

# HOUGHTON ROAD CORRIDOR

## TUCSON, ARIZONA

### PHASE I ENVIRONMENTAL SITE ASSESSMENT

Prepared for

Arizona State Land Department

Task I-C-6 Deliverable

UPP 47-111563

July 25, 2008

**By:**

EcoPlan Associates, Inc.

# INTRODUCTION/PURPOSE

On behalf of Westcor, EcoPlan Associates, Inc. (EcoPlan) has completed this Phase I Environmental Site Assessment (ESA) for the Arizona State Land Department (ASLD) Houghton Road Corridor (HRC) project area, located in the southeast Tucson metropolitan area, Pima County, Arizona (Figures 1-3) (the Project Area). The purpose of the Phase I ESA is to identify "recognized environmental conditions" associated with the Project Area, if any. This assessment was conducted on approximately 18.75 square miles of mostly undeveloped natural desert land in southeast Tucson, Arizona. The Project Area consists of approximately 12,000 acres, composed of multiple parcels of land.

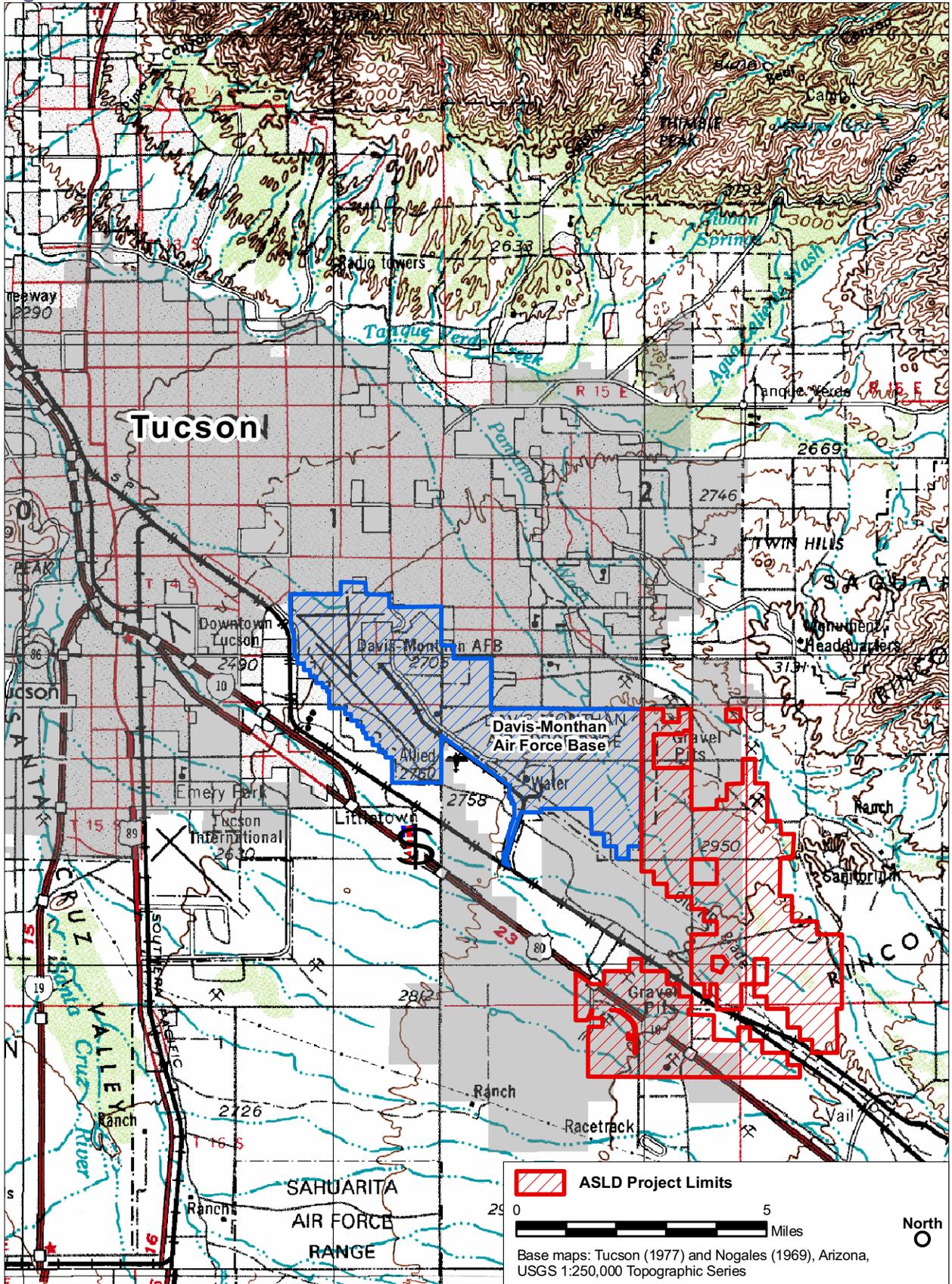
## Executive Summary

EcoPlan conducted this Phase I ESA on behalf of Westcor from January through July 2008 for the HRC Urban Planning Permit (UPP) area located generally along Houghton Road in southeast Tucson, Pima County, Arizona. This Phase I ESA covers approximately 12,000 acres of mostly undeveloped natural desert and rangeland. This Phase I ESA was conducted in accordance with the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (E1527-05) to evaluate the Project Area to identify-"recognized environmental conditions." In accordance with ASTM Standard Practice E1527-05, the Phase I ESA process includes "all appropriate inquiry" to identify conditions indicative of releases or threatened releases of materials deemed to be hazardous substances.

The assessment of the Project Area included site reconnaissance activities (on-foot and drive-by inspections); photography of the Project Area; a records search of environmental regulatory agency databases for information concerning the environmental records; a review of historical to recent regional aerial photos; and interviews with federal, state and local agencies, current and former occupants of the site, and other periodic users of the site.

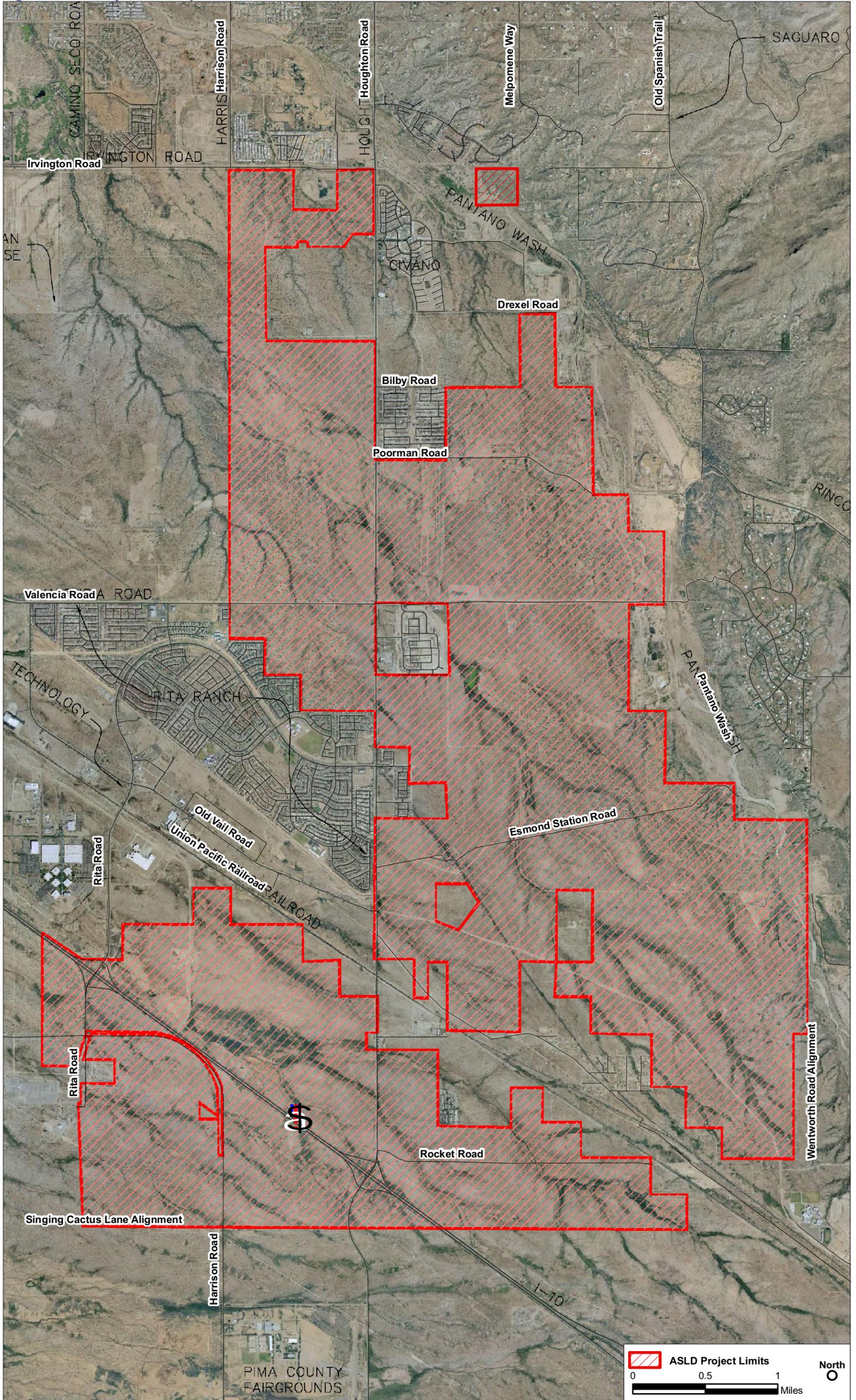
The Project Area is characterized by flat, gently sloping to hilly topography, and portions of the Project Area appeared to be used by recreational off-road vehicles and motorcycle trail riding activities. Scattered residential developments are located on adjacent parcels. Based on the record search, the review of historical to recent aerial photos, and the site reconnaissance activities, EcoPlan noted scattered piles of dumped trash, refuse, tires, abandoned appliances, and furniture along with several abandoned, rusted, and/or bullet hole-riddled car bodies.

Figure 1 Project Location



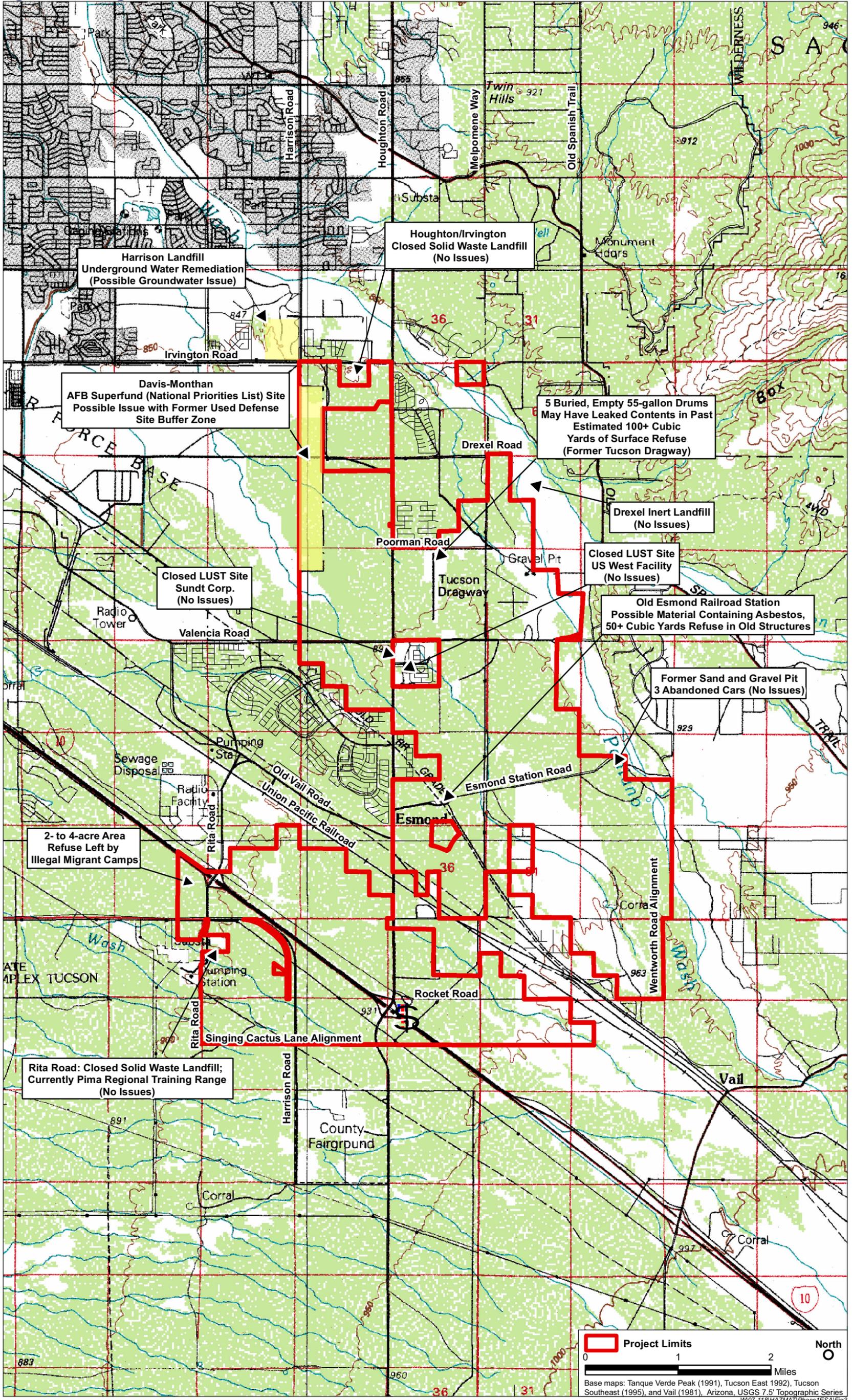
W07-118/HAZMAT/Phase1ESA/Fig1

Figure 2 Project Vicinity



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Figure 3 Recognized Environmental Conditions



We have performed a Phase I ESA of the Project Area in conformance with the scope and limitations of ASTM Practice E 1527-05. Any exceptions to, or deletions from, this Practice are described in Section 9 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Project Area except for the following:

1. The Davis-Monthan Air Force Base (DMAFB) utilized approximately 320 acres in the northwest portion of the Project Area primarily as a buffer zone for ordnance and small firing arms operations conducted on the DMAFB since World War II pursuant to a lease from the State of Arizona that ended in 1978. This area is currently classified as a Formerly Used Defense Site (FUDS) (this term is used hereafter to signify the 320-acre area within the Project Area). Limited site reconnaissance activities by or on behalf of the U.S. Army Corps of Engineers (Corps) and the Arizona Department of Environmental Quality (ADEQ) since the reversion of the property to the State of Arizona in 1978 has found expended flares, over a dozen significant subsurface abnormalities based on magnetometer readings, and expended scrap ordnance. In 1997, the Corps recommended no further action for the FUDS. The land use in the FUDS and expected future use in the FUDS at the time the Corps made this recommendation was limited to range land grazing as assessed by the Corps. The ADEQ reportedly was not consulted about this recommendation. In a 2003 visit to portions of the FUDS by consultants for the ADEQ, loud detonations and small arms firing from the DMAFB were heard and felt. In 2003, ADEQ's consultant recommended that the State of Arizona consider that the FUDS remain as a buffer between the DMAFB and surrounding development, and that the Corps reevaluate the no further action recommendation given that current uses of the FUDS are no longer limited to cattle grazing (i.e., portions of the FUDS are utilized for recreational purposes, particularly mountain biking) and the finding of subsurface anomalies and ordnance scrap within the FUDS. Most recently, the ADEQ has indicated that the Corps has hired an engineering firm to conduct site inspections at all of the military munitions sites at FUDS properties. The site inspections are funded by Congress under the Military Munitions Response Program (MMRP) and are to be completed by 2010 or 2011. In June 2008, the ADEQ resubmitted to the Corps the 2003 report prepared by its consultant requesting that the FUDS be reclassified and included in the MMRP. Though the Corps indicates in its FUDS inventory posted online that potential hazards were found at the DMAFB Poorman Range and lists the Inventory Project Report Status as "complete" (Corps 2006), the ADEQ at this time has not received written confirmation from the Corps that the FUDS will be included in the MMRP. If included, the site inspection is anticipated to consist of limited site reconnaissance and soil sampling and could result in recommendations for additional investigation or remediation by the Corps or the ADEQ. Finally, DMAFB representatives have also recently stated that consideration be given to setting aside the FUDS as a buffer separating DMAFB ranges from future land development.
2. The northern end of the abandoned Tucson Dragway race track that operated until the mid-1980s has a total of five partially buried 55-gallon metal drums with rust holes at two locations that may have past subsurface releases of unknown liquid contaminants or pollutants. The site also contains more recent dump sites of refuse and garbage.
3. The Project Area includes the former Southern Pacific Railroad Esmond Station (originally named the Papago Station). The station was used for passenger transfer and as a daily order office for conductors and engineers. It is not known to, or suspected to, have included fueling or maintenance operations. The station is located in the 10300 block of East Esmond Station Road and was built in approximately 1855. The station was abandoned by the railroad when the mainline was diverted to the south in approximately 1952. The depot remained unused and was destroyed by a fire in November 2003. One or two abandoned, partially demolished buildings

remain at the site. The structures may contain hazardous building materials such as asbestos-containing materials and/or lead-based paint. The site may also contain an abandoned septic system. Any septic system associated with the railroad depot would not have been expected to have been used for disposal of regulated substances, but rather would more likely have consisted of normal sewage associated with restroom activities and would not be expected to present an environmental concern. There are dump sites of refuse and garbage at the site. The Esmond Station is also known for a tragic head-on collision between two trains in 1903 where 14 people were killed. The location of the collision is reportedly approximately 0.75 mile west of Esmond Station, near the current day intersection of Rita and Houghton roads, outside of the Project Area. Debris from the incident has been identified at the surface near the abandoned railbed in recent years and may also be buried near the tracks between the location of the collision and Esmond Station. Therefore, some remnant debris may occur in the Project Area. Spillage of fuel from the locomotives resulting from the accident has not been reported. If it occurred, it would likely be limited to the area near the point of impact, which is outside of the Project Area. Based on the locomotive fuel-type used at that time (Bunker-C oil, a tar-like substance) and expected bioremediation over the last 105 years, if a fuel spill occurred, it is likely that any current residual soil contamination would be very localized. Based on the characteristics of Bunker C fuel and the depth to groundwater in the area, it is unlikely that a spill, if one had occurred, would have affected groundwater.

4. The closed Harrison Landfill adjacent to the northwest corner but outside of the Project Area has undergone subsurface and groundwater remediation since 2001 for volatile organic compounds (VOCs), mostly perchloroethylene (PCE) and trichloroethylene (TCE). Remediation efforts may be approaching completion. Prior to remediation efforts, PCE and TCE concentrations in groundwater exceeded their respective state Aquifer Water Quality Standards. Due to the proximity of the Project Area to the closed landfill, a possibility exists that residual levels of groundwater contamination could migrate from the landfill to the Project Area. This would occur, however, only if south-eastward migration of contaminated groundwater has occurred. The landfill investigations have reported groundwater migration is generally in a west-northwesterly direction, away from the Project Area. A possibility also exists that landfill gases/vapors could migrate from the landfill area to the Project Area.
5. The Project Area includes overhead electric power lines owned and operated by Tucson Electric Power (TEP). Transformers associated with smaller distribution lines, such as the 138 kV lines along Houghton Road and any private lines and transformers, may contain polychlorinated biphenyls (PCBs) if these transformers date from 1978 or earlier.

Based on this Phase I ESA, we recommend the following:

1. The ASLD should consult with the DMAFB, the Corps, and the ADEQ to determine an appropriate future strategy with respect to the FUDS.
2. The partially buried drums at two locations at the former drag strip buildings should be removed and the surrounding soils assessed for the presence of petroleum hydrocarbons, VOCs, and/or other contaminants.
3. An investigation of the remnant historic buildings at the Esmond Station railroad depot should be performed to identify the presence of asbestos and/or lead-based paint if the structures are demolished or renovated. Due to the previous use of the site, the area should also be assessed for the presence of an abandoned septic system.

4. Should future drinking water supply wells be installed in the vicinity of the Harrison Landfill, water quality testing of such wells should include VOCs and other potential landfill contaminants in addition to the parameters required by State of Arizona regulations for drinking water wells to assess whether contaminants from the former landfill may have migrated beneath the Project Area to such wells. A soil-gas survey may be warranted to assess whether landfill gases/vapors may be migrating from the landfill and vicinity to the Project Area if development occurs in the area.
5. PCB transformers are regulated by the Toxic Substances Control Act (TSCA); any that may occur in the Project Area are subject to specific regulations regarding their use, maintenance, labeling, disposal, and procedures in the event of spills or leaks.
6. Refuse dump sites in the Project Area will warrant removal of solid waste prior to site development.

## Project Location

The Project Area is located in southeast Tucson in northeast Pima County, Arizona. The site encompasses about 12,000 acres of undeveloped ASLD land west and east of Houghton Road (to the DMAFB boundary and the Harrison Road alignment and Cactus Lane alignment, respectively). The northern boundary is the Irvington Road alignment, and the southern boundary extends south of Interstate 10 (I-10) to just north of the Singing Cactus Lane alignment.

## Project Description

The Project Area consists of approximately 12,000 acres of ASLD land in southeast Tucson. The ASLD has issued a UPP to Westcor for the future development of the Project Area with commercial, residential, open space, and/or other uses. The Project Area is largely undeveloped and has been used historically primarily for grazing. Past and current cattle grazing was evident in existing trails linking livestock tanks with grazing areas, manure, and bedding grounds throughout the Project Area. Approximately 320 acres of the Project Area were used primarily as a buffer zone for ordnance and small arms firing activities at the adjacent DMAFB. Other historic land uses include transportation (I-10, major streets, arterial, collector, and unimproved roads), utility lines, and recreational uses, including mountain biking and hiking at "Fantasy Island" in the northwestern portion of the Project Area. Also, many off-road vehicle trails exist in some of the undeveloped desert areas in the Project Area, and the Tucson Radio Control Club radio-controlled aircraft park is located east of Houghton Road on Valencia Road. Major roadways within or directly adjacent to the Project Area include Houghton Road, Valencia Road, Irvington Road, Rita Road, Mary Ann Cleveland Way, and I-10.

Additional prior land uses consisted of sand and gravel mining operations and related activities in and along Pantano Wash (outside of the Project Area except for some adjacent disturbed areas in the Project Area that appear to have been exploration sites), a former railroad line (Esmond Station train depot and associated railroad grade), and the former Tucson Dragway, with a remnant paved track and demolished buildings east of Houghton Road and south of Poorman Road. Several sites contain construction and landscaping debris, abandoned appliances and furniture, abandoned old cars, and household refuse. One area contains migrant trash adjacent to unimproved roads south of I-10 near Rita Road (Figures 1 and 2).

# FINDINGS AND CONCLUSIONS

We have performed a Phase I ESA of the Project Area in conformance with the scope and limitations of ASTM Practice E 1527-05. Any exceptions to, or deletions from, this practice are described in Section 9 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Project Area, except for the following:

1. The DMAFB utilized approximately 320 acres in the northwest portion of the Project Area primarily as a buffer zone for ordnance and small firing arms operations conducted on the DMAFB since World War II pursuant to a lease from the State of Arizona that ended in 1978 (the FUDS). Limited site reconnaissance activities by or on behalf of the Corps and the ADEQ since the reversion of the property to the State of Arizona in 1978 has found expended flares, over a dozen significant subsurface abnormalities based on magnetometer readings, and expended scrap ordnance. In 1997, the Corps recommended no further action for the FUDS, apparently based on the then-limited use of the FUDS for cattle grazing activities. The ADEQ reportedly was not consulted about this recommendation. In a 2003 visit to portions of the FUDS by consultants for the ADEQ, loud detonations and small arms firing from the DMAFB were heard and felt. In 2003, ADEQ's consultant recommended that the State of Arizona consider that the FUDS remain as a buffer between the DMAFB and surrounding development and that the Corps reevaluate the "no further action" recommendation given that current uses of the FUDS are no longer limited to cattle grazing (i.e., portions of the FUDS are utilized for recreational purposes, particularly mountain biking) and the finding of subsurface anomalies and ordnance scrap within the FUDS. Most recently, the ADEQ has indicated that the Corps has hired an engineering firm to conduct site inspections at all of the military munitions sites at Formerly Used Defense Sites properties. The site inspections are funded by Congress under the MMRP and are to be completed by 2010 or 2011. In June 2008, the ADEQ resubmitted to the Corps the 2003 report prepared by the ADEQ's consultant and requested that the FUDS be reclassified and included in the MMRP. Though the Corps indicates in its FUDS inventory posted online that potential hazards were found at the DMAFB Poorman Range and lists the Inventory Project Report Status as "complete" (Corps 2006), ADEQ at this time has not received written confirmation from the Corps that the FUDS will be included in the MMRP. If included, the site inspection is anticipated to consist of limited site reconnaissance and soil sampling and could result in recommendations for additional investigation or remediation by the Corps or the ADEQ. Finally, DMAFB representatives have also recently stated that consideration be given to setting aside the FUDS as a buffer separating DMAFB ranges from future land development in light of historic use of this property.
2. The northern end of the abandoned Tucson Dragway racetrack that operated until the mid-1980s has a total of five buried 55-gallon metal drums with rust holes at two locations that may have past subsurface releases of unknown liquid contaminants or pollutants. The site also contains more recent dump sites of refuse and garbage.

3. The Project Area includes the former SPRR Esmond Station (originally named the Papago Station). The station was used for passenger transfer and as a daily order office for conductors and engineers. It is not known to, or suspected to, have included fueling or maintenance operations. The station is located in the 10300 block of East Esmond Station Road and was built in approximately 1855. The station was abandoned by the railroad when the mainline was diverted to the south in approximately 1952. The depot remained unused and was destroyed by a fire in November 2003. One or two abandoned, partially demolished buildings remain at the site. The structures may contain hazardous building materials such as asbestos-containing materials and/or lead-based paint. The site may also contain an abandoned septic system. Any septic system associated with the railroad depot would not have been expected to have been used for disposal of regulated substances, but rather would more likely have consisted of normal sewage associated with restroom activities and would not be expected to present an environmental concern. There are dump sites of refuse and garbage at the site. The Esmond Station is also known for a tragic head-on collision between two trains in 1903 in which 14 people were killed. The location of the collision is reportedly approximately 0.75 mile west of Esmond Station, near the current day intersection of Rita and Houghton roads, outside of the Project Area. Debris from the incident has been identified at the surface near the abandoned railbed in recent years and may also be buried near the tracks between the location of the collision and Esmond Station. Therefore, some remnant debris may occur in the Project Area. Spillage of fuel from the locomotives resulting from the accident has not been reported. If it occurred, it would likely be limited to the area near the point of impact, which is outside of the Project Area. Based on the locomotive fuel-type used at that time (Bunker-C oil, a tarlike substance) and expected bioremediation over the last 105 years, if a fuel spill occurred, it is likely that any current residual soil contamination would be very localized. Based on the characteristics of Bunker C fuel and the depth to groundwater in the area, it is unlikely that a spill, if one had occurred, would have affected groundwater.
  
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5. The Project Area includes overhead electric power lines owned and operated by the TEP. Transformers associated with smaller distribution lines, such as the 138 kV lines along Houghton Road and any private lines and transformers, may contain PCBs if these transformers date from 1978 or earlier.

# RECOMMENDATIONS

Based on the information gathered in this Phase I ESA, EcoPlan recommends the following:

1. The ASLD should consult with the DMAFB, the Corps, and the ADEQ to determine an appropriate future strategy with respect to the Poorman Range FUDS.
2. The partially buried drums at two locations at the former drag strip buildings should be removed and the soils assessed for potential leakage of petroleum hydrocarbon and volatile organic compounds or other contaminants.
3. An investigation of the remnant historic buildings at the Esmond Station railroad depot should be performed to identify the potential presence of asbestos and/or lead-based paint if the structures are demolished or renovated. In addition, based on the previous site use, the area should be assessed for the presence of an abandoned septic system.
4. Should future drinking water supply wells be drilled in the vicinity of the Harrison Landfill, water quality testing of such wells should include VOCs and other potential landfill contaminants in addition to parameters required by State of Arizona regulations for drinking water wells to assess whether contaminants from the former landfill may have migrated beneath the Project Area. An assessment also should be performed to assess whether landfill gases/vapors may be migrating from the landfill area to the Project Area.
5. PCB transformers are regulated by the TSCA; any that may occur in the Project Area are subject to specific regulations regarding their use, maintenance, labeling, disposal, and procedures in the event of spills or leaks.
6. Refuse dump sites in the Project Area will warrant removal of solid waste prior to site development.