MARSHES

SPECIES IS ASSOCIATED WITH DENSE EMERGENT RIPARIAN VEGETATION. REQUIRES WET SUBSTRATE (MUDFLAT, SANDBAR) WITH DENSE HERBACEOUS OR WOODY VEGETATION FOR NESTING AND FORAGING. CHANNELIZATION AND MARSH DEVELOPMENT ARE PRIMARY SOURCES OF HABITAT LOSS.

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ENGINEERS • PLANNERS • SCIENTISTS • ECONOMISTS

U. S. BORDER PATROL - YUMA SECTOR
SECTION 7 CONSULTATION INITIATION MEETING,

U. S. BORDER PATROL OFFICE, YUMA AZ,
SEPTEMBER 9, 1997

ATTENDEES

(b)(6) - Immigration and Naturalization Service Headquarters (INS)
(b)(6) - U. S. Fish and Wildlife Service (USFWS)
(b)(6) - U.S. Fish and Wildlife Service (USFWS)
(b)(6) - U. S. Fish and Wildlife Service (USFWS)
(b) (6); (b) (7)(C) - U. S. Border Patrol, Welton Office (USBP)
(b) (6); (b) (7)(C) - U. S. Border Patrol, Air Operations (USBP)
(b) (6); (b) (7)(C) - U. S. Border Patrol - Yuma Sector (USBP)
(b) (6); (b) (7)(C) - U. S. Border Patrol - Yuma Sector (USBP)
(b) (6); (b) (7)(C) - U.S. Border Patrol - Yuma Sector (USBP)
(b)(6) - Louis Berger & Associates, Inc. (Berger)
(b)(6) - Louis Berger & Associates, Inc. (Berger)

1.0 INTRODUCTION

The purpose of the meeting was to initiate the Section 7 consultation in compliance with the Endangered Species Act (ESA) for the ongoing activities of the U. S. Border Patrol (USBP) in southwestern Arizona. The activities of the USBP were identified and described by USBP staff, and the Section 7 consultation and Section 9 incidental take permit requirements for these activities were outlined by U. S. Fish and Wildlife Service (USFWS) staff. The highlights of the meeting are presented below.

2.0 DESCRIPTION OF ACTIVITIES

After an introduction of attendees, USBP staff identified the limit of activities subject to this consultation process as the activities of the USBP Welton Station covering the area typically bound by (b) (7)(E) the U. S. / Mexican border to the south, and (b) (7)(E) The primary activities consist of the continued preparation of existing drag roads and the maintenance of existing access roads (ground operations), air patrol by helicopter (air operations), and apprehensions and rescues performed pursuant to the

ongoing mission of the USBP. Emergency rescue operations are also performed by the USBP on behalf of the Cabeza Prieta National Wildlife Refuge (CPNWR). A base map and a series of overlays illustrating the typical helicopter patrol route, drag roads, and areas of vehicle and pedestrian apprehensions and rescues was presented.

2.1 Ground Operations

Road surfaces are dragged or smoothed (b) (7)(E) as needed to determine footprints of illegal entry into the U. S. (b) (7)(E) and/or traffic). Drags involve the smoothing of existing dirt road surfaces by dragging tires by chain attached to a ground vehicle. Maintenance of existing access roads to the drags is conducted by blading (b) (7)(E) No drags or road maintenance is conducted within the (b) (7)(E) (b) (7)(E) Ground operations are initiated in response to air reconnaissance only, and are called in only if the routine helicopter patrol identifies "sign".

2.2 Air Operations

(b) (7)(E)

when "sign" (foot prints / tire tracks) is encountered. Approximately 500 apprehensions and 9 rescues were made last year with the peak period for apprehensions being in the spring (January - May).

(b) (7)(E)

The USBP - Yuma Sector has four pilots and three helicopters. New, quieter helicopters are expected to replace the existing fleet next year. The new helicopters (Boeing MD 600N) are designed without tail rotors to reduce their detectability during surveillance.

The USBP - Yuma Sector also provides helicopter support for the Cabeza Prieta National Wildlife Refuge (CPNWR) on an as needed basis. Repair of the CPNWR (b) (7)(E) and water tank inventories are conducted utilizing this support. The USBP also reports violations (i.e. off-road vehicle use) to the CPNWR and provides a monthly report on incidental wildlife sightings. The USBP also assists the CPNWR in retrieving collars from pronghorn with mortality

signals. This rapid retrieval is essential in facilitating the cause of death of the animal, as animal carcasses are subject to rapid deterioration due to scavengers.

3.0 SECTION 7 CONSULTATION PROCESS

The USFWS staff asked questions to clarify the definition of the USBP activities subject to the Section 7 consultation, made requests of additional information on the activities, and defined the scope of the Biological Assessment necessary to complete the consultation process. In general, the more information/detail the USFWS obtains on a given activity, the less assumptions the USFWS have to make. The USFWS will assume that an affect occurs in the absence of information to the contrary.

3.1 Activity Clarification

The USFWS inquired as to the status of the interagency agreement between the USBP and the CPNWR. The 1987 Memorandum of Agreement (MOA) lapsed in 1992, but the spirit of the agreement is maintained. Both the USBP and the CPNWR officials agreed that a new MOA should be drafted shortly. The USFWS asked how the USBP modifies it's activities in the CPNWR. The

(b) (7)(E)

(b) (7)(E)

based on past experience was requested. The USBP only deviates from the routine flight path when "sign" is observed, or when required by the CPNWR and AGFD. The USFWS asked that the Biological Assessment include a narrative description of drag roads, maintained roads, rescue and apprehension activities, and helicopter usage.

3.2 Biological Assessment Requirements

The USFWS noted that based on their review of the Yuma County list of special status species there were three endangered species which may occur in the vicinity of the USBP activities. These activities would be subject to Section 7 consultations and incidental take permits would be needed. The species are the Sonoran pronghorn antelope, Cactus Ferruginous Pygmy Owl, and the lesser long nosed bat. The USFWS noted that the Perigrine Falcon was only a transient species and that the USBP activities would not likely coincide with the Falcon, as such, the USBP activities would not affect the Perigrine Falcon. These species are considered to be endangered. Other species on the list would likely constitute no affect, but the Biological Assessment should briefly state the rational

for determining no affect. The USFWS recommended that the USBP submit a written request for the county list and request formal consultation.

The USFWS noted that there are 7 - 9 individual Cactus Ferruginous Pygmy Owls known to exist in Arizona. The Owls favor dense multi-storied vegetation of riparian areas and washes. The owls are secondary cavity nesters. Field surveys for the Owls would not be necessary as part of the Biological Assessment, but habitat assessments are recommended. Aerial photographs showing dark areas (i.e. areas of denser and hydrophytic vegetation) along washes may illustrate suitable habitat.

The USFWS noted that the lesser long nosed bat is known to roost in caves and mine shafts east of the Yuma County line, and that it may forage within the activity area of the USBP. Habitat assessments and timing/coincidence issues may need to be addressed for the bat. (b)(6)(b)(7)(C) of Tucson was identified by the USFWS as a bat expert. The USFWS noted that the forage area for the bat may not exist in the USBP activity area, and since the USBP (b) (7)(E) operations, the determination of may affect, but not likely to adversely affect may be applicable.

Since surveys and studies are currently underway for the Sonoran pronghorn, the USFWS noted that no additional surveys/studies need to be conducted by the USBP. The AGFD is the primary repository of Sonoran pronghorn data.

4.0 TERMS AND CONDITIONS OF THE BIOLOGICAL OPINION AND INCIDENTAL TAKE PERMIT

The USFWS noted that subject to the Biological Assessment, the terms conditions of the Biological Opinion and incidental take permit will likely focus on impact minimization which may include flight path changes, flight height alterations, limits on ground disturbance in sensitive habitats.

5.0 OTHER ISSUES

Other issues were discussed concerning the Section 7 consultation process and Section 9 incidental take permit. These issues included the following:

- The incidental take permit will specifically address the activity presented in the Biological Assessment pursuant to Section 7. If any changes to the activity occur subsequent to issuance of the Biological Opinion, then the take permit will need to be modified or reissued.

- The Bureau of Land Management (BLM), upon whose land the drag roads are prepared, would need to be a party to the Section 7 consultation process only if it is a partner in the activity. Since the BLM is not a partner, it was recommended that the BLM not become a party to this consultation process.

6.0 ACTION ITEMS

The USFWS recommended the following:

- That the formal Section 7 consultation process be initiated with a letter request to the USFWS, which also requests the special status species list for Yuma County.
- That the Biological Assessment contain a full detailed description of the USBP activities, and focus on the Sonoran pronghorn antelope, Cactus Pygmy Ferruginous Owl, and the lesser long nosed bat.

Prepared by:

(b)(6)

Louis Berger & Associates., Inc.

October 7, 1997
Date

APPENDIX C
BIOLOGICAL OPINION ANNUAL REPORT

U.S. Department of Justice
Immigration and Naturalization Service
Architect-Engineer Resource Center

Attention: CESWF-PM-INS
819 Taylor Street, Room 3A28
P.O. Box 17300
Fort Worth, TX 76102-0300

April 10, 2002

U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
(b)(6)
2321 W. Royal Palm Road
Suite 103
Phoenix, Arizona 85021-4951

RE: Biological Opinion (2-21-96-F-334) Annual Report for the U.S. Border Patrol Operations, Yuma Sector, Yuma Arizona

Dear (b)(6)

The purpose of this letter is to provide data addressing the Conservation Measures set forth in the September 5, 2000 Biological Opinion (BO), 2-21-96-F-334. This will serve as our first annual report and identifies the Conservation Measures that have been implemented by the Immigration and Naturalization Serve (INS) and U.S. Border Patrol (USBP).

The following paragraphs describe the status of the Conservation Measures contained in the BO.

1. Purchase of newer, quieter MD600N helicopters to replace existing OH-6As. The MD600N were originally requested as replacements for the OH-6As on January 16, 1998 (see Attachment A); however, the USBP had decided against purchasing the MD600N because of cost, maintenance and operational issues that had arisen after several MD600Ns were placed into service. The USBP has not forgone replacing the OH-6As and are currently evaluating several single engine light duty aircraft as a replacement aircraft for the OH-6As. The El Paso Flight Operation will develop aircraft specifications and solicit prospective vendors. Noise levels will be one of the specifications considered during the analysis. These aircraft would be used to detect sign of illegal entry during the daytime hours and for Search and Rescue (SAR) missions. The USBP has purchased one A-Star aircraft for night operations.

The A-Star is a double engine medium duty aircraft, which is needed to transport the (b) (7)(E) and required personnel (two agents).

2. Coordinate with Arizona Game and Fish Department (AGFD) weekly to obtain current pronghorn locations to avoid concentrations and fawning areas. The USBP has met with (b)(6) AGFD to discuss USBP helicopter over flights. See attached memorandum dated 5/3/00 from Chief Patrol Agent (b) (6); (b) (7)(C) (Yuma Sector) to you regarding this meeting (Attachment B). The AGFD fax the weekend telemetry flight results to the USBP weekly and USBP pilots alter their flight patterns to minimize disturbance to the pronghorn. See attached memorandum dated March 5, 2002 from Patrol Agent in Charge Aitkens (Wellton Station). Copies of the weekly telemetry flight data are provided in Attachment B. Also provided in Attachment B is the current and anticipated air operations schedule in the Cabeza Prieta National Wildlife Refuge.

3. Continue to make monthly reports of activities and wildlife observations to the Cabeza Prieta National Wildlife Refuge (CPNWR) manager. The Yuma Sector, Wellton Station has been performing monthly coordination with the CPNWR manager. See the attached summaries (11/00 to 10/01) from the Patrol Agent in Charge Wellton Station to the CPNWR (Attachment C), also the record of the semi-annual meeting with USFWS personnel from the CPNWR, which covers sensitivity to the environment, are also contained in Attachment C.

4. Finalize USBP and CPNWR Memorandum of Understanding. The MOU was completed on November 12, 1999 and is provided as Attachment D.

5. The USBP should continue participation in ecosystem partnerships with the federal agencies in Sonoran pronghorn habitat. The USBP attends an annual interagency meeting with CPNWR, USFWS, Bureau of Land Management (BLM) to present the annual report and discuss ways to improve conditions. To date an annual report has not been submitted. This letter report covers those activities up to December 2001. However, the agencies meet quarterly a the Barry M. Goldwater Range Executive Council discussing germane issues and seeking ways to reach or assist each other in meeting our individual mission requirements.

The following provides documentation for the Reasonable and Prudent measures set forth in the BO.

Reasonable and Prudent Measure number 1.

1) Reduce flights into Cabeza Prieta and administrative road usage by Border Patrol vehicles during fawning. Flight information is same as Conservation Measure item 2 above (Attachment B). Administrative roads on CPNWR are only used when required for apprehensions. Illegal entries are tracked by foot with the assistance of a USBP helicopter.

2) Establish speed limits on all roadways in current pronghorm habitat, as identified by AGFD surveys that are prudent for visibility so no Sonoran pronghorn are injured due to vehicles. The USBP has established a speed limit of [redacted] miles per hour along roadways within and adjacent to Sonoran pronghorn habitat. See memorandum dated March 3, 2002 from Patrol Agent in Charge [redacted] (Wellton Station) instructing USBP personnel of the speed limit (Attachment E).

Reasonable and Prudent Measure number 2.

1) Within six months of the date of the opinion, the USBP will begin a study with AGFD to determine the effects of noise, visual impacts, and night operations form helicopter over flights on Sonoran pronghorn. This study has not been initiated at this time: however, funding is currently being sought to provide AGFD with the appropriate resources.
2) The USBP will within one year of the completion of the BO begin a study with AGFD to determine the effects of border patrol activities on pronghorn during fawning season. This study has not been initiated at this time; however, funding is being sought to enter into an agreement with AGFD to be a part of the annual breeding survey.
3) All above studies and monitoring efforts will be coordinated with the Service. As no studies have been initiated, there have been no coordination efforts with the USFWS.

Reasonable and Prudent Measure number 3.

1) A report of the results of all monitoring efforts, including complete and accurate records of all incidental take that occurred during the course of the actions described herein, will be submitted to the Service on a yearly basis. This report will also describe how each of the terms and conditions of all Reasonable and Prudent measured in this incidental take statement were implemented. The USBP will attach all maps, tables, a summary of meetings and contacts, and consultant's reports produced during the year to the annual report. Submittal of this correspondence fulfills this requirement. This report is for the period 9/00 to 12/01.

During the meeting you requested that INS and the USBP provide a list of recipients for future correspondence regarding the Yuma Sector. All correspondence should be addressed to (b)(6) at the address below, with copies furnished to the following list of individuals.

Immigration and Naturalization Service
Headquarters Facilities and Engineering Division
(b)(6) Acting Director
425 I Street NW
(b) (7)(E)
Washington, D.C. 203536

Copy Furnished to:

U.S. Border Patrol
Yuma Sector
(b)(6)
350 W. First Street
Yuma, AZ 85366-2708

Immigration and Naturalization Service
Western Region Office
(b)(6)
24000 Avila Road
Laguna Niguel, CA 92677

Immigration and Naturalization Service
(b)(6)
425 I Street NW
Room 6100
Washington, D.C. 20536

Immigration and Naturalization Service
(b)(6)
425 I Street NW
Room 2060
Washington, D.C. 20536

U.S. Border Patrol
(b)(6)
425 I Street NW
Room 4226
Washington, D.C. 20536

INS/AE Resource Center
(b)(6)
819 Taylor Street
Room 3A28
Fort Worth, TX 76102-0300

If you have any questions or require additional information, please do not hesitate to call.

Sincerely,

(b)(6)

Director, INS A-E Resource Center

ATTACHMENT A
(Helicopter Replacement Memorandum)

Memorandum

(b) (7)(E)

Subject El Paso Flight Operations	Date January 16, 1998

To Chief Air Ops Air Operations El Paso, Texas	From Office of the Chief Patrol Agent Yuma, Arizona

As you are aware, the Immigration and Naturalization Service (INS) has received notice of intentions to file law suites from environmental organizations, specifically, "Earthlaw" and the "Land and Water Fund." They have alleged that Yuma Sector activities, which take place within the Cabeza Prieta Wildlife Refuge, adversely affects the living and breeding habits of the endangered Sonoran Pronghorn antelope. Last September, members of the INS Facility Planning staff held meetings with Yuma Sector staff, the U.S. Fish and Wildlife Service, and Arizona State Department of Game and Fish to outline consultation and incidental take permit requirements, to comply with the Endangered Species Act.

In an effort to minimize our impact upon the habitat area, we have long utilized aerial flight patterns to patrol these sensitive areas. However, as pointed out in correspondence by the Land and Water Fund, the noise levels of our aircraft may have an effect upon the antelope and other endangered species, which are known to inhabit the area. One way to mitigate our impact is to utilize quieter aircraft to patrol the area. This point was stressed by both members of the U.S. Fish and Wildlife Service and Arizona State Department of Game and Fish as a means of reducing the incidental take and impact upon the animals.

In order to mitigate the impact upon the endangered species of the Cabeza Prieta our fleet of three OH-6 helicopters should be replaced with the MD-600N. This replacement would serve both environmental interests in this sensitive area and those of the INS. Moreover, the extended range of these aircraft and expanded capabilities would provide a far more stable platform for operations.

Your consideration of this sensitive issue is appreciated. If you or your staff have any further questions, please do not hesitate to contact myself or (b)(6)

(b) (6); (b) (7)(C)

Chief Patrol Agent

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Form G-2
(Rev. 1-2-80)

ATTACHMENT B
(AGFD Coordination)

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

(b) (7)(E)

Office of the Chief Patrol Agent

350 West First Street
Yuma, Arizona 85364

May 3, 2000

(b)(6)
Wildlife Biologist
U.S. Fish and Wildlife Service
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021

Dear (b)(6)

In an effort to coordinate our activities with the changes in the critical habitat area of the Sonoran Pronghorn Antelope, Assistant Chief Patrol Agent (b)(6) and Patrol Agent in Charge (b)(6) Arizona Fish & Game Department, on Tuesday, May 2, 2000, to discuss the route of travel of helicopters as they flew over the Cabeza Prieta Wildlife Refuge.

(b)(6) pointed out that areas to avoid usually shifted with the seasons and stress the animals were experiencing, due to climatic conditions. We pointed out the area known as the (b) (7)(E) and how we had altered our flight path to avoid the area. We agreed to meet with him during early June to map out alternative routes of travel, which would coincide with critical habitat area, for that time of year. At that time, we will alter our routes, as he suggests, where possible, to avoid critical habitat area. We also told him that we would meet periodically to map out routes of travel for the critical seasons and weather conditions.

(b)(6) agreed to provide a copy of the telemetry data collected and send it to our office each Monday. In that way, we would be able to avoid the locations of known individuals, as we patrol the area.

If you have any further questions on this meeting, please contact ACPA (b)(6)(b)(7)(C) (b)(6)(b)(7)(C)

Sincerely,

(b)(6)(b)(7)(C)
Chief Patrol Agent

MMM/pb

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

Office of the Patrol Agent in Charge
Air Operations

350 West First Street
Yuma, Arizona 85364

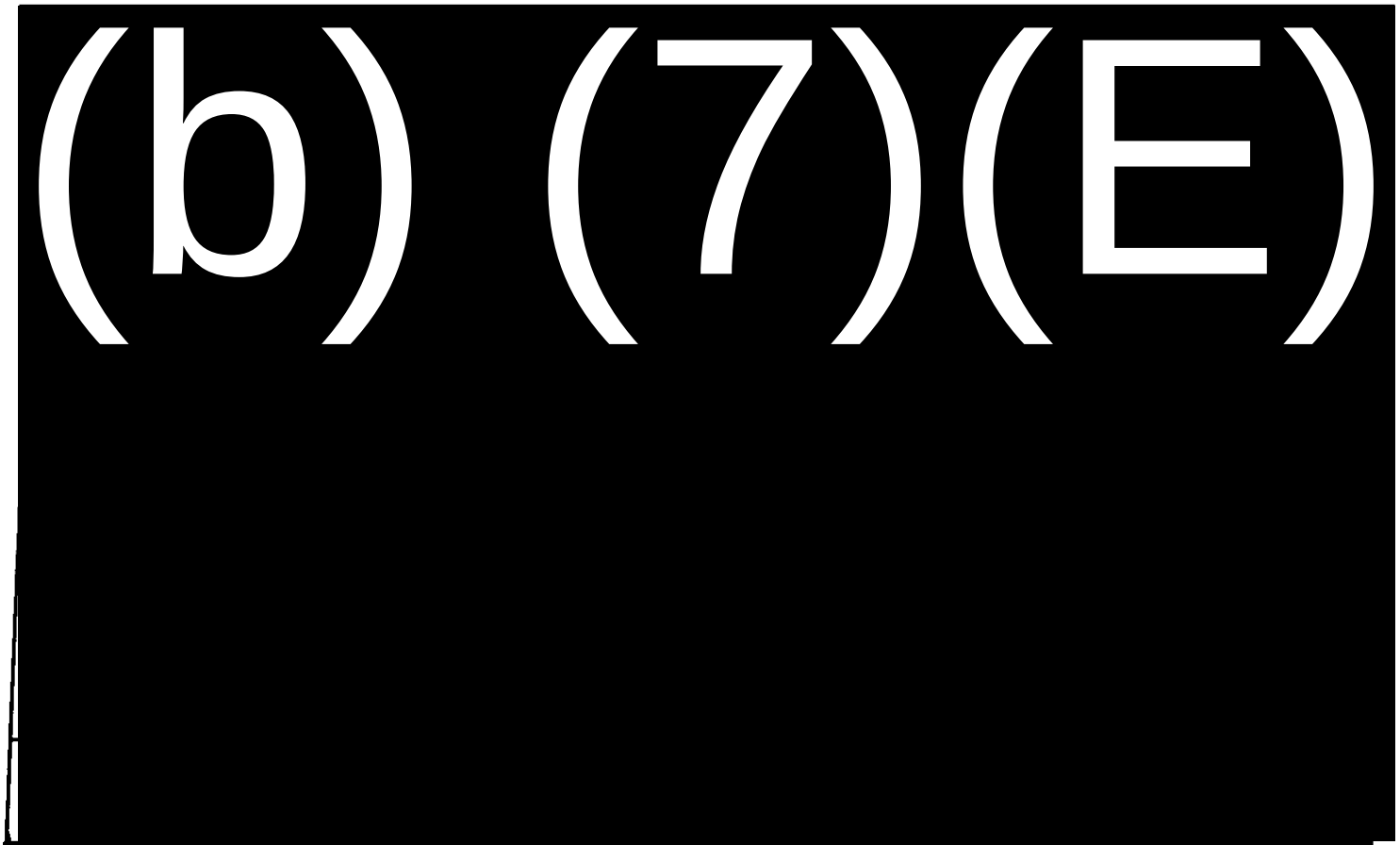
March 5, 2002

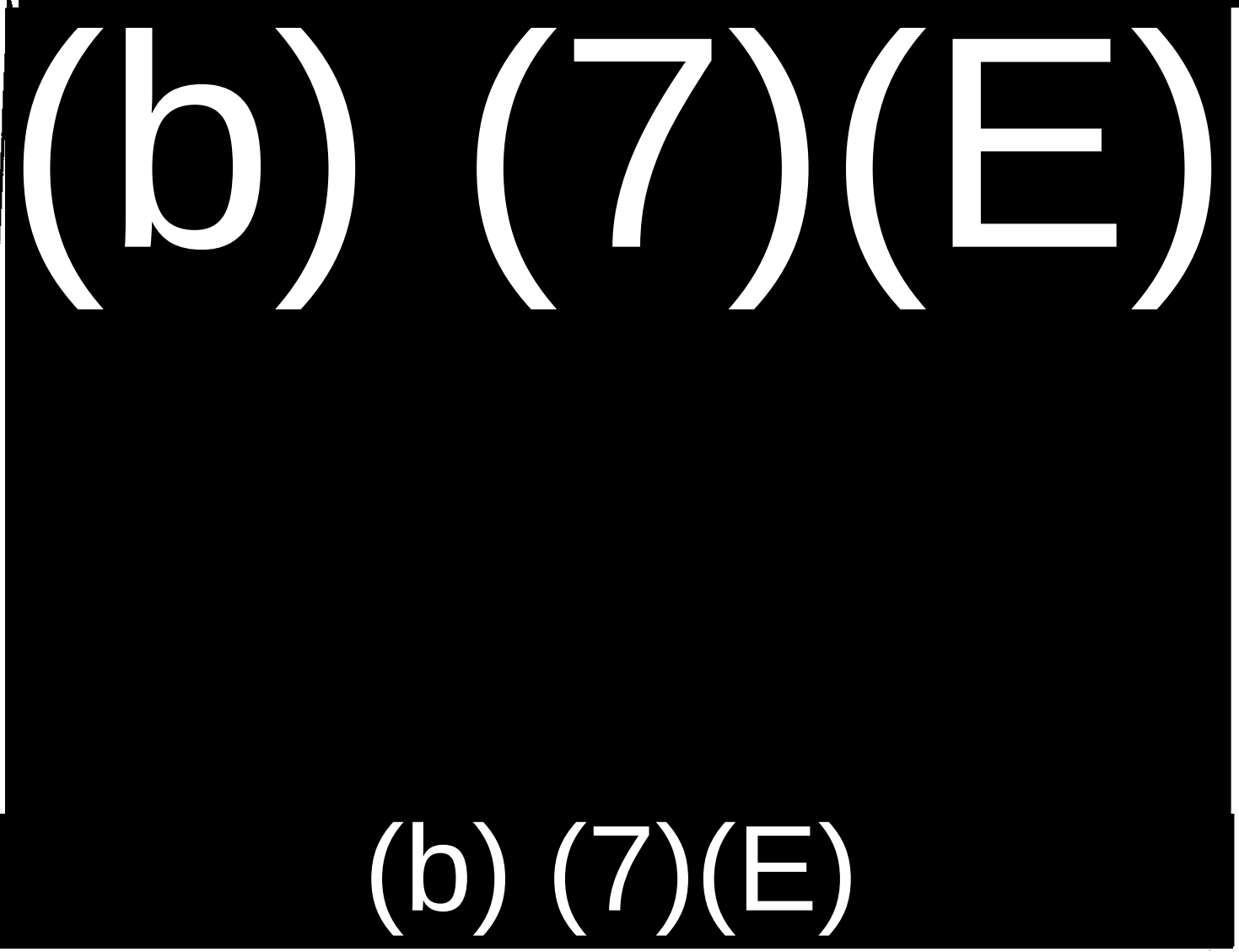
MEMORANDUM FOR CHIEF PATROL AGENT
YUMA, ARIZONA

FROM: (b)(6)(b)(7)(C)
Patrol Agent in Charge

SUBJECT: Pronghorn Antelope Over-flight Restrictions

The Yuma Sector Air Operations Unit conducts flights within the Cabeza Prieta Wildlife Refuge on a continual basis. All pilots are briefed to avoid the (b) (7)(E) during fawing periods of the Sonoran Pronghorn antelope. Flights over or near the (b) (7)(E) are avoided unless we are following undocumented aliens through the area. We receive on a weekly basis a map provided by the Arizona Game and Fish Department that shows concentrations of antelope on the Barry M. Goldwater ranges. This map is posted in a prominent place and reviewed by the Sector pilots. These areas are avoided if at all possible while conducting our missions.





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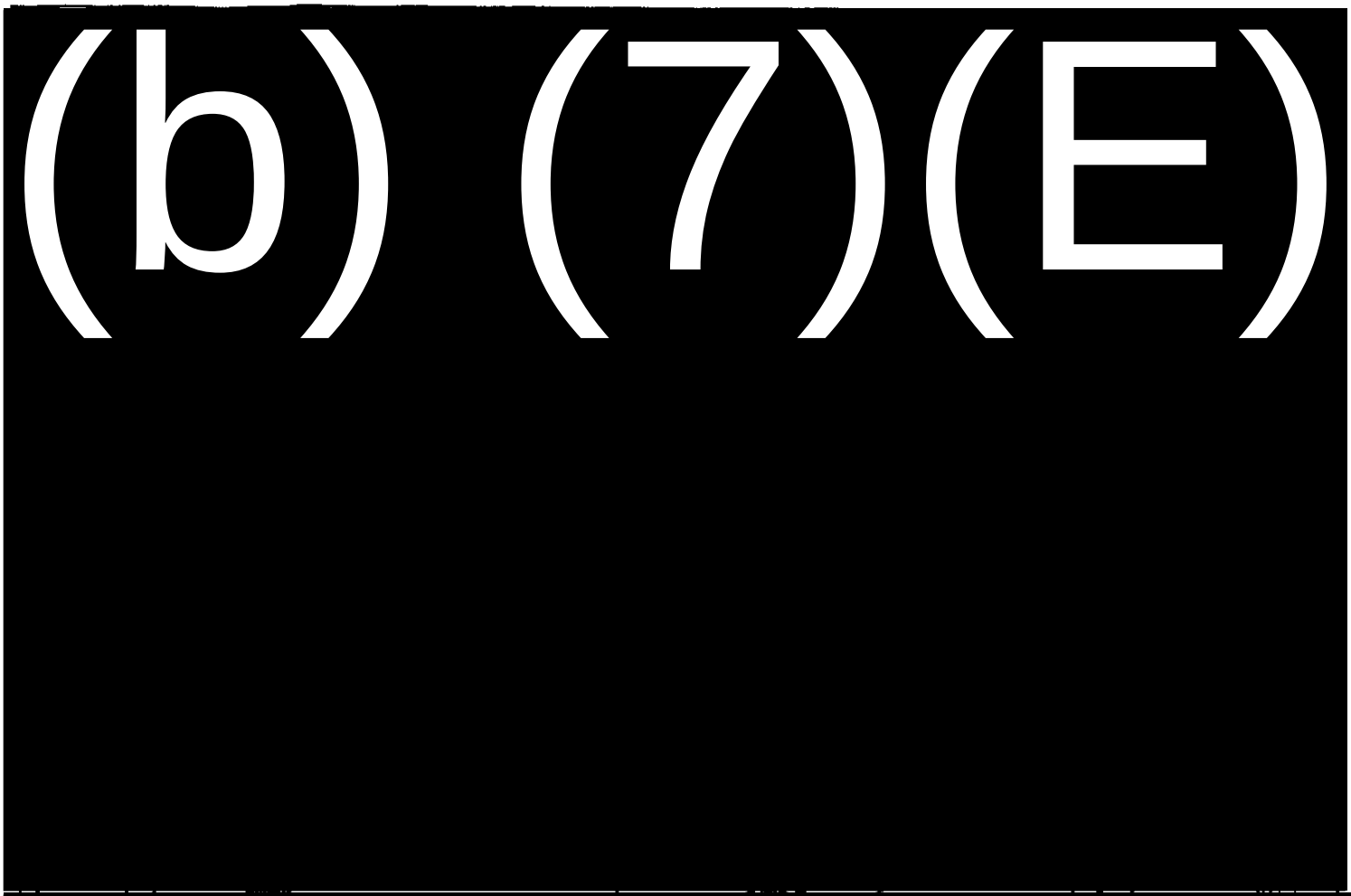
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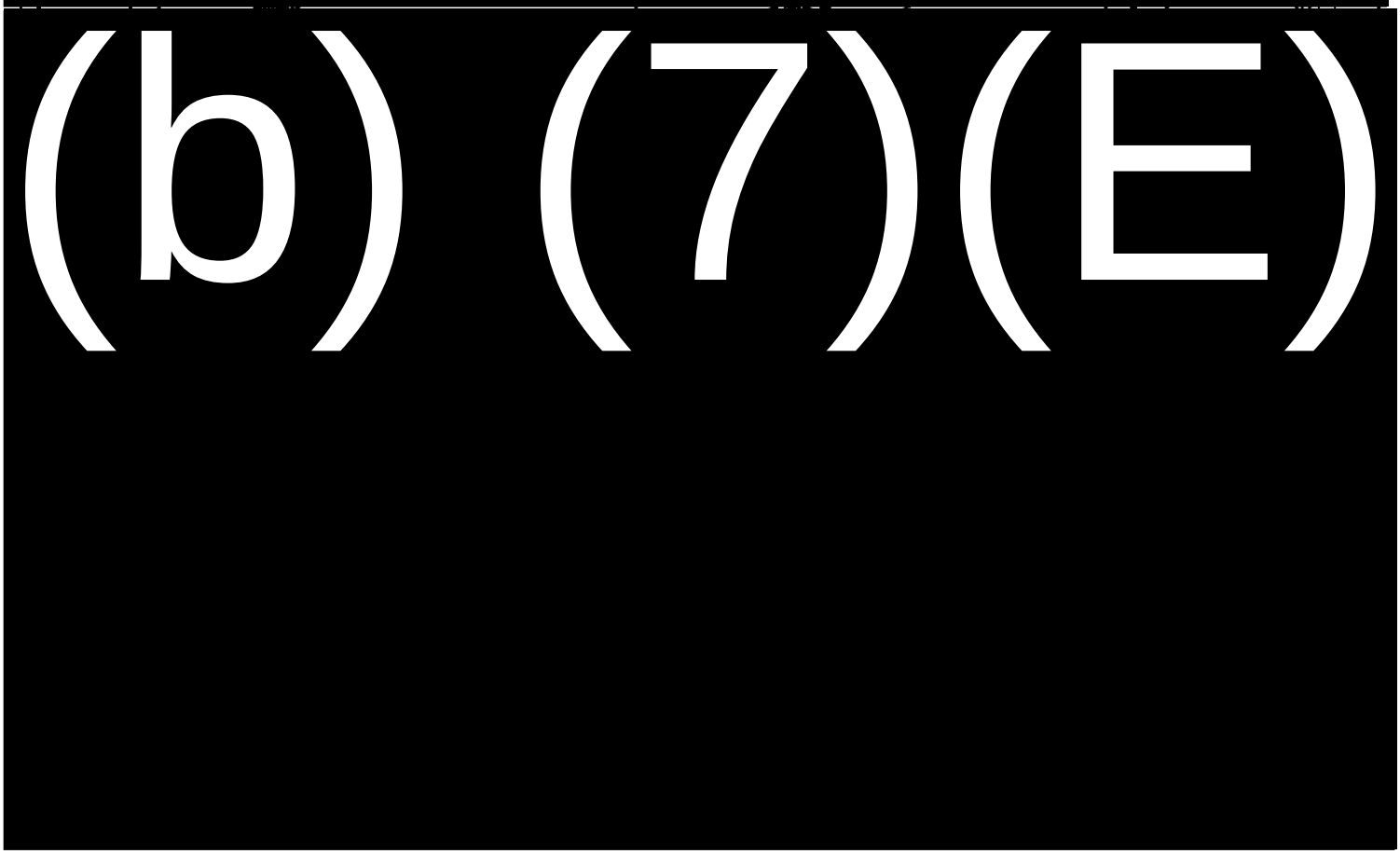
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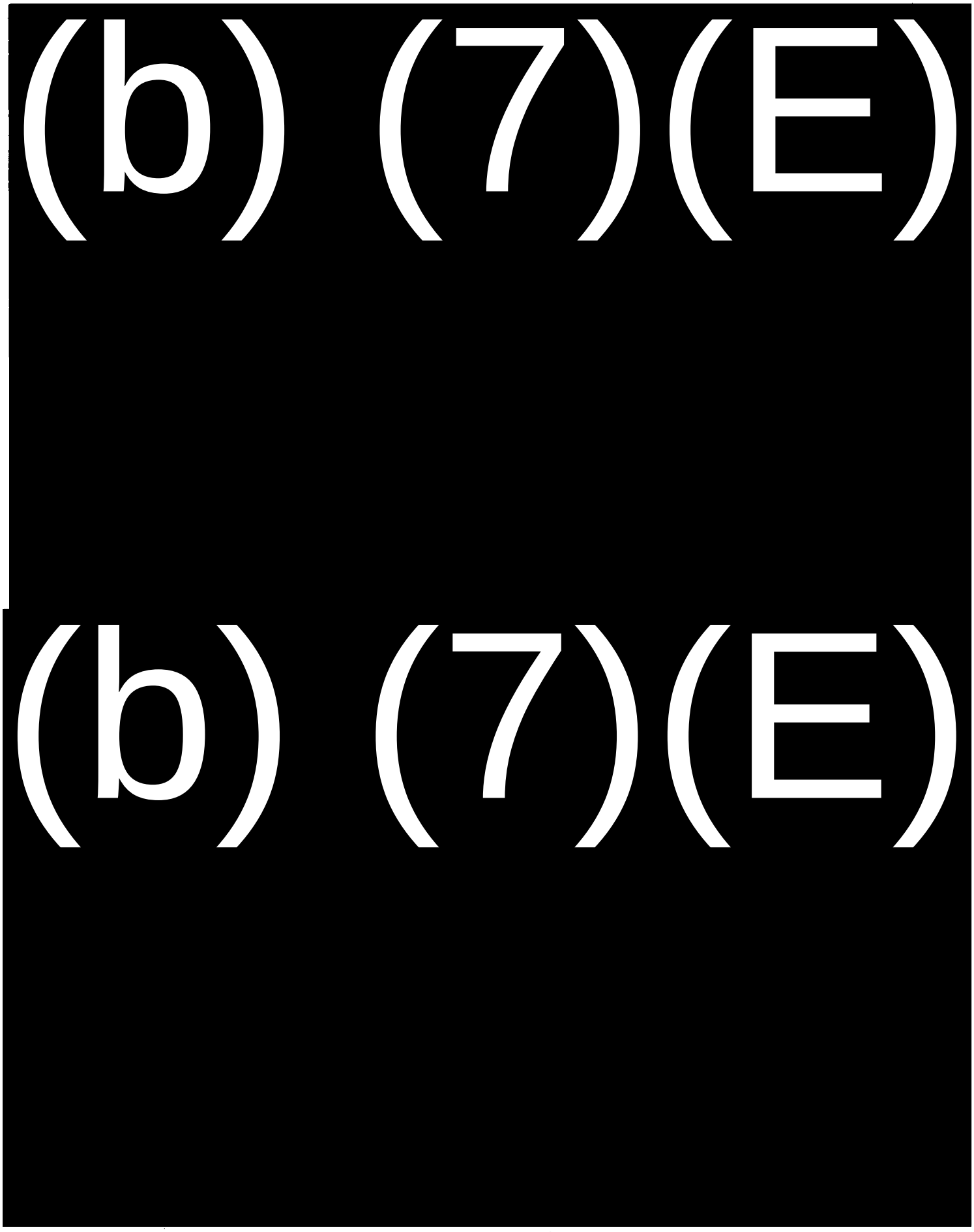
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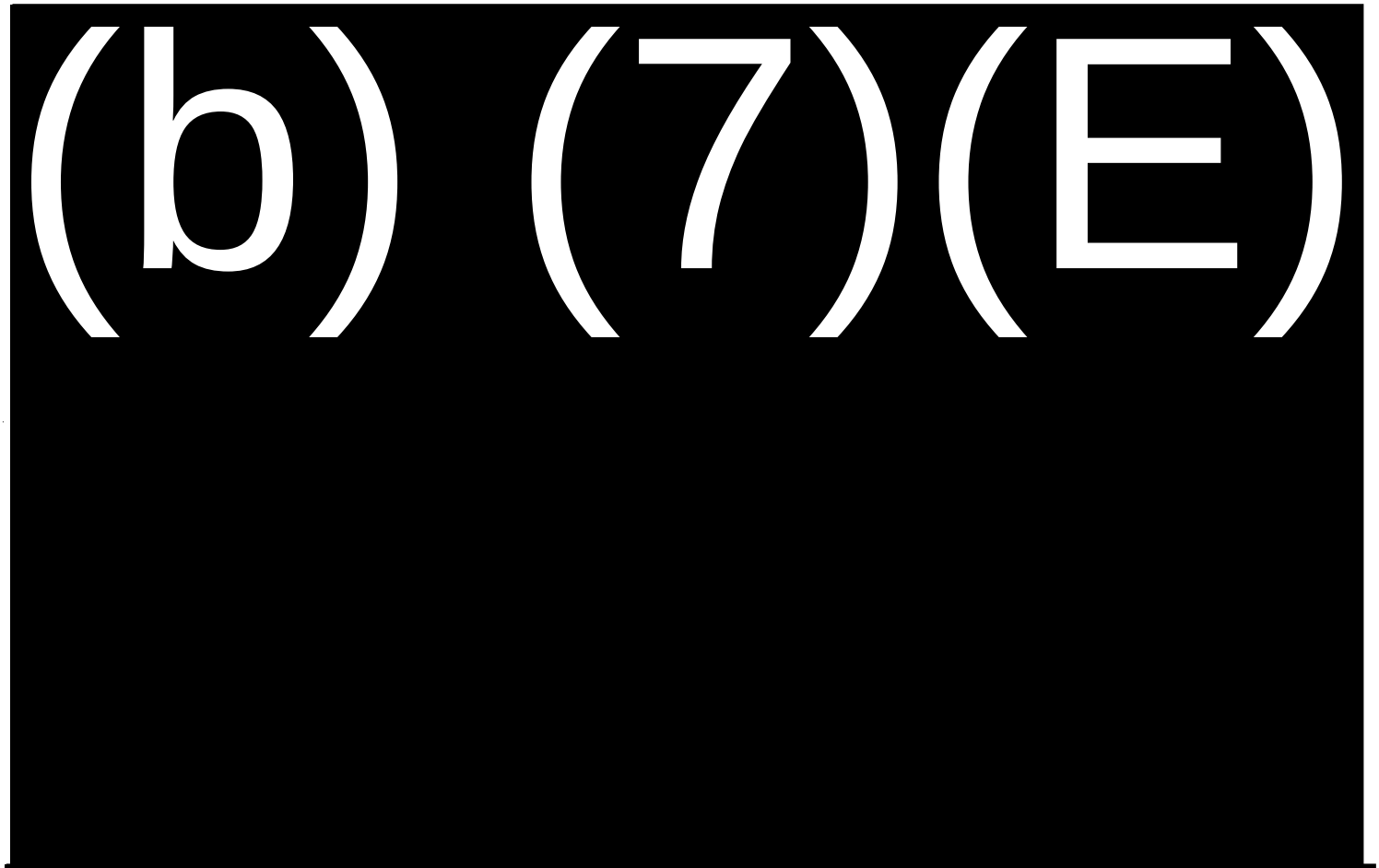

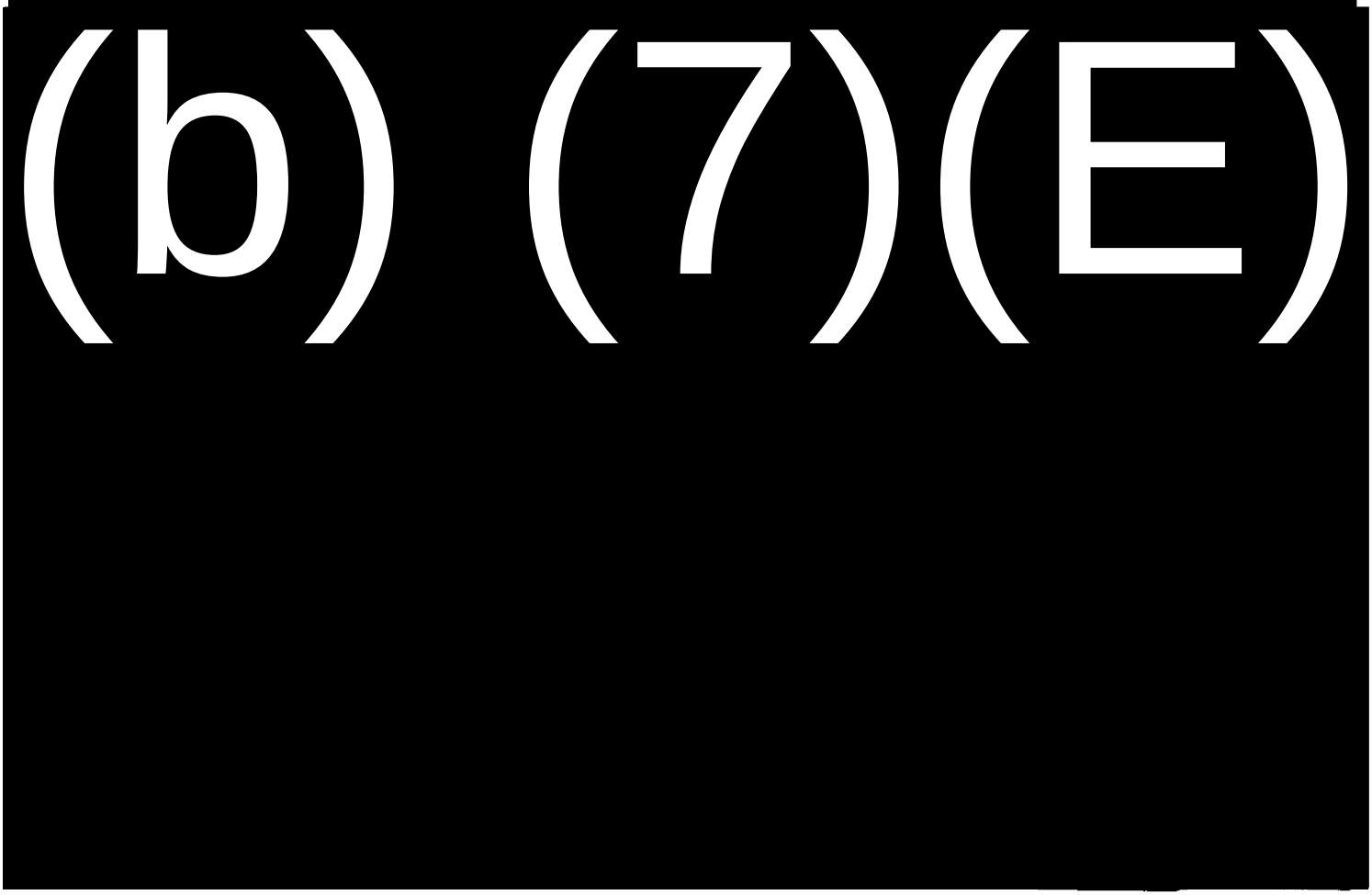

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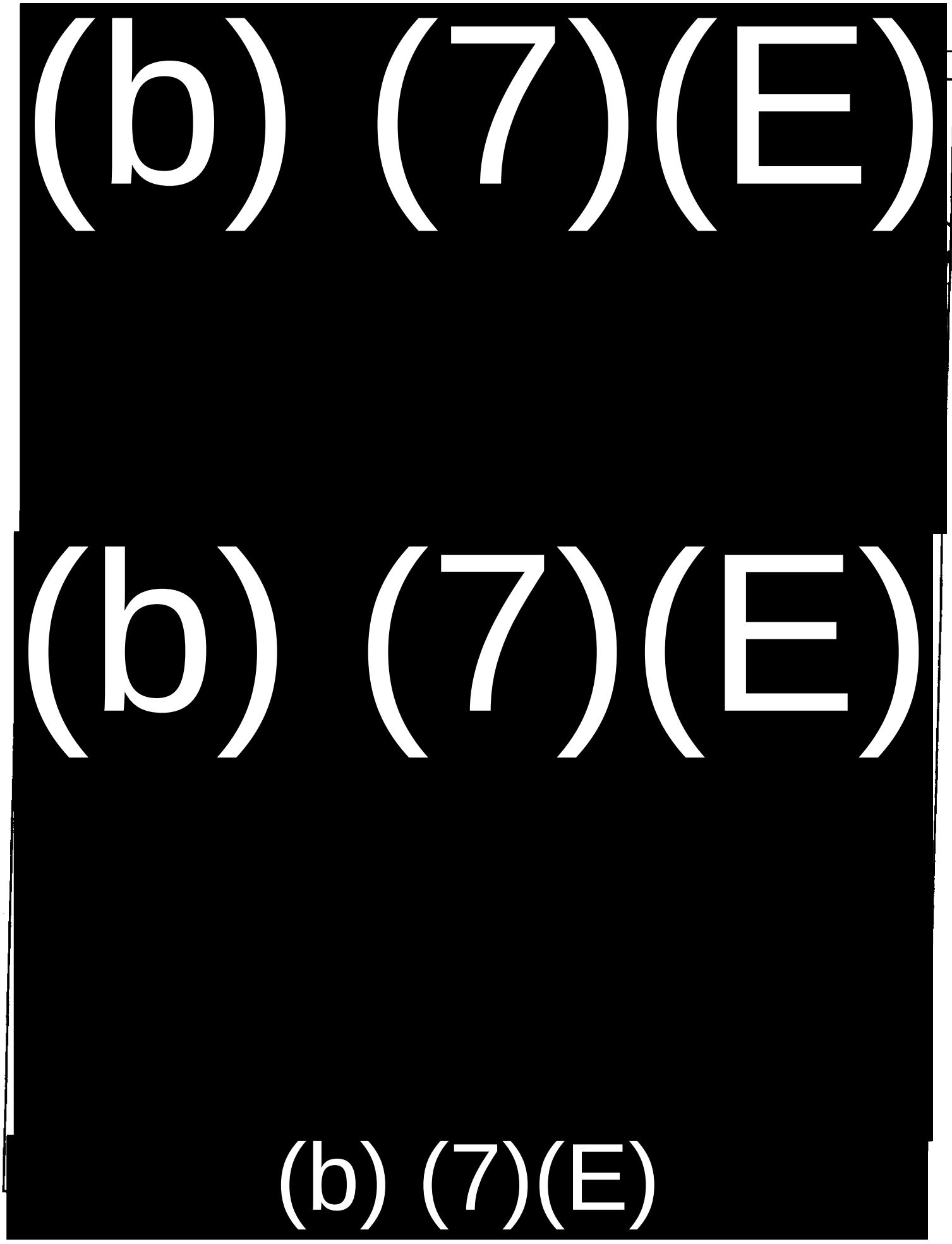
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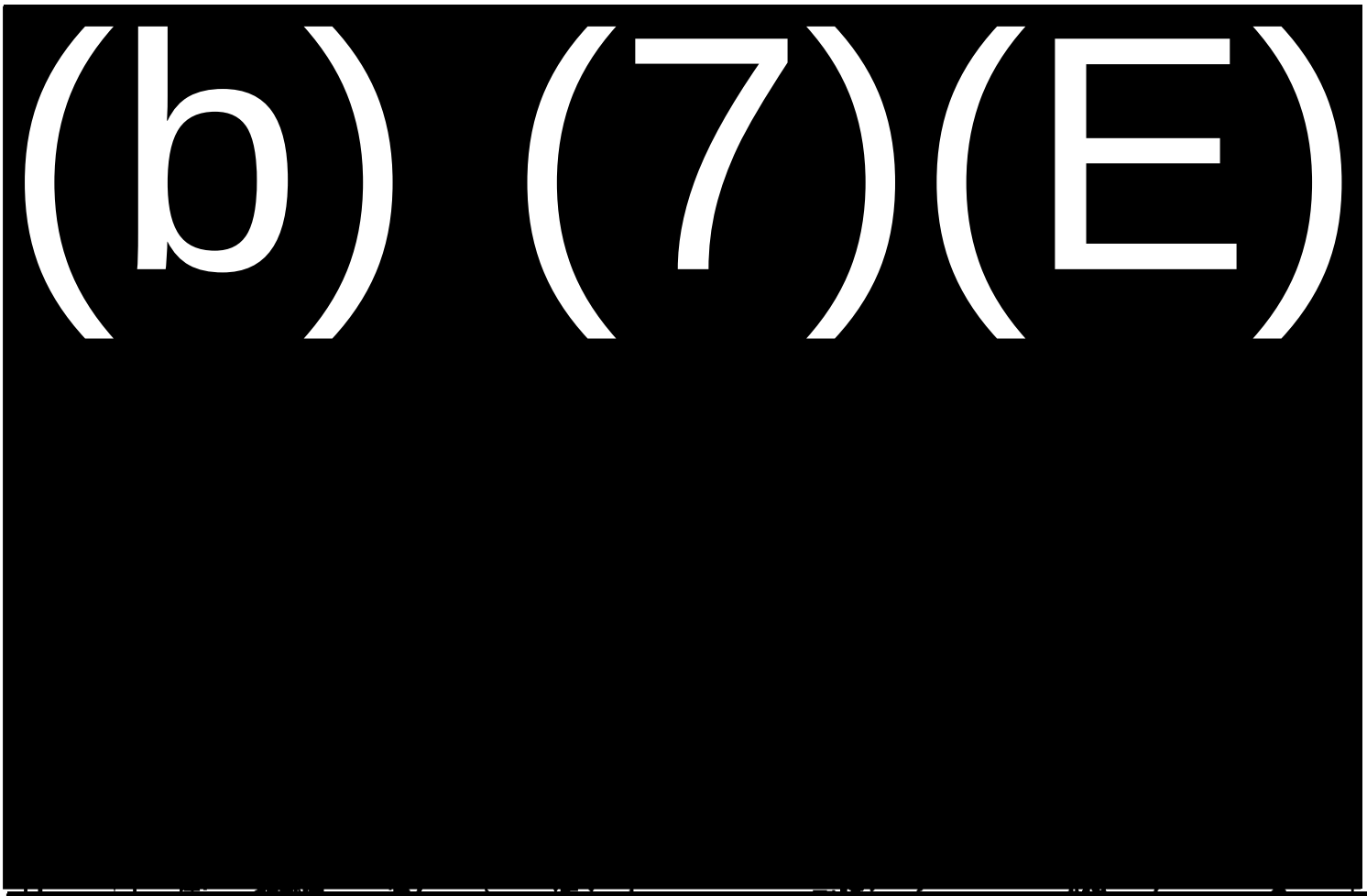

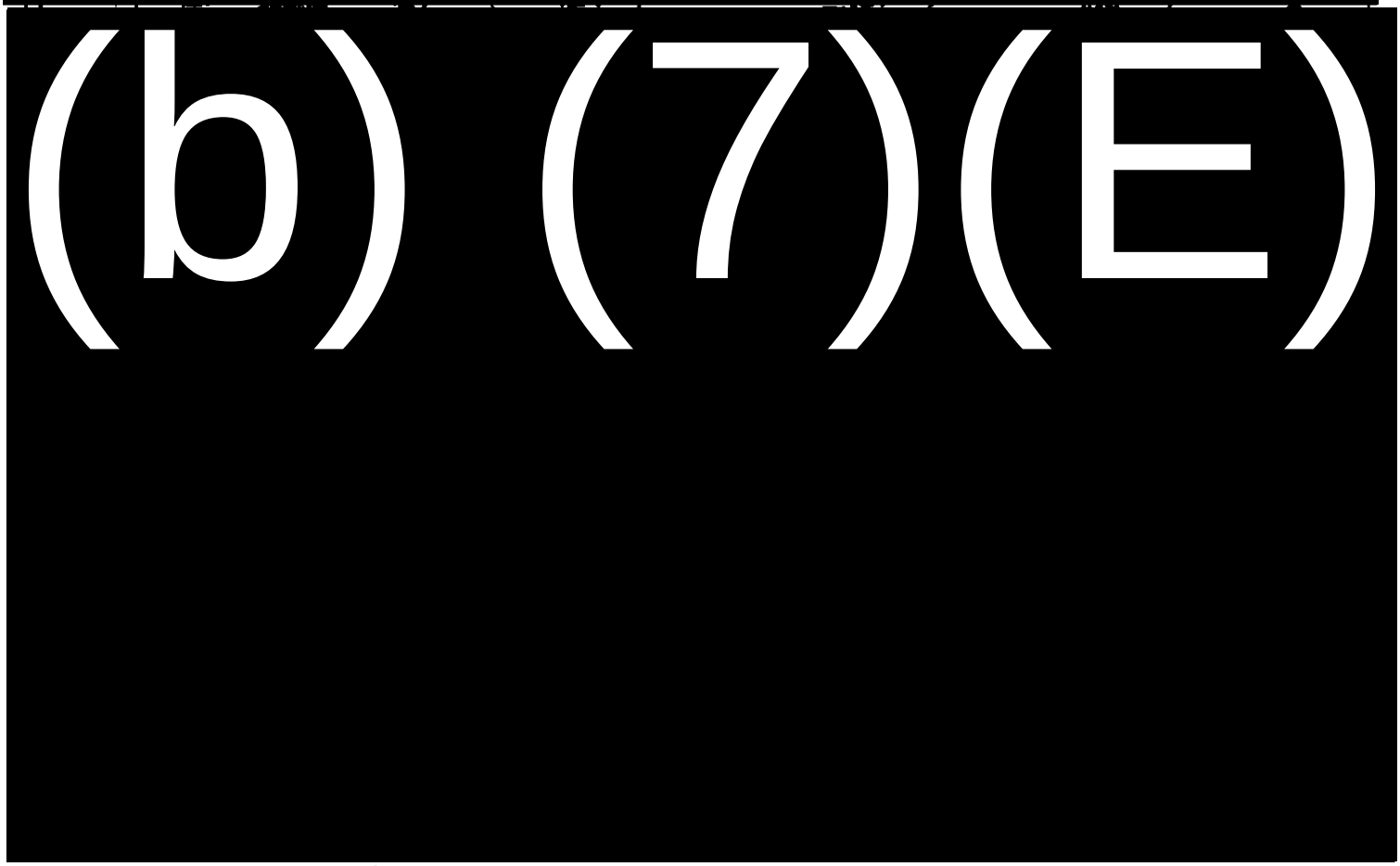

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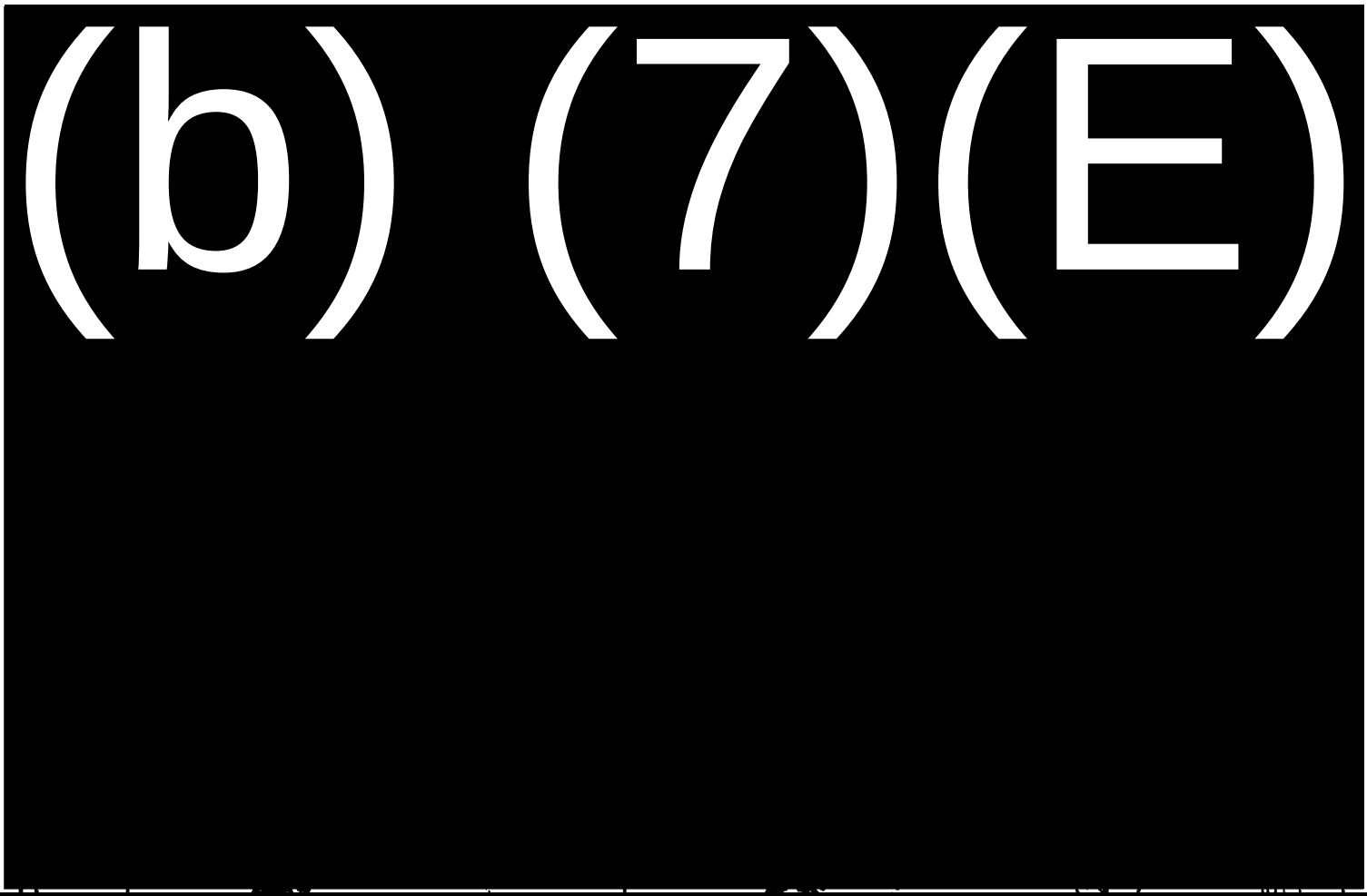
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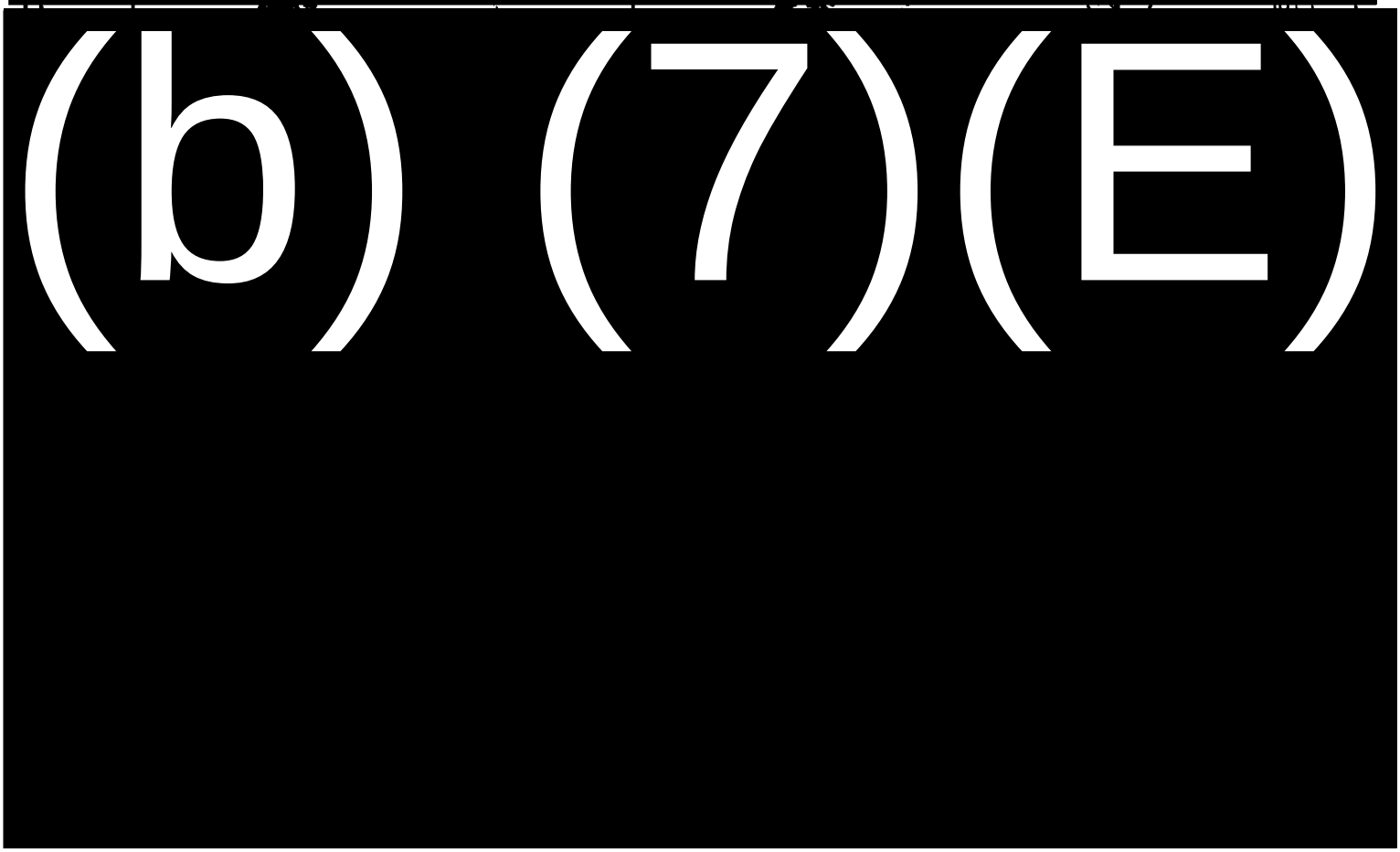
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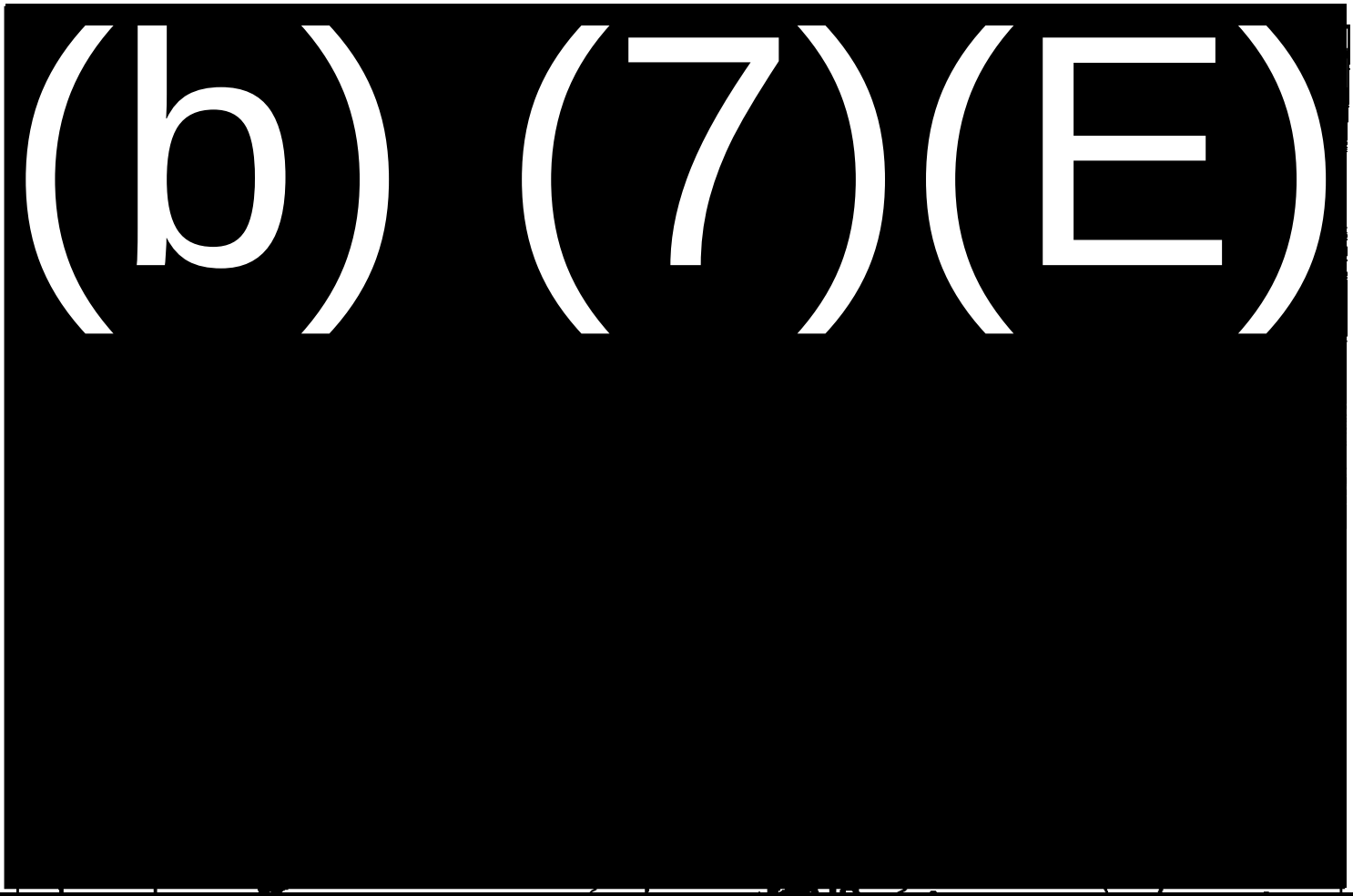

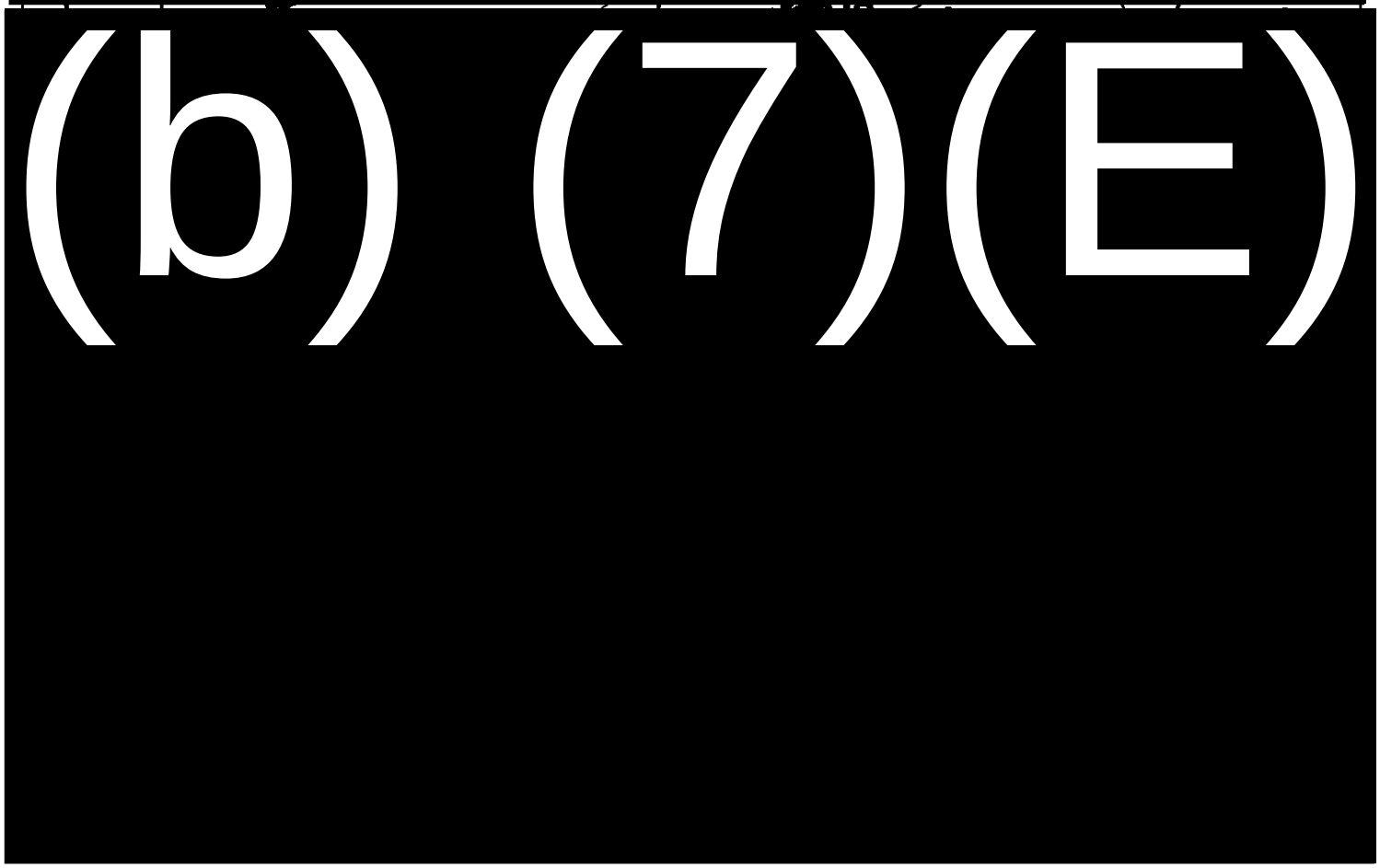

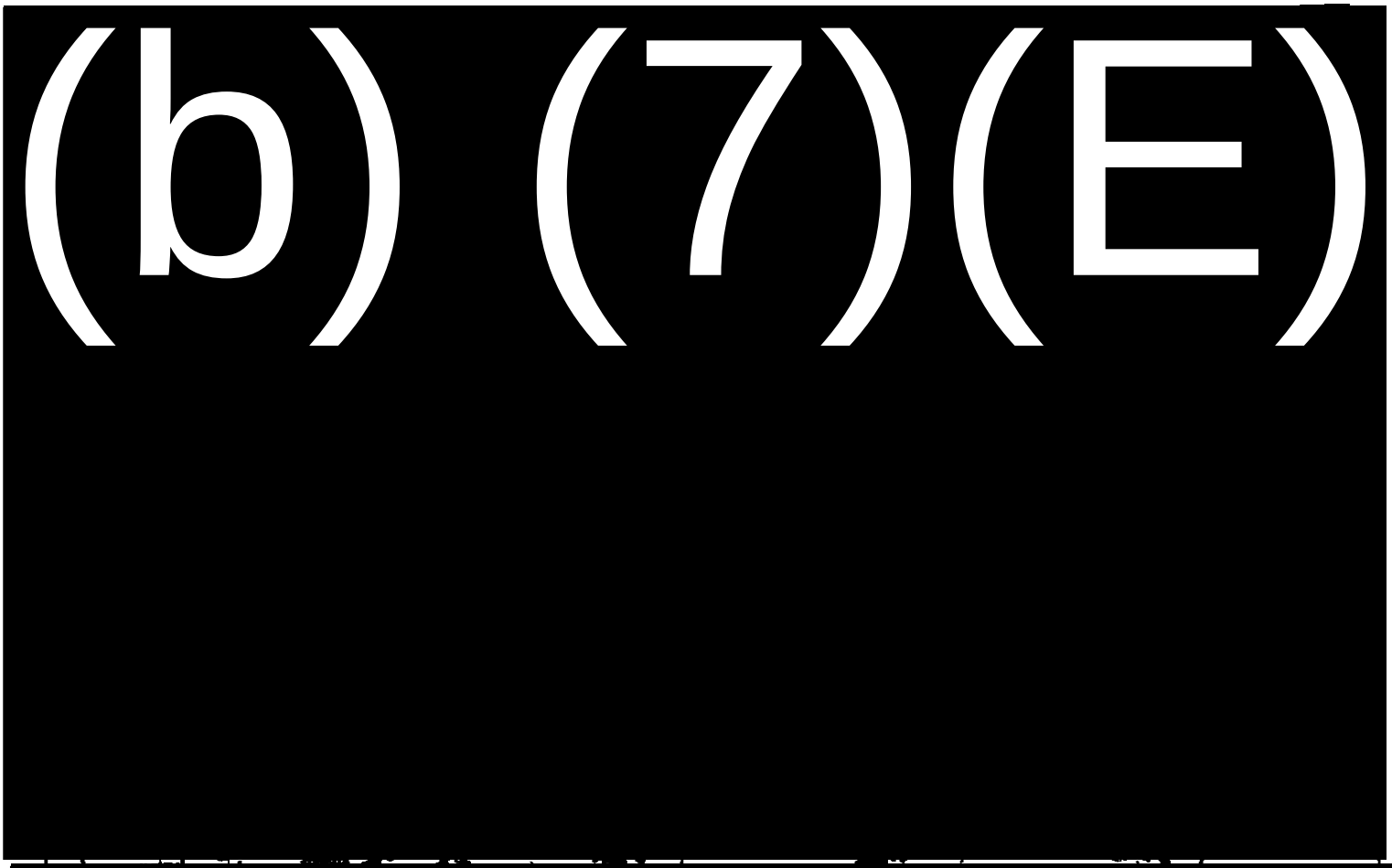

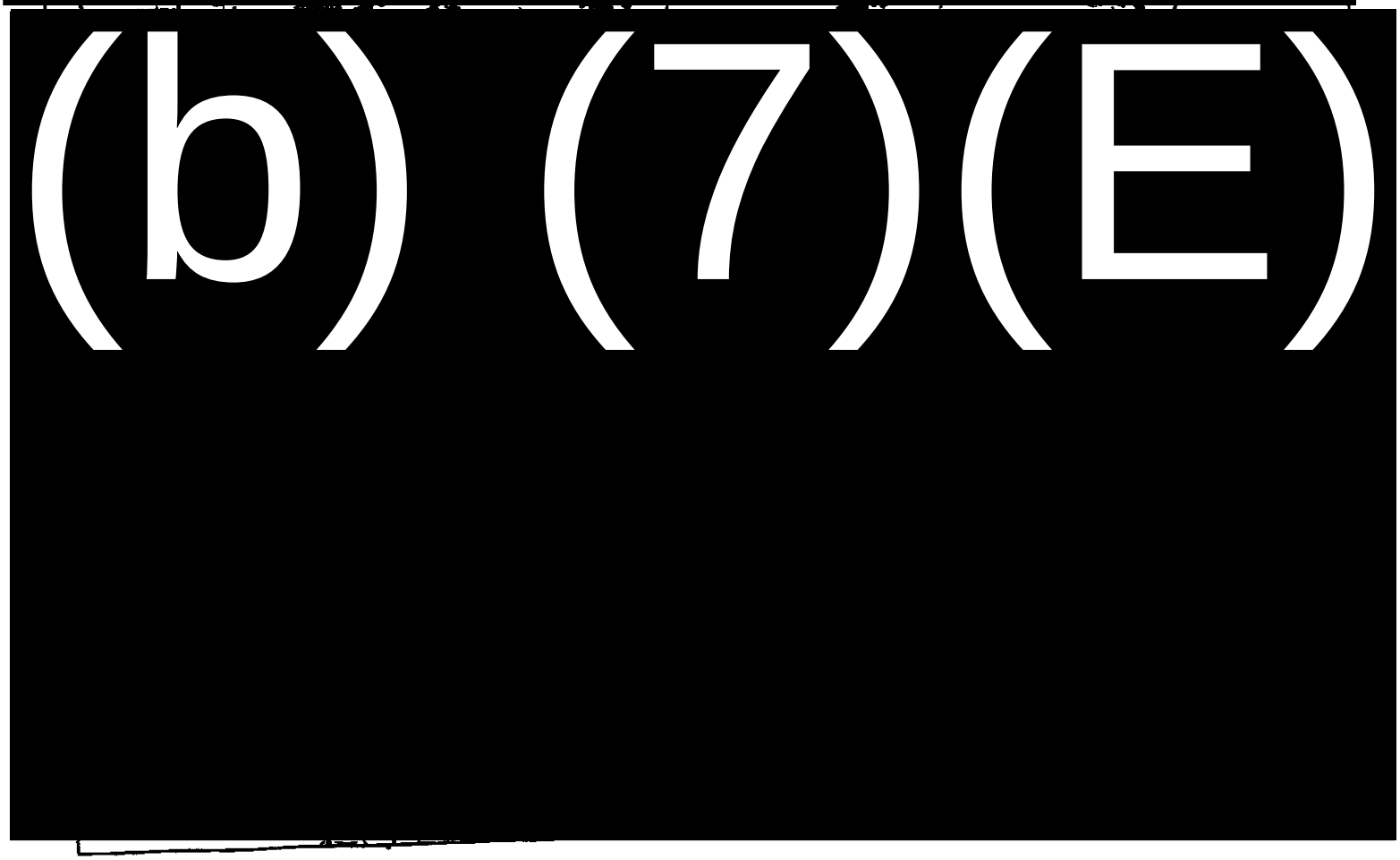

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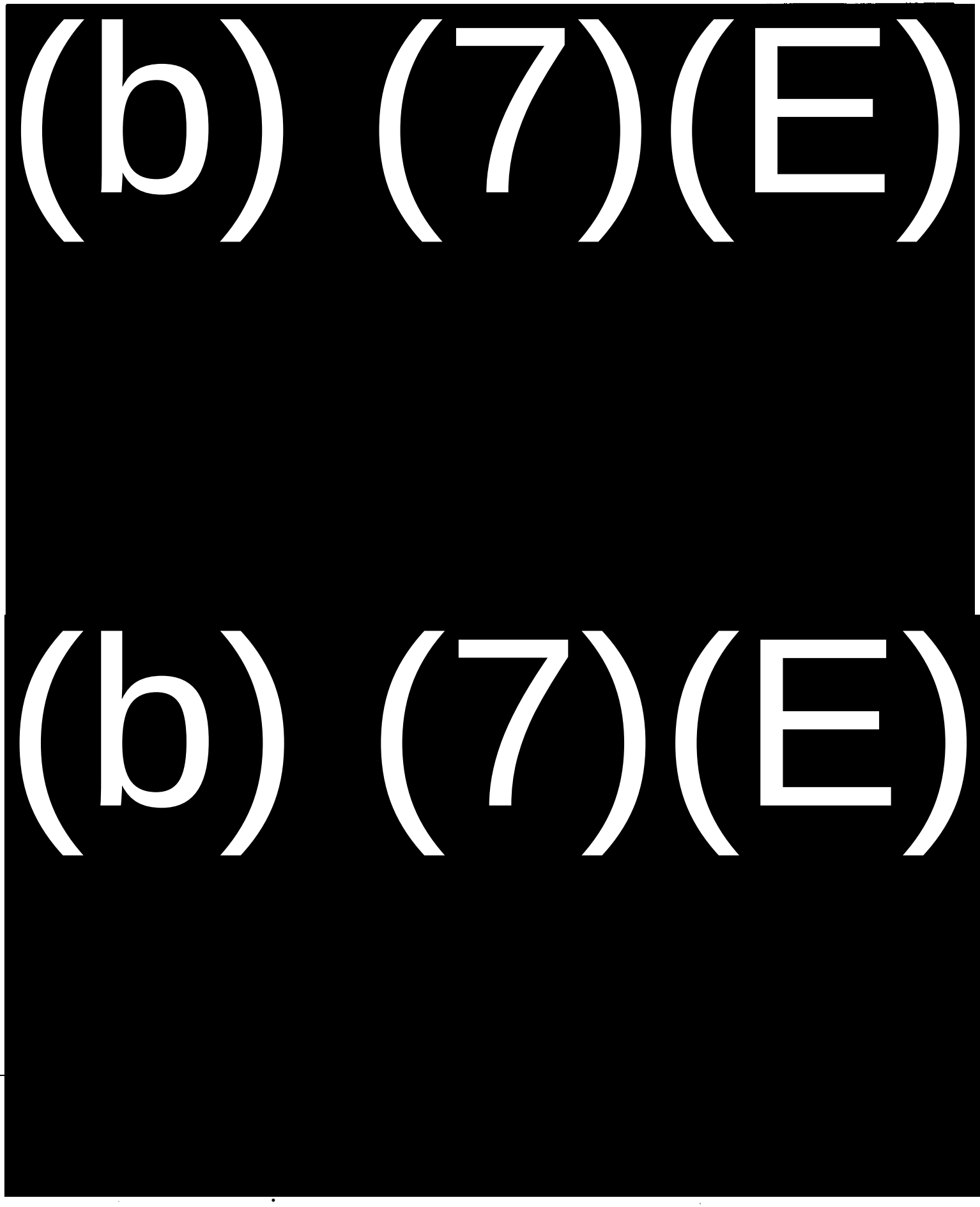

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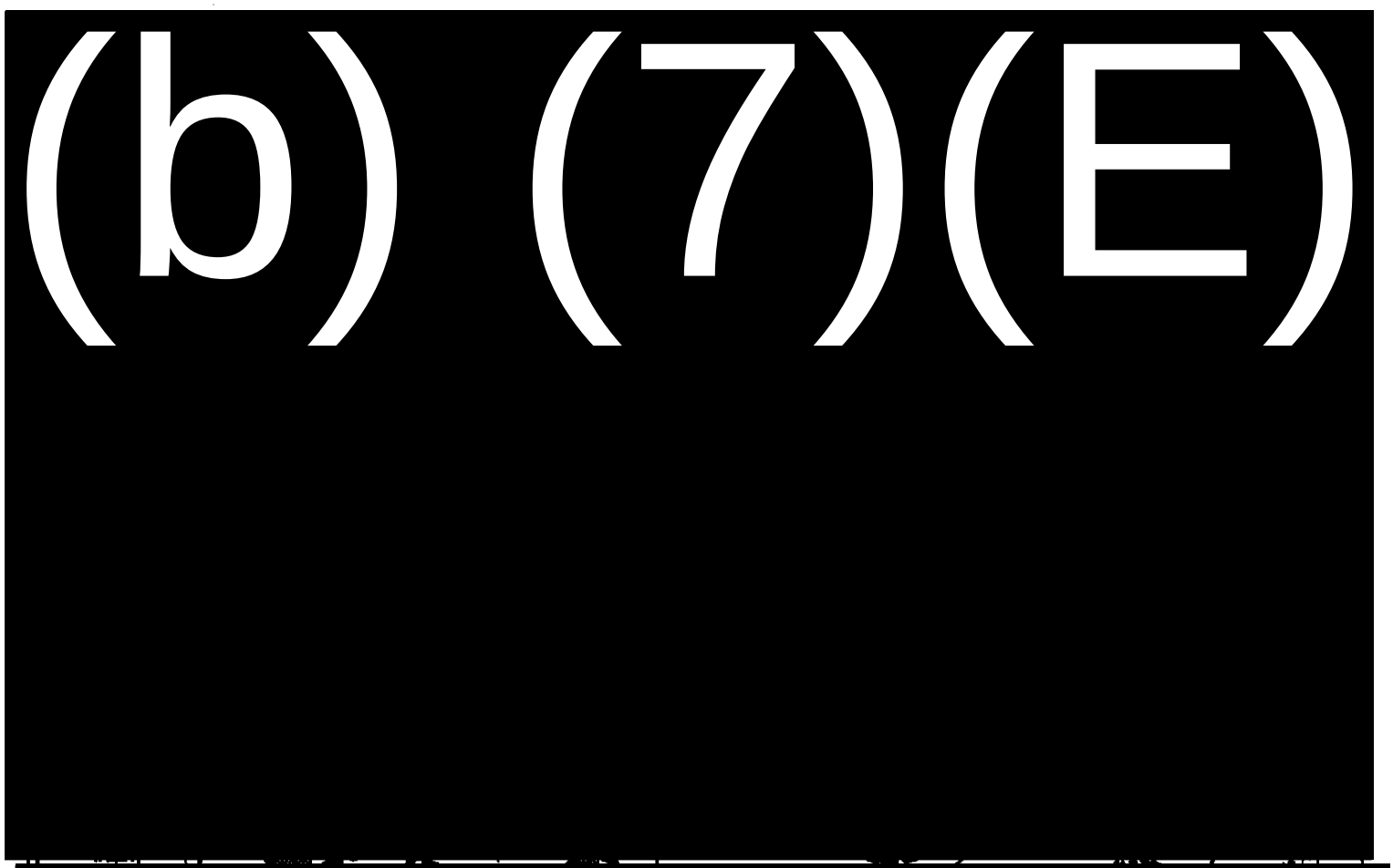
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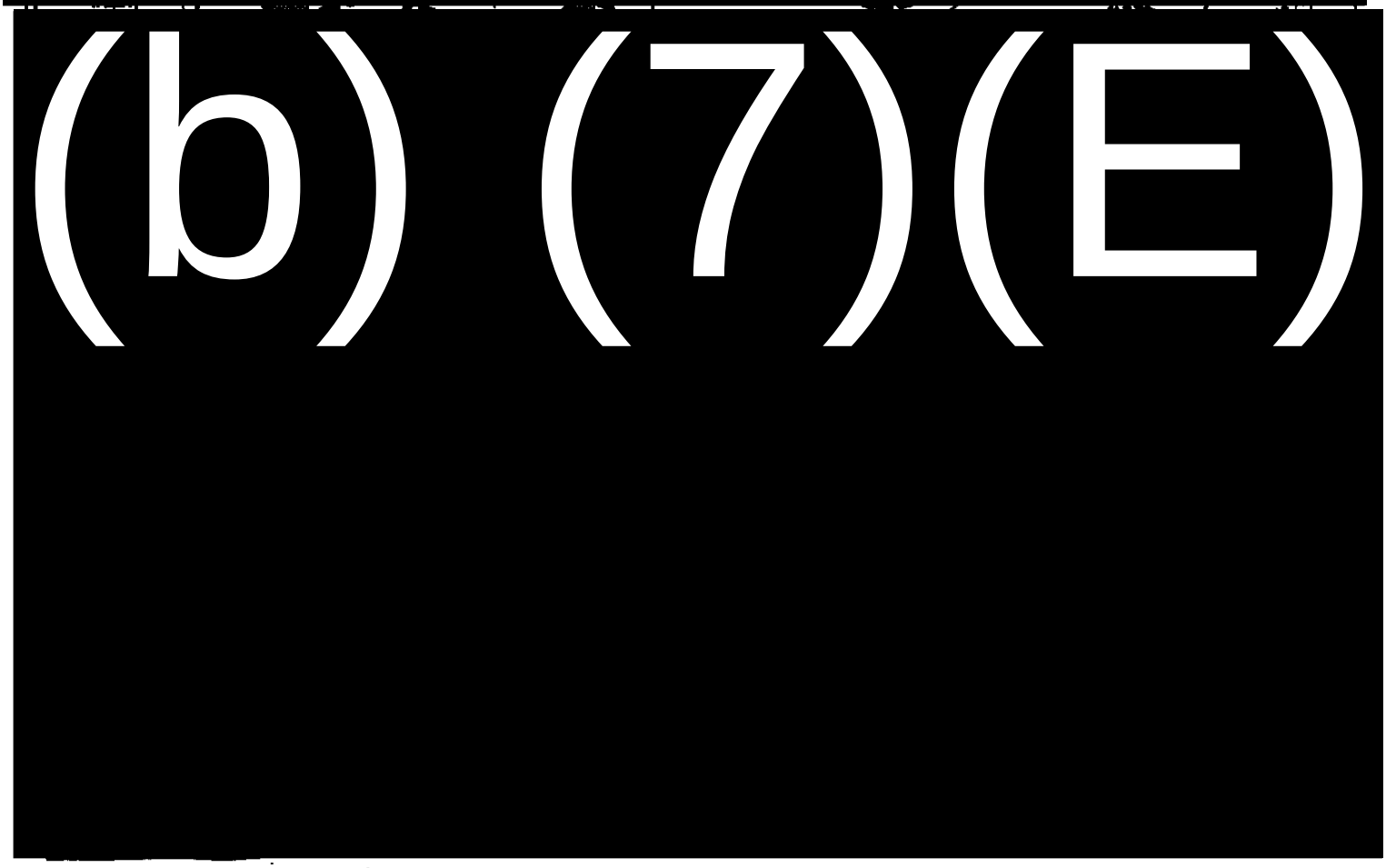
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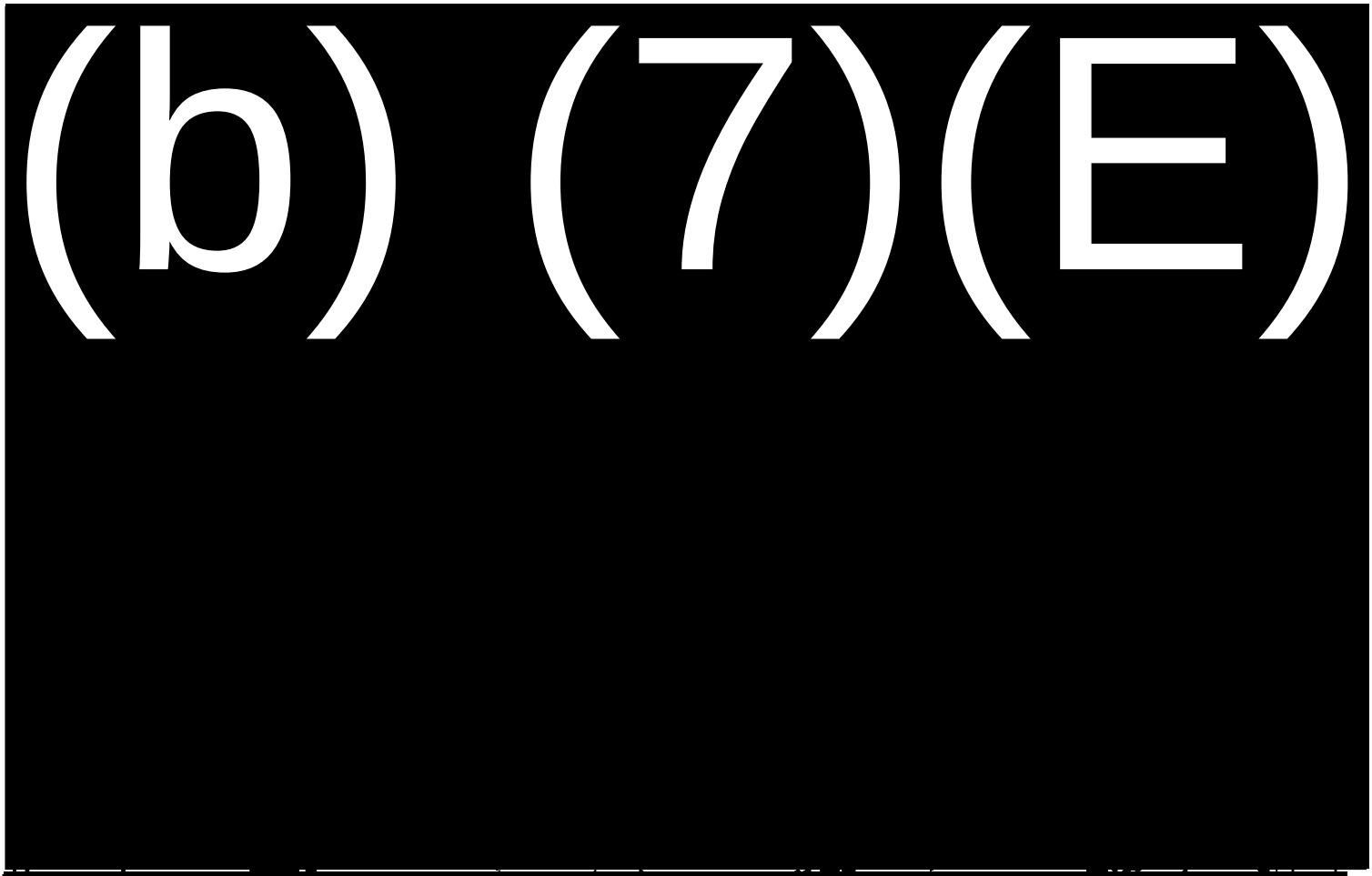

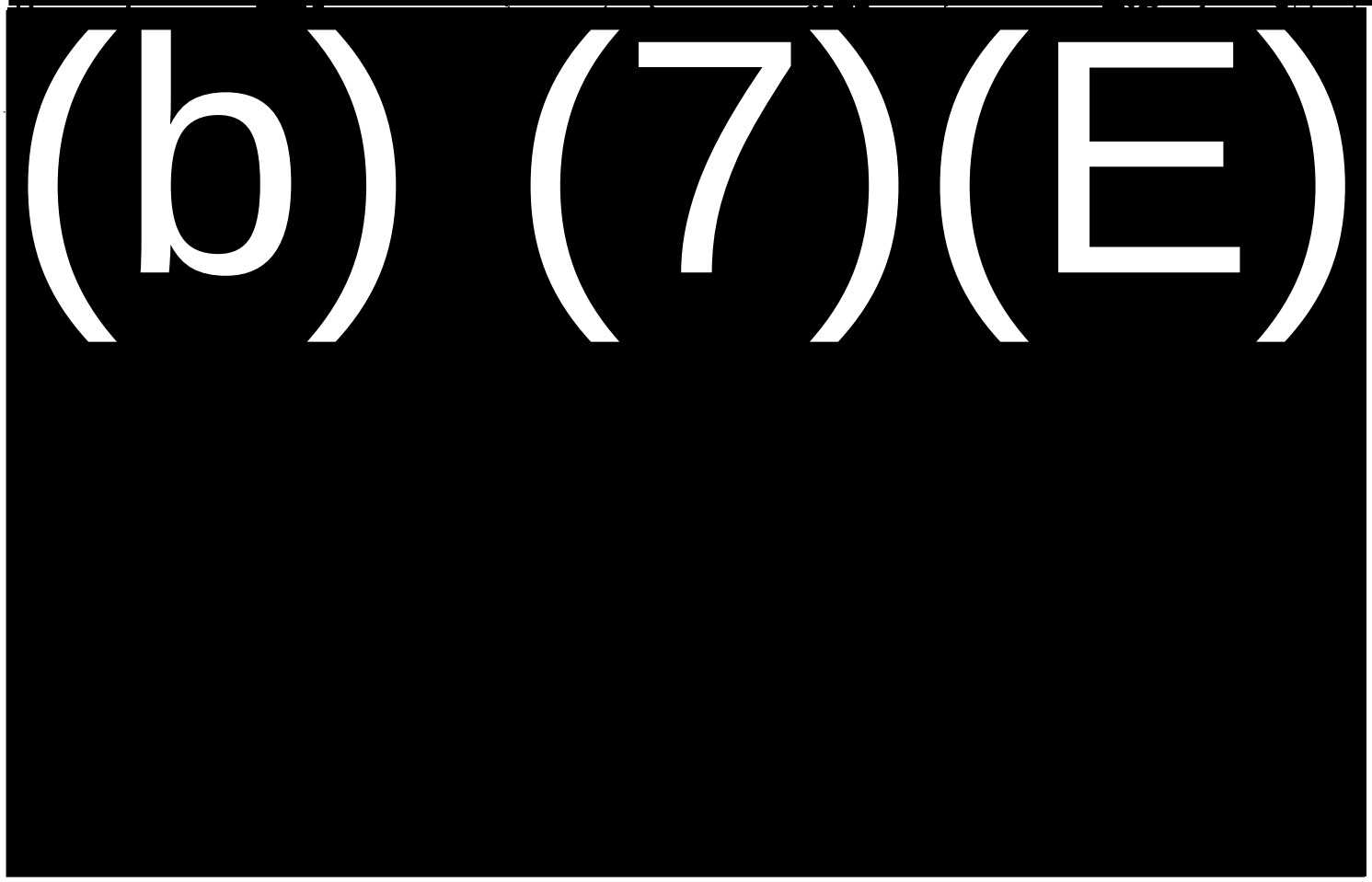

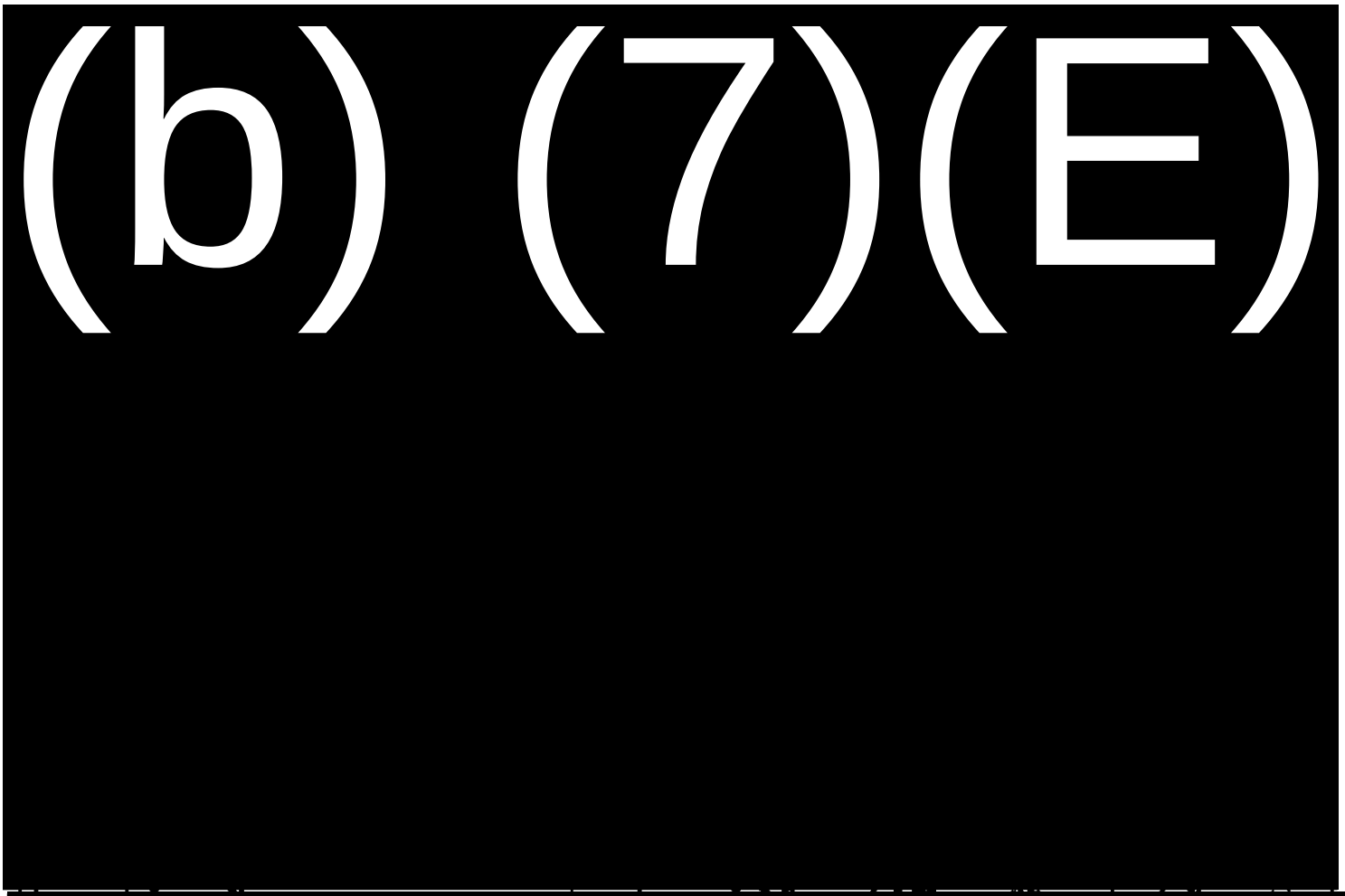
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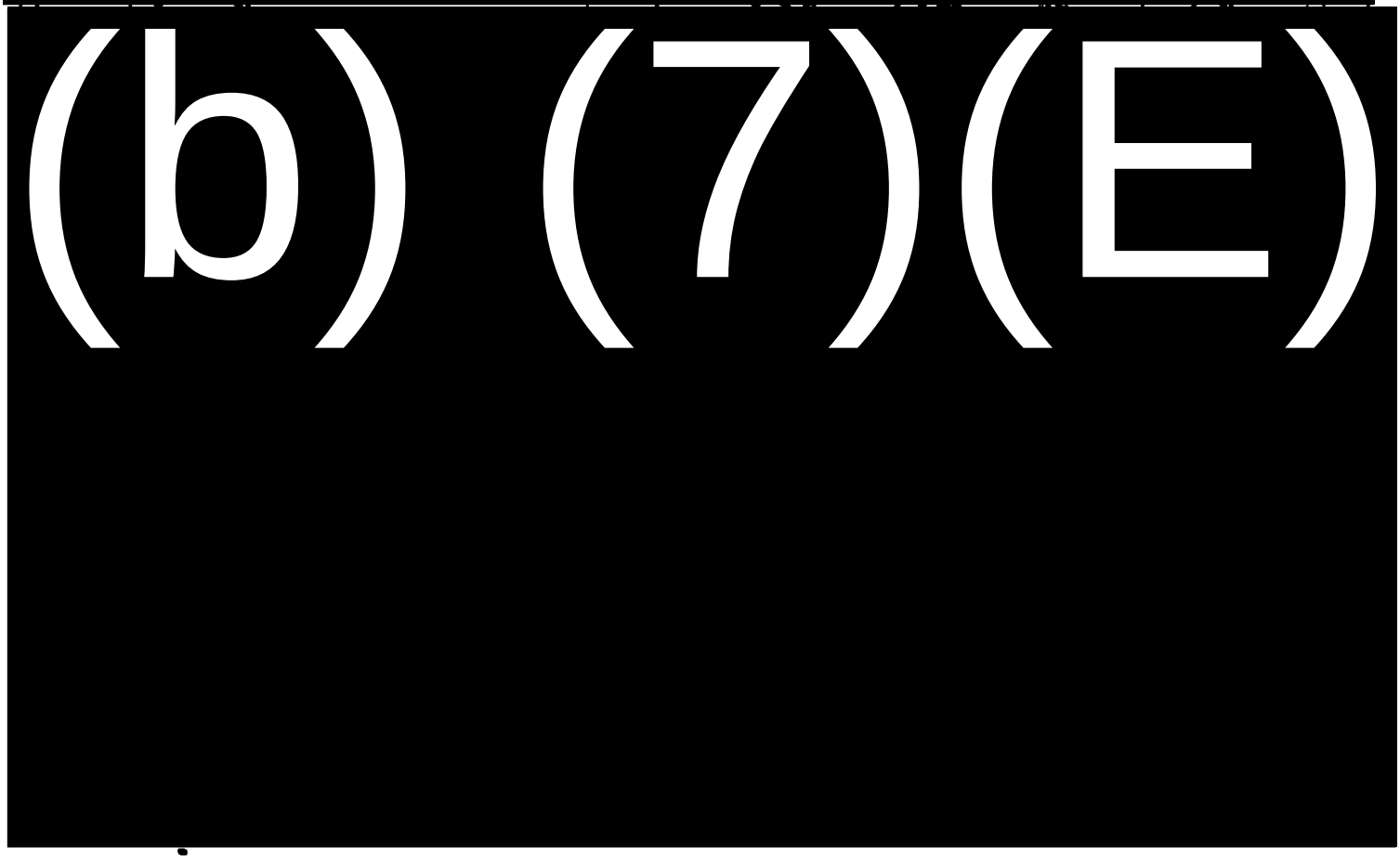
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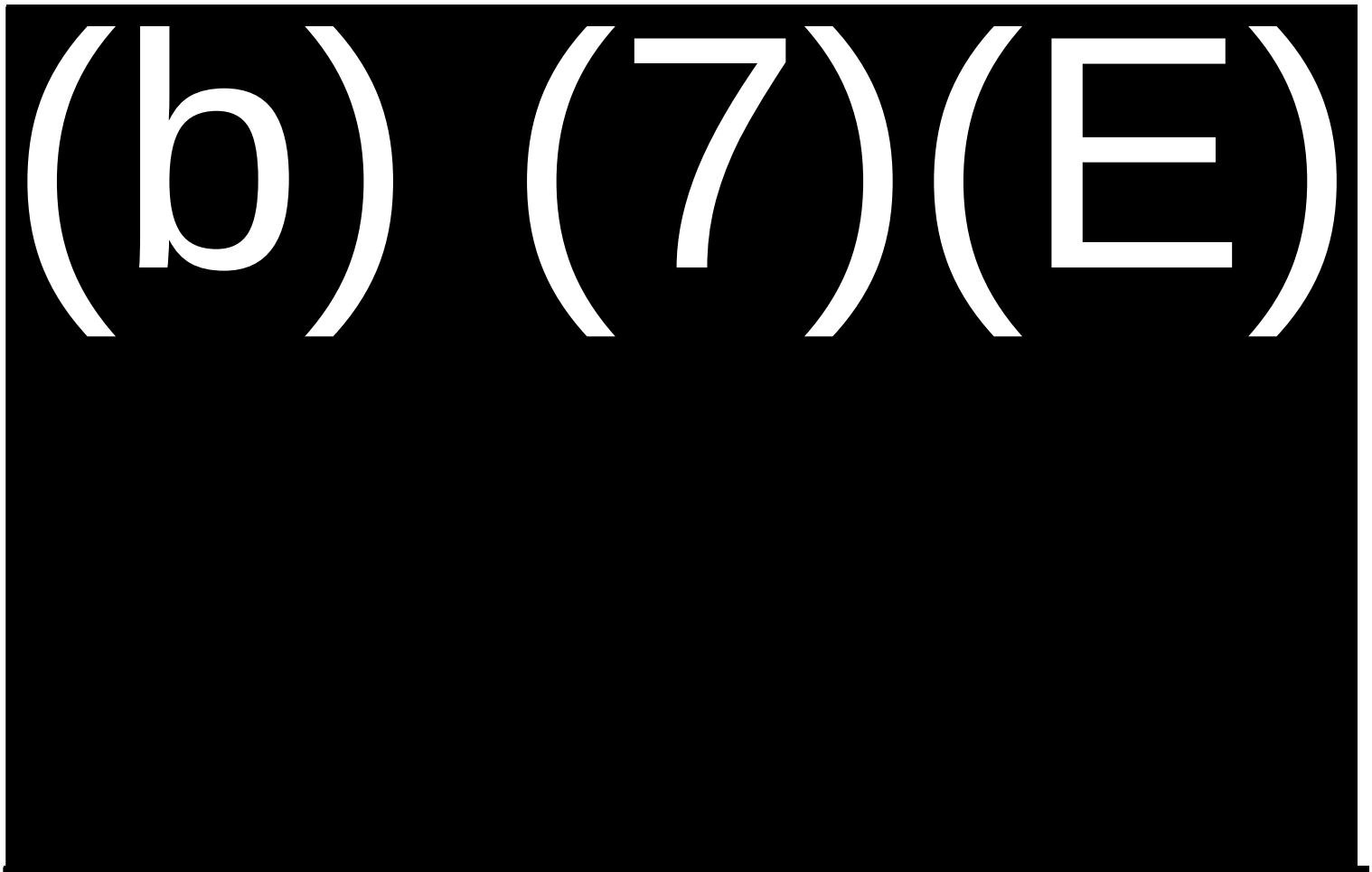

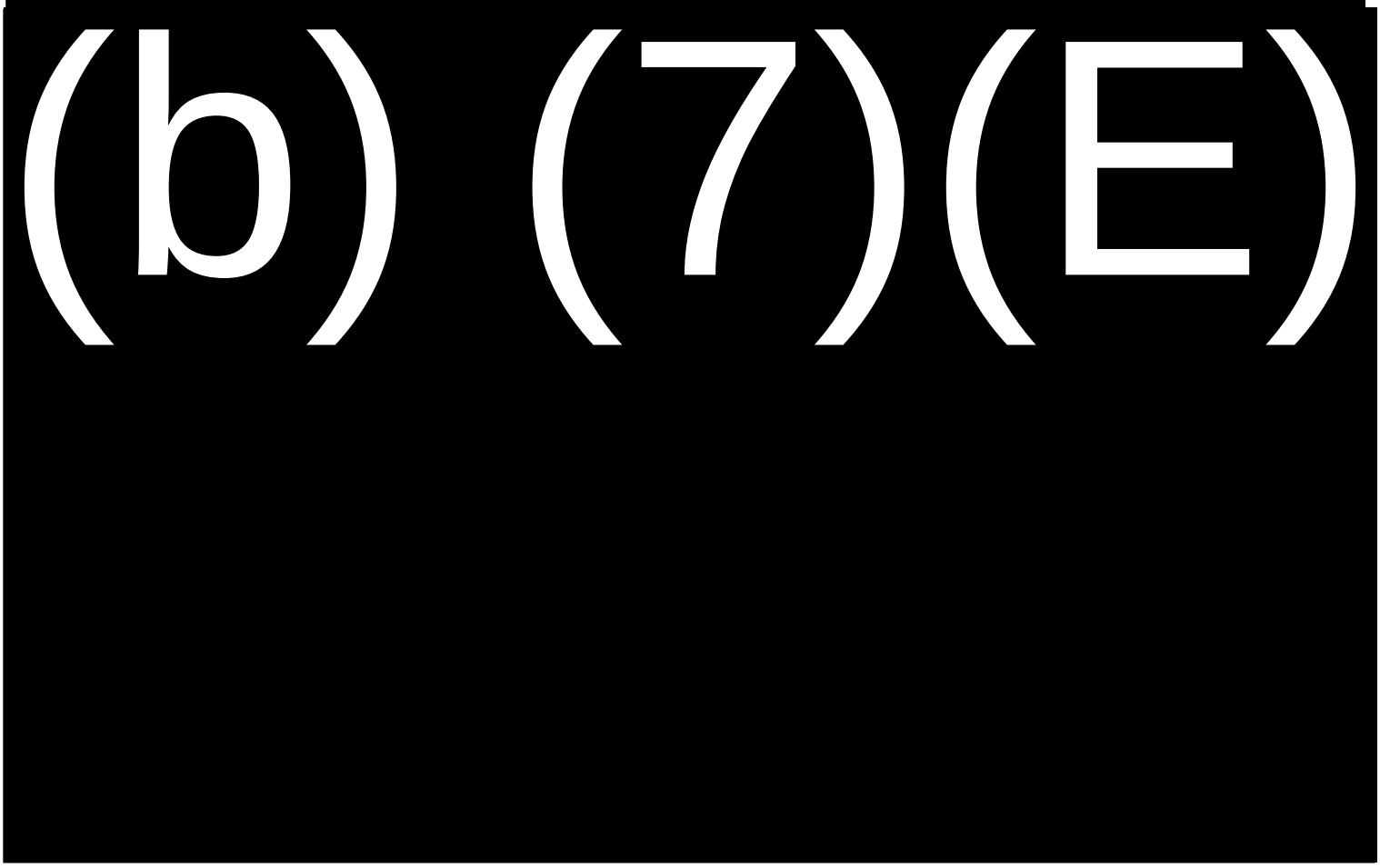

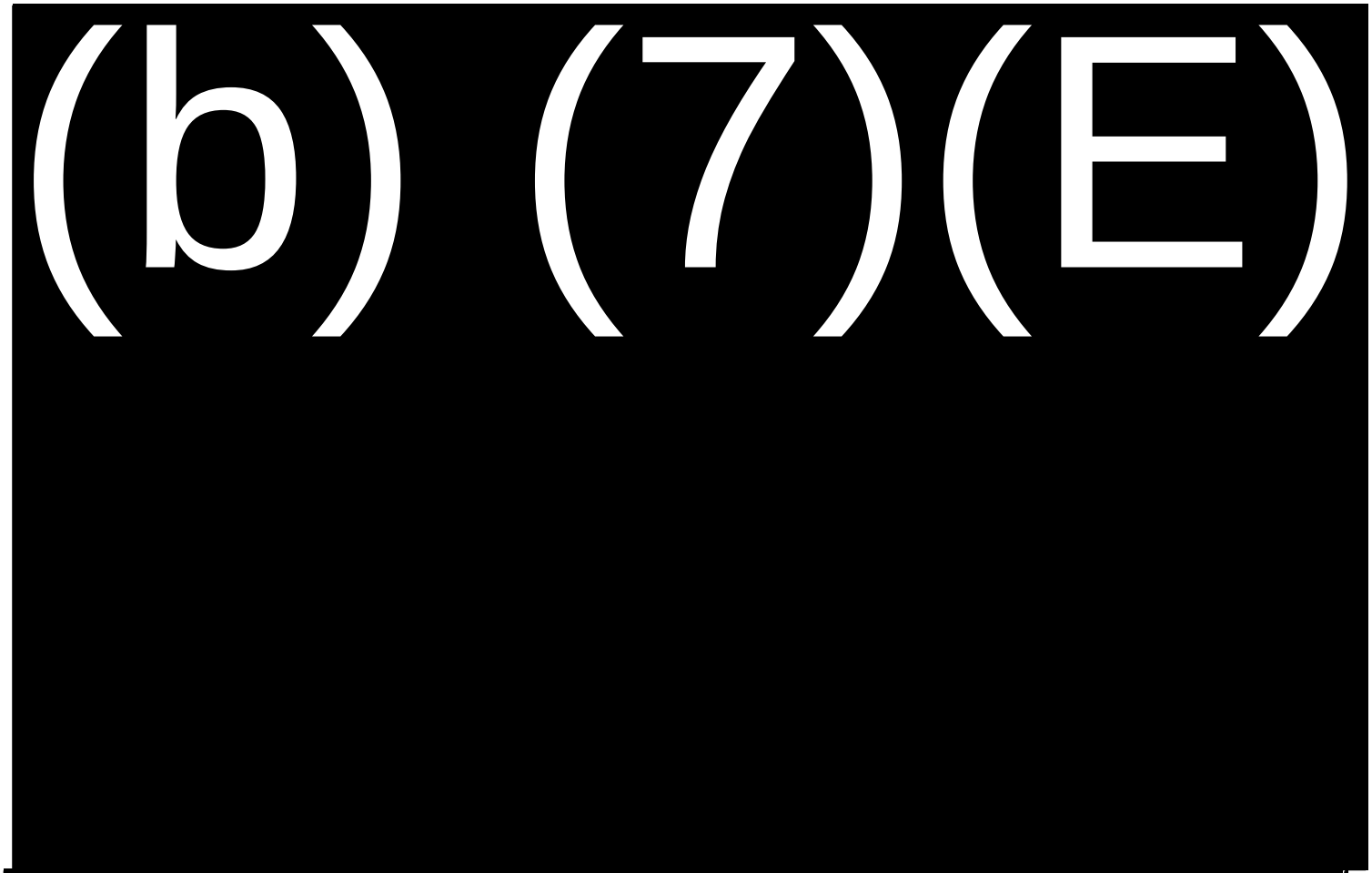

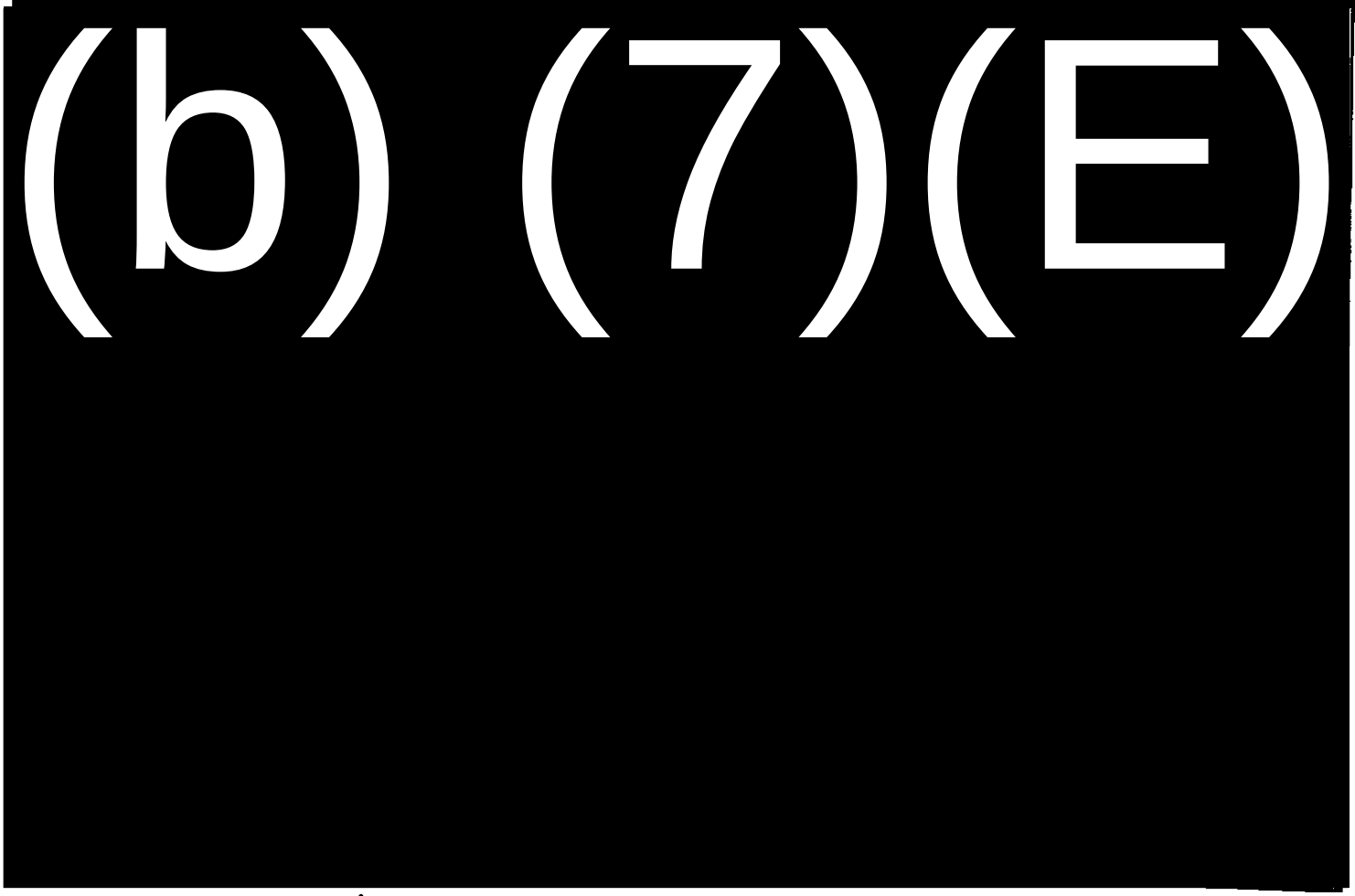

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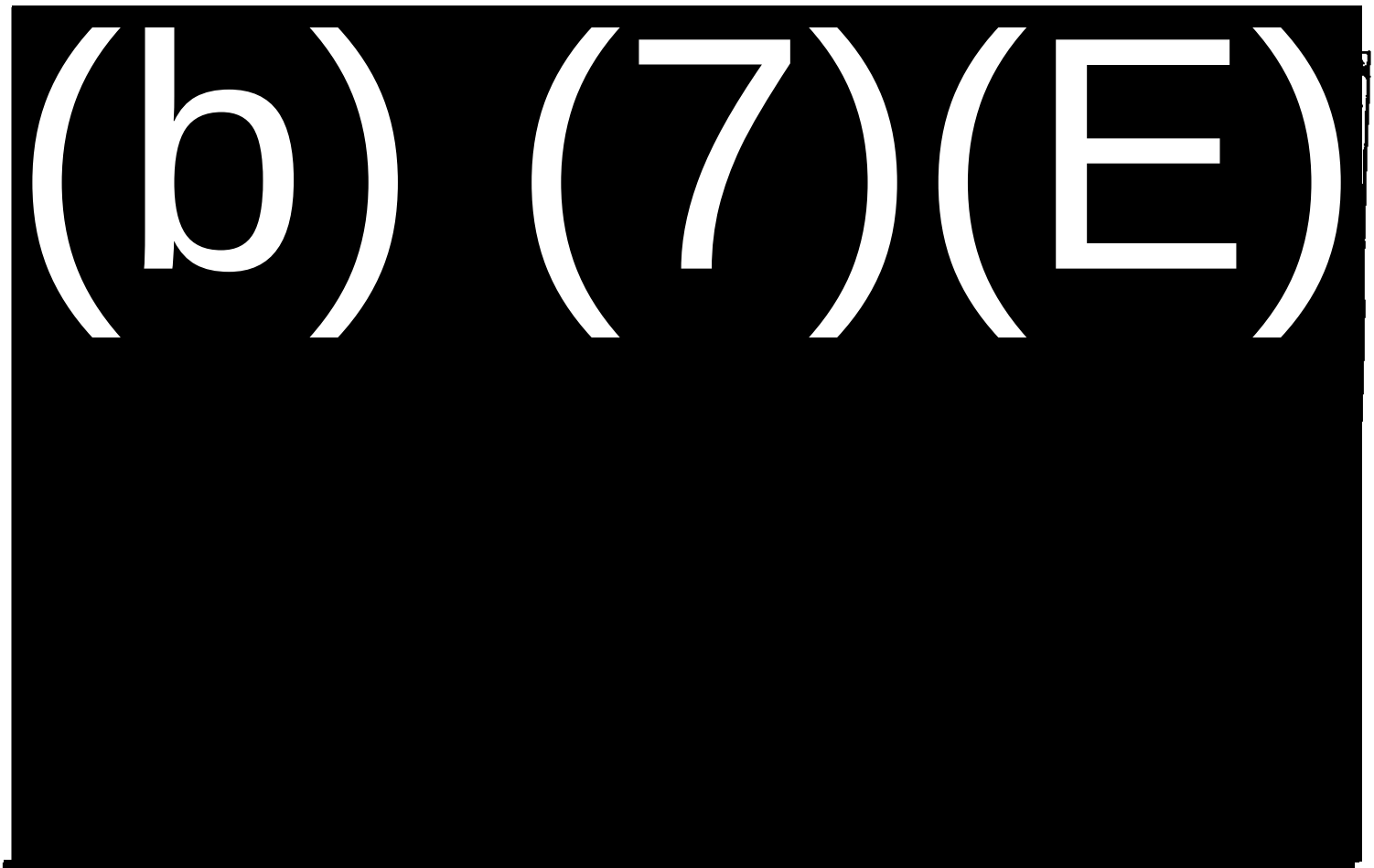

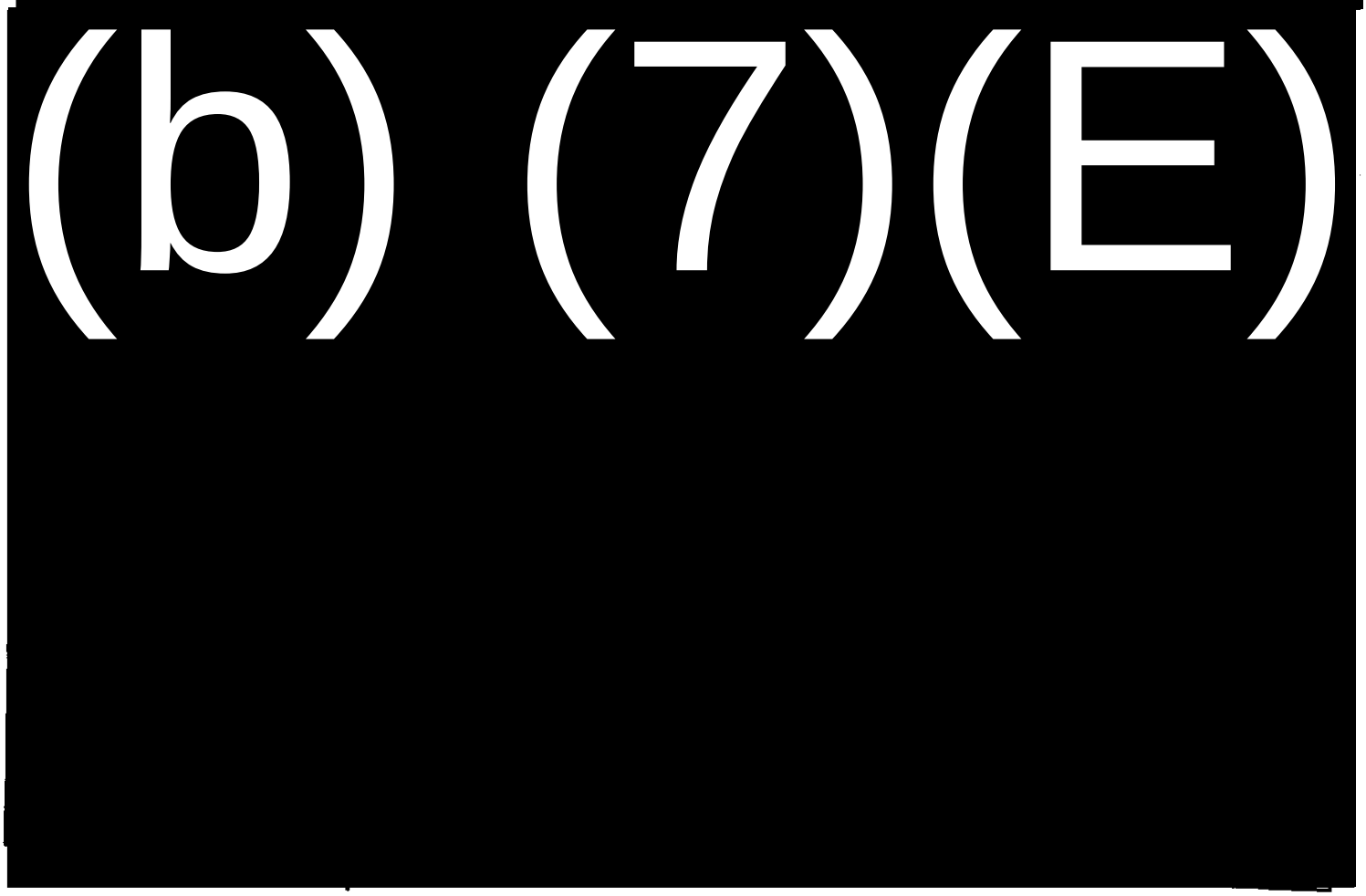

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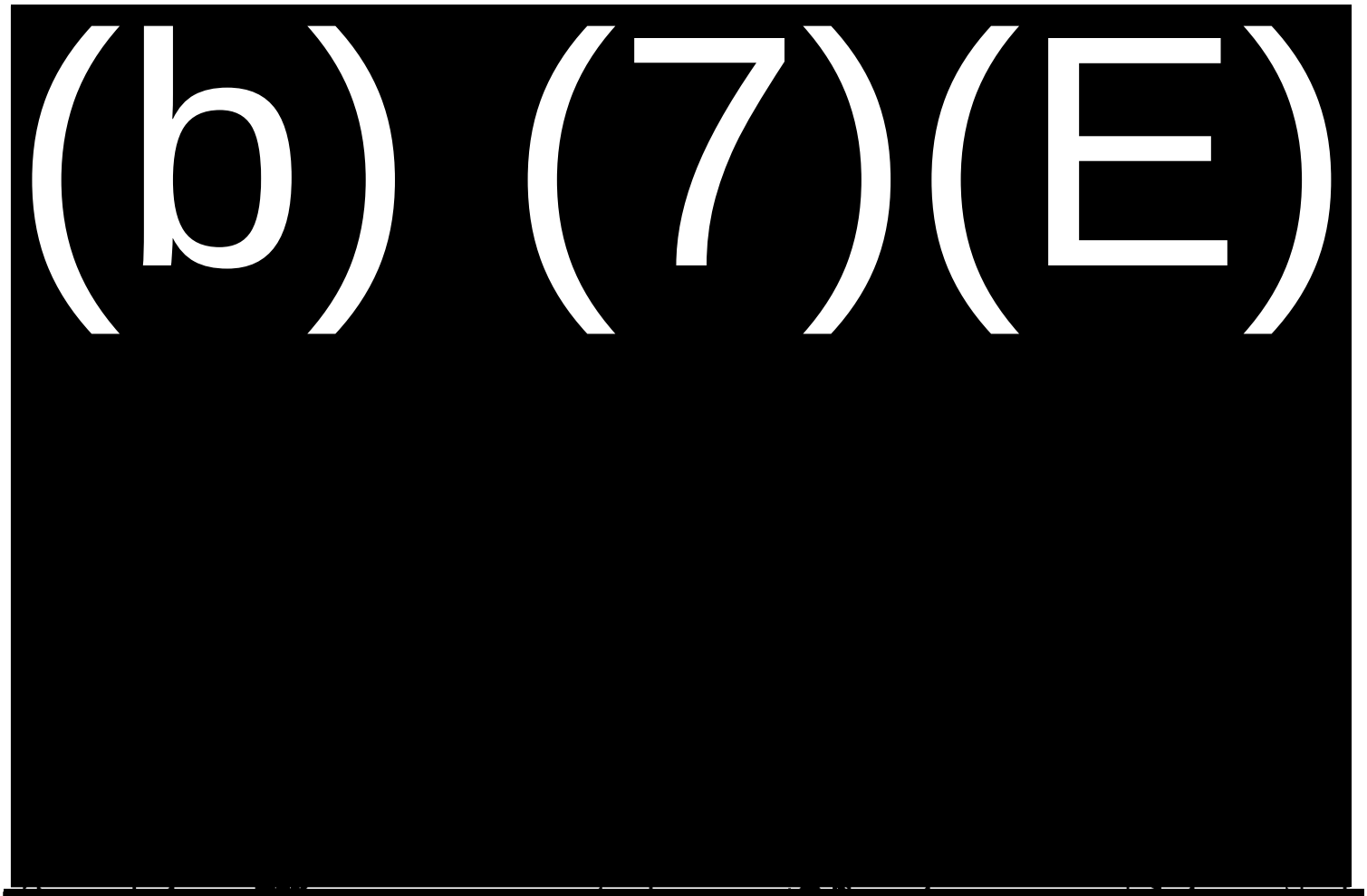
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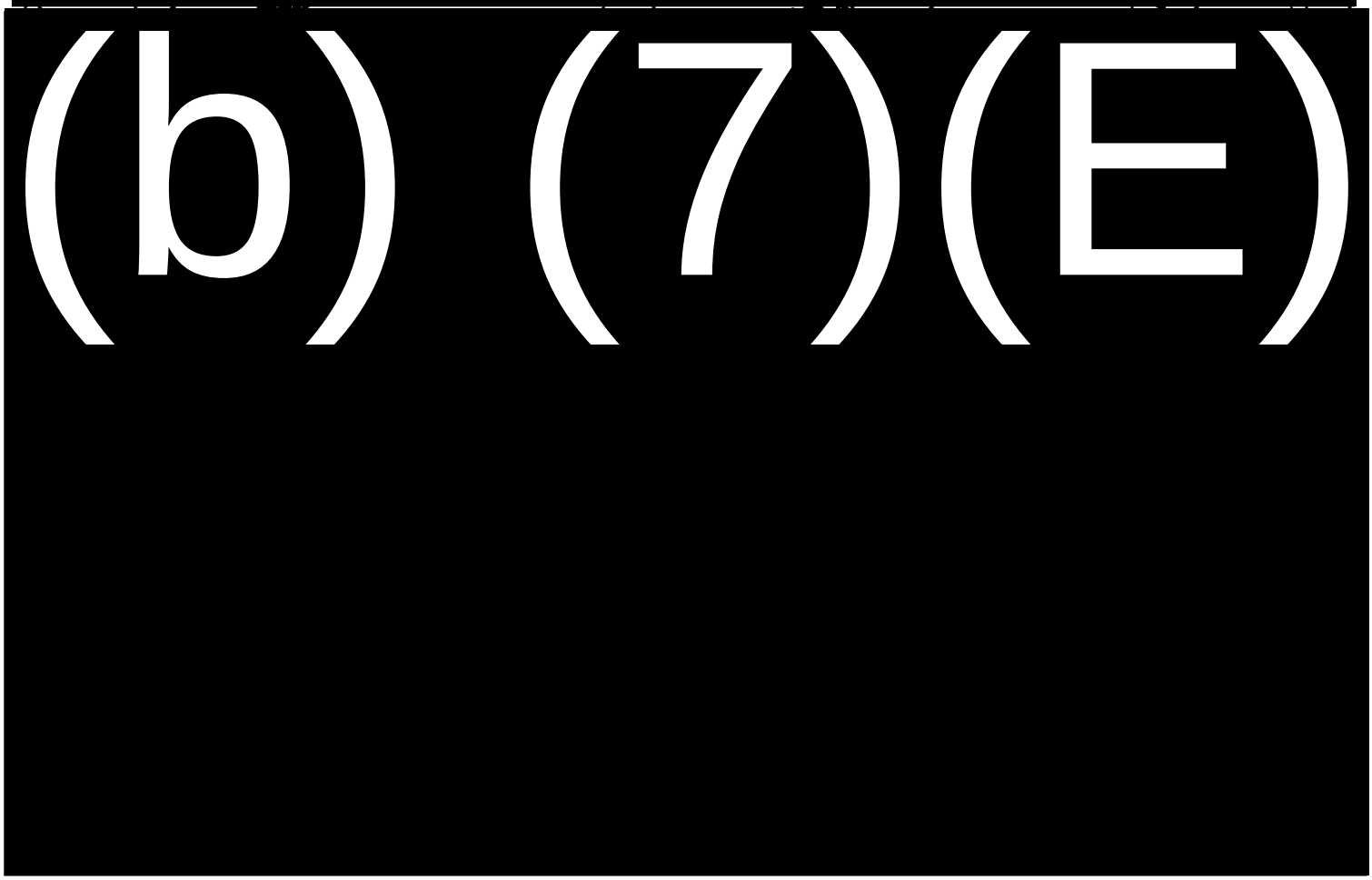
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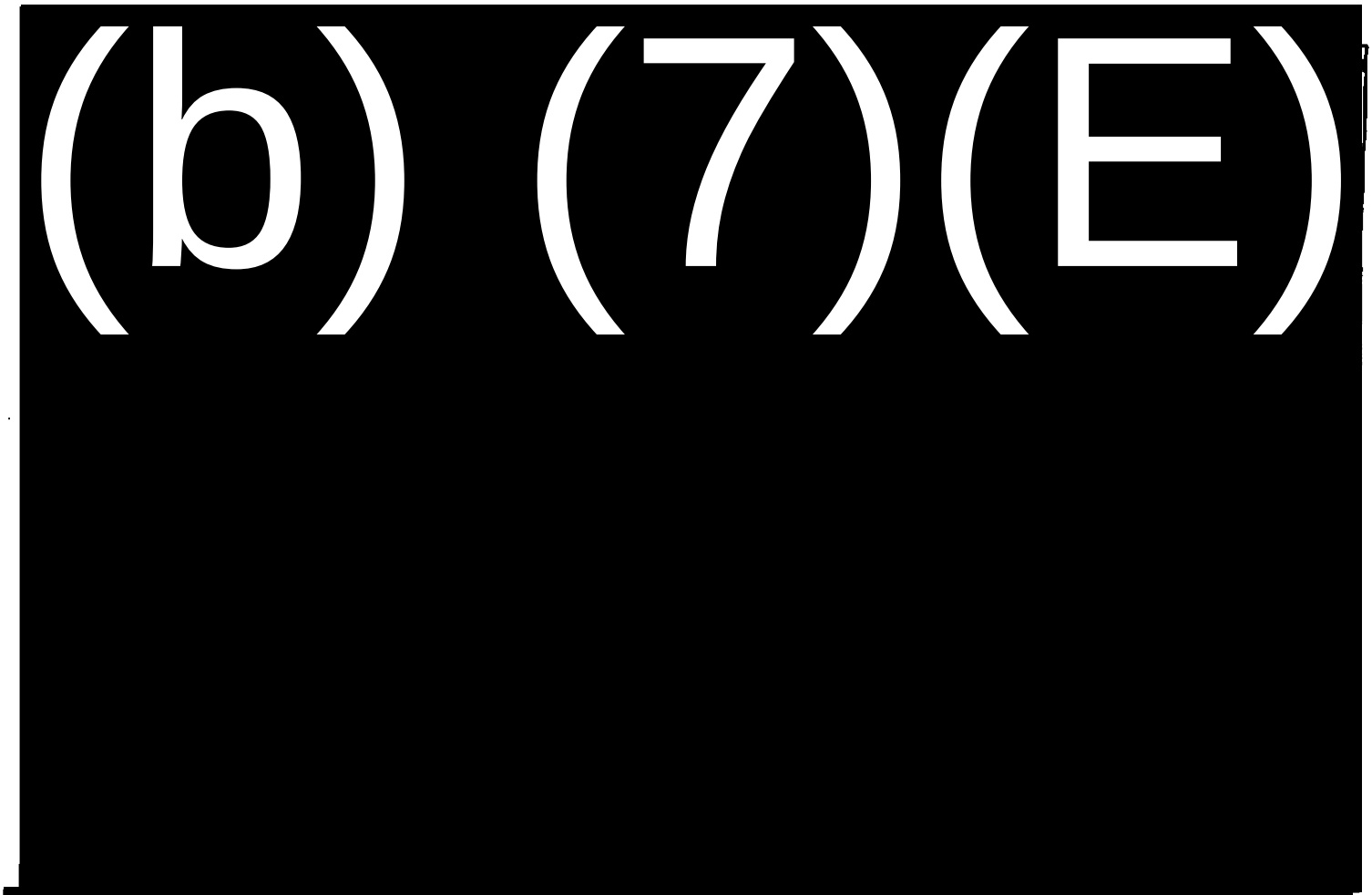
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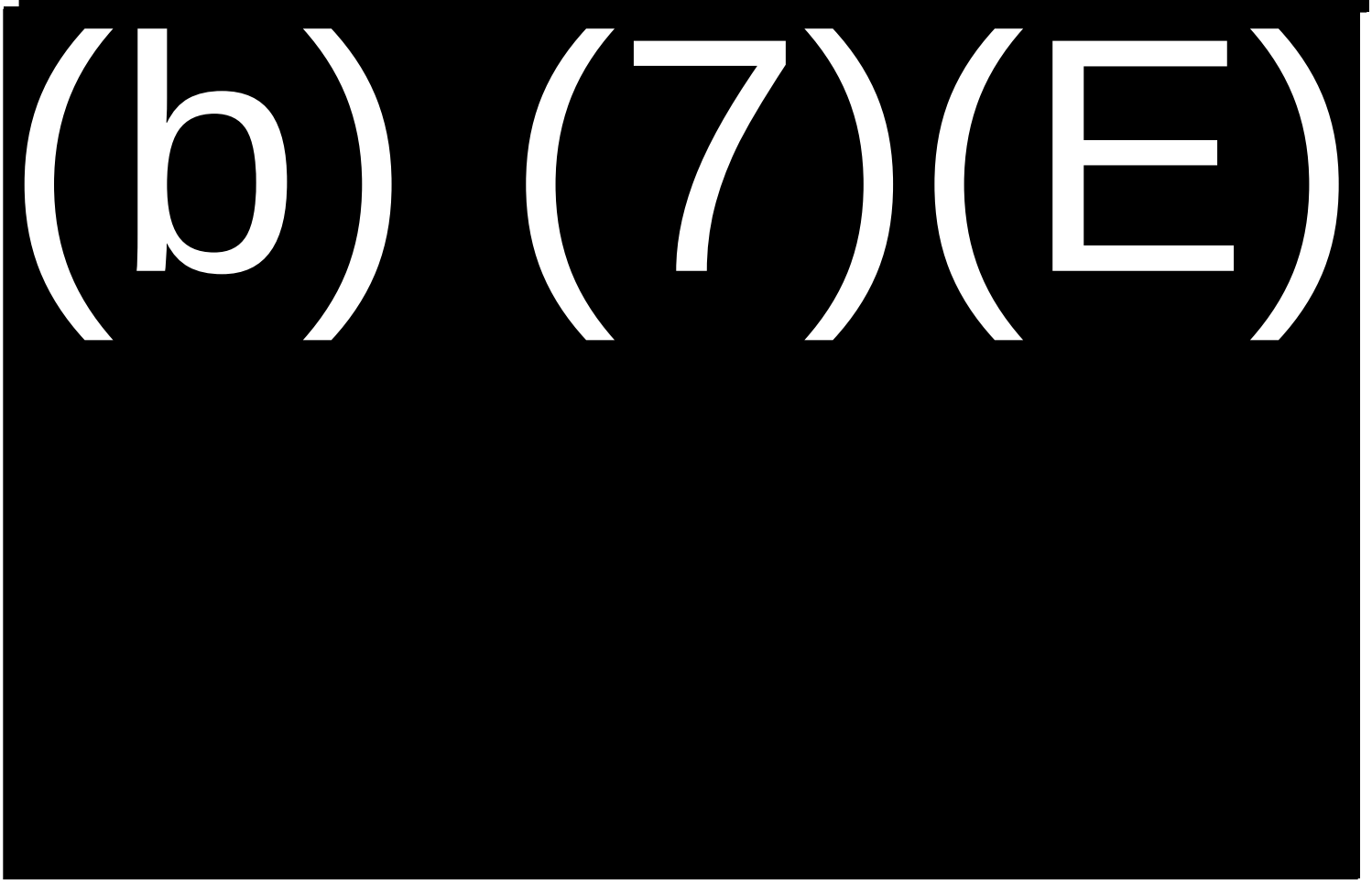
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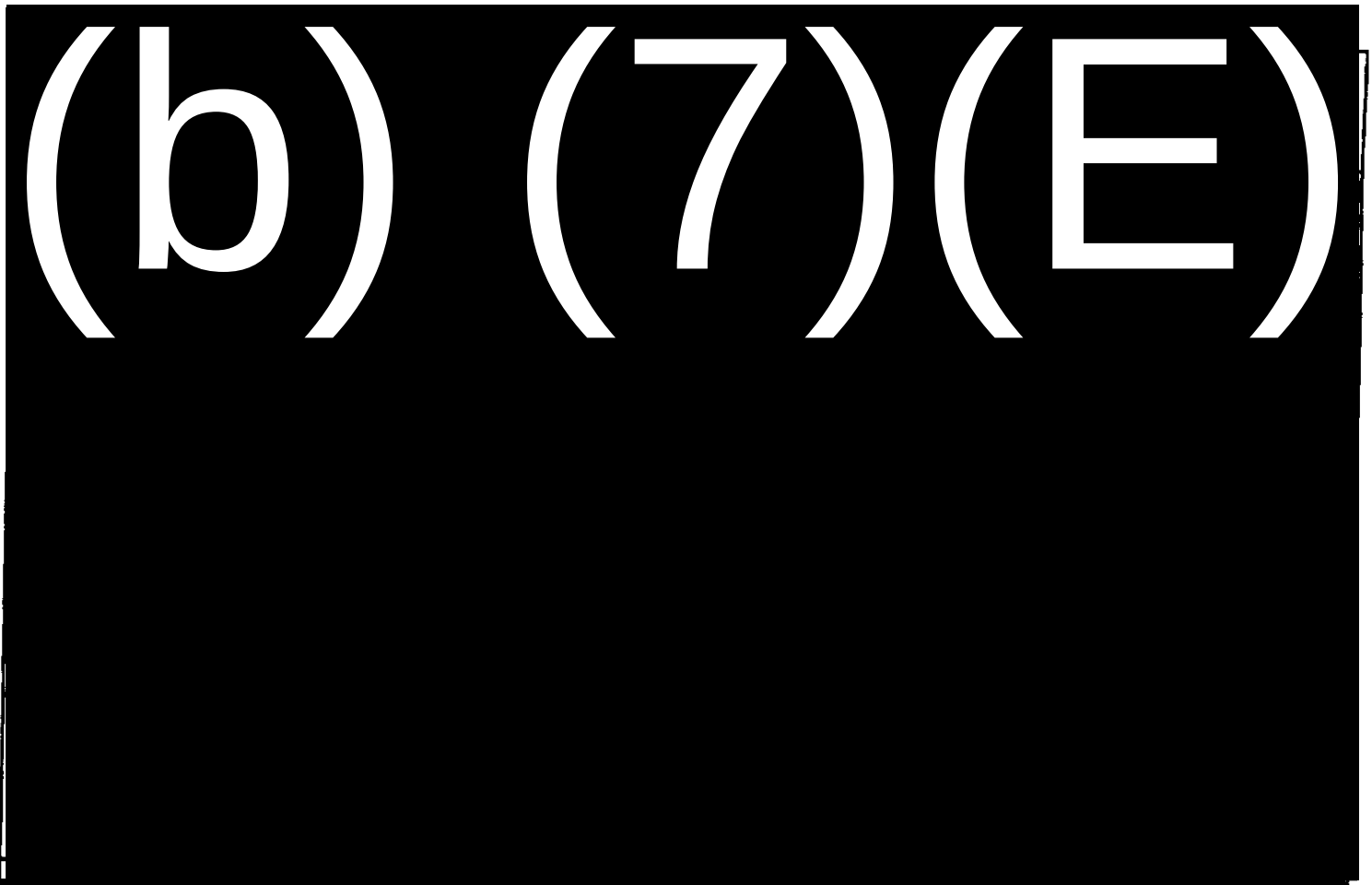
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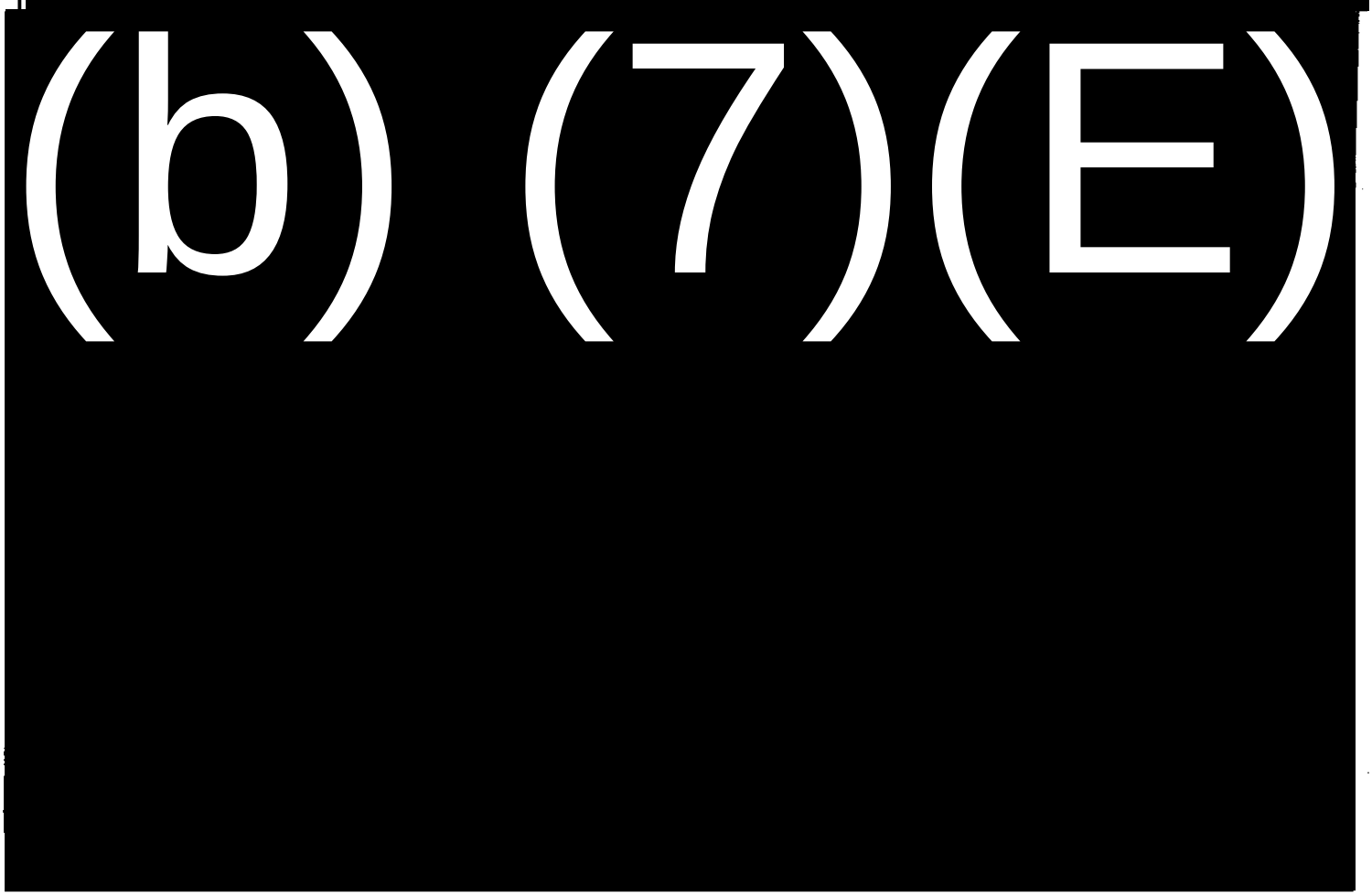
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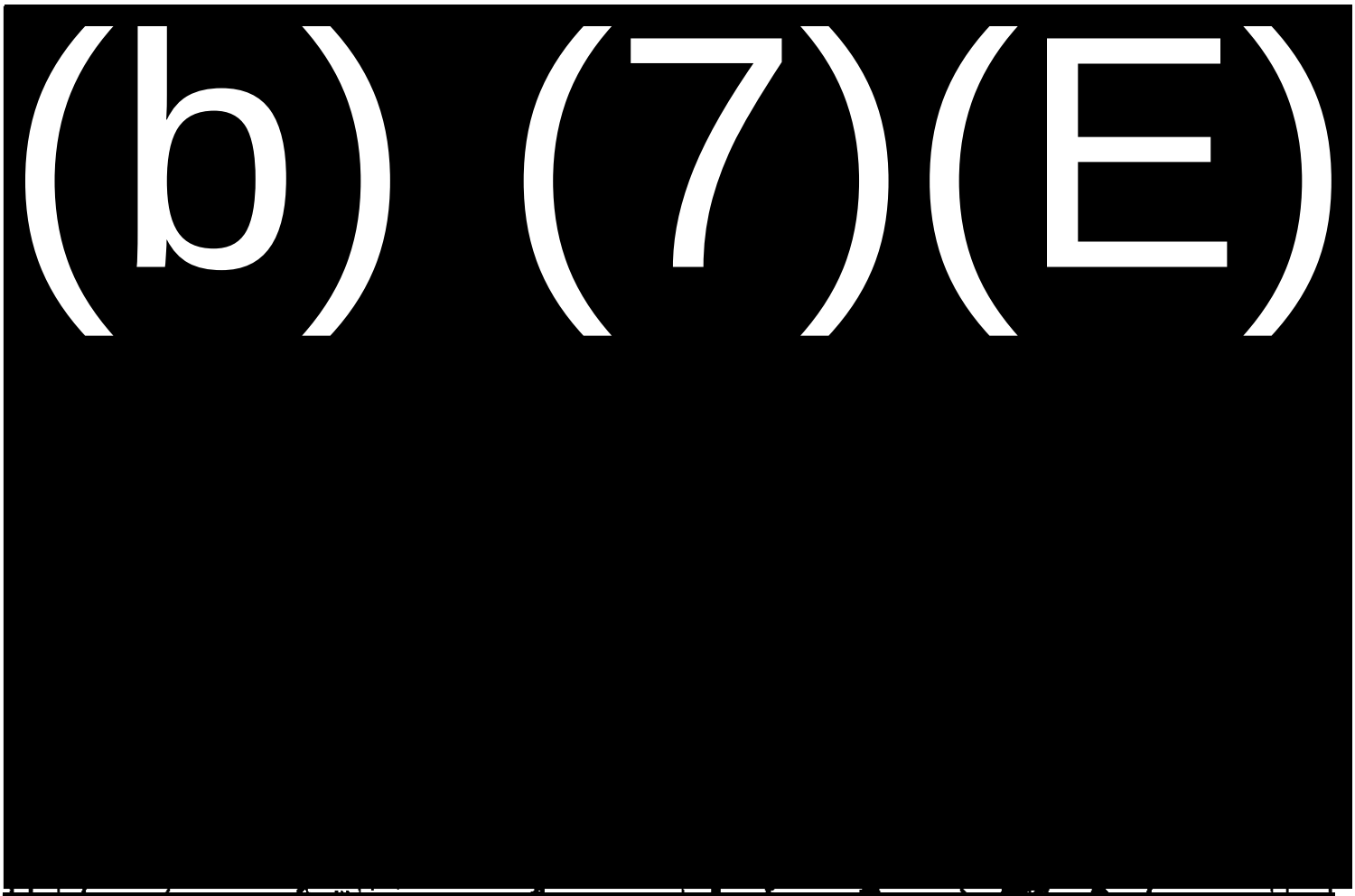
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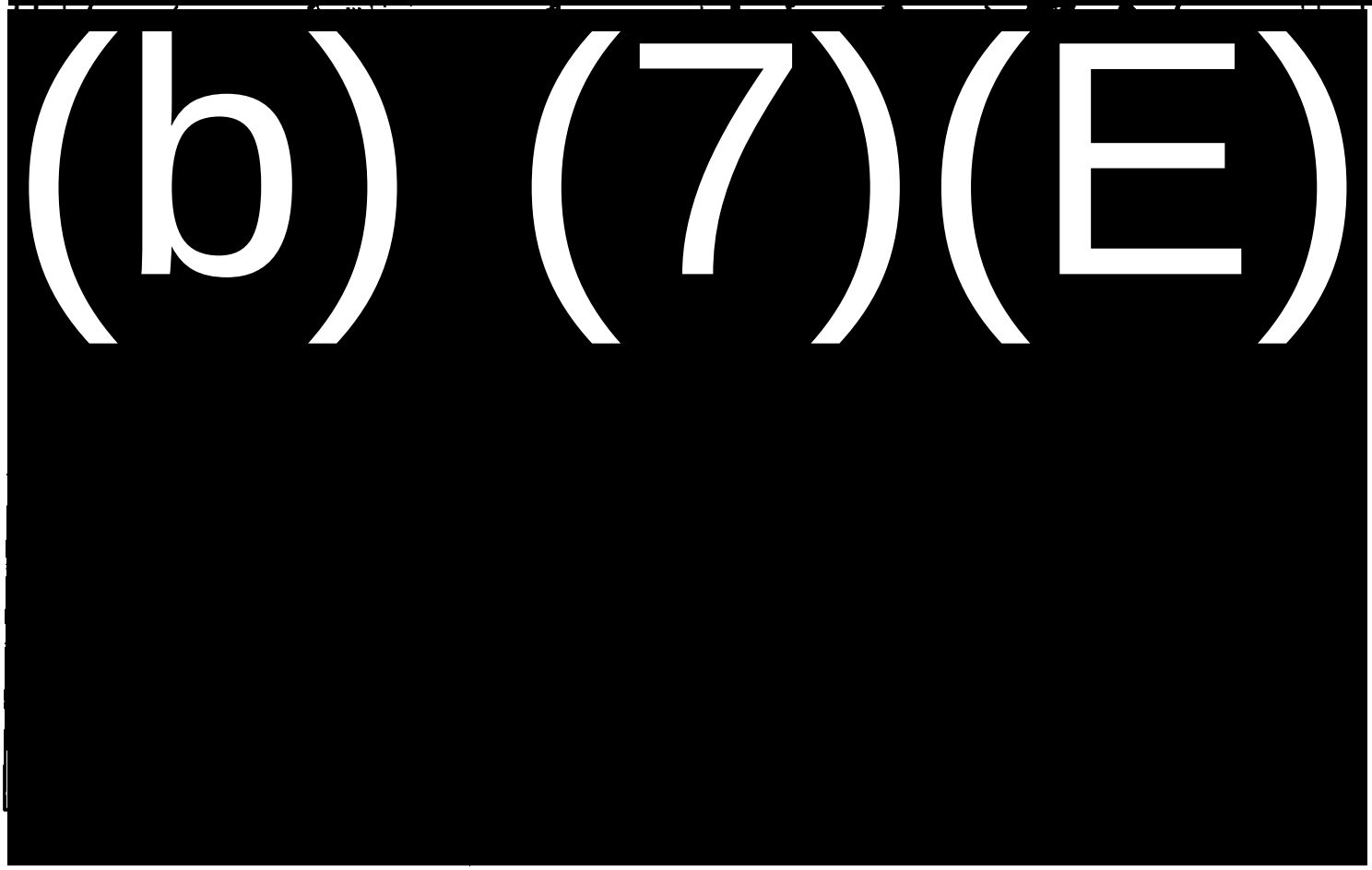
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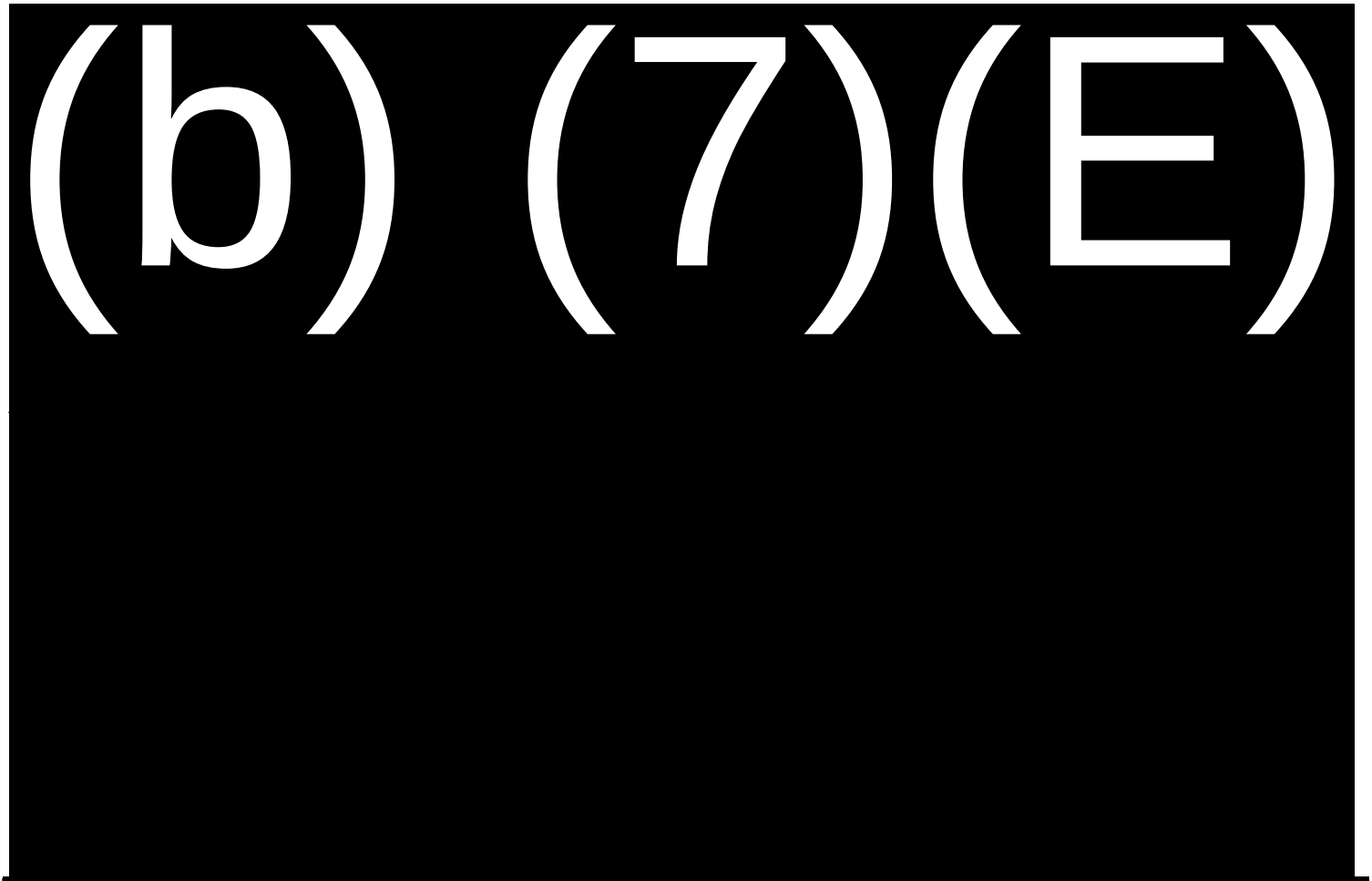

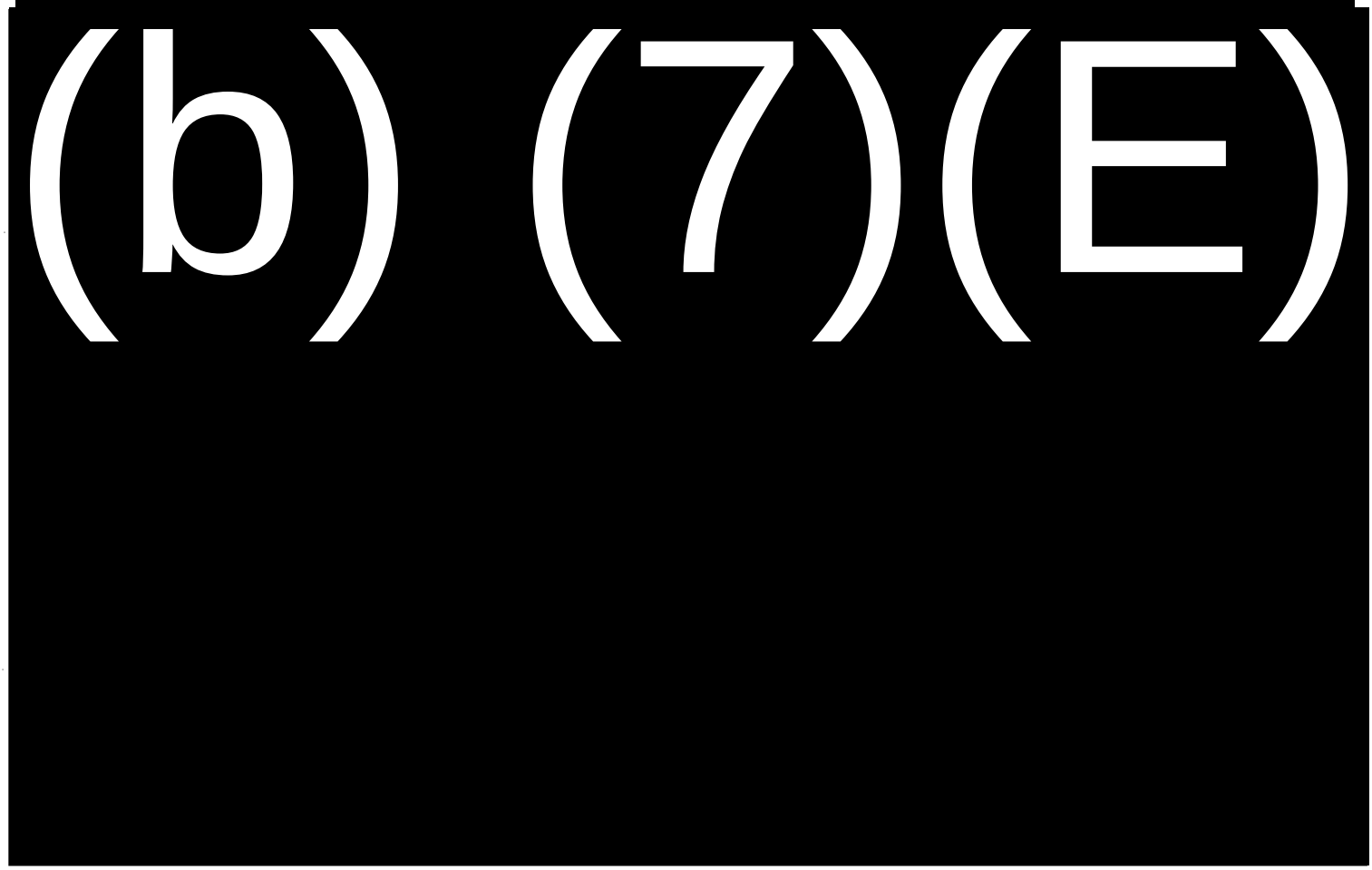

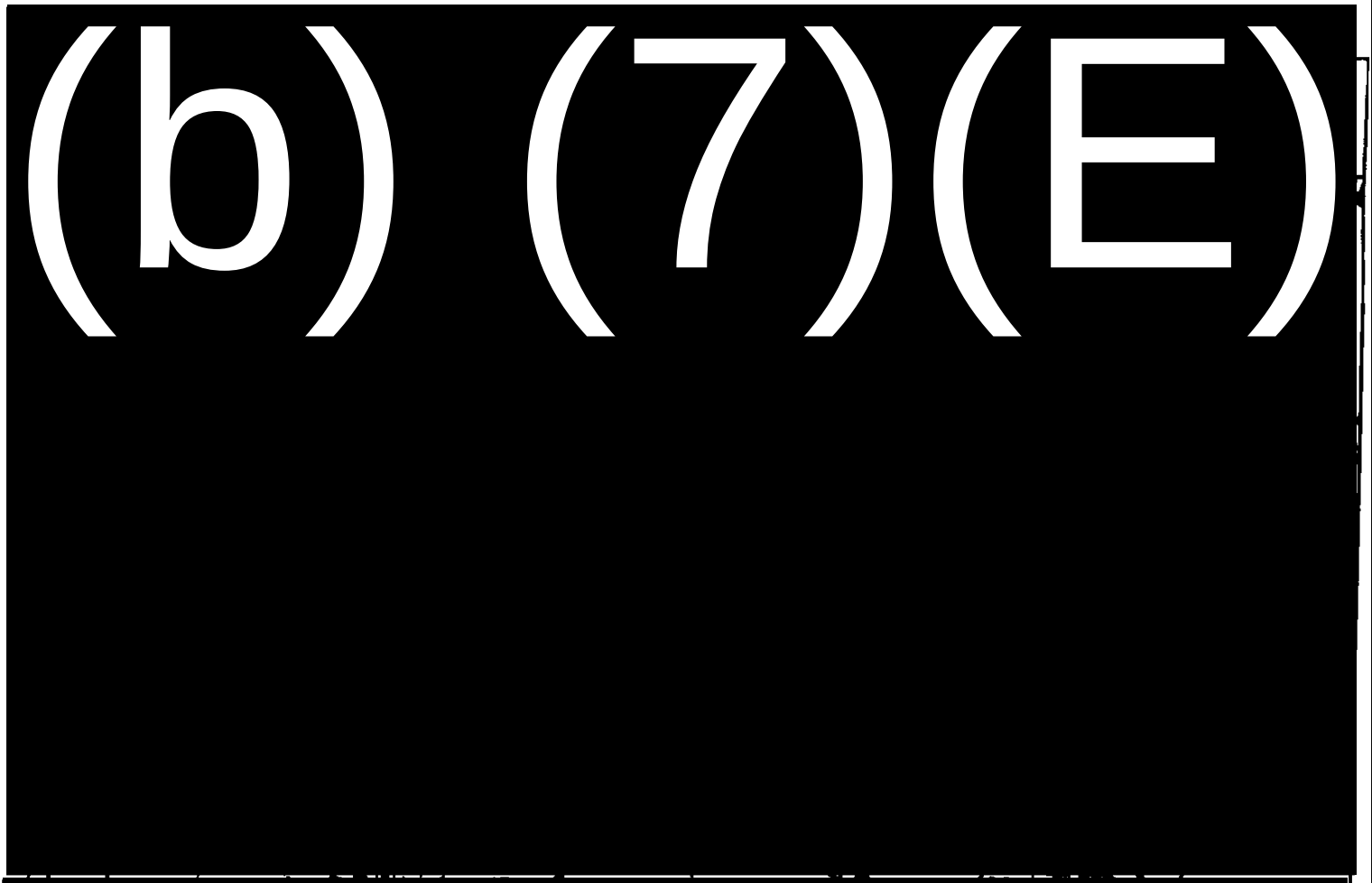
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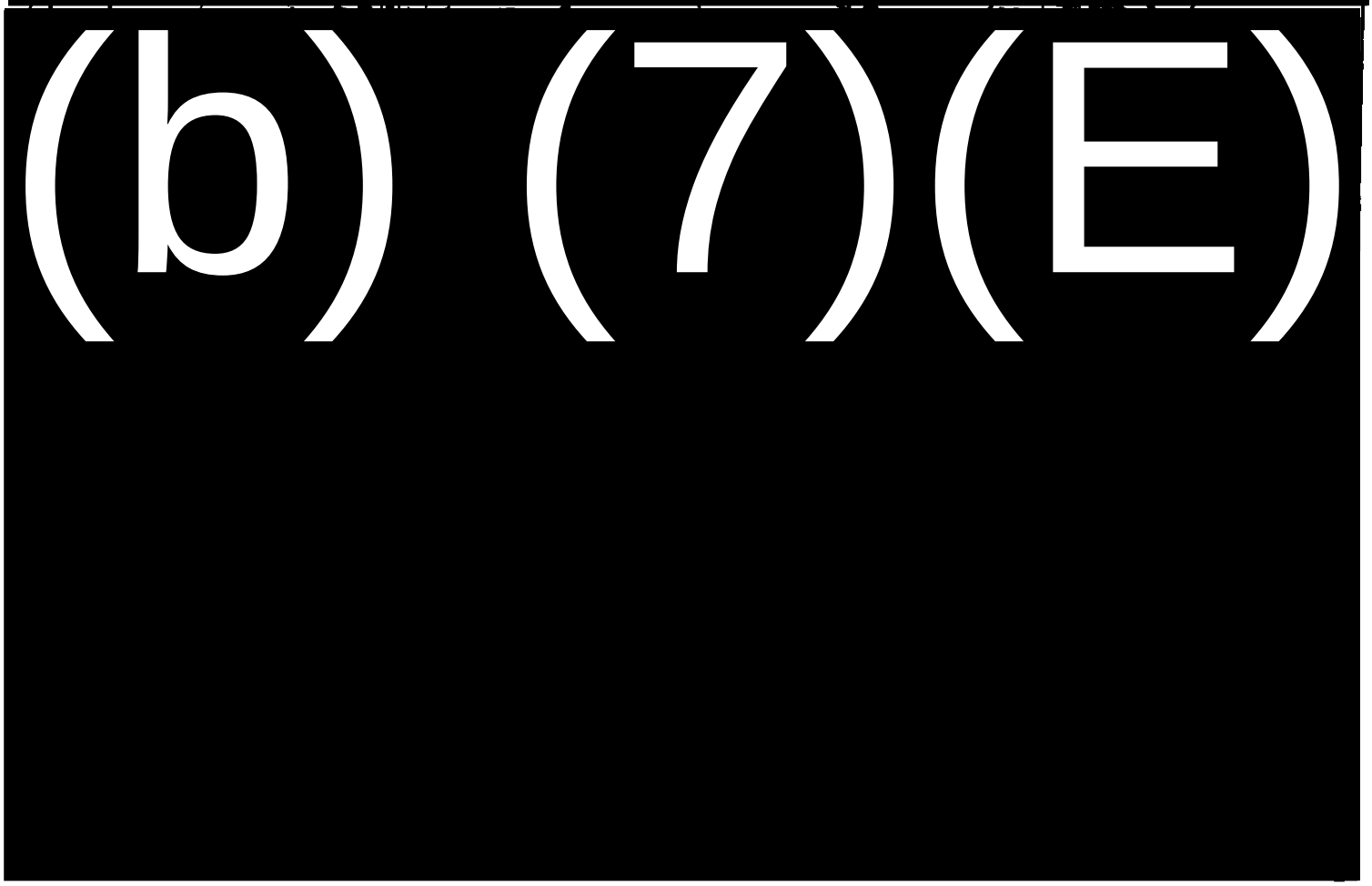
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AIR OPERATIONS WITHIN THE CABEZA PRIETA WILDLIFE REFUGE

The Yuma Air Operations unit operates within the confines of the Cabeza Prieta Wildlife Refuge (b) (7)(E) During the months of June through September of 2001 we were mandated by our Chief Patrol Agent to make (b) (7)(E) into the area. This was precipitated by the 14 deaths that occurred in May. From October 2001 through January 2002 we made one (b) (7)(E) into the area. The activity level has increased in the area and for the months of February and so far in March we are averaging (b) (7)(E) (b) (7)(E) into the area. With the anticipated summer months to come our daily flights into the Cabeza will (b) (7)(E)

ATTACHMENT C
(CPNWR Coordination)

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

Office of the Patrol Agent In Charge

29820 Frontage Road
Wellton, Arizona 85356

October 2, 2001

To: Cabeza Prieta National Wildlife Refuge

ATTN: (b)(6) Acting Manager

Subject: September 2001 Wellton BP Desert Summary

During the month of September 2001 Wellton Agents and Yuma Sector Pilots recorded 16 walking entries, and 1 vehicle entry, crossing illegally into the US from Mexico. A total of 10 walking entries impacted on the Cabeza Prieta NWR, and the remaining 6 impacted only on the Barry M. Goldwater Range. The one vehicle entry impacted on the Cabeza Prieta NWR, entering the US (b) (7)(E) This vehicle and 10 illegal Mexicans were apprehended (b) (7)(E) The driver/smuggler was presented for prosecution, and the vehicle seized.

There were no significant incidents regarding rescue operations during the month. Illegal entries through the desert have decreased significantly during the last 4 months.

There were no significant wildlife sightings reported during the month.

If we can be of assistance to you and your agency do not hesitate to call. Telephone (b) (6); (b) (7)(C) (b)(6)(b)(7)(C)

Sincerely

(b)(6)(b)(7)(C)

7

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

Office of the Patrol Agent In Charge

29820 Frontage Road
Wellton, Arizona 85356

September 4, 2001

To: Cabeza Prieta National Wildlife Refuge

ATTN: (b)(6) Acting Manager

Subject: August 2001 Wellton BP Desert Summary

During the month of August 2001 Wellton Agents and Yuma Sector Pilots recorded 11 walking entries, and 4 vehicle entries. A total of 5 walking entries impacted on the Cabeza Prieta NWR, and the remaining 5 impacted only on the Barry M. Goldwater Range. The vehicle entries all impacted on the Cabeza Prieta NWR (b) (7)(E) (b) (7)(E) (b) (7)(E) (b) (7)(E) Arizona, and one was apprehended by Wellton Agents near the intersection of (b) (7)(E) Two others returned to Mexico.

There were no significant incidents regarding rescue operations during the month. Illegal entries through the desert have decreased significantly during the last 3 months. (b) (7)(E) by Sector Air Operations, 24 - 7 ground operations, heat, and the on-going detail of agents to the (b) (7)(E) area have all contributed to this decrease in illegal entries.

There were no significant wildlife sightings reported during the month.

If we can be of assistance to you and your agency do not hesitate to call. Telephone (b) (6); (b) (7)(C) (b) (6); (b) (7)(C)

Sincerely,

(b)(6)(b)(7)(C)

8

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

YUM 50/2.2

Office of the Patrol Agent In Charge

29820 Frontage Road
Wellton, Arizona 85356

July 3, 2001

To: Cabeza Prieta National Wildlife Refuge

ATTN: (b)(6) Manager,

During the month of June 2001 Wellton Agents and Yuma Sector Pilots recorded 94 walking entries, and 1 vehicle entry (b) (7)(E) A total of 40 walking entries impacted on the Cabeza Prieta NWR, and the remaining 54 impacted only on the Barry M. Goldwater Range. The one vehicle entry impacted on BMGR only. (b) (7)(E) (b) (7)(E) (b) (7)(E) and then returned to Mexico at it's entry location.

Rescue operations for the month located three survivors and three deceased. All those rescued refused medical attention, and were subsequently repatriated to Mexico. Two of those rescued were (b) (7)(E)

(b) (7)(E)

No significant wildlife sightings were reported during the month of June 2001.

If we can be of assistance to you and your agency do not hesitate to call. Telephone (b) (6); (b) (7)(C)

(b) (6); (b) (7)(C)

Sincerely

(b)(6)(b)(7)(C)

9

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

YUM 50/2.2

Office of the Patrol Agent In Charge

29820 Frontage Road
Wellton, Arizona 85356

June 2, 2001

To: Cabeza Prieta National Wildlife Refuge

ATTN: (b)(6) Manager,

During the month of May 2001 Wellton Agents and Yuma Sector Pilots recorded 475 walking entries, and 18 vehicle entries across the US/Mexico border. Walking entries impacted on both the Cabeza Prieta NWR and the Barry M. Goldwater Range. Vehicle entries impacted on both locations as well.

Illegal walking entries through the desert south of Wellton, Arizona remain consistent with March and April 2001 entries. Smaller groups entering (b) (7)(E) (b) (7)(E) Illegal vehicle entries appear have steadily increased through the (b) (7)(E) As of the end of May and through the next couple of months steps have been taken to dramatically decrease the entries on the (b) (7)(E) Wellton Station apprehended a total of 8 vehicles crossing the desert from Mexico during the month. Most entered illegally near (b) (7)(E) Two of these vehicles were encountered after entering from the Sonorita area (b) (7)(E) These two vehicles were involved in the transportation of approximately 398 pounds of Marijuana. Only one of the 8 vehicles was not a drive-through, and it was apprehended on (b) (7)(E) after picking up a group of illegal aliens that walked up (b) (7)(E) Many more drive-throughs apparently came from the (b) (7)(E) and brought aliens north (b) (7)(E) (b) (7)(E) before returning to Mexico by the same route.

There were no significant wildlife sightings reported during May.

If we can be of assistance to you and your agency do not hesitate to call. (b)(6)(b)(7)(C) (b)(6)(b)(7)(C)

Sincerely,

(b)(6)(b)(7)(C)

10

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

YUM 50/2.2

Office of the Patrol Agent In Charge

29820 Frontage Road
Wellton, Arizona 85356

May 2, 2001

To: Cabeza Prieta National Wildlife Refuge

ATTN: (b)(6) Manager,

During the month of April 2001 Wellton Agents and Yuma Sector Pilots recorded 568 walking entries, and 17 vehicle entries across the US/Mexico border. Walking entries impacted on both the Cabeza Prieta NWR and the Barry M. Goldwater Range. Vehicle entries impacted on both locations as well.

Illegal walking entries through the desert south of Wellton, Arizona remain consistent with February and March 2001 entries. One group of 55 illegal aliens entered near (b) (7)(E) area and was apprehended east of the (b) (7)(E) Illegal vehicle entries appear to be increasing through the (b) (7)(E) area. Wellton Station apprehended a total of 8 vehicles during the month, all but one entered illegally (b) (7)(E) and each was determined to be transporting illegal aliens.

There were no significant wildlife sightings reported during April.

If we can be of assistance to you and your agency do not hesitate to call. (b)(6)(b)(7)(C)
(b)(6)(b)(7)(C)

(b)(6)(b)(7)(C)

11

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

YUM 50/2.2

Office of the Patrol Agent In Charge

29820 Frontage Road
Wellton, Arizona 85356

April 4, 2001

To: Cabeza Prieta National Wildlife Refuge

ATTN: (b)(6) Manager,

During the month of March 2001 Wellton Agents and Yuma Sector Pilots recorded 616 walking entries, and 17 vehicle entries across the international boundary with Mexico. Walking entries impacting on the Cabeza Prieta Refuge totaled 491, and those impacting on the Barry M. Goldwater Range totaled 354. Fifteen of the vehicle entries impacted on the CPR, and two impacted only on the BMG. Of the total vehicle entering, three were apprehended by Wellton Agents. Two of the three apprehended vehicles entered near (b) (7)(E) (b) (7)(E) and the third entered near (b) (7)(E) All others entered near (b) (7)(E) or returned to Mexico.

Illegal walking entries through the desert south of Wellton, Arizona have not increased during March 2001, but have remained steady and consistent with February 2001 entries. One group of 43 illegal aliens (b) (7)(E) and were apprehended (b) (7)(E) (b) (7)(E) The vehicle entries appear to be increasing through the (b) (7)(E) Those vehicles apprehended by Wellton Agents were transporting illegal aliens.

There were no significant wildlife sightings reported during March.

If we can be of assistance to you and your agency do not hesitate to call. (b)(6)(b)(7)(C) (b)(6)(b)(7)(C)

(b)(6)(b)(7)(C)

12

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

YUM 50/2.2

Office of the Patrol Agent In Charge

29820 Frontage Road
Wellton, Arizona 85356

March 2, 2001

To: Cabeza Prieta National Wildlife Refuge

ATTN: (b)(6) Manager,

During the month of February 2001 Wellton Agents and Yuma Sector Pilots recorded 760 walking entries, and 10 vehicle entries. All these walking entries impacted on the Barry M. Goldwater Range, with 250 of this total impacting on the Cabeza Prieta Refuge. Six of the vehicles impacted on the CPR and three impacted only on the BMG.

Illegal entries through the desert south of Wellton, Arizona have increased dramatically during February 2001, with a total of 760 walking entries, as compared to 355 during January 2001. Several vehicles made illegal entry from Mexico (b) (7)(E) and traveled northeast into the Tucson Sector's area of responsibility. Wellton Station did not apprehend any of these vehicles. Of the 10 vehicle entries that traveled into Wellton Station area, seven crossed into the US inside the CPR boundary. One of these seven returned to Mexico, and the other six were apprehended by Wellton Agents. One of the six vehicles was found to be transporting 1445 pounds of marijuana and the two occupants were armed with a 9mm handgun. They were also equipped with (b) (7)(E) A second vehicle traveling with this was not apprehended, and it is believed that it was transporting marijuana as well. All others entered (b) (7)(E) and were found to be transporting illegal aliens.

There were no significant wildlife sightings reported during the month.

If we can be of assistance to you and your agency do not hesitate to call. (b)(6)(b)(7)(C)
(b)(6)(b)(7)(C)

(b)(6)(b)(7)(C)

13

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

YUM 50/2.2

Office of the Patrol Agent In Charge

29820 Frontage Road
Wellton, Arizona 85356

February 1, 2001

To: Cabeza Prieta National Wildlife Refuge

ATTN: (b)(6) Manager,

During the month of January 2001 Wellton Agents and Yuma Sector Pilots recorded 355 walking entries, and 2 vehicle entries. All these entries impacted on the Barry M. Goldwater Range, with 115 of the total impacting on the Cabeza Prieta Refuge.

Illegal entries through the desert south of Wellton, Arizona have increased during January, with a total of 355 walking entries as compared to 123 during December 2000. Several vehicles made illegal entry from Mexico (b) (7)(E) Mexico, and traveled northeast into the Tucson Sector's area of responsibility. Wellton Station did not apprehend any of these vehicles. Two vehicles entered (b) (7)(E) and were both apprehended. They were transporting illegal aliens.

There were no significant wildlife sightings reported during the month.

If we can be of assistance to you and your agency do not hesitate to call. (b)(6)(b)(7)(C)
(b)(6)(b)(7)(C)

(b)(6)(b)(7)(C)

14

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

YUM 50/2.2

Office of the Patrol Agent In Charge

29820 Frontage Road
Wellton, Arizona 85356

January 2, 2001

To: Cabeza Prieta National Wildlife Refuge

ATTN: (b)(6) Manager,

During the month of December 2000 Wellton Agents and Yuma Sector Pilots recorded 123 walking entries, and 5 drive through entries. All these entries impacted on the Barry M. Goldwater Range, and all but 22 of the walking entries impacted on the Cabeza Prieta Refuge. Across the Cabeza Prieta we recorded two larger groups, one group of 15 illegal aliens entered (b) (7)(E) and a group of 10 entered (b) (7)(E)

Illegal entries through the desert south of Wellton, Arizona were light during the month with the total of 123 walking entries, as compared to 104 in November. Five vehicles made illegal entry from Mexico (b) (7)(E) Mexico, with four traveling northeast into the Tucson Sector's area of responsibility. Wellton Station apprehended one of these four vehicles (b) (7)(E) It was transporting 7 illegal aliens from Mexico. Of the other three vehicles, only one continued north while two others off loaded their suspected illegal alien cargo and then returned to Mexico. The fifth and sixth vehicles drove (b) (7)(E) (b) (7)(E) where one evaded apprehension. The other was transporting 7 illegal aliens from Mexico.

Illegal entries through the desert appear to be increasing slightly, but still less than in previous years.

One significant wildlife sighting was reported during the month. This sighting occurred on 12-17-00 @ 5:30PM, when 8 adult antelope crossed the (b) (7)(E) approximately 2.5 miles east of (b) (7)(E) They were all running, south to north, and all appeared to be healthy. They appeared to be guiding on the southern end of (b) (7)(E)

If we can be of assistance to you and your agency do not hesitate to call. (b)(6)(b)(7)(C)

(b)(6)(b)(7)(C)

(b)(6)(b)(7)(C)

15

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

YUM 50/2.2

Office of the Patrol Agent In Charge

29820 Frontage Road
Wellton, Arizona 85356

December 5, 2000

To: Cabeza Prieta National Wildlife Refuge

ATTN: (b)(6) Manager,

During the month of November 2000 Wellton Agents and Yuma Sector Pilots recorded 104 walking entries, and 3 drive through entries. All these entries impacted on the Barry M. Goldwater Range, and all but 20 of the walking entries impacted on the Cabeza Prieta Refuge. Across the Cabeza Prieta we recorded three larger groups, one group of 20 illegal aliens entered (b) (7)(E) another group of 13 and a group (b) (7)(E)

Illegal entries through the desert south of Wellton, Arizona were again somewhat light during the month with the total of 104 walking entries, as compared to 101 in October. Three vehicles made illegal entry from Mexico (b) (7)(E) Tucson Sector's area of responsibility. Ajo Station Agents reportedly apprehended 6 illegal Chinese from one of these vehicle entries. All three of the vehicle entries impacted on the Cabeza Prieta Refuge. (b) (7)(E) Mexico is located only a short distance south and west of (b) (7)(E)

The illegal entries through the desert appear to be less than in previous years, previous months. We attribute our high profile forward deployment of personnel into the desert as the main deterrent, and cause for the drop in illegal entries. Wellton Station is now staffed with 43 Border Patrol Agents which includes four Supervisors.

There were no significant wildlife sightings reported during the month.

If we can be of assistance to you and your agency do not hesitate to call. (b)(6)(b)(7)(C)
(b)(6)(b)(7)(C)

(b)(6)(b)(7)(C)

16

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

YUM 50/2.2

Office of the Patrol Agent In Charge

29820 Frontage Road
Wellton, Arizona 85356

November 2, 2000

To: Cabeza Prieta National Wildlife Refuge

ATTN: (b)(6) Manager,

During the month Wellton Agents and Sector Pilots worked 1 reported rescue operation. A subject called the Wellton Station and reported that he had left two others in the desert (b) (7)(E) (b) (7)(E) The area was searched for two days until the subjects were finally tracked (b) (7)(E) where they had been picked up by a vehicle.

Illegal entries through the desert south of Wellton, Arizona were somewhat light during the month with a total of 101 illegal entries, (compared to 97 in September). One vehicle made illegal entry (b) (7)(E) (b) (7)(E) area, unloaded 17 aliens and returned south. Ajo Station Agents apprehended the 17 aliens.

We are still experiencing walking groups of 10 plus persons entering in all areas between (b) (7)(E) (b) (7)(E) During the month all illegal entries impacted on the Barry M. Goldwater Range, and all but 22 impacted on the Cabeza Prieta Refuge. The vehicle entries impacted only on the Cabeza Prieta Refuge, no vehicles entered through BLM area of responsibility.

If we can be of assistance to your agency do not hesitate to call. (b)(6)(b)(7)(C) (b)(6)(b)(7)(C)

(b)(6)(b)(7)(C)

17

Cabeza Prieta Fish and Wildlife Service Briefing
Wellton, Arizona
November 3, 1999 0800 AM

Briefing Presented By:
(b)(6) **Deputy Director / Cabeza Prieta Wildlife Refuge**
Vergial Harp, USFWS/Cabeza Prieta

In Attendance:

NAME	AGENCY	PHONE
(b) (6); (b) (7)(C)	USBP/WEL	(b)(6)(b)(7)(C)
	YCSO/YUMA	
	USBP/WEL	
	YCSO/WEL	
	USBP/WEL	
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	USBP/WEL	
	USBP/WEL	
	USBP/WEL	
	USBP/YUM	
	USBP/YUS	

All Area Code (520)

Briefings are provided semi-annually by CPNWR Personnel. Briefing covered CPNWR mission and accomplishments with hand-outs on refuge wildlife and regulations.

(b)(6)(b)(7)(C)

18

ATTACHMENT D
(Memorandum of Understanding)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Cabeza Prieta National Wildlife Refuge
1611 N. Second Ave
Ajo, AZ 85321
Phone (520)387-6483 Fax (520)387-5359
email (b)(6)

RECEIVED
'99 NOV 15 P 3:01
U.S. BORDER PATROL

November 12, 1999

121/62

(b)(6)(b)(7)(C)
Chief Patrol Agent
United States Border Patrol
350 West First Street
Yuma, AZ 85364

Dear (b)(6)(b)(7)(C)

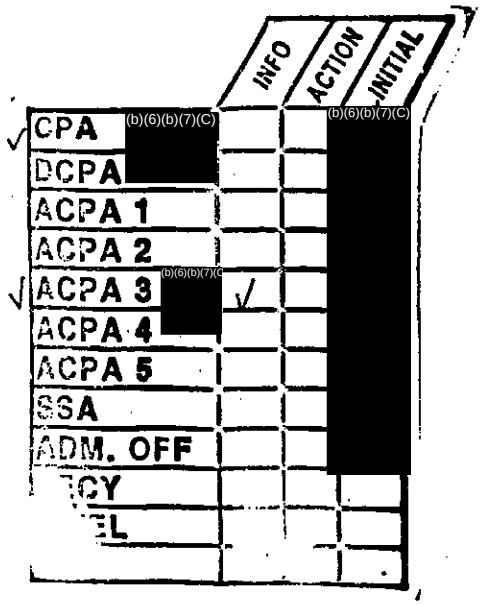
Enclosed is a signed original of the new Interagency Agreement between your agency and ours. We see this as another positive step both agencies are taking to continue the excellent cooperation that has been going on for so many years along the international boundary in the Sonoran desert region.

We appreciate the work of the Yuma Border Patrol Sector staff in putting together the updated version of the agreement so we can continue the mutual work of both agencies in such a sensitive environment. We appreciate your efforts on being understanding to our needs as we trust we are to your mission. We hope that this outstanding cooperation can continue for many more years.

Sincerely

(b)(6)

Refuge Manager



19

INTERAGENCY AGREEMENT

BETWEEN

U.S. FISH AND WILDLIFE SERVICE

CABEZA PRIETA NATIONAL WILDLIFE REFUGE

AJO, AZ

AND

IMMIGRATION AND NATURALIZATION SERVICE

U.S. BORDER PATROL

YUMA SECTOR

YUMA, AZ

20

This AGREEMENT made and entered into on the date signed by all parties, by and between the United States Department of the Interior, U.S. Fish and Wildlife Service, hereinafter called the "FWS," and the United States Department of Justice, Immigration and Naturalization Service, United States Border Patrol, Yuma Sector, hereinafter called the "BP."

I. WHEREAS - The "FWS" is authorized by 50 CFR 25.41 U.S.C. to enter into an Interagency Agreement with the "BP" to foster mutual assistance relationships, establish policies and procedures of mutual concern, and confirm mutual assistance between the two agencies; and

II. WHEREAS - It is the purpose of the "FWS" to administer Cabeza Prieta National Wildlife Refuge for the conservation and development of natural wildlife resources, including the bighorn sheep, the preservation of wilderness resources, and the federally endangered Sonoran pronghorn antelope; and

III. WHEREAS - The "BP" is authorized under 8 CFR 287 to patrol the border to prevent the illegal entry of aliens, as well as smuggling of persons and contraband into the United States. This same section provides power and authority to arrest, without warrant, and to board and search any conveyance within a distance of twenty-five miles from the external boundary of the United States; now

THEREFORE - The FWS agrees: To promptly notify the "BP" of any and all activities "FWS" employees may observe or become aware of, which may have relation to smuggling and/or illegal entry of persons and contraband into the United States; and

To assist the "BP" in search and rescue operations within Cabeza Prieta National Wildlife Refuge and as requested by "BP" in search and rescue operations adjacent to refuge lands, whenever possible; and

To engage in regular informational and educational meetings with "BP" personnel and to share mutual law enforcement information; and

THEREFORE - The "BP" agrees: To travel only on public use roads for routine patrol within the Refuge boundaries and to report Refuge violations to the "FWS"; and to restrict the use of administrative roads to investigate sensor activity, engage in pursuit activity, and search and rescue operations; and

To restrict off-road travel to emergency situations, and to limit the resulting off-road damage to the environment to as little as possible; and to report those situations to the Refuge Manager within seven (7) working days which required off-road travel in emergency situations; and

To report to the Refuge Manager (or designee) all drug seizures occurring within the Refuge boundary and continue to report, on a monthly basis, the number of illegal entries and apprehensions that occur on the Refuge, within the respective Sector boundaries; and

To distribute information, host informational and educational meetings with "FWS" personnel, and otherwise keep "BP" personnel working within Cabeza Prieta National Wildlife Refuge aware of the general Refuge mission and regulations, wilderness designation, and above mentioned conditions; and to allow Refuge Officers the use of Border Patrol radio frequencies, for the purposes of contacting patrol agents and pilots concerning illegal entry and/or smuggling activities encountered by Refuge Officers, as well as emergency situations.

THEREFORE - The "FWS" and "BP" mutually agree: That each agency will render assistance to the other in the above mentioned activities, provided that such assistance is within its capabilities and jurisdiction, and that such action will not impair such agencies from fulfilling their own objectives; and

All requests made of the opposite agency will be reasonable and will not compromise the integrity or mission of either agency.

IV. This AGREEMENT, beginning on the date signed by all parties, shall be in effect for a period of five (5) years or until such time that either party gives sixty (60) calendar days termination of involvement notice, in writing, to the other party. The parties to this AGREEMENT to determine if changes are necessary will conduct an annual review at the end of each calendar year. However, this AGREEMENT may be amended at any time it becomes necessary, by written mutual agreement of both parties.

V. No party shall be liable to any other for any loss, damage, routine expense, personal injury, or death occurring in consequences of this AGREEMENT.

VI. KEY OFFICIALS - For purposes of facilitating communications in implementing this AGREEMENT, key officials have been identified by each party as:

U.S. Fish and Wildlife Service

Refuge Manager
Cabeza Prieta National Wildlife Refuge
Department of the Interior
U.S. Fish & Wildlife Service
1611 N. Second Avenue
Ajo, AZ 85321
(b) (6)

U.S. Border Patrol

Chief Patrol Agent
U.S. Border Patrol
Immigration and Naturalization Service
Department of Justice
350 W. 1st Street
Yuma, AZ 85364
(b) (6); (b) (7)(C)

APPROVED:

(b)(6)(b)(7)(C)

Chief Patrol Agent
Yuma Sector
U.S. Border Patrol
Yuma, Arizona

11/8/99

Date

(b)(6)

Refuge Manager
Cabeza Prieta National Wildlife Refuge
U.S. Fish and Wildlife Service
Ajo, Arizona

11/12/99

Date

ATTACHMENT E
(Speed Limit Memorandum)

U.S. Department of Justice
Immigration and Naturalization Service
United States Border Patrol

Office of the Patrol Agent In Charge

29820 Frontage Road
Wellton, Arizona 85356

March 3, 2002

MEMORANDUM FOR Wellton Station Personnel
Wellton, Arizona

FROM: (b)(6)(b)(7)(C)
Patrol Agent In Charge
Wellton, Arizona

SUBJECT: Vehicle Speed and the Sonoran Pronghorn Antelope

Certain work areas within the Wellton Border Patrol Station Area of Responsibility are known habitat for the Sonoran Pronghorn Antelope. The Sonoran Antelope is considered an endangered species and is protected. The USBP Yuma Sector, Wellton Station, along with USFWS has agreed to certain considerations regarding this species.

USBP Wellton Station responsibilities with these considerations are:

(1) USBP agrees that a speed limit of (b)(7)(E) miles per hour be established along roadways adjacent to Sonoran Pronghorn habitat. This speed limit is in place specifically to avoid injury to the Sonoran Pronghorn.

Those areas of concern for Sonoran Antelope habitat are; From (b) (7)(E) (b) (7)(E) (b) (7)(E) (b) (7)(E) Road.

As a reminder, Wellton Station personnel will adhere to the conditions of this agreement, and will, to the extent possible, limit speed to (b)(7)(E) MPH while working these areas of concern.

APPENDIX D
FREQUENCY OF DRAGGING OPERATIONS

FREQUENCY (in days) OF DRAGGING OPERATIONS
1995 and 1996

(b)(7)(E)

10/95	11/95	12/95	1/96	2/96	3/96	4/96	5/96	6/96	7/96	8/96	9/96	10/96	11/96	12/96
3	2	2	3	1	6	6	2	4	2	3	2	2	0	3
2	1	1	1	2	1	1	2	0	3	2	1	0	0	3
1	1	2	1	1	1	1	2	2	1	0	2	1	0	1
1	0	2	1	1	0	0	1	0	1	2	1	0	0	0
1	1	2	1	0	0	1	2	1	1	0	1	0	0	0
1	0	2	1	0	0	0	2	0	1	1	2	0	0	0
1	1	2	2	0	3	1	0	2	2	0	2	1	0	2
0	1	1	0	0	1	1	1	1	0	1	0	0	0	0
0	1	0	0	0	0	0	1	0	0	0	0	1	0	0
0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
0	0	0	1	0	0	1	0	1	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	0	1	0	0	0
0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

Wellton Station detailed to YUM/YUS 10-15-96 to 12-15-96

FREQUENCY (in days) OF DRAGGING OPERATIONS
1997

(b)(7)(E)

1/97	2/97	3/97	4/97	5/97	6/97	7/97	8/97	9/97	10/97	11/97	12/97
3	2	3	3	3	3	2	3	2	0	4	5
3	1	1	0	1	6	1	3	1	0	2	3
3	1	3	3	3	7	1	4	1	1	2	5
0	0	0	1	1	1	0	0	0	0	0	1
2	0	1	2	1	0	2	0	0	1	0	2
3	0	3	4	0	2	0	1	1	0	1	0
3	0	1	0	0	0	0	1	2	0	2	3
1	0	0	0	1	2	0	0	0	0	1	0
0	0	1	1	2	0	0	0	0	0	0	0
0	0	0	1	2	1	0	0	0	0	0	0
0	0	1	1	2	2	0	0	1	0	0	0
0	0	2	0	0	2	0	1	0	0	0	4
0	0	0	1	1	0	0	0	1	0	0	0
0	0	0	1	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	1	0	1
0	0	1	0	0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0	0	0	0	0

FREQUENCY (in days) OF DRAGGING OPERATIONS
1998

(b)(7)(e)	1/98	2/98	3/98	4/98	5/98	6/98	7/98	8/98	9/98	10/98
	3	1	1	0	2	7	10	10	10	7
	2	0	0	0	1	6	7	3	5	4
	2	4	0	0	2	10	10	9	11	9
	0	0	0	0	0	0	2	0	1	0
	0	0	0	0	0	2	6	4	4	2
	0	1	0	0	0	4	6	3	5	2
	1	0	0	0	2	4	5	3	4	1
	0	0	0	0	0	0	3	1	2	1
	1	0	0	0	0	2	1	0	0	1
	0	1	0	0	0	0	0	0	1	0
	0	0	0	0	0	3	2	3	5	3
	0	0	0	0	0	3	1	3	1	0
	0	0	0	0	0	0	3	2	2	0
	0	0	0	0	0	1	0	0	1	0
	0	0	0	0	0	0	1	1	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0

Data only available through October 1998. Drag roads were graded during the months of [redacted] During the months of February, March, April and May, Wellton agents were assigned traffic check and only went south to assist in apprehensions from pilot sightings.

APPENDIX E
CACTUS FERRUGINOUS OWL REPORT

ENVIRONMENTAL COMPLIANCE DOCUMENTATION:
CACTUS FERRUGINOUS PYGMY-OWL

U.S. BORDER PATROL'S ONGOING ACTIVITIES YUMA SECTOR COVERAGE AREA

22 June 1998
Revised 20 July 1998

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the state, the species has been documented near Dudleyville along the lower San Pedro River. Other localities in south central Arizona include historical records in Pinal County near Sacaton and Blackwater on the Gila River Indian Reservation and at Casa Grande. In addition to Bendire's collection, Pima County records include those along the Santa Cruz River and its tributaries near Tucson. Near the Mexican border the species has been found in Santa Cruz County near Patagonia and also in Sycamore Canyon west of Nogales, and in southwestern Pima County at Organ Pipe Cactus National Monument and Sasabe. It has also been found in eastern Yuma County near the Mexican border at Cabeza Prieta Tanks on the Cabeza Prieta National Wildlife Refuge (Monson 1998).

Present-day pygmy-owl locations in Arizona include those from Pima County and southern Pinal County (Lesh and Corman 1995; Corman 1997; Duncan and Harris 1998; Duncan et al. 1998; Tibbitts and Dickson 1998; S. Richardson, Ariz. Game and Fish Dept., Tucson, pers. comm. 27 March 1998). These existing owls are located on federal, state and tribal lands, and privately owned property at Organ Pipe Cactus National Monument, Buenos Aires National Wildlife Refuge, Tohono O'odham Nation near the Mexican border, the northwest Tucson area, and southern Pinal County.

The nearest pygmy-owl record to the U.S. Border Patrol's Yuma Sector Coverage area was at Cabeza Prieta Tanks. Gale Monson heard and observed an individual pygmy-owl in a mesquite thicket there on 10 April 1955 (Monson and Phillips 1981; Monson 1998). Cabeza Prieta Tanks are a series of natural tinajas or bedrock waterholes in the middle of the Cabeza Prieta Mountains, 1.2 mi. N Cabeza Prieta Peak (32°18'27"N, 113°48'09"W). Elevation of the tanks is about 1,540 ft.

Natural History

The pygmy-owl nests in tree or large columnar cactus cavities. Cavities may be naturally formed (e.g., knotholes) or excavated by woodpeckers; it does not construct its own nest holes. All currently known pygmy-owl nest sites are in woodpecker-excavated holes in

saguaros (S. Richardson, Ariz. Game and Fish Dept., Tucson, pers. comm. 27 March 1998; T. Tibbitts, Natl. Park Service, pers. comm. 19 May 1998). Nesting activity for this owl species begins in late winter to early spring. Its diverse diet includes birds, lizards, insects, and small mammals (Proudfoot and Beasom 1997). Little is known of the owl's life history, especially in Arizona.

Several habitat types are used by the pygmy-owl in the western portion of its range in Arizona and adjacent Mexico. These include streamside Sonoran riparian deciduous forest and woodland associations or Sonoran Desertscrub representative of the Arizona Upland subdivision. The streamside associations include such species as willows (*Salix* spp.), ash (*Fraxinus pennsylvannica* var. *velutina*), cottonwood (*Populus fremontii*), and/or velvet mesquite (*Prosopis velutina*). The Sonoran Desertscrub associations are composed of relatively dense saguaro cactus stands associated with short trees such as paloverde (*Cercidium* spp.), mesquite, and ironwood (*Olneya tesota*), and an open understory of triangle-leaf bursage (*Ambrosia deltoidea*), creosotebush (*Larrea tridentata*), and various other cacti and shrubs. For detailed descriptions of these habitat types see Brown (1982).

Pygmy-owls found in Sonoran Desertscrub are typically found associated with structurally diverse stands of desert riparian scrub with saguaros along washes. There is no permanent flow in these washes; instead flow is intermittent based on seasonal rainfall as well as strength and duration of individual storms. Desert riparian scrub vegetation is easily recognizable by the presence of a linear assemblage of trees and shrubs. These plants are denser and taller than the sparse desertscrub vegetation that typically exists in the adjacent uplands. Pygmy-owls also inhabit Sinaloan Deciduous Forest and Thornscrub in Mexico. Throughout its range, the pygmy-owl occurs at low elevations, generally below 4,000 ft. Similarities between the streamside riparian and desertscrub sites include structurally diverse habitats coupled with a species rich prey base (Duncan et al. 1998).

Most historical records, particularly those in the northern part of its range in Arizona, were from streamside Sonoran riparian deciduous forest and woodland associations. It is likely that many desertscrub sites were overlooked by pioneering naturalists in Arizona because many were collectors for museums and more species could be acquired in riparian habitats than otherwise (R.B. Duncan, unpubl. data).

Threats to the Species

The cactus ferruginous pygmy-owl is threatened by past, present, and potential future destruction and modification of its habitat, throughout a significant portion of its range in the United States. It may also be threatened in portions of its range in Mexico but data is lacking on the severity and kinds of threats.

Pygmy-owl populations associated with riparian habitats have been most effected. Wide-scale loss and modification of the majority of riparian habitats in the southwestern U.S. have occurred. These losses are attributed to urban and agricultural encroachment, woodcutting, water diversion, channelization, livestock overgrazing, groundwater pumping and hydrological changes resulting from various land-use practices. The largest pygmy-owl populations still in existence in Arizona are mostly associated with Arizona Upland Sonoran Desertscrub habitats. Some of these desertscrub sites are currently being locally impacted by urbanization.

Methods

No direct pygmy-owl surveys were conducted in the U.S. Border Patrol's Yuma Sector Coverage area on the Barry M. Goldwater Air Force Range (BMGR) and adjacent Cabeza Prieta National Wildlife Refuge (CPNWR). Instead, R. B. Duncan & Associates evaluated project effects based on the area's potential to support pygmy-owls through the use of historical and contemporary documentation of the species in Arizona and adjacent Sonora, Mexico, and the presence or absence of suitable habitat capable of supporting the species in the project area. The latter was based primarily on a one-day field trip to the

APPENDIX F
LONG-NOSED LESSER BAT REPORT

INTRODUCTION

In 1988 *Leptonycteris curasoae* was federally listed as endangered due to apparently low and declining numbers, disturbance of roosts and because of interdependence with its food resources, saguaro cacti and agaves (Shull 1988, U.S. Fish and Wildlife Service 1995). Bats in general are of special concern because of their low reproductive rate (one offspring per female each year), longevity (up to 30 years with an average life span of 5-10 years) and, for gregarious species, their tendency to aggregate in large numbers in only a few roosts (Sheffield *et al.* 1992).

During spring and summer months, pregnant female lesser long-nosed bats, *Leptonycteris curasoae*, arrive in the United States and concentrate their numbers by gathering in only a few sites. For example, the largest known maternity roost of this species contains 100,000 adult females. This increases the vulnerability of the species because destruction of only a single major roost could have a serious impact on the entire species (Henshaw 1972). Of the approximately 12 known major maternity roosts throughout their range in Central and North America, there are only three verified major maternity roosts of *L. curasoae* in the U.S., all in Arizona (Cockrum 1991). Other, smaller roosts, have also been found. In the fall, as food becomes a limiting factor, lesser long-nosed bats leave Arizona and migrate south into Mexico following a nectar corridor of flowering *Agave* plants (Fleming 1991).

Leptonycteris curasoae feeds primarily on flower pollen and nectar of columnar cacti (e.g. saguaro and organ pipe) and agaves (e.g. Palmer's agave), plus the fruits of columnar cacti (Dalquest 1953, Beatty 1955, Hayward and Cockrum 1971, Hevly 1979, Cockrum 1991). It has been demonstrated that they are significant pollinators of saguaro and organ pipe cacti (Alcorn *et al.* 1962, McGregor *et al.* 1962). Their importance to agaves has not been rigorously tested, but they are thought to be important pollinators of agaves (Howell and Roth 1981); however, see Cockrum and Petryszyn (1991) and Schmidt (1993).

During daylight hours, bats of this species take refuge in day roosts located in mines or caves. At night, the bats emerge to forage on flowers and/or fruits of saguaro and organ pipe cacti. The longest one-way distance recorded for foraging *Leptonycteris curasoae* is about 25 kilometers (Horner *et al.* 1990, Dalton *et al.* 1994). There is evidence that they may travel even further (a large colony in Mexico is no closer than about 30 - 50 kilometers to the nearest food source). *L. curasoae* rest (night roost) locally within their foraging territory in trees and shrubs, mines, and rock faces and return to their day roosts just before dawn (Jorgensen *et al.* 1994).

In general, *Leptonycteris curasoae* in Arizona forage from after dusk to nearly dawn during the months of May to September. Precise lengths of foraging and night roosting bouts are still largely unknown. Foraging habits and strategies within a bat

colony shift as the maternity season progresses and food resources and availability change. Among the causes of these shifts are changing reproductive status (pregnancy, lactation, and weaning) and energy requirements of female bats and their young (Kurta *et al.* 1987, Speakman and Racey 1987, Kunz 1987). Later in the season, as the young are weaned and begin to forage with their mothers, there is increased pressure on the food resources. During this time, the plants are progressing through their life cycles of flower and fruit production.

OBJECTIVE

The purpose of this report is to assess the potential impacts on the Lesser Long-Nosed bat by activities of the U.S. Border Patrol in Southwestern Arizona.

METHODS

Information on distribution of these bats comes from our own field work, mine surveys, and mist-netting data, along with published and unpublished records. Included in the published material are Hoffmeister (1986), Cockrum (1991) and the Lesser long-nosed bat Recovery Plan (U.S. Fish and Wildlife Service 1995).

SOURCES OF DISTURBANCE

Disturbance that can harm this species can be placed into two broad categories: 1. disturbance to the animals while they are in their daytime roost, and 2. disturbance of their nighttime foraging.

1. Daytime roost disturbance.

During the day, the entire colony of bats will retreat to a dark, quiet site to rest and nurse their young. These day roosts are found in natural caves or abandoned mines. The bats residing in these mines are vulnerable to any human entry into their roost. Bats can be directly killed through acts of vandalism or indirectly from the stress associated with panic. The bats in a roost may also be negatively impacted by human activities conducted in the vicinity of their roost, most likely from high levels of acoustic noise (e.g. aircraft, loud music, blasting).

2. Nighttime foraging disturbance

At night, the bats emerge from their day roost to forage. Potential threats in this category include removal of their food source (columnar cacti) or substantial human activity in their foraging territory. Examples include urban development and some mining operations. Human activity in the form of lights and sound can cause bats to avoid a particular foraging territory. However, for such disturbance to be significant, it would have to be present over much of a colony's foraging territory and occur on a regular basis.

BORDER PATROL ACTIVITIES

The nearest known day roosting site to the Border Patrol flight path is in (b) (7)(E) (b) (7)(E) approximately 1 mile from the closest approach (see Figure 1). This roost is not one of the three primary maternity sites in the U.S., but consists of a relatively small colony of less than one hundred individuals. The foraging habitat for the colony in this roost extends to the west only as far as the (b) (7)(E)

1. Daytime roost disturbance.

It is assumed that air patrol activities do not take Border Patrol into abandoned mines, and is therefor not a problem in this area. Their activities do bring them within about 1 mile of a known roosting site with aircraft. Based on our studies with fighter jets flying over a known roost (Dalton and Dalton, 1993), this source of noise pollution at this distance is not considered significant.

Any Border Patrol ground personnel entering abandoned mines containing bats would be subjecting the animals to disturbance.

2. Nighttime foraging disturbance

It is assumed that the Border Patrol activities do not remove or alter columnar cacti, therefore this source of disturbance is not considered a problem. There is the possibility of nighttime flights occurring within the foraging territory of this colony. Given the size of the colony's territory, and given that the Border Patrol activities at night (b) (7)(E) and on the edge of their territory, this form of disturbance is not considered significant. Again, ground activities that involve entering mines would potentially be disturbing young left in the mine while the mothers were out of the mine foraging.

RECOMMENDATIONS

Based on the fact that all regular Border Patrol flight activities (b) (7)(E) (b) (7)(E) (b) (7)(E) this form of human activity within this species' territory is not considered significant. However, ground activities requiring the entry of abandoned mines used as day roosts by these animals would constitute a threat to the resident colony. If such activity is foreseen, then it is recommended that such sites have bat friendly gates installed on their entrances, thereby eliminating the need to enter them.

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Figure 1. *Leptonycteris curasoae* Foraging Territory and Border Patrol Flight Path
From USGS 1:250,000 Topographic map AJO, ARIZONA

APPENDIX E
NATIONAL REGISTER OF HISTORIC PROPERTIES

Appendix E
Properties Listed on the National Register of Historic Places

Resource Name	Address	City	Multiple
Cochise County, Arizona			
Apache Powder Historic Residential District	100 and 200 Blocks, W. 6th St.	Benson	Benson MPS
Barfoot Lookout Complex	Buena Vista Peak	Portal	National Forest Fire Lookouts in the SW Region TR
Bear Spring House, Guardhouse, and Spring	S of Bowie off Apache Pass Rd.	Bowie	
Benson Railroad Historic District	200 & 300 Blocks, E. 3rd St.	Benson	Benson MPS
Bisbee Historic District	US 80	Bisbee	
Bisbee Woman's Club Clubhouse	74 Quality Hill	Bisbee	
Briscoe, Benjamin E., House	358 N. Bowie	Willcox	Willcox MRA
Cima Park Fire Guard Station	In Chiricahua Wilderness NE of Douglas, Coronado NF	Douglas	Depression-Era USDA Forest Service Administrative Complexes in Arizona MPS
Cochise Hotel	Off U.S. 666	Cochise	
Coronado National Memorial	30 mi. SW of Bisbee	Bisbee	
Council Rocks Archaeological District	Address Restricted	St. David	
Crowley House	175 S. Railroad Ave.	Willcox	Willcox MRA
Double Adobe Site	Address Restricted	Douglas	
Douglas Historic District	Roughly bounded by Pan American, H, and F Ave. along 8th, 10th, 11th, 12th, and 13th St. and G Ave.	Douglas	
Douglas Municipal Airport	E end of 10th Ave.	Douglas	
Douglas Residential Historic District	Roughly bounded by Twelfth St., Carmelita Ave., Seventh St., and East Ave.	Douglas	
Douglas Sonoran Historic District	Roughly bounded by the W side of H Ave. between Sixth and Ninth Sts.	Douglas	
Douglas Underpass	US 80 under Southern Pacific RR, milepost 366.1	Douglas	Vehicular Bridges in Arizona MPS
Douglas, Walter, House	201 Cole Ave.	Bisbee	
Dragoon Springs Stage Station Site	Address Restricted	Dragoon	
El Paso and Southwestern Railroad Passenger Depot--Douglas	Fourteenth St. and H Ave.	Douglas	
El Paso and Southwestern Railroad YMCA	1000 Pan American Ave.	Douglas	

Appendix E: Continued.

Resource Name	Address	City	Multiple
Faraway Ranch Historic District	AZ 181	Dos Cabezas	
Fort Bowie National Historic Site	12 mi. S of Bowie	Bowie	
Fort Huachuca	3.6 mi. W of Sierra Vista	Sierra Vista	
Gadsden Hotel	1046 G. Ave.	Douglas	
Garden Canyon Archeological Site	Address Restricted	Sierra Vista	
Garden Canyon Petroglyphs	Address Restricted	Sierra Vista	
Geronimo Surrender Site	Bluff overlooking Skeleton Canyon, 45 mi. NE of Douglas	Douglas	Warfare Between Indians and Americans in Arizona MPS
Grand Theatre	1139--1149 G. Ave.	Douglas	
Gung'l, John, House	210 S. El Paso Ave.	Willcox	Willcox MRA
Hereford Bridge	Hereford Rd. over the San Pedro River	Hereford	Vehicular Bridges in Arizona MPS
Hi Wo Company Grocery	398 E. 4th St.	Benson	Benson MPS
Hooker Town House	235 E. Stewart	Willcox	Willcox MRA
Johnson--Tillotson House	124 N. Curtis	Willcox	Willcox MRA
Kinjockity Ranch	10047 E. AZ 92	Hereford	
Lehner Mammoth-Kill Site	Address Restricted	Hereford	
Martinez, W. D., General Merchadise Store	180 San Pedro St.	Benson	Benson MPS
Mee, Joe, House	265 W. Stewart	Willcox	Willcox MRA
Monte Vista Lookout Cabin	Monte Vista Peak	Elfrida	National Forest Fire Lookouts in the SW Region TR
Morgan House	2442 E. Maley	Willcox	Willcox MRA
Muheim House	207 Youngblood Ave.	Bisbee	
Naco Border Station	106 D St.	Naco	
Naco-Mammoth Kill Site	Address Restricted	Naco	
Norton, John H., and Company Store	180 N. Railroad Ave.	Willcox	
Oasis Court	363 W. 4th St.	Benson	Benson MPS
Pearce General Store	Ghost Town and Pearce Rd.	Pearce	
Phelps Dodge General Office Building	Copper Queen Plaza, intersection of Main St. and Brewery Gulch	Bisbee	
Portal Ranger Station	Forest Rd. 42A SW of Portal, Coronado NF	Portal	Depression-Era USDA Forest Service Administrative Complexes in Arizona MPS

Appendix E: Continued

Resource Name	Address	City	Multiple
Quiburi	Address Restricted	Fairbank	
Railroad Avenue Historic District	Roughly bounded by Curtis Ave., Stewart St., Southern Pacific RR tracks, and Grant St.	Willcox	Willcox MRA
Redfield--Romine House	146 E. 6th St.	Benson	Benson MPS
Rucker Canyon Archeological District	Address Restricted	Douglas	
Rustler Park Fire Guard Station	SE of Chiricahua NM, Coronado NF	Douglas	Depression-Era USDA Forest Service Administrative Complexes in Arizona MPS
San Bernardino Ranch	17 mi. E of Douglas on the international boundary	Douglas	
Saxon, Harry, House	308 S. Haskell	Willcox	Willcox MRA
Schwertner House	124 E. Stewart St.	Willcox	Willcox MRA (AD)
Sierra Bonita Ranch	SW of Bonita	Bonita	
Silver Peak Lookout Complex	Coronado National Forest	Portal	National Forest Fire Lookouts in the Southwestern Region TR
Smith--Beck House	425 Huachuca St.	Benson	Benson MPS
Soto, Pablo, House	108 E. Stewart	Willcox	Willcox MRA
St. Patrick's Roman Catholic Church	Oak Ave., on Higgins Hill	Bisbee	
St. Paul's Episcopal Church	Safford and 3rd Sts.	Tombstone	
Stafford Cabin	30 mi. SE of Willcox in Chiricahua National Monument	Willcox	
Tombstone City Hall	315 E. Fremont St.	Tombstone	
Tombstone Courthouse	219 E. Toughnut	Tombstone	
Tombstone Historic District	U.S. 80	Tombstone	
Treu, John, House	205 W. Vista, Warren Townsite	Bisbee	
Treu, Max, Territorial Meat Company	305 E. 4th St.	Benson	Benson MPS
US Post Office and Customs House--Douglas Main	601 Tenth St.	Douglas	Historic US Post Offices in Arizona, 1900--1941, TR
Willcox Women's Club	312 W. Stewart	Willcox	Willcox MRA
Wilson, J. C., House	258 E. Maley	Willcox	Willcox MRA
Pima County, Arizona			
Air Force Facility Missile Site 8 (571-7) Military Reservation	1580 W. Duval Mine Rd.	Green Valley	
Air Force Facility Missile Site 8 (571-7) Military Reservation	1580 W. Duval Mine Rd.	Green Valley	
Arizona Inn	2200 E. Elm St.	Tucson	
Armory Park Historic Residential District	E. 12th St. to 19th St., Stone Ave. to 2nd Ave.	Tucson	

Appendix E: Continued

Resource Name	Address	City	Multiple
Armory Park Historic Residential District (Boundary Increase)	Roughly, 19th, 20th, and 21st Sts. from Stone Ave. to Jacobs Ave.	Tucson	
Barrio Libre	Bounded by 14th, 19th, Stone and Osborne Sts.	Tucson	
Bates Well Ranch	Bates Well Rd. E side	Ajo	
Blixt--Avitia House	830 W. Alameda St.	Tucson	Menlo Park MPS
Boudreaux--Robison House	101 N. Bella Vista Dr.	Tucson	Menlo Park MPS
Bray--Valenzuela House	203 N. Grande Ave.	Tucson	Menlo Park MPS
Bull Pasture	E of Lukeville on Organ Pipe Cactus National Monument	Lukeville	
Cannon, Dr. William Austin, House	1189 E. Speedway	Tucson	
Cavalry Corrals	N. Craycroft Blvd.	Tucson	Fort Lowell MRA
Cienega Bridge	5.3 mi. SE of Vail on Marsh Station Rd.	Vail	Vehicular Bridges in Arizona MPS
Cocoraque Butte Archeological District	Address Restricted	Tucson	
Colonia Solana Residential Historic District	Roughly bounded by Broadway Blvd., S. Randolph Way, Camino Campestre, and S. Country Club	Tucson	
Colossal Cave Preservation Park Historic District	Jct. of Old Spanish Trail and Colossal Cave Rd.	Vail	
Copper Bell Bed and Breakfast	25 N. Westmoreland Ave.	Tucson	Menlo Park MPS
Cordova House	173--177 N. Meyer Ave.	Tucson	
Coronado Hotel	410 E. 9th St.	Tucson	
Desert Laboratory	W of Tucson off W. Anklam Rd. on Tumamoc Hill	Tucson	
Dodson--Esquivel House	1004 W. Alameda St.	Tucson	Menlo Park MPS
Dos Lomitas Ranch	Organ Pipe NM	Ajo	
El Camino Del Diablo	NW of Lukeville	Lukeville	
El Conquistador Water Tower	Broadway and Randolph Way	Tucson	
El Encanto Apartments	2820 E. Sixth St.	Tucson	
El Encanto Estates Residential Historic District	Roughly bounded by Country Club Rd., Broadway Blvd., Fifth St., and Jones St.	Tucson	
El Montevideo Historic District	3700 and 3800 blocks of streets between Broadway & 5th St.	Tucson	

Appendix E: Continued

Resource Name	Address	City	Multiple
El Presidio Historic District	Roughly bounded by W. 6th, W. Alameda Sts., N. Stone and Granada Aves.	Tucson	
El Tiradito	221 S. Main St.	Tucson	
Empire Ranch	6 mi. E of Greaterville	Greaterville	
Fort Lowell Park	N. Craycroft Blvd.	Tucson	Fort Lowell MRA
Fourth Avenue Underpass	Fourth Ave.	Tuscon	Vehicular Bridges in Arizona MPS
Gachado Well and Line Camp	E of Lukeville in Organ Pipe Cactus National Monument	Lukeville	
Greenway, John and Isabella, House	1 Greenway House Dr.	Ajo	
Growler Mine Area	N of Lukeville	Lukeville	
Gunsight Mountain Archeological District	Address Restricted	Three Points	
Hughes, Sam, Neighborhood Historic District	Roughly bounded by E. Speedway Blvd., N. Campbell Ave., E. 7th St. and N. Bentley Ave.	Tucson	
I'itoi Mo'o--Montezuma's Head and 'Oks Daha--Old Woman Sitting	Organ Pipe NM	Ajo	
Iron Horse Expansion Historic District	Roughly bounded by Eighth St., Euclid Ave., Hughes and Tenth Sts., and N. Fourth and Hoff Aves.	Tucson	
Julian--Drew Building	182 E. Broadway	Tucson	
Kentucky Camp Historic District	Address Restricted	Sonoita	
Lemmon Rock Lookout House	Coronado National Forest	Tucson	National Forest Fire Lookouts in the Southwestern Region TR
Los Robles Archeological District	Address Restricted	Red Rock	Hohokam Platform Mound Communities of the Lower Santa Cruz River Basin c. A.D. 1050--1450 MPS
Lowell Ranger Station	Off Sabino Canyon Rd. NE of Tucson, Coronado NF	Tucson	Depression-Era USDA Forest Service Administrative Complexes in Arizona MPS
Manning Cabin	10 mi. E of Tucson in Saquaro National Monument	Tucson	

Appendix E: Continued

Resource Name	Address	City	Multiple
Manning, Levi H., House	9 Paseo Redondo	Tucson	
Matus, Antonio, House and Property	856 W. Calle Santa Ana	Tucson	
Men's Gymnasium, University of Arizona	E. Fourth St., University of Arizona campus	Tucson	
Milton Mine	NW of Lukeville	Lukeville	
Officer's Quarters	N. Craycroft Blvd.	Tucson	Fort Lowell MRA
Old Adobe Patio	40 W. Broadway	Tucson	
Old Library Building	University of Arizona campus	Tucson	
Old Main, University of Arizona	University of Arizona campus	Tucson	
Pie Allen Historic District	Roughly bounded by N. Euclid Ave., E. 6th St., N. Park Ave., and E. 10th St.	Tucson	
Pima County Courthouse	115 N. Church St.	Tucson	
Post Trader's Store and Riallito House	5425 E. Fort Lowell Rd.	Tucson	Fort Lowell MRA
Post Trader's Storehouse	5354 E. Fort Lowell Rd.	Tucson	Fort Lowell MRA
Quartermaster Storehouse	5479 E. Fort Lowell Rd.	Tucson	Fort Lowell MRA
Quartermaster's Corrals	N. Craycroft Rd.	Tucson	Fort Lowell MRA
Rillito Racetrack--Chute	4502 N. First Ave.	Tucson	
Rincon Mountain Foothills Archeological District	Address Restricted	Tucson	
Ronstadt House	607 N. 6th Ave.	Tucson	
Ronstadt--Sims Adobe Warehouse	911 N. 13th Ave.	Tucson	Spring, John, MRA
Sabedra--Huerta House	1036--1038 N. 13th Ave.	Tucson	Spring, John, MRA
San Pedro Chapel	5230 E. Ft. Lowell Rd.	Tucson	
San Xavier del Bac	9 mi. S of Tucson via Mission Rd.	Tucson	
Santa Ana del Chiquiburitac Mission Site	Address Restricted	Tucson	
Santa Cruz Catholic Church	1220 S. Sixth Ave.	Tucson	
Schwalen--Gomez House	217 N. Melwood Ave.	Tucson	Menlo Park MPS
Site No. HD 13-11	E. Fort Lowell Rd.	Tucson	Fort Lowell MRA
Site No. HD 13-13	E. Fort Lowell Rd.	Tucson	Fort Lowell MRA
Site No. HD 13-4	N. Craycroft Blvd.	Tucson	Fort Lowell MRA
Site No. HD 4-8A	E. Fort Lowell Rd.	Tucson	Fort Lowell MRA
Site No. HD 5-26	5495 E. Fort Lowell Rd.	Tucson	Fort Lowell MRA
Site No. HD 7-0A	5429 E. Fort Lowell Rd.	Tucson	Fort Lowell MRA
Site No. HD 7-13	5531 E. Fort Lowell Rd.	Tucson	Fort Lowell MRA
Site No. HD 9-28	5668 E. Fort Lowell Rd.	Tucson	Fort Lowell MRA
Site Nos. HD 12-4/12-8	E. Fort Lowell Rd.	Tucson	Fort Lowell MRA
Site Nos. HD 5-28/5-25	3031 N. Craycroft Blvd.	Tucson	Fort Lowell MRA

Appendix E: Continued

Resource Name	Address	City	Multiple
Site Nos. HD 9-11/9-2	5651 E. Fort Lowell Rd.	Tucson	Fort Lowell MRA
Sixth Avenue Underpass	Sixth Ave.	Tucson	Vehicular Bridges in Arizona MPS
Smith, Professor George E. P., House	1195 E. Speedway	Tucson	
Sosa--Carrillo--Fremont House	145--153 S. Main St.	Tucson	
Southern Pacific Railroad Locomotive No. 1673	Himmel Park	Tucson	
Speedway--Drachman Historic District	Roughly bounded by Lee St., Park Ave., Speedway Blvd., 7th Ave., Drachman St., and 2nd Ave.	Tucson	
Spring, John, Neighborhood Historic District	Roughly bounded by W. Speedway Blvd., N. Ninth Ave., W. Fifth St., N. Main Ave., W. Second St., and N. Tenth St.	Tucson	Spring, John, MRA
Stone Avenue Underpass	Stone Ave.	Tucson	Vehicular Bridges in Arizona MPS
Sutherland Wash Archeological District	Address Restricted	Tucson	
Sutherland Wash Rock Art District	Address Restricted	Tucson	
U.S. Post Office and Courthouse	55 E. Broadway	Tucson	
University Heights Elementary School	1201 N. Park Ave.	Tucson	
University of Arizona Campus Historic District	Roughly bounded by E. Second St., N. Cherry Ave., E. Fourth St., and Park Ave.	Tuscon	
Upper Davidson Canyon Archeological District	Address Restricted	Sonoita	
USDA Tucson Plant Materials Center	3241 N. Romero Rd.	Tucson	
Valencia Site (BB:13:15;BB:13:74)	Address Restricted	Tucson	
Velasco House	471--475--477 S. Stone Ave. and 522 S. Russell St.	Tucson	
Ventana Cave	Address Restricted	Santa Rosa	
Victoria Mine	N of Lukeville	Lukeville	
Warner, Solomon, House and Mill	350 S. Grand Ave.	Tucson	
West University Historic District	Roughly bounded by Speedway Blvd., 6th St., Park and Stone Aves.	Tucson	
Wright, Harold Bell, Estate	850 N. Barbara Worth	Tucson	
Santa Cruz County, Arizona			
10 Cottages on Short Street	117--126 Short	Nogales	Nogales MRA

Appendix E: Continued

Resource Name	Address	City	Multiple
Arizona-Sonora Manufacturing Company Machine Shop	Grand Ave. at Arroyo Blvd.	Nogales	Nogales MRA
Atascosa Lookout House	Coronado National Forest	Tubac	National Forest Fire Lookouts in the Southwestern Region TR
Bowman Hotel	314--316 Grand Ave.	Nogales	Nogales MRA
Bowman, W. G., House	112 Sierra	Nogales	Nogales MRA
Burton Building	322--324 Grande	Nogales	Nogales MRA
Cady Hall	346 Duquesne St.	Patagonia	
Calabasas	N of Nogales	Nogales	
Miller, Hugo, House	750 Petrero	Nogales	Nogales MRA
Montezuma Hotel	217 Morley	Nogales	Nogales MRA
Nogales Electric Light, Ice & Water Company Power House	498 Grand	Nogales	Nogales MRA
Nogales High School	209 Plum	Nogales	Nogales MRA
Nogales Steam Laundry Building	223--219 East	Nogales	Nogales MRA
Noon, A. S., Building	246 Grande	Nogales	Nogales MRA
Old Nogales City Hall and Fire Station	223 Grand Ave.	Nogales	Nogales MRA (AD)
Old Tubac Schoolhouse	Address unknown	Tubac	
Pennington Rural Historic Landscape	N of jct. of Royal Rd. and Calle Del Rio	Nogales	
Piscorski, Jose, Building	315 Morley	Nogales	Nogales MRA
Ruby	N of U.S./Mexico border between Ruby and Montana peaks	Ruby and Vicinity	
Santa Cruz Bridge No. 1	South River Rd. over the Santa Cruz River	Nogales	Vehicular Bridges in Arizona MPS
Santa Cruz County Courthouse	Court and Morley Sts.	Nogales	
Three Mediterranean Cottages on Pajarito Street	102--104 Pajarito	Nogales	Nogales MRA
Tubac Presidio	Broadway and River Rd.	Tubac	
Tubac Townsite Historic District	Roughly bounded by Tubac and Plaza Rds. and Presidio Dr.	Tubac	Tubac Settlement MPS
Tumacacori Museum	Tumacacori National Monument	Tumacacori	
Tumacacori National Monument	18 mi. N of Nogales on I 19	Tumacacori	
US Custom House	Jct. of International and Terrace Sts.	Nogales	Nogales MRA
US Post Office and Immigration Station--Nogales Main	Hudgin St. and Morley Ave.	Nogales	Historic US Post Offices in Arizona, 1900--1941, TR
Wise, J. E., Building	134 Grande	Nogales	Nogales MRA

Resource Name	Address	City	Multiple
Yuma County, Arizona			
Resource Name	Address	City	Multiple
Antelope Hill Highway Bridge	NW of Tacna spanning the Gila River	Tacna	Vehicular Bridges in Arizona MPS (AD)
Balsz House	475 2nd Ave.	Yuma	Yuma MRA
Blaisdell Slow Sand Filter Washing Machine	N. Jones St.	Yuma	
Canelo Ranger Station	Forest Rd. 52B N of Canelo, Coronado NF	Canelo	Depression-Era USDA Forest Service Administrative Complexes in Arizona MPS
Canelo School	18 mi. SE of Sonoita on AZ 93	Canelo	
Cranz, Frank F., House	408 Arroyo	Nogales	Nogales MRA
Crawford Hill Historic Residential District	Roughly bounded by Oak St., Terrace Ave., Compound St., & Interstate 19 & Grindell	Nogales	Nogales MRA
Dunbar, George, House	118 Sierra	Nogales	Nogales MRA
Finley, James, House	7.2 mi. SW of Patagonia in Coronado National Forest	Patagonia	
Guevavi Mission Ruins	6 mi. N of U.S.-Mexican border	Nogales	
Harrison, Sen. James A., House	449 Morley	Nogales	Nogales MRA
Hotel Blanca	701 Morley	Nogales	Nogales MRA
House at 220 Walnut Street	220 Walnut St.	Nogales	Nogales MRA
House at 334--338 Walnut Street	334--338 Walnut St.	Nogales	Nogales MRA
House at 665 Morley Avenue	665 Morley Ave.	Nogales	Nogales MRA
Kentucky Camp Historic District	Address Restricted	Coronado National Forest	
Kitchen, Pete, Ranch	3.5 mi. N of Nogales off U.S. 89	Nogales	
Kress, S. H., & Co., Building	119--121 Morley	Nogales	Nogales MRA
Las Dos Naciones Cigar Factory	331 Morley	Nogales	Nogales MRA
Marsh Heights Historic District	Roughly bounded by Court St., Summit Ave., S. Court St., and Morley Ave.	Nogalez	Nogales MRA
Marsh, George B., Building	213--225 Grand	Nogales	Nogales MRA
Mediterranean Style House	124 Walnut	Nogales	Nogales MRA

Appendix E: Continued

Resource Name	Address	City	Multiple
Mediterranean Style House	116 Walnut	Nogales	Nogales MRA
Brinley Avenue Historic District	29-96 W. 2nd St., 198-200 S. Main, 201 S. 1st, and 102-298 Madison Aves.	Yuma	Yuma MRA
Brown House	268 S. 1st Ave.	Yuma	Yuma MRA
Brownstetter House	627 Orange Ave.	Yuma	Yuma MRA
Cactus Press--Plaza Paint Building	30--54 E. Third St.	Yuma	Yuma MRA
Caruthers House	441 2nd Ave.	Yuma	Yuma MRA
Connor House	281 S. 1st Ave.	Yuma	Yuma MRA
Double Roof House	553 4th Ave.	Yuma	Yuma MRA
Dressing Apartments	146 1st Ave.	Yuma	Yuma MRA
El Camino Del Diablo	NW of Lukeville	Lukeville	
Ewing, Frank, House	700 2nd Ave.	Yuma	Yuma MRA
Ewing, Ruth, House	712 2nd Ave.	Yuma	Yuma MRA
Fourth Avenue Junior High School	450 S. 4th Ave.	Yuma	Yuma MRA
Fredley Apartments	406 2nd Ave.	Yuma	Yuma MRA
Fredley House	408 2nd Ave.	Yuma	Yuma MRA
Gandolfo Theater	200 S. 1st Ave.	Yuma	Yuma MRA
Griffin, Alfred, House	641 1st Ave.	Yuma	Yuma MRA
Harquahala Peak Observatory	E of Wenden off U.S. 60	Wenden	
Hodges, Peter B., House	209 Orange Ave.	Yuma	Yuma MRA
Hotel del Ming	300 Gila St.	Yuma	Yuma MRA
Jackson, E.B., House	572 1st Ave.	Yuma	Yuma MRA
Kent, Jerry, House	450 3rd Ave.	Yuma	Yuma MRA
Lee Hotel	390 Main St.	Yuma	Yuma MRA
Levy, Henry, House	602 2nd Ave.	Yuma	Yuma MRA
Marable, George, House	482 Orange Ave.	Yuma	Yuma MRA
Martinez Lake Site (AZ-050-0210)	Address Restricted	Fisher's Landing	
Masonic Temple	153 S. 2nd Ave.	Yuma	Yuma MRA
Mayhew, Carmelita, House	660 1st Ave.	Yuma	Yuma MRA
McPhaul Suspension Bridge	W of Dome	Dome	Vehicular Bridges in Arizona MPS (AD)
Methodist Episcopal Church	256 S. 1st Ave.	Yuma	Yuma MRA
Methodist Parsonage	248 S. 1st Ave.	Yuma	Yuma MRA
Mexican Consulate	129 W. 4th St.	Yuma	Yuma MRA
Ming, A.B., House	468 Orange Ave.	Yuma	Yuma MRA
Mohawk Valley School	5151 South Ave. 39 East	Roll	
Norton House	226 S. 1st Ave.	Yuma	Yuma MRA
Ocean To Ocean Bridge	Penitentiary Ave	Yuma	Vehicular Bridges in Arizona MPS (AD)

Appendix E: Continued

Resource Name	Address	City	Multiple
Old La Paz	Address Restricted	Ehrenberg	
Old Presbyterian Church	SW of Parker on 2nd Ave.	Parker	
Ortiz House	206 S. 1st Ave.	Yuma	Yuma MRA
Pancrazi House	432 S. Madison Ave.	Yuma	Yuma MRA
Parker Jail	N side of Agency Rd. in Pop Harvey Park	Parker	
Pauley Apartments	490 W. 1st St.	Yuma	Yuma MRA
Power Apartments	20 W. 3rd St.	Yuma	Yuma MRA
Riley, Clara Smith, House	734 2nd Ave.	Yuma	Yuma MRA
Ripley Intaglios	Address Restricted	Ehrenberg	
Roosevelt School	201 6th St.	Yuma	Yuma MRA
Russell-Williamson House	652 2nd Ave.	Yuma	Yuma MRA
San Carlos Hotel	106 1st St.	Yuma	Yuma MRA
San Ysidro Hacienda	Address Restricted	Yuma	
Sears Point Archaeological District	Address Restricted	Gila Bend	
Smith, J. Homer, House	600 5th Ave.	Yuma	Yuma MRA
Southern Pacific Freight Depot	Main St.	Yuma	Yuma MRA
Southern Pacific Railroad Depot	Gila St.	Yuma	
Southern Pacific Railroad Passenger Coach Car--S.P. X7	201 N. 4th Ave.	Yuma	
St. Paul's Episcopal Church	637 2nd Ave.	Yuma	Yuma MRA
Stoffela Store/Railroad Exchange	447 S. Main St.	Yuma	Yuma MRA
US Post Office--Yuma Main	370 W. Third St.	Yuma	Historic US Post Offices in Arizona, 1900--1941, TR
Yuma Century Heights Conservancy Residential Historic District	Roughly bounded by 4th Ave., 8th St., 1st and Orange Aves.	Yuma	
Yuma City Hall	181 W. 1st St.	Yuma	Yuma MRA
Yuma County Courthouse	168 S. 2nd Ave.	Yuma	Yuma MRA
Yuma Crossing and Associated Sites	Banks of the Colorado River	Yuma	
Yuma Main Street Historic District	170--387 S. Main St., 10--29 W. Third St.	Yuma	